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HUMAN MENTALITY

IN

THE LIGHT OF PSYCHIATRIC EXPERIENCE

BY

BROR GADELIUS

OXFORD UNIVERSITY PRESS
LONDON
LEVIN & MUNKSGAARD
COPENHAGEN

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IN THE LIGHT OF PSYCHIATRIC EXPERIENCE

AN OUTLINE OF GENERAL PSYCHIATRY

BY

BROR GADELIUS

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PREFACE TO THE ENGLISH EDITION.

The English translation of my book »Det mänskliga Själslivet« here published is a revised and enlarged edition of the first two parts, together constituting an independent volume, of the 2nd edition of the Swedish original. The book is intended as a general guide to normal psychological as well as psychopathological phenomena, and in my treatment of the subject I have especially desired to point out how greatly normal psychology has benefited by psychiatrical experience. But since morbid mental life, like an uneven surface, reflects distorted and deformed images of various details of the normal psychic structure, it has at the same time been my object to show that a clear insight into the diseased mind can only be gained against the background of normal mental life. The idea thus underlying my exposition has already been emphasised in my previous prefaces, where I have likewise pointed out how great is the importance for psychiatry of heredity- and race-biological research, precisely from the point of view, here indicated, that the difference between the normal and the pathological is merely a difference of degree.

Besides enlarging certain parts of this work, an enlargement rendered desirable by the constant advance of psychobiological research, I have added a new chapter to the present edition. My book, in addition to a general consideration of the main psychiatric and psychological problems, also comprises an account of the care of the insane in former days and now. In connection with my description of the treatment of mental disorders in hospitals and under freer forms, and without entering into the principles of a more special treatment, I have found it appropriate to discuss psychoanalysis at some length. Thus, at the same time as I have desired to maintain the extreme importance of psychotherapy in every form of mental suffering, I have found it advisable, in view of the great influence exercised by the Freudian doctrines, and the impress of dogmatic onesidedness they have imparted to the theory

and practice of mental treatment, to subject psychoanalysis to a critical examination.

As is well known, it is not the first time that a psychiatrist enters the lists against Freud. And it is natural that this should be so. For a ballast of psychiatrical experience would have rendered his soaring speculative flights utterly inconceivable. The foundation for a psychotherapy as laid by Freud has become inadequate and unstable through his unscientific onesidedness, but in spite of all it must be acknowledged that a foundation has been laid and important preparatory work done. And as preparing the way for a further development of psychotherapy even errors and exaggerations may be considered meritorious. The imposing erection of the Freudian exaggerations has provoked fruitful criticism, and fresh points of view have been gained from the suggestions made. Thus, directly and indirectly, there is reason to mention Freud as one of the foremost among the founders of psychotherapy.

I take this opportunity of tendering my respectful thanks to the Trustees of the Therese and Johann Andersson Memorial Fund under the Caroline Medical Institute of Stockholm, for the liberal donation which has rendered possible the translation and publication of this book. At the same time I desire to express my grateful acknowledgement of the unfailing kindness of my always helpful Danish publisher, Mr. Ejnar Munksgaard. Finally I beg Fru Doktorinnan Anna Lamberg-Wåhlin of Stockholm and Miss Annie I. Fausbøll of Copenhagen to accept my cordial thanks for the good help they have rendered in the translation of the book.

Stockholm March 24, 1933.

Bror Gadelius.

PREFACE TO THE FIRST EDITION.

During the many years that the present writer has held the chair of psychiatry at the Caroline Medical Institute, the need for a Swedish text-book on this subject has made itself felt. Hence the pleasing, but perhaps rather daring, thought that I might one day be able to supply this need has long been present to my mind. An attempt in this direction has now been made, and the present work is an introduction to a more special and comprehensive study of the mental diseases of which I am preparing the manuscript and which is already to a large extent finished. The difficulties with regard to printing, etc., which are now so obstructive to all scientific writing, have necessitated the publishing of this introduction as a separate volume, and its nature may also be said to justify such a measure.

My chief object in the following exposition has been to give the reader that insight into the mental life of man, its fundamental phenomena and elementary functions, which is necessary for the study of mental pathology.

It is against the background of normal mental life that the mental diseases must be seen. They possess no distinctive flora of phenomena. The abnormality is due to a qualitative change, to disharmonies, displacements and the emphasising of certain details at the cost of others. The normal »mental structure« has its »susceptible points«, its »preformed lines of breaking«, hence the morbid changes of personality do not set in anyhow and quite capriciously, but in a manner determined by the nature of the mental functions. Thus I am altogether of opinion that normal psychology and psychopathology stand in need of a continual interchange of experiences, and that this reciprocal »reflection« affords excellent opportunities for illuminating certain details and for a profound study of many particulars which are thus

thrown into full relief. This reciprocity, the true value of which has not been properly appreciated, and which might be taken advantage of in a far more profitable manner than is done in these days when experimental psychology is predominant, I have of course been able to apply only as a general principle and for the purpose indicated above. But the use of this reciprocity as a psychological method of research may perhaps secure for the present work a more universal interest among the readers bent on psychological studies than might be expected for an introduction to a psychiatry under ordinary circumstances.

It is not difficult to find an excuse for the relative bulkiness of this work. Nothing is in my opinion more apt to cool the ready interest of a reader than a summary concentration.

During my long activity as a lecturer it has been necessary for me to explain clearly to my audience the psychological concepts which constantly recur in the descriptions of the special diseases. I have then experienced over and over again how the lack of introspective practice and psychological knowledge in my pupils necessitated a greater fullness in the exposition, and more circumstantiality as to the elementary concepts, than would have been called for if the preparation for medical studies had been more humanistic. The chapters on general psychiatry in the compendious, often excellent, German text-books will mostly appear forbiddingly dry to the beginner. But this is not all. My motive for writing the present book was not only the lack of a text-book of psychiatry in any Scandinavian language, it was also the lack in our country of every kind of guide to empirical psychology. And in that respect there was, accordingly, further work cut out for me, in so far as this lack was felt by those preparing for the study of psychiatry.

A reader unschooled in psychology but all the more familiar with medical and scientific views, will perhaps shake his head at the predominantly psychological view of the subject taken by the present writer. Where, he asks, are the scientific methods of research, where are palpation, auscultation and dissection, where are physiology and pathoanatomy? Is it necessary and compatible with a scientifically sound empiricism to drag psychology so decidedly into the foreground in the study of mental diseases? If the questions and answers of psychiatry develop as a purely intellectual sport, a kind of ballgame between normal psychology and abnormal psychology, will not then the profoundness of the psychiatrist become a freemasonry which the scientifically trained medical student cannot understand and makes no effort to understand, not from ignorance but on principle?

In this case also we must keep to the old dictum: »Render unto Caesar the things which are Caesar's«. Science, represented by physicochemical methods of investigation has its limitations. Much has been gained in this way, it is true, and much, we hope, is still to be gained, but this path does not, as many want to believe, lead directly into that world of secrets, the diseased mental life. An enlightened scepticism, founded on epistemology, is needed here. But epistemological points of view are not altogether easy to understand, and they are by no means common elements in the general education or philosophy of the physician or the scientist.

The scientific treatment of problems is quite simple and direct in its methods in other fields of medicine. It moves on even ground and on the same level, and it proceeds quite naturally from physiology and anatomy to a medicochemical interpretation of the various organic diseases. Here there are no obstacles and no epistemological warnings against abysmal precipices or »thin ice«. The argumentation is straightforward and its groundwork as level as it is secure. It is quite otherwise in psychiatry and the complicated relations met with in this field, the relation between the brain as an organ and the mental diseases as disorders of mental life. Here the methods must be changed, for the problems are no longer on the same plane, and they must be treated along two parallel theoretical lines, the physicochemical and the psychological line. Instead of an equation with *one*, we meet with an equation with *two* unknown quantities, and x can no more be expressed by y, than y by x. These points of view, which are so important for the scientific tactics in the study of psychiatrical problems, have been dealt with at some length in this book. They are unfortunately often overlooked, but then all efforts are fruitless and must lead to complete disappointment. And thus I have vindicated my view as to the important position of psychology in the study of psychiatry.

But there is of course another aspect of the problem, and psychiatry is not psychology alone, its points of view are also psychobiological. It is a branch of medicine, hence it cannot disregard the fundamental idea that the phenomena which we experience in our consciousness are psychophysically postulated inner experiences whose normal nature is dependent on the undisturbed course of the physiological vital processes. Behind the psychopathological phenomena we have always reason to surmise a pathological change in the parallel physiological processes. This, then, is the chief question in psychiatric research, round which all other points group themselves. Questions and

problems of the kind indicated here ferment in modern psychiatry. It is a young science, still in the age of adolescence, and as such it is full of expectations, conjectures and hypotheses, and quite naturally it now takes great interest in »internal secretion«. I have not been able to avoid mentioning these discoveries, on the contrary, I have here made use of them in a manner that will no doubt appear rather bold to some. Only the future can settle the value of these theories, but at the point at which we have now arrived, they are permissible attempts to bring light into the darkness. Hypotheses, like scaffoldings, are only built up to be pulled down again, but no one can deny their significance for the progress of science.

Long before psychiatry had risen to the rank of a science, the mentally diseased were subjects of lively attention. Social considerations and religious ideas were the decisive motives. The care of the insane may be regarded as a measure of the awakening pity for the sufferers, but the uprooting of the prejudices of centuries' growth which long stood in the way of modern reforms was a result of the scientific insight of psychiatrists, and thus we see the practical side of psychiatry keep abreast of its development into a science. The care of the insane is the Alpha and Omega of psychiatry, and it has been accounted for in detail in the present work. I devote an introductory chapter to its history, and an exposition of the treatment of mental patients concludes this book.

Stockholm, January 1921.

Bror Gadelius.

PREFACE TO THE SECOND EDITION.

The period of development through which psychiatry has passed since the first edition of this volume appeared may well be said to have been uncommonly fruitful. New facts and new points of view have come to light in many quarters, and it is especially in the domains of *neurology* and *heredity research*, which are intimately connected with psychiatry, that a number of observations and experiences have been added to our knowledge with the effect of entirely recasting our fundamental view of the organic substratum of mental life, and our conception as to the genesis of mental disorder.

In 1924, when the fourth volume[1]) of the first edition was ready, and the whole work was thus complete, I had occasion to mention what a revolutionising influence on psychology and psychopathy the study of certain diseases affecting the mid-brain and its large nerve-nuclei has had, and will certainly have also in the future. The symptom-picture of diseases in the subcortex (the mid-brain and brain-trunk), and not least in conditions of so-called parkinsonism after unfavourable cases of encephalitis lethargica (sleeping sickness), affords an insight into the significance of these parts for the mental automatisms. Comparative-anatomical experience of the rôle played by these biologically primitive centres as instruments for the mental life of animals throughout the whole animal series, coupled with the knowledge of the said symptoms, has opened new paths for the understanding of the structure of mental processes and their development out of more elementary and primitive automatic relations. And against the background of the theories I venture to put forward in regard to the significance of these relations for normal psychology, the psycho-

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1) The present work is a translation of volumes I and II of the Swedish edition. Volumes III and IV contain the outlines of a special psychiatry.

pathic symptoms which may on good grounds be located to these parts stand out in a new and clearer light.

In close connection with these experiences within the domains of neurology and psychopathology, so important for psychiatry, we should consider the discoveries, new departures, and hypotheses arrived at during recent years by *serologists* and *endocrinologists*. They have widened our knowledge of the organic substratum of mental life in a still deeper and more primitive layer, *the purely vegetative*.

Modern heredity research has also done much fruitful work for the advancement and deepening of psychiatry through the incontestable evidence it has given of the familial nature of mental diseases. The conception of mental diseases as constitutionally postulated reactions, with an influx from two sides of hereditary possibilities of a fluctuating variability of forms, has more and more ousted the older theory, still maintained by *Kraepelin,* of well-defined disease entities.

Many advances have accordingly been made during the last few years, and the material at my disposal in the revision of this volume has been very rich. But this material consists of a large array of facts and hypotheses, and he who wants to survey psychiatry in its present condition can only sketch the picture of a science which is still groping its way and in which thus far no solid and fully reliable foundation of wellproved facts exists.

Hence a text book of psychiatry intended to bring together in one scheme the contemporary problems will necessarily, and purposely on the part of the author, be given the character of an outline rather than a final and complete work. I am well aware that this remark may be made especially with regard to the present volume of »Human Mentality« in its second edition, but if so, the excuse lies close at hand. By this I do not mean to say that there may not be other defects in my work, due to causes other than the nature of the subject. For these defects I ask the reader's indulgence.

Stockholm, October 9, 1929.

Bror Gadelius.

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CHAPTER I.

INTRODUCTION.
A BRIEF SURVEY OF PSYCHIATRY AND THE CARE OF THE INSANE IN FORMER AGES.

Psychiatry or the science of mental diseases is one of the youngest branches of medical research, and its development has more than that of any other branch been impeded and retarded by human prejudice and the superstitious ideas of ancient times. It may with good reason be said that the earlier history of psychiatry coincides with that of human superstition.

In the period of classical antiquity, when religious conceptions had not as yet begun to hinder an objective study of mental diseases, there were, at a quite early period, sagacious and interested physicians whose experience of these diseases, and whose opinions regarding their treatment have in some cases come down to us, though, as a rule, only in the shape of fragmentary suggestions. We are reminded of the humoro-pathologic interpretation of the genesis of diseases widely adopted in Greece at the time of *Hippocrates*, by the term *melancholia* (= black bile), a term which, up to quite modern times, has had a far wider application as a name for certain mental diseases than it has in our day. *Hippocrates* himself devotes great attention to the mental disorders arising out of somatic suffering. He distinguishes between *mania*, *melancholia* and *phrenitis*, which latter term among the ancients seems generally to have stood for a transient disturbance of the reason in connection with feverish diseases. *Plato* also inclines to humoral pathology and sees the origin of mental diseases in an accumulation of mucus and bile in the body, but at the same time seems to assign

an important part to the predominance of animal desires over the reason. *Asclepiades* of Prusa in Bithynia belongs to a later time. He was active in Rome during the first century before Christ. His writings are not extant, but thanks to *Cornelius Celsus,* who has deservedly been called »the record-keeper of classical medicine«, *Asclepiades* has been saved from oblivion. Much of what *Cornelius Celsus* had to tell his contemporaries (1st century of our era) is a compilation from earlier authors, among them *Asclepiades* of Prusa. In *Cornelius Celsus'* work *»On the Medical Art«*, three different forms of mental disease are mentioned: 1) phrenitis, which has an acute course and is accompanied by fever, 2) insanity, which »manifests itself as sadness apparently due to black bile (melancholia)«, and 3) »a third kind of mental disease, which has the most chronic course of them all, so chronic that it does not encroach upon the continuance of life«. This third kind probably corresponded to paranoid forms as well as states of dementia (dementia praecox).

Cornelius Celsus gives fairly explicit instructions with regard to the treatment of all these forms, and here again we find the same naïve and inventive folk-therapeutics which were afterwards current from the end of the Middle Ages (Paracelsus) until the middle of the nineteenth century.

A great deal of the so-called *psychic treatment* subsequently adopted by *Reil,* was indicated by *Celsus,* and probably also by *Asclepiades* of Prusa. Thus, for certain cases, we notice the employment of measures of intimidation and chastisement, for others encouragement and diversion are recommended; if the patient was excited, the former were used; if he was depressed, recourse was had to the latter. The following extract from *Celsus'* work shows the great influence he must have had on the treatment of the insane in olden times.

»The frenzy«, *Celsus* writes (in »The Medical Art«, vol. 3, ch. 18), »appears in several forms so that some patients are merry, others sad; some are easily kept quiet and only betray insanity in their speech, while others spring to their feet and commit assaults and violence of one kind or another, and among the latter there are some who only misbehave themselves while in a passion, whereas others again act with cunning, and, while they are watching for an opportunity of doing evil, they seemingly show the most perfect health, though they are betrayed by their further action. It is unnecessary to deal very severely with those among the sufferers of this kind who only show insanity in their speech or even commit slight acts of violence; but those who behave more violently it is advisable to fetter so

that they may not injure either themselves or others. Never rely on such a fettered patient, he may speak ever so sensibly or pathetically when he wishes to get rid of his chains, for this is a dodge characteristic of the insane.

Earlier physicians usually kept such patients in dark rooms, thinking that they might be frightened by things they disliked, and also that the darkness itself would in some measure be conducive to calming the mind. Asclepiades, on the contrary, supposed that darkness in itself was alarming and declared that they ought to be allowed to see light. Neither treatment, however, is applicable to all cases, one patient being more disturbed by light, another by darkness, and we also find patients in whom no difference can be observed, whether they are treated in one way or the other. The best thing, therefore, is to try both and keep the patient who fears darkness in a light room, and the one who is scared by light, in a dark place. But in cases where no such difference exists, the patient ought to be kept in a well-lighted room, if he is in full vigour, and if he is not, in a dimly-lighted room.« The employment of medicine in an attack of frenzy *Celsus* considers useless. He mentions that *Asclepiades* expressly advises against blood-letting, on the assumption that »there was no mental disease except in conjunction with intense fever«, and thus blood-letting should only be undertaken during a remission of the fever.

But, *Celsus* observed, in case of grave danger, much may be done without hesitation which would not be permissible under other circumstances. Thus there are moments when a fever, even though it does not remit, yet it does not rise, and such a moment is, if not the very best, yet certainly propititious for the use of remedies. If the patient's strength admits thereof, even blood-letting may be undertaken. Still less apprehension should be entertained with regard to the enema.« Further, he recommends rubbing, and bathing the closely cropped head with water »in which discutient herbs have been boiled«; for stronger patients »rue pestled with vinegar« should be held under the nose, or sneezes evoked »by appropriate physic«. For weaker persons it is recommended to moisten the head with »attar of roses and serpyllum«. It is also useful to pour the juice of solanum and herba muralis (pressed from both at the same time) over the head. As regards the »psychic treatment«, it should be individual. »In some we have to dispel imaginary apprehensions, as was done with a very rich man who feared starvation, by repeatedly bringing him news about fictitious legacies; in others, their arrogance has to be checked, sometimes even flogging is necessary to keep them quiet; in other cases both chiding and threats must be tried to put an end to their unreasonable laughter; in others again morbid conceptions have to be dispelled, and for this purpose music, cymbals and noise are suitable. We must agree with them, however, rather than contradict them, and gradually, without their noticing it, guide their minds from unreasonable manners of speech to more correct ones.« Thus, »it has even been possible to make patients take food in spite of their reluctance, by placing them among the guests at a feast.« In order to induce sleep »it is advisable to rub the head with a mixture of saffron and unguent of iris.« Decoctions of poppies or henbane are also recommended for the patient to take in water, as well as the fruit of mandragora under the pillow. »*Asclepiades* declared these remedies to be unsuitable, as they often made the disease change into lethargy.« »Nor is it

amiss, if the patient has not been bled before, or is not quite right in his head, or cannot sleep, to give a wet cupping at the back of the head; and as this checks the illness itself, it can also bring about sleep.« Further he gives a great deal of good advice with regard to the dietary.

For states of depression too, dietetic instructions are given and advice as to the psychic treatment. This latter should tend to diversion, praise and encouragement; and in the third group of diseases, which are of a more chronic character, special importance is attached to emetics and laxatives. »In a gloomy turn of mind, black hellebore should be given to effect evacuation, and in a cheerful state white hellebore to effect vomiting; and if the patient refuses to take them in a liquid state, they should be mixed with his bread to beguile him more easily. As to the prognosis, it is stated that the disease is of a slighter nature when it has a cheerful character than when it is of the gloomy kind. In these forms of disease great stress is also laid upon the psychic treatment.

If the patient has »committed any misdeed, he should be punished with hunger, fetters and flogging«. »He must be forced to attention, to learn various things by heart and to remember them, for in this manner the physician may succeed in gradually compelling him through fear to consider his behaviour. In this disease also sudden fright and deep dread are useful, generally speaking everything that violently moves the mind. A change may possibly be worked, when once the thoughts have been diverted from their old groove.« The severer treatment should especially be used with patients who show themselves gay and in high spirits. As to the dietary, fat meat and wine are forbidden. Only in the rarely occurring form of insanity which arises through fear, is it permissible to give the patient wine.

Among the later authors of classical antiquity, *Galenus* (131—200 A. D.) seems to have been of relatively small significance to psychiatry in comparison with his extraordinary prominence in other fields of medical science, where for more than a thousand years he remained the authority to whom all appealed. *Galenus*' theories on the genesis of mental diseases have not got beyond the humoropathologic conceptions of the bile and putrid mucus polluting the blood and thus irritating the meninges. His therapeutic prescriptions do not seem to contain anything new beyond the remedies indicated by *Celsus*.

Two of *Galenus*' contemporaries, *Soranus* the Elder, of Ephesus, and *Aretaeus*, of Cappadocia, were evidently very prominent scientists. The latter, especially, seems to have rendered great services to the study of nervous and mental diseases.[1])

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[1]) Cp. *Georg Ilberg*, Das neurologisch-psychiatrische Wissen og Können des Aretäns von Kappadokien. Zeitschr. f. die ges. Neur. u. Psych. BLXXXVI.

Thus, while in antiquity mental diseases attracted the attention of physicians to a remarkable degree, and the insane were given a treatment, in certain ways rational, in most cases rough, but always well-meaning, their lot after the fall of the Roman Empire, all through the Middle Ages, and far into our own times was of the saddest. Brutality and superstition vied in excluding the insane from all human rights. At best, they were regarded as possessed and taken on pilgrimages to shrines, or they were subjected to violent exorcism. At the worst, they were burnt as witches or hunted like wild beasts. Some were kept fettered and many dragged out their lives among convicts in foul prisons. The barbarous indifference of the time to human suffering, and the awe of the insane coupled with mediaeval demonism, kept mercy farther away from these miserable beings, who were incapable of disclosing their troubles, than from any other form of affliction.

Even where religious prejudices did not directly influence ancient conceptions of the insane, the treatment was uncharitable owing to the very spirit of the age. Some of the old Swedish provincial laws contain statutes against the »insane, madmen or maniacs«. The earlier and the later Vestergötland laws provide that a madman should be fettered, the Uppland law makes the same provision, and according to the Södermanland law the insane man was to be kept locked up by his kinsmen, and they were mulcted if he escaped or did any harm.

A young Swedish research worker in the field of historical psychiatry, *T. Sondén,* has pointed out that our old ordinances, like those of the Norwegian, Danish and Icelandic laws, are generally animated by a clear conception of the irresponsibility of the insane for their actions. It is true that this reveals the keen eye for justice and fairness which distinguished the men who made laws for the people in those fierce times. But to draw the inference from these laws that the insane were, to any great extent, given other care than that directly connected with severe regulations, seems to me over-hasty. It was, in the first place, the violent and »raving« who were thus in the interests of public order subjected to this always rough and primitive care. The only object of the regulation about fettering was surely to prevent the insane from doing harm. Socially, they were little better than wild beasts, and their exceptional position in the eyes of the law was most probably an immediate consequence of this view. The milder and socially less dangerous forms of the disease were overlooked.

Though we lack reliable information about these remote times, the knowledge gained from later centuries bears out the truth of the opinion expressed above.

Moreover, the religious conviction that evil powers intermeddled with human affairs strongly influenced the conception of insanity.

In the Middles Ages, but perhaps most of all during the period of transition to modern times, (in the North up to the end of the seventeenth century), diabolism lay heavy on the spirit of the age. For long ages it biassed any simple and straightforward view of mental diseases. We must not think that it is only in legends of the saints that the devil dominates, and hallucinations are considered »a delusion of Satan«. These legends are only a reflection of the spirit of the age, as were the protocols of the trials for witchcraft.[1]) The popular prejudice that mental diseases were a punishment for sins and excesses died hard. In this view, which has survived into our own age, we may trace an attenuated remnant of mediaeval superstition. It is clear that this religious and moral collocation of disease and sin set its stamp on the treatment, and it was found quite proper that the insane should be treated with severity.

The representatives of medical science in the fifteenth and sixteenth centuries were of their own times, and we must not wonder at the weft of superstition and diabolism that is clearly to be traced in their attitude towards the insane; *Paracelsus, Fernet, Ambroise Paré,* and others, have no hesitation in agreeing with the inquisitors as to the pacts made by witches and magicians with the Evil One, or the intercourse of demons with men and women.

The figure of *Paracelsus,* strangely impressive in the history of medicine, meets us at the very transition from the Middle Ages to modern times. With him the spirit of research begins to wake up, but it is still drowsy and incapable of distinguishing between myth and reality. To Paracelsus, demons and monsters, nymphs, sylphs, pygmies and salamanders are as real as the pain and aches of man, diabolic possession has to him the same reality as the podagra, and the art of protection against evil spirits is as justifiable as the art of healing diseases. Ostentatiously disclaiming all relationship with *Galenus* and the Arabs, he built up his own system, which reveals itself as a fantastic blending of scholastic subtleties, mediaeval nature-mysticism, and humoro-pathologic speculations.

To Paracelsus, the nature of disease seems to have been of varying description. It is sometimes described as a microcosmos, sometimes as an incomprehensible product of sulphur, mercury and salt, and again, more reasonably, as a result of man's fight against noxious influences. In general he seems to have looked upon disease as a tangible thing with an existence of its own. This is at any rate the case with

[1]) *Cf.* the present writer's »Tro och overtro i gångna tider«.



Fig. 1. Paracelsus and medical quackery. A caricature from the 17th century.

certain mental diseases. The matter out of which, for instance, *mania* arises, is a Humor destillatus, concocted either above or below the diaphragm and rising to the head. If it comes »aus den Stercoribus«, the mania becomes »fast thumb und umbesinnig«, if it arises above the diaphragm it is »fast grimmig mit grossen truchem umb das Hertz«, and that which comes from the limbs, »dasselbig macht frölich und frisch und gans wildt«. The mania is cured by »zweyerley Arztney — ein Chirurgische und ein Physische«. The surgical cure is effected in the following manner: »Am ersten so mach ein Aperitiff auf das endt, wo die Mania entspringt«. If there is any doubt as to the origin, openings are made in all the extremities — toes, fingers and head, with a vesicant unguent (Attractiff). »So du also die Apertiones gemacht hast, so merck, das durch Die der fluss Maniæ soll heraus gezogen werden und mit aller seiner Materien. Und das geschiet allein durch Attractiff, das oben die Ulcerierten Extremitates gelegt wirdt«. This »attractive« is prepared in a special manner, and the paste is placed over the holes in the extremities and must be frequently changed, till *Maniæ alterationem* is observed. Afterwards the wounds are healed according to established rule and custom, but it is important that the holes in the head should be closed last.

It is also advisable to open a vein, and finally the physical treatment remains: this is carried out by means of agencies that cool the »materiam peccantem maniæ als ein kelte ein wasser zu Eyss«.

The chorea (St. Vitus's dance) is sometimes due to delusion, sometimes it is a reaction of anger and curses, and is cured by magical incantations.

A different thing is the irresistible desire to dance, when it is due to a Levitas

animi (chorea lasciva). Then Paracelsus' directions are as follows: the patient is to be locked up in a dark and disagreeable prison and put on bread and water. This cure per abstinentiam will gradually change the mind, and through hunger and want the levity will be succeeded by »*Tristitia*, ein Meisterin, in der kein Freüd ist, kein Lachen, kein Tantzen, kein Heülen«. Afterwards the melancholy is removed by cautiously providing the patient with light, food and more pleasant surroundings.

Paracelsus distinguishes between »Obsessi, die vom Teüffel besessen sind«, and »Unsinnige Leüthen«, and he gives directions as to »wie man die Besessenen Leüt erledigen und den Bösen Geist von Ihnen austreiben soll«. The chief thing in this exorcism is fasting and praying. »Derhalben ist am aller ersten gross von nöthen dieselbigen Leuth zum Gebett zu treiben. Wie wol es sehr schwerlich dahin kompt, dann der Teüffel regiert ihnen die Zungen«. — Hence one should proceed with caution at first and read a prayer to the man possessed. If he refused to pray, stronger measures must be employed; his feet and arms were tied and a third person threw himself upon him till he was finally forced to repeat the prayer. For protection against the demon, who had now, willy-nilly, to leave his prey, a special exorcism had to be repeated, lest the rôles should be suddenly changed.

We have merely dwelt on Paracelsus in order to depict a prominent representative of psychiatric conceptions in earlier times. Certain ideas from classical antiquity are still prevalent, with a tinge of mediæval mysticism and demonism. It might have been supposed that psychiatry, during the next three hundred years, would change its garb many times, but this has hardly been the case. As late as 1800, this science wears so antiquated a garb that we might be tempted to say that time had stood still in this domain. With his application of the ancient »psychic treatment«, perverted by superstitious additions, Theophrastes Bombastus deserves the name of Paracelsus. Three hundred years later, in *Heinroth*'s theories and *Reil*'s therapeutics, we meet with new incarnations of the classical prototype, and even now not a little deteriorated by religous and moral prejudices.

Under unfavourable external conditions and in spiritual darkness the mentally afflicted dragged out their lives in hopeless misery, persecuted, ill-treated, understood by none. If they were troublesome or dangerous to those around them, they were imprisoned and locked up in the strong cells for thieves and vagabonds provided in the

dungeons or in the town-walls; some were without further ado taken across the frontier and left there; others, who were more boisterous, were handed over to the hangman to be flogged. The word »madbin«, indicating the place where the mentally afflicted were detained in old times, expresses with sufficient eloquence the extent of the care given to these unfortunates. Such madhouses, *Wimmer* says, were often established in abandoned monasteries or prisons, or they were combined with the almshouses and the premises where the plague-stricken, the venereally diseased and the wanton women were kept in custody. Thus they had the character of a »quartier de force«. They were frequently situated outside the town-walls and fenced round with high walls provided with strong grated windows. Or special towers were built into the town-walls for the insane, or a row of cages like those of a menagerie. Everywhere it was thought that the oldest, most out-of-the-way, and dampest rooms, prison cellars and the like, were good enough for the mentally diseased.

It was, therefore, a relief in their miserable existence, when during the 17th and 18th centuries the authorities began to send them to the penitentiaries to be kept in custody there. As late as the end of the 18th century, when the famous philanthropist *John Howard* visited a great many European prisons, he found mentally afflicted patients almost everywhere, imprisoned like criminals and sharing the inhuman treatment which was bestowed upon the latter.

This state of affairs prevailed for centuries, and the Scandinavian North was no exception to the rule. Violence and the word of God were worked for all they were worth. Two examples of the treatment of the mentally afflicted in the time of Charles XI and Charles XII, when the smoke from the burning of the last witches still lay dark over the land, may be quoted here.

About 1698, the Governor af Väster-Norrland had reported to the Crown that the daughter of a clergyman had gone mad and had to be constantly watched. He requested that »she, and others like her, might be dealt with in the way formerly used for curing them, that every time they were given food (which should consist of nothing but bread boiled in good water or in weak small beer) the Lord's Prayer and the 51st Psalm should be read devoutly; that to anybody who refused to read but uttered curses instead, should be shown a bundle of rods with a serious admonition to fear God and read the Prayer and the Psalm; and that any one who nevertheless showed disobedience should be flogged with three or four pairs of rods, two cuts from each, slowly and seriously, to be stopped as soon as he was willing

to pray«. This request was granted by the Crown on January 16th, 1699.

In these measures we find Paracelsus' instructions about fasting and praying well emphasised. As to the mode of procedure in other respects, the prescribed manipulations show a strong resemblance to an exorcism according to ancient rites founded on a passage in the New Testament, and known and practised all over the Christian world during the centuries when demonism was rampant. The following proceedings also recall Paracelsus' disciplinary cure »per abstinentiam« for diseases originating in levity:

According to *G. A. Sparre*, a Royal Act of March 13th, 1714, provided that a woman who was at times troubled by weakness in her head, but who had become pregnant while of sound mind, should be fined or, if she was not able to pay the fine, condemned to four days' prison on bread and water, »lest she relapse into weakness of head«.

Dr. *T. Sondén* has called my attention to the fact that *Sparre* has misunderstood the connection in this instance. The ordinary punishment for misdemeanour of this kind was *flogging*, but from consideration for the woman and in order that she should not »relapse into weakness of head«, this punishment was changed into a fine, or »four days' prison on bread and water«. The rectification is illuminating. Before the Royal Act of March 13th, 1714, mitigated the earlier prescript, flogging was the treatment which *might* befall a woman, »troubled with weakness in her head«, now this punishment was changed into prison on bread and water during four days if she was unable to pay the stipulated fine. Since, however, this abatement of the punishment, to which prophylactic value is expressly attached, is in my opinion stamped with the brutality of the age, I let the case stand as an example, in spite of the rectification. I willingly admit, however, that the flogging, which was carried out until 1714 in such cases, is a far stronger argument for the views about the mentally afflicted which I have indicated here, than prison with bread and water, though this is not very likely, either, to prevent a threatened relapse in a patient suffering from periodical mental disease.

With what inhuman severity the mentally diseased were treated in the courts of justice, two centuries earlier, is shown by another case which *T. Sondén* has found in the Stockholm court records of 1477. Here we are told about a mentally deranged man who had stolen money from the plaintiff's servant. Instead of the ordinary punishment, hanging, the sentence was mitigated so far, on the plaintiff's intercession, that the culprit, though mentally diseased, had to »stand in the pillory, lose his ear and be turned out of the town«.

From their origin in the Middle Ages and far into the 18th century our institutions for the care of the sick were most primitive. They served as almshouses, hospitals and »madhouses«, all in one. Their oldest history is bound up with that of the houses of refuge for sick, disabled and poor wayfarers, which existed as early as the 12th, 13th, and 14th centuries and were under the ægis of the convents.

It was chiefly the Order of the Holy Ghost that administered this charity, and the name »House of the Holy Ghost« was therefore, in

the Northern countries synonymous with that of a hospital and almshouse. Also in other European countries the convents offered a home to sufferers in the Middle Ages. The well known London institution, Bedlam, was such a refuge, it having been developed from a convent into a hospital for mental diseases. Its history goes back to 1247, when it was founded by the Order of Mary of Bethlehem. Hence the name Bedlam.

At the time of the reformation, when the convents were secularised, they were often handed over to the towns to be turned into hospitals, or, as they were still called, Houses of the Holy Ghost. King Frederick I of Denmark gave the Grey Friars' monasteries in Malmö and Ystad to those towns for the benefit of their sick and poor.

Danviken, the first regular establishment for the care of the mentally diseased in Sweden, has a similar history. In 1531 Gustavus Vasa had secularised the Grey Friars' monastery in Stockholm and changed it into a House of the Holy Ghost, but this was moved to Danviken, outside the town, in 1551, because, as Göran Tegel, the historian, says, »a mighty stench spread all over the town of Stockholm from the madhouse on the Grey Friars' Island«.

From the wording of Gustavus' letter about the institution of the hospital it does not appear that he gave special thought to the care of the insane. But as the hospital was intended for sick and poor people, »who could not take care of themselves«, it is probable that mentally diseased persons were received already at an early period, even though in a small number. The date when the *Danvik Asylum* was built, as an annexe to the original hospital, is not known to us, but it was in use during the first years of the 18th century. We know from *Hagström*'s (Hagströmer's) description of the Danvik Hospital that 19 mentally diseased patients were under care there in 1706. In 1710, when the plague was raging, 122 out of the 197 patients in the hospital died. In 1711, therefore, there were only 5 mentally diseased patients there. Later on the number increased, and in 1779 it amounted to 80.

In 1788, a new »madhouse« at Danviken stood ready for use, as »the old madhouse had for years been so dilapidated that no repairs had been undertaken and, besides, so crowded and badly arranged that it might sooner be regarded as the most horrible lock-up, apt to create lunatics« (Hagström). As illustrating the state of things in those times, and in connection with his own therapeutical experiments, Hagström, the physician of the establishment, mentions the so-called scabies cure,

then in fashion. »There was no need to inoculate scabies and eczema in the Danvik madhouse, so as to attempt to bring the insane back to reason in that way; the great crowding in the old madhouse and the miserable rooms as a rule caused the scabies infection to make the round when once it had entered through some newcomer or in any other way.« Hagström was not able to discover any favourable effect from this general and involuntary scabies cure.

The new asylum, originally a salt store-house, had the following equipment. »Twenty-seven small cells, each for one madman, nineteen of which were enclosed by strong partitions, the doors having small openings. Thirteen of these cells were provided with conveniences which could be cleaned from the outside through the wall. Eight were intended for the slightly deranged; they had ordinary doors and iron bars to the windows. All rooms opened into corridors, of which there were six in all.« Hagström expresses his satisfaction with these arrangements in the following way: »What a gratification and inward pleasure to those by whose generosity or efforts this house of mercy has now been established, and made so comfortable for the most miserable and unfortunate of men, who are to be harboured here!« Pretensions were, indeed, moderate at that time, and light is thrown on the development of humane ideas during the following 60 or 70 years by the statement of *Magnus Huss* concerning the same so-called madhouse in 1865. »It may be possible to give a present-day cut to an old-fashioned dress, but to transform a store-house into a refuge for the care and cure of mentally diseased patients is impracticable.« And further: »The Danvik hospital is perhaps the most unsuitable for its purpose of all the charitable institutions of Stockholm; this place may be called a stain on the municipal government of the capital; indeed it may be said to be a shame to the human race that an institution like the present for the care of unfortunate fellow-creatures should be allowed to exist.« Thus times had changed.

However, the Danvik Asylum was for long the only institution in Sweden where mentally diseased patients in large numbers were harboured. In other parts of the country the possibilities for the proper care of the insane were even less during the 18th century.

The so-called Crown-Asylums, which, as has been mentioned above, derived their origin from the monastic institutions of the Middle Ages, were really almshouses. But the resources at hand were made use of, and in the Asylum Lists of the paupers, we occasionally find »madmen,

and weakheaded, silly and frantic persons« mentioned. These Crown Asylums were under the supervision of the governor of the province and the bishop; they were managed by special superintendents. In 1756, their number was 42 — 38 in Sweden, 4 in Finland — with a total of 1,597 inmates (*Sparre*, l. c.), but of these only a small number were mentally diseased. Through endowments and donations some of these institutions were quite wealthy for the time.

The first real step towards the regulation of the poor-law system and the hospital care of the mentally diseased in Sweden was taken during the session of the Riksdag in 1756. In consequence, probably, of a private motion of Lieutenant-Colonel, later Major-General, Baron Carl Ehrensvärd, concerning *an alteration in the management of the lunatic asylums*, a committee within the Riksdag was commissioned to investigate the income, buildings, etc., of the Crown Asylums, and the number of patients accommodated there. The committee sent in an exhaustive report and as a result, an *Orphanage and Asylum Commission* was appointed by the Riksdag, which was to have charge of the administration of these charitable institutions in the country. This Commission worked out a scheme for the organisation of charity, which was published as the Royal Statute of April 11th, 1773, »relating to the Orphanage and Asylum Institutions of the Kingdom«. The abovementioned Commission was dissolved in 1767 and was replaced by a Board of Directors which functioned till 1773, when the management of the medical service in the country was taken over by the Order of the Seraphim, at first through the medium of a Board of Commissioners consisting of two Knights, but from 1787 through the Guild of the Order of the Seraphim, established that year. For more than a hundred years, up to 1876, the Order thus supervised the management of our asylums for the mentally diseased. In that year the management was transferred to the Board of Health (the present Medical Board).

Beside the asylums, lazarets were also instituted in the middle of the 18th century, and under the Royal Act of December 11th, 1766, such patients as could not be cured in the lazarets were to be admitted to the asylums. Several of the smaller asylums were now closed, their number being limited to one in each administrative district, and by the Royal Act of October 19th, 1775, the Crown Asylums were set apart exclusively for the admittance of »madmen« and those who were suffering from the more serious diseases. In 1776, the new lazarets were also placed under the above-named Board of Commissioners, and it was enacted that one should be built in each administrative district and, where circumstances allowed thereof, be combined with an asylum.

This amalgamation of the affairs of the lazarets with those of the asylums, which more and more became the refuge of mentally diseased patients, was undoubtedly an advantage to the former, but detrimental to the latter; for, from the gradually accumulating *Asylum Fund*, which constistuted a fairly important sum for those times, especially after the closing of a great many small asylums, quite considerable sums were every now and then granted to the lazarets, whereas the asylums received niggardly treatment.

Thus the lazarets literally developed at the expense of the asylums. The former were favoured by the scientific and humane aspirations of the age, but as yet there existed no science of psychiatry capable of directing the humane feelings of the time towards the improvement of the asylums; and as monuments of a bygone barbarity, decayed and despised, these parodies of human mercy survived far into the 19th century.

Of the lives of the paupers and »madmen« in these asylums during past centuries, we know little. The care bestowed on them was dependent on the goodwill of the superintendent and the control which the governors of the districts exercised over the institutions. In many places, the governors of our provinces seem to have watched over the interests of the asylums with fatherly care, and their letters to the superintendents often contain well-meant admonitions. Thus a letter from the Malmöhus District Governor to the superintendent in Landskrona ends with the following words: »Furthermore you should spare no pains for these unfortunates, lest they suffer for want of proper care or through mismanagement of themselves, and the parson should also watchfully attend to the cure of their souls.« — Spiritual care was, of course, deemed the essential thing for these poor, foolish and weakheaded creatures, hence the Church faithfully made its way into their miserable abodes to administer consolation; medical attendance and treatment were not thought of, but the patients were all the more diligently referred to the word of God and the means of grace. From the instructions to the asylum superintendent in Malmö in 1750 it appears that the insane were not given any particular supervision or care: »The King has, on August 27th, been graciously pleased to order that those inmates of the asylums who have soundness of mind and body, should wait on those who are in a worse condition, or demented, and so one should be duly bound to support the other in all attendance. And as this ought also to be done in the asylum of this town, you shall keep the paupers to this rule, in order that the King's gracious purpose may be properly served; likewise you have forthwith to notify any case of transgression by a pauper, so that due rebuke and chastisement may follow.« Towards the end of the 18th century an increasing number of insane patients were admitted to some of the



Fig. 2. Fettered maniac in his cell. After Esquirol.

asylums, and representations were made respecting improved conditions for the attendants who were extremely few in number. The Guild of the Order replied: »The Guild of the Royal Order of the Seraphim desires to make it known that though the madmen are now more numerous than before, this is no reason for considering that the work of the warders and servants has become more dangerous, as the same expedient can be employed there as in other asylums, viz. that unruly patients be fettered and thus rendered incapable of doing violence to the attendants.«

Such was the care of the insane all over the country in the year 1789 — in point of principle; in reality, undoubtedly worse. It is easy to imagine that the orders and regulations, under the circumstances then prevailing, did not afford any protection against outrages and abuses of the worst kind. As there was no supervision and perhaps hardly any local separation between men and women, sexual intercourse was far from rare. Nor did the consequences of such morals fail to appear; venereal infection was spread, and »weakheaded« paupers repeatedly gave birth to children conceived in the asylum.

A great many tales from the old asylums tell of the brutality of the age. In several places it used to be a popular amusement to look at the insane, laugh at them, and listen to their foolish talk. From this we can understand that, in 1799, *Kant* warned nervous persons from visiting the »madhouses« out of curiosity. Several foreign institutions, such as Bedlam, St. Jürgen in Lübeck and others, were public places of amusement in the 18th century. Up to 1803 it was common practice in Lübeck to go to the »madhouse« during Lent, and the concourse of people is said sometimes to have been so great that the soldiery had to be ordered out to prevent riots. *Pinel* mentions that almost any one might get a ticket to see the patients in the lunatic wards of la Salpetrière and in the Julius Asylum in Würzburg, the badly paid attendants had thus an opportunity of adding to their income. In Malmö, a favourite pastime of schoolboys was to chaff the patients from the streets, which made the superintendent put up »half-hatches« before the windows to put a stop to the mischief. Similar stories are told from other places. In the 18th century there was no medical attendance in the Crown Asylums. In 1812 a request was made for the appointment of a physician which resulted in the Guild of the Order granting 25 or at the most 30 rix-dollars as the stipend for a physician, at the same time complimenting the Governor for his solici-

tude about »the care and nursing of the poor wretches«. At Danviken a physician had already been appointed during the 18th century.

Concerning the quality of the attendants a contemporary German author writes: »When the male attendants were appointed, they were chosen chiefly for their size and defiant attitude; and if they only had courage and fearlessness, their personalities otherwise did not matter in the least; for the women, too, the chief qualities were reckoned to be muscular strength and daring, as well as a ready tongue.« It is not to be wondered at that the Berlin physician *Horn* testifies of the attendants in the *Charité* that »nowhere in Berlin do you meet such rabble«, and it cannot have been much better in the provinces, as released convicts were »by kind consideration« taken on as attendants, this being the case in the newly built establishment of *Sonnenstein (Kraepelin)*. In 1806, *Hufeland*, visiting a lunatic asylum, and probably feeling indignant at the treatment of the unfortunate patients, was told by an attendant: »It is evident that you know nothing about these scoundrels; half of them are possessed by the devil and cannot be cured, and the other half suffer from malice for which the stick is the only remedy.«

We have attempted in vain to get complete insight into the asylum management of those days from the old documents of the Malmö asylum. The letters of the authorities, schemes for repairs, account-books, etc., reveal, however, the nature of the treatment. The expenses for the labour of blacksmiths and locksmiths were considerable; padlocks, iron bars, bolts, and the like, speak plainly of the prevalent ideas about the danger to be apprehended from the insane and the importance of safeguarding measures. Unruly patients were locked up in cages and iron-lined enclosures, and if this did not suffice, they were put in irons. From European institutions we have many tales showing that similar examples may be quoted from abroad. *Müller* relates that when, in 1799, he entered into office in the Julius Asylum in Würzburg, he found in the middle of each ward a stone pillar with iron chains fastened to it »for the taming of the unruly and mischievous«, and *Conolly* tells that, in 1820, out of 400 patients in a large English asylum no less than 70 were fettered. The chains and the straitwaistcoat or camisole, invented by *Macbridge* and warmly recommended by *Cullen*, and other coercive contrivances vied with the whip and stick as the means of keeping order and discipline in the old asylums.

The whip and the rod were also strongly recommended by a large number of physicians. *Authenrieth* found that there was no better remedy against insane women's inclination to show themselves naked than a few cuts with a stick, and *Neumann* recommends the same treatment against uncleaniness. Hence we should not wonder at a Swedish physician, otherwise known for his great benvolence, who as late as 1836 expressed his opinion that »corporal punishment had been wrongly done away with in the French asylums«.

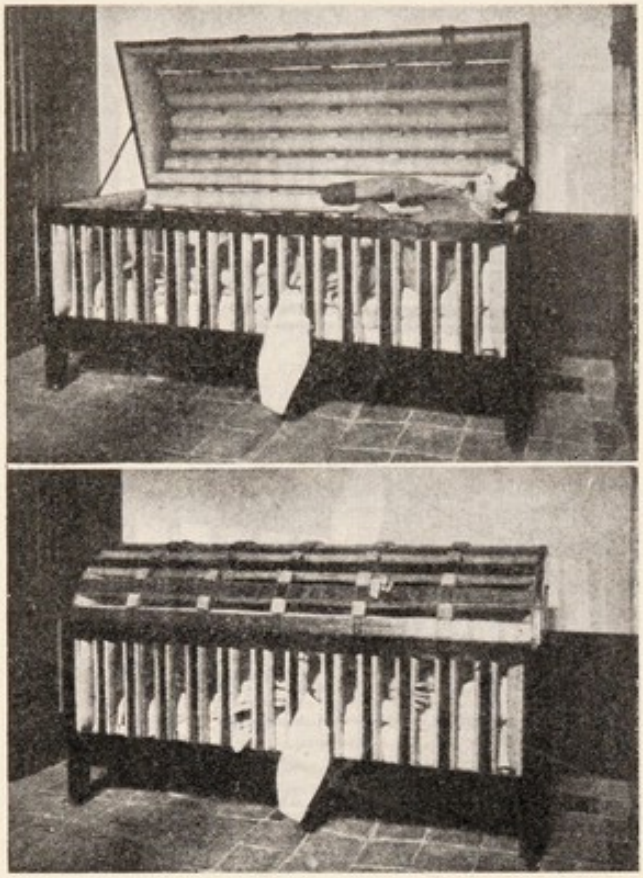


Fig. 3. Cage in the form of a trunk for unruly cases.

A hundred years ago very few physicians devoted themselves to the care of the mentally diseased. This sphere was looked upon with a mixture of contempt and fear. The works on psychiatry which then appeared were to a great extent not written by physicians. Laymen, mostly theologians and philosophers (*Hoffbauer, Kant*), were often interested in this subject; *Haslam* was an apothecary. Among physicians who have more or less completely devoted themselves to psychiatry as their life-work, we may mention *Lorry, Pinel* and *Esquirol* in France, *Cullen, Arnold, Crighton* in England, *Chiarugi* in Italy, and *Reil, Heinroth* and *Horn* in Germany.

A work of special interest in the history of the care of the mentally diseased is *Reil's*: »Rhapsodien über die Anwendung der psychischen Curmethode auf Geisteszerrüttungen«, which appeared in 1803.

Like a second *Celsus, Reil* compiled the therapeutical resources of his predecessors and of his own time, and as will appear from the following gleanings, these were fairly plentiful. *Reil* presupposed that it was possible by means of strongly acting agencies to bring about a diverting, violently moving and rousing effect on the deranged

emotional and mental life; and it is remarkable to see how invariably this so-called psychic treatment kept to the same old groove as in the remote past. A number of violent, physical as well as psychic, irritants were still used in order to produce unpleasant and painful sensations. The patients were submitted to violent emotions, their instinct of self-preservation was appealed to; it was a kind of distracting treatment which in an insulting way aimed at shaking them out of their mental depression, waking up the apathetic, and wrenching the hypochondriacs from their delusions. The reason being deranged and unsettled, it had to be shaken and pulled right again — this seems to have been the scholastical would-be-wise way of reasoning.

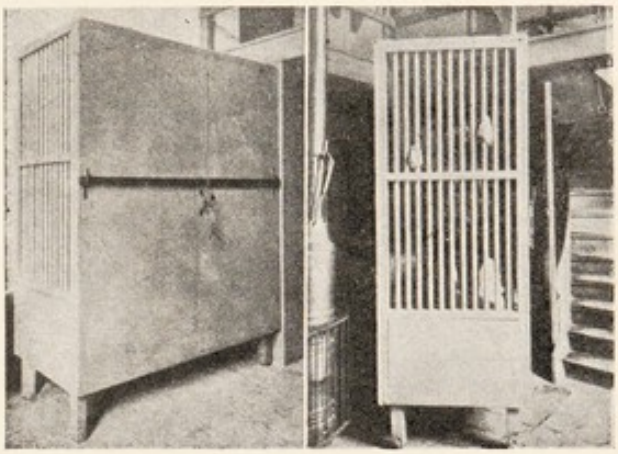


Fig. 4. Cage for unruly patients dating from the beginning of the 18th century.

Thus *scabies* was inoculated in order to produce a continuous and strong irritation of the skin, which was chiefly supposed to have a salutary influence on the blunted irritability of the brain characteristic of weak-mindedness or the so-called imbecility. The scabies cure was recommended as early as the middle of the 18th century and, according to *Reil*, employed successfully by several physicians. *Hagströmer*'s experiences of this much praised mode of procedure at the Danvik asylum has already been referred to.

Water, in *Reil*'s opinion, is an element of which man has a natural fear; it may therefore be used in many ways for curing the mentally diseased. Apparently he wishes to emphasise that no undue sentimentality or exaggerated fear of causing the patient's death should be allowed to bungle the cure. On this subject he quotes earlier authors. *Willis* (1622—1676) recommends the so-called surprise-bath which was arranged in the following elaborate manner. He had a house built above a lake, so constructed as to collapse as soon as the patient entered, and draw him down into the depths. *v. Helmont* (1578—1644) relates how a weight was tied to the feet of an old man, who was then lowered into the water and kept in this position during the time required for reading a Miserere over him. This author thought that the cure

was without effect only in those caces where the patient was drawn out too soon, for fear of his dying. A certain deranged carpenter could not be cured by any means, not even by the miraculous influence of St. Dymphna's tomb in Gheel.[1]) On the way from this place to his home, he wrenched himself free and threw himself into a deep pool by the road. He was pulled out apparently dead, but when restored to life, he had recovered from his insanity, and afterwards lived for 18 years, sound and sane. *Boerhave* (1668—1738), too, points out that one of the chief means for curing the »mad« is to thrust them into water and keep them down as long as they can stand it. So, *Reil* adds, lunatic asylums ought to be situated near a lake or a river and be provided with a contrivance for shower-baths, and with boats that fall to pieces on the water, and with everything besides which is conducive to the convenient employment of this excellent cure. But if the water cure proved futile, *Reil* and his contemporaries were far from being nonplussed. No end of radical remedies and heroic cures were recommended. Like *Chiarugi*, and without any perceptible hesitation, he suggests coitus as a serviceable remedy. There is a strange interaction between the two poles of the body, the head and the genitals. Disturbances in one of them, through coitus or parturition, deliver the other from excessive accumulation of forces, for *Reil* thinks that it is the same electric matter which charges the head with frenzy, and the genitals with libido. Besides this, the most intense of all the pleasurable sensations of the body, *Reil* also appeals to other sensations and instincts, all with the praiseworthy intention of curing the insane.

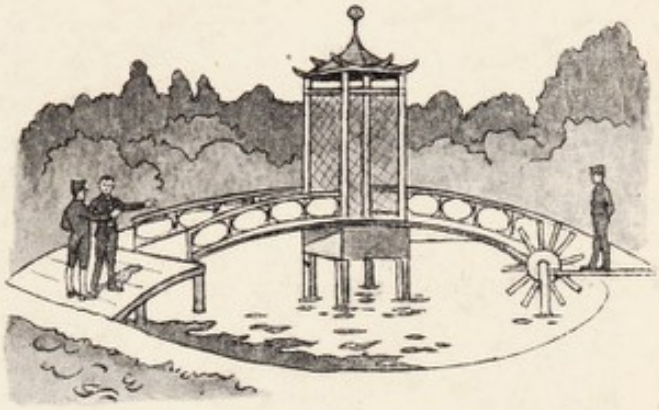


Fig. 5. Contrivance for a so-called surprise bath. In the floor of the tasteful and inviting pavilion there is a trap-door.

[1]) The small town of Gheel in Belgium, now a well-known colony of family homes for mental patients, was formerly a famous pilgrim resort dedicated to the princess Dymphna who, pursued by her insane father, was killed there about 600 A. D. Miracles and marvels were reported to take place at her tomb, the mad and possessed were healed, and Dymphna soon came to be the patron saint of the insane. She is represented in the church at Gheel with a fettered demon at her feet, who, submissive as a dog, has subjected himself to her will.

Hence he proceeds with jesuitic ingenuity, always making the end justify the means.

By letting violent sensations of discomfort alternate with sensations of satisfaction and pleasure, he thinks it possible to cause a favourable change in the patient's state of mind. Consequently it is expedient purposely to evoke painful sensations in the patient in order subsequently to act the part of a deliverer and rescuer. As Paracelsus »per abstinentiam« let the patient's »levitas animi« be followed by tristitia and then restored his health by the opposite procedure, so also *Reil* lets the patient suffer cold, hunger and thirst — afterwards warming him and giving him plenty of food and drink.

It was believed that the corporal sensations of discomfort themselves could be made to act upon the mental life of the patient and bring about the desired effect for the recovery of his health. *Reil* thought that no means should be despised which might possibly lead to the goal. He administered sternutaments (Celsus), burned the patient with redhot iron and melted sealing-wax, thrashed him with stinging nettles, let loose ants on his body, dipped him into a large tub full of living eels, shaved his head and tortured him with dripping water; in short, like an inquisitor who uses forcible means to make his victims abjure the demon, he surpassed himself in cruelty. And in spite of all this, Reil was a humane man, an eminent physician and philantropist, who sacrificed his health, his strength and finally his life in the faithful fulfilment of his duty. He died from typhus, as head physician of the large war hospitals of Halle and Leipzig, in 1813.

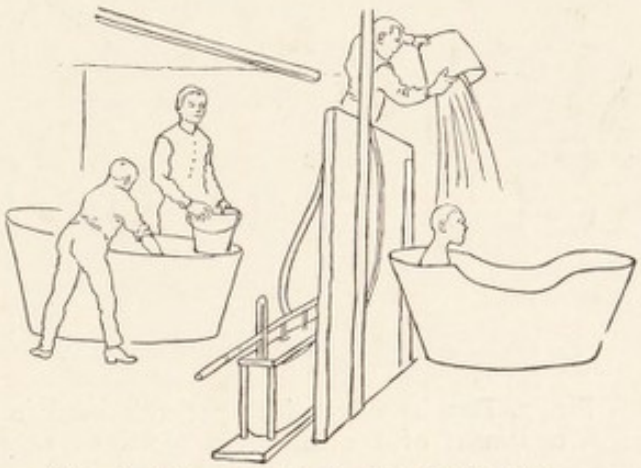


Fig. 6. The patient is drenched with cold water.

The assumptions on which *Reil* acted, were characteristic of the age in which he lived. To evoke fear or some other strong emotion, either for the purpose of punishing or in order to bring about a wholesome shock to the patient's mental life — this was the motive of the water-treatment with drenchings and shower-baths, as well as of the more or less complicated mechanical therapeutics then in common use. In the figures here reproduced (after *Kraepelin*) we give some examples

of the water-treatment. Fig. 5 shows how a surprise-bath was arranged. The decorated pavilion built on a bridge over deep water seemed to welcome a visitor, but when the patient entered under its roof, he plunged headlong into the water. From fig. 6 we see the mode of procedure so warmly recommended by the Berlin psychiatrist *Horn*. From a considerable height 10 to 50 pails of cold water were poured over the patient's head. *Horn* praises this treatment and specially commends its good influence on serious cases of melancholia or hypochondria, or hyperæmia or congestions in the head of patients too much addicted to material enjoyments and drink. *Pienitz* seems to have used it chiefly for punishment, always accompanied by serious and solemn exhortations to repentance. *Jacobi*, on the other hand, mentions with disapproval that in one estblishment the same patient was drenched day after day with from 200 to 300 pails of cold water. In fig. 7, finally, we see how the jet-douche is applied with ruthless force to the patient's head, generally as a punishment for uncleanliness, violence or excitement.

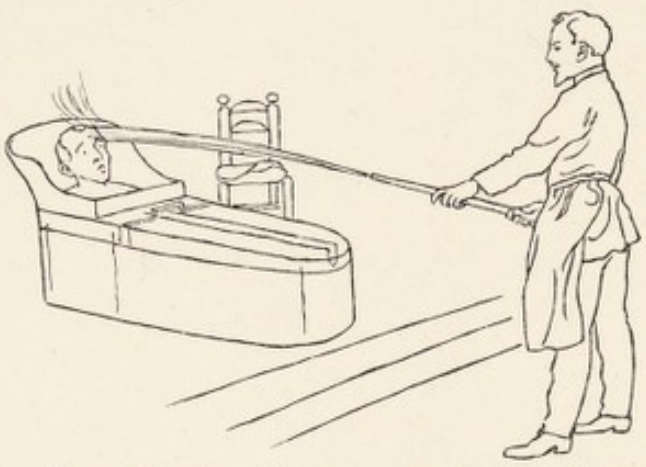


Fig. 7. Douche directed at patient's head in treatment of the insane in olden days.

The mechanical devices for curing the mentally diseased were as numerous as they were fantastic. Inventors vied with each other in producing a number of monstrous constructions, real instruments of torture, but highly praised in their time. Among those frequently used was the swing, constructed by the Englishman *Cox*, or the swinging-bed, as it was called in its modified shape, used by *Horn*.

The swinging-bed was a strange kind of round-about or centrifuge. On a horizontal plank-bed made to rotate round a vertical axis by a wheel-gear, the patient was tied, with his head at the peripheral end. The speed of the swinging-bed could be brought up to as much as 125 revolutions a minute. *Horn* vividly describes the hideous sensations experienced by a sound person when the bed was spun round; it was impossible to stand it for more than 1½ or 2 minutes at the utmost. The patients showed a horror of it which is easy to understand. They were centrifuged till the conjunctiva of the eyes bled, they yelled with horror and despair, and the desired effect of arousing their dread

certainly did not fail to appear. It was a great relief to the unfortunate mental patients when these centrifugal experiments were banished from therapeutics; in later times they have taken their proper place in experimental pathology. For by much the same method as was earlier practised for curing mental patients, attempts are nowadays made, and with better results, to evoke in dogs symptoms of — paralysie générale.

In the same year, 1818, as *Horn* recommended the swinging-bed, another invention, if possible even more monstrous, the so-called »hollow wheel«, was made known. With this device its inventor, Dr. *Hayner* in Waldheim, beat all records in ingenuity. The »hollow wheel« was built up on the same principle as the revolving cages in which squirrels are made to run, in the pleasing illusion that they jump from branch to branch and not from one rib to another inside a perpetually rotating wooden box. In like manner the mental patient was isolated, and if he did not keep perfectly still, he had to choose between turning dangerous somersaults in the extremely labile wheel, which was worked from outside by the hospital attendants, or else standing upright and following the moving of the wheel by running. In this way the patients sometimes had to run for hours at a stretch, but then, as a rule, the desired end was gained, the delinquent being so fatigued after such exercise that he at once fell into a beneficial sleep. The monstrous inventions described above were fairly soon degraded to doing service as effective means of punishment when the patient had behaved badly, been unruly or violent. *Engström* describes their use in the German institutions in 1834 as follows: »If a measure is needed, not only for checking the patient's senseless doings for the moment, but also, and still more, to frighten him from repeating such acts, the so-called swinging-chair is employed. Immediately after having committed some foolish or mischievous deed, the patient is placed in the swinging-chair and is rotated with appropriate speed until he becomes quiet, asks to be pardoned and promises to reform, or till he begins to vomit. Then

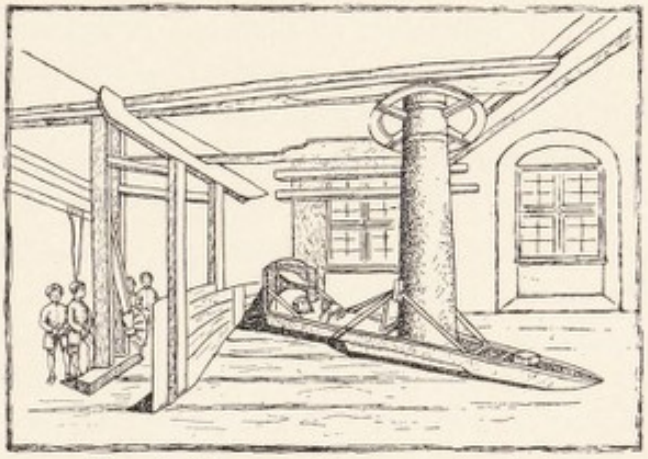


Fig. 8. The so-called swinging-bed.

— generally within 8 to 15 minutes — he is released from the swinging-chair with a serious admonition to keep quiet and peaceful. This measure, however, is seldom resorted to, and still less frequently the swinging-bed or the swinging-wheel are employed.«

We listen with mixed feelings to the description of these barbarous cures. The first groping attempts at the cure of mental diseases during the past century seem to us naïve; we consider them coarse and cruel, but these immature and brutal efforts characterise less the men who carried them out than the age in which they lived. The few physicians of a more enlightened mind who, making mental pathology their study, devoted themselves to the care of the insane, so neglected through centuries, could not completely free themselves from current theories and ancient prejudices. Complete emancipation, the victory of humane and enlightened views, has never been brought about at one stroke. From the arms of theology, abused by religious superstition, the study of the mental derangements first found refuge in metaphysics before finally reaching its safe home among the natural sciences. And the care of the mentally diseased has had to undergo a similar development.

The psychic treatment described in these pages faithfully mirrors the current theories. The great contemporary philosophers in Germany brought their influence to bear also on the scientific conception of psychiatry and gave to it a speculative bias. Psychiatry fell under religion, and mental patients were regarded from ethical and moral-philosophical points of view. *Heinroth's* conception was mainly theological, that of *Langemann* and *Ideler* ethicopsychological. The former sees the cause of mental diseases in sin, the latter in the emotions and passions.

The basis of *Heinroth*'s aetiology is the freedom of the will of man. God has given him liberty to choose between good and evil. If a man chooses evil, he becomes its slave and sinks into bondage. The insane man has a diseased soul, but as the soul was originally free, the first step towards disease and bondage must have been a voluntary act — the choice of evil, *sin*. Many authors have pointed out that Heinroth, in following this track, almost completely adopted the ancient demonological view. Only exorcism was lacking.

In the light of this it is easy to understand the psychic treatment, which was mainly of a punitive and corrective nature.

Compared with the cruelties of old times and the still prevalent superstitious contempt for the insane, this treatment, however, was marked by benevolence and compassion. Humane views had begun to

prevail, but were revealed more in scientific interest and good intentions than in the treatment itself. There was still too much left of that scornful attitude towards the insane which stood in the way of a deeper human sympathy. Coarseness still ran in the blood.

There are orientals who regard the insane with reverential awe. The West has been different, is different still. While heads are bowed with a feeling of understanding and respect before other forms of human suffering, the mentally deranged are met with ignorance and contempt. They are called insulting names; people turn their backs on them with horror. Few prejudices have hindered humane reforms in Christian communities as much as the prejudice against the mentally diseased. Clearly the explanation is that this prejudice is of religious origin, and that its roots can be traced far back in mediaeval demonism and fear of the devil. What has been said above is true even of our own times and of the most enlightened persons; very few are quite free from these prejudices. And if this is so, how much harder was it not for those who lived a hundred years ago to oppose the feelings of the age in which they were born. The gulf between them and the brutality of their own times was undoubtedly wide enough to warrant the name assigned to them by posterity as benefactors of mankind and pioneers of humane ideas.

This may seem to the reader a paradoxical statement after all that has been said about the practices of these men, but let them speak for themselves. We quote *Reil*'s own description, burning with indignation, of the conditions in Germany at the beginning of the 19th century. »Barbarity is still with us, such as we have inherited it from the brutal coarse past. We confine these unfortunate beings like criminals in madhouses, in abandoned prisons, in narrow dungeons over our city gates or in the damp cellars of the penitentiaries, where the compassionate glance of the philantropist never reaches them and where, fettered in iron, they rot in their own ordure. Their chains have gnawed away their flesh to the bone and their hollow pale faces show the proximity of the grave which will silence their wailing and conceal our shame. They are abandoned to the tender mercies of a curious mob, and venal watchmen drive them forth like strange wild beasts to amuse the gaping crowd«.

»Epilectics and imbeciles, prattlers and silent misanthropists are crowded together in the strangest muddle; whips, chains and imprisonment belong to the order of the day. The attendants are mostly brutal, unmindful of their duty and barbarous. In most institutions the rooms

are small, unwholesome, dark, and overcrowded; in winter cold as the lair of the polar bear at the north pole (!), in summer exposed to the fire of the pathogenic Sirius (!)«. — Thus far Reil.

In a pamphlet published in 1817, *Hayner* summons the Government, the authorities and the superintendents of the asylums to take measures against the grave transgressions which were still incident to the treatment of the mentally diseased. »I could not have believed it possible«, he writes in his pramphlet, »that Germany still contained murderers' dens, where unfortunate insane patients are treated like savage beasts and left to perish and rot like carrion. But a short time ago a veracious man, Dr. Ruier, physician in the asylum of Marsberg, assured me that, when travelling through a small German country, he had in two places observed how the insane are hung with chains and left to wallow naked in their dirt in underground dens«. Hayner further writes: »It is an infamy to chain an unfortunate human being like a dog or a criminal. The use of chains is unrighteous and embitters the unhappy man. To put an insane man in irons is injurious to his bodily condition; it makes his mental suffering worse and lessens the prospects of recovery«. — Hayner's pamphlet is one of the rays of light in these dark times, and the author will always be remembered with respect and gratitude.

Thus, when describing the treatment of the mentally afflicted we must not overlook the immense difference between aimless cruelty and forgetfulness of all human considerations on the one hand, and on the other a coercive rule, based on current theories and in its origin inspired by humane intentions. The *radical* cure of the mental diseases was always the goal in front of old-time psychotherapeutists. We who have stepped in where thousands before us have ended can easily smile at the naïve efforts of bygone days. We do not know what it is to begin without precedents and to work out the first uncertain elements of a science from a few hundred observations. It is true that in therapeutics the ancients have only bequeathed to us the lesson of fruitless attempts, but such lessons are just as necessary for progress as others of a more positive kind. Scientific research gropes its way in the dark. The path chosen by the psychiatrists of former days was a blind alley, and later generations discovered the mistake. All scientific development has been the same. For psychiatry, which probably placed its aim too high, the way of progress has also been that of *resignation.* Psychiatry had to go through the evolution of a century before it realised how few are the roads which can be opened towards the

curing of mental diseases, how close we are here to the bounds of our knowledge, where the unyielding sphinx broods over the enigmas of the mind, which no science will ever wrench from her grasp. Thus from generation to generation this first fine faith of psychiatry has dwindled,



Fig. 9. Bedlam in the 18th century.
After the etching by John Hogarth.

and our time is marked by a resignation which the ancients were too young to feel. But this resignation is merely due to our knowledge of the limitations of science; we have concentrated our theory on such questions as do not lie beyond that limit, while in the practical field, we have restricted our activities to domains where we are able to afford help, laying emphasis on *humane care* before radical healing.

After this short digression we will return to our account. We have desired to emphasise that the coercive measures which were called forth and put into system by the prevailing doctrines, must be judged quite differently from the thoughtless neglect and cruelty which at that time in many places decided the fate of the mentally afflicted.

The medical treatment was the same as in Celsus' time, both with regard to indications and the choice of remedies. Generally speaking

it was so, at any rate. Violent purgatives, emetics and nauseants were still in use. Tartarus emeticus and Ipecacuanha were administered daily or every second or third day in full doses or merely for the purpose of keeping up a constant nausea. Alternately with the administration of these remedies blood-letting was performed. A large number of medicines, from the mineral as well as the vegetable kingdom, were reputed to have a wonderful effect on the mind, some of them from time immemorial. Belladonna was administered in mental diseases caused by »scorbutic, venereal or scabious affections«. Datura was employed as a stupefaciens against mania; arsenic and mercury against melancholy; cuprum ammoniacum in mental diseases complicated with epilepsy, etc.

The mental hospitals at the end of the 18th and the beginning of the 19th century were also in foreign countries very few in number and extremely antiquated, and even among physicians the opinion seems to have prevailed that they were only suited for incurables, imbeciles, or maniacs. Thus *Haindorf* declares, in 1811, that in view of the state in which most German asylums were found to be, »only a small number of patients could be cured by medical treatment, unless a real miracle were to happen«. Some of the large foreign establishments fell into grievous disrepute on account of the existing conditions, thus paving the way for a desirable reform. Such was the case with the old *Bedlam* in London, *Bicêtre* in Paris before *Pinel's* time, and the asylums in *York* and *Florence* in the time of *William Tuke* and *Chiarugi.* Undying honour is due to the life work of these men, who were the first to strike a blow at the thoughtless routine established by the unpunished cruelty of many centuries, to which numberless unfortunate beings had succumbed. After *Philippe Pinel* (1755 (?) — 1826), on his appointment as physician at Bicêtre in 1792, had delivered the insane from their fetters, and *Chiarugi* in Florence had done his fellow-countrymen the same service, their example had a strong inciting effect, though in many places the new spirit gained ground only with difficulty. Thus we learn from the report which *Pinel's* disciple Esquirol submitted to the French Department for Internal Affairs in 1818, that miserable conditions still prevailed in many places in the provinces at that time. Similar conditions or, if possible, still worse, existed in England.

In that country *William Tuke* had founded his celebrated asylum *The Retreat* in 1792. In this place experiments were made, earlier than anywhere else in the world, with a mild and benevolent treatment of

the insane, and this had gradually given rise to a new and energetic movement which for half a century carried on an obstinate and eventually victorious campaign against the deeply rooted coercive system.

The first results of this awakening was the exposure of the hideous conditions which existed in the *York Asylum* and *Bedlam.*

The history of these two institutions is perhaps the blackest page in the annals of psychiatry.



Fig. 10. Ph. Pinel.

The Asylum of the city of York, founded in 1777, was long inaccessible to inspection. The authorities, physicians, managers and officials, seem all to have acted in perfect agreement — a veritable gang of scoundrels and murderers. When at length a razzia was made of the ill-famed asylum, they spared no effort to obliterate the traces of their crimes. The daily records and the books were forged or burnt. The patients are said to have died in such numbers from hunger and neglect that the authorities tried to conceal these horrors by transferring one third of the deceased to the list of recoveries. There were secret cells which were never visited by any outsider. Everywhere the unfortunate victims were found in an extreme state of spiritual and corporal decay. Naked and emaciated, besmeared with excrements, covered with sores and vermin, the insane were chained to the walls and floor with nothing to lie on but damp and stinking straw. Foot-irons and handcuffs had worn away the flesh of many. — The full extent of these miseries was never brought to light, for one of the wings of the asylum was burnt down, in what was probably a planned conflagration, before the inquiry was completed. Several of the patients were burnt to death. All this happened as late as 1814.

In the following year it was Bedlam's turn. The account of the conditions prevailing there which was laid before a committee of the House of Commons, reveals conditions hardly less shocking than the atrocities described above. Doctor Monro at Bedlam was of the opinion that chains could not be dispensed with in the treatment of the insane;



Fig. 11. The insane are delivered from their fetters.
After the painting by Robert-Fleury preserved in la Salpêtrière.

for poor people they were absolutely necessary. Everywhere the patients were fettered to the walls or floors. Irons were hung about a certain Norris in the most inhuman way. He could only rise along a vertical iron bar to which he was fastened with chains, but could not move a step, and hardly lie down on his wretched plank-bed (cf. Fig. 2). In this position he had to remain for two years. He only lived a year after his release.

Fig. 9 shows an interior from the London asylum Bedlam, and it is probable that the local details were copied from life. The artist who drew it was the famous *John Hogarth*, 1697—1764, and the picture thus gives us an idea of life in an English asylum about 1750. In a series of drawings Hogarth depicts the career of a rake, and the picture reproduced here shows the end of his sad existence. Here we meet with the conception of mental diseases common at that time, viz. that they were a punishment for sins and errors. The picture gives expression to the prejudices which, as a remnant of earlier views, live to this day among the general public, and thus it possesses a certain folk-psychological interest. Further it shows us a number of the inmates, fantastically bedizened in sundry fineries and emblems, poor demented creatures, living in their own world, but crowded together and locked up in cells in Bedlam, often gaped at and laughed at by curious onlookers, of whom we see a group in Hogarth's etching.

Long after the date of the aforementioned picture, in 1815, the mentally diseased in English institutions were fettered with chains, handcuffs and foot-irons, and only by slow degrees did more humane conceptions prevail. After *William Tuke* and his son *Samuel Tuke,* it was chiefly *Charlesworth* and *Gardener-Hill* who applied more humane principles in an asylum at Lincoln. *Gardener-Hill* was the first to venture upon treating the insane without coercive measures, with an absolute reliance on *non-restraint.* Influenced by him, the eminent physician *John Conolly* (1794—1866) not only introduced the new system all over England, but was also active in mitigating the treatment in German asylums. Conolly's work »The Treatment of the Insane without mechanical Restraint« (1856), owing to the ardour with which he set forth his reformatory ideas, made a very powerful impression everywhere.

In the Scandinavian North we find the same sad conditions during the first half of the last century, albeit on a relatively smaller scale.

Judging by the »Madhouse-Ordinance« in force in 1820 at the Danvik Asylum in Stockholm, all patients, men and women, had only male attendants. »Every morning, at 6 o'clock in summer and 7 o'clock in winter, the steward, accompanied by the men-servants, visits all the inmates, and the state of the more unruly ones is closely examined. The insane are then summoned to perform their natural evacuations and, if possible, to comb their hair and wash, and finally to drink some cool water — —«. It was further prescribed that »the behaviour of the insane should be watched with the greatest attention, that the disorderly or noisy should be punished without indulgence by suitable means, such as the strait-waistcoat, confinement to their rooms (or, in graver cases, to the rooms of the lower corridor, which could be darkened by shutters), diminished allowances of food«, etc. *von Weigel,* the »archiater« (physician in ordinary to the King), wrote an account of the conditions at Danviken in the above-mentioned year, from which we quote:

»Finally, with regard to the remedies in use at Danviken, I should not omit to mention the employment of a swinging-machine, which has been introduced there as the result of successful experiments made in England. So far it has not contributed in any considerable degree to the healing of the insane, presumably because they are so little affected by its movements that they can stand being swung round for half an hour without any effect, whereas a sound person can hardly endure it for a few minutes without being sick. But as the swinging evokes unpleasant sensations even in the patients, it has sometimes been employed with advantage as a punishment, and afterwards, by threats of repetition, as a means for prevailing upon the noisy and ungovernable, who have earlier experienced it, to keep more quiet. These swingings have also proved useful in cases where emetics and purgatives have been of no avail, as often happens with the insane. If, on such occasions, they are ex-

posed to the motion of the swinging-machine, they soon begin to respond to such remedies«.

It is true that conditions connected with the care of the insane in the Scandinavian countries have never given rise to such scandals as in England, but it is only too apparent from the writings of contemporary authors that in many places they were scandalous enough right down to the middle of the last century. Information as to conditions in Sweden may be obtained from *Engström*'s account of the care of the insane in the eighteen-thirties, *Sondén*'s »Appeal to the Authorities concerned to regulate the Care of the Insane in accordance with the Times« in the forties, *Ekströmer*'s inspection reports, *Sondén's* and *Magnus Huss'* description of the Danviken Asylum from the fifties. Everywhere we encounter a gloomy picture of neglect, violence and inhuman treatment, miserable premises and the very worst hygienic conditions, so that we are far from being able to boast that with us the duty of society towards the insane was very early laid to heart or fulfilled in a humane way. It may with greater justice be said that barbarity has been more tenacious and more deeply rooted than it was in the leading civilised nations. Thus, for instance, in Nyköping asylum the patients were locked up in »cages« as late as 1853, and there was still found »all the filth, stench and uproar, all the abominations appertaining to these survivals of the asylum furniture of olden days. Foot-irons were still in use to fetter those violent and unreliable patients, for whom there was no room in the cages, to bedsteads in the large wards« (Ekströmer). In the old asylum of Gothenburg, too, foot-irons were used in 1853 »to keep the untrustworthy in their beds«. The cages, which must have given to the place the appearance of a horrible menagerie, still remained in 1866. In Växjö the patients were confined in »highly unsuitable cupboards, provided with iron bolts, dark, and rendering all cleanliness and ventilation impossible«; the boisterous and uncleanly, »worse circumstanced, perhaps, than certain domestic animals«, were locked up in cages (Ekströmer).

»That the asylums have not fulfilled their purpose, of bringing back weakminded persons to health and reason by tender and suitable treatment but that these institutions have rather been mere places of custody for the unfortunate patients«, is alleged by the Guild of the Order of the Seraphim in 1822 and again in 1828 as a reason for centralising the care of the insane to a small number of large institutions and closing a great many small district asylums.

The opening of the first Swedish central asylum for the mentally

diseased in Vadstena in 1829, became, as *C. U. Sondén* has it, »the line of demarcation between barbarism and humanity«. Its first physician was *G. Engström,* whose efforts for the improvement of the care of mental patients in Sweden were so highly meritorious.

The lack of competent medical guidance long contributed to hamper the proper development of mental hospitals. Danviken was the only place where there was a resident physician, and most likely the visits and daily rounds were somewhat irregular. Salaries were extremely scanty and could make of these posts nothing but subsidiary occupations. The notions about the care of mental patients were, with few exceptions, completely devoid of understanding. Small interest was taken in the theoretical side of the subject, and as for the humanely practical aspect, the age seems to have been distinguished by a great deal of thoughtlessness and but slight receptivity. Not only the lack of supervision and care and the deficient local conditions, but the formal regulations also long impeded the development of the care of the insane in Sweden. Such a regulation was the stipulation of a so-called test-cure in an ordinary hospital before the patient, with or without a certificate of incurability, could be admitted to an asylum for life at a low price. In spite of lively protests from many quarters, this test-cure remained from 1813, when it was introduced by a circular letter from the Guild of the Order of the Seraphim, till 1858, when it was cancelled by the new asylum regulations. »The test-cure patients«, writes Ekströmer in his report to the Crown in 1840, »are kept in special cells, often dark and badly furnished, where they are locked up without ever getting outside, partly to prevent them from running away, and also to separate them from the physically ill«. »All arrangements«, he further writes, »are of the same description, and the impressions received by the patient under these circumstances seem in most cases rather to maintain than to remove the affliction, rather to aggravate than to improve it«. Dr. *C. U. Sondén,* the warmhearted champion of the cause of the mentally diseased in the middle of last century, held that this strange organisation bore evidence of a complete ignorance of the most urgent necessity in the care of the insane, i. e. the necessity of procuring as soon as possible the best possible treatment for the patient; and *G. Engström,* the asylum physician in Vadstena, expressed his opinion as to the unsuitability of the lazarets in this respect in the following words: »I do not believe that our lazarets, considered as nursing institutions for the mentally diseased, rank very high, and still less that their physicians are so well versed in the wide field of

psychiatry that they can successfully undertake the difficult treatment of psychic suffering.«

It is a curious fact, characteristic of the slow development of the care of the mentally diseased in the North, that the lazarets, together with the municipal institutions under the poor-law administration, were long the places where acute mental cases received the first care. This care was limited to keeping the patients in special »madmen's cells«. It is true that there no longer existed any ordinances for such an abuse of the opportunities for restoring the patients to health. The name »test-cure« was a forgotten word, and no one had the least doubt as to the unsuitability of isolating patients with acute mental diseases at random. But other evils made these measures, which were the immediate continuation of the old test-cure, a necessity, and these evils were the insufficient number of places in the State institutions or Central Asylums, as they were called after the old district and Crown asylums had begun to be closed. Owing to the increasing generosity of the State and an increasingly clear-sighted policy in the care and control of the insane, the nearer we approach the end of the last century and present times, the more have these evils been minimised. By degrees new mental hospitals were built and opened, in Uppsala in 1841, in Växjö in 1857, in Stockholm in 1861, in Härnösand in 1862, in Gothenburg in 1872, in Lund in 1879, etc., and the growing building activity during the last few decades has made the number of places correspond more closely to the accommodation required. Even now the accommodation required has not yet been attained, but this must not prevent us from acknowledging the great interest bestowed during the last fifty years upon the mentally diseased by those in authority.

The establishment of large mental hospitals has, of course, entailed the training of a great many schooled psychiatrists, who have grown in number and qualifications in proportion as new hospitals have arisen. The improved financial position which this body of physicians has gradually acquired made it possible to raise the standard of their ability. To begin with the requirements included the obligation of living within the hospital and finally of devoting their work entirely to the mentally diseased.

That these altered conditions were equivalent to a brightening of the fate of mental patients can be taken for granted. However, we will postpone till a later occasion the account of how the care of the mentally diseased has become humanised and developed into the real medical attention and care which marks the treatment of these patients

in our day. For pedagogic reasons it seems to us appropriate, in rendering the history of the care of the insane, to take, as it were, the same path that led to the reformation of this care. The path was one of widened knowledge. It was owing to the rise of psychiatry to a real science that the treatment of the mentally afflicted became more and more humane and at the same time more rational. It is therefore our purpose first in a general way to acquire an insight into the nature and essence of mental diseases and their symptomatology, and then, having arrived at a knowledge of the indications for their treatment, to come back to the modern principles of this treatment.

Before proceeding on these lines, however, we will add to our account of the development in Sweden a survey of the conditions in the neighbouring countries of *Denmark, Norway* and *Finland,* which, in many respects, were similar to those of our own.

Denmark—Norway. The Royal Ordinance of 1632 in all probability expresses the first notion that the State might do something for the care of the insane. Apparently this led to the establishment of »madhouses« in several places. The development of the care of the insane in the Danish provinces appears on the whole to have been the same as in the south of Sweden. The asylums, which everywhere in Denmark seem to have had to serve the same combined purpose as described above, were gradually provided with cupboards and cages where the unruly patients were confined. Such cages put into sheds without a fire-place were to be found in the asylums of Elsinore, Aarhus, Randers, and other places. As late as 1841, *Hübertz* found 133 such cages in use in different parts of the country. In the city of Copenhagen, where the care of the mentally diseased has had its own history, there existed in the 16th century a so-called Town Madhouse. In 1620 the patients were placed in the so-called Pestilence House, and in 1660 they were removed to another place of custody at Kalvebod Strand, where there were more than thirty mad cells, built out over the water. The patients led a miserable existence which has been described by a tradesman, *Claudi Rosset,* in 1749, and the conditions were hardly improved when, in 1769, they were housed in the »Ladegaard«, which they shared with paupers and the venereally diseased. In 1788 a warm-hearted observer, *N. E. Riegels,* describes the existence of the »stark mad« patients in the following terms: »Descend with me, oh ye thoughtless ones, into the underground abodes of the madmen, where mephitic air, confined space and the cries of the un-

fortunate will overcome you. Let the door of the mad cell be opened, and you will be startled — —«

The building itself, he further writes, was ramshackle and rotting, the roof and walls were leaky; and the patients lacked clothes and all necessaries. The most ungovernable were kept naked in ghastly holes, etc.

»It was,« *Wimmer* writes, »the afterwash of a world-war — the bombardment of Copenhagen in 1807 — which finally induced the City of Copenhagen to found a hospital of its own for mental patients at Bistrupgaard near Roskilde, in 1816.« The original fund for this purpose was a donation from the above-mentioned *Claudi Rosset*, given in 1766 to the old St. Hans' Hospital in Copenhagen, a charitable institution of the combined type, like Danviken in Stockholm. A new building had long been planned when the necessity of removing the patients during the bombardment made the matter urgent and hastened on its realisation. Though to begin with St. Hans' Hospital seems to have preserved its old-time character of a refuge for the poor and infirm, yet even at the start the care of the mentally afflicted became its chief task, and a mental hospital was built which was well-equipped, light and roomy, as those times went. The first physician was *Johan Henrik Seidelin*, who was succeeded in 1831 by *Adolf Wilhelm Göricke*. The latter who had studied at Sonnenstein, the most modern German institution of the time, was a benevolent man and applied the kindest principles in the treatment of the insane. At a visit to St. Hans' Hospital in 1834, the Swedish psychiatrist G. Engström received the most favourable impression. He writes, *inter alia:* »The first of these principles is, with sincere fervour and zeal for the task, in the most tender and humane way, yet with earnestness and perseverance, to attempt to gain one's end, the recovery or at least improvement of the patient, and more by hearty compassion and careful treatment than by inordinate severity, compulsion and hard punishment, to lead and guide the deranged — I am glad to say that all this seemed to me strictly observed here.«

Under Göricke and his successors *Steenberg* (1863—1892) and *Rohmell* (1892—1912) St. Hans' Hospital gradually became the largest mental hospital in Denmark and in all the Northern countries. Besides Göricke, *Hübertz* and *Selmer* in the forties and fifties greatly contributed to the development and improvement of the care of the insane in Denmark, and some large institutions were erected in the provinces. Thus the mental hospital for North Jutland in *Aarhus* was

opened in 1852, the hospital at *Vordingborg* (»Oringe«) for Sjælland in 1857, the hospitals of *Viborg* and *Middelfart* in 1877 and 1888, etc.

Norway. A detailed account of the older history of the care of the insane in this country would only be a repetition of what has already been said of Sweden and Denmark. By the ordinance in a Royal Act of July 14th, 1736, the asylums, or at least the larger ones, were to be provided with one or two rooms where the insane could be kept, so that they might not break out, and towards the end of the 18th century a number of small mental hospitals were built in Oslo, Trondhjem, Arendal and other places. In all, there were in Norway at the beginning of the 19th century 3 places for the custody of the insane.

After the separation from Denmark a committee was appointed in 1825 to inquire into the position of the mentally diseased in Norway, and the result of the inquiry, published by Professor *Frederik Holst* in 1828, gives a sad picture of the prevalent conditions. Means were lacking, however, for an effective reform, and nearly twenty years passed before anything of importance was done. In the beginning of the forties it so happened that a young medical student, *Herman Major,* who had suffered the personal affliction of seeing his fiancée become deranged, had his eyes opened to the deplorable fate of these patients in the Norway of those days. His report on the conditions in question, published in 1846, was of decisive importance for the further course of events. He succeeded in getting his scheme for the treatment and care of the mentally diseased discussed in the Storthing and passed into law in 1848, and this Act is still in force. It was also on *Herman Major*'s initiative that the first real mental hospital in Norway, *Gaustad Asyl* near Oslo, came into existence. *Major*'s tragic death, before the asylum was ready, prevented his becoming the head physician and director of the institution, an office which would have come to him as a matter of course. When Gaustad was opened, in 1855, *Ole Sandberg* (1811—1882) became its first physician. It was due to this active and impulsive man, writes Dedichen, not only »that psychiatry in his day was more familiar to the general practitioner than ever before or since, but also that the conditions of mental patients have very largely changed for the better«.

During the latter half of the 19th century two new mental hospitals were opened, *Rotvolds Asyl,* near Trondhjem, and *Egs Sindsykeasyl* outside Kristianssand (1881), besides which some older municipal institutions in Oslo, Bergen, and other places were enlarged.

Finland. In early days the care of the insane, here as in the mother

country, Sweden, was entrusted to the »Houses of the Holy Ghost«. As far back as the Middle Ages there were such institutions in Åbo, and most likely also in other places. An asylum, as the word was then understood, was founded by a Royal Act of July 15th, 1619, in Sjählö in the Åbo district; it was entirely given over to mental patients in 1785 and since February 4th, 1840, has exclusively accommodated incurable patients. Other asylums were built in Kronoby (1631) and Helsingfors (1632), etc. These were, like the asylum of Sjählö, intended for paupers, invalids (lepers and patients with infectious diseases) and the insane. The first mental hospital in Finland was opened in 1841 at Lappvik, near Helsingfors. Originally it could accommodate 90 patients, but by the adding of new buildings this number has later been considerably increased. The first physician of the hospital was Professor *Leonard Fahlander* (1807—1870), who was succeeded in 1868 by *Saelan.*

Since old days it had been incumbent on the district hospitals to keep a certain number of »mad cells«, and gradually additional accommodation was provided, small wards of admission being opened at the hospitals of Åbo, Viborg, Vasa, etc. During the latter half of the 19th century, the new mental hospitals of *Fagernäs,* near Kuopio (1885), and *Pitkäniämi,* in the district of Tavastehus (1900), were opened.

LITERATURE.

A. Cornelius Celsus: The Medical Art (Swedish trans. by M. V. Odenius. — Die Bücher und Schriften *Paracelsi;* Basel 1589—1591. — *G. A. Sparre:* On the Measures taken by the State of Sweden for the Care and Treatment of the Mentally Diseased. Address given on resignation of the presidency in the Royal Academy of Science. 1861. — *A. Hagström* (Hagströmer): The Danvik Hospital. Inaugural address, R. Acad. Sci., 1788. — *Christ. v. Weigel:* The Danvik Lunatic Asylum. Address given on resignation of the presidency, Royal Acad. Sci., 1820. — *C. U. Sondén:* Appeal to the Authorities, etc. 1847. — Report on the district hospitals and lunatic asylums of the kingdom by *C. J. Ekströmer* 1840. — Report to the Guild of the Royal Order of the Seraphim concerning several foreign asylums and the treatment given to demented persons therein, by *G. Engström,* 1835. — *Reil:* Rhapsodien über die Anwendung der psychischen Curmethode auf Geisteszerrüttungen. 1803. — *Esquirol:* Des maladies mentales. 1838. — *Heinroth:* Lehrbuch der Störungen des Seelenlebens und ihrer Behandlung. 1818. — *Bror Gadelius:* The Care of the Insane in bygone Days and in our own Time. 1900. (In Swedish). — *Wimmer:* St. Hans Hospital. 1816—1916. Jubilee volume, 1916. — *Dedichen:* Die Heil- und Pflege-Anstalten für psychologische Kranke in den Skandinavischen Ländern im Jahre 1900—1901. — *Th. Kirchhoff:* Geschichte der Psychiatrie. Handbuch der Psychiatrie herausg. von Aschaffenburg 1812. — *Kraepelin:* Hundert Jahre Psychiatrie. 1917.

CHAPTER II.

EPISTEMOLOGICAL POINTS OF VIEW. THE WORKING METHODS OF PSYCHIATRY.

When we consider the important part played by mental diseases in the history of human suffering, a part they will ever continue to play, we must unhesitatingly assign to the study of these afflictions a prominent place in medical research. The importance of psychiatry as a branch of the study of medicine is thus first of all due to the large share of mental diseases in the misfortunes of mankind, and to the social and legal significance of these diseases. To provide against, to heal or by rational care to mitigate these sufferings, to intervene in order to set right the legal complications which may be caused by mental disease, these are the first and main tasks of psychiatry as a practical medical science. But all science is also its own end, and from this theoretical point of view psychiatry claims the attention of every reflective mind. It offers a tempting multiplicity of phenomena and calls into being important questions both of a general psychological nature and relating to individual traits; in its application it gives many a valuable hint for the proper estimation of cultural phenomena, historical and political events, etc.

Psychiatry and the care of the mentally diseased, the scientific study and the practical task, have of late more and more pressed forward to a position abreast of the branches of medicine, owing to the continuous humanising of the care of the sick and to the growing of the subject itself into a far-reaching science. And, in the natural order of things, this place of honour is only what is due to *the science of the afflictions of the mind*. This science, *psychiatry*, should, in at least the same degree as surgery and internal medicine, be able to command the interest of the student.

However, psychiatry occupies a somewhat exceptional position among the subjects taught in medical study. It has but little kinship with the rest and does not share their fellowship. It moves in quite a different sphere, and deals with other conceptions, other values and points of view than the physicochemical which enter as constant elements into the more exact disciplines.

Religious prejudices and a naïve conception of the relation between *body* and *soul* were long a hindrance to the scientific study of mental diseases, and humanly speaking it is easy to understand the devious paths which psychiatry had to wander before it reached its proper place. Who dared in olden times deny that a knowledge of the mental afflictions was more the concern of theology or moral philosophy than of medicine? That this knowledge was in consequence mingled with all kinds of superstition, is, as will appear from the above, the lesson we learn on studying the history of psychiatry. All through the Middle Ages and even far into modern times, the belief in demons showed the theoretical, witch-burning and exorcisms the practical standpoint of this subject, and even much later the scientific existence of psychiatry, in spite of all moral philosophy and metaphysics, remained highly dubious.

When psychiatry subsequently passed into its scientific phase, the attempt was made to eliminate or modify the psychological character of the subject by defining it in anatomical terms and substituting the word »brain-disease« for *mental disease*. The brain is the organ of the mind, and mental diseases are thus somatic diseases, just as much as heart and lung affections. This view became a scientific watch-word, under the banner of which psychiatry came down to earth, and abandoned earlier moral-philosophical doctrines which in mental diseases saw the effects of ethical causes, such as sin, remorse, unrequited love, etc. It had long been the great advantage of internal medicine over psychiatry that it had a firm foundation in anatomy and physiology, and now it became the endeavour of psychiatry to express the somewhat irrelevant phychological values in the anatomical and physiological terminology common to other branches of medicine But this endeavour to place the mental diseases beside and on a level with *other* organic diseases soon met with a hindrance which many a scientist, in his zeal to proceed on the course once taken, had overlooked. Wherever the experience and reflection of man have attempted to connect body and soul in an *unbroken* chain of cause and effect, this hindrance has stood in the way. In the relation between *brain anatomy*

and psychiatry we are up against an unbridgeable theoretical gulf, which has become the more evident, the more scientists have tried to penetrate into the problem of cerebral localisation.

We have here touched upon a question of fundamental importance, a question which we encounter on the very threshold of the domain of research to which we shall give our attention in the following. This question is of such great importance to our whole conception of the purport of psychiatry, and to the *epistemological limitation* of this subject, that it would seem appropriate, by way of introduction, to dwell on it somewhat exhaustively, and the more so since it is only in the light of this question that we rightly learn to appreciate the value of the different methods of research and the resources which are at our disposal in studying the psychical disorders.

The naïvely dualistic conception that the soul has its abode somewhere in the body, is almost as old as mankind. *Hippocrates* localised it to the brain, and *Plato*, in speculating on the shape of the head, came to the conclusion that the higher psychical processes had their seat there. *Aristotle*, on the other hand, supposed the heart to be the seat of the soul, while the opinion of *Galenus* that the brain secreted the vital spirits in its ventricles and distributed them through the arteries to the other parts of the body had followers even in quite modern times. In accordance with the prevalent metaphysical conception of the soul as a homogeneous substance, its location was sought for in a limited part of the central nervous system. *Descartes* (1596—1650) pointed out as the organ of the soul the glandula pinealis, because it was situated above the canal through which the vital spirits in the anterior cerebral cavities communicated with those of the posterior cavities, and thus by the slightest movements it was able to influence these vital spirits. Other scientists found more significant reasons for its location in other places, now in centrum ovale *(Vieussens*, 1641—1716), now in corpus striatum *(Willis*, 1622—1676), and again in the pons *(Haller*, 1708—1777). *Sömmering* (1755—1830) a contemporary of Kant, held that we must look for the seat of the soul in the fluid that fills the ventricles of the brain, because all the nerves of the body were supposed to have their ends there and could thus meet in a common centre of sensations (sensorium commune).

Thus naïvely was the relation between body and soul conceived towards the end of the 18th century. Among the immense number of more or less fantastical conjectures and attempts at an explanation, most of which have now merely historical interest, we undoubtedly meet with some ideas, due to a sure intuition, which have only in our own times met with proper appreciation. Thus, for instance, in the humoral pathology founded by *Hippocrates*, and in its stressing of the importance of a proper blending (crasis) of the humours for the health of the body, we may trace the first seed of the thoughts and suppositions which, as we shall see below, have been followed up in the serological and biochemical researches of later days. This system of ideas also includes the old doctrine of the four temperaments, which was an important factor in the psychological theories of that time. Affections and emotions were located in the blood, the thoracic and abdominal

organs, the sympathetic ganglia, etc., and in this way the whole body was made responsible for the psychical phenomena, more correctly than was the case in the circumscriptive localisation. Development during the 19th century took another course, however, and gradually the anatomical point of view became predominant.

Thanks to his remarkable intuitive power, *Emanuel Swedenborg*, as early as 1734, localised certain nervous faculties to the cortex of the cerebrum. After Swedenborg, the much discussed *Frans Josef Gall* (1758—1828) deserves to be mentioned among those who first appreciated the importance of the cerebral hemisphere and its gyri for the higher psychical processes. Through him the old doctrine of the homogeneity of the soul was upset. Gall taught that the fundamental forces of mental life, the particular dispositions and instincts, were conditioned by definite organs in the cortex. Even though the »organology«, or as it was afterwards called »phrenology«, which he based on these suppositions, was a misconception, *Gall* has undoubtedly given an impulse to latterday attempts to localise in the cortex the nervous phenomena of the body no less than the various manifestations of our mental life.

Gall already localised the faculty of speech to the frontal brain. The doctrine of localisation, however, in the form Gall had given it, was subjected to severe criticism by *Flourens* (1794—1867), who claimed to have discovered that the hemispheres of the cerebrum, though the seat of the will and the sensory perceptions, did not present a functional difference in different parts, but in a highly general way conditioned the mental faculties and the functions of the body, which thus abated in proportion as the hemispheres were destroyed. The scepticism which Flourens expressed with regard to localisation, seems to have dominated the scientific world till *Broca*, in 1864, published his observations on aphemia — as he called motor aphasia. In a way Broca restored Gall's half-forgotten prestige and localised aphemia to the third left frontal gyrus (F_3). This localisation had a more physiological character, inasmuch as Broca supposed that injuries in this area cause a hindrance to the consummation of the act of speech, in other words, the inability of the coordinate muscular movements which are the antecedent condition of speech. But it is only from the year 1870, when *Fritsch* and *Hitzig* succeeded in their efforts to evoke muscle contractions in the opposite part of the body of the experimental animal by electric stimulation of the cerebrum, that Flourens' theories were generally abandoned. From this time on, localisation became the object of energetic study, and the methods of examination, physiologico-experimental and anatomico-clinical, were gradually developed. By extirpation of the cerebral hemispheres (Goltz) the attempt was made to find out which functions of the body and mind were dependent on these, and by the stimulation or extirpation of limited areas and comparative anatomico-clinical studies on man (*Fritsch, Hitzig, Gudden, Ferrier, Munk, Horsley, Schäfer,* and others) a fuller insight was obtained into the centres of the various functions, and the position of the motor, sensible, and sensory projection areas in the cortex became gradually known and recognised. Also *Flechsig's* myelinisation method, that is, the study of the development of the medullary sheath in connection with non-contemporaneous functional maturation within different central areas, contributed to the further verification of the earlier observations and the advancement of our knowledge. Then came the elective histological staining methods (*Weigert and Pal, Nissl, Marchi, Golgi, Ramon y Cajal, Bielschowsky,* and others), as also the methods of vital staining (*Ehrlich, Retzius,* and others). Finally, we may mention that some scientists, by examining the

structure and composition of the different layers of ganglion cells, have established a cyto-architectonic difference in different parts (centres) of the cortex, indicating a differing functional shape of these parts.

Comparative anatomical studies have, moreover, made it clear that the higher we rise within the animal scale, the more does the cerebrum take over the functions which in a lower stage have their most essential centres in the stem of the brain, its ganglia or in the cerebellum (*v. Monakow, Eddinger*). There is thus, phylogenetically, an upward progression to the cerebrum (v. Monakow). We shall see later that the knowledge recently gained in the study of the so-called sleeping sickness (encephalitis lethargica) has to some extent modified our attitude towards v. Monakow's supposition.

Thus it was during the latter half of the last century that cerebral localisation came to the front. By collocating clinical and post-mortem findings, and by experiments on animals, we have succeeded in unveiling some of the mysteries of the cortex.

Our physiological knowledge has thereby been enriched, and extremely important data have been gained for the diagnosis of gross organic lesions, these in their turn paving the way for modern brain surgery. But this knowledge did not, in its application to psychiatry, reach so far as was expected in certain quarters. The doctrine of the aphasiæ afforded points of contact with mental diseases that were too uncertain to give any information as to the anatomical substratum of the latter, and the same thing may be said about the symptoms agnosia and apraxia etc. which are related to the aphasiæ. Some clues to the localisation of the higher mental functions had also been expected from the study of brain tumours etc., and above all tumours and traumata in the frontal brain seemed to arouse hope in this respect. Earlier results, however, have either been negative or highly unreliable, and only the elaboration of the vast material placed at our disposal by the World War and the subsequent epidemics has led to certain discoveries and observations which have undeniably also been of service to our psychiatric knowledge. We will return to these questions later.

A weighty circumstance which may here be insisted on is that the uncritical combination of anatomical and psychological points of view made in certain quarters *(Munck, Flechsig, Wernicke)* which, inter alia, simply presupposes certain unproved psychophysical correspondences, for instance, between the association of ideas and association fibres, must be looked upon as objectionable in principle, as has been specially emphasised by *v. Monakow.*

During the period towards the end of the last century, so fruitful for cerebral research though less so for psychiatry, a number of

psychiatrists well schooled in brain anatomy came forward, among whom *Meynert*, *Flechsig*, and *Wernicke* are the most representative names. Their aims and scientific points of view are set forth by *Flechsig* in his well-known address »Gehirn und Seele« (1896) in the following words. »Psychology, in spite of endless striving, has not yet attained to the rank of an exact science, principally because it has been forced to develop its fundamental conceptions independently of brain anatomy (Hirnlehre). Thanks to the truly naïve supposition that it was possible to advance the knowledge of the functions of an organ like the brain without knowing that organ, psychology has become the arena for divers quaint fancies but, on the other hand, remained extraordinarily poor in really fruitful ideas.« He adds: »Psychiatry, too, has suffered considerably from the lack of a clear anatomical comprehension of the organs of the mind and has been unable to develop into a science of equal standing with the other branches of medicine, because it has not been able to systematise its observations on an anatomical basis.«

Flechsig deservedly attracted considerable attention and created great expectations by his supposed discovery of *association-* and *thought-centres*. The supposition of these association-centres was based on observations of the development of the brain during the first months of life. Through his study of the development of the medullary sheaths which takes place at different periods in the different parts of the brain, and which he assumes to correspond to a functional difference in the nerve-paths, *Flechsig* arrived at the following results. Only about one third of the cerebral cortex is connected with the underlying subcortical portions by projection fibres. These projection fields, which get medullary sheaths earlier than the other portions of the brain, contain in all 5 centres, and these centres, which approximately correspond to the recognised localisation of motor and sensory tracts, consist of projection organs for the tactile, olfactory and corporal perceptions, as well as sight and hearing. To the remaining two-thirds of the cortex *Flechsig* assigns the centres of thought and comprehension. Here projection fibres are lacking — Flechsig alleges this in support of his view — but instead, these parts are connected with the centres of sensation by complicated association systems. Here, too, the medullary development, fascicle by fascicle, allowed a division of the cortical areas into separate centres. The number of centres which Flechsig indicated as the result of his investigations, carried out in this manner, was in 1896 nine, five of which were projection organs and four association organs. A couple of years later, however, this number had

already increased to about 40, including centres of sensation as well as of thought. Flechsig still took as his ground the above-mentioned myelogenetic differences, which led him to suppose a functional differentiation; but, as a rule, he has not expressed any opinion as to the nature of this differentiation and, therefore, the anatomical numbers in his brain-chart hitherto represent so many interrogation marks with regard to the functions of these organs.

On the whole, it must be said that as regards the psychological aspect of his neophrenology Flechsig has based his supositions on nothing but the most vague and general arguments. The anatomical part of his conclusions has been most decidedly gainsaid by Sachs, Dejerine, O. Vogt, v. Monakow, Siemerling, and others and, finally, *Nissl* has denied to his suppositions the importance for psychiatry which certain quarters had been willing to accord them. The giant structure, which Flechsig began with such boldness, was in its fundamental positions a tower of Babel, impossible of realisation. By this time it may be said to have lost all significance, especially after v. Monakow's critical revision of the localisation theory. In fact, we know absolutely nothing about these so-called centres of thought, and even the assertion of the special importance of the frontal brain as an organ of mental life, long regarded as an axiom, has been refuted (v. Monakow).

How indifferent the champions of the brain-anatomical school within phychiatry are to the criticism raised on epistemological grounds against such attempts at localisation, appears from the following passage of arms between Flechsig and the philosopher *Friedrich Paulsen* in Berlin (d. 1908). In one of his works Paulsen had pointed out that conscious processes cannot be localised. »A sensation and a thought do not take place *here* or *there*, and fill no space. Thus thoughts do not arise in the brain, any more than in the stomach or in the moon; the one statement is as absurd as the other, for *in the brain physiological processes take place, and nothing else.*« To this Flechsig replies, in no less spirited terms: »Thinking takes place in the brain; this is the conviction of numerous mentally sound men to whom human science is greatly indebted, whereas I have never heard any but deranged or weak-headed individuals maintain that their minds are to be found in their stomachs or on Sirius (!)«.

Just as incomprehensible as the philosopher Paulsen's arguments were to the brain-anatomist Flechsig do the objections seem to have been[1]) with which *Kant*,

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[1]) *Kant*'s words, quoted by Sömmering himself in the work he dedicated »Unserm Kant«, »Über das Organ der Seele«, 1796, contain i. a. the following annihilating argument: »Denn wenn ich den Ort meiner Seele, d. i. meines absoluteren Selbst, irgendwo im Raume anschaulich machen soll, so muss ich mich selbst durch eben

a hundred years earlier, met *Sömmering*'s view of »sedes animæ« in the ventricles of the brain, though Sömmering tried to turn the mild criticism which Kant, »the pride of the age«, had pronounced against this view, into a recognition of its truth. And indeed, however indispensable the epistemological points of view may be for bringing home to the inquirer the limitation of the natural sciences, they are difficult of understanding for the anatomical and experimental way of thinking. Let us therefore attempt a brief analysis.

There is an epoch-making episode in the history of human civilisation which never fails to impress a young mind enthusiastically devoted to the study of science, and this episode, which is identified with the names of Copernicus and Giordano Bruno, is the advent of an idea which freed science from the shackles of religious superstition and reduced the importance of our earth, which had hitherto been the centre of the universe and God's footstool, to that of a more in the infinite.

But there is also another episode in the development of human knowledge, associated with another idea, the epistemological value of which surely makes it worthy of a place beside the former, an idea which had already glimmered in the minds of the wise men of India, had been seen in part by *Plato*, by *Descartes*, *Berkeley* and *David Hume*, and was finally born again in Kant with perfect clearness. This idea[2]) *of the world as a creation of our own imagination* gives to human

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denselben Sinn wahrnehmen, wodurch ich auch die mich zunächst umgebende Materie wahrnehme; so wie dieses geschiet, wenn ich meinen Körper in Verhältniss auf andere Körper ausser mir betrachten muss. — Nun kann die Seele sich nur durch den inneren Sinn, den Körper aber (es sey inwendig oder äusserlich) nur durch äussere Sinne wahrnehmen, mithin sich selbst schlechterdings keinen Ort bestimmen, weil sie sich zu diesem Beruf zum Gegenstand ihrer eigenen äusseren Anschauung machen und sich ausser sich selbst versetzen müsste, welches sich widerspricht.«

[2]) *Kant*, in his preface to »Kritik der reinen Vernunft« (2nd ed., pp. XVII, Akad. Aufl., pp. 11—12), writes as follows: »Hitherto it has been assumed that all our knowledge had to accommodate itself to objects. But all attempts to get to know anything about them *a priori* through conceptions that widened our knowledge, were frustrated by such an assumption. Let us try, for once, whether we do not make more progress in metaphysics by assuming that the objects must accommodate themselves to our knowledge. This tallies better with the desired possibility of knowing something about the objects before they are given to us.

This is exactly what happened to Copernicus when he could not make clear the movement of the celestial bodies as long as he assumed that they moved round the spectator, and therefore tried whether he would not be more successful if he set the spectator in motion and did not move the stars. (In metaphysics similar attempts may be made with regard to objects and their perception)«. As

understanding a central position with regard to the universe and saves us from another prejudice, another form of superstition, viz, naïve materialism. In agreement with Kant's own opinion as to its importance, this thought has rightly been called »the Copernican thought of Kant«. But this conception which, in all reasoning about the ultimate object of knowledge, mind and body, makes consciousness the centre round which everything moves and gravitates, is not usually among the presuppositions by means of which the student of natural science forms his judgment of the external world. The epistemological rehabilitation of consciousness is therefore so far from being acknowledged in the realm of science, that there are even now scientists who deny to the psychical all claims to be recognised as a subject for scientific research. Owing to its subjective quality it is regarded as a reality of too intangible a nature, and, compared to the »real« objects, of too doubtful a value to merit scientific investigation.

No one has, in this respect, gone so far as *Bechterew*, the Russian brain-physiologist and psychiatrist. With a lively appreciation of the views i. a. of Flechsig, this prominent researcher in the field of the nervous system attempted a few years ago to inaugurate a new era of psychological research or rather, a brand-new science, which he calls »objective psychology« and in which he proposes to study psychology while ignoring — consciousness and the psychic phenomena. Starting from the principle that current psychology is concerned with subjective studies of the ego and can only by analogy apply these experiences to others, on the assumption that these others also possess a mind like my own, Bechterew considers it more reliable to replace these inner experiences by an objective study of the anatomical and physiological phenomena accompanying the psychical processes. These phenomena are called by Bechterew »phenomènes neuropsychiques« and »bio-psychiques« (»neuro-psychiques chez les animaux doués d'un système nerveux, bio-psychiques chez les protistes«). Bechterew justifies his use of the term »psychic«, in spite of the principle from which he starts, by the assertion that it is taken in a different sense from the usual one, and that his intention is to pass by the subjective phenomena and chiefly direct his attention to the cerebral processes »qui en forment la base«.

Such an attempt to make psychology »more scientific« by ignoring consciousness, and reducing the whole subject to brain-physiology is clearly, to use *Höffding*'s simile, to saw off the branch on which one is sitting.

The thought present to Bechterew's mind in an epistemologically vague form is indeed akin to that which inspired *Wundt* in his great work, »Physiological Psychology«. But Wundt makes clear his grasp of the subject in quite a different way.

Kant speaks of metaphysics here, it may be pointed out that, to Kant, metaphysics also includes the theory of knowledge, and thus his words have, as it were, a value of absolute authority at first hand as the guiding and demarcating principle for all empirical research.

Physiological psychology must not, he writes, be regarded as a part of physiology »and does not propose to deduce and explain psychical phenomena from physical ones«. Such a tendency is as little implied in the title »physiological psychology«, as the title of a book called »microscopical anatomy« would imply any intention of explaining the uses of a microscope by anatomy.

The famous physiologist *Du Bois Reymond*, in his well-known lecture »On the limits of science«, pointed out the absurdity, from an epistemological point of view, implied in the premisses adopted by certain brain-anatomists. »If our knowledge of all the phenomena in the material world were astronomical, i. e. if we knew the atomic movements with the same exactness as we know the orbits of the celestial bodies, this would be of small avail to us for understanding how consciousness arises. If we had this »astronomical« knowledge of everything that happens in our brains, then we might also follow every minute the changes, displacements and movements of the atoms with which any particular psychic phenomenon was inseparably associated. It would indeed be extremely interesting, could we see the dance of carbon, hydrogen, nitrogen, oxygen, phosphorus, and other atoms, which corresponds to a musical sensation, the whirl of atoms answering to the acme of sensual pleasure, or the molecular storm which accompanies the raging pain in an injured trigeminus. But how could this help us? It is true that we should be convinced that consciousness is inseparably connected with atomic movements, but nowhere should we see it arise or be able to explain it as a purely mechanical outcome of these movements.

Modern natural science has in certain quarters tried to evade the dualistic points of view from which others have not succeeded in freeing themselves. One result of such attempts is the psychomonistic explanation of the universe. The physicist *Mach*, the physiologist *Verworn*, the psychiatrist *Ziehen*, and others, represent this view. Psychomonism, having learnt from Kant and Schopenhauer, recognises nothing but the psyche. Everything consists of perceptions; matter, our body, our Ego, are composed of the simple elements, our only immediate experiences. Colours, tones, heat and pressure-perceptions are elementary parts of the mass that forms the external world; moods and feelings, thought and volition are the ingredients that constitute our conscious-

ness. It is not the outward things that produce our perception-complexes, but the perception-complexes within us create the things. Matter is a thought-symbol for the mass of these perceptions, and it suits our limited and practical purposes to locate matter as a reality in the external world. In this we act according to deeply rooted instincts, which naturally carry with them a certain profitable economy of thought.

Epistemological corrections are inconvenient to the scientist in every-day life. When not necessary, it is at any rate superfluous to regard the external world as a kind of phantasm only existing in our consciousness. Always to drag about this thought must have a disturbing effect on scientific work, and it is from some sort of instinct of self-preservation with regard to all the values which such a thought might injure that we forget it in our laboratories or over the microscope when we are trying to penetrate into the most secret things of life.

It is also conceivable that too obstinate an insistence on the principle formulated by psychomonism may lead to the theoretical absurdity which has been called *solipsismus,* according to which nothing exists outside one's own individual psyche which contains all the universe in itself. The necessary counterpoise to this consequence of theoretical egocentricity is the assumption of an infinite number of individual psyches standing in relations of space and time to my own, but, somehow, this assumption leads back to dualism. And indeed it is extremely difficult to free oneself from it. When we have succeeded in rising above it in the theory of knowledge, we fall back into it immediately we reach out for experience. Dualism is and will always remain the necessary form for all empirical knowledge.

Even if it is true that matter is only a perception-complex and that these perceptions of colour, pressure, tone, taste and smell are psychical elements in the same degree as emotions, thoughts and volitions, still, in spite of this seemingly homogeneous conception, the difference between body and mind, spirit and matter, cannot be made to vanish. It merely reveals itself in another form, it returns as a necessary parallelism, a duality as regards points of view, the *objective* and the *subjective.*

In the mental operations performed in connection with a physical experiment, we keep ourselves outside and regard the perceptions as external phenomena. If, for instance, for some practical purpose or other we illuminate a green object with a yellow light, we leave the perception as such out of consideration and regard the green object and the source of light as realities in the external world, confining our study to the relation between these. It is a different thing if I consider the perception green and yellow by itself, or direct my attention to such phenomena, emotions or moods, as remain psychical on account

of their nature. These psychical values *must* be looked at from within, regarded from outside they disappear, and we see at most physiological processes. If the molecular changes which take place somewhere in the cerebral cortex and are a correlation of the psychical perception »green«, could be observed, there would be mirrored to the objective spectator a physiological series of perceptions, in other words, something quite different from the perception »green« which presents itself subjectively. Even if I could look into my own brain, right through the skull, and there witness some of the molecular processes which *Du Bois Reymond* called up before his imagination, I should still not succeed in getting a glimpse of the psychical within the physiological limits. My attention would be torn between two incompatible points of view; I should, if a simile be permitted, constantly have to turn over the leaf and look, now at one side, now at the other, in order to be able to follow two differently traced processes, which had nothing in common but an unerring parallel conformity, a certain sign on one side always corresponding to a certain other sign on the other side.

It is this view which is represented by the so-called *parallel theory*.

The parallel theory was originally allied to a metaphysical doctrine of substance. To *Descartes* there were three substances, the highest of which was God. The other two, substantia extensa and substantia cogitans, are united in man as body and soul. Descartes supposed an immediate interaction or *influxus physicus* between these two substances.

Spinoza, on the other hand, conceived substance as homogeneous, and this one sole substance, God, revealed itself in twofold manner under the attributes extensive and cogitative. The former attribute comprised the external world, the latter our conceptions. Between these two worlds Spinoza assumed a continuous simultaneity in regard to the phenomena and processes of both forms of reality. He denied the possibility of influxus physicus. Hence we are warranted in regarding *Spinoza* as the first to posit the theory of parallelism.

Scientific (physiological) psychology has taken up the theory of parallelism, but disclaims all share in the substance-theory of Spinozism.

Without overstepping the bounds of our experience, the parallel theory thus tries to connect the objective and the subjective phenomena of Nature. The parallel principle, however, cannot be considered so universal as to warrant the simple statement that physical and psychical processes always accompany each other, and that it is thus possible to infer the presence of one from the presence of the other. We have here, as Wundt expresses it, in any case a *quaestio facti* which can by no means be decided *a priori*. Physiological psychology, however, thinks

it is able, with a probability bordering on certainty, to assume that there is no psychical process to which there is not a corresponding physiological process, or rather a complex of physiological processes. On the other hand, the reverse of this does not hold good, viz. that every *physical* process has its psychical counterpart. There are, in fact, a great many natural phenomena which altogether lack a psychical correlate. Likewise, with regard to the *psychical connections*, the question arises, how far a parallelism is conceivable between these and the physical connections. The latter are mechanical sums and aggregates, the former something different. The supposition that the association fibres in the cerebral cortex take care of the psychical processes which we call the association of ideas, or that the nerve fibres connecting different cerebral areas are charged with the task of bringing about a connection between our thoughts, is regarded by *Wundt* as mere brain-anatomical vagaries. And v. Monakow sharply criticises the parallelling of anatomical observations (interruption of association fibres) with psychological phenomena, which we find in *Wernicke*'s sejunction theory and in *Liepman*'s explanation of apraxia. Also *Jaspers* and *Gaupp*, as well as other modern psychiatrists, regard such suppositions as armchair science, »brain-mythology«, etc.

The limitation of our knowledge is indicated by the parallel theory. One does not look for the *immediate cause* of a psychic phenomenon in certain physiological or pathoanatomical processes or circumstances, though it is nevertheless considered to be »tied« to certain organic conditions. On the other hand, we can no longer explain the phenomena which meet us in mental diseases by animistic or demoniac influence and thus fall back into a position abandoned a hundred years ago, and which leaves the way open to superstition in its worst mediæval form. In this respect, too, the parallel theory, the conception that no psychical process lacks its correlate in the physical substratum, when accepted as a scientific dogma, serves as a kind of safeguard against irrelevant fancies.

But we must not forget that, epistemologically, the parallel theory only possesses limited validity. It is no all-comprehensive view, nor does it exclude a psychomonistic theory of life. Always to have *Kant* and his »Copernican thought« before one's eyes, however, is like doing rough work in holiday clothes; they must be put away in working-hours. Indeed it may reasonably be asked whether empirical psychology can breathe at all in Kant's company? It is in this respect that the parallel theory is better suited to our needs and better adapts itself

to our scientific conditions of life, even though it does not stand the test of truth in a higher and more rarefied air. The parallel theory is the expression of a *dualism* which we cannot do without on the firm ground of reality.

While the parallel theory *a priori* has been able to tell us that brain-anatomy is not the bridge by which to reach an understanding of the psychological phenomena, we have gathered more information from the unsuccessful attempts at localising different psychical faculties to the cerebral cortex. In his very comprehensive critical work on localisation in the cerebrum published in 1914, *Monakow* points out that the attempts to locate the psychical processes to limited areas have resulted in hasty, unproven and often illogical suppositions. Only certain synchronous associations of engrammata (memories) of the simplest kind let themselves be localised to limited areas and »centres«, but every wider and more complicated process presupposes a collaboration of nerve elements diffusely spread over the whole of the cortex, *and in no wise serving as special organs for certain acts or aims, but rather representing a keyboard* where the individual elements are constantly utilised for varying purposes.

While the cerebral localisation of the psychical functions has so far given unsatisfactory results and cannot be said to have had any real significance in its application to psychiatry, it is quite otherwise as regards that part of brain-research which has been concerned with elucidating the pathological changes found post mortem in the organic forms of mental diseases. This branch of histology, which has been directed to the details of cerebral pathology, has been *extremely helpful* in the development of the diagnosis or differential diagnosis of the various forms of disease, and it is to be hoped that, as the technique is improved, fresh disclosures will be made, to deepen our knowledge of the forms already known and to help us conquer new territories from the region of the so-called functional psychoses. Though we are now more sceptical as regards the future of pathological anatomy in the realm of psychiatry, in comparison with earlier, somewhat exaggerated expectations, still the important results attained during the last few decades by research-work on *paralysie générale, arteriosclerosis, senile dementia and cerebral lues, etc.* seem to indicate such progress that we dare hope for the discovery of new details, however conscious we may be of the limitations of the technique.

It must not be forgotten that in the post-mortem symptoms are also included the changes which the brain undergoes during the death-

struggle and immediately after death, and it may be difficult to distinguish between these changes and the symptoms directly connected with the preceding morbid processes. The destructive processes during the agony, and still more those beginning after death, are to be likened to a swelling wave of turbid water that sweeps over the living structure, obscuring its features so that we only divine their vague outlines. In order to fix this difference, *Nissl* has established certain *cell-equivalents* for the dead material with prescribed staining methods. These equivalents are correlatives and symbols of the living cell structure, not this structure itself. But even with this necessary restriction of our possibilities, and the transfer of our basis from living nerve tissue to »cell-equivalents«, we are certainly able by comparisons to draw important conclusions concerning the extension of the pathological processes in a number of cases. In addition to the histopathology of the nervous elements, the ganglion cells and the nerve fibres, the meninges too, as well as the blood-vessels and the neuroglia have been subjected to close study.

Nissl was the pioneer in this field, and *Alzheimer* shares with him the honour of the excellent results arrived at during the last few decades. Difficulties of a purely technical nature have been surmounted and new roads made which have rendered hitherto untrodden fields accessible to research. As long as it was only a question of throwing light on certain of the grosser changes in the above-mentioned forms of organic mental disease, the old working-methods, with *Nissl*'s staining of the ganglion cells and *Weigert*'s staining of the glia and the medullary sheaths, were sufficient, but they failed when the investigation was to go deeper and the changes in certain tissue-elements were to be followed in more detail. In connection with the important part allotted to the *neuroglia*, of being not only the supporting substance of the central nervous system, but also an intermediate link between vessels and nerve tissue, an apparatus which in every form of destructive pathological change (»Abbau«) within this tissue shows a reactive accommodation, *Alzheimer*'s investigations have given us possibilities in different forms of mental disease of following the transformation of the glia, which differs according to the different nature of the pathological processes. *Alzheimer*'s observations have, in this way, been extended also to such »simple« forms of mental disease — we are thinking especially of dementia præcox — as were formerly regarded as functional.

The various metamorphoses of the glia cell, pathologically condi-

tioned by different morbid processes, thus become exponents of these. In certain acute stages, in rapid forms of dementia præcox, infection psychoses, paralysie générale and status epilepticus, the glia often reacts violently, and it is under these circumstances that the amoeboid glia cells, studied exhaustively by *Alzheimer*, make their appearance. The glia is thus represented in greatly varying ways, sometimes, in the more chronic cases, by fibre-forming cells (astrocytes), sometimes, in acute cases, by amoeboid cells and finally, in some cases, (paralysie générale) by both these cell-forms. From this *Alzheimer* infers that a thorough difference also exists in the reaction of the respective pathological processes on the nerve tissue, even though the knowledge of these differences is for the present hidden from us. Important phases, worthy of mention, in this methodical investigation are the relation of the glia to the nervous decomposition products, the lipoid grains and granules of various kinds which are absorbed in the glia cells or accumulated in the perivascular spaces and finally also found in the cells of the pia — all this representing different stages in the scavenging work of the glia.

Contemporaneously with these investigations which are based upon a delicate technique, the method of silver staining, worked out by *Ramon y Cajal* and *Bielschowsky*, has also opened up possibilities of following the pathological changes in the fibrillar structure of the ganglion cells and the nerve fibres.

Other scientists have attempted by purely physical means e. g. weighing the brain, and by exact determinations of the proportion or disproportion between the weight and volume of the brain and the capacity of the skull *(Rieger, Reichardt)* to arrive at an exact expression for the extent of the pathological changes. That this method will not bear comparison with the pathoanatomical method can be seen in the cases of brain-pressure followed by sudden death, where the physical examination was, indeed, able to indicate that the cause was a disproportion between the volume of the brain and the capacity of the skull, but only the pathoanatomical method was able to discover the immediate cause of this disproportion, whether it was an oedema of the meninges or a real acute swelling of the cerebral substance with the presence of amoeboid glia cells (Alzheimer). On this subject see the special part of this work, the chapter on dementia præcox.

It may finally be mentioned that the investigation, carried out especially by *Brodmann*, of the cellular architectonics in the cerebral cortex and the distribution of the different cellular types within dif-

ferent areas has hitherto not afforded the guidance which *Nissl* long ago expected, when he supposed different cell layers to be places of predilection for different kinds of poison effects. Generally speaking, the changes in the ganglion cells of the pathological preparations are but little specific in any respect. Earlier expectations of finding typical degeneration pictures for certain diseases and a typical localisation, according to the nature of the virulent or infectious matter present, have unfortunately not been fulfilled.

Among the other branches of medicine pathological anatomy has been able *directly* to advance clinical knowledge. Here the symptoms stand in a quite immediate causal relation to the organic changes, and develop in agreement with relatively simple and easily understood physicochemical laws. The different forms of disease are to a certain extent pathoanatomical conceptions. There is no such immediate relation between psychiatry and brain-pathology. Here, too, the parallel theory draws the boundary lines of research. Instead of a single series of causes, we must observe two series of phenomena with a parallel course.

It is true that there is no causation between the collateral files of these series of phenomena, no so-called *influxus physicus* from one sphere to the other. Yet we must suppose a reciprocity, so that certain anatomical and pathoanatomical signs must have a correlative in certain clinical symptoms. Before we dare hope to attain the slightest insight into the significance of the anatomical signs as parallel phenomena, each of these two series of phenomena must be mastered by science in a far more comprehensive manner than has hitherto been possible. The key to the anatomical cipher, which cerebral localisation has refused to us, must, if at all obtainable, be procured by indirect means. Let us take an example which will make clear the great difference in the position of the mental diseases towards pathoanatomy. Among the organic psychoses, paralysie générale (dementia paralytica) is probably the best known with regard to its pathoanatomical changes. Paralysie générale is the type of an organic mental disease. It also forms a transition to the cerebral diseases in the more limited sense. It is easy to convince oneself that the brain of a paralytic is in many respects morbidly changed. Macroscopically as well as microscopically, the number of pathoanatomical symptoms is striking. It is not as if these symptoms, or at least the majority of them, were in themselves

characteristic of dementia paralytica, but their quantity is characteristic. The general picture is, in the typical cases, completely convincing, and even if we have not had the opportunity of observing the clinical symptoms during the patient's life, our diagnosis is, none the less, equally sure. But if we demand greater conformity between the clinical and the post-mortal pictures, how meagre are the points of analogy as compared with what we are used to in our internal-medical interpretation of the pathoanatomical pictures! With regard to mental diseases we lack the key to an understanding of other conditions than the purely quantitative. In paralysie générale (apart from certain focal symptoms and a localisation of the morbid process to the projection centres) we merely find a certain quantitative correspondence between the cerebral atrophy and the dementia observed in life. We cannot trace the clinically different forms of disease to different forms of extension of the degenerative process, we do not know of anything characteristic of the simple form as distinct from the classical form, or of any localisation that is typical of the hypochondriac and depressive form as distinct from the manic form. We do not know where to seek the characteristic, we lack all data, all clues. What has been said here about paralysie générale is of course applicable also to dementia senilis, arteriosclerotic insanity, and other organic psychoses. The results of pathoanatomical research are a help to us when we have to verify or in doubtful cases to make clear the diagnosis post mortem, but for a deeper insight into the details of the clinical process, the anatomical pictures are insufficient.

While pathoanatomy in its relation to the phenomena of life will always have to take the second place, (which reduces its importance as an auxiliary science to psychiatry), serology and biochemistry, on the other hand, are able during life, and while the morbid changes in the tissues of the body are developing, to place their resources at the disposal of Research. Here again our theory of parallelism may serve as the basis of our suppositions. The psychopathological phenomena are a deterioration, a dislocation and derangement of the *normal psychological structure* which we make our starting-point in the consideration of the morbid phenomena. The biochemical processes in health and in sickness form an analogous case, and acquaintance with the biological chemistry of normal life, the metabolic process and the still in many respects uninvestigated details of internal secretion, will give us a basis for our future estimation of the disturbances which, by autointoxication, give rise to certain main groups of mental diseases.

It is indisputably in this direction that we may look for the development of psychiatry with the greatest expectations, and even though the results hitherto gained by our research are rather inconsiderable in spite of persistent efforts, yet a number of clinical factors and experiences seem, unsought, to direct us towards the investigation of the blood and the body fluids as the chief of the scientific resources at the disposal of psychiatry.

An intimate connection between certain psychoses and functional anomalies in certain endocrine organs, (especially the sexual glands and the glandula thyroidea) had long been surmised by clinicians. Hence the supposed discovery of organic albumen, foreign to the blood, in blood-serum in certain mental diseases, particularly dementia præcox, which *Fauser* published in 1912, was bound to create great interest.

Fauser's starting-point was *Abderhalden's* work »Schutzfermente des tierischen Organismus«, published in the same year. In this remarkable work, which in the spring of 1914 had already appeared in a fourth edition (editions 2—4 bore the somewhat altered title »Abwehrfermente etc.«), Abderhalden communicates his discovery of specific ferments in the blood when foreign organic albumen is present in the blood-plasma. The nature and chemical composition of these ferments are unknown and their presence in the blood can only be demonstrated through the capability of the blood-plasma to solve, digest, or as Abderhalden has it, »break down« (abbauen) a certain quantity of organic albumen, corresponding to the ferment. Consequently, it is the presence of the albumen in the blood in a more or less unabsorbed form that causes the formation of a specific ferment. Acting upon the assumption that foreign albumen was present in the blood of pregnant women, Abderhalden made his much discussed discovery of the serological »pregnancy test«. In other words, he claimed to have proved that blood taken from pregnant women is able to decompose placental albumen by means of a ferment under these circumstances. That this ferment was specific for this type of albumen was, according to Abderhalden, proved by a number of controlling tests; it does not affect any other form of albumen but that of the placenta.

Influenced by Abderhalden's work, *Fauser* now examined blood from persons suffering from certain forms of mental disease. Fauser's inquiry was directed mainly to dementia præcox and the supposition, long prevalent, that a dysfunction of the sexual organs was in some way connected with this form of mental disease. He followed Abderhalden's so-called method of dialysis, using the ninhydrin reaction on the dialysate, and thought he was able to show that the suppositions that had led him to these experiments were correct. In the great majority of cases of dementia præcox he found present in the blood a ferment with the specific property of being able to decompose the albumen substance of the sexual cells. The blood of men, according to his statement, gave a positive result with testicular albumen, the blood from women a similar result with ovarian substance. Very often, however, the blood of persons suffering from dementia præcox contained two specific ferments, one of which was adapted to testicular, or ovarian, albumen, the other to brain substance. In other cases again, Fauser found, in addition, a third ferment capable of decomposing thyroid gland substance while, finally, the combination of

specific ferments in certain cases indicated a combined dysfunction of brain and thyroid gland. A number of scientists tested the results published by Fauser; most of them were able to corroborate them, others took a critical view of the method from the very beginning. Continued testing did not turn out favourably for Fauser. The method of dialysis proved extremely difficult of application, the permeability of the capsules employed varied so much that parallel tests with the same serum and the same organ very often gave different results. The ninhydrin as indicator also encouraged the drawing of conclusions which were highly subjective, autosuggested, and the whole series of earlier experiments at last appeared in a strange light. After the period of feverish research inaugurated by Fauser, in certain quarters people felt inclined somewhat shamefacedly to turn their backs on the whole question. Yet it must not be forgotten that the reliability of the method of dialysis is not a *conditio sine qua non* for proving the correctness of Aberhalden's conclusion as to the appearance of proteolytic ferments when foreign albumen is present in the blood. He had also arrived at this conclusion by other roads, and before working out the method of dialysis, he had proved the existence of the ferments by the optical (polarisation) method and in other ways. Finally it should also be recognised that Fauser, notwithstanding his hasty inferences, has the honour of having introduced this method of research into psychiatry. In proportion as the method of dialysis can be improved, or other clinically serviceable methods become accessible, those promises will perhaps be fulfilled which now seem to us to have been precipitate. In connection with one of his first lectures on sero-diagnosis, Fauser incidentally remarked that »the gold is lying in the streets, all we have to do is to put out our hands and take it«. One of his critics (S. Loeb) soon raised the objection that the gold was »largely mixed with dross«. For our own part we would add that, as long as we may hope to find, were it only a vestige of precious metal, we ought to spare no pains in trying to secure it.

We have dwelt at some length on the application of Abderhalden's sero-diagnosis to psychiatry, because in its day this new departure seemed to involve the solution of several important questions regarding the connection of certain mental diseases with disturbances of the internal secretions. Though this presumption has not as yet been confirmed, it still remains — unproved so far, but claiming our attention. The well-known German serologist, *Kafka*, having a few years ago (1928) applied the method of Abderhalden in about 6 000 cases, attributes to it a lasting value.

The great importance of the *internal secretions*, not only for the development of our physical qualities but for our mental life too, has also been experimentally proved and clinically confirmed.

Incidentally we may mention the observations, recorded from Halle by *Abderhalden*, concerning the obvious influence on the development of frog-spawn etc., exercised by hormones from various endocrine organs, such as the thymus, pancreas, thyroid gland, hypophysis, and others. Thus, for instance, under the influence of the

thyroid gland there is increased metabolism which not only results in an accelerated metamorphosis in the animal, but also most clearly retards its growth. As soon as large quantities of thyroid gland substance are caused to influence the experimental animal, singular disturbances in its development become evident. The study of these is, according to Abderhalden, of the greatest interest. »It is conceivable that the strange malformations which may appear in the foetus of mammals and man can be ascribed to a deficient function of the endocrine glands (auf ein Versagen entsprechender Drüsen mit Inkreten zurückzuführen sind).« (Pflügers Arch. 1919).

Experiments on the higher animals, whereby the intimate reciprocity between mental life and internal secretions has been illustrated, deserve to be mentioned. Among these are *Cannon*'s discovery of an *increased secretion of adrenalin* from the adrenals and a larger percentage of sugar in the blood when the experimental animals (cats) were subjected to strong affective influence. Here also we must mention *Steinach*'s remarkable transplantation experiments on the testicle and ovary in castrated rats and guinea-pigs, by which he has succeeded in showing how sexual differentiation and the development of the secondary, physical as well as mental, sexual qualities are dependent on the hormonopoietic cells of the sexual glands. In the following we shall come back to Steinach's transplantation experiments, which seem to be of value as a guide to our understanding of the pathological aberrations of the sex impulse and especially of homosexuality.

Finally we may call to mind the numerous cases of evolutional or consecutive disturbances that accompany innate defects or acquired disorders in the functions of the endocrine system, such as myxoedema, Graves' disease, infantilism, eunuchoidism etc., and in all clinical observations of this kind we always find more or less pronounced emotional symptoms, moral and intellectual gaps.

It has proved, however, that the physicopathological problem of the relation between neuropsychical diseases and hormonal influences is far more intricate and complicated than was at first supposed. As an intrinsic part of *»the vegetative system« (Kraus)* the endocrine organs are of the greatest importance in establishing that deepest ground for psychical life which the said German author calls *»Tiefenperson«*. But in the vegetative system the influence of the hormones depends on a subtle collaboration with a great number of biochemical details which have not as yet been satisfactorily investigated.

The application of serology will in the future, directly or indirectly,

become important in the answering of psychiatric questions; the value of *Wassermann*'s reaction for the diagnostics of the luetic psychoses shows best that we may entertain hopes in this direction. It may be said, however, that the chemistry of metabolism and the investigations of blood, urine etc., which have been made in different forms of mental disease, have not as yet, in spite of all efforts, resulted in any discoveries worth mentioning respecting the pathogenesis. Here it is of great importance to be on one's guard, so as not to attribute a primary value to consecutive phenomena. This has, for instance, often been done with regard to the corpuscular alterations and anomalies during examination of the blood.

Psychiatry embraces one side of medical experience which, owing to its nature will after all always remain more or less inaccessible to the physicochemical resources placed at its disposal by the above-mentioned auxiliary sciences. It must therefore, first and last, rely upon itself and upon *clinical observation.*

It is clinical observation, this core of all psychiatric research, and the principal aim by which it is inspired, which we shall now consider in its most general features. It is the clinical work by the bed-side which must fill up the greater part of the psychiatrist's day. At the bed-side he encounters his chief task, and though the questions and problems which constantly start into being from his observations, demand occasional recourse to pathoanatomical, serological or chemical methods of examination, it must not be forgotten that the clinical examination is chiefly directed towards phenomena of a psychic nature and must continually adopt points of view which have a psychological basis, and are inspired by this as from a life-giving centre.

Hence, what we take as the domain of psychiatric research is diseased mental life in its various manifestations. We conceive these manifestations as abnormal on account of a more or less instinctive and immediate comparison with normal mental life, its perceptions, emotions and volitions, and a real understanding of mental diseases, their varying forms and symptoms, must be based upon an insight into the *structure* and *coherence* of normal mental life.

The mental life of our fellow-creatures is not accessible to direct palpation or observation, and it is unavoidable that our knowledge of the phenomena of mental life must be limited to what we know of

our own inner life, what we have experienced by the aid of *introspection*. Our conception of this is at first dim and vague, but during a constant exchange between outward and inward experiences, and by comparisons between ourselves and others, we weed out the subjectively unessential and grasp the objectively universal and in this manner, finally, a systematic whole is created, a structure of conceptions which is as firm in its frame as any continuity based on outward realities. This structure of conceptions is in a way the synthesis of all that we know about normal psychology and of the average man's usual manner of thinking his thoughts, experiencing his joys or sorrows, his pain and displeasure, of his usual manner of coming to a decision and carrying it into effect. But this structure of conceptions is, moreover, a kind of *standard*, by which we immediately and intuitively judge other people's as well as our own mental life and, as such, it is the psychological equivalent of what in ethics we call »conscience«. If we have, in this way, constructed for ourselves a standard or universal plan for the conception of psychical phenomena, we have then also indicated what is to be understood by the *normal structure*. Naturally enough we meet with varying degrees of divergence from the normal mental structure and disturbance of its balance, but we only encounter a limited number of typical reactions. The psychic equilibrium does not allow itself to be upset arbitrarily, in any direction whatever, but always along certain lines, which in their turn are conditioned by each individual's particular nature and structure.

Between the typical reactions, however, nature affords fluid transitions, a circumstance which *a priori* makes the supposition of mental diseases with sharply defined outlines — (real pathological entities) — a clinical absurdity.

Some of the divergences which are the subject of our clinical study of mental diseases are so obvious that it does not need any wide knowledge of the subject to comprehend their pathological character. They are just as evident as when we convince ourselves through our senses of sight and hearing that a vessel which has fallen to the floor is *broken into a thousand pieces*, or has been cracked or dented, according to its nature. In one case we are immediately convinced that a confused, agitated or heedlessly anxious person differs radically from the standard which we have adopted for our own conduct and that of our fellow-creatures. And in the other case, if a person quite unaccountably, in a seemingly conscious and orderly state of mind, suddenly, without any conceivable reason, as if urged by some irresistible force, commits an

act which strikingly contrasts with this standard, or if in a third case, owing to motives which are manifestly out of touch with all reality, he lets himself perform acts which make him every day more and more incapable of all social adaptation, then we are forced in either case, after instinctive comparison with the unwritten norm which is the law of our own behaviour, to the equally instinctive judgment that the compulsive conduct of the former is in some odd way *disintegrated*, that of the latter *deranged* by delusions. And according as our immediate opinion becomes verified after examination, we find the explanation of these modes of reaction in a characteristic disturbance of volition (katatonia) or in the presence of a more or less typical derangement (paranoia, paraphrenia).

There are, however, other cases, where similar reactions are present, but where the divergences from the normal are not so sharply contrasted, cases which in a quite special degree claim the experience and expert knowledge of the clinical observer. There is no sharp line of demarcation between psychical health and disease, but rather an undefined region, a border-land, shading off in both directions, and when we speak of pathological reactions, we should remember that these are not only represented by strongly marked extremes, often as unmistakeable as they are convincing, but also by intermediate forms and anomalies of a more vague character. The *border-land* between disease and health is exactly such a scale of intermediate forms, gradually fading into peculiarities of no significance. The correct estimation of such an intermediate form and the just appraisement of the psychopathic qualities of the patient, and their significance as limiting his social power of action, are tasks which often offer great difficulties. And these tasks make the greater demands on our skill, as the patient's weal and woe may to a considerable degree be dependent on the verdict of the physician. The consequences of his opinions are most obvious in legal cases, where divergences from the normal have led to an act which is punishable by law, or threatens to become detrimental to the economic position of the persons concerned, or may in any other way harm him or his family in some respect. Unfortunately, the way to the wider knowledge of the subject which is indispensable to a right judgment of these border cases and psychopathic anomalies of different kinds, and of more or less interest to forensic psychiatry, cannot be marked out in a text-book of psychiatry. *But it begins* with a study of the quite obviously abnormal and the pathological divergences from the normal structure of a more typical nature which meet us in the com-

monest forms of mental disease. It is these divergences which shall first be made the object of our attention; any further attainment leading to deeper knowledge depends upon experience, power of observation and again — experience.

If we pay attention to our own inner life, we can easily convince ourselves that mental life is a complex of phenomena which are in constant motion, and in this streaming mass of phenomena the constituent parts change and succeed each other without cessation. Like the body of a jet of water or a cascade, mental life possesses in addition to its dynamic qualities, a constant and unifying form; this form we call *consciousness*. And like the waterfall which in each moment of existence appears to the spectator as a visual entity and not as an infinite number of streaming particles of water, consciousness is to our inner observation not a number of elementary psychical phenomena, but a fusion of them all into a whole — what we call a *synthesis*.

In a state of *confusion* and in dementia of organic origin the synthesis is destroyed, and the structure dissolves, like a crumbling mosaic, into a chaos of small pieces and scattered fragments. The regulated coherences, *associations* (in the higher sense), which are conditioned by a combining synthesis, are dissolved, and this more or less complete annihilation of all coherence we call *dissociation*.

In most cases of mental disease, however, the structure of the mental life is wholly or partly preserved, even though it be in one way or another changed, rendered unstable, sundered or deranged.

As the course of mental life is always reflected in dynamic forms, which appear to our inner conception as a moving mass of phenomena, we find in the first place that the *tempo* of the motion shows individual differences in different individuals and in the same individual at different times. For this reason alone the structure of the mass of phenomena may undergo changes according to varying speed and other form-giving circumstances, and these changes and shiftings of tempo etc. which, within certain limits, may be regarded as variations of the normal, become when they pass these limits pathological phenomena and typical mental disease.

The mental diseases in which this dynamic fluctuation manifests itself as an obvious divergence from the accepted standard are principally found within the group of mental affections which we call the *manic-depressive*. Within this group we meet the forms mania and melancholia, which have of old been characterised as emotional disturbances; and there is indeed a constant reciprocity between the emotions

and the tempo of the mental processes, exaltation being accompanied by soaring thoughts, depression and anxiety by inhibition.

Consciousness being the existing form of mental life, let us examine more closely its content of ideas of a more or less strong emotional tone, which pass our introspection in an unbroken stream. We can then easily convince ourselves that these integrating elements, in spite of all their mobility, yet form the ground of something constant, the condition of a personal continuity. Penetrating from the surface into the depths, we find that a number of actual conceptions show a strong tendency to remain in the streaming mass and retain their actuality with a certain tenacity. It is an everyday experience that an idea with a strong emotional tone remains longer in our consciousness than one less strongly toned — indeed, it very often happens that, notwithstanding our desire to get rid of an unpleasant or at any rate persistent thought, we are obliged again and again to direct our attention towards it. In this manner every experience of importance to us, whether of a pleasant or a painful nature, dominates our consciousness to such a degree that it stands like a bulky block of thoughts in the way of all mental activity that has no connection with the emotionally toned occurrence. For a moment we may rid ourselves of the persistent memory, it sinks for a little while below the surface of the stream of thought, but it soon comes up again; it has the character of an irksome *complex* of ideas that splits and distracts i. e. (literally) drags our inner being asunder. Even in normal distraction we thus find a tendency towards a sundering of the process of mental activity. This sundering also affects our volition, and at such moments we are divided into two; while we automatically perform an action, our attention is directed towards something quite different. This disintegration, which in the *schizophrenic* forms of mental disease, hysteria and dementia præcox, goes far beyond the limits of the normal, is thus in itself not alien to the normal structure of mental life; on the contrary, in the extremely complicated character of this structure there lies a natural tendency towards disintegration and division of the functional stream, which can hardly be unknown to any of us.

From what has been said it follows as a corollary that emotions and affects also determine the continuance of conceptions within consciousness. Ideas of a very intense emotional tone easily become complexes and blocks of conceptions which, as it were, run aground in the stream, and whether they are visible or sink below the surface, act like rocks in a water-course, dividing and splitting the flow. But with this the *static* side of the course of mental life has not been exhaustively con-

sidered. Every idea or complex of ideas which in the shape of an event in our lives acquires a more or less transient or episodical importance, will always leave certain traces of its existence, according to its importance, memories which sink down and join the sediment of remembrances which form our personal experience. Thanks to the *memory,* there is thus a temporal continuity in everything that momentarily passes by. This sediment of memories and life-experiences forms, as it were, the bed of a river, over which the present flows in perpetual contact with the past. Our observations of ourselves and our fellow-creatures cannot be deepened into a real comprehension unless we take into consideration the strata of memories and experiences of the past; it is after all these strata which give colour, character, and direction to the flow of consciousness. Thus the collective life-experience of every human being forms a gigantic complex of a permanent nature, but this complex is not a dead sediment but a fund of living memories, out of which something from the past is recalled in each present moment, giving colour and a personal continuity to the present, while at the same time determining our personal attitude towards the future. The very centre of the composite inner experience, which is renewed in this way every moment, is our personality, or *our Ego.*

With regard to this life-experience, the personality and central part of the mental structure, a derangement, perversion and dislocation in a morbid direction diverging from all reality, fixes the lot of the paranoiac in a channel which deviates more and more from the normal. But here again we must bear in mind that in general people are much addicted to subjective interpretations and an egocentric evaluation of external circumstances, and that accordingly also the mental life of the paranoiac, in spite of its absurd derangement, can be traced back along a course of development the first stations of which do not lie outside the boundaries of the normal, even though, aware of the danger in the course taken and the presence of a predisposition, we were able to foresee the final issue in a chronic mental disease.

In the highly compressed presentation given above we have sought to give an indication of what is implied by the conception of a normal psychic structure and also of the chief directions in which we may expect deviations from the normal in clinical investigations of special cases. A more detailed description of the symptoms in these deviations, *the psychopathological elementary phenomena,* will be given in the following parts of this work. Their psychological classification may appro-

priately conform to the classification of the mental phenomena adopted for normal psychology: *emotions, conceptions* and *acts of volition.*

As psychopathological deviations can only be comprehended when seen against the background of the normal, and the particular details cannot be understood unless the corresponding normal psychological details are clearly apprehended, the description of the psychiatric phenomena will be preceded by a general psychological summary, which of course does not claim to be anything but an orientation with regard to such psychological conceptions as are indispensable to psychiatry.

In stressing the importance of psychologically schooled thinking for a rational conception of the mental diseases, we demand of psychology the modern scientific standpoint of which particularly *Wundt* has been the pioneer. We cannot, however, regard clinical experience as being of less importance for fundamental psychological knowledge than the experimental methods of research, as *Wundt* and his school seem to do. On the contrary, we consider that clinical study with its more passive methods, and Nature herself as the arranger of »experiments«, give better results than active intervention. It is with good reason that the German psychiatrist *Jaspers* writes: »If we compare what has been gained by (clinical) psychopathological experience with that which has been gained by experimental methods, we must frequently endorse the opinion of *Möbius,* when he characterises the psychological experiment thus: 'Alles was herauskommt ist, derb gesagt, Kleinkram'.«

There is a reciprocity between psychology and psychiatry, which places these two sciences in natural dependence on each other and which we should be able to utilise for the good of both. It is true that in the Scandinavian North *Höffding* and *Herrlin* have based their work on this reciprocity; and the latter especially has fully appreciated the importance of psychiatry as an auxiliary to normal psychology. To *Wundt,* on the other hand, such a view has always been alien. With regard to the brain and the anatomy of the nervous system, psychiatrists have always been pioneers; and it seems to us that, as the result of a far more intimate community of interests, a still livelier interchange between psychiatry and psychology might be expected to take place. That this has not been so is probably due to a very common misconception about there being a sharp line of demarcation between health and disease, and to a wide-spread opinion that mental diseases belong to a separate sphere, the phenomena of which lack correspondence with normal life. We have hinted in the foregoing that this is not the case, and anyone who will take the trouble to seek in the literature of psy-

chiatry for a confirmation of the favourable attitude of psychiatry to psychological problems, will certainly find that this literature is rich in useful suggestions, which have frequently been overlooked or not appreciated at their full value.

Here we observe, even at an early period, a firm grasp of what is essential, of *»real« psychology,* whereas one-sidedly speculative psychology was apt to lose itself in metaphysical determinations and conceptions. Psychiatrists found their experience of broken and disintegrated mental life a surer guide to the understanding of the essential features of the mental structure than introspection, which was easily led astray without these directive lines.

And indeed, it is found that the deviations from the normal which are predetermined for the pathological reactions owing to the peculiar dynamic and stato-dynamic ways in which mental life functions give us the outlines for a systematic *classification of the mental diseases.* As we lack universally applicable pathoanatomical data, the basis of classification here indicated is the only rational one.

As we have already attempted to show and shall subsequently explain in more detail, the modes of reaction here indicated are connected with the extremely intricate relations of equilibrium on which the undisturbed course of normal mental life is dependent. Apart from the radical structural dissociation which meets us in confusion, and which, indisputably, has a physiological analogy in the dissociation of mental life during sleep, the psychical equilibrium is, broadly speaking, threatened in three different ways, corresponding in our classification of the mental diseases to three abnormal modes of reaction: the *manic-depressive,* the *schizophrenic* and the *paranoid.* In the first of these, the disturbance of the equilibrium is predominantly dynamic, in the latter two rather stato-dynamic. The dynamic disturbances are of a simpler kind, generally non-malignant and acute and, on the whole, affect the mental life in an exclusively formal way. The stato-dynamic disturbances are of a more serious nature and are often chronic in their course, a circumstance connected with the profound importance of the static factor, *memory,* which comes into play here by a fixation of emotionally toned percepts and complexes.

The extreme complexity of the relations of equilibrium in mental life necessarily implies that in the three directions mentioned above the equilibrium may be *unstable* even within the limits of the normal, and even in sound persons we accordingly find a more or less definite tendency, rooted in constitutional disposition, towards one or other of

these modes of reaction. But this, so to speak, predestined inclination to topple over in a certain direction does not necessarily imply a fatal issue. As is well known, the German psychiatrist *Kretschmer* has recently divided all humanity into two of the abovementioned temperamental types, the cycloid (manic-depressive) and the schizoid (schizophrenic), strongly emphasising the normal nature of these types.

There is no sharp line of demarcation between health and disease, and every disease appearing in a certain period of life has its previous history (anamnesis) which often reveals to the investigator important traits and qualities which are a great help to our clinical diagnoses. In many a mental disease the onset is slow and insidious with vague indications, peculiarities of character and præpathological symptoms (prodromes). In the clinical examination of the mentally diseased we must accordingly attach great importance to the *status antecedens* and approach the patients more intimately than is usual in the case of other disease. Far more insight into character and a greater power of individualising are thus required of the psychiatrist than of the general practitioner. It is here a matter of extreme importance to gain the patient's confidence, to pursue the examination without unnecessary brusqueness, and by gentle tactics, to progress gradually from the surface to the depths.

The *status antecedens* includes *family circumstances, descent* and *heredity* and, as we shall see in later chapters, this part of the examination also often gives very valuable suggestions for judging of the nature of the affliction.

It is in some hereditary circumstance that we usually find the ultimate cause of the labile equilibrium referred to above, and the constitutional, i. e. congenital, predisposition for mental disease becomes apparent in the three different reactions which then manifest themselves. It is along these internal (endogenous) lines that most mental diseases develop. They are the expression of a functional imperfection in the nerve tissue of the brain and are ready to set in whenever the equilibrium, which has long been unstable, is upset in the direction towards which the predisposition has inclined, often owing to some trifling external occurrence. In the more extreme cases the immediate cause is often difficult to find. This causal factor may often be compared to the drop that makes the already filled cup overflow. In other cases it may be more obvious, and there is, of course, always an inverse proportion between the degree of fullness of the endogenous measure and the remainder which may be still poured in from outside

so as to fill the cup to the brim. Every circumstance that influences the nervous system detrimentally and that in one way or another, physically or mentally (sorrow, adversity), affects the brain of a person predisposed, adds to the already existing predisposition and furnishes the exogenous supplement required for filling the measure. We shall subsequently discuss in more detail the fact that sometimes the boundaries between exogenesis and endogenesis are vague and fluid.

Indubitably exogenous are of course such injuries, acutely affecting the nervous system, as arise from a trauma, poisoning or infection, as well as processes of a more slowly destructive nature which develop directly or indirectly in connection with a chronic infectious disease (syphilis). The case is different in those processes which probably originate in metabolic disturbances and arise from an impairment (dysfunction) of normal biochemical functions (dementia præcox) and not through any external agent. The nearest parallels to these degenerative processes are in part also certain praesenile and senile changes, as well as arteriosclerosis.

Here we may, perhaps, already touch upon the question whether and in which way the cerebral tissues react to all these injuries. Is the reaction specific, or is it one of the above-mentioned reactions which is released by the exogenous factor?

From what has been said above, it might be inferred that the latter is more likely to be the case when the endogenous factor predominates, the former when the predisposition is less prominent. The special position of the explicitly exogenous forms is, however, doubtful.

Though the question of a specific reaction still remains open, yet the supposition of certain authors *(Nissl, Kraepelin)* that the brain reacts to different poisons in a manner specific to these poisons, hardly seems to have been corroborated by close investigation of various forms of the psychoses of infection and intoxication (*Bonhoeffer, Kleist*). On the contrary, all experience may be said to have shown that the cerebral tissue will always react in *one* way only to every kind of violent interference with its functions, be it an external trauma or an intoxication. This reaction is *confusion, states of amentia* or *deliria,* and in extreme cases loss of consciousness. This leaves an exceedingly narrow margin for specific reaction. And it will perhaps narrow down still more if we consider the fact that the same confusion may also set in as an effect of psychical traumata, and that our dreams during sleep are the prototype of all confusion.

Consequently there is nothing incongruous in the supposition that

specific reactions varying in nature with the different injurious influences, do not exist, and that confusion, too, is a psychic mode of reaction which has its origin in the synthetic structure of mental life, in its quality of being a *unitas multiplex*, which under certain conditions falls to pieces and is deprived of its conscious form. Nor are the experiences derived from the more chronic poisonings and infection psychoses (alcoholism and paralysie générale) calculated to prove the existence of specific reactions in the proper sense of the word.

On the other hand it cannot be denied that in the exogenous or mixed forms a number of clinical detail-phenomena, organic sensations, hallucinations, etc. may occur which may reasonably be looked upon as a more specific stimulus effect of an agent active in the special case. Thus for the present it will be right to maintain the difference between endogenous and exogenous symptoms, unless we prefer altogether to avoid these terms and content ourselves with the expressions *homonomous and heteronomous* proposed by *Kleist*. These terms, though they do not touch directly upon the question of genesis, otherwise express much the same thing. We will return to this question in a later chapter.

Strictly speaking, our entire examination of the patient is »somatic«, inasmuch as our knowledge of his mental life is conveyed to us by the external physical medium. Hence, in the first place we observe all the expressive movements which reflect the state of his mind and help us to penetrate further into it. The expression on the patient's face, the play of his features, his gestures and peculiarities of movement, the more or less characteristic traits that manifest themselves in his speech and accents, the expressions of his moods and temper, give us important information about the fundamental traits of his mental condition. Further, his general conduct, his relation to his environment, the behaviour and actions which reveal his inclinations and opinions, his emotional and imaginative life — all these should be studied cautiously and with an eye for what is essential.

With regard to the somatic examination in a narrower sense, this should be carefully attended to, and every psychiatrist needs a thorough all-round medical training. The patient admitted to a mental hospital should feel from the very first that the psychiatrist is a physician, and his physical needs, ailings and sufferings should receive careful attention. Asylums and psychiatric clinics are essentially *hospitals*,

and the general medical treatment necessary to the state of the patient should be at his disposal in the mental hospital.

Very great importance should be attached to the *neurological* side of the examination, which in many cases is decisive for the knowledge and right comprehension of the nature of the disease. Certain organic forms of mental affliction (paralysie générale, lues cerebri, psychoses with brain tumours) as well as certain neuroses (hysteria, neurasthenia) and endocrine diseases (morbus Basedovii, myxoedema) should always be regarded quite as much from a neurological as from a psychiatric point of view. *Neurology* and *psychiatry* are sciences which are so intertwined and have such a large borderland in common, that they can only be separated by doing violence to the natural connection.

LITERATURE.

Kant, Immanuel: (Preface to) Kritik der reinen Vernunft. *Sömmering, S. Th.:* Über das Organ der Seele. Königsberg 1796. *Høffding:* Den nyere Filosofis Historie. *Deussen, Paul:* Allg. Geschichte der Philosophie. B. II. 3. *Flechsig, Paul:* Gehirn und Seele. 1896. Same author: Die Grenzen geistiger Gesundheit und Krankheit. 1896. *Bechterew, W.:* La psychologie objective. 1913. *Mach, E.:* Die Analyse der Empfindungen. 1903. *Du Bois-Reymond:* Über die Grenzen des Naturerkennens. 1886. *Vorworn, Max:* Allg. Physiologie. 1903. *Gadelius, Bror:* Psykiatri och hjänanatomi. 1904 (Svensk Läkaretidning). Same author: Själspatologiens ställning till det personliga. 1918. (Svensk Läkaretidning). *Jaspers, K.:* Allg. Psychopathologie. 1913. *Wundt, W.:* Die Grundzüge der physiologischen Psychologie. 1908—1913. *Kafka, V.:* Kap.: Serologie der Geisteskrankheiten. Bumkes »Handbuch« B. III. 1928. *Frisch, F.:* Das »vegetative System« der Epileptiker. Berlin 1928. *Kraus, Friedrich:* Vegetatives System und Individualität. Med. Klinik. 1922.

CHAPTER III.

THE SUBJECT, CONSCIOUSNESS AND THE STREAM OF THOUGHT.

On the strength of an inward, all but irrefutable, certainty we assume that our mental life is centred round a subject, an Ego, that *perceives, thinks, and acts.* These perceptions (sensations), thoughts and acts of volition are the subject of psychology, but the Ego itself cannot be subjected to investigation. The peculiar relation of the subject to the phenomena of personal experience, however, gives to this experience a special *form,* and this form we call *consciousness.* As an inward personal experience, consciousness is always something more than knowing and knowledge in the abstract. The word con-sciousness tells us that *sciousness* is not floating in the air. It is framed and held by the subject, as an image of the outer world is held by our eyes; it always belongs to someone who knows and is always an act of the subject.

To what extent, then, must we exclude the subject from our investigations?

When we speak of emotion, thought and volition as *acts of the mind,* which we briefly express in the three sentences *I feel, I think, I will,* the subject confronts us in so challenging a manner that we cannot disregard it. We should offend against the elementary laws of logic, were we to say that it does not exist, that it is simply a psychological delusion which we cannot trust. Let us say, instead, that this *Ego* is the necessary postulate for the sense and continuity of it all, though we cannot discover it within the field of our inward observations, for the natural reason that that which is a subject cannot at the same time be its own object.

To many psychologists, from *Hume* to *Wundt,* the Ego is simply a

comprehensive idea. According to this view we do not find the Ego within consciousness for the reason that we »cannot see the wood for trees«. This principle of totality does not rise above the level of the object and does not bring us within reach of the subject. The comprehension of the whole is still on the same level as each of its parts, but the relation of these parts to the subject is not the relation of the trees to the wood, but their relation to the owner of the wood. Consciousness with its content is not a section through the subject himself, but only a momentary phase of his existence as a feeling, thinking, and willing Ego. The subject, accordingly, cannot be a phenomenon which meets us within consciousness, and thus it evades all study. Its existence as an *abstract Ego* we must, however, without denying it, pass by; it lies beyond our consciousness.

In the same way as the sense-perceptions are an exponent of the outer world, the perceptions of our body and its many different parts and organs are an exponent of an inward personal centre within us; and with their synthesis of obscure sensations (the body-sensation or cenaesthesia) they form the essential part of the inward experience which we call the *empirical Ego*. »Organic sensations and emotions give us the Ego in quite the same manner as visual and tactile sensations give us the objective world. But just as the visual and tactile sensations *are not* the outward things, so also we cannot say that the organic sensations or emotions, or the optical images of certain parts of our body visible to us, are our Ego which is perceived through them, and which seems to become changed when they undergo important changes« (Ebbinghaus).

The assumption of an abstract Ego is based on logical grounds. On the other hand, the existence of a concrete or empirical Ego rests on introspective observations of the phenomena which we witness within the bounds of consciousness. These observations fully explain the *perception of an Ego* and the uniform sense of personality that accompanies every mental act and unites the details of the mental process into a whole. It is true that this perception gives the same results as the above-mentioned logical conclusion, but it can be explained independently of this conclusion and does not force on us the assumption of an abstract Ego, the existence of which is chiefly proved to us by a logical demonstration. We shall revert to the question of »the empirical Ego« in a later chapter.

The field of psychological research is limited, like the scope of our knowledge in general. But this very limitation makes science more or less manifestly dependent on *philosophy*. This is particularly true of psychology. Here we feel more strongly than ever the need of widening our outlook into a theory of life, in the light of which many things, otherwise incomprehensible, become significant. The content of consciousness, the emotions, perceptions and volitions, would lack every *raison d'être* if we did not start by assuming a subject who feels, thinks and wills, and who in these three directions reveals different forms of action and modes of operation. Without assuming this, there would be nothing left but a chaos of fragments without a vestige of the unity which we can still always observe in the shifting diversity of phenomena in ourselves and our fellow-men.

The same demand for a uniting, combining and life-giving principle asserts itself in biology. The late Professor *Bang*, of Lund, in an inaugural address in 1904 answered firmly in the negative the question whether the results of bio-chemical research go to prove that life can be a chemical problem. But with this *Bang* dismisses the whole question and remains true to his scientific agnosticism. The ability to check the scientific demand for clearness before it enters upon paths leading to uncertainty is, strictly speaking, purely a matter of temperament. But the impulse for such escapades, to which the agnostic holds up a warning finger, may nevertheless be felt differently for practical reasons. What the biologist experiences as a moderately disagreeable sensation, reappears in the research work of the psychologist as a vivid feeling of dissatisfaction, and though the former may keep a cool head and remain an agnostic, it is not certain that such an attitude can be borne by the latter. For is not life, or the wondrous something that cannot be explained as a mechanical property in the protoplasm, the source of that which appears in the nervous system of the higher animals and man in richer and richer forms and shape, and which in them we call mind or soul? Tied to his bio-chemical view, the biologist may entrench himself in his agnosticism, when only a negligeable quantity of this mystery is concerned. The psychologist meets it in mightier forms, which claim more respectful attention.

Consciousness. The principal task of psychology is to study the phenomena that meet us within our consciouness. To go outside consciousness is useless and is an impossibility. Everything that is a part and an object of our experience comes within our consciousness. We are conscious of outward happenings, natural phenomena and physical facts, and we are conscious of those inward experiences which we call emotions, thoughts and acts of volition.

Owing to confused, partly metaphorical interpretations, our conception of the concept of consciousness is often hazy. It comes natural to us to conceive of consciousness as a kind of room, or stage, where ideas, emotions and volitions pass in and out, enter upon the scene and make their exit only to come forward again. This view of consciousness,

as *Wundt* has pointed out, is utterly false. Consciousness is no stage which is still there when its living content has disappeared. It only exists with this content and is nothing *per se*. But to its content also we cannot assign any permanence. The earlier view, held by *Herbart*, that ideas are a kind of fixed quantities, has for good reasons been abandoned by modern psychology. It is an error to picture ideas as if they were acting persons, who come and go. Ideas are fleeting phenomena, momentary processes, not fixed objects. Within mental life all is movement, and it is, strictly speaking, wrong to say that an idea comes back. It is never the same idea, and this also applies to other psychical phenomena. In everything there is perpetual change, everything flows, and the sum total of the ever changing content in each separate moment of existence constitutes consciousness. Against the mind-stuff theory of earlier times, modern psychology posits the actuality of psychical phenomena as the only thing within reach of our experience.

Tacitly assuming the existence of a subject, we may regard consciousness as a kind of *inward field of vision*. It is so far an analogy to the range of vision of our sight, as within its bounds it receives with varying degrees of clearness all the perceptions, emotions and ideas that are actualised to us and our »inner eye«. When an idea is brought into the focus of consciousness, this »adjustment« gives to it its greatest possible clearness and distinctness. It is this adjustment, equivalent to the fixation of outward objects, which *Wundt* calls *»apperception«*. Apperception is an act of volition and is accordingly accompanied by certain feelings of activity. This active attitude of ours in apperception is called *attention*. Consequently, attention is characterised by the same feeling of tension as accompanies all other volition, and the essential features of this feeling are certain purely physical sensations (organic sensations).

The span of attention was tested experimentally by *Wundt* and his school, the object being to ascertain how many units of perception simultaneously present could be apperceived by consciousness at a certain moment. These tests can of course be undertaken by means of different senses, but visual impressions seem best suited for the purpose. If an instantaneous image consisting of a certain number of disconnected letters (m, p, x, z, k, g), or figures, is exposed in specially adapted instruments, so-called tachistoscopes (flap tachistoscope, mirror tachistoscope, *Wirth)*, the following observations may be made. With regard to a certain number of isolated stimuli, for instance letters which cannot be apprehended synthetically as a word or a name, experience has shown that our consciousness can perceive simultaneously

and retain about *six*. For the senses of hearing and touch too we find the maximum of simultaneously perceived units of perception to be six, provided that the sensory organs are in a fully physiological condition. However, this by no means expresses the *span of consciousness*, as self-analysis in such experiments will show, for in addition to the clear and distinct impressions of certain perceptive units (letters), other impressions of a vaguer nature simultaneously enter our consciousness, at the same time as certain ideas, often quite complicated, or certain emotions, may be faintly present.

The so-called *subconscious phenomena* have been much debated, and declared non-existent by many psychologists. And it must be admitted that a great deal of confusion has prevailed with regard to this conception. In the first place it is evident that consciousness, between its focus and its periphery, exhibits numerous degrees of distinctness. In apperception the ideas are raised to the greatest possible clearness; they have then reached the focus of consciousness and are actual in the highest sense of the word. But besides the ideas present in the very focus, there are other ideas within consciousness, which, as it were, keep in the shade, their actuality growing less and less distinct till they reach the boundary where they cease to be perceived. This boundary line is extremely vague, and many ideas which thus remain *unnoticed, or are repressed* or *set aside* continue to influence the conscious processes. Most of the phenomena which we call *presentiments*, moods, and so on, are such ideas or emotions, consigned to the periphery of consciousness, thrown into the shade, but still actual. The importance of such unnoticed ideas and the emotional elements combined with them must not be underrated, they are the vehicles of aspirations and inclinations which influence and govern the course of conscious events. We know that the course of our thinking is such that the actual details are gradually brought into the focus of consciousness, while the leading ideas, the ideas of purpose, remain in the periphery. Unnoticed, like stage managers hid in the wings, they determine the direction of our thoughts or the choice between different motives. Hence, they need not be conscious in any high degree to make their influence felt, and it is this lower degree of consciousness which, among other things, we designate by the term »subconscious«.

Further, the inclinations, tendencies and aspirations which dominate a human being may be of such a conflicting, and mutually hostile nature that the one, so to speak, shuns the other. This drives them out of sight of each other so that, while a legitimate line of thought, ap-

proved of by the subject, fills consciousness, another may continue and develop in the dark corners, thanks to the feeling-tone by which it is supported. It may happen that under such circumstances (hysteria, schizophrenia) there is a still more valid reason for speaking of subconscious phenomena, and we may even fail to find a better name for phenomena which are of a mental nature, actual and active and yet not conscious. What will subsequently be described as »split personality« and »obsession« will exemplify cases of this nature.

If we accordingly keep to the term *subconscious* for these mental phenomena which are either unnoticed and repressed, or actually suppressed, it will scarcely be deemed reprehensible.

The compass of consciousness and the compass of the psychically actual generally coincide. As has been already mentioned, unnoticed phenomena may, however, be exceedingly actual and exercise the greatest influence upon the conscious processes; their actuality may be compared to the ultra-violet rays in the spectrum whose effects are apparent in spite of their »invisibility«. Under such circumstances, too, there is reason to speak of subconscious phenomena. Whether the expressions »unconscious« or »ultra-conscious« are to be preferred is merely a matter of taste.

Strictly speaking, the subconscious phenomena exist *for us only* after they have become conscious. The term »subconscious« is a kind of retrospective *conjecture* with regard to the earlier stages of a psychical process which have developed without the control of our consciousness. When an association series, a-b-c-*d*-*e* becomes conscious only at *d*, we assume that it has been subconscious in the a-b-c stage. To dismiss this assumption as absurd is indubitably a very ego-centric way of reasoning, to a certain extent recalling the so-called solipsismus, which negates the existence of other selves besides one's own self, simply because these cannot be immediately perceived *by me*. If consciousness is equivalent to subjective tone, the subconscious phenomena are such as lack this tone. I have — like *Bleuler* — long held the opinion that mental activity goes on independently of the subjective tone. In the pursuit of his intentions and aspirations the subject need not be actually present. Our emotional life, our interests, our wishes and more or less passionate desires, have always the power to keep the mental processes at work. The associative evolution of thoughts is not only a subjective but an inherent mental capacity in general, peculiar to psychical activity, subconscious as well as conscious. Confluent with the com-

prehensive complex of organic sensations and memories which constitute our empirical Ego a subconscious conclusion or inference enters our consciousness. Association with the Ego-complex of course makes an inference conscious.

Many a modern psychiatrist, too, (e. g. *Ziehen* and *Bumke)* would, like *Wundt,* deny the existence of subconscious mental processes. On the other hand — as we shall see in Chapter XVII — *Sigmund Freud,* in agreement with the doctrines of his »Tiefenpsychologie«, assumes a most complicated structure of the subconscious realm of the human soul.

To indicate the boundary line at which a perception, an idea, etc., becomes conscious, German psychologists make use of the terms »Schwelle« and »die Schwelle des Bewusstseins«. It seems to me that the term »line of distinctness«, though not as expressive as the German terms, nevertheless is to be preferred to the expressions »threshold of consciousness«, »threshold value«, and others, which are too metaphorical.

As is well known, *Herbart* (1776—1841) was the first to introduce the expression »Schwelle«, and he called the boundary which the ideas seem to cross when entering consciousness »Schwelle des Bewusstseins«. The conception »Schwelle« was later adopted by *Fechner* (1801—1887) as a measure of the perceptions. This conception was also accepted by *Wundt,* and has been further developed in his methodical and experimental investigations into the elementary phenomena of mental life. In these experimental investigations, the *stimulus* is a constant and continually varied starting-point. When changes in the intensity of perceptions with varying stimuli are to be determined and measured, all these changes take place between two boundary lines. The lower line is designated by *Wundt* as Reizschwelle (stimulus limit), the upper line as Reizhöhe (stimulus height). These conceptions are applicable in all kinds of stimulus and perception qualities. Thus we can denote the number of vibrations which corresponds to the deepest perceivable tone as the stimulus limit of tone-perceptions, and that of the highest perceivable tone as the stimulus height of the tone quality. Similarly, the smallest perceivable time interval between two impressions (stimuli) is designated as »Zeitschwelle«, the smallest impression of space perceived by the senses of touch and sight as »Raumschwelle«; while the upper boundary value beyond which we cannot discern changes in the size of the time-interval or space relations in question is termed the stimulus height (Reizhöhe) for these perceptions. By stimulus-sensibility *Wundt* means the position of the stimulus limit. The lower this limit is placed, the greater, of course, the stimulus-sensibility.

The stream of thought. We have dwelt on consciousness as the constant form for the movement of mental life. We will now pass on to the moving content of consciousness.

The views of the content of consciousness have varied largely in the course of time, and in the account of its manifold phenomena the details were long the principal matter while the continuity was regarded as of secondary importance. Personal inner experiences were gathered together, and a tripartition of the content of consciousness into *emotions, ideas* and *acts of volition* was agreed upon and is still in practice; but, what was worse, after this introspective centrifugalisation, and after the remainder had been thrown away as being of no value, the elementary phenomena thus found were assumed to be a kind of constant form-elements (*Herbart*). Even more recent experimental research, with its over-scrupulous desire to be scientific, will in some measure have contributed to divert the interest in the mutual relations of the details as parts of a moving whole. A one-sided associationist psychology has interpreted these mutual relations in a purely mechanical way and the psychic processes have been regarded as a play of physical forces and affinities. This mechanical outlook was long prevalent, and it is the merit of *William James, Wundt, Høffding, Bergson,* and other psychologists of later times, to have broken away from this view.

Thus we must regard the physical elementary phenomena as parts of an ever-flowing continuity. How would it be possible to form a theory of the blood, if we only considered its form-elements without taking into account the blood-plasma, or even the vital relations of the blood-mass? And, further, the ideas, the form-elements of associationist psychology, are no fixed units, and their mutual relation to each other it not an addition or a mechanical process (Wundt).

William James was the first to prove in a convincing manner that the psychic process is an unbroken continuity. It is not composed of parts joined on to each other, it is a continuous and incessantly flowing organic connection. A »river« or a »stream« are the metaphors by which this current is most naturally described. *James,* therefore, has chosen to characterise it as »the stream of thought«.

Not only the image of the outer world which we create for ourselves, but also the peculiarities of the language are apt, according to James, to lead us astray and obscure the flowing and reciprocal nature of the thought-combinations. We are accustomed to see one object by the side of another, to join word to word, but no such rhapsodical phenomena occur within our consciousness. On a superficial introspection the real relation will easily be overlooked, especially in cases where a preceding element vividly *contrasts* with a subsequent one.

It is forgotten that the very feeling of a contrast contradicts every possibility of an interruption.

James writes: if a deep silence is suddenly broken by a violent noise, an explosion or a thunder-clap, it is evident that the feeling of the silence does not cease the moment the outward silence is broken by the noise. Beside the awareness of the noise, the awareness of the silence still continues, and what we hear the moment the thunder crashes is not thunder *pure*, but thunder breaking upon silence and contrasting with it. Our feeling of the objective thunder in this case is quite different from what it would be were it the continuation of previous thunder. We believe the thunder to abolish the feeling of silence, but the contrast arises by the fact that in the awareness of the thunder an awareness of the previous silence continues; and it would be difficult to find in human consciousness a perception so limited to the present moment as not to continue and blend with what follows.

According to James, this conclusion is supported by brain-physiological observations, as there are reasons for supposing that every central process has a duration, during which it reaches its maximum at a certain pace and then fades away, quickly or slowly. If, within the cerebral cortex, a certain stimulation process, *c*, as the substratum of an actual mental act has been immediately preceded first by the stimulation process, *a*, and then by another, *b*, it would be most correct to designate the process which has taken place during *c* as cb_a, or in other words, we have to assume that each »section« does not catch only *one* but whole series of stimulus waves running side by side.

Hence, the stream of thought has no interruptions, and consciousness (under normal conditions) does not experience any feeling of disintegration. But in this stream we can clearly discern certain distinct parts, which James calls »substantive parts«, from something else, less definite, which sustains the connection and forms the mediatory link between one thought and another (»transitive parts«). An essential portion of these indefinite transitive parts consists of an after-effect of what has just been experienced, for alongside of a thought or a complex of thoughts which has commenced, there is always the echo of thoughts which have previously filled consciousness. Much of what we call moods are fading mental phenomena of this kind, and the echo of a past idea with its particular feeling-tone is also expressed in the copulative transitions of the language; all conjunctions, every small *and* and *but*, possess significance as the vehicles of these echoes in the stream of thought.

James has strikingly exemplified the existence in our consciousness of these inarticulate transitive perceptions. »Suppose three successive persons say to us: 'Wait!' 'Hark!' 'Look!' Our consciousness is thrown into three quite different attitudes of expectancy, although no definite object is before it in any one of these three cases. — — Meanwhile we have no names for the psychoses in question but the names hark, look and wait.« »Suppose we try to recall a forgotten name. The state of our consciousness is peculiar. There is a gap therein; but no mere gap. It is a gap that is intensely active. A sort of wraith of the name is in it, beckoning us in a given direction, making us at moments tingle with the sense of our closeness and then letting us sink back without the longed-for term. — — And the gap of one word does not feel like the gap of another. — The rhythm of a lost word may be there without a sound to clothe it or the evanescent sense of something which is the initial vowel or consonant may mock us fitfully, without growing more distinct. Every one must know the tantalizing effect of the blank rhythm of some forgotten verse, restlessly dancing in one's mind, striving to be filled out with words.«

Thus the less palpable and indefinite intermediary between the substantive parts of thought may be infinitely varied and in spite of its vague and uncertain nature exceedingly rich in matter. But all this was overlooked in the earlier association-psychology which only reckoned with the more obvious form-elements.

To William James we must indubitably assign the credit of having rehabilitated the continuity of mental life, after it had been miserably chopped into chaff by earlier psychologists. There is no gap whatever between the substantive parts of thought, it is filled by waning phases merging into each other, which in the continually varying form of feelings, moods or anticipations keep the stream constantly flowing.

If, for the sake of greater clearness, we once more make use of the metaphor of the blood with its fixed ingredients and its plasma, we may accordingly say that the form-elements of consciousness swim in an undefined something, the constituents of which are indistinct perceptions of endeavour, of pleasure or pain, of vague moods, or distinct additions of feelings and affects all of which, while giving tone and dynamic qualities to the ideas, forms the uniting »plasma«, the condition for the continuity and unity of the stream of thought. It is surely unnecessary to point out that this metaphor is in many respects incomplete and halting. The form-elements of consciousness are not, like those of the blood, limited organisms and fixed ingredients. On

the contrary, they are fugitive, continually dissolving and again renewed, and the plasma of the stream of thought is not of a different nature to that of the form-elements, for we find here the same constituents, though in a vaguer and less definite, as it were, amorphous state.

Our interpretation of the course of mental processes would not, however, give us a true insight into the development of the higher psychic phenomena, were we to stress merely the transition. It is true that all is flowing, but it is none the less true that *all remains*. In addition to the dynamic point of view we should accordingly emphasise the *static* factor. The formula of mental life is not purely dynamic but more correctly, *stato-dynamic*. This will, indeed, appear from what has been said above, for the relations between the successive, substantive stages of thinking are essentially of a static nature. They consist of constant stimulus-waves which have not ceased to move when a new movement begins at some other point. It is the waning and echo of the past, which form the transition to the present and ring in the future.

If, as a parallel theory, we turn to the brain-physiological point of view, we may trace mental activity back to *two* organic dispositions inherent in the cortical nerve-tissue which, to all appearance, are the vehicles of the most essential postulates of mental life. These postulates are the irritability of the cerebral cortex and its particular plasticity or power of holding the impressions and afterwards rendering them in the same manner as they were first experienced. The dynamic principle is attached to the irritability, the static principle to the plasticity. The dynamic factor of mental life is the continuous current of perceptions, emotions and ideas, the static factor is represented by *memory*.

This static element causes certain *permanent* and *recurrent* factors to assert themselves in the flowing stream and to exercise their effect on the course and direction of the stream of thought. The essential property of memory is conditioned by an intrinsic power in the nervous substance of retaining received impressions latently, and of actualising them when the stimulus is repeated. Owing to this static property there is a constant deposit of memories and experiences going on within the stream of thought. All this forms an ever increasing residuum, a gigantic complex of hoarded life-experience, end above its latent or but vaguely perceived mass of memories the stream of thought flows on; and, as we shall subsequently see, it conditions the personal continuity, the

empirical Ego, as well as the form-elements, simple or complicated, which are constantly freeing themselves from the mass of memories and rising to the surface, once more to be actualised and in their turn

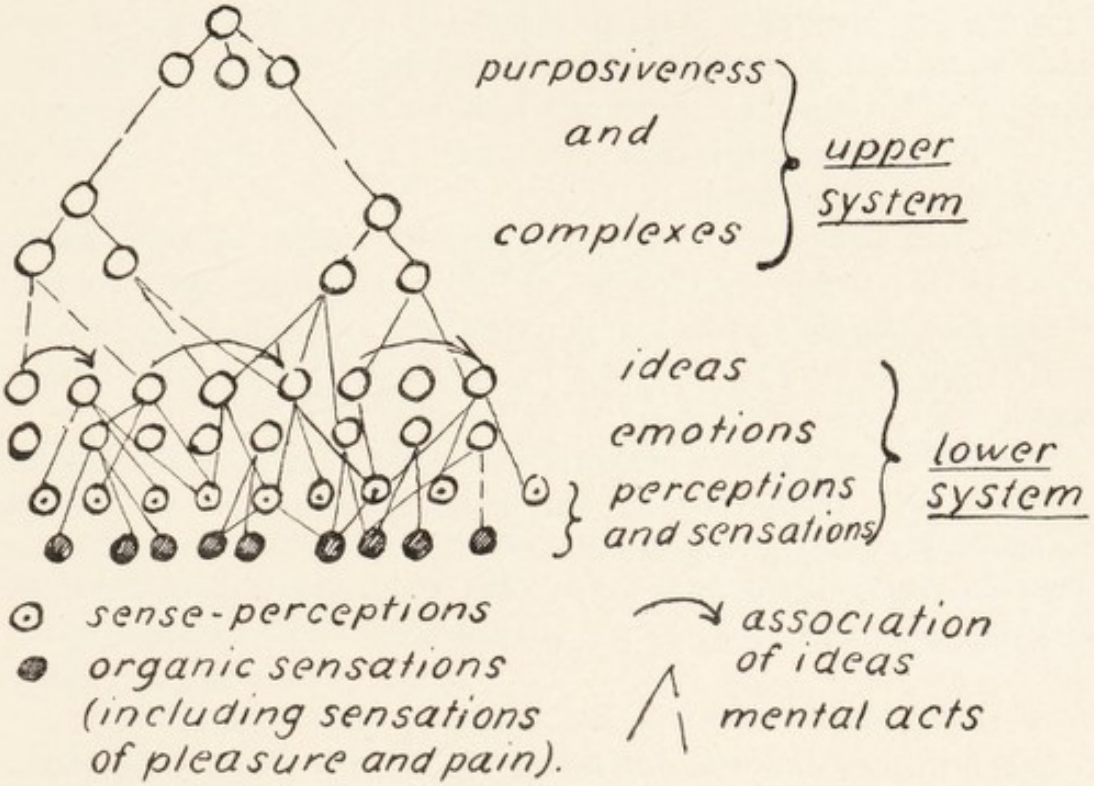


Fig. 13. Adapted from Jaspers.

become assimilated with outward impressions, thus forming new experiences.

The most elementary among the stato-dynamic formations of the stream of thought are *sensations*, *perceptions* and *emotions*. In the next place we meet with the form-elements which we call *ideas*. On this lower level, in Fig. 11 characterised as the lower system, the formation of the form-elements is determined by certain elementary tendencies of attraction or assimilation which reveal themselves in the primitive, incessantly combining and as quickly separating psychical processes which we rather crudely sum up under the term *association of ideas*.

Even on this lower level the active forces are not of a mechanical nature. Here we already meet with a first intimation of those mental acts, *thought* and *volition*, which in a more highly developed manner appear in the upper system, though thought as yet only reveals itself as a constellation (see further, p. 193), and volition still largely keeps the form of a *reflex*.

On a *higher level (the upper system)*, we meet with those more complicated formations which we call *purposiveness* and *complexes*. The complexes are combinations of more elementary psychical formations. These complicated psychical phenomena enter into our thinking in a more representative way. As vehicles of our endeavours, our aims and interests, they move in endless series and realise the mental acts, thought and volition, by virtue of which the stream of thought advances. With purposiveness these acts attain a form, conscious in the higher sense of the word.

We will now more closely examine the various detailed phenomena of the stream of thought, the above-mentioned stato-dynamic formations, and only after having considered separately the mobile details of mental life shall we again insert them in the synthetic activity which takes shape in *thinking*.

Side by side with our detailed study of the psychological phenomena we will always consider the pathological changes which these details may exhibit in disease, a parallel study of the normal and the abnormal being likely to bring out the psychological details of both in stronger relief.

LITERATURE.

Wundt, Wilhelm: Grundzüge der physiologischer Psychologie. 3. Auflage. 1908—11. *James, William:* Principles of Psychology. 1891. *Stern, William:* Die Psychologie und der Personalismus. 1917. Etc. *Bumke, Oswald:* Das Unterbewusstsein. Eine Kritik. 2te Aufl. 1926. *Freud, Sigmund:* Gesammelte Schriften.

CHAPTER IV.

SENSATIONS, PERCEPTIONS AND AFFECTS. WHAT IS THE SIGNIFICANCE OF THE ENDOCRINE ORGANS FOR THE EMOTIONS?

What is a perception and what a sensation? Can the perception be disintegrated into sensations and entirely resolved into such elements? These questions have long occupied psychologists without any definite result being gained.

Even the psychology of emotions is in a state of uncertainty as regards the very groundwork. For psychiatry, however, the psychology of the emotional life is of the greatest significance, and as, on the other hand, an all but fundamental importance for our knowledge of the genesis of the emotions must be ascribed to psychiatric experience, we have necessarily to dwell on our attitude towards these questions at some length.

It is generally agreed that sensation is a psychic state of the greatest possible simplicity, not further divisible by our analysis (Alfr. Lehmann), and every perception is the effect of a stimulus acting in various ways on our body. These stimuli are either received from the outer world, causing physiological changes in the terminals of our sensory nerves, or else they consist of certain physiological changes in the interior of the body which are there perceived by peripheral nerve elements of different kinds. In the former case, we speak of sense-perceptions, in the latter of organic sensations.

The *sense-perceptions* (from vision, hearing, smell, taste, and touch) have a mainly intellectual significance for our mental life, as they form the nucleus of our ideas and are the material with which our intelligence works. The organic sensations, on the other hand, the often vague

and indistinct sensations from the different parts of the body, from muscles, joints, skeletal parts and viscera, play quite a different part in our consciousness. Here they keep more in the background and have in the main the nature of an indistinct accompaniment to our ideas.

This indistinct accompaniment which — to use a metaphor borrowed, if I remember right, from Ribot — is always with us like a distant humming from life's many workshops inside our body, is of fundamental importance for our conception of ourselves and our (empirical) Ego. But from this vague sum total of an infinite number of bodily sensations, which in every moment of existence forms a riverbed or undercurrent in our consciousness, certain complexes of organic sensations again and again disengage themselves and, owing to their greater intensity, come into the foreground. It is these complexes of organic sensations which here interest us, and their importance to our emotional life has long been a matter of dispute among psychologists.

While psychologists of an older school, as a rule, emphatically denied that the organic sensations form constituent parts of our emotions, certain psychologists have of late accorded to the organic sensations the very greatest importance for the genesis of the emotions and above all of the affects.

As far back as 1872 *Darwin* writes: »Most of our emotions are so intimately connected with their forms of expression, that they hardly exist when the body remains passive.« And in his book on »The Expression of the Emotions« he quotes statements by *Gratiolet, Bain, Spencer,* and others, which have the same purport.

The Danish neurologist *Carl Lange* was, however, the first to develop this theory consistently in his work on the emotions (»*Om Sindsbevægelser,* 1885). Carl Lange submits the chief forms of emotion, grief, joy, fright, anger (embarrassment, suspense) to thorough investigation, and finds that in them all there are certain physiological phenomena which determine the character of the emotion. *Grief* is marked by a paralysing action on the muscular apparatus and a constriction of the fine blood-vessels, *joy* by exactly the opposite phenomena. In the emotion of *fear* there are added to the symptoms which accompany grief, a convulsive state of the involuntary muscle groups in the heart, vesica, intestine, a feeling of tightening in the throat, and so on; whereas the phenomenon of *joy* differs from that of *anger* in that the vascular dilatations and the increased innervation of the voluntary muscle apparatus assume greater dimensions in anger and give rise to more discordant and violent expressions than in joy.

After this analysis Lange asserts that our emotions are transmitted by the vasomotor centre in the medulla oblongata. When this centre is touched by a stimulus arising from the sensory centres or thought centres in the cortex, the blood distribution is changed and a wave of sensations from the respiratory and circulatory organs, from skin, muscles and mucous membranes etc., reaches our sensorium, and it is this wave of sensations that constitutes our emotions. »We owe«, *Lange* writes, »to our vasomotor system all the emotional side of our mental life, our joys and sorrows, our happy and unhappy hours; if the impressions that affect our senses had not the power of setting them in motion, we should wander through life without feelings or sympathy; all the impressions we receive from the outer world would only enrich our experience and increase our knowledge, but would neither rouse us to joy nor to anger, never bend us down in sorrow or fear.«

Somewhat earlier than Lange, *William James* had expressed a similar opinion. In his »Principles of Psychology«, 1891, he puts it in the following words: »If we fancy some strong emotion, and then try to abstract from our consciousness of it all the feelings of its bodily symptoms, we find we have nothing left behind, no 'mind-stuff' out of which the emotion can be constituted, and that a cold and neutral state of intellectual perception is all that remains.«

The Lange-James theory soon met with opposition. *Alfred Lehmann* investigated the question experimentally and for this made use of the plethysmograph. On the strength of the curves published by him he sought to prove that the fluctuations in volume of the arm, and at the same time also the organic sensations issuing from the vasomotor centres, only appear when the sensation of pleasure and pain, bound up with a sense-perception, has made itself felt. Thus, according to *Lehmann,* a primary, centrally conditioned sensation of pleasure or pain is immediately connected with every sense-perception and every idea. To this pleasurable-painful sensation the various complexes add themselves secondarily, and then the pleasurable or painful sensations swell into the intense inner experience which we call affect.

While *Alfred Lehmann* in his conception of the emotional life only assumes *one* immediate component, independent of all visceral or peripheral sensations, the pleasurable-painful sensation, *Wundt* assumes the existence of two other components besides the pleasure-pain sensation, and those he calls »Erregung — Beruhigung«, »Spannung — Lösung«.

These components — they may be termed »unrest — quiet«, »tension — relief« — have been tested experimentally by Titchener, Hayes and others, and, as a rule, they have not been acknowledged as being original emotional states in the same

sense as pleasure-pain. In the latest edition of his great work »*Die Hauptgesetze des menschlichen Gefühlslebens*« (1914), Lehmann sums up his criticism of Wundt's so-called three-dimensional hypothesis of emotion in the following words: »The hypothetical contrasting sensations »unrest — quiet«, »tension — relief« are not, like the sensations of pleasure and pain simple emotional components. The pleasure-pain sensation always arises directly and immediately with every impression or perception, whereas it has been manifest in every case where a careful analysis has been possible that the perceptions »unrest — quiet«, »tension — relief« are either conveyed by associations of different kinds, or by organis sensations. Accordingly they cannot be looked upon as specific emotional elements, but are merely modified and differently toned pleasure — pain sensations.«

In order to examine to what extent organic sensations and visceral sensations play a part in the genesis of emotions, *Sherrington* cut through the spinal cord of a dog in such a manner that the vagus and the sympathetic nerve, the vasomotor apparatus and all skeletal muscles lying behind the shoulder-region were separated from the centre. By this transection all visceral sensations were excluded from the dog's sensorium. Nevertheless the animal exhibited normal emotions in the usual way and showed signs of joy, anger, disgust, fear, etc. Sherrington considers the attempt to feed the animal with dog-flesh, a dish that all dogs reject with abhorrence, to be particularly convincing. In this respect, too, the experimental animal behaved in a normal way, and from its behaviour Sherrington concludes that, notwithstanding the separation of the visceral impressions from its sensorium, the presence of real emotions must be assumed in the animal. This inference seems to Sherrington all the more justifiable when we compare the behaviour of a dog treated in this manner with that of Goltz' dog which had been deprived of its cerebrum.

However, Sherrington's attempt at refuting the visceral theory of the emotions in this manner is open to objections. *Lehmann* doubts whether the signs of joy, fear, disgust, etc. shown by Sherrington's dog really prove the existence of emotions in the animal. There is another, quite plausible explanation of its behaviour, and that is the assumption of representative emotional centres in the cerebral cortex or the subcortical ganglia.

For such an assumption we may adduce certain analogies with other centres of perception.

The illusory sensation which a person who has had a limb amputated may have of distal parts, fingers or toes, which no longer exist, is manifestly due to the presence in the cortex of a representative centre, which continues to fulfil its functions even after the removal

of the limb. Another experience of an every-day nature which may be alleged as proving the existence of representative centres in the brain, is the sensation of movement which in an intended act precedes the carrying out of the act itself. It is extremely likely that we possess representative centres in the brain for the affects too. We can certainly revive an emotion in our memory and do it by the aid of these centres, but the recollection is and remains a shadowy image of the really experienced emotion, and this experience, according to our assumption, requires the actual accompaniment of visceral sensations; only in this way will the characteristic feature of the emotion arise.

In the cases of so-called depersonalisation, of which we will speak in a later chapter, the patient complains of not being able to feel joy or sorrow, etc. A general change in the organic sensations required for the consciousness of self and in their cooperation for a normal body-sensation is, as a rule, characteristic of these cases. *Lehmann* points out, in his analysis of such a case (the case of Alexandrine), that while it is true that the emotions are not entirely absent, yet, owing to the deficient cooperation of the organic sensations, they do not attain the same fullness as under normal circumstances. In summing up *Lehmann* says: »The case of Alexandrine and analogous experiences show that an emotion may be possible without organic sensations, but that without them the emotion does not reach any high degree of intensity, and that without them the subject cannot 'feel deeply affected'«. An emotion without organic sensations is what Lehmann calls an »imagined feeling« (»ein vorgestelltes Gefühl«); it is only by the *»émotion-choc« (d'Alonnes)* which arises in the visceral changes that the process becomes an affecting and thrilling reality, an emotion.

The intensification of the sensations into real emotions by a visceral *émotion-choc* was observed by psychiatrists long before d'Alonnes and Lehmann, since it was expounded already in the fifties by the Danish-German psychiatrist *P. Jessen,* in his *»Versuche einer wissenschaftlichen Begründung der Psychologie«* (1855), a work which has unjustly fallen into oblivion. Jessen speaks with great decision about the dependence of the emotional life on visceral sensations. Especially the sensations from the heart are placed by him in the foreground. In the chapter »Zusammenhang des Gemütes mit den verschiedenen Organen des Körpers«, he writes inter alia, »By this reciprocal action between the mind and the heart or through the special activity in the nerve tracks which connect them, every emotion continues for a longer or shorter time and can in this manner be enhanced, frequently to an extraordinary degree. The unbridled activity of the heart which is called forth by anger sustains the anger and makes it grow, and the anguish provoked is not likely to subside as long as the palpitation caused by it continues. Many psychological experiences and psychopathological phenomena are due to these and similar circum-

stances and may be explained by the existence of subordinate relatively independent nerve-tracks, as well as by a lingering (Germ. »haften«) of the impressions in the nerves and an influence of habit conditioned by this circumstance.«

In a recent publication I have tried to show that the German philosopher *Friedrich Lange* (1828—1875) in his excellent work »Geschichte des Materialismus« (2te Aufl. 2tes B. p. 370 a. p.), as to the psychology of emotion, is in closer agreement with the conception of *James*, than is *Carl Lange*. The latter, differing from James in the epistemological point of view, is a materialist in the same sense as in modern times *Bechterew* and *Watson*, as may clearly be seen from the critical objections he has put forward against the first work of *Lehmann* on this subject.

The affects are always apt to obscure one's judgment. They bewilder us and prevent us from seeing things clearly, and they beguile us into acting injudiciously and rashly. Hence it is not to be wondered at that *Kant* regarded them as morbid states which are not consistent with a clear reason. On the other hand, from a purely biological point of view, the emotions play an important part as a means of protection and defence in the struggle for existence and, also from the ethical point of view, they are clearly of the greatest significance for the development of man.

Joy and grief, pain and anxiety are in themselves normal human reactions, and they all enter into the experience of every developed human heing. That side of our personality from which, in contact with the outer world, are drawn these reactions of pleasure and pain, relief and liberation, suspense, unrest and anxiety, ever shifting with the circumstances, we call *affectivity*. The affects rise from and again sink back into the permanent general sensibility which in everyday monotony forms the bodily nucleus of personality. From this general sensibility into which the organic sensations from different parts of the body melt synthetically, each particular emotion looms out as a characteristic group of perceptions, referable to the most vital parts of the body, the heart and the bloodvessels, the lungs and the digestive organs, but also to the various glandular organs, the muscles, the mucous membranes and the epidermis. Thus every affect, apart from the sensorial impression and the idea which provokes it, is a complex of organic sensations and visceral sensations and as such the emotion is in its origin connected with the general organic sensibility in the same way as the tremendous heights of the Alpine peaks are connected with the bed rock on which the level country also rests. The immediate condition of the emotion, the affectivity, is accordingly more a potential quality than an ever tangible something in the mobile general sensibility, and

the greater the reactive mobility of this latter, the greater the affectivity.

Before investigating further the process involved in the rise of emotions we will again touch upon *Wilhelm Wundt*'s attitude towards the question of the emotions, in deference to the leading part he has taken in modern psychology. The salient feature in Wundt's theory is the voluntariness, that is, the prominent part he assigns to the action of the will in his account of the psychological processes. This element of will comes out in apperception, which in Wundt's psychology is the act by which a thought within consciousness is raised to greater clearness. Apperception takes place in that peculiar perceptive condition (with organic sensations of tension, etc.), which physiologically constitutes the state called attention. The apperceived ideas, however, are accompanied by certain elementary sensations. These sensations and the organic sensations connected with the act of volition are the factors involved and further developed in the affect. The affect grows out of an introductory sensation, the reaction to an observation, an impression or an idea, and from the centres which in the act of apperception give rise to certain attendant phenomena of a physiological nature, the stimulus spreads to other centres (affective expression centres) of vasomotor, respiratory, mimic or pantomimic nature. This explains the fact that the affect, »owing to an interweaving of the factors that take part in it,« is marked in a high degree by the quality which Wundt calls »self-enhancement« *(Selbststeigerung)*. Hence Wundt also, if we understand him rightly, means by this the heightened relief into which the emotions are thrown by the organic sensations and, consequently, it would seem that *Wundt* and *Lehmann* have in the main come to the same result. To *Wundt*, the emotion is a psychophysical process and he states clearly that it is just as wrong to lay one-sided stress upon the psychic component, the emotion, as upon the physical component, the attendant organic sensations *(die Begleiterscheinungen)*.

Generally *Wundt* pays very little attention to psychopathological experience, and it almost seems as if he lived in the conviction that disturbances of mental life constitute a world of their own, from which no conclusions regarding normal conditions can be drawn. It is remarkable that in his big work *»Grundzüge der physiologischen Psychologie«*, comprising over 2000 pages, Wundt dismisses the mental diseases with 5 pages. And yet it is surely indisputable that psychiatry is well able to make clear and throw an instructive light upon more than one of the psychological phenomena, not least the problem of the

emotions. Psychiatric experience shows that the centre of gravity of the problem can be shifted between two poles — the *cerebral cortex* and the *viscera*. Under normal circumstances the initiative issues from the cortex and is under its control; under abnormal conditions the centre of gravity moves nearer to the visceral pole, and the main interest of the process is to be found more in the organic relations and less in the psychocerebral ones. When Wundt, *via* apperception, regards the affect as dependent upon the will, we must not forget that this ideal condition is reversed during illness and morbid deterioration, so that the will is, instead, subordinate to the affects.

However, with his conception of the will as an affect, to which we shall return in a later chapter, *Wundt* has himself paved the way to an understandig of these shifting relations between *will* in a higher (apperceptive) sense and *affectivity*. We find here as frequently elsewhere that the disease appears as a kind of atavism and represents a relapse into more primitive conditions. It was already asserted by Lange that individuals as well as whole nations are more subject to affects, the lower they stand in culture and education. »When racial peculiarities do not work in the opposite direction, the so-called savage tribes are more irascible and ungovernable, more violent in their joy and more overwhelmed by their grief than the civilised nations. The same difference is to be seen between different generations of the same people — we are quiet and tame in comparison with our barbarous forefathers who enjoyed nothing so much as throwing themselves into an intoxicating frenzy of pugnacity, but who were also so easily disheartened by adversity that a trifle would make them take their own lives.«

In the affects, accordingly, as well as in other functions of the nerves and mind, »a migration of centres towards the cerebrum« (v. Monakow) takes place phylogenetically. In a biologically lower stage of development, the head-quarters of the emotions lie in the visceral centres, in certain regions dominated by the vagus and the sympathetic nerve. With the development of the higher mental life and the apperceptive faculties, the conscious emotions located in the cerebrum are created which, however, in the organic sensations and the substrata of these sensations have continually preserved an instrument of animal origin, the resonance of which is always required for giving back to the emotions their original strength and which, in the struggle for existence, has been developed in the service of self-preservation.

About this development *von Monakow* has propounded the following theory.

»Already in the self-regulating vital processes of the cell, in the assimilation and secretion of certain chemical elements, we may perhaps find the first trace of the sensations of pleasure and pain. A number of fundamental feelings, such as hunger, and others, always retain their collective character as a bulk-expression of the common needs of the different cellular individuals. We know that such feelings in a later stage of development lack a really circumscriptive localisation in the cerebrum. In general we may say that a specialisation of emotional life is less due to a different division of labour and localisation in different regions of the cerebral cortex, than to changing stimulus conditions in the cortical centres according to the nature of the biochemical elements which are brought to these centres from the endocrine organs with the blood.«

According to *von Monakow,* studies in evolution and morphology go to prove this. Even in the stage of biological development represented by *the turbellaria* one finds a fairly distinct indication in the nerve cell rudiment of one *exteroceptive* (Sherrington) part, for the sensory and motor apparatus, and one *enteroceptive* part. The former mainly occupies the exterior, the latter mainly the interior part of the tubular body rudiments of these animals. In the inner part there are dispersed a number of bladder-shaped cells of non-nervous nature, which in the whole of their equipment, with their pale yellowish pigmentation, recall certain elements in the adrenals of the mammals. There are a great many such cells secreting adrenalin in the chromaffine system of mammals, and as is well known, they are intimately connected with the sympathetic nerve.

The above-mentioned cells in the interior of the turbellaria are considered by *Leydig* to be closely connected with the adrenals and are looked upon as substances homologous with these and with the chromaffine system. According to von Monakow's own observations, there is in the embryo of man, during the second month of life, a strongly developed adrenal rudiment which can only be imperfectly distinguished from the ganglion rudiment of the abdominal organs. Possibly there are in the body wall of the turbellaria other cells as well which may be considered as precedent stages of the other blood glands (thyroidea, the hypophysis, etc.).

In view of these facts, von Monakow asks himself whether, from these Leydig cells, and from certain sparse grains found within them (»im ganzen spärliche Körnchen«), certain chemical ingredients, adrenalin and similar substances, are not supplied to the nerve cells, substances which are of the greatest importance to the nervous economy of the animal. Indeed, von Monakow thinks it highly probable that the visceral emotions arise by the interaction of nerve cells and cells that secrete the above-mentioned chemical ingredients, and draws the conclusion that *certain emotions located in the cerebral cortex of man presuppose the presence in the blood-mixture of a stimulus of chemical substances of the nature indicated.*

The endocrine organs gradually differentiating from Leydig's cells, which contribute the above-mentioned biochemical element to the function of the visceral nervous system, are, as we know, closely connected with the sympathetic nerve and the autonomous nervous system. These visceral nervous systems live their lives fairly independently of the lower parts of the central nervous system, and only on a level with the optic thalami, or, respectively, the bottom of the third ventricle, does a more intimate exchange take place because, from this point, the visceral systems are represented by a number of connections with the cerebrum. Representa-

tive cells in the cerebral cortex, more especially within the sphere of the senses, provide ample contact between the cerebrum and the visceral systems.

The condition for the origin of the emotions is thus, according to *von Monakow,* a reaction of the hormones on the cerebral cortex brought about in the ways indicated above. This conclusion agrees fairly well with the suppositions of *Lehmann* and *Wundt,* and gives them further support.

The organic process and the ways in which the emotions develop have also been experimentally evidenced. *Gerhard Katsch* made such an experiment on a rabbit. By perforating the abdominal wall and fitting a celluloid window into it, Katsch was able to observe the intestine during states of emotion. The rabbit is an easily frightened and sensitive animal, and when Katsch let something fall on the floor with a clatter, he could see through the celluloid window how the rabbit's intestine suddenly became pale and all movement in it ceased. It looked, says Katsch, as if an intravenous adrenalin injection had been made; the inhibitive impulse conveyed by the viscera in sudden fright reveals itself in exactly the same way.

The instinct of self-preservation is a deeply rooted influence that animates all living beings, and day and night the emotions are at its service. They are in immediate contact with all the sense-organs that signal danger. They awaken the animal mind with their noisy anxiety when it dozes in security; they egg on its energy to meet the attack. They find new expedients for victorious combat and means for making flight easier. In certain animals the emotion paralyses all power of moving, they lie rigid and motionless in a kind of stupor, and thus they escape danger. In others the excitement grows into fury, which enhances their courage and diminishes their sensibility to pain. *Cannon* found in his experiments on cats that alarm and rage increase the adrenalin secretion and that, as an effect of hypersecretion of the adrenals, an affective glycæmia ensues. The larger percentage of sugar in the blood may, as has been supposed, create better conditions for flight by conveying increased nutriment to the muscles. In the struggle for existence, affectivity is thus a useful asset of ancient biological ancestry. Its intimate relation to the visceral ganglia and the endocrine organs and thus also to metabolism is an arrangement inseparably connected with its primitive task of providing protection in this struggle.

Experiments having proved that the adrenalin content in the blood of animals increases during emotion, *von Monakow* (1916) puts the question »whether, in emotion, only adrenalin is secreted in an increased quantity, or whether the same thing also happens with other, similar, substances. May it not be possible that every outbreak of passionate feeling is accompanied by a hypersecretion of specific substances and that thus, for instance, in erotically toned feelings quite a different substance is active than is the case in anger, etc.?« Of course experience would seem to justify the supposition of *v. Monakow*.

In connection with the study of certain endocrine affections, especially of *Graves'* disease, the relation of the cerebrum to the internal secretion organs has been investigated. *Oswald* expresses the opinion that »they are organs, as it were, switched on to the nerve-apparatus *(Einschaltungsorgane)* which are stimulated from the nervous system and, then, by their secretion contribute towards strengthening the stimulus emanating from the nervous system. Thus they are of significance as amplifying agents, resources at the disposal of the nervous system for giving greater weight and emphasis to certain stimuli.« *Oswald* accordingly calls them »multiplicators«.

Continued studies of the autonomous nervous system — called shortly by *Fr. Kraus* the *vegetative system* — have recently made the question of the visceral origin of emotion much more complicated. This vegetative system is supposed to be a quite independent apparatus, biochemically most intricate in structure, though incessantly acting upon our mental life. The influence of the hormones, too, enters into this structure, but their effects on vagus and sympathicus and, by means of these nerves, on the smooth muscles in bloodvessels and viscera are in their turn dependent on the electrolytes in the blood, and mainly on the proportion of calcium and potassium *(Kraus* and *Zondek)*. According to *Kraus*, the vegetative system is the substrate of what he calls »die Tiefen-Person« and is supposed to have its centre in the striatum. This view agrees with a supposition, already set forth by *Carl Lange*, that the emotions are located in the subcortical ganglia.

Thus, on the one hand, it seems that the task of the cerebral cortex is to turn to profitable account the impulses arising from this basement floor of mental life. On the other hand, the cerebrum also serves as a complicated and highly developed signal-apparatus which not only arouses and releases the activity of the vegetative system but also controls it. From an early, animal stage of development, man and the higher animals have inherited this visceral apparatus, and every day experience

teaches us that its function appears the more immediate and independent, the younger a person is, the lower he stands in the race-biological scale, and the more disease or degeneration have reduced the repressive influence of the higher centres, an influence which in all of us is a more or less frail acquisition of development and culture. We know from our own experience that the emotions interfere now more actively, now more *representatively* in our mental life. The cooperation of the visceral instruments is always necessary for actualising them and when, in morbid conditions, this cooperation goes too far, it means that the central repression of the peripherally active reflex-movements is disturbed. In a smoothly running and, so to speak, normally *tempered* psychical activity the function of the *representative centres* presumably suffices to give to the thoughts the measure of feeling-tone required for due clearness, for keeping up the interest, etc. It is only on very special occasions and in critical situations that the affects are actualised. Under normal circumstances they are awakened in a *repressed* manner and live on as memories and representative phenomena; a shade of joy, fear, anxiety or grief, etc., may fill the mind and give a decisive tone to our ideas, while the emotion need not develop with all the emphasis that *d'Allones* has called *émotion-choc*. What constitutes the difference between the normal man and one affectively labile or a man harassed by phobias and pathological complexes, is just the representative limitation of the emotional life in the former, or, in other words, the ability of the normal man to control the visceral reflexes.[1])

The American psychologist John Watson, the well-known originator of »behaviourism« and a consistent adherent to the Russian »objective psychology« (Bechterew) as well as to the »reflexology« of Pavlov, does not ascribe any value to *inner* experience. As formerly *Carl Lange* in his criticism of *Lehmann*, so *Watson* contends that the emotions are purely visceral phenomena, and that, for their development, we need only consider the effect of »unconditioned and conditioned re-

[1]) The above suggested view agrees in the main with »The Thalamic Theory« of *W. Cannon*. This remarkable psycho-physiologist in the range of emotion has found »that after removal in lower animals of all of the cerebrum anterior to the thalamus the behavior commonly designated as 'rage' is exhibited; and when in addition the thalamus is removed, the reaction disappears«. From this experience *Cannon* draws the conclusion, that »the thalamic region is a coördinating center for so-called 'emotional' reactions«. The same author also assumes the existence of a cortical control exercised through a »cortico-thalamic path« which »is inhibitory in function«. *(Walter Cannon:* Again the James-Lange and the thalamic theories of emotion. Psychol. Review. Vol. 38. 1931. See also: Amer. J. Psychol. 1927. 39.)

flexes« (Pavlov). Normal as well as abnormal psychological phenomena can be interpreted as purely mechanical, and introspective observation is dismissed by *Watson* as old-fashioned. All children are alike at birth. They are all endowed with the same congenital equipment. The qualities of these newborn little »bulks of protoplasm« are restricted to a disposition for a small number of unconditioned emotional reactions, *fear*, *rage*, and *love*. All differences appearing in later years are supposed to be exclusively due to environment and to the ability of the educator to fix good or bad qualities by building up conditioned reflexes of different kinds. The doctrine of heredity, again, *Watson* held to be humbug. The question, »Can we train our viscera?« contains the whole pedagogic problem. I have no doubt that Watson himself believes in his power to re-mould the world without sentimentalising, were he only able to make room for all »little bulks of protoplasm« in his laboratory.

Accordingly, the interaction of the brain and the vegetative system including the hormone-producing endocrine organs may with fair probability be said to form the basis of our emotions. But the complicated relations of its genesis are still far from clear. If, in an introspective analysis of the development of emotions, as given above, we must attach fundamental importance to the organic sensations, the essential thing from a brain-physiological point of view is a direct stimulus of the brain through the blood-stream. The psychological interpretation of the affects as an intensification of the primary feeling of pleasure or pain conditioned by the wave of organic sensations, is perhaps not easy to bring into perfect harmony with the simpler physiological formula, the stimulus of the brain through the blood. But these interpretations, derived from different starting-points, have yet one thing in common, viz. the interaction of the brain and the rest of the body.

The Russian psychiatrist *Speranski* in a recently published, exhaustive study of the problem of emotion (»Innere Sekretion und psychische Prozesse« 1929) has paid due attention to the double points of view mentioned here. Speranski belongs to the school of Bechterew, who wishes to substitute for the word »psychology« the word »reflexology«. For the purpose of emphasising the central importance of the hormones for the interpretation, especially of the emotional-physiological phenomena, he prefers, however, to term the theory as a whole »Hormono-reflexology«. He assumes the existence of special emotiogenous hormones and for the sake of brevity, calls them »em-hormones«. These hormones exercise a double effect and their influence is partly *hæmatogenous* and partly *neurogenous*. In the brain there is, as supposed by *Speranski*, a very complicate system of superior and inferior emotion centres. The learning of »Conditioned reflexes«, so necessary for our mental progress, for the development of our ideational life and our memory, presupposes a constant support and an incessant activation by the aid of this emotional mechanism.

We have in *the irritability of the nervous tissue* found the ultimate

postulate of the mental processes and of the constant stream of perceptions, feelings and ideas which move in our consciousness. Hence, the condition of movement is the irritability, whereas the substratum for the varying content of the stream is the specific energy of the irritable nerve-substance differentiated in various ways. The manifestations of life actualised from irritability, on the other hand, require a *stimulus*, and apart from all the special stimuli, outward and inward, which shape and release the shifting content of the stream, there remains, as the essential condition of the psychic energy, the immediate stimulus from a blood-stream continually flowing through the central nervous system. Hence we suppose, with good reason, that the blood-stream which uninterruptedly carries nutrition to the brain, also provides a direct stimulus which, in some manner, modifies the nervous substance by means of the biochemical substances contained in the blood. That the products secreted from the endocrine organs, the hormones, are especially active in this process, is an assumption for which we have already attempted to give convincing reasons.

This stimulus acting upon the metabolism within the nervous substance may be regarded as the substratum for the general mood (including its fluctuations) which essentially influences the psychic processes. By sometimes giving to the impressions a greater volatility, or sometimes by an emotionally toned *retention* of them delaying or dividing the stream of thought, it determines the form of these processes, their tempo, etc.

If we view the matter introspectively, that is, from a psychological point of view, all experience favours the supposition that the feeling-tone constitutes the dynamic factor of the stream of thought and the condition for the progress and maintenance of the inner movement. Without feeling-tone all reasoning would come to an end, all acts of volition cease and mental life be reduced to a play of disconnected images, since both movement and connection are conditioned by the feelings that give life and meaning to the images.

The primary part that, physiologically, we assign to the above-mentioned direct stimulus, must psychologically be given to the feeling-tone, and by this path also we are led to the assumption that our feelings are the immediate experience of stimulus processes enacted in the brain.

Hence, we base our conception of the emotional life on the assumption that by their action on metabolism the hormones also have a stimulating influence on the cerebral cortex and the associative centres.

The brain of a normal person always keeps these stimulating influences under control.

The stimulus is thus kept at a certain proper height, and the feeling-tone is supplied with that minimum of tension which is the most favourable condition for clear reasoning. The weaker this control, the stronger the affectivity. This latter is therefore at its strongest in certain periods of development, before the cerebral cortex has attained due maturity and when, on the other hand, the endocrine organs are probably in a state of heightened activity. Such a period in life is *puberty*. A certain imperfection in the functioning power of the cerebral cortex can be observed as a permanent quality in psychic defectives (weak-minded and degenerate), and in these affectivity is strongly developed, as in animals and in persons on a low cultural level. The feeling-tone then asserts itself with a maximum of strength owing to lack of control. The same thing occurs in cases of endocrine disease, for instance, morbus Basedowii.

The influence of the affects on the mind is double-edged. Along with the stimulus, which disposes to increased mental activity, an overexcitement may also set in which has the opposite effect. We all know how a strong emotion, instead of stimulating the associative centres, brings about *confusion,* sometimes even real paralysation. We know the disturbing effects of emotion from a great number of observations of our own selves and of our fellow-men. Under its influence we become irresolute, uncertain and embarrassed, it makes us bungle, feel awkward and tremble, we behave in a bewildered manner (confusion reaction), and in extreme situations it drives us to the helplessness of anguish, the wild rapture of joy, the blind madness of panic, the ecstasy of bliss. Can all this be due to the hormones?

In respect of the above mentioned modern theories *(Kraus & Zondek)* it may perhaps seem rather premature to point out certain specific elements circulating in the blood as active in the genesis of our emotions. It is of course more cautions to say that, even though an ample part of this influence is hormic, our affectivity is, upon the whole, the effect of a complex action, an inner experience of what is for the moment going on within *the vegetative system* and the reaction of this system on the brain.

This reaction may sometimes in very sensitive persons assume the character of an acute, more or less transient intoxication. The mental disorders caused by an *»affective toxicity«* of the blood-supply to the brain can in such cases be aggravated and directly transformed into

psychogenous states of confusion. Epileptic seizures, too, are interpreted by *Frisch* in this manner.

Affectivity enters as an essential quality into our mind. To a large extent it conditions our relation to life and to our fellow-men. Its retroaction on our ideas and our conduct evinces itself in what we call *temperament*. Our active attitude towards it and our varying power of controlling its influences we call *character*. Temperament enters into character as its necessary feeling-tone. For temperament, the essential thing is the emotions and general feelings which as involuntary and reactive expressions of affectivity accompany the intellectual processes; for character the most important thing is the will and the intellectual processes. And whereas the temperament probably has its centre in the subcortical ganglia, more particularly the thalamus *(Cannon)*, and its essential substratum in a highly complicated and mainly biochemical retroaction of the bodily functions on the brain, the substratum for the character also comprises the cortex, as the organ of memory, higher volitional life and intelligence. It is especially within the realm of affectivity that we meet with the more unfavourable pathological disturbances, and when once the genesis of these disturbances is made quite clear, they will give a convincing support to the view of a connection between affectivity and the vegetative nervous systems and endocrine organs.

We will now sum up what has been said above. Our *body*, apart from our sensory conception of it, is subjectively a connected unity of an infinite number of organic sensations, and these organic sensations are experienced by us in different ways during different moments of existence. During a state of relative normal balance our consciousness is reached by an indefinite tone from these collective sensations, and this tone with its slight admixture of pleasure or pain imparts colour to our mental life. The body-sensation has its stable equilibrium like a mobile surface of water; but this surface rarely appears as smooth as a mirror, it is constantly rippled by small gusts of wind. Its mobility is at times so extremely great that the least provocation — thoughts or exterior incidents — is able to make its waves run high. These waves of organic sensations accompanying our impressions and ideas we call emotions, and when they are released with abnormal facility, we speak of a heightened affectivity.

The emotions are inner experiences which are registered in the cere-

bral cortex in the same way as the impressions from the external world, hence we have, in addition to our memories of these outer impressions, accompanying memories of our emotions. Indubitably, therefore, the cerebral cortex possesses representative, *i. e.* reproductive, centres for joy, anxiety, anger, indignation, fear, etc., and our ideas become emotionally toned by a resonance in the memory centres not necessarily accompanied by an actualisation of the organic sensations. But on the other hand, we cannot again experience an affect without a wave of organic sensations once more flooding our consciousness; indeed, we can hardly with any degree of fullness revive the memory of an emotion without experiencing the bodily heat of faintly echoing organic sensations.

The difference between the view here expounded and the opinion of those who do not attribute to the organic sensations any significance for the origin of the emotions is, strictly speaking, that these psychiatrists and psychologists desire to restrict the substratum of the emotional life to the perceptions which may be immediately located in the brain. As long as we do not inquire into the origin of those remembered affects which are stored in the above mentioned representative centres of emotion, it is certainly right to limit the substratum of the emotions to the cerebrum. If, on the other hand, we seek their origin, we must take into consideration the influence on the central nervous system exercised by different parts of the body by the aid of the vegetative nervous system, an influence which is partly manifested in the organic sensations that condition our experience of the affects, but must also partly be conceived as reaching the brain as a direct stimulus through the blood-stream. In addition to what has been adduced above, the investigations carried out during recent years by *Steinach* on the importance of the sexual glands for the secondary sex-qualities, physical as well as psychical, would seem to support the view that the hormones exercise a powerful influence on the development of our emotional life and on our temperament. We will return to this question in Chapter XII. The stimulating effect of certain poisons (alcohol, morphia, etc.) is also a common experience, of a nature to support the assumption of a direct stimulus of the cerebrum through the content of the blood-stream.

Thus, the brain and its projective system (the spinal cord and the peripheral nerves) are the instruments whereby the symphony of personal experience comes into existence, but these instruments alone do not suffice for the orchestration of mental life. There is something

beyond this, something more elementary and primitive. As in an orchestra the addition of some harsh and strong effect as, for instance, of drums and kettledrums, will excite and carry away the listener, so the desires and emotions cannot be dispensed with in the full orchestration of life. It is the vegetative nervous system and the endocrine organs that contribute this animal ingredient and thus become instruments of mental life. Hence we say too little when we say that the brain is the organ of mental life. *The entire body is the organ of the mind.*

In conclusion we wish to point out that no doubt there is more than one psychologist who will not be satisfied with the interpretation of the emotions offered here, and who, like *Lipps,* is of opinion that in relation to the »Ego« the body and its organic sensations are object (»gegenständliche«) phenomena, belonging to the outer world (»Welt der Dinge«), whereas *emotion* is a quality of the »Ego«, and hence cannot be dismissed as a »bundle of organic sensations«. We will not deny that, as a *complementary* point of view, such an objection may be justified; for just as, on logical grounds, we distinguish between an abstract and an empirical Ego, we may also have to reserve for emotion an abstract existence beyond the reach of our analysis. However, with this concession, we must desist from discussing further this part of the problem, which belongs to metaphysics, and assert here that in the eyes of science mental life has no objective existence unless it enters into an instrumental relation to the body and is comprehended by us as a series of psychophysical phenomena. The point of view here followed out is the only one that is serviceable to psychiatry and must not be regarded as one-sidedly materialistic. Our attitude towards the question can briefly be summed up in the following manner:

A musician is dependent on his instrument; indeed, strictly speaking *we only know him through his instrument,* and if we ask him what, at the moment of inspiration, it is to him, he will answer that he so incorporates it with himself that it ceases to be the object of wood or metal that the eye sees and the hand fingers. In the same way, but if possible in a far higher degree, the body, including the brain, is the instrument on which our personal existence is played.

CHAPTER V.

THE MORBID CHANGES OF EMOTIONAL LIFE.

The relation A/D between assimilation and dissimilation, termed *biotonus* by the physiologist *Verworn*, has been made the starting point for explanations of the well-known experience that with a growing stimulus a sensation of pleasure will at last turn into pain. This hypothesis which has been discussed in detail by *Alfred Lehmann*, can clearly be applied to the metabolic processes taking place in the cerebral cortex under pathological conditions. As long as assimilation and dissimilation balance each other and the ratio between them is equal to 1, and as long as the assimilative power of the nervous system, under increasing stimulus and with a heightened dissimilation, can keep pace with it, we experience pleasantly toned sensations. When, on the other hand, dissimilation becomes greater than assimilation and the ratio between them is < 1, the emotional tone of the reaction becomes one of pain.

This theory, which has been put forward by the Dutch psychiatrist *Jelgersma*, gives us quite plainly the key to much that has hitherto been unaccountable and obscure. We can now understand on the one hand how the normal emotional life may easily drift towards one or the other pathological extreme, towards *mania* or *melancholia*, and on the other hand how it is that these seemingly opposite states, *exaltation* and *depression*, so easily alternate or intermingle.

The general features of the symptom picture of mania or the manic states, derive their origin from that morbid exaggeration of the mental functions which are briefly summed up under the term *exaltation*. The *depression* of melancholia is exactly the opposite. Mania and melancholia are the two poles in the dynamic scale of mental life, and to a *plus* in the picture of mania, corresponds a *minus* in melancholia. At the same time, the intellectual creative faculty and its emotional tone

are altered. A quicker tempo, and, subjectively, an increased facility and dash are the characteristics of mania, and with it all a sense of pleasure, elation, and psychic scope continually clearing the way for the multitude of onrushing thoughts, and a feeling of untrammelled freedom and ease. In melancholia, on the other hand, the stream of thought flows slowly and languidly as if its source were dried up. The dynamic tempo is tardy and lingering, with a tendency towards stagnation, and its emotional tone is one of growing pain. In addition, the melancholic state is frequently combined with a sense of debility and general weakness, and the patient is often conscious of the morbidity of his condition. In this respect too, there is a marked difference from the maniac, who in his intensified self-assurance generally feels at the height of subjective health and well-being, and in a mental state that renders him incapable of self-control or of understanding his pathological state. But the self-analysis of the melancholic is discoloured by the opposite tendency to paint everything black, to represent himself as incapable and worthless, as morally deficient and a wretch. His estimate of himself thus goes to the opposite extreme.

But, in addition to feelings of pleasure and pain, a heightened affectivity is also a characteristic of mania and melancholia. The peripheral and visceral parts of the body contribute pleasantly or painfully toned organic sensations, and the feelings easily rise to an emotional storm. In the exuberant transports of joy and bliss in mania, as in paralysie générale, strongly toned pleasant organic sensations probably contribute to the highly strung emotional state. *Kraepelin* attaches special significance, in alcoholic poisoning and above all in acute intoxication, to the heightened motor excitability and the »increased facility with which every motor impulse is released«, and thinks this experience will explain the enhanced feeling of pleasure in the manic states.

Owing to this excitability, however, the pleasantly toned emotion in mania is extremely labile. The patient brooks no contradiction and reacts by fits of rage as soon as his wishes are thwarted. Any trifle will throw him into a temper and a state of tension, and the feeling of pleasure is soon succeeded by explosive discomfort. The peevishness and violence of the maniac, which are roused on the slightest provocation, bear witness to his motor excitability.

In melancholia, too, the painful emotion easily acquires a tinge of tension, which in every act of volition or intellectual endeavour manifests itself in the feeling of inhibition so characteristic of melancholia.

The feeling of inhibition of the melancholic is clearly expressed in the pain which every effort of his will costs him, whether outward action or intellectual work be concerned. The patient has difficulty in grasping the contents of what he reads, in collecting his thoughts, in carrying out the simplest combination of ideas. He is at a loss for words, his answers come slowly, uncertainly and hesitatingly. It is fraught with the greatest difficulty for him to nerve himself for a decision and carry it into action. Everything appears to him more or less impossible, troublesome and difficult. His thoughts stand still, his judgment is uncertain, his apprehension subjectively confused; at the slightest call for a resolve mountains of difficulties rise up. And during all this the melancholic experiences a strong sense of incapacity, *the feeling of inhibition.*

Even strained attention *(James, Wundt)* is characterised by definite organic sensations, and when the psychic effort meets with a check, as is normally the case when we are set a task that is beyond our strength, a series of painful sensations of tension sets in which may grow into real anguish. With the inhibition of the intellectual functions which is such a common symptom in melancholia, and the subjective resistance which the patient has to conquer in the simplest task, the situation is continually apt to plunge him into a painful realisation of his own incompetence and impotence.

Pathologically the most important of all forms of affects is fear. Apart from its reactive occurrence in normal minds, fear, besides in melancholia, meets us in numerous other forms of mental disease. It is also, as we know, the most significant sympton in constitutional neurasthenia (anxiety neurosis).

Violent outbreaks of fear are very common in the early stages of dementia praecox. They are also present in alcoholic psychoses and general paralysis, and they are not rare in epilepsy. Fear and hallucinations are frequently associated, for fear in itself is apt to obscure consciousness and exercise a dissociating influence on the reasoning power. Hence it predisposes to delusions, illusions, and hallucinations (melancholia, alcoholic psychoses, epilepsy etc.).

When the patient is overcome with fear, the inner tension and the intensely painful emotion is reflected in a series of characteristic, objectively prominent symptoms. Among these we may mention a frantic demeanour, convulsive gestures, general muscular weakness, trembling, paleness, a quickened pulse, increased blood-pressure, cramp in the smooth muscular apparatus, strong perspiration and involuntary eva-

cuation of the bowels and bladder. Somtimes fear keyed up to its highest pitch in *mortal terror*, may completely paralyse the subject. The terrified man sees everything and hears everything, but it all seems to have lost its meaning to him, all reactions are inhibited, heaven and earth may perish and he will not be able to move a foot to escape. He behaves like certain animals which seem to become paralysed by fright. In other cases the paralysis mainly affects the intellectual faculties and a strong confusion or an actual clouding of consciousness may set in. It is in these psychogenic forms of confusion that we have found grounds for assuming a real *affective intoxication*, though so far its existence must of course be considered hypothetical.

All the above-mentioned phenomena, which develop in the highest degrees of fear, can be traced also in the slighter onsets of this affect. In melancholy we meet with all shades of painful emotion, from a slight depression with a more or less pronounced feeling of inhibition, to the most violent inward tension and fear. The accompanying bodily sensations often give a definite local tone to this fear. The patient localises the affect sometimes to the cardiac region and the epigastrium (precordial fear), sometimes to the head (with strong feelings of inhibition?) or the abdomen, sometimes to the arms and legs. The more distinct these added bodily sensations appear, the more will the patient complain of a terrible pain of a bodily nature, which is often referred to the internal organs and not infrequently to the abdominal viscera. Its character of fear is none the less unmistakable.

The maniacs with their high degree of motor excitability are easily able to shake off, as it were, their emotional tension in frequent fits of rage and violent action, whereas, in the melancholic, it withdraws into the depths, and outbreaks occur only in extreme cases. The violent painful emotion and the intolerable anxiety then find an outlet in uncontrollable despair, and the patient completely loses all power of reasoning. He is seized with a blind fury and is carried away by an irresistible desire to wreck and destroy. In such a crisis — *raptus melancholicus* — acts of violence, such as murder and suicide, arson, etc., are no rare occurrences. In the violence of the explosion, the frantic behaviour of the patient and the subsequent uncertainty in the power of recollection which at times approaches complete amnesia, these attacks resemble certain *transitory* states of confusion occurring in epilepsy (epileptic equivalent).

In early stages of katatonia there also occur onsets of agitation strongly mingled with fear. Here self-mutilation and acts of violence

are by no means rare. In those cases of constitutional neurasthenia which can rightly be called *anxiety-neuroses,* cases which are sometimes hard to distinguish from katatonia, fear often rises to a considerable pitch. Outbursts of agitation evoked by the strong emotional tension are fairly common in such cases, and it may be questioned whether the *raptus melancholicus* just described is not more typical of the anxiety neuroses than of melancholia proper, as the passive nature of and the marked motor relaxation in the latter do not dispose to such violent reactions.

In the forms of constitutional neurasthenia which, owing to their mainly physical symptoms, can be classified under the heading *psychasthenia,* the emotion does not attain the same strong development as in the above-mentioned forms of mental disease, nevertheless fear plays an extremely important part in all these cases. This, too, is so in *hysteria.* In many a case fear might be called the main symptom. Sometimes it displays itself as a vague anxiety, which incessantly pursues its victim with a dull gnawing uneasiness, a »free-floating« fear without any cause or object. But it often attaches itself to some outward circumstance, in which it finds a kind of motive. In this way arise the forms of compulsion-like symptoms which we call *phobias.* There is not a thing in heaven or on earth that the apprehensive man cannot by his fear transform into a lurking evil, which constantly gets in his way and plunges him into painful agitation. One person is afraid of certain objects, as broken glass, pins or scraps of metal; another is beside himself if he sees a spider, an earwig or some other creeping thing. A third has a morbid fear of people and all such places where there is a crowd *(anthropophobia);* a fourth cannot bear to have the door shut when he is alone in a room *(claustrophobia);* a fifth is overcome with trembling helplessness when he has to pass an open space or cross a street *(agoraphobia);* a sixth is disconcerted as soon as any one looks hard at him *(»phobie du regard«);* a seventh is constantly afraid of blushing during a conversation *(erythrophobia);* an eighth washes his hands all day long for fear of dirt and dust *(mysophobia);* a ninth has a similar dread of bacilli *(bacillophobia);* a tenth is frightened out of his wits in a thunderstorm *(astraphobia);* an eleventh is afraid of everything and goes about in a permanent fear of his own fear *(panphobia)* — in all these and many others a morbid dread is the common feature. They all suffer from an emotional tension and a dread of certain painful experiences, a dread which for want of restraining self-control grows into terror, with an explosive renewal of

the same experiences as soon as any of these various objects come into view, or any of these embarrassing situations are forced upon them. Naturally the sufferer does everything to avoid the cause of his morbid fear, and strange indeed are the precautions, stratagems, and expedients, to which the patient resorts in order to elude the danger. As the paranoiac musters all his astuteness to protect himself against his supposed persecutors, so also the patient who suffers from a phobia. He finds himself continually threatened by dread, and by sundry, elaborate precautions he tries to avoid getting into contact with it. And yet there is a world of difference between the deranged man and the psychasthenic patient who is dominated by his phobia. The former is convinced of the reality of his fancies, whereas in the latter the »fixed ideas« are a kind of mental parasites. He quite understands their morbid nature and tries in vain to free his consciousness from them. In *fear* they have an ally, which is too strong for him, and his will is always defeated in the battle. Thus, behind the *phobias,* in the last instance, we trace a morbid weakness of the will. They belong to the category of symptoms which we call obsessions and compulsion phenomena. The most typical forms of the so-called insanity of compulsive thoughts, the insanity of doubt and the fear of touch (»folie du doute avec délire du toucher«, described by *Le Grand du Saulle)* grow out of deeply rooted phobias (mysophobia, bacillophobia, etc.). The essential condition for the development of these chronic states is degeneration and a strong hereditary predisposition.

Phobias and fixed ideas are often perversions and caricatures of qualities and traits which are intimately connected with the emotional life and the character and which even in the normal condition may be marked by a certain extravagance. Instances of such traits which have sometimes a more egoistic, sometimes a more altruistic cast, are: great concern for one's personal well-being; considerateness and deference in intercourse with others; punctiliousness and love of order verging on pedantry; the cautious handling of fire, water, and sharp objects; scrupulous fulfilment of daily duties, apprehension of everything that may be considered ridiculous, injurious to health, or dangerous, etc. While a person who is naturally careless and negligent is never very mindful of his acts, even when these acts may easily cause disaster by his neglect, the careful and self-observant person is often inclined to go beyond the limits of a certain moderation, to become too anxiously cautious, depicting to himself with overscrupulous imagination the consequences of his incautiousness. His feeling of responsi-

bility and his conscientiousness are carried to an excess of pedantic caution which is not exempt from a painfully toned tension and anxiety. When a door has to be shut, a light turned out, a water-tap turned off, a sum of money counted, a dish of food prepared, a medicine administered which is poisonous in large doses; when a knife or a fire-arm has to be handled, a child attended to, a letter written, stamped or posted; when an important document is to be signed, a promise given or a prayer read — in the thousand more or less important »whens« of life, emotions and ideas are awakened in the anxiously responsible or conscientious person, which are extremely apt to become toned with fear. The simplest act in this manner becomes an overpowering burden, and it is either performed with a thousand precautionary measures or else dwelt on afterwards with a thousand doubts and scruples and anxious meditations: »Did I shut that door? Did I turn out the light? What did I do with the tap, the knife, the fire-arm? How did I put the baby to bed? Did I count the money right? Did the letter drop into the letter-box? Did I not give too large a dose of the medicine? Did I say my prayer without any blasphemous thoughts?« And so on, interminably. Thus some of life's many trivial things furnish matter for the development of fear-toned complexes which force themselves upon the patient's consciousness *(obsessions)* or dominate his will against his better knowledge *(compulsive actions)*.

There are a great many more or less nervous persons who owing to their manifestly emotional disposition may with justice be said to reason emotionally. It is in them we often meet with the above-described complexes with a strongly painful feeling-tone. But in this type of person we also meet with ideas, toned with pleasure and interest, which may be more or less odd and eccentric, without being necessarily downright morbid on that account. As instances of such phenomena, which are sometimes insignificant, sometimes obviously pathological, we may mention *abnormal fads, preconceived opinions, imperative ideas* and *eccentric whims*. All these types of ideas, in which the more or less impulsive emotional reasoning finds expression, may exercise an unlimited power over certain persons and be adhered to with a fanaticism bordering on the pathological, making them inaccessible to argument and uncritical beyond measure. It is evident that this domain of prejudice cuts deep into normal life, where it coincides with the area of superstition and religious aberrations. The faddish eccentricity, on the other hand, is closely connected with the morbid compulsion in its many variations. Not infrequently we see how the

superstitions of old times run in people's blood and how the belief in exorcism and mystical quack remedies remains as an obstinate survival of the usages of our forefathers. The repetition of certain words to ward off danger, the belief that 13 is an unlucky number, that cats augur evil and old women bring bad luck, these are instances showing how obscure feelings and inherited prejudices may affect people's opinions and actions. The greater the influence of emotional reasoning over a person, the less clear are his opinions and motives. All kinds of vague conceptions founded on fancy or prejudice, religious superstition or socially fantastic ideas embraced with faith and enthusiasm, fill his consciousness, and neither criticism nor reflexion have ever been allowed to perform the highly needed task of clearing up his ideas.

During my long experience as a mental physician I have not been able to avoid noticing that the *relatives of mental defectives* deserve as careful a study as the patients themselves. In the borderland between health and disease there are a series of peculiar states of character, which may with reason be called *prepathological,* as they form a kind of preparatory stage for the fully developed and complete dislocation of »the normal mental structure«. One of the most typical prepathological forms, with which the psychiatrist becomes acquainted during consulting hours or in his correspondence, is the *prekatatonic* form. This type appears more or less conspicuously in the parents or brothers and sisters of persons suffering from dementia praecox, hebephrenia and katatonia. Sometimes we find, in these stages preceding the typical degeneration which manifests itself in this form of mental disease, a vacillating and timid unassumingness of the emotionally colourless kind which we also meet with in the relatives of criminally wrecked persons. This lack of emotional colour may be related to hebephrenic imbecility, as in certain cases a slight dementia remains after a more or less abortive form of the disease has been passed through fairly unnoticed in youth. Much more frequently, and especially in typical cases of katatonia, we encounter in the patient's relatives an arbitrariness and a personal pretentiousness which claims to know everything and understand everything. Such persons turn to the professional only in an extremity. In their crazy self-assurance they place much more confidence in a treatment of their own choice or in some remedy that appeals to their emotional reasoning. Water doctors, women quacks and homoeopaths find their clients among people in these prepathological states, and only after a long course of Kuhne-baths and miracle-working pills, massage by charlatans and the curative treatment of »natural healers«

do these people in despair resort to the trained specialist. Their preconceived ideas have often an undercurrent of superstitious belief and religious prejudice, and if they do not fall a prey to medical quackery, they are perhaps so much the easier caught by the faith-cures offered them by revivalists or »Christian scientists«. In all their being emotional reasoning dominates. They are sworn enemies of vaccination and vivisection, fervent theosophists, baptists or Swedenborgians, they are extremely ambitious and staunch to stubbornness in their principles. For the rest they may be excellent and estimable individuals, prominent as social reformers and often still more prominent as the bearers of new ideas, gifted musicians, artists, and so forth .They are, however, so full of their own opinions and so enthusiastic in their convictions that they cannot listen without mute protest to the medical advice they have asked for, if indeed they listen at all. Generally they become absentminded and lost in their own thoughts, and when the physician has expressed his opinion, they ply him with innumerable questions which cannot be answered, or propose impracticable schemes.

That the *borderland* where these prekatatonic phenomena are met with is not far from the realms of morbid compulsion, imperative ideas and abnormal impulses, is often proved to us by the confidences of the relatives. In families where dementia praecox is congenital, phobias and obsessions are also common occurrences. They are found in the parents and in the brothers and sisters of the patient, and they also present themselves as early symptoms in cases of this disease.

Case I. K., spinster, aged 40, typical case of dementia praecox (katatonia). Before the outbreak of disease scrupulously careful. During the disease touches of mysophobia. The patient's mother also abnormally pedantic; though living in a town she constantly suffers from an immoderate dread of nightly assaults, thieves and burglaries, arson and other terrors. Every evening she examines all doors and windows with the utmost care, and may do so for hours. A second daughter has inherited the mother's morbid fears and is besides a sufferer from mysophobia.

In addition to fixed ideas and phobias and the above-mentioned emotionally toned complexes of a more or less abnormal nature, *pathological impulses* and fancies are also noteworthy. In spite of a certain similarity the difference between these and the obsessions is considerable. Pathological impulses and whims may come on suddenly and surprisingly, but the patient is at once familiar with them and accepts them as part of his own flesh and blood. They never, like the obsessions, impress him as something strange forcing his attention against his will. The pathological whims are recognised by the patient as his

own thoughts, whereas he will do anything to rid himself of the obsessions.

Case II. J. belongs to a wealthy family, known for their eccentricities. One day his carriage stops outside a restaurant, he orders the coachman to go in and dine, while he himself sits in the driver's seat »to find out what it is like to be a coachman«. On another occasion he started watering his flowers with champagne. One of J.'s uncles lived alone with his dogs and had his table laid for himself and his four-footed friends. (In both cases general paralysis could be excluded).

Peculiarities of the nature indicated in cases I and II are fairly common in diseased families, and this is especially the case in families of preponderatingly *schizoid* type. With regard to this term, which is often met with in modern psychiatry, the following remarks may be made.

Starting from the two large principal groups of mental diseases, the manic-depressive and dementia praecox, the German psychiatrist *Ernst Kretschmer* has interpreted the symptom-picture in these diseases as the pathological accentuation of qualities which characterise two normal types of temperament, the *cycloid* and the *schizoid* type.

This view coincides with the conception expressed in the present work.

In the *cycloid* type we meet with the open, unreserved man of realities, sober-minded and objective in his judgments, whose emotional life flows evenly, taking the tone required by circumstances, and is not, as it were, unnecessarily specialised, in the manner characteristic of the formation of complexes. If a pathological displacement occurs in this type, the divergencies have merely the nature of a lack of balance, and this disturbance of the equilibrium in all the functional regions of the mind reveals itself as cyclothymic changes of mood, or in more advanced cases as manic-depressive outbursts of exaltation or depression.

The *schizoid* type, on the other hand, represents a more or less prominent personal reserve and inaccessibility. Among people of this type we meet with the unworldly dreamer and the emotional thinker, with persons inclined to absent-mindedness and liable to splitting of the personality, complex-formations, whims with a strongly emotional tone, obsessions, fads and preconceived opinions. A gradual growth of these traits pushes this type more and more in the direction of the abnormal. Within the borderland which separates health and disease it is usual to find psychopaths with *schizophrenic reactions*. The manifest

disease, on the other hand, towards which the gradual displacement finally tends, is here *dementia praecox* or *schizophrenia.*

In the schizophrenic reactions and with regard to the further development of these symptoms, it is difficult to draw the line between an incipient dementia praecox, hysteria, and psychasthenia. Neurologists and psychiatrists have so far collaborated too little with regard to the boundaries of these diseases and their mutual relations, and a uniform interpretation still remains to be found.

According to the experience of the present writer, there is nothing more common than to diagnose an early stage of dementia praecox as hysteria, and often rightly so, for what is a schizophrenic reaction may at the same time, with regard to the *opportune element* entering into the genesis, be a hysteric reaction. Moreover, obsessions and phobias, pathological impulses or whims can normally be designated as the earliest symptoms in the development of a katatonia (dementia praecox). This should always be borne in mind in judging of symptoms which may in themselves be interpreted as psychasthenia. After these brief suggestions we must, however, reserve these questions of differential diagnosis for more detailed treatment in the special part of this work.

The profound change in and development of the emotional life which takes place during *puberty,* renders this age peculiarly susceptible to psychic disturbances (tempus minoris resistentiæ). That this is especially so in families with distinct psychoneurotic tendencies is a well-known fact. At this age a strongly emotionally toned period of »Sturm und Drang« sets in with eccentricities, fads, and all kinds of strange impulses, after which marked symptoms of mental disease (dementia praecox) are developed, with a growing agitation, intractability and strange conduct. However, the development is not always unfavourable. Our experience of this »Sturm und Drang-period« with its often exuberant emotional reasoning and tendency to pathological impulses points towards favourable possibilities in individual cases, where the diagnosis of dementia praecox seemed unmistakeable at first, but where the correctness of this diagnosis after a quick and complete recovery would seem dubious. We shall return to this question later on.

Onesided emotional reasoning, unaffected by criticism and dispassionate judgment, is also reflected in the so-called *imperative ideas* (German »Überwertige Idéen«). By these we mean strongly emotionally toned ideas which are directed towards a more or less utopian goal, some plan or purpose, which is obstinately har-

boured in the teeth of all reverses. Often it is so tenaciously adhered to in spite of fruitless efforts that the person concerned entirely loses sight of reality and neglects his own interests, and will even thwart his own purposes, and endanger his own and his family's welfare. Instances of imperative ideas are supplied by habitual complainers and faddists with more or less impossible social ideals, certain inventors, and men out of the common run inspired by whimsical fancies. The imperative ideas differ from the *delusions* in not having the absurd content of the latter. As the name implies, the pathological element in these ideas lies in the exaggeration of their importance which is the expression of an excessively strong and at the same time persistent emotional tone. Since overestimation under all circumstances expresses a lack of balance in the power of judgment, the difference between the imperative ideas and the delusions is more formal than real. Thus, too, in the development of delusions in mania, melancholia and paranoia, emotional reasoning is the essential and lack of judgment the contributive element.

The unimpaired soundness of our emotional life is the fundamental condition for a normal mental life. It constitutes the very core of our inner being and in the rational and adequate accentuation of our endeavours lends colour and substance to our whole existence. The demands made on us in all the different circumstances of life, in our homes and in society, are of a nature to generate in us, according to our innate dispositions, a number of feelings developed in different directions and adapted to different objects. Sympathy and tenderness for those nearest to us, interest in our work, affection for our friends, reverence for the higher values of life, love of home and country, respect for what we have been taught to value, contempt and abhorrence of the reverse, veneration of knowledge, admiration of art, and so forth. Into all these and many other kinds of feeling does our emotional life ramify, thus making existence yield its richest.

In morally deficient individuals this richer ramification of the emotional life does not develop. Beyond a brutal and primitive egoism they have no feelings to spare for their fellow-men or for the higher values of life. The same conditions naturally apply to the feeble-minded, *idiots* and *imbeciles;* but even in individuals whose intellect is fully developed, the emotional life may be extremely deficient, as is the case in *criminally disposed natures.* That certain mental diseases can blunt the emotional life is a well known fact. All its higher manifestations, indicated above, lose their warmth and power of maintaining a normal

adaptation to the demands of existence. Interest, the sense of moral responsibility, consideration for others, all disappear, life becomes brutalised and reverts to more primitive forms. This is the case in *dementia praecox*. The sapping of the emotional life begins in the delicate shoots where there is a subtle cooperation of the intellectual and emotional elements which mutually condition each other. Intellectual alertness and interest disappear, the patient becomes indifferent and lacking in judgment. *The altruistic feelings,* the highest development of the natural instinct, are dwarfed and annihilated, whereas the appetites manifest themselves with brutal egoism. Even the deeply rooted moral inhibitions fostered by education and culture, which in the form of modesty and a sense of decency, cleanliness and carefulness of our outward appearance in each of us forms the condition for regulated social intercourse and bodily discipline, cannot withstand the devastation in dementia praecox. The patients undergo a sad change in this respect. In *general paralysis* we observe similar changes, but as a general rule it may be said that that blunting of mental life in certain forms of dementia praecox which has here been indicated, attacks the emotional life more onesidedly, whereas in dementia paralytica the personality as a whole is altered, dulled and utterly destroyed. The strange half-measures in dementia praecox, in which side by side with the devastation of the emotional life a remarkable remnant of the functional capacity of the intellect is retained, has given *Stransky* cause for emphasising, as an essential feature of this disease, the *dissociation* between the emotional life, the *thymopsyche,* and the intellectual life, the *noopsyche.*

A decline of mental life which is intimately bound up with emotional alterations is met with even in normal conditions in *old age.* It is almost a physiological fact that the power of adaptation in intercourse with other people, the altruistic considerations and feelings, decline in the aged. A touch of egoism and egocentricity appears in old people, and when there is a more violent onset of senility in the shape of actual mental disease, *dementia senilis,* the emotional symptoms develop in the direction of the indications as a rule to be observed in the aged. As is frequently the case in the genesis of mental diseases, here, again, we are concerned with an exaggeration in absurdum of traits that can already be traced in the mental structure under physiological conditions.

Violent storms of emotion are momentarily, or as long as they last, able to paralyse and efface all the softer shades and undertones of the highly differentiated emotional life. This is evidenced no less in

emotionally labile and morbidly anxious individuals and those who suffer from fixed ideas and phobias, than in such forms of mental disease as will often strongly affect the emotional life. The highest degrees of pleasure and pain ruthlessly isolate themselves in the Ego. It seems, and experience proves it for the manic states, as if intense pleasure were more brutalising than pain. Melancholics are often made painfully aware that they are no longer in their anguish capable of experiencing the many different feelings which formerly enriched their lives. They no longer feel any tenderness, reverence or friendliness, and they bitterly reproach themselves with the coldness and indifference which dominate their inner lives. This agonised apathy *(anaesthesia dolorosa)* which frequently forms part of the phenomena comprehended in the term *depersonalisation* will be more fully discussed in the following chapter.

LITERATURE.

(Chapters IV and V).

Jessen, P.: Versuch einer wissenschaftlichen Begründung der Psychologie, 1885. *Darwin, Ch.:* Ausdruck der Gemütsbewegungen bei dem Menschen und den Tieren. Übers. von Carus. 6. Aufl. 1910. *Ribot:* Les Maladies de la Personalité, 1889. *Lange, C.:* Om Sindsbevægelser, 1885. *James, William:* Principles of Psychology, 1891. *Wundt, Wilhelm:* Zur Lehre von den Gemüthsbewegungen, 1908—1911. *Titchener:* Zeitschr. f. Psych. u. Physiol. d. Sinnesorgane. Bd. XIX. *Lehman, Alfr.:* De sjælelige Tilstandes legemlige Ytringer, 1898. *The same author:* Die Hauptgesetze des menschlichen Gefühlsleben, 1914. *v. Monakow:* Gefühl, Gesittung und Gehirn, 1916. *Cannon* and *de la Paz:* The stimulation of adrenal Secretion by emotional Excitement. The Journ. of American Med. Assoc. vol. LVI. *Sherrington:* The integrative Action of the nervous System. *Katsch, Gerh.:* Beiträge zum Studium der Darmbewegungen. Psychische Beeinflüssung der Darmmobilität. Zeitschr. f. exper. Path. u. Therap. Bd. 12. *Jelgersma:* Zeitschr. f. die gesamt. Neurol. u. Psychiatrie. Bd. 9. *Kraepelin, E.:* Psychiatrie. 8. Aufl. *Gadelius, B.:* Emotionspsykologien och dess betydelse för neurologie och psykiatri. Sv. Läkarsällsk. Förhandl. 1916. *Same author.* Modern development of the psychology of emotions. Acta psych. et neur. 1932. *Kretschmer, E.:* Körperbau und Charakter. Berlin 1922. *Watson, John,* The ways of Behaviorism. Swedish translation 1929. *Lange, Friedrich:* Geschichte des Materialismus. 1876. *Frisch, Felix:* Das »vegetative System« der Epileptiker. 1928. *Speranski, W. N.:* Innere Sekretion und psychische Prozesse. 1929.

CHAPTER VI.

THE CONSCIOUSNESS OF SELF OR THE EMPIRICAL EGO AND ITS DISORDERS.

In our conception of ourselves as subjects we cannot get beyond our experiences and what we realise in our consciousness. In other words, we are unable to rise introspectively above the objective level. The Ego which we conceive in this way, we call the concrete or empirical Ego, and this is something quite different from the subject in an abstract sense. Everything that psychologists have said about the subject as a totality can be said about the empirical Ego. In a wide sense it is the sum total of the conscious phenomena, and in this comprehensive sense we may say that this Ego is equal to our consciousness. We shall, however, according to the prevailing custom, ignore this wider acceptation and draw a definite line between *our self* and *the outer world*. It is true that, theoretically, this boundary line will be uncertain, because our body is partly an inner phenomenon belonging to our Self, partly something outward, coinciding with the outer world. But practically this line can be drawn. What we regard as our Self is chiefly what is constant and central, not so much what we distinguish as inward or outward.

Hence it is not all the phenomena within our consciousness that we designate as parts of our empirical Ego. If we conceive consciousness as a plane which is divided into peripheral and more central zones by a series of concentric circles, then the peripheral parts are occupied by the incidental, ever changing content of our mind, the central parts by the more enduring, constantly recurring elements. The more constant a phenomenon is in our consciousness, the more is it a part of our Self; and the very foundation of our personality, the nucleus of the empirical Ego, consists of a complex of the most enduring phenomena

of consciousness which, since they are experienced and repeated over and over again from one instant to another, form a string on which all our conscious moments are threaded like the pearls of a necklace. The most constant phenomena are the organic sensations which, combining in a synthesis of indefinite sensations, the so-called *cenaesthesis* or sense of the body, always accompany our consciousness like a muffled undertone.

But this renewal from moment to moment of the same organic sensations does not give the experience of *continuity* unless each moment is blended with the next by an *act of memory.*

Hence, the phenomena which, by their constant presence in consciousness, give to its content the special tone inherent in the possessive words *my* and *mine,* are:

1) The general sensation of our body, monotonously renewed from instant to instant, and

2) certain personal memories which, together with this general sensation, form a synthetic whole, the *sense of personality* or the empirical Ego.

Thus, the sense of personality possesses a physical key-note without which the most vivid ideas do not obtain their specifically subjective possessive nature; further, there enters into it the faint echo of personal memories which are of significance for the fullness of this subjective tone and give to it its extension in time. These memories arrange themselves perspectively with the present as a foreground, and this perspective of memories fading away into dimness communicates to the Ego its quality of a historical synthesis, a thread running through time the spinning of which goes on in every *present moment.* This thread runs continually through our consciousness. Thanks to it we are always in contact with the past; the continuous perception of this guiding thread leads from the past into the present, and all consciousness of personality carries with it the feeling of this unbroken continuity. But our orientation towards ourselves is not discursive, we do not grope our way back from one memory to another, it is usually *intuitive* and immediately corroborative, and the consciousness of self makes itself felt as an indefinite but nevertheless vividly convincing synthesis of past and present in a peculiar, constantly returning *momentary experience.* In the centre of this momentary experience in which the consciousness of self is realised, there are perceptions of our body, and even this nucleus of actual organic sensations has its perspective of organic memories through which the innermost and most central part

of this intuitive orientation is rendered possible. This intuitive orientation implies a permanent recognition of our Ego, and we may refer its constant »quality of familiarity« to the group of phenomena which *Semon* calls *homophonia*, by which he means a consonance of mnemic perceptions or actual and mnemic perceptions which coincide with each other. (See further Chapt. X.) The dimly perceived uniformity of the actual organic sensations and our memories of earlier organic sensations is the main condition of a continuous and similarly repeated momentary consciousness of the Ego.

The consciousness of Self is thus *a very complicated phenomenon*, but the constant presence of this complex is an indispensable condition for the normal course of mental life and for its orientation. In the first instance this orientation implies a feeling of our own body, but any fuller consciousness of Self also involves *an orientation in time and space* owing to the personal memories entering into the complex, and their connection with the present. Not infrequently we experience a disturbance of the faculty of orientation in the interruptions of the personal continuity which come with sleep, and corresponding phenomena are met with in mental diseases as soon as they are accompanied by confusion. When we suddenly wake up from profound sleep, while the silence and darkness as yet prevent surrounding objects from awakening our slumbering memory, we will often stare dazedly about us without understanding the situation or knowing where we are. We are only partially awake and our orientation is still incomplete. The most central parts of our Self, the body-feeling and the organic memories belonging to it, are synthesised with obscure perceptions of the present into a limited recognition of the physical Ego, but the darkness and silence delay the orientation as to time and space. Only after having searched in the dark or groped around with our hands and thus got into a feeble contact with our surroundings, are local memories awakened, after which the perspective of time is at once unrolled by this local contact, completing our awakening.

During intense intellectual activity the consciousness of Self may be pushed into the background, so that we all but lose sight of ourselves, but however thin-spun the thread may be, it never breaks, and we do not cease to perceive its connective efficacy. In sleep, on the other hand, the thread breaks, either completely, so that the consciousness of personality fades away, or else, as we saw from the example above, loses its foothold in the present and consequently its power of spatial and temporal orientation.

The consciousness of Self is mainly a static phenomenon. During a

continuous precipitation of impressions and organic sensations it forms a kind of sediment of personal memories, over which the shifting contents of the mind flow on, though the stream of thought as such is independent of it. The mental activity assumes a subjective colouring while flowing over this bed, the thoughts pour forth as *my* thoughts, and the bodily sensations give me the sense of an effort of my own, of my own will, my own merit, but, *as far as we are able to penetrate in our analysis of the empirical Ego*, all this is a secondary determination, a subordinate phenomenon, the actuality of which is not necessary, and whose complete disappearance would by no means compel our thoughts to stagnation.

The correctness of this view is confirmed by the *psychology of childhood*. The development of personality takes place during the earliest years of life and the awareness of Self only gradually includes in its synthesis the different parts of the body, which at first are regarded as objects in the outer world. Thus, the child lacks a central consciousness of its Ego during its earliest years, and the continuity of our memories only dates from the time when this consciousness has had time to become integrated into a continuous personal whole. The gradual development of the Ego-complex takes place during the accumulation of an infinite number of experiences about the body and its movements, and these experiences are fixed by memory. The mental life of a child is at first a continuous stream of impressions and images and not till later on does the feeling of personality ally itself with this impersonally psychical process. In the child »sciousness«, or the knowledge of objects, is developed earlier than the consciousness of its own personality. The child itself with its body and limbs is an object like everything else, and it speaks about itself in the third person. Gradually, when the Ego-complex has had time to be deposited, this knowledge obtains its river-bed and the flowing content of the mind its definite connection. A confluence of the Ego and the objects perceived changes *sciousness* into *consciousness*. The effect of this is above all an orientation — with reference to the subject. *It is this reference to the Ego which essentially characterises our consciousness.* This reference to the Ego gives a sense of the arbitrariness of the ideas and their dependence on the subject, of his will and his advantage. The Ego inevitably obtains complete ascendancy over the psyche, its sway being intuitively confirmed in every momentary experience. But as far as our experience goes, this intuition of an autonomous Ego lacks an empirical basis. In the structure of consciousness there is no room for such

an Ego, inasmuch as the empirical Ego is a part of this structure, a psychical complex-phenomenon, the development of which we can follow. The autonomous Ego coincides with the abstract Ego, and its existence is founded entirely on a logical demonstration. *The empirical Ego is not an autonomous principle, but a secondary phenomenon, which gradually develops out of simpler conditions. Hence, the empirical Ego may, like other conscious phenomena, undergo morbid changes, its conditions being of an organic nature.*

Child-psychology shows us how personality emerges from the psyche in proportion as the brain attains a certain maturity. The psyche, accordingly, is the soil, the empirical Ego the secondary phenomenon; one of the predominant qualities of the human psyche is its ego-forming tendency. All psychical life tends to clothe itself with a personal form.

This personal form belongs to our consciousness. The word consciousness means something more than »sciousness«, knowledge, for the reference to a subject is clearly expressed in the compound term *consciousness*. The actuality of a psychical occurrence, accordingly, over and above its character of knowledge and perception, possesses its peculiar ego-tone. It should be noted, however, that this ego-tone is accessible to our introspective analysis. It is a complex of elementary phenomena, *the empirical Ego*, which develops during the first years of childhood and is subsequently throughout life such a constant phenomenon within our consciousness that we may characterise it as a river-bed over which the psychical process flows on, and from which it receives its subjective colour, its character of consciousness.

Now, does this river-bed glow of itself, as it were, with a peculiar phosphorescence, or does it borrow its light from the autonomous Ego, as do the planets from the sun? However preposterous the first supposition may seem, yet all this remains to science an open question, which cannot be solved empirically.

The desire to avoid metaphysical explanations and to ground the study of mental life on nothing but the conscious phenomena has influenced psychologists of both the old school and the new in such wise that they have entirely ignored the abstract subject. *Hume*, however, was already dissatisfied with the attempt to derive a personally combining principle in our thinking from a connection between the conscious phenomena. *Wundt*, it is true, keeps aloof from all obviously metaphysical company, still he has not been able to avoid resorting to interpretations which savour strongly of it. French psychologists, *Ribot*, *P. Janet*, and others, uphold the traditions from *Hume* and keep clear of metaphysical speculations. Their »Ego« is the empirical totality, and the ego-feeling is explained as a synthesis of organic sensations and personal memories. The authors who have lately undertaken the interpretation of the diseases of personality, »depersonalisation« and »split personality«, etc., do not always keep apart the abstract Ego assumed on logical grounds,

and the Ego-feeling as an empirical phenomenon. It is difficult, or indeed hardly possible, to keep metaphysics outside, in this central question, and so one is continually up against uncertainties. *Isserlin* deals fully with these questions in an interesting psychological introduction to *Aschaffenburg's* »Handbuch der Psychiatrie«, but the empirical reasons adduced by him for the assumption of a *primary Ego* seem to me of doubtful value. For Isserlin's »unanschauliche Akterlebnisse« are hardly anything but organic sensations and bring no new argument in favour of the assumption of an autonomous Ego which does not already exist in the form of an exclusively logical demonstration. (Cf. Chapt. XI).

DISTURBANCES IN THE CONSCIOUSNESS OF SELF.

1. Depersonalisation.

We will now pass on to the morbid changes in the perception of the Ego. From what was said above it will be easily understood that a complex of so complicated a nature as the empirical Ego sometimes deteriorates and falls asunder when the combining elements which, under normal circumstances, simply and automatically bring about its comprehensive synthesis begin to fail, and are no longer capable of keeping together its many detailed perceptions in one continuous grasp from instant to instant. A by no means rare consequence of these synthetic disturbances is the strange sensation of *unfamiliarity with the Ego*, which we call *depersonalisation*. Even the older school of psychiatrists knew this symptom. A patient, described by Ball, gives the following description of his own condition. »My personality is entirely gone, and it seems to me as if I had been dead for two years. The thing that exists has no knowledge of nor any conformity with my old self.« The patient calls himself »a thing«, which he compares to »an empty cardboard box«. He eats, but it is only »the shadow of food that is conveyed to the shadow of a stomach«. His pulse is only »the shadow of a pulse«. For the rest, he is well aware of the absurdity of these assertions but, nevertheless, he cannot free himself from these peculiar notions.

This feeling of uncertainty as to the existence of one's own Ego, is often mingled with new and strange sensations, and as a further contribution to this disturbance of the personal identification there appears an altered experience of the outer world, which seems to the patient changed, destroyed or annihilated. All this results in the morbid state which *Wernicke calls somato-psychical bewilderment (»Ratlosigkeit«).*

One of my patients, Mr. X, a merchant, energetically denied h' own self, declaring that he was not Mr. X at all, but only »a cur's carcase«, »a trumpery take-in«, and so on, and insisted upon my ascertaining the organic reality of the change by tapping his chest, etc. At the same time he had the queerest sensation of everything having changed. »We have been blown up and are floating in the air«, »the whole earth is nothing but a flake in space«, »we are in eternity, in hell, not in time«. Another patient of mine, a young girl, writes about herself and the development of her disease:

»My head is quite choked, when I look down at the paper, it is not as it used to be,« »it is as if I had to push through my whole head to get down to the paper.« »All the back of my head received all impressions and movements instead of being insensible as it ought to be.« »My throat thumped and was stiff; the more it spread, the more difficult it became to breathe. There was still a little that connected the head with the breath — but then the last connection with the head was gone. Then all was finished.« »Formerly I used to feel that I had a neck and a face, but now there is no difference, since it has all been fused till it has become almost flat.«

»When it is morning it ought to be felt, but I never have the real feeling of morning. Formerly when I woke up I had the feeling of a new day. I have no ordinary perception. I have only the *thinking process* left. I need no food and no sleep. One day I ate nothing. I felt just as usual. I feel no change. I can never grow old, I am sure I can never die, and never have an illness.« She is equally insensible to the passing of the seasons and their usual effect on the body and the soul. »Never did I feel, as I used to, that is was winter, never did I catch cold, as I did when I was well. I was just as if I was unchangeable. For the sun I was, as it were, paralysed (insensible). I did not feel its effect on my face as I used to. I could not say whether it was warm or what it was like. I could wear thick clothes when other people thought it was warm, and I did not perspire.« In the most unmistakable manner she gives expression to her incapability of living fully. »She is only half.« She envies other people who can move freely without having to think of their movements, who can walk and stand, dress and have intercourse with their neighbours naturally and freely without giving constant heed to themselves. In all this she is strongly agitated, is shy of other people's eyes and feels dreadfully embarrassed. Expressions of a characteristic feeling of uncertainty and confusion occur again and again in her descriptions.

Depersonalisation occurs in psychasthenic conditions, in dementia praecox and in melancholia. The symptom is often accompanied by morbid anxiety. In a letter from a melancholic woman which has been communicated to me by a near relative, we read: »If only you could feel my torments! All feelings are gone. Feelings of fatigue, rest, hunger, satiety, gladness, all these are gone.« What remains in such cases is the sensation of an unchanging emptiness, a bleak eternity,

from which the conviction of *never being able to die* naturally arises.

The sense of immutability very often makes the patient incapable of accommodating himself to the passage of time since the various perceptions which, as the hours go by, accompany the physiological processes and are a kind of indicators of the flight of time fail to appear. »When it is morning,« the girl wrote, »it ought to be felt, but I never have the real feeling of morning. Formerly, when I woke up, I had the feeling of a new day. I have not the usual feeling. — I feel no change, I can never grow old, I am sure I can never die.« Another patient of mine, a labourer's wife of 33, complained of having lost her sense of time; she had to look at the clock more often than before in order to know how time was passing. The reason for this, she says, is that *she no longer feels the time in her body in the same way as she used to.* When she wakes up in the morning, she has exactly the same feeling as when she goes to bed in the evening. No sense of its being morning when she gets up, no feeling of fatigue when she goes to bed. Nor does she feel any natural hunger before meals, and after having eaten she does not feel satisfied in the same way as before. Everything is always invariable, empty, hopeless and monotonous, without the changing moods which she remembers from her days of health.

The explanation that has hitherto been given of the enigmatical phenomenon of depersonalisation imputes it to the immediate effect of changed organic sensations owing to a deficient synthesis, this bringing about an involuntary disturbance in the momentary consciousness of the Ego. A similar opinion was expressed by *Pierre Janet* long ago. This interpretation gives a fairly satisfactory explanation of the patient's somato-psychical bewilderment *(Wernicke)* and the disturbing influence on the personal identification. The absence of the animal feelings of hunger, satiety, fatigue, etc., as well as the incapacity for human feelings and affective states (joy, grief, tenderness etc.) is traced by *d'Alonne* to a decrease or disappearance of the visceral sensations (the well-known case of Alexandrine).

Towards these attempts at an explanation *Schilder* assumes a sceptical attitude. The starting point of his analysis of depersonalisation is the conception of the objective relation of psychical elementary phenomena to the subject.

Lipps, and with him *Oesterreich,* looks upon the emotions as states of the Ego, whereas to Schilder emotions as well as ideas and per-

ceptions are objective, conscious phenomena towards which the Ego assumes a certain attitude. This attitude as an act of the Ego is to Schilder the essential thing in depersonalisation. Thus he distinguishes between »feeling« as an act and »feeling« as an object, and, in accordance herewith, views depersonalisation as a result of the patient's incapability of any full and immediate experience. In other words, there is an inner conflict, an opposition within the patient during the progress of the act itself, which gives to it all a strange semblance of unreality, or as *Schilder* has it, »a deficient actuality«. But while emotions, ideas, perceptions and memories lose their actuality for the subject, Schilder sees no change in the raw material by the aid of which the different mental acts carry a certain process into execution. The deficiency lies in the execution itself, in the act of the Ego whereby an emotion, a thought, an act of volition or a memory are realised. The patient feels, thinks, wills and remembers in a disjointed, refractory manner, but the feelings, the thoughts themselves, etc., are not altered. The whole matter thus centres in the experience itself. Depersonalisation is, according to this view, a central suffering in the strictest sense, a suffering which affects the purely dynamic expressions of the subject.

Schilder's analysis of depersonalisation is well adapted to illuminate those cases where self-observation in the form of an involuntary brooding (brooding mania, German: »Grübelsucht«) constantly stands in the way of the immediate experience. Such was the case of the patient from whose autobiographical notes we have given extracts above. She is worried by continual uncertainty and embarrassment and feels that she cannot do the simplest thing or make the simplest movement spontaneously and naturally. Everything she does she has to follow with her thoughts and accordingly feels uncomfortable and stiff. »Two things,« says Schilder, »are noteworthy in this, the incompleteness of the experience and the directing of the inner eye to this deficiency. If the patient succeeds by the agency of some shock — and particularly if he is surprised by some outward thing — in breaking through this vicious circle, he can observe unhampered and vividly the outer objects which he is otherwise unable to perceive because he is preoccupied with his own self more than with his experience. Thus the patient's attention is directed more towards himself than towards *that* which he experiences; this applies to his feeling, thinking and perceiving, and the same thing can be said about his acts of volition. One of Oesterreich's patients declares that »when reading he is more observant of the act of reading than of that which he reads «

These symptoms of depersonalisation are largely coincident with *psychasthenia*, which has been exhaustively described by *Pierre Janet*, though there are transitions in several directions (manic-depressive insanity, hysteria and dementia praecox). Regarded as cases of psychasthenia or constitutional nervousness, the phenomena of depersonalisation are strictly speaking special cases within a far more extensive group of diseases, among which we also include *imperative ideas* and *phobias*. We have already devoted some attention to these afflictions and will return to them later on. At the root of this suffering there is always, we imagine, — and this is a circumstance that *Schilder* ignores in his explanation — a morbid affect, fear or morbid anxiety, and, according to the ideas which are combined with the affect, the symptoms manifest themselves differently. It is the affect that mobilises the fixed ideas, deepens the brooding, and is the cause of a deficient synthesis and unaccomplished actuality. What *Janet* calls *»fonction du réel«*, the unreflected and immediate experiencing of a situation or an act, is made impossible by the brooding mania which in some manner puts an obstacle in the way. To these not infrequent cases belong certain forms of professional neuroses, writer's cramp, stage fright, stuttering, etc. *Sexual impotence* may also, in our experience, be due to a special concentration of the brooding mania on the most animal and primitive form conceivable of the »fonction du réel« — the sexual act

When Schilder, in his interpretation of depersonalisation, lays the chief stress on experience itself as an act of the subject, this is theoretically a fairly satisfactory explanation. *Empirically*, however, it implies a standpoint which is productive of very little if not altogether sterile. For the act, as a manifestation of the autonomous Ego, is a thing which can in no wise be made the object of our investigations. What immediately enters the patient's consciousness, however, is a feeling of uncertainty, inadequacy and inhibition, of »halfness« and insufficiency; but these feelings, which, as it were, mirror the mental acts which are inaccessible in themselves, are mediated not by the autonomous Ego but by our body, our nervous system and our brain. They correspond to the act-feelings described by *Löwy (Wahrnehmungs-, Denk- und Willensgefühle)*, which always accompany the experiences of the subject, and are summed up by *Oesterreich* in the term »life-feeling« (*das individuelle Lebensgefühl*). It may reasonably be asked whether, ultimately, these feelings are anything else than organic sensations and elements of the bodily Ego, and, like *William James*, we doubt this to be the case. »The individual life-feeling« covers very fairly what *Wundt* calls »Totalgefühl«, and Oesterreich identifies it with the *Self*, which according to this author is something different from the abstract and autonomous Ego. But the »Self« is just what above we called »the empirical Ego«, and consequently it is this and not the autonomous Ego, about which we know nothing, that is affected by depersonalisation. In this we fully agree with Oesterreich, and it

is for the reasons here indicated that, rather than accept Schilder's act-theory, we prefer to regard depersonalisation as the result of a deficient synthesis *(Janet)* of the composite complex which we call the empirical Ego. This deficient synthesis involves a disturbance of the consciousness of Self and a deterioration of the same caused by abnormal organic sensations.

II. Split Personality (Schizophrenia).

Far more common than the deterioration of the perception of Self (depersonalisation) and with a much larger extension within the different forms of mental disease, acute or chronic, functional or organic, is the splitting of the personal synthesis which we call *dual or split personality* or schizophrenia *(Bleuler)*.

Split personality is to a certain degree conditioned by the structure of normal mental life and occurs as an every-day experience in the form of *absent-mindedness* or distraction.

We have seen how the stream of thought flows on continually without interruption. Its different processes are linked together. An idea which has already passed the culmen of actuality accompanies the next with its dying after-tone. With rising and falling stimulus waves, the coming and going not only succeed each other but exist in and beside each other. This makes it possible for one idea or complex of ideas to stand in the way of another in proportion as the feeling-tone of the former makes its stimulus waves persist or conditions their tendency to constant recurrence. When some unexpected or surprising event, some news, good or bad, which lays hold of our emotions and forces itself upon our attention, interrupts us in our daily task, the course of which, like all mental work, develops as the result of certain purposive ideas, and complexes, we notice at once that our work is disturbed. Dissension arises in us, with a splitting of the stream of thought in our consciousness, and when we try to return to our work, we continue it mechanically, whilst our attention and interest are constantly following another track. It is this condition of mind which we call absentmindedness or distraction.

There is another thing to be noted in this connection. In the same degree as a mental act is conscious or, in other words, *Ego-toned*, we have a strong feeling that our Self is directing the course of our thoughts and acts, but this feeling is only a qualified truth, if not an error. For

an emotionally toned idea possesses a spontaneous tendency to motion and needs no special impulse from the Ego to be kept going. Hence it may easily happen that, in a competition between two complexes of ideas within our consciousness, the complex which was last pushed aside but is nevertheless kept alive by the emotional tone, develops into a piece of spontaneous thinking. But under these circumstances we find that our Self, torn between competing ideas and unable to accentüate them both at the same time, is *split*, fragments of it being loosened from the Ego-complex and joining the spontaneous thinking. We meet with this already in distraction. It is not unusual to hear very absent-minded persons talking to themselves, to see them automatically perform various rather complicated acts, mislay things and altogether behave strangely and confusedly. Very often such a person has afterwards not the slightest recollection of what he has done at such times. He acts in this respect almost like a somnambulist, while at the same time his attention is preoccupied with quite different things. Such persons, who are often rather eccentric, may accordingly display curious traits which afford a striking resemblance to *katatonia*. Curious stereotyped acts and habitual, automatically performed movements give to these eccentric persons a stamp that resembles not a little that of chronic mental defectives. The *autism* of the katatonic, accompanied by stereotyped acts and compulsive movements, is strictly speaking nothing but a distraction. It seems to me a striking circumstance that these »eccentrics«, like the »abnormal characters« in general, are relatively often met with in families where dementia praecox also is a family trait. We refer the reader to what has been said in a previous chapter of the *schizoid* type of personality.

It is in dementia praecox, and especially in the form we call katatonia, that splitting of the personality appears as a fundamental feature of so universal a nature that *Bleuler* has considered himself justified in calling the entire group *the group of the schizophrenias*.

The symptoms of rupture within the mental life which occur in dementia praecox, and more especially in katatonia, have given rise to a number of theories as to the psychogenesis of the disease. These generally tend to an accentuation of the *intrapsychical dissociation (Stransky)* between the elementary functions of mental life, viz. emotions, ideas and acts of volition, which would cause division and deficient cooperation (psychical ataxia). For our part we have some hesitation in accepting these attempted explanations, since we doubt the existence of the normal psychological conditions on which such a supposition is based. A sundering of the mental life must needs arise in such »places« as dispose for it, but surely the structure is not what *Stransky* assumes. In mental life there can be no question of any

kind of natural boundary lines between the two mental strata, emotional life and ideational life (thymo- and noopsyche), which Stransky assumes as his starting point, and still less between three such strata, ideational, emotional and volitional life. For in these respects it is mainly a matter of an indissoluble coherence. But even under normal circumstances mental life is like a mosaic of complexes and chains of ideas which succeed each other and often compete with each other for admission to the centre of consciousness and therefore often repel each other. And it is beyond doubt that the disease in question is in some way rooted in a functional fragility of our psychical structure.

The most common phenomenon of split personality is hallucination, and it is quite comprehensible that hallucinations often appear in the very form of mental disease where the schizophrenic disposition is most marked, i. e. in dementia praecox. In Chapt. VII we will state fully the grounds on which we consider hallucination to be a phenomenon of splitting. Here we shall merely point out that the most essential feature and chief characteristic of hallucination is found just in its nature of being something alien to the subject, something that enters his consciousness *from outside,* — a physical or mental influence which the patient perceives in the most palpable manner with his outer or inner senses, a supposed reality which he hears or sees, or an inner force that uses his body, his tongue, and his limbs as tools without his own cooperation.

It is especially in the last case, in the *motor* forms of hallucinations, the motor speech impulses and other kinaesthetic sensations of hallucinatory nature, in other words, in the states brought on by these delusions, which have been known of old as inspiration and obsession, that the splitting of personality is most obvious. Around the split off fragments of the bodily Ego, the kinaesthetic sensations in speaking with tongues and other forms of automatism (automatic writing), the mad conviction is formed that God, the devil, a demon or a spirit speaks and moves within one's body. In other words, a sense of partial depersonalisation forces the patient to believe that his speech, writing, and other doings are inspired by a will other than his own.

Another symptom, often of a senile type, which is closely related to obsession, is the so-called *mania of transformation.* This is exemplified in the epidemic *lycanthropy* of the ancients, in which the victims imagined themselves transformed into werwolves. It seems obvious that organic sensations of a new and mysterious kind, which impair the consciousness of self, are at the back of this form of more or less complete alteration of personality.

The *negation mania* — not to be confounded with negativism — should also be remembered in this connection. In conjunction with the above-mentioned obsessions and the mania of transformation it constitutes the bulk of somato-psychical symptoms, and they are all intimately connected with alterations of the bodily Ego. They arise from abnormal organic sensations and, like the obsession symptoms, they may to a certain extent be regarded as phenomena of partial depersonalisation. We will return to them in Chapt. IX.

The above-described symptoms, obsession, and the manias of transformation and negation, are common in dementia praecox. They are also present in certain forms of melancholia, as well as in organic psychoses of a graver nature such as arteriosclerotic mental disease, dementia senilis and general paralysis; briefly, in all conditions where there is disintegration of personality.

In olden days obsession appeared as a very common symptom in religious hyste-

ria. Inspiration and obsession, radiant revelations and dark temptation alternate in descriptions of the religious life of saints and penitents.

Faith as well as temptation could take bodily shape, the former in sensations of the presence of God or Christ, the latter in the conception of *incubi* and *succubi*, amorous spirits of the male or female sex, who came on visits in the night. In convents and religious institutions obsession often spread epidemically, and it is a well-known fact that the belief in demons and »witches« assumed the character of an endemic hysteria which prevailed all over Europe. These and similar phenomena which were so common during the darkest age of superstition in the Christian era also occur in other parts of the world and even in our day among peoples at a low level of civilisation. An example of this is the demonomanic ecstasy among the Shamans of Siberia *(Stadling)* as well as the voodoo-ceremonies in Haiti *(W. B. Seabrook)*.

In our day endemic hysteria is more rarely met with. But *speaking with tongues*, which in many parts of the Scandinavian countries has assumed an epidemic character, shows that religious ecstasy is still capable of raising epidemic psychopathies like those of ancient times.

As an illustration of the questions dealt with above we publish the following case.

Case III. Karolina C., living at a sea-port in the south of Sweden; born Sept. 8., 1869. Married to a sea-captain. On the testimony of her husband and friends, she had appeared perfectly healthy without any traces of agitation or eccentricities up till July 5., 1914. On that day she had met a well-known ship-owner in the town, Captain X, whom she had previously questioned about her husband's chance of getting an appointment on one of Mr. X's many ships. On the above occasion, she had met X in the street, and he had »bantered her« and pressed her hand »quite meaningly« and had an expression in his eyes which she did not »like to understand«. X was known in the town as »the kind of gentleman who is fond of women« and now she clearly saw what it was he wished of her. As to the appointment for her husband she had asked about, he turned the matter off and deferred his decision till another occasion. When Mrs. C. parted with X, she felt strange in her mind, and the following night she felt clearly how X, to her shame be it spoken, »really was in coition with her«. How this could happen, she can only explain in the way that, by a miraculous power which she compares to »witch-craft«, X had set a *lover-spirit* on her. This »lover-spirit« made what she experienced on this and many following nights seem as distinct and natural as if X in person had been in bed with her. It was not a dream, for she was wide awake, and she both heard and saw. X lay on her like a big man and penetrated into her body; she felt his kisses and heard him talk soothingly, saying: »Don't be frightened, it is only I.«

Since then the spirit which still remained in her body, has *talked in her mouth* and told her that X would give her a big sum of money to compensate her for the »lover-spirit«. About three weeks after the 5th of July, she had met Captain X and said to him severely: »Take it away! take it away!«, but X said nothing and left her.

When, however, by the spirit, X repeated his promises of large sums of money that she could draw in his office, she began to go there and write letters to Mr. X's son, asking him for the »promised« money. After having been turned away from the office, and seeing that her attempts to get her wrongs redressed by an amicable settlement were fruitless, she asked the help of the police in a letter, and when

she was summoned to the police-court, she told the following story there: Mr. X had set a lover-spirit inside her when she was in her home, on the fifth of July, 1914. This spirit spoke through her throat into her mouth, and she could take her solemn oath that Captain X could hear everything that was said, both at the examination and otherwise when she spoke. The spirit loved her almost every night and sometimes in the day-time too. It worked inside her like a big strong man and did not leave her alone even when she was in the lavatory or during her periods. She was also informed by the spirit and through a pricking sensation in her genitals when Captain X had intercourse with other women, and this frequently happened. As she found that she ought not to suffer like this without getting paid for her trouble, she had written to Captain X and demanded compensation. Through the spirit Captain X had then promised her a large sum of money, in September 1914. Her husband was now away, but she was convinced that Captain X would not dare to have the spirit within her when her husband was at home. Through the spirit she also knew that Captain X felt very uneasy when she was sad and wept, and she on her part felt very much troubled when Captain X was worried. She had consulted two doctors and wanted to get a certificate of health and a testimony that the spirit »had committed adultery with her«. With this testimony she would force Captain X to pay her the promised compensation. Through the police Mrs. C. was remitted to the mental hospital of the town and stayed there for some time. But she was still pestered by Captain X's »lover-spirit«. Furious at being treated as a mental defective, she travelled to Gothenburg and Stockholm, partly for the purpose of getting rid of her »incubus« by hypnotism and partly to get a health certificate, and armed with this to obtain redress from Captain X as well as from the physicians who had persecuted her. Dr. G., in Gothenburg, gave her hypnotic treatment in the early summer of 1915. Dr. G. told me that she was fairly susceptible to hypnotism and was soon completely free from her subjective symptoms, the voice inside her, etc. But she remained as undiscerning as ever with regard to the idea that the man in question had »kept her a prisoner«. When she had been at home for some time, she met him again and had a recurrence of the obsessing fancies, and »the lover-spirit« haunted her again. She then came to me in Stockholm, asking to be hypnotised and to get a health certificate. I referred her for eventual treatment to Dr. K., who arrived at the same result concerning her as Dr. G. had done. The incubus-sensations disappeared, but her morbidly superstitious fancies were unshakable. She had left her legal claims in the hands of a firm of solicitors in her town who wrote to me on her behalf. I stated that Mrs. C. was mentally diseased and I have not heard from the solicitors any more, though I have had repeated visits from Mrs. C. She did not find her stay in Stockholm entirely satisfactory; she had, to be sure, got rid of the constant visits of the »lover-spirit«, but she had not succeeded in obtaining redress.

Alternating Personalities, Double Consciousness.

The classical type of a dual personality is the case of Félida X, which was under observation by *Azam* for many years and has been exhaustively described by him.

Since her 12th year Félida X had exhibited a number of hysterical symptoms and appeared to be a depressed, anxious-minded and constantly suffering person. Time after time she had short fainting-fits from which she woke up quite changed, she was then gay and enterprising and quite free from her earlier ailments and complaints, which, however, she remembered. Her memory during this livelier state, »état second«, completely retained everything that had gone before. When this état second had lasted for a few hours, after a fresh hysterical attack, she relapsed into her original painful state, and in this state she had no recollection whatever of what she was like in her *état second*. This latter state gradually became of longer duration and involved her in serious complications, for during this state she showed a disposition for erotic experiences. She actually became pregnant and, during a subsequent brief normal period, she came to Azam, quite naively consulting him about her »swollen stomach«. After many years — Azam observed her from 1858 to 1890 — these two states still alternated, and during the normal state she had finally forgotten about three quarters of her life, owing to the long duration of the secondary states.

Cases of this kind have since been published by *Dufay, Pierre Janet, Pitres,* and others, and the main feature of them all, which to a certain extent justifies the term »dual personality«, is the characteristic *disturbance of memory (Wimmer),* for personal continuity is chiefly conditioned by memory.

In itself and apart from the impairment of memory, it is not at all unusual for the periodically affected patient to exhibit such a manifest alteration in feelings, interests, conduct and character during different episodes of his disease that it has been contended that he has *two* distinct personalities which alternate in the different phases of the disease. This is, of course, not the case and should only be understood metaphorically. But the difference, for instance, in the same patient, when he is in the depressive stage of *folie circulaire* and when he is in the hypomanic stage, is truly very often stupendous. If then we imagine a case of this kind to be complicated by impaired memory so that the patient afterwards, during an interval of health or a period of depression, does not retain the slightest recollection of what he has been doing during the hypomanic state, the doubling of his personality would be complete. In psychopaths (hysterics) who have been arrested for a criminal act, there is not infrequently an *opportune* expulsion of all recollections which refer to the time of the crime.

The following is a remarkable case of this complicated nature, which we have published in more detail in another connection:

Case IV. T., a naval officer in the reserve, aged 33. Previously of perfectly irreproachable conduct and in a good economic position, he was arrested in 1914 on

the charge of forgery and uttering counterfeit notes. All the circumstances indicated that the crime had been committed in an abnormal state of mind. Immediately after the arrest he fell into a state of hysterical confusion, and when he woke up from this state, he manifested complete amnesia for all events of the last 6 weeks, including the crime. He was excused from criminal liability after the Board of Health had pronounced him to have committed the crime whilst of unsound mind. He went back to his service in the navy in April, 1916. In September, 1917, he was again arrested for a criminal act of a very strange nature. It was during the World War, and T. had personally, without making a secret of either name or address, quite unconcernedly approached the German Legation in Stockholm with an offer to sell a photographic reproduction of a secret code of signals belonging to the Swedish navy. A somnambulistic audacity and absence of the most elementary caution marked T.'s behaviour on both these occasions. After being arrested, in 1917, he attempted suicide and after that again the same hysterical confusion set in as when he was in prison the first time; it faded away slowly, and he woke up with complete amnesia, this time if possible more absolute than before and extending over a period of 7 months and comprising not only the criminal act but also all details of his personal life. Among other things he is absolutely ignorant of an intimate liaison with a young girl and the paternity resulting from it.

Under renewed observation, extended over more than a year, and with the prospect before him of having to remain for a long time in the hospital, his statements remain unshakably consistent and there is no possibility of doubting the reality of the amnesia. T. is a hysteric and easily hypnotised. P sthypnotic suggestions are obeyed without fail. Moreover, complete analgesia can be brought about in this manner. His memory, too, is easily influenced during the hypnosis and gaps of memory for past events can easily be suggested. But, on the other hand, all recollections of the spontaneous periods of amnesia are inaccessible even during hypnosis, which, in all probability, may be explained mainly by their opportune nature, closely bound up with self-preservation. In agreement with renewed statements from the present writer, in June 1918 and June 1919, the Board of Health declared that this time also T. was likely to have been of unsound mind when he committed the crime and that he required continued medical care.

This very remarkable case undoubtedly deserves to be compared with other cases of so-called »dual personality« which have already become in some measure classical, and if, in some essential point or other, it is open to doubt, this may also apply to the earlier cases. In these cases the persons concerned are almost invariably *hysterics,* and it is well known that the boundaries between hysteria and simulation are fluctuating. This is especially the case with prisoners committed for trial, but there may be other obscurely inspiring motives beside that of self-preservation, and not the least frequent is the desire of attracting attention and interest. How this motive may have acted in the classical cases of double consciousness, it is not easy to say. But as far as we can judge, it should not be left unnoticed. We will, how-

ever, leave these questions for the present and resume the discussion of them later on. The impairment of memory, so essential in these cases, will also be more closely considered in another connection. For without this impairment we should surely have no reason for speaking about two or more personalities, or at least no more reason than there may be in, for instance, folie circulaire.

If we make *Janet*'s synthesis of personality the basis of our interpretation of these phenomena, and suppose that out of the sum total of elements of personality, organic sensations, and recollections, two groups are formed, two empirical Egos, as the underlying stratum for two persons, there will still be a distinction between split personality and dual personality in that in the latter case the two formations within the original person alternate in accordance with the broken continuity of memory, whereas in cases of split personality they are coactive, which is characteristic of obsession. Be this as it may, the name »dual personality« should always be accepted with much reserve. Often in these cases there is a strange psychical plasticity characteristic of hysteria, whereby the personality of the patient willingly adapts itself to the impulses of his fancy. It is this adaptability which is referred to in the expression *suggestibility*. It is very easy to make a hypnotised person familiarise himself with the rôle of any named unknown person, and in certain rare cases the hysteric is led by his own fancy dramatically to merge his identity in that of an autosuggested personality. The stigmatist who lives through Christ's sufferings, and Miss Helen Smith, described by *Flournoy*, who during long alternate periods was now Cagliostro, now an Indian princess or an inhabitant of Mars, and who spoke a special »Martian language«, afford good examples of autosuggested alternating, or respectively, dual personalities.

To dual personality may also be said to belong the not infrequent cases of fugues, absences and dreamy states of hysterical or epileptic character *(Schulze, Heilbronner, Raecke)*, which we will discuss later on. They consist of a somnambulistic absence of mind, accompanied by a more or less complete oblivion of the experiences of a shorter or longer period, and thev are naturally of interest to psychiatric jurisprudence.

LITERATURE:

Ribot: Les maladies de la personalité. 1889. *Janet, Pierre:* Les obsessions et la psychasthenie. 1903. *Oesterreich, K.:* Die Phenomenologie des Ich in ihren Grundproblemen. B. I. 1910. *Schilder, Paul:* Selbstbewusstsein und Persöhnlichkeitsbewusst-

sein. 1914. *Isserlin, M.:* Psychologische Einleitung (in: Aschaffenburg's Handbuch der Psychiatrie). 1913. *Wimmer, August:* Hukommelsestab og »Dobbeltbevidsthed«. 1918. *Flournoy, Th.:* Des Indes à la Planète Mars. 1900. *Gadelius, Bror:* Om medvetna och »undermedvetna« psykiska processer. Psyke 1908. *The same author:* Själspatologiens ställning till det personliga. Sv. Läkartidningen 1918. *The same author:* Tro och övertro. 1912—13. *Charcot:* Clinique des maladies du système nerveux publiés p. Guinon. T. 2. 1893.

CHAPTER VII.

IDEAS AND CONCEPTIONS. THE PATHOLOGY OF PERCEPTION. FALSE PERCEPTIONS. ILLUSIONS AND HALLUCINATIONS.

The elementary psychic stuff of which ideas and (as we have assumed) also emotions are formed, we call perceptions. These are either outward or inward. In a preceding chapter we have already devoted attention to the former, and we have seen how sensations from our body and our internal organs enter as the essential and most constant elements into the central part of our consciousness which, in an empirical sense, constitutes »our Ego«. Around this Ego is grouped, like a system of concentric circles, the more extensive part of the mind's content which is referable to the outer world and is conveyed by perceptions from the outer senses.

Through these outer senses a never ceasing stream of perceptions flows into our consciousness, from which conceptions and thoughts take shape, and the result of which, on the other hand, is a sediment of memories which widens our personality by an ever increasing experience. Thus all our activities in life originate in the constant contact with the outer world in which, thanks to our senses, we find ourselves, and it is this well-tried truth that is expressed in an old saying: *Nihil est in intellectu quod non antea fuerit in sensibus.*

Through stimulation of the peripheral sensory surfaces by sound, light or other active agents, a functional change in the outer sense-organs is produced. From them the stimulus is conducted to the brain, where the impressions are changed into perceptions. That the qualitatively varying nature of the different perceptions is due to the specific energy of the peripheral sense-organs as well as to that of the cerebral sensory centres is surely beyond doubt.

According to *Henschen,* there is a transformation of the specific

stimulations or energies of the peripheral sensory surfaces which, while keeping their specific nature, are brought into a common form of force. »Just as a windmill and a stream of water cannot cooperate for the production of power till their movements have been transferred to a similar or to the same apparatus, or their forces have been transformed into a new, for instance electrical, power, so also we must imagine that the specific, and hence heterogeneous, energies of the different senses must in order to cooperate be transferred to homogeneous cellular elements, while keeping certain specific qualities.« In this way the different sensory surfaces of the brain become capable of »cooperating with each other or of being associated for higher psychical forms of movement or complicated ideas.«

The central sensory surfaces for vision, hearing, smell, taste and touch constitute storehouses of perceptions, in intimate communication, even though locally separated. By a consonance of these sensory surfaces our ideas are given the elementary stuff of sensorily toned impressions, which now make the ideas seem reflexes of the objects or concrete memories of them, now only give an abstract image of sensory reality to the ideas which we call *concepts*. Perceptions, memories and concepts, as regards sensorily perceived clearness and concrete distinctness, form a scale of phenomena which gradually loses in external palpability in the same degree as this consonance from the sensory surfaces decreases in strength. However, through the perception of outer things and the actual experience of different sense-impressions, our ideas are anchored at the sensory centres; and this primary attachment, conditioned by contact with the outer world, connects our ideational life inseparably with the original storehouse of the sense-perceptions. Hence our memories and the generalisation of them, which by the aid of language is enclosed in the concepts, constantly remain in a more or less perceptible contact with these storehouses, however much this contact wears away and loses in originality by the constant use of the concepts.

When as children we make our first acquaintance with a certain object, for instance an orange, we receive a most vivid impression of it through several of our senses. While our hands glide over the half-solid, faintly cool, outer form of the orange, our sense of smell takes in the pleasant, aromatic flavour, our eyes see its round shape and yellow colour. When we then peel it and our mouth delights in the refreshing juice, we enjoy for a few minutes a symphony of numerous impressions localised in different sensory centres which are afterwards

called up as soon as the memory of this experience is awakened and will finally as a faintly symphonic recollection impart content and concrete tone to the concept »orange« every time this word is pronounced. Finally the strongly reduced sense-reality of the concept takes the place of the complex of vivid perceptions which constitute its original, concrete background.

In this way concepts, for instance, the concepts of animal, horse, bird, tree, bush, rose, negro, etc., etc., represent a wide complex of elementary impressions, distributed over different sensory surfaces, towards which in each special case the subject assumes a more abstract or a more concrete attitude according to the circumstances, the degree of emotional tone, and so on. For the shaping and retention of the concept, *language* fills an important task. Words are keys, and when they are struck, they evoke a resonance vibrating over wide fields of association. A concept which under ordinary circumstances is touched nominatively and then passes quickly by in the stream of thought, may under other circumstances be retained and, thanks to the attention we bestow upon it, be again actualised in its original strength. In that case a *reperception* takes place; the idea is raised from the general and abstract form of the concept and resumes the character of a concrete recollection at the same time as it appears with greater distinctness and objective definiteness. This reperception is more or less complete, according to the emotional tone and other concurrent circumstances. ranging from the development of concrete ideas with a strong sensory tone to real *hallucinations*. If, for instance, a sensitive person has been frightened on some occasion by a savage dog, the word and concept »dog« will not easily glide by without colour; out of the concept the concrete memory is readily actualised owing to the strong emotional tone; and what is more, an easily frightened person, afraid of dogs, may even imagine that he sees these animals and hears them barking when they are not there.

The mental act which we call observation or, when it is more involuntary, *perception,* is by no means so simple as we often think. A large number of elementary sense-impressions, sensations of colour, form, sound, and movement, are to be assimilated with certain memories into a homogeneous image. If this assimilation is deficient, or if irrelevant details are mingled with the image, the observation becomes

faulty, misguiding and deranged. An observation thus falsified as to its content, we call an *illusion.*

Illusion is often a normal phenomenon and as an involuntary ideational act illustrates what Wundt calls *creative synthesis.* Particularly illuminant examples of physiological illusions are found in the reproductive assimilation phenomena. The idea of landscapes or rooms which the often coarse painting of a stage-setting gives us, is such an illusion. The assimilating ideas which determine our conception are the images in our memory (reproductions) of landscapes, etc., which are here assimilated with certain systematically arranged lines and coloured surfaces into a calculated pictorial whole.

More capricious illusions of this kind are the so-called *pareidolias,* in which the entirely objective shaping of the mental images is prevented by the distance of the objects, their indistinctness, vagueness in detail and line, etc. A common example of this is afforded by »the man in the moon«, and in similar fashion the damp surface of a wall, spotted and uneven, may, under the influence of suitable distance and a certain degree of creative imagination, reveal a forest view, a bizarre study of a human body, etc. In fever-delirium, slight intoxication or the beginning of sleep, that is, in all conditions where the clearness of consciousness decreases, pareidolias are very common.

Other examples of reproductive assimilation phenomena which result in illusions are found in a number of very commonplace misreadings, mistakes and confusions. For the reasons mentioned above we do not notice the errors in a proof-sheet, misread the head lines if we look hastily through a paper, etc. We often finish the sentence of a speaker before he has had time to do so himself, and we notice this best, when we have been in such a hurry that we put the wrong construction on it. When imagination is morbidly excited and attentiveness towards external objects is lessened, the assimilating power of our ideas is heightened. Hence it is very common for maniacs and fever patients to mistake one person for another, and so on.

To be perfectly objective, that is, to take in what one sees and hears with the exactitude of a camera, is a quality which demands alertness and attention in the onlooker, as well as a quiet and harmonious frame of mind. The frequent absence of these conditions easily explains the everyday experience of human errors and misunderstandings.

The effect of deficient attention is heightened in the presence of an emotion, for instance, strained expectation, dread of darkness, pathological anxiety, etc. The emotion and the associatively connected memory images which it has evoked determine the assimilation in these cases.

If we have for a long while impatiently and perhaps with strained expectation been looking out in vain for a person with whom we have an appointment among the people coming and going in the street, we

suddenly seem to see him approaching; we seem to recognise his bearing and looks, and only when he comes close to us do we find that we have imparted our friend's exterior and face to a perfect stranger.

A person who is troubled with a dread of darkness will fancy that a weird shape steps out of the gloom and looks at him threateningly. In reality, he sees nothing but a white coat hanging on a peg and perhaps stirring slightly in the draught from an open window.

This typical form of sense illusions is extremely common in such mental diseases as are marked by an abnormally highstrung emotional state. Depression and exaltation, *melancholia* and *mania*, often display a mental state inclining to illusions, which lends support to existing mental delusions or favours their development. Also in the evolution of chronic paranoid states, affective illusions have a marked influence on the gradual displacement of ideational life towards the abnormal.

As there is a conformity in all essential things between the illusions of sane and insane persons, it is easy in each special case to watch the development of this form of sense-illusion in the latter. A morbid abatement of the power of attention and an incapacity of fusing together the impressions into distinct conceptions in keeping with reality, always afford space for the creative interference of imagination. States of reduced apperceptive faculty in incipient confusion or some slight muddling of consciousness (states of perplexity) are always apt to cause subjective dislocations of the outer reality. In our dreams during light sleep, illusive disturbances of the outer impressions also arise, and the same thing happens during the slighter narcoses. The intensity and quality of the outward perceptions changes. Slight sounds grow into a loud noise and the booming of guns, colour-perceptions are altered and associate themselves with weird fancies. During states of confusion the sense-impressions are misunderstood and distorted into a medley of ever changing images, and all perceptions yield with plastic readiness to the creative imagination. According to the mood or emotion which for the moment rules the patient, the surrounding objects stand out now in a dismal and threatening, now in a gay and mirth-provoking light, and the mien, attitudes and movements of other people appear alternately intimidating and kindly, at one moment provoking laughter, at another resistance and violence.

In cases of neurasthenia and psychasthenia we frequently come across a change in the patient's conception of his own organs, the so-called *macropsia* or *micropsia;* in the former case the body or its parts seem unnaturally big, in the latter unnaturally small. A third form of

these somato-psychical illusions is *dysmegalopsia,* when the body is felt to be unsymmetric, larger on one side than on the other. These somatic illusions are closely related to the disturbances in the synthesis of organic sensations, which are very often manifested in the so-called negation and transformation manias (dementia praecox, senile melancholia, senile dementia, arteriosclerosis and general paralysis).

Naturally such a varied and conspicuous symptom as false perception very early attracted the notice of mental pathologists, and we find a detailed account of these phenomena already given by the prominent French psychiatrist *Esquirol* (1772—1840). It was he who drew a sharp line of demarcation between *illusions* and *hallucinations.* »In illusions,« he writes, »the sense-organs are active and impressions from outside provoke a reaction in the brain, but the effect of this reaction is influenced by the ideas and tendencies which rule the patient's life, and so he deceives himself with regard to the nature and the causes of the existing sense-impressions.« »In hallucinations, on the other hand, the phenomenon occurs solely in the brain. The brain-activity is so highly strung that during hallucinations the patient gives body and reality to images and ideas which his memory evokes without the intermediation of the senses.« In hallucinations the patient accordingly is »animated by an inner conviction that he is under the influence of a distinct sense-impression, whereas in reality no outward object touches his sense-organs.« On the authority of this classical and on the whole still acceptable definition, we may briefly say that *an illusion is the subjectively distorted image of a real object, whereas an hallucination is a mental image projected outwards without an object.*

And yet it is not absolutely correct to draw this sharp line between illusions and hallucinations. Hallucinations very commonly make use in their development of outward realities as a *point de repère,* or of certain peripherally subjective perceptions comparable to outward realities, for instance, *mouches volantes,* or entotic sound-phenomena, as tickings or tinnitus in the ears. In hallucinations, however, the main thing is unquestionably the central subjective element, and in the genesis of this form of false perception we must suppose a central over-excitation which, in the instant of the hallucination, is given a vent or rather an opportunity for discharge. It is in these moments of strong inner pressure that the above-mentioned peripheral factors bring about the explosion. As a saturated solution can easily be brought to crystallise by rubbing against the walls of the vessel, so is the hallucinatory discharge frequently caused by a peripheral shock or stimulus, in itself slight, which becomes the exciting cause. The mobility of the visual hallucinations in an acute alcoholic delirium may possibly be due to extant *mouches volantes* forming the nucleus round which the hallucinations take shape. Also smaller visually perceived details, such as the pattern of a wall-paper, spots on the wall, streaks

of sunshine, etc., may become a centre for the often florid forms of false perception. A similar development, which in principle hardly allows any sharp distinction to be made between illusions and hallucinations, can be seen still more plainly in the case of auditory hallucinations. For a mentally affected person whose mind, so to speak, is filled to the brim with preparedness for hallucinations, every sound, be it ever so slight, becomes the drop that makes the cup run over. In the whispering of leaves, in the sound of passing footsteps, in the rattling of keys, in the rush of the water when the tap is turned on, even in the faint friction of the thread in sewing, the »voices« are heard to speak, they are always ready and are awakened by the slightest noise. Hallucinatory susceptibility is also very commonly made active in connection with inflammations of the middle ear (tinnitus, tickings and rattle). If the hearing of one ear only is reduced, it is from this ear, as a rule, that the hallucinations are induced, but the centrally subjective perception is apprehended by both ears. Unilateral hallucinations are extremely rare.

In regard to the stage of development, we distinguish between elementary and differentiated hallucinations. To the former belong the so-called *acoasmas* (elementary auditory phenomena assuming the character of vague sounds, noise, music, etc.); to the latter, more differentiated auditory hallucinations, the so-called *phonemas (Wernicke)* or, popularly, the *»voices«*. In visual hallucinations, too, we meet the phenomena in similar stages of development, either elementary with the character of simple light- og colour-perceptions, glare, flames, etc., or differentiated into various shapes and other florid visions full of figures.

Whether the elementary hallucinations are to be interpreted as real, centrally conditioned, sensory hallucinations or only as peripheral stimulus phenomena, must be tested in each special case; both kinds of origin are possible. A similar ambiguity also, for obvious reasons, exists with regard to hallucinations of the other senses, smell, taste and touch. Undoubtedly the abnormal sensations are often centrally conditioned, but, on the other hand, they may be due to peripheral states of irritation (in cases of decomposition in the oral and nasal cavities, etc.). The former is not infrequently the case in epilepsy (hallucinatory aura), and in alcohol-delirium real tactual hallucinations are present (haptic hallucinations). A fairly common form of tactual hallucinations are the *sexual* hallucinations. Such conditions are common in climacteric insanity and seem to be characteristic of the so-called *involution paranoia (Kleist)*. In men too *(dementia praecox)* sexual hallucinations are met with and, as always, they give rise to paranoid suspicions of nocturnal assaults and crafty and improper advances on the part of the persons surrounding them.

Hallucinations from several senses at the same time are not infrequently observed. We then speak of combined hallucinations. Such combinations are common incidents in the delirious states during psy-

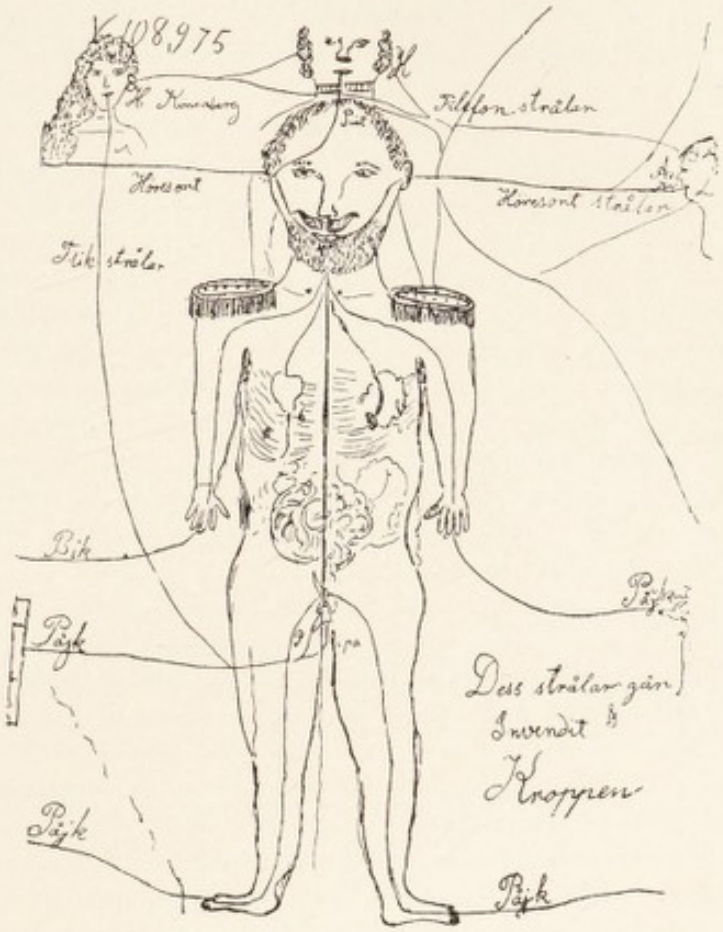


Fig. 13. Drawing made by a patient suffering from hallucinations from several senses.

choses due to fever, infection or acute intoxication, and also in acute forms of confusion of an endogenous nature. In these forms of mental disease, which often have a rapid and favourable progress, the patient's condition is like that in a dream. He becomes the prey of all kinds of false perceptions, and lives through the most vivid scenes and situations, just as we do in our dreams. But also in certain chronic forms of disease, as in the paranoid form of dementia praecox, hallucinations from several senses at once may be present, notwithstanding the patient's general alertness and good orientation. A common combination in these chronic psychoses of paranoid character (paraphrenia, *Kræpelin)* are hallucinations of hearing, smell, taste and tactual sense, and in the last respect particularly from the genital region. Fig. 12, a drawing

made by an insane man in order to explain the assaults on his body by supposed persecutors, visualises in a drastic manner the many disagreeable influences which may trouble such a patient.

Is is a well known fact that hallucinations can occur episodically even in perfectly healthy people. Circular inquiries which have been sent out and answered seem to indicate that hallucinations in normal persons are commoner than one might *a priori* believe. To all appearance, however, many of the prominent personalities who are said to have had visions or heard voices at some time or other, were on these occasions off their usual balance. Such was probably the case with *Tasso, Shelley, E. T. A. Hoffmann, Schumann,* and others. Not a few of the great painters possessed or developed in themselves a visual creative faculty, which not infrequently culminated in real hallucinations. Thus we are told about *Spinello* (ob. 1410) that the devil once appeared before him, complaining that Spinello had painted him so repulsive. The painter *Montagna* (d. 1523) is said to have possessed in such a high degree the power of giving concrete form to the inspirations of his fancy that he straightway delineated his visions, and about *Raphael* it has been related that when he had in vain attempted to draw the Holy Virgin's face from his own imagination, she at last took pity on him and complied with his fervent desire of beholding her countenance.

Earlier in this work we have laid stress upon the view that primitive people in olden times, during epochs of civilisation that were marked by a religious exaltation easily passing into ecstatic conditions, should not be placed on a level with or judged by the standard of people of our own age. Anyone desiring an insight into the strange mentality of the Middle Ages should read *Henrik Schück*'s work: *Vår förste författare* (The earliest Swedish Author), where the visitations and lively visions of *St. Christine* of Stumbelen are related as told by eyewitnesses. The points of view from which historical personalities and their lives are judged are also applicable to many a religious ecstatic in later times. The mental life of man has shown itself to possess a stronge faculty of adaptability to the conditions of the time and the state of civilisation, and it behooves us to use the psychiatric footrule with caution. The episodic visitations which a man like Luther experienced cannot be dismissed with a psychiatric diagnosis. Thus hallucinations must not always be regarded as a proof of mental disease.

From hallucinations in the strict sense *Kandinsky* distinguishes the so-called *pseudo-hallucinations*. By these Kandinsky meant »such objective stimulations of certain sensory regions of the brain as call forth fully concrete and very vivid sense-perceptions or sense-images, the observing consciousness, however, distinguishing them sharply from hallucinatory images in that they lack the character of objectivity and reality possessed by the latter, appearing on the contrary as subjectively conditioned and yet also as something abnormal, new and very different from the ordinary sense-perceptions and images of fancy.«[1])

[1]) Quoted after *Frey Svenson.*

Among the pseudo-hallucinations which lack the property of the genuine hallucinations of being projected into objective outer space and, according to Kandinsky, only appear in »the mind's eye«, this author also seems to include the *hypnagogic* hallucinations, which even in healthy persons may present themselves immediately before falling asleep.

Frey Svenson, who, like Kandinsky, guided by his own experience, especially with regard to hypnagogic hallucinations, has attempted to penetrate into the psychology of the phenomenon, is, however, of opinion that the hypnagogic hallucinations may be genuine hallucinations. The hallucination, according to *Svenson,* is »a conception that has taken the shape of a perception without an adequate stimulation of the corresponding sense-organ«, and what in his view distinguishes hallucination from vivid conception is the *»perception-actuality«* — *Wernicke* has earlier pronounced the same opinion. This *»perception-actuality«* is conditioned by certain organic sensations which give the feeling that the peripheral sense-organ is active, and hence it seems to the hallucinating person that he *hears* and *sees,* and not merely that he thinks. A conception may, in Svenson's opinion, have a high degree of concrete sensory distinctness, even of bodily objective reality (what *Jaspers* calls *»Leibhaftigkeit«)* without being a hallucination. In this way there only arise sensorially coloured, well-developed conceptions and concrete memory-images or, at the utmost, pseudo-hallucinations. It is only through the »perception-actuality« that the hallucination arises. We will return to this question later on.

Hallucination is sometimes an acute, transient symptom without significance for the progress of the disease, but in other cases this symptom has a more persistent and chronic character. It is then conditioned by profound changes in the patient's mental life, at the same time as it helps to hold him firmly in a deranged conviction. While visual hallucinations often belong to the acute category of symptoms, auditory hallucinations easily become chronic, and, on the whole, the latter have a more serious prognostic significance than the former. In the comparison between visual and auditory hallucinations, this also applies to the different suggestive effect of the hallucinations on the patient's conception of and attitude towards the outer world.

Though, indubitably, cases of visual hallucination of a more chronic nature are not rare, the general rule is that visions are more acute and transitory symptoms than auditory hallucinations. In acute alcohol-delirium the visual hallucinations usually disappear at the same time as the delirious state, and the cases which from an initiatory stage of delirium tremens develop into hallucinosis or alcohol-paranoia are almost without exception such as are combined with auditory hallucinations. We do not know the reason for this. Possibly it may be found in the peculiar conditions within the respective sensory centres, and I am inclined to presume that

recovery of the physiological balance is more easily effected after functional disturbances within the sphere of vision than when there has been an overexcitation in the auditory sphere.

Our visual perceptions of the outer world, owing to their abundance, their form and colour, their now mobile, now fixed relation to surrounding objects, and their perspective relations, are of such a complicated nature that visual hallucinations, when they interfere with all this, can hardly fail to reveal their nature; and it is extremely rare that they possess such a stamp of reality as to derange the hallucinating person's judgment, letting him remain in the belief that the visions really exist. It is true that in this stamp of reality the outward objectivity (*Leibhaftigkeit,* according to *Jaspers)* of the hallucinations as well as the perceptive actuality *(Wernicke, Svenson)* is included — the distinction between these two factors, which interact and condition each other, seems to us rather artificial — but even when these conditions for the genuineness of the hallucinations are fulfilled, they may lose their objective appearance through deficient conformity with the environment in which they occur. As long as the clarity of consciousness is quite untroubled, the visual hallucinations are thus very seldom able to detach themselves from the subjective plane represented by the pseudo-hallucinations, and even if they appear in objective plasticity, they still give the impression of being something alien to the outer world. By their absurd content, incongruous with the environment, by their conspicuous disproportion which cannot be fitted into real space, they contrast so essentially with the objects seen simultaneously that the patient's conviction of their reality is neither genuine nor overmastering. However, only a certain measure of emotion, anxiety or fear, need set in to trouble consciousness and hinder attention, for the hallucination to overpower the patient and exclude his faculty of criticism.

In other words, the visual sense is a sense appertaining to the outer world and of such a highly differentiated nature that the hallucinatory reversal of its function in the direction *from inside out* only seems possible in an imperfect degree. With hearing it is quite different. This sense is in its mental relation more of an inner kind. Objectively, the auditory perceptions do not possess such a high degree of characteristic differentiation as the visual perceptions, and subjectively, hearing has many more points of contact with our inner being, our emotions and thoughts, our intelligence and our endeavours. This is why

the contact between ourselves and other people's minds is in the main effected by the auditory sense. If we compare the psychological importance of auditory and visual impressions, it is undeniable that what is imparted to us through our hearing affects our personality far more intimately. It reaches our innermost soul and is more immediately received by our Ego in being assimilated with our interests and endeavours. Visual impressions more affect the outer aspects of our personality, whereas our inner, essential contact with other persons is mediated by the sense of hearing. This intimate and immediate relation to our mental life explains to a certain extent the higher compliance and adaptability of the auditory apparatus in cases where an abnormal irritability in the acoustic centres gives favourable conditions for the reversed functional direction manifest in the hearing of »voices«.

The difficulties a normal observer would have in fitting the phenomenon into the texture of outward reality, do not exist for the patient, whose criticism of the auditory hallucinations is rarely provoked to positive resistance. A mentally deranged person who »hears voices« may find with some astonishment that what he hears is not heard by those around him, but he either relies more upon his own senses than upon those of other people and thinks it quite probable that he has »a keener hearing«, or else he believes that his secret friends or foes use special agencies, such as »wireless telegraphy«, »specially prepared gramophone records«, and so on.

The close connection between the imaginative life and the sensory falsifications — and this applies above all to auditory hallucinations — is however only partially elucidated by the circumstance that the patient can easily enough explain away the logically absurd and by the aid of his imagination find convincing reasons for the reality of the hallucinations. The deeper connection between hallucinations and ideational life is, as already indicated, based on a *final causality. Hallucinations are, to be sure, the manifestation of a deranged life* but they also imply a final confirmation of the reality of long harboured suspicions, fears or hopes. Accordingly when the physician tries by arguments to shake the patient's belief in the reality of his »voices«, he is requesting an abnormally inspired imagination to put to death not only its own offspring but also its deepest ground, manifestly an unreasonable demand.

This intimate relation between the patient's mental and ideational attitude and the eventually heard »voices« is thus the circumstance that makes the auditory hallucination so persistent and unfavourable a symptom. Even in extremely rare cases there is hardly anything to

be compared with this in visual hallucinations which are more frequently characterised by a whimsical elusiveness, whereas auditory hallucinations possess an almost logical consistency. The patient's mental life is like an overheated steam boiler where there is a constant high pressure of imprisoned thoughts, anxious expectations, suspicions, fears and hopes, and finally the tension finds an outlet in ways of which the patient knows nothing. Then, when the »voices« make themselves heard, we can judge of the inner tension from their development, but the patient's mental life is unfortunately like a boiler without a safety valve, and the hallucinations, far from affording relief, rather increase the pressure. They go to confirm the suspicions, fears and hopes, and the certainty does nothing but increase the tension. Here, then, we find the conditions determining the gradual development of the »voices« and their unwillingness to recede.

What we have to take into consideration in explaining this phenomenon and assigning its clinical value, are the psychological conditions determining the origin of the hallucinations and their connection with the patient's mental condition generally. It is a question of theoretical interest with hardly any practical significance, whether *genuine* hallucinations are often present, and whether the criterion of a genuine hallucination, as distinct from a pseudo-hallucination, consists in the outer objectivity *(»Leibhaftigkeit«)* of the images, or in the perceptive actuality. *Wimmer*, agreeing with *Masselon*, *Schroeder* and others, expresses the opinion that »hallucinations with the vividness of a sense-impression and with a definite (and primary) projection outwards in space are extremely rare, at any rate in cases where hallucinations have been observed in spite of perfect lucidity. Most frequently we are here only concerned with pseudo-hallucinations.«

How far Wimmer is right is probably difficult to decide, but little importance attaches to this decision, since a hallucination undoubtedly has the stamp of reality in every case where this phenomenon develops as an involuntary and automatic projection outwards of the patient's conviction.

With regard to the theory of the origin of hallucinations, we must, to begin with, pay due attention to the distinction between 1) acute false sensory perceptions occurring during a confused or clouded state of consciousness, and 2) those developed subacutely, or chronically, which present themselves when consciousness is clear.

When acute hallucinations occur, there is generally a turbidity of consciousness. An incoherence (dissociation) within the ideational life

is then unmistakable. This state has the character of a *dream* or of a somnambulic mental condition. Our experiences in dreams are extremely helpful in elucidating the genesis of the hallucinations in these cases. The chief factor is here *dissociation.* However we may explain the physiological processes when sleep is coming on, one thing is certain, that our consciousness from being a regulated and purposive reasoning suddenly changes into a chaos, more or less rich in details, in which events and situations succeed each other in a kaleidoscopic manner, without inner connection and unguided by reason, logic or criticism. It must be borne in mind that this dissolving process, which we call dissociation, even during sleep has different degrees, and it is not altogether unknown to the waking state, as to which the experiences of distraction and day-dreams bear witness.

If we carry on the comparison between the delirious and confused states and normal dreams, we meet in the development of both of them the remarkable circumstance that every time the ideational life, at the cost of coherence in reasoning, breaks up into a thousand fragmentary memory-images and disconnected ideas, the formative power of these memory-images rises at the same time to a height which gives back to them something of the plasticity and objectivity of sensory impressions or perception. In a word, the fanciful creations of memory and impressions which meet us in the shape of dreams, often possess in all their features a clearness of outline and a sensory objectivity which give us good reason for speaking about the *hallucinatory vividness of dreams,* and in all likelihood there is a deep psychophysical conformity between dreams and the *hallucinosis* which accompanies episodic states of acute confusion.

So far the problem of hallucinations presents no difficulties. It is harder to explain the sensory vividness of the images in our dreams, and also how *dissociation* in acute confusion-psychoses can change the memory-images into the seeming perceptions which we call hallucinations.

Among numerous hypotheses I will only quote that of *William James.* In opposition to earlier brain-anatomists, psychiatrists and psychologists *(Meynert, Taine),* who assumed two kinds of centres, the subcortical or sensational, and the cortical or ideational and reproductive — both kinds of centres have been localised to the cortex by later investigators *(Kraepelin, Ziehen, Henschen)* — James supposes ideas and perceptions to have a common substratum. It only depends on the intensity of the nervous process, whether idea or sensation will be produced. Under ordinary circumstances there is a free discharge from the cells through the associative paths between them, and the tension does not rise to the maximal explosion-point unless the exciting currents are greater than those which the various portions of the cor-

tex supply to each other. Nerve-currents from the periphery (centripetal) are thus the only currents that are able to vanquish the intracellular resistance which James calls the »supra-ideational« and bring about the peculiar disintegration with which sensational perception is linked. In order to account for the process, James illustrates his theory thus: »Let an empty pail, with a leak in its bottom tipped up against a support so that if it ever became full of water it would upset, represent the resting condition of the centre. Let water poured into it stand for the currents which are its natural stimulus; then the hole in its bottom will, of course, represent the paths, by which it transmits its excitement to other associated cells. Now let two other vessels have the function of supplying it with water. One of these vessels stands for the neighbouring cortical cells and can pour in hardly any more water than goes out by the leak. The pail consequently never upsets in consequence of the supply from this source. A current of water passes through it and does work elsewhere but in the pail itself nothing but what stands for *ideational* activity is aroused. The other vessel, however, stands for the peripheral sense-organs and supplies a stream of water so copious that the pail promptly fills up in spite of the leak, and presently *upsets,* in other words *sensational* activity is aroused. But it is obvious that if the leak were plugged, the slower stream of supply would also end by upsetting the pail.« Thus James would explain hallucinations through a blocking of the associative paths (dissociation).

However ingenious this hypothesis may be, it commits the error of rather too undauntedly applying anatomical points of view to psychological conditions. To a certain degree it may be a matter of intellectual taste whether one feels attracted towards such analogies; but undoubtedly they are far from being shot-proof from the criticisms which *Nissl, v. Monakow* and others have expressed against every »brain-mythological« mixing of anatomy with psychology. May be such hypotheses can be defended, may be not. In the latter case we must for the present abstain from all attempts at explanation and willingly admit the limitation of our knowledge.

As to the other form of hallucinations, *the more or less chronic ones which occur when consciousness is clear,* the conditions are here quite different, though we still have to give heed to the same two causal factors, *dissociation* and *stimulation of the centres.*

Esquirol had already pointed out that hallucinations cease when the patient's attention is claimed by a conversation, a task which he has been set, or the like. It is easy to ascertain the truth of the observation that it is only when attention slackens and a certain degree of distraction or *functional dissociation* sets in that the »voices« are heard. In diseased persons, especially the paranoid, or in the hysteric or the katatonic who is lost in himself, this abstraction reaches a far higher degree than in the normal person. Characteristic of all these patients is the day-dream, or rather, an incessant mental rumination, absorbing the thoughts in certain obscure fears, presentiments, or expectations that »something great« will happen. The primary factor here is always a morbidly changed affective life, which is the root and

origin of the pathological egocentricity of the dream-life of the hysteric and the autism of the katatonic. Real life never takes properly hold of these patients, they meet its happenings with an abstracted eye; they are in one way or another always held captive within themselves, self-centred or self-absorbed (autistic), and they listen to the flow of impulse, the involuntary course of spontaneous thinking, which incessantly wells up in their minds, filling them with suspicion, with wonderings, expectations or presentiments, all according to the nature of the affect which has fixed certain complexes in them, and they are in the power of these complexes, personally unfree or disintegrated. The sundering of personality, which reaches the highest degree in hysteria and katatonia, is present in every case where hallucinations occur, and I agree completely with *Frey Svenson*'s view that hallucination is a schizophrenic symptom.

It is probably to a certain extent due to the same conception that *Kraepelin* is unwilling to assign to paranoia cases of derangement where hallucinations occur. We cannot, however, make a sharp distinction between the different forms of disease as Kraepelin does. Before the involuntary creative imagination of the deranged has completed its work and, as it were, built up a new cosmic system, which has had time entirely to displace the reality of the normal person, the struggle within him between two different points of view, that of imagination and that of reality, creates a state of distraction and dissension, a dissociation of the personal coherence which often leads to hallucinations. To this emotionally conditioned dissociation is joined the stimulation of the sense-organs in a way that we may most properly regard as *auto-suggestion*. The physiological point of view, hyperaemia in the vessels of the brain, intoxication of some sort, here sinks into the background, for it is the psychological side of the matter that now obtrudes itself upon the beholder.

When discussing illusions, we saw how strained expectation, dread of darkness, etc., may, so to speak, force the activity of the peripheral sense-organs to a consent, resulting in an illusory remodelling of auditory and visual perceptions in accordance with what is expected or dreaded. The enduring and constant influence of the egocentric emotion has an intensely strong effect. Months and years may pass without the patient ever getting any peace; night and day he lives in anxious expectation; and like watchful outposts, now against surrounding dangers, now on the watch for the realisation of a long cherished dream of greatness, his senses are always on the qui-vive.

But this strained expectation, directed towards certain imaginary possibilities, is probably, on the other hand, the manifestation of a gradually increasing stimulation of the sensory centres, which culminates in a preparedness of these centres at any time to clothe the unconscious impulses in the form of sense-perceptions. And that which in the moment of hallucination invests itself with the garb of sense-perception is nothing but dissociated fragments of the patient's own most deeply hidden meditations, his own suspiciousness, his own belief, fear or anxiety, his own ambitious expectations, his aspirations and dreams of success and glory, as well as his hidden or repressed erotic desires, all that which within himself, uncritically and in a deranged and gradually deranging manner, under strong emotional tension, is developed into an incessant conscious as well as subconscious mental rumination.

Let us use a metaphor to further illustrate what has been said above. Just as a stone, thrown into the air; is in immediate contact with the thrower only at the moment when he holds it in his hand, so it is with spontaneous thinking in the different stages of its development. Here the propelling power of the throw is the feeling-tone, the emotion. The feeling-tone, even when it manifests itself in a more spiritualised form as interest, is a bodily heat, developed in some way or other, which at the moment the thought is born is converted into movement, very much in the same way as when combustion creates muscular activity. And once begun, the movement continues, with ourselves as onlookers, in the same way as when we throw a stone into the air. We may — and this is often the case in states of distraction — turn our back on the whole of the subsequent process, and then we cease to follow the spontaneous course of the thought, just as we cease to follow the course of the stone and to watch it falling into the water or a field. If so, we shall be all the more startled when the inner processes in their final effect wake us from our dreams with an *argumentum ad hominem* of the most powerful kind, just as the falling stone may break a window-pane or knock us on the head. A final effect of this kind, as impressive as it is unexpected, we meet with under pathological circumstances in hallucination. The essential thing in hallucination is exactly this violent renewed personal contact with certain ideas, split off during more or less subconscious conditions, i. e. under circumstances which leave the person who is »struck«, in ignorance of the hidden development of the process and keep him in the false belief that an alien force is the assailant or is interfering with his fate. The direction in which the course of morbid expectation develops is indicated in the tendency of the belief itself. Belief, be it morbidly deranged or religiously ecstatic, is always its own *causa finalis*. It is determinative, but determinative *teleologically* with a definite intention. The whole process is in a manner predetermined. Hence hallucination is the consistent final effect of the paranoiac's belief in the guile of his persecutors, of his incessant vigilance in all directions, and of his constant listening and searching. And a final effect of similar kind follows on the desire of the religiously deranged to be blessed by God with the gift of speaking with

tongues, and on the hope of spiritualists to get into contact with the souls of the departed through automatic writing, and so forth.

Hallucination is the most powerful means by which morbid expectation borne by belief can realise its object and complete the substantiation at which belief, owing to its nature, aims. It is also a fine testimony to the existence of the psychological law which *Wundt* calls *creative synthesis*, at the same time as it is a utilisation to the utmost limit of the possibilities afforded by the psycho-physical structure of man.

We have repeatedly, in the present work, emphasised the fact that in the normal psychical phenomena and their specific structure we find an indication of the general lines and the established order according to which the phenomena of mental diseases develop. The process in the genesis of hallucinations is prepared and, as it were, present *in nuce* in *reperception*, of which we have already spoken as imparting to our ideas a sensory clearness and distinctness of outline.

The nature of reperception can most simply be rendered clear by the aid of the following diagram, borrowed from *Ziehen*.

Fig. 14.



R represents a stimulus applied to a sensory centre C. The effect of the stimulation is a concrete image which disappears when the stimulation ceases, but before disappearing has fixed, at M, certain traces of memory (engrams), which may be reawakened by a fresh stimulus in the direction *a* but also by stimuli in the direction *b* — from the ideational life — when an image of memory is produced. The process R. C. M. is what happens in perception. In hallucination the process is reversed to M. C. R., an image of memory awakened in our thoughts, thus proceeding in the direction *b*, bringing the centre C, and possibly also the nervous process C. R., into play. The term *reperception* or »reversed perception« is consequently an adequate expression.

We find that earlier psychologists, *Kahlbaum* and *Griesinger*, already held this view. The term »reperception« originates from the former. Griesinger points out »the constant presence of a sensory element in our ideas *(ein stetes Eingehen sinnlicher Bilder)*. This renders possible the delicate, faintly perceived consonance in the sensory centres which accompanies all thinking, and to which is ultimately due, even though in varying degree in different persons, the »corpus« of colour,

line and tone, so indispensable to the clearness of our ideas. This is also the basis of all the psychological peculiarities we ascribe to the imagination, and therefore all creative power can be regarded as a more or less active cooperation of the sensory centres. Hallucinations and the imaginative activity here referred to differ only in degree.«

Both *v. Krafft-Ebing* and, later, *Kraepelin* and *Goldstein* have expressed a similar opinion. The transition between images of the imagination and real hallucinations is represented by the so-called *psychical hallucinations (Baillarger), pseudo-hallucinations (Hagen, Kandinsky)* and apperceptive hallucinations *(Kahlbaum).*

The first-mentioned are phenomena which often occur in persons with strong visualising and auditory faculties, painters and musicians, and there is no sharp line of demarcation between psychical hallucinations and pseudo-hallucinations. More distinctly pathological phenomena are the so-called *»inner voices«* which often denote the first stage of verbal auditory hallucinations. Here nothing but the projection into the outer world is lacking, and there are all kinds of transitions between the »inner voices« localised to the »head or brain«, voices that are assigned to the ears and heard as whisperings, and lastly such voices as distinctly come from outside.

Different authors include somewhat varying phenomena among the apperceptive hallucinations, some regarding them as being analogous to psychical hallucinations and pseudo-hallucinations, whereas by other authors *(Bleuler)* under this heading the interesting phenomenon is mentioned which German psychologists call *Gedankenlautwerden (Cramer),* a term that might be translated »thought resonance«. This resonance comes on during the patient's mental work, or perhaps most probably during the passive pauses which continually interrupt his work. When the patient is reading, he hears a »voice« that now loudly, now in a whisper, repeats the words in the book, and when he is writing, »there is some one« who dictates the words he is about to put down. The first thing occurs most frequently. But even at other times, when the patient is thinking about something, and before the thoughts have taken shape in his consciousness, he hears a voice that sometimes faintly indicates, sometimes says out loudly, sometimes sneeringly repeats what the patient is thinking or is on the verge of thinking. This symptom is extremely painful to many patients, so much the more as it often has a connection with their most hidden thoughts or most secret doings. For a modest person, fastidious and sensitive with regard to his personal concerns and decency, these bold voices with their constant allusions

to sexual and natural matters are exceedingly trying, and the patient often reacts against this indiscreet interference with outbursts of anger and despair. In his inability to understand the wantonness of this persecution, the patient has recourse to more or less fantastic explanations, as »broad-casting«, »wireless telegraphy«, »Tesla currents«, »electric mirrors«, and so forth. In this manner he tries to make clear to himself how strangers succeed in prying upon his innermost thoughts and most hidden acts.

This phenomenon, already observed by earlier psychiatrists *(Baillarger)*, has been exhaustively described by *Seglas* and *Cramer*. They explain it as being a hallucination in the muscular sense (motor speech hallucination) and state in support of this view that the thought word is often accompanied by a distinct innervation of the centre for the spoken word. Many people move their lips involuntarily during mental work, and Seglas mentions a patient who declared that he could not think unless he moved his mouth at the same time; he felt that he would be suffocated otherwise. In these cases, too, there is a more or less distinct reperception; and how common reperception is, and how great its significance for the perspicuity and concrete sharpness of the mental images, is proved to us by the inclination people so frequently show for clothing their thoughts in word-symbols, sometimes motorial, sometimes auditory.

A glance at the individual development of language will illustrate this fact. When we learn to take in our language through our ears, reproduce it with our tongue, read with our eyes and use our hand for expression in writing, all this implies that symbolic engrams (memories) are continually being imprinted on different sensory centres or in their immediate vicinity; and when we think, these engrams are reawakened by a reperception whereby our thoughts assume now one, now another verbal form. Thus the thoughts are sometimes faintly heard, sometimes faintly spoken, in rare cases even faintly seen, according to the different natures of different people. Now it may be laid down as a general rule that the reperceptive disposition, which differs greatly individually, in an essential degree determines the character of the hallucinations. Thus ordinary »voices« are the manifestation of an auditory disposition, and this is why the auditory word-symbols play such an important part for the majority of men. On the other hand, motor speech hallucinations are by no means rare in persons of a definitely motorial type, and the patient then perceives »voices« which, indeed, he hardly hears, but feels so much the more, »voices« that misuse his tongue for blasphemy, curses, and obscenities. These motor speech hallu-

cinations, which may sometimes grow into real impulses when the patient is forced to utter aloud the offensive words alien to him, are usual in dementia praecox, and especially in senile forms of melancholia, as also in senile dementia.

Probably the reperceptive type is usually of a mixed nature; indeed, the combined, auditory-motor form, has even been regarded as the commonest. This we must take into consideration in explaining such phenomena as »ideational resonance« *(Gedankenlautwerden).* In many cases it will most simply be explained as a verbal-auditory hallucination and one of the clearest examples of a pathological reperception. In other cases (when the voices repeat what the patient has read and dictate what he is writing) the facts may be more complicated. It has been supposed *(Hoppe, Seglas, Cramer)* that the voices may be the faintly perceived sound of the subjective voice, when in a »disorder of judgment« *(Cramer)* or, as we prefer to express it, in a dissociation within consciousness, the perception of the subjective involuntary speech which accompanies the reading or writing is split off from the personality and assumes the character of something alien. By an association with entotic sounds and other perceptions from the hearing apparatus the hallucination might, as Cramer suggests, more easily arise. In one or two cases of chronic derangement it has been evident to us that the patients have moved their lips and talked to themselves while the auditory hallucinations were going on, and it is conceivable that the »voices« in these cases were the subjective talk which was no longer included in the personal synthesis. Let us briefly quote a case which shows how conspicuous the most peculiar scissions may be in chronic mental defectives.

Case V. An old man, deranged for many years and admitted to the Stockholm Mental Hospital. Symptoms: believes himself to be a great inventor who has solved the problem of *perpetuum mobile* and invented miraculous things, all based on the solution of that problem. Persecution-mania. Considers himself always ridiculed and molested. When induced to propound his schemes and inventions, he frequently interrupts his flow of words and says in a changed, angry tone: »By God, these people laugh at it!« Then he goes on as before with his account of the inventions, but over and over again, when asked what he means by his exclamation »By God, etc.«, he emphatically denies having said anything of the sort. He is absolutely trustworthy and it is clear that these words are repeated automatically and in a stereotyped manner without the patient noticing them, intensely preoccupied as he is with his pet ideas, the inventions.

If the stereotyped exclamation had been different and less an expression of his own ideas than of those of his enemies, it is quite plausible that, in the absence of personal tone, it would have been interpreted by him as addressed to him by his persecutors.

The egocentric sensitiveness of deranged persons, and their readiness to find insinuations in the most commonplace utterances, evoke, associatively, numerous manifestations of their reactive peculiarity. Without directly perceiving a repetition of what he thinks (»ideational resonance«), the patient has a strong conviction that everybody knows about it, that everybody can read his thoughts. Apart from clearly manifested hallucinations, the so-called *apperceptive illusions (Kraepelin)* are very common under these circumstances. »Secret signs«, »signal systems« and in-

sinuations full of meaning are traced in the most commonplace incidents, and not infrequently we meet with an extraordinary quickness of combination. One of my patients, Miss H., would suddenly, in the midst of a conversation, become perfectly furious because she felt highly insulted by some casual attitude of her interlocutor, who perhaps stood with his hand on his hip or with his arms crossed. Quite involuntarily she interpreted it as an indecency.

Some of the earlier psychiatrists have raised objections against regarding hallucinations as a reperceptual phenomenon. Thus *Schüle, Meynert* and *Kandinsky* point out that there is an absolute and essential difference, and not merely a difference in degree, between a sensorially concrete image of memory and a perception. This is expressed by Meynert as follows: »The memory of the brilliant disk of the sun has so little in common with a real impression of light, that it does not even possess the inconceivable billionth part of the light that shines from the glow-worm. A gun-shot loud enough to burst the drum-membrane is, as a memory, not even the equally inconceivable fraction of the sound that is produced by a hair falling on a surface of water. Even if we must needs assume that the memories originate from the sensory impressions, yet they have as little in common with these impressions as has the algebraic symbol with the object it represents.«

It certainly seems somewhat misleading to bring into prominence, as Meynert has done, the phenomena of a physico-chemical nature which, in the outer world, *accompany* that stimulation of our sense organs which is the substratum of our perceptions. With them we are not concerned in the present case. For no hallucination can blind our eyes like the real vision of the sun's disk, any more than the hallucination of gun-shots can burst our drum-membranes. A hallucination may be »an idea that has taken the shape of perception« (Frey Svenson), but this does not preclude its retaining the more platonic character of an idea (= memory-image) with regard to the qualities of which Meynert speaks.

Like Taine, Meynert belonged to the earlier school of authors who assumed that they had explained the objective perspicuity and stamp of reality of hallucinations by localising them to the subcortical ganglia. He believed that their activity as a substratum for sensory perceptions of light and sound was hindered by the cerebral cortex, but was set going as soon as the cortical functions were brought to rest during sleep or disturbed in disease. In the former case the images presented in our dreams with sensory vividness were supposed to arise, in the latter case hallucinations. Of course we cannot simply deny the probability of this supposition. For even though »the progress of the higher sensorial functions towards the cerebral cortex« *(von Monakow)* in man can be regarded as completed, it is quite possible

that these ganglia still retain some primitive task as a substratum for our sensorial functions. It is true, that we have no real reason for localising either the sense perceptions or hallucinations to any other place than the cortex, but in view of the changes that have been found in the grey nuclei of the midbrain, both in the postencephalitic state and in dementia praecox, etc., proving the importance of these ganglia for certain psychical automatisms, it is by no means precluded that the hypotheses concerning hallucinations may sooner or later require a revision in this direction.

However, as we have already pointed out, it is by no means unthinkable that reperception may extend peripherally much further than to the centres of sense-perception. In that case, the reperceptive stimulus will interest not only the path MC in Fig. 13, but also the path CR. This means that the stimulus will reach as far as the peripheral sense-organs or, more probably, the centres in the cortex representing the organic sensations for the eye and the ear (including the outer ear) with all the muscles that are active in seeing and hearing. And, as a matter of fact, *Wernicke*, in his endeavour to explain the character of reality possessed by hallucinations, attached the chief importance to these organic sensations. Hence he assumes that the stimulus, beyond the centres of the memory images, extends to the »perception-cells« in which the bodily sensations are located or, in other words, that a supervening sensation from the region of the organic sensations *(Affektion des Bewusstseins der Körperlichkeit)* is the factor which changes the memory-image into a hallucination. This creates the vivid feeling of real seeing or hearing which *Frey Svenson* calls *perceptive actuality*, and in which he has, in a manner that closely corresponds to Wernicke's view, come to see the essential thing in hallucination.

Hallucination, in addition to other things, is always a phenomenon which involves a splitting of personality (schizophrenia). It is of its essence to affect us as something that is alien to our Self, either as an extrinsic occurrence, a vision, a »voice« that forces our attention, or as something inward which invades our personality like the will of another, like an alien initiative. In all these cases the organic sensations play the part of leading, or rather *misleading*, local signs. These organic sensations are split off from that general sense of our body which forms the bodily ego and from this point of view hallucinations may be regarded as phenomena of partial depersonalisation (cf. p. 141). In hallucinations of sight and hearing, the detached organic sensations act as a kind of »door-knockers« warning us of something attacking us from outside and forcing itself upon our attention. In the *inner* hallucinations, which are generally of a motorial character, in *motor speech hallucinations* and impulses, *speaking with tongues*, and *automatic writing* these detached fragments of personality, the organic sensations, become the starting-point for the conception of a strange will in our own body, a spirit or demon

who speaks with our tongue and moves our limbs against our will, using us as tools or agents for a good or bad purpose (cf. case III). It is especially in cases of religiously tinged derangement, hysteria or katatonia, that such phenomena of *inspiration* or *obsession* are met with, and most frequently the hallucinations are then of unmistakable motor type. It is also in these cases that the above-mentioned nature of the hallucination as being a partial depersonalisation appears most distinctly. By the side of his old Ego the patient feels the presence of a strange personality, a spirit, God or the Devil, who inspires his speech and his movements. Certain fragments of his personality are depersonalised, certain organic sensations (sensations of movement) enter into the automatic process (hallucination), and it is around these detached fragments, this »rib« of the old personality, that »the new Self« is created. The term »new Self« must of course be accepted with great caution. In any case, »the new Selves« are extremely rudimentary, and hardly more complete than the fragments of human organs that may be found in a dermoid cyst.

In conclusion it must once more be emphasised that hallucinations must first and foremost be regarded as a psycho-pathological phenomenon, and the conditions which determine their degree of objective reality are accordingly, as we have pointed out, most frequently of a psychological nature. In the deranged person hallucinations develop as a link in a series of events which take shape from his morbid conviction, and it is in the first instance from this conviction that they derive their stamp of reality. This does not prevent *reperception* from being a plausible formula for the conception of the autosuggested processes regarded from physiological and anatomical points of view, and in this it should especially be borne in mind that reperception, not least in verbal hallucinations, has a normal basis in the importance of the various word-symbols for our thinking and reasoning.

By a peculiar irradiation of excitement from one sensorial sphere to another, the form of hallucination which has been called *reflex hallucination (Kahlbaum)* is not infrequently developed. As an example I will mention the following somewhat drastic case.

Case VI. P. A., a farmer, 45 years old, who has been a patient in the Lund Mental Hospital for a long time. Before that he had been guilty of certain fraudulent practices in horse-dealing but was acquitted owing to mental disease. Diagnosis: dementia praecox. Hallucinations of hearing. One day when I had to extract an aching tooth, this is what happened after the operation was successfully accomplished. When he got back to the ward, he looked discontented and was heard to utter this reflexion: »I believed that Dr. G. to be a decent sort, but what do you think? Just as I had sat down and he had got a good grip of the tooth and was pulling with his tongs, I heard him say: 'Confess now, you devil, that you stole the horse'.« That in this case it was the sudden sensation of pain that called forth the hallucination, will be evident.

The following case also, which Professor X, a well-known psychiatrist, has given me from his own experience, may be quoted:

Case VII. X was in a clinic for eye-diseases and had a few days earlier been operated upon for cataract of his right eye. Both eyes had absolutely impenetrable bandages. In the evening, when X was in bed, he lifted one hand and moved it in front of his eyes. While he was moving it in different ways, extending his fingers, etc., he quite suddenly saw his hand perfectly distinctly with all its details, and seemed to follow the movements of the fingers with his eyes, exactly as if he had been looking at it in full daylight and with his vision unimpaired.

The kinaesthetic perceptions (organic sensations of movement) here seem to have provoked the visual memories associated with them so that they suddenly appeared to X with hallucinatory distinctness. Nor is it improbable that a post-operative entoptical stimulation of the right eye contributed to the reperceptive intensification of the visual memories.

Nearly related to the reflex hallucinations are the so-called *synaesthesias*. These, too, are perceptions called forth in one sensory area by stimulation of another, in other words, an inadequate effect of a stimulus. Thus an impression of colour may combine with a sensation of taste, a tone stimulus with a sensation of heat or cold, a certain smell with a certain colour, a colour with a tone, and so on — the last phenomenon, the so-called *acoustic photism* or synopsia *(phonochromatism)*, being the most frequent.

Though »coloured hearing« had been observed earlier, the first detailed description of it is founded on an account by *F. A. Nussbaumer*, 1873, who, like his brother, was phono-chromatic.

In more recent times it is especially *Friedrich Wehofer* who has added to the literature about this phenomenon by a series of interesting self-observations. He writes that for him »the subjective field of vision was the scene of certain coloured ornamental phenomena, which occurred when he was listening to music, the different instruments all standing out in their particular colours, »the violin in violet, the oboe in bright chrome-yellow, the flute in cyanic blue, and the brass instruments in dark velvety tones of purple, shading over deep green into black, whereas a fainter and deeper brass note gave him a sensation of dark blue.«

These peculiar sensations appeared quite spontaneously when he was in the right mood, and went on without any influence from his will: »he was only a spectator and could not in the least assert himself as stage-manager.«

Coloured hearing and other forms of synaesthesia cannot be regarded as abnormal phenomena — at least not without further investigation — though their development in a pathological direction is sometimes unmistakable. Hence they are generally of less interest to psychiatry than to psychology and aesthetics. The synaethesias are, however, indubitably a »symptom« of the hypersensitiveness which is found

even in normal individuals — the term is always relative — and which characterises intellectual and artistically endowed persons. In the introductory remarks in this chapter we pointed out that intelligence also includes in its substratum the sensory centres, and the presence of less marked synaesthesias, probably very common, undoubtedly gives to artistic and sensitive people the richest possibilities of enjoying what the artist has created in tones or in colours.

We will conclude this chapter by an account of two cases calculated to illustrate our statements.

Case VIII. H. H., admitted to the Stockholm Mental Hospital 29. 12. 1920. He is 35 years old, a draughtsman in an office, went through an acute mental disease lasting three weeks, which broke out in connection with his father's disappearance (suicide by drowning) and circumstances having reference to this event. After his recovery, H. wrote down an account of his life, where he describes in detail his experiences during the illness. We will give some extracts from it which illustrate the genesis of H's illusions, peculiar organic sensations, and hallucinations. Especially noteworthy in this is the emotional state which lies behind the development of his illusive perceptions.

The patient's father had for many years been periodically deranged and given to alcoholic excess. Evidently he had then often been harsh and menacing towards his wife and children, putting strong pressure upon them, which cast a gloom over their home-life. This had a particularly detrimental effect on H.'s younger sister, who had for a long time shown herself sensitive and hypernervous, and on H. himself, who in his warm sympathy for his sister gradually noticed the same symptoms in himself that he had observed in her. In spite of all, H. felt a deep compassion and filial tenderness for his father, but these feelings were combined with much anxiety and tension, so that they had upset his mental balance and early laid in him the foundation of a psychical overexcitement. H.'s intimate account of himself reveals a manifest disposition for hypochondriacally tinged self-analysis.

Before his father's disappearance, his mind was already filled with a strange agitation, which manifested itself in dreams and presentiments of evil. On those occasions he often had the feeling, though he was alone in the room, that someone was standing behind him, »throwing, as it were, a shadow high up over my shoulder.« »I was aware that something must be wrong with me, for I did not like to look at myself in the glass, especially when I was alone in the room and was worried by the shadow.« The father, who had been depressed and brooding during the last months of his life, disappeared from his home on Dec. 12th, 1919. For some time immediately before this date, H. had been troubled by palpitation of the heart, had heard mysterious knocks, dreamt strange things about his father, and in the twilight, when fully conscious, had had the vision of a child's skeleton.

In the drawing we reproduce, H. has attempted to explain how this illusion, as

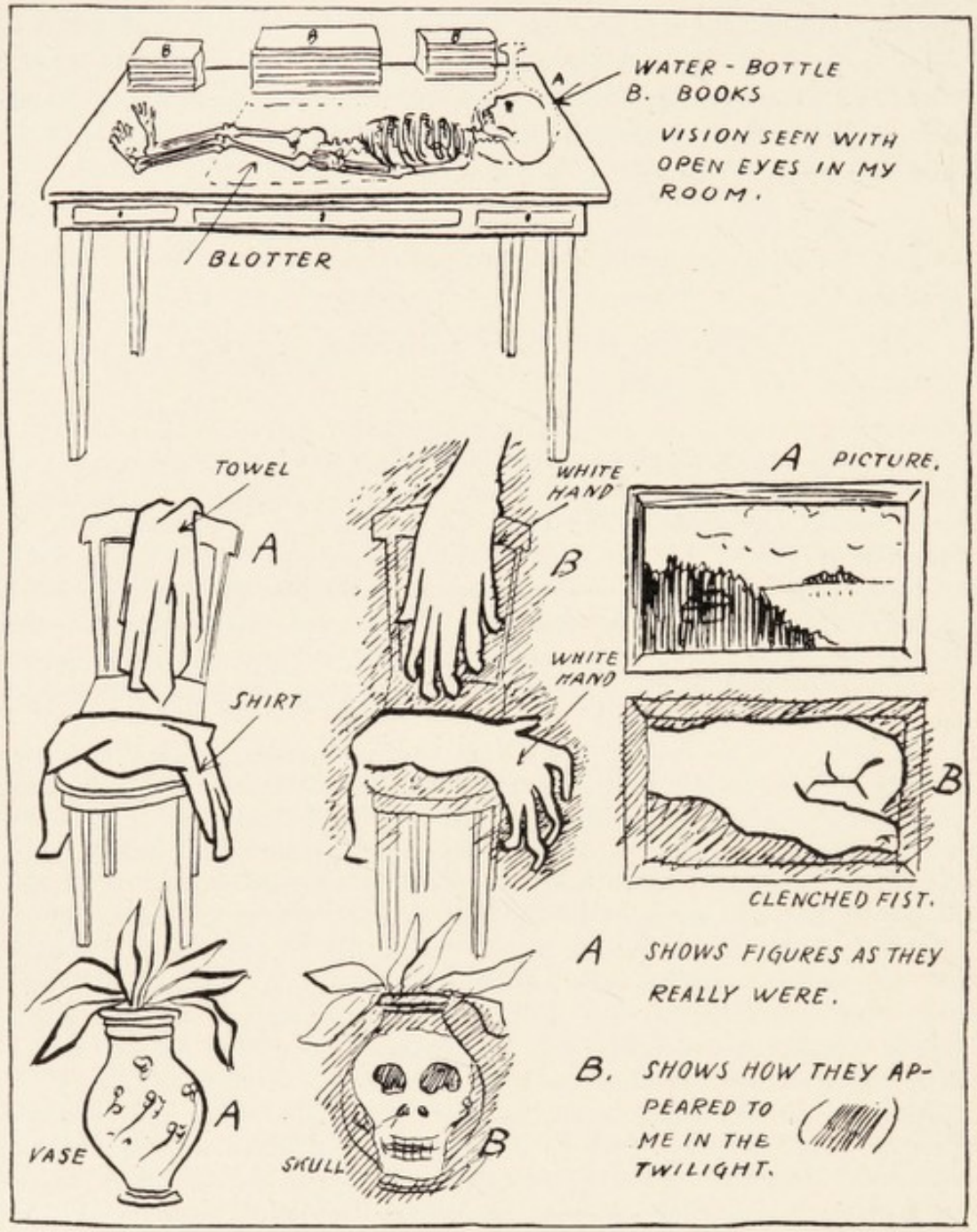


Fig. 15. Drawing by the patient in Case VIII to explain how his visions of skeletons, hands, etc. arose. (Typical illusions).

well as others mentioned below, arose, and also the manner in which he felt certain other strange sensations. In Fig. 14 he shows how the illusions of the child's skeleton, of skulls, and hands were created by his emotionally excited imagination.

»Often when it was dark I saw in my room a brightly shining point which I could not explain. Its colour was a bright bluish violet, and it was alternately stronger and fainter.« In addition, »I was often disturbed by white transparent hands and arms being thrust speedily over my shoulder (most often the right), when I sat working at my table.« During this time, »ideas chased each other in my head as never before. If I was drawing, I suddenly took into my head to write a story

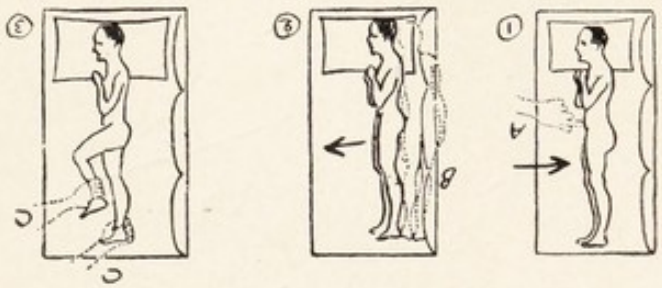


Fig. 16. H. depicts his sensations of being touched, etc. (Tactile and muscle-hallucinations).

or a fairy tale, and then I put away my drawing things and took out pen and paper, but hardly had I taken them when I changed again and it occurred to me that I would make a wood-cut, and then the weariness previously mentioned came over me and I had to lie down. Then I sometimes noticed that when I looked towards the electric light in the next room without fixing my gaze on the lamps, all was darkness before my eyes, as if I had become blind.« But as he had the same transitory sensations earlier, he thought it was »a general tiredness of the eyes,« and so left off working and went for a walk.

During the days following his father's disappearance, H. was greatly troubled by »increased blood-pressure in his throat and head«, which prevented him from sleeping. His sister had during these days had hysterical attacks and behaved very strangely; this, in turn, had increased his own anxiety. On Dec. 14th, when she was on the ground floor of the house, she thought she saw her father in the lift. On the night of Dec. 19th, »I lay without knowing it on Father's mattress and had one of his blankets over me. I did not get much sleep but was disturbed almost the whole night in an unaccountable manner. Some one was pulling my feet and pressing against my head, chest and back.« (Fig. 16). On Friday, Dec. 19th, I worked till one o'clock. At that moment I had a sudden feeling that my ears were blocked. I had a sensation as if something had come dashing against my ear with a hissing or whirring noise like the sound in a telephone wire, and there was a block in the opposite ear. The buzzing was most of all like a vacuum through the head from ear to ear.« He also had a strong feeling of dizziness, when walking »he went sideways and had to balance with his arms«. When he came home to rest, his ailing sister was on the point of leaving for a rest-cure in the country with

a nurse. He now felt the pressure over his head grow worse and had to call up all his self-command to keep upright. When he had lain down to rest his violently working head, he was disturbed by a shrill ringing of the telephone-bell, and after having answered a question on the telephone, it occurred to him to enter his father's room, so he went to the door and looked into the room. »Then I saw my father sitting on the sofa in the same position as when I last saw him (on the day when

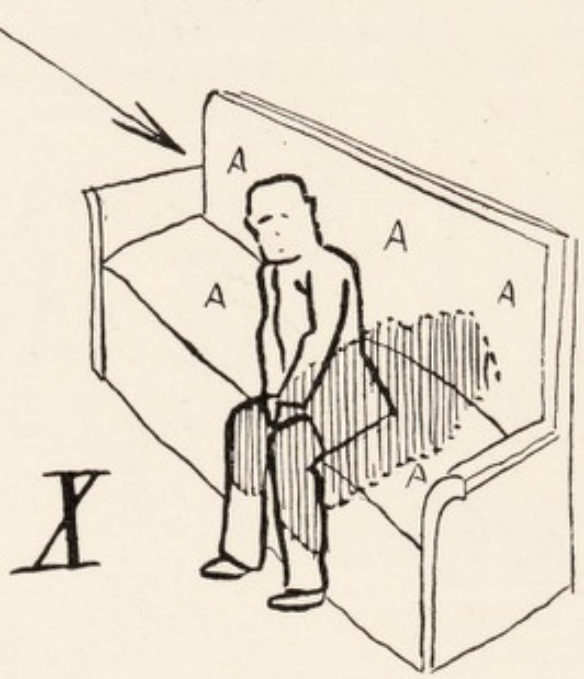


Fig. 17. The vision of the father, and H.'s explanation of it.

he left us). He was bending forward with his hands pressed between his knees and there was something sad in his expression. I stood rooted to the spot, staring, while my heart worked furiously, with a force that shook my body. Then I saw a pair of eyes fixed upon me, and with a violent effort I succeeded in catching hold of the edge of the door and banged it to, crying out 'faugh', and then ran with my arm over my eyes to throw myself on a sofa, my heart working wildly all the time.« When his mother and his second sister, who was well, had come in and he had told them of his vision, they went together to his father's room. The three of them stood in the door looking towards what he pointed at. »On the sofa lay a rug (cf. Fig. 17), part of it hanging down and looking somewhat like two trouser-legs. By concentrating one's regard upon this place, one might take it to be the lower part of a man sitting there.« »This object on the sofa«, H. adds, »was thus *the framework of my hallucination,* and on looking closer, I also saw a reflex on the back of the sofa from the faint light falling on it.« »In short«, H. continues, »I did not mind it so much and went to bed about 11 o'clock in my room, but I had not been told that Mother had not taken away Father's bedclothes. I lay awake till midnight, when I was overpowered by a feeling of fear absolutely unknown to me, my whole body jerking and shaking. Then I felt a forefinger prodding me in the region of the stomach (Fig. 16). I moved away, but to my astonishment it followed, and I was now lying right against the back of the sofa. Then I was

pushed out towards the edge by a body trying to get between me and the wall (Fig. 15). All of a sudden I had a feeling that my whole body was pushed along the bed towards the feet, and when I opened my eyes looking out into the half-light, a towel or a shirt hanging over a chair, seemed to my view a pair of skeleton hands (Fig. 14). Again this nervous movement shook my body and an indescribable fear overwhelmed me.« H. now got out of bed and went into the next room to his mother and sister, to tell them that he was interfered with. They made a bed for him in a different place, and he took care that none of his father's belongings were used. However, he still had the feeling that something strange was in the room or that somebody was pressing against the doors from the next room and trying to get at him, and he thought that the double doors were broken in the middle and moved inwards into the room where he was. »Now I began (it was about 1 o'clock) to fix my eyes anxiously on the four walls of the room, as if searching for things that might worry me, though there was a light in the next room (where his mother and sister were sleeping). The first thing that caught my eye was a handkerchief on the table beside me. In the gleam of light it looked like a death's head, and so I flattened it down on the table and afterwards pushed it above my head so as to get it out of sight. Then I made my sister rearrange the curtains which fell down to the floor, for their folds formed all kinds of images unpleasant to my eye, also some brass and silver things on the sideboard made me ask her to move or turn them, so that they might not torment me.« To prevent sweating which troubled H. very much, his sister cooled him with wet towels. »But now a very strange thing began in my head. I felt my head pulled as when you stretch a hard piece of India rubber which will not yield. This feeling moved in a direction from the forehead to the back of my head. I could trace two direct currents from the temples branching like a delta, or a broom, halfway across the crown of my head, and making the back of my head very heavy. I felt it most when I lifted my head from the pillow. The intense pressure on my head increased every minute and it was as if some strange force wanted to get me into its grip, and the thought that now rushed through my head was to get hold of some weapon, a pair of scissors or something of the kind. In despair I fought against this thought for a couple of ghastly seconds and conquered it, but cried out at once to Mother, my sister and my aunt to be quite prepared if anything should happen to me. — — I had not the slightest notion of what was coming. To resist temptation I clasped my hands under the bedcover and kept them pressed hard against my stomach, my body being steaming hot. While I held my hands clasped, I had a feeling that an enormously violent (nervous) force wanted to pull them apart, and it was as if this force came from my own wrists. Owing to the profuse sweating my hands were wet as sponges and it was difficult to hold them clasped; and though I pressed hard with my knees, it was as much as I could do to get through it. I had not a thought against anybody in the room or any of my acquaintances, and do not know whether it was only a wild impulse to rush out of bed and hit about me, with or without a weapon in my hand, but I seem to remember that my frenzy was directed against *the unknown thing that had come over me*. However, I stayed in bed and fought through the nerve-crisis, eagerly begging my mother and the others to be prepared for the worst, and *to get a rope and tie my hands together* when I asked them to do so. This, however, was not needed.«

From this point onwards in the patient's tale, the case develops as a splitting of personality or *partial depersonalisation,* characterised by the distinct feeling of outside *coercion* and encroachment upon the patient's own will, as well as by extremely impressive muscular hallucinations and tactile sensations. The change gradually grows more complete. The patient's Ego has to make room for »the unknown thing« which he has long felt around him and which, becoming more and more intrusive, finally tends to take possession of the patient's own body. That this unknown force, by the strongly impelling events in his home, more and more distinctly becomes identified with the dead father appears in the further progress of the disease.

After the bout last described H. had a few days of comparative quiet. He was even able to fulfil some duties which were incumbent on him in connection with his father's death. He tells us what happened while he was doing it, among other things the following: »Then I wrote a letter to my father's employer conveying all our thanks. While I was writing down the rough draft of this letter I was worried by *somebody playing pranks with my pen.* This was quite inexplicable to me, and I told Mother. It was as if somebody wanted to snatch the pen from my hand, especially when I wrote something about Father. Still I got the letter written and posted it.« That same day H. went to see Dr. K. In the taxi he sat down in the middle of the seat because he had a feeling that *somebody* wanted to get in and sit beside him. While he was out in the open air, all morbid sensations disappeared, but at home they soon returned. Gradually he became subject to a remarkable uncasiness or dread of being *alone* in the rooms. On Dec. 24th he writes: »The dread or fear of being alone had now got the upper hand, and even when I was in the W. C., I used to leave the door ajar. — — As I sat writing just now, it was as if a white hand swept across the drawing on my right. It was quick as lightning and looked like a white ray. I found it uncanny and so got up and lit a cigarette, whereupon I sat down and smoked. In doing so I leaned back and then felt a hand with fingers against the back of my chair which was quite smooth. Deliberately I pressed against it, but was at once overcome with such a feeling of alarm that, if my nerves had been weak, I do not know what would have happened.« Early in the morning of the same day (Dec. 24th), while still in bed, he had heard »a horrible death-rattle in the next room, followed by desperate weeping«, and later in the day he had another hallucination of his father, »and that in broad day-light and out of bed.« The shape was this time seen behind the bottom of a bedstead which stood leaning against a chest of drawers. H. was very talkative that day and he imagined that one of his aunts recognised his father in him, for she wept when she heard H.'s voice over the telephone, thinking it sounded different from what it used to. The same day H. went with his mother and sister to the place near Stockholm where the sick sister had previously gone. The inexplicable anxiety which had haunted H. during the last few days and the feeling of an unknown presence close to him continued, and he still showed the same fear of being alone. Soon after the arrival of the family at E-g a series of strange happenings of the same kind as the

earlier ones occurred and, moreover, his sister's illness and the convulsions she suffered from, made a strong impression on H. Ever since their father's death he had had the notion that the cause of his sister's suffering was the same as that of his own and he noticed in her affliction the same features as in his own. He writes about his condition on Dec. 26th: »After dinner we sat on the sofa, drinking coffee. Sitting like that, I felt agitated by something inexplicable, — — — the agitation was caused by my feeling as if another body were around me; there was a tension in my jaw, and so I got up and walked towards the gramophone.« When he was on the point of setting it going, it was as if his hand was held back and the gramophone would not work properly. At the same time he heard a strange knocking inside it. About his sister he writes in this connection: »My sister Elsa had not set the gramaphone playing once here, for the state of her health is more than miserable. Her eyes stared and she walked as if her legs were a pair of stilts, indeed she could hardly walk at all. Besides, she complained of a dreadful pain in all her joints and in her *jaw*, so intense that she sometimes felt she would give way and faint. She was also afraid of being alone in the room, which I noticed carefully — — — so that I, who was suffering from the same fear but had stronger nerves, convinced her that there was nothing to fear. She walked with an effort, stooping, and catching hold of the backs of the chairs as she dragged herself along.«

After these notes about the first days at E-g he adds: »Now I have written down all the different effects which relentlessly carried me on to the fatal days of the 27th, 28th and 29th of December, 1919; against this current my own strength was as nothing. It was all planned beforehand, though without my knowledge, and it resulted in a serious psychical disease, which I cannot and will not explain.«

On Dec. 27th, his sister was, if possible, worse and he found her in »violent pain«. When anybody came near her bed, her face was distorted, »as in a cramp, her eyes protruded, her jaw was gaping, and she seemed to be fighting against a paroxysm of weeping.« H. was now driven by an impulse that did not come from his own mind to calm his poor sister by stroking her. This was repeated twice or thrice, after which she went to sleep, and when she woke up the next morning, she was much better.« »From the expression of Elsa's face,« H. writes, »I now understand that she was destined to go through the mental struggle, but little did I then think that this action which some unknown force suggested to me would draw it down upon myself.«

After this H.'s condition grew worse, and during that day and those following he had repeated convulsive fits in which he felt how he himself disappeared and somebody else took entire possession of his body. *This other person, H. felt convinced, was his dead father.* From his extremely exhaustive account of the pathological phenomena he now experienced, we only quote some few details.

»The initiatory attack on my nervous system and what it consisted in. When I was in the drawingroom at about 5 o'clock in the afternoon of Dec. 27th, I was tired and felt slack. If I sat down on a chair I grew anxious, and if I walked about, this made me uneasy and I had a feeling that somebody was worrying me, and every time I came near a corner of the room where it was darker, I saw the shadow I have mentioned before which I thought had left me,

for, to my surprise, it had not troubled me during the last week.« »When I then approached Mother, I felt an enormous heat between her and me, and when I stretched out my right hand in the air, I had sensations of an intensely glowing heat which much surprised me. It was like fire.« The others, when asked by him, said they felt nothing of this. — »Whipped on by some terrible force I moved forward, and, though the enormous heat would have been reason enough for me to draw back, I felt that my hand must needs rest in hers, and so our right hands met. My hand had barely touched hers when I had a slight convulsive fit in the upper parts of my body and my legs gave way. My sister Kerstin at once caught hold of my left hand, I bent backwards and called out *in the voice of a stranger* that none of us recognised: 'Father has been forgiven'.«

»I now took a step backwards, and then the effects followed each other closely; indeed, I do not know who it was or where they came from. I disclaim all kind of participation in it.

»I now felt, as it were, electric currents running through my chest, and a great anxiety came over me. I grasped both Kerstin's hands and at once there was a change within me, my jaws began chewing violently and my hands were raised towards heaven. Then my sister caught hold of my wrists, and instantly I had an attack of cramp, which threw me against her, and while she supported me I cried out in a convulsed, sobbing voice: »My dear daughters.« My face was distorted, and almost in the instant I cried out, I asked Kerstin to look away, but as the cramp would not relax, I cried again: »Press hard under my chin,« and then wept for a short while. I felt that this was almost too much to bear, and I made up my mind resolutely to go to bed. I sat down on the sofa which was made up as a bed for the night, and said: »How strange that I should cry 'my dear daughters', since *I* have no daughters.« Some one present answered: »It sounded like Father's voice and his convulsive weeping when he was excited.« H. now asked his mother to get pen and paper so as to write down what was called out, but he thinks himself that he remembers most of it distinctly.

»I lay down on the sofa and now felt how a number of things that I had heard my father speak about during his illness made an onset on me and *pushed away my own thoughts.*« After a while he got up to take a sleeping-draught from a table near by. He then had another attack, calling out his own Christian name, »Hugo, Hugo«, in a strange voice which was forced out of him. He was also oddly constrained to lay down certain »rules« for the conduct of those present. Everything had to be done in a special manner. The essential thing was that no one was allowed to thank him, and he promised them all a good result of what was now going on. He felt it to be a matter of life and death to himself that his instructions were followed.

Hardly had he taken the sleeping-draught when a fresh attack came on. During the convulsions he cried: »Be silent, Father«. In this cry also his mother and sister recognised the father's voice.

»Every attack began with fear and a shivering of all my body, the blood rushed to my head which was wrenched violently backwards, my jaws working convulsively.« The sister brought water to cool him and he asked her to press his chin hard when told to. »The voice which was pressed forth violently from between my lips, sounded like a death-cry, and in my hands and legs there was a convulsive contraction of the muscles, as in death-agony. The voice was my father's.« The

attacks did not last very long and when one was over, he asked for a cigarette, his mind was clear, and he was able to talk with those about him in a ordinary manner, read a paper, and so forth. In the following night he called out during an attack in his father's voice: »I have chosen a spot where nobody will find me. It shall be made known to everybody« (the father's dead body had not yet been found and was still searched for).

During the next few days the attacks continued and at last became so violent that he could hardly be held down on his bed. »In the same way as on the earlier

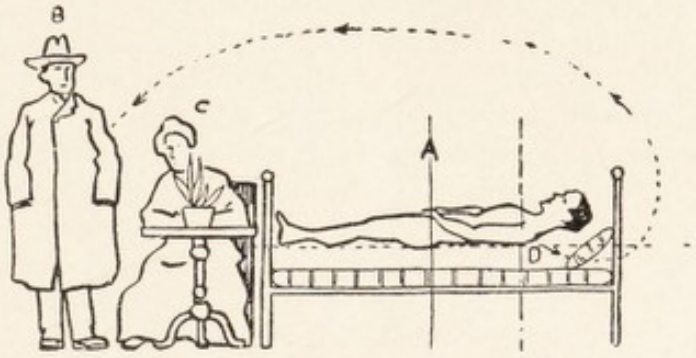


Fig. 18. The feeling H. had of the doubling of his personality.

occasion I again cried out 'Hugo, Hugo', and my cries were frightfully loud. I felt as if my chest would burst, it worked so violently, and in my jaws the usual cramp remained; it was kept in check by bathing with water. I made everybody leave the room and attempted to cry out equally loud in my own voice, but this was impossible.« »While I was asleep for a little while, my sister Kerstin noticed that my sleep was exactly like my father's and thus it was not my own. I dreamt that I cried 'Dear Mina, Mina' (his mother's pet name).«

Gradually a number of new sensations and phenomena set in. Among these may be mentioned peculiar sensations of his body being raised and moved, or making oscillatory and swinging movements. Finally he experienced the feeling of a complete doubling of his personality. »I felt like a compass, but the movement was at first only directed upwards and downwards at my head and my feet.« He then describes the strange sensation which he has illustrated in a drawing (Fig. 18). »Then I felt as if a hand had seized me by the back, at D, and drawn me out of bed altogether; I had a sense of flying through the air and found myself standing fully dressed beside my mother who was sitting by my bedside. I never saw myself standing in the room, but as I lay in bed I felt myself to be in two places at once.«

Finally it may be mentioned that a number of visions also occupied the patient's interest during these days. They appeared to him framed in faceted openings in a strange lattice-work which showed itself to him with coloured outlines. The visions, drawn in Fig. 19, represented his mother's form in various pathetic attitudes and also fragments of a male shape (that of the father). When in clear intervals he could be spoken to, he discussed the meaning of these images with his mother, and came to the conclusion that they all had reference to his parents' married life and repre-

sented agitated scenes, in which the mother, owing to her husband's vehement temper, had frequently had to go through extremely trying experiences.

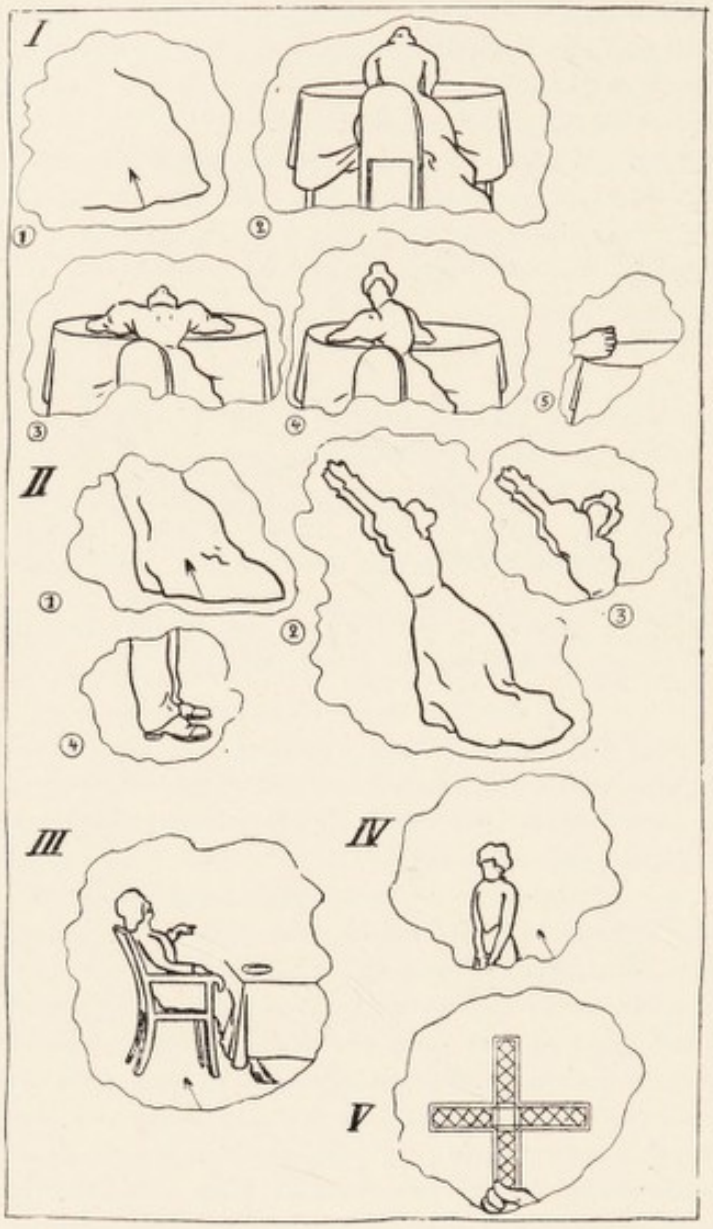


Fig. 19. Visual hallucinations, drawn from memory by H.

The patient was admitted to the Stockholm Mental Hospital on Dec. 29th, 1919; and for a couple of days he was very excited, with recurrent attacks of agitation. Already before his arrival in the hospital, the dead father had »departed from him«. H.'s mouth had then involuntarily spoken some words about the father having now »won forgiveness and deliverance«. The last H. felt of his father was the sensation of a hand stroking his own. The symptoms of obsession, however, continued during the first days in the hospital. Different »spirits« spoke through his mouth, uttering commands and »rules« as to how the patient was to be treated. If these were

disobeyed, the patient became unruly and vehement. After a few days he grew calmer and, his mind clearing quite rapidly, he recovered perfectly and had a lucid view of his illness.

Diagnosis: Hysterical symptoms in mental disease of an acute katatonic (schizophrenic) nature.

Case IX. Miss X, 51 years old, writes: »On March 7th, 1911, I heard in the middle of the night in my room how somebody in the house opposite read aloud my old letters, which were kept in a small chest of drawers and a big bag, both of them locked, and which I still believed were in our empty old home in Y. I recognised the letters so well that I felt inclined both to laugh and cry, for I had kept several of them just because they amused me so. I went at once to my sister's room and said that I wanted to telephone to the Police Superintendent at X and ask him to send somebody to our house in Y. My sister would not allow this, but I was so miserable when I told her what I had heard, that I had to telephone to a relation of ours, Mr. L., in order to have the matter investigated. *While I was talking over the telephone, I heard somebody listening in the flat above,* and afterwards some one moved on the stairs. I went into my room, but still heard the same footsteps, hurrying along and then crossing the street, while somebody said: *»She knows, she has telephoned, how on earth can she know?«* I heard several people wonder and I wondered myself; now I know that *even then I was exposed to the same electric influence* as I have been ever since. *All the while I felt as if I really belonged to another world; I heard from an incredible distance how people talked, but I was almost deaf to those who were in the same room.* Afterwards I was told that all my letters were kept in an attic at my sister's, Mrs. K., and that it was there they had looked for them. In the same way I heard one day when I told my sister that I meant to go to L., how some one in the street said, 'to-day she is going to L.', and when I looked out of the window, I saw four or five persons standing together in the street. Without saying a word to my sister that I had changed my mind about the journey, I went with her to pay a call, and we spoke no more of the matter. In the evening I heard from the house opposite how they talked about my not going to L. How I could hear it, *I did not then understand.* All the windows of that house were shut. On the 19th of September the same year I rang up my sister Mrs. Y, saying that I had something to tell her. Entering the tram I saw the two persons I have spoken about earlier and by their eyes, when they looked at me, I understood that they were talking about my concerns. We were sitting alone in the library at Mrs. Y's, and *when I began to speak, I had a distinct feeling that some one was listening — but where?* My sister did not like my saying so, for I said that some one must be there, and I had to go and see whether all doors were shut. Later in the evening, when I had already gone to bed, I heard some one in the street telling some one else every word I had said to my sister. — — — — In February two years later I went on Dr. H's advice to the sanatorium at A. To begin with, the same stupid story was repeated here, but after a few days, when I had got my room in the sanatorium, the *voices* began, and now I understand that I had been »prepared« to hear them ever since I left Stockholm. In the house where I lived with my sister, the flat underneath was empty, and I now realised that the noise I used to hear at night came from *an electric apparatus which even then had been set going against me.*

The voices began one evening in the sanatorium when I came up to my room

in despair at the customary allusions I had heard in the dining-room. I said to myself· 'Is there no one who can help me?' A voice answered at once, whispering 'Yes, I can help', and thus it all began that has since then been going on without interruption for a whole year, day and night. *At first I believed that it was an illness,* but later I came to look at it differently. The object was to drive me into such despair as to make people think that I was mentally diseased. The aim of it all was to frighten and excite me to the utmost degree. To begin with I did not understand their conversation, except now and then when I had to laugh. French, German and English (American) alternated, but finally I became so frightened, so threatened that I told them it looked as if I had fallen in with a company of American villains. *Sometimes their conversation was so indecent that I had never heard anything like it,* and I am afraid that what I did not understand was of the same description and perhaps worse. What frightened me was that I should be treated like a woman who is assaulted, and I believe that their words gave me the greatest terror that it is possible to know by hearing alone. — — — *Since the day they began, they have not been silent a single hour, day or night,* and I thought it was impossible for me to live, prepared as I was to be killed or driven by their behaviour to kill myself. The voices have said, not once but many times, that there are four who are tormenting me. Still I believe that there are more of them and that they take turns in torturing me. *They blow something over my head and face, some powder that gives out a sound* and which I can wash away with soap and hot water. They do it in order that they may hear where I am in the house, and when I get some of it into my ears, it makes such a din that I can hear all my head resounding. They have told me that it is pulverised asbestos or else glass. When they hear where I am, they direct an electric current against my back, my neck or my head, which makes me hear them, and they hear me. They also hear others through me and the sounds that my ears catch. — — I believe that this electric current is used *not only for listening, but also for a more wicked purpose,* in order to hurt somebody personally, I mean corporally. One gets so tired and sleepy without knowing why, and one has a feeling of discomfort and trouble, gets hot and flushed as if one had fever, and one gets a racking pain in the back, too, if they go on long.

»*To a woman it is intensely painful when her abdomen is subjected to an electric current* and people at the same time continue their stupid talk«. About the means that she uses to protect herself against the supposed persecution, the patient further writes: I have not slept in a comfortable bed for 8 or 9 months, I have had to *arrange paper, books and newspapers. Many nights I have lain on glass boxes, china dishes, soap-dishes and all sorts of things that I could hold on to, in order to protect myself.* But now their electric current and search-light have become so powerful that I can bear it no longer. I request that the Police Superintendent should wire to New-York or Chicago to find out whether there is a system of punishment of such a nature as to make one hear voices by means of electricity.«

»I have been told that they fix an electric wire in the engine-room and in this manner make the electricity follow the hot water pipes through the different floors. — — — I do not believe that they place a wire in the engine-room, for that would be discovered, but I believe that they find out where the radiators are and where the pipes pass, and then they direct the current against them, if they do not hear one so well that they can send the current direct. — —«

Diagnosis: Paranoia. (Hallucinations of hearing. »Thought resonance« *(Gedankenlautwerden).* Hallucinations from the general sensibility, especially the sexual regions.

The case will be continued in the special part of this work, chapter XIV. After death the discovery of a tumour in the right corpus striatum may possibly support the above-mentioned hypothesis of *Meynert* and *Taine.*

LITERATURE.

Esquirol: Des maladies mentales. Bruxelles 1838. *Griesinger, W.:* Die Pathologie und Therapie der psychischen Krankheiten. 1861, 2. Aufl. *Baillarger:* Recherches sur les maladies mentales. Paris 1890. *Wernicke:* Grundriss der Psychiatrie. 1900. *Kraepelin:* Psychiatrie. *James, William:* Principles of Psychology. 1891. *Seglas, J.:* Leçons cliniques sur les maladies mentales. Paris 1895. *Taine, H.:* De l'Intelligence. 6:me éd. 1892. *Meynert, T.:* Sammlung von pop. wissenschaftlichen Vorträgen. X. Das Zusammenwirken der Gehirntheile, 1892. *Ziehen, Th.:* Psychiatrie. 1894. *Kahlbaum:* Die Sinnesdelirien. Allg. Zeitschr. f. Psychiatrie XXIII. *Kandinsky:* Arch. f. Psychiatrie. 1881. *Cramer, A.:* Die Hallucinationen im Muskelsinn bei Geisteskranken. 1889. *Henschen, S. E.:* Om sinnes- och föreställningscentra i hjärnan. Hygiea 1919. *Svenson, Frey:* Vanföreställningarnas och sinnesvillornas psykologi 1919. *Parish, Edmund:* Über die Trugwahrnehmung. 1894. *Goldstein, Kurt:* Die Halluzination, ihre Entstehung, ihre Ursachen und ihre Realität. Wiesbaden 1912. *Jaspers, Karl:* Zur Analyse der Trugwahrnehmungen. Zeitschr. f. die Neur. u. Psych. 1911. Etc

CHAPTER VIII.

THE PSYCHOPATHOLOGY OF THINKING.

While the image of a continually flowing stream does justice to the mobile continuity of mental life, it says nothing as to how the movement is utilised for methodical work. This methodised movement, the most highly developed form of which appears in human thinking, is inherent in all mental life. We can agree with Leibnitz as to the correctness of his statement that »the soul is always thinking«. Thought is that continuous act of the mind which, by a synthesising activity, incessantly links together and assimilates the simple into the more complicate, perceptions and emotions into ideas, simpler ideas into complexes of ideas. In its most complete form of activity, it rises to creative *reflection*, which, during a purposive adherence to motives and aims, brings its objects to greater and greater clearness and development.

Mental activity in its complete form meets us in the rhythmical alternation of passive and active phases, of ideational *impulse* and *reflection*. This twofold activity of thinking has hardly received as much attention as one might have expected. Yet it would be wrong to say that it has been entirely overlooked.

The Swedish philosopher *Allen Vannérus*, in his work »On Studying Wundt's Psychology«, has pointed out »that a division of mental life which only distinguishes perceptions, emotions and acts of volition, does not express the fact that activity is the fundamental form of mental life, nor does it emphasise that which is characteristic of this activity, namely, that it appears *partly as a primary unconscious psycho-automatism, partly, conditioned by this psycho-automatism, as a more or less conscious and deliberate activity*, the material of which is found in the data given by the indicated fundamental activity«. Vannérus consequently distinguishes two »systems of functions«: 1) The *fundamental*, which contains: a) those functions which are the unconscious reactions of the psychical subject to the transsubjective influences conveyed in one way or another; b) the — likewise unconscious — activity

of this subject with the received content of the data[1]) given to consciousness. 2) The *upper system* which comprises all the conscious factors by which the given content — the immediately present ideas, emotions and volitions — in manifold ways and for some purpose or other is remodelled and more closely determined. Attention, for instance, undertakes such a remodelling when it is directed towards some object in order to raise the comprehension of it to a greater degree of clearness — —«.

With *Vannérus* we may thus appropriately designate *ideational impulse* and *reflection* as the two *systems* of mental life, of which the lower, and fundamental one represents »unconscious automatism« (impulse), and the upper one the conscious functions »which in manifold ways remodel and more closely determine what is automatically given« (reflection).

Many years ago (1902), the present writer published a small work »On Imagination«, in which he made the following remarks about the two forms of mental activity: »The psychic phenomena form no exception to the universal law of the rhythm of movement. All mental work proceeds during a rhythmical alternation of active and passive phases, of concentration — reflection — and distraction or diffusion — imagination. Thus it is more than a metaphor when we say that our thought pulsates. This is chiefly apparent to us in the fluctuations of attention, its constant straining and subsequent relaxing. At one moment we gather ourselves together for a clear conception of certain ideas, in the next we expand to give place to inspiration.« Broadly speaking it is the same oscillations within mental life which *Bergson* has in view when he speaks about »le double mouvement de concentration et d'expansion par lequel la conscience reserre ou élargit le développement de son continu«. In the main this view also corresponds to the description of the process of thinking which *William James* has given in his Psychology. In the constant movement of the conscious content of our mind, James distinguishes two tempi. Now the process is held up, and we are more vividly aware of the object of our thoughts, now its pace is quickened and we are aware of a relation, a transition from one link to another. It is a striking observation, that the wonderful stream of mental activity moves at varying speed. Like a bird's life, it consists of an alternation of flights and perchings. This is also reflected in the rhythm of language. The resting-places are occupied by clear, complete sensorial imaginations which can be held before the mind without difficulty; the places of flight are filled with thoughts of relations that obtain between the matters contemplated in the periods of comparative rest. *James* calls the resting-places »substantive parts«, and the places of flight »transitive parts«. The aim of all thinking is to reach some other »substantive part« than the one from which it has just been dislodged, and this is accomplished by »transitive parts«.

That the said *impulse*, which Vannérus calls the lower system, is the original, primary and primitive element in the development of human thinking, is a circumstance

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[1]) This phase b) of the *fundamental* system *(Vannérus)* is that part of human thinking which goes on independently of our consciousness and actual attention. It is properly not subject to the will and, as the genuine quality of mind, I have called it spontaneous thinking. Hence it comprises every form of emotionally inspired pondering, our normal daydreams as well as the above-mentioned paranoic ruminations, which again and again repeat the same suspicions or expectations.

that has been emphasised by more than one inquirer. *Jung* calls attention to the »two ways of thinking«. The one is represented by our dreams and by the impulses of primitive man and the child. *Mythology* and other products of the »dream-thinking« of undeveloped races are expressions of the primitive forms of mental activity, with which we meet in the childhood of humanity. And *Nietzsche* regards our dreams not only as a remnant of the mental life of primitive man, but also as the »ground from which a higher reason once developed and is still developing in every human being«. »How late sharp logical thinking and the critical observation of cause and effect have developed, may be understood from the fact that our functions of reason and thought still so immediately (in dreams) revert to this primitive mode of drawing conclusions, and by the circumstance that very nearly half of our existence is spent in this state.«

Gradually reflection has developed out of impulse, and it is evident that there is no definite distinction between them. Unconscious thinking shows already the independently creative qualities which become more prominent in reflection. »It is,« says Høffding, »nothing wholly new that appears with the work of reflection, for already in that which is immediately given we find similarity and disparity, coherence and multiplicity, and, what is especially important, an involuntary effort to bring conflicting tendencies into harmony. If such an effort were not present in an original form, it would indeed be unjustifiable to speak of a stream, a 'continuité mouvante', an 'unité de direction' (Bergson). Thus here already there appears an analogy to what we call synthesis with regard to reflection, a tendency to gather and unite. And reflection awakes when a fuller realization of this tendency asserts itself than is possible in involuntary mental life.« This does not preclude that *Høffding* is right in saying elsewhere: »Perhaps some of the most important activities of our mental life take place below the region of reflection, and it is often only the after-effects of these deep-lying processes that remain for reflection to deal with.« And like *Wundt*, who expressly protests against the mechanical conception of mental activity and lays down the doctrine of the »creative synthesis« as essential for psychical action, *Høffding* asserts that in the simplest »sensing« there is always an element of discrimination, in other words, even if we penetrate to the groundwork of mental life we shall, within the involuntary and automatic processes, find the independently creative qualities which appear more distinctly in reflection.

Lastly it must be mentioned that *Freud*, in his doctrine of »das Ich und das Es«, has expressed the same view of a creative power extending deep down into the realm of the unconscious. We will return to this subject in chapter XVII.

Association of ideas is on the whole more characteristic of the lower than of the upper system. It is the commonest form of ideational impulse, of involuntary, automatic mental activity. Still, as we pointed

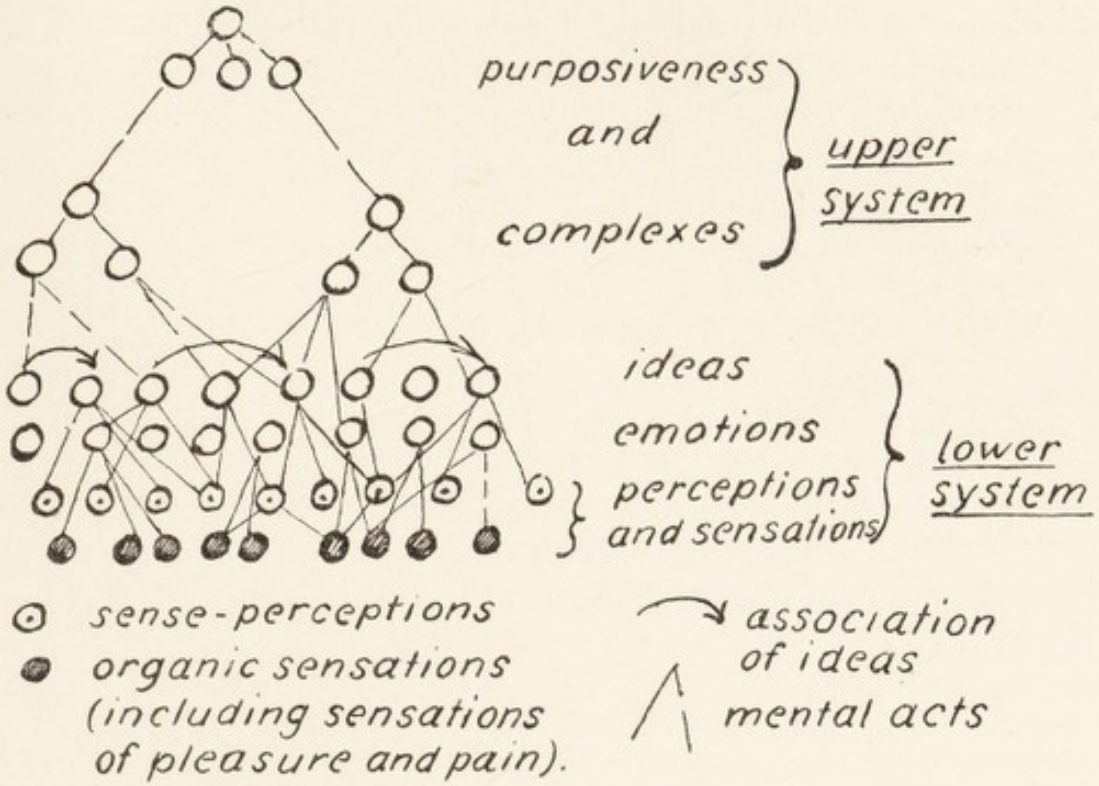


Fig. 20. Adapted from Jaspers.

out above, we obviously meet with constant indications of an independently creative activity (creative synthesis, *Wundt*) already in the lower system, and the boundary between the upper system and the lower is fluctuating, the more so as reflection finds its material in ideational impulse and is only able to carry out its work on this basis. Of course it is not a matter of indifference whether a mill grinds wheat or chaff, and association of ideas is the prerequisite of the results accomplished by the mental acts.

Associationist psychology has fallen into discredit in our days, chiefly through *Wundt* and his disciples, and especially the doctrine of the association of ideas has been subject to a critical revision.

After a bitter struggle, the associations of ideas in the old acceptation of the term, — originally four like the elements in physics, viz. similarity, contrast, coincidence (contiguity) and succession — were cut down to two, *similarity* and *contiguity*, and gradually, in certain quarters, these were reduced to *one* only. »This,« writes *Wundt*, »recalls the

reform carried through by certain natural philosophers in the early Renaissance, by which, instead of the original four elements, one single element, now fire, now water, was made the fundamental principle of all existence.« Still it seems to us that *Wundt* went too far in his crushing criticism of the old associationist doctrine. However wrong the associationist psychology may be in its too atomistic and mechanical conception of the coherence of ideas, still it gives a usable formula for the simpler sequences of thought and the *flight of ideas,* and to acknowledge that *Wundt* is entirely right would be to throw away the good with the bad. We may ask, for instance: »How did I come to think of this thing?« If we then succeed in tracking our thoughts, we shall find that their spontaneous course leads from one thing to another. Each preceding link stands in a peculiar relation of attraction towards a succeeding one and the importance of the principle of similarity and contiguity is unmistakable and can under no circumstances be denied. But this does not prevent these phenomena, the course of which quite naturally fits into the popular formula, from showing, when scrutinised more closely, something beyond a purely mechanical coupling of one idea to another.

As early as the eighteenth century, *Hoffbauer* made synthesis the essential thing in all associations. »If one idea is to evoke another, both must be connected by a more general conception.« This view we also find indicated by *Kant* and *Fries,* and in modern psychology *Høffding* has adopted it. »Since synthesis is the general fundamental form of consciousness, we must expect to meet synthetic activity in every association, which at bottom is an expression of psychic energy. What happens in every association is really this: out of the separate element, consciousness builds up a larger compound on the cooperating principles of similarity and contiguity, in which the given element of consciousness forms a single link. When we speak of association by similarity, and association by contiguity as two separate things, we are simply operating with abstractions. They may be mutually reduced to each other, but under some circumstances one indicates the most important point of view, under other circumstances the other. They represent two extreme points of the law of totality. The less difference there is between the parts, the nearer we come to a pure association by similarity; the more different they are, the more the process will assume the character of an association by contiguity.«

Wundt further asserts that every idea is in itself a complex of simpler form-elements, among which the emotional components are the most important. Hence, an idea is continually changing. It falls to pieces incessantly to be incessantly renewed, but the new idea is never identical with the old one. The processes which we call associations of ideas also consist properly of phenomena of fusion and assimilation, to which there is no analogy in mechanical conditions. What *James* calls the »transitive phase« of thought is the equivalent of *Wundt*'s moments of assimilation, and both do justice to the characteristic quality of the psychical pro-

cesses, to which there is no analogy within the physical processes, and which led *Wundt* to introduce the term »creative synthesis«. But though *Wundt*'s assimilation hypotheses in a much more complete degree does justice to the incessantly fluctuating changes of the psychical elements, the eternal *»Zerflattern und Zerfliessen«* of ideas, yet the most commonplace experience proves that associationist psychology contains a roughly sketched, practicable formula for the dynamic relations of the psychical elements, which gives us a comprehensible insight into the composition of the stream of thought. This does not prevent us from regarding synthesis as the essential thing (in this following *Høffding*), a view which precludes a conception of ideas as being mechanical units simply added to each other.

Hence, what we call *association of ideas* is a formula for the simple, automatic mental processes, and the principles conditioning the associative »relationship« within consciousness are *similarity* and *contiguity*.

The former comprises every kind of connection between corresponding or related conceptions, as for instance, king, prince, queen; God, Christ; water, sea, the Caspian Sea; fruit, orange, lemon, and so forth. The most common form of association by similarity is probably the mechanically linguistic one. All phonetic associations owing to similarity in sound, such as rhyme and alliteration, etc., belong here and they represent the lowest form of brain automatism, appearing when reflection is eliminated. In alcohol poisoning and in manic conditions they are an often observed phenomenon in the volatile rigmaroles reeled off by the patient.

Association by contiguity is due to the simultaneous fixing of two impressions. If one idea (memory-image) is awakened, it brings up the other. If one of two persons who are constantly seen in each other's company one day meets us alone, we involuntarily think of the absent one. It is the same with words, things, etc. The name Gustavus involuntarily makes us add the name Adolphus. Ideas such as feather, wing, bird; rider, horse, saddle; anvil, sledge, smith, leather apron, and so forth, attract each other as the magnet attracts the iron filings. Associations by contiguity exist not only between memories imprinted simultaneously; also when the impressions have immediately succeeded each other they belong to this category, for instance, lightning, thunder; knife, bleed; smoke, fire; and so forth.

Finally, as regards *association by contrast*, some psychologists class it with association by similarity (*Jerusalem*), whereas others, like *Ebbinghaus*, regard it as an association by contiguity. »Nature«, he says, »often creates in contrasts. She places the shadow beside the light, mountains beside the valleys, death in the middle of life.« But *Ebbing-*

haus is on the whole disinclined to acknowledge any other form of association than that by contiguity and supports his opinion by brain-physiological reasons.

R. Semon, who in his well-known *Mneme*-doctrine makes the theory of the simultaneous engram complexes the basis also of a natural and uniform interpretation of the associations, points out that this question has been unnecessarily complicated by an imperfect insight into psychological coherence. According to Semon, all associations can be traced to one single form, the *simultaneous* form, and so far he has arrived at the same results as *Ebbinghaus.* In order to avoid repetitions, we will discuss Semon's mneme-doctrine in another connection and here refer the reader to Chapter X.

A phenomenon to which certain psychologists have ascribed significance as an independent psychic factor beside the association of ideas, is *perseveration. Herbart* already, who, as mentioned above, regarded ideas as fixed entities which come and go, spoke about »freely nascent ideas«. The term »perseveration« for these »freely nascent ideas« was introduced into psychiatry by *Neisser* as denoting an inclination for incessant repetition of the same thing which has often been observed in katatonia. The patient again and again makes the same, often monotonous, movement or endlessly repeats the same word, sentence or melody. Though this phenomenon is present to a remarkable degree in insane patients suffering from katatonia, epilepsy or organic diseases (brain-tumours, paralysie générale), it occurs as a normal trait; in the mentally diseased it is only a strengthening of a feature in the normal mental structure. This has especially been asserted by *G. E. Müller* and *Pilzecker,* who allot to perseveration the above-mentioned independent rôle in the progress of ideas.

The tendency to perseveration may differ individually, may be stronger or weaker. It often appears as a sign of fatigue in the shape of repetitions of the same words or expressions (for instance, in letter-writing) and it is greatly increased in emotionally toned ideas. We will revert in a later chapter to the part it plays in the genesis of katatonic stereotypies, in the forming of pathological complexes, etc. Perseveration belongs to the simplest among the involuntary phenomena which enter into the composition of the lower system and create the material of which our thoughts are built up. But perseveration imparts to this material a stagnant or rather adherent character and, where the material is not renewed by current ideas, the thoughts develop in hopeless repetition, as in the pathological cases (dementia praecox, epilepsy) and

especially in the so-called *intentional perseveration,* when gross organic defects (brain-tumours, haemorrhages) are present.

Constellation, purposive conception, complex. Earlier psychiatrists regarded thinking as an interaction between »the brain and the Ego«. The Dano-German mental specialist *P. Jessen* derives from the automatism of the brain our spontaneous fancies and dreams, the whims and delirious ravings of the mentally diseased, in brief, everything that is produced within us when the control of reflection, self-restraint and criticism is lacking. »It is«, Jessen writes, »of great interest to psychology to make clear how much the brain and how much the ego participate in the result of thinking, but this question is difficult to answer, since as a rule it is only the result of their co-operation that becomes apparent«. Apart from the dualistic and, from an epistemological point of view, rather naive wording of this question, Jessen here (as early as 1855) touches upon a problem which may be said still to possess actuality.

In the preceding part we have seen how the two systems, ideational impulse and reflection, overlap and interlock. Even in the mental activities which seem to be products of the »automatism of the brain«, we also often find manifestations of a control which acts upon the »mechanical« relations. Thus we see that, in the apparently automatic processes which are called associations of ideas, there is a choice between the involuntarily given memory-images, *a choice which in a primitive way foreshadows the development of the censorship which conditions reflection.* This rudimentary choice is present in the phenomenon which we call *constellation (Ziehen).* The formula of this phenomenon is briefly expressed as follows. The idea *a* has under ordinary circumstances a stronger associative relationship to the idea *b* than to the idea *c.* Under the influence of a modifying circumstance *d,* which may be a sensation, an emotion, or an idea, this relation is changed, so that *a,* in the choice between *b* and *c,* prefers c. We can thus delineate the primitive or rudimentary mental process in *constellation* as shown in Fig. 21.

If we adopt a brain-physiological point of view, we might perhaps conceive the course of the constellation thus: we start by assuming that the impulse is to a certain degree conditioned by the automatism of the brain, even though we do not know how far this automatism extends. Left to itself and cut off from the influence of the controlling forces which characterise the upper system, the impulse wells forth as an involuntary stream of mental images, moods and feeling, now swifter, now slower, according to the varying conditions with regard

to preparedness for explosion (awakening) which distinguish the different fields of the cerebral cortex that may be supposed to be in activity during mental work. In this, the multiplicity, change, and diversity within the streaming mass of images are dependent on the development and differentiation of the cerebral cortex for the purpose of thinking. For the present we disregard the fact that, among the masses of form elements whirled up automatically at the moment of impulse, there always enter more composite fragments, purposive conceptions and complexes, turning even the automatic processes into *acts* of spontaneous thinking. We shall revert to this later, having now only in view the simplest of these involuntary acts, constellation. In the processes which succeed each other every moment in the cerebral cortex, stimulus-waves that come and go, rise and fall are present simultaneously. Hence the cerebral processes must not be conceived as a series of consecutive notes, clearly distinguishable from each other, but as symphonies in which sonorous waves of stimulation mingle with waning or waxing ones in a very complicated way, which in its turn conditions the intermingling nature of the processes. Every momentary section of the stream of thought thus comprises a quantity of simultaneous stimulus-waves, mutually acting on each other, and the fainter perception of a rising or falling wave modifies the content and the direction of that which fills our consciousness with a fuller resonance. *It is this after-effect, or collateral effect, of a perception, an emotion, or an idea, which is the essential fact in constellation.* In this the *emotion* is the chief thing, for the perceptions are only effective as sense-impressions on account of the emotion they awaken, as organic sensations they are merely of importance as being simple components of the emotions, and as to the ideas, these are always dependent on the emotional tone. Our animal feelings and emotions afford a convincing example of the conditions of constellation. Hunger and thirst awaken the thought of food and drink. The hungry man and the man replete with food do not understand each other, for the spontaneously flowing associations are conditioned in the two cases by the most highly contrasted general feelings, which radically alter the relationship of the ideas. The thoughts actualised by the feeling of hunger are inhibited by the feeling of repleteness. The case is similar with regard to our emotions. Uneasiness and fear take

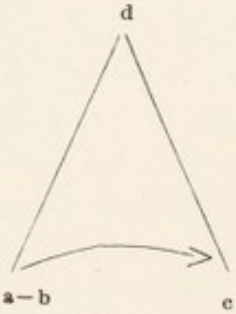


Fig. 21.

shape in thoughts of impending misfortunes, and a dread of darkness in alarming ideas of ghosts, thieves, and so on.

The constellation $\overset{d}{\underset{a\text{-}c}{\wedge}}$ is the mother-phenomenon out of which are created the more complicated relations which are the essential constituent of thinking. There we find *d*, which conditions the constellation, in the more highly developed form of *purposive conceptions (Obervorstellungen, Liepmann)* and complexes (»ideational complexes«, *Freud-Jung).*

While perceptions, emotions and ideas are the simpler form-elements which characterise the lower system, *purposive conceptions* and *complexes* are characteristic of the upper system (cf. Fig. 20). The activity of this upper system then takes the form already indicated by the constellation, but instead of being an automatic, involuntary choice between associated ideas, this choice more and more becomes a conscious censorship. In other words, in proportion as an upper system, consciousness or reflection, gradually develops out of the involuntary stream of thought, thinking assumes the character of an inwardly directed act of volition which methodically distributes the conscious impulses in successive series of purposive conceptions or complexes of such.

In the spontaneous mental process without attention, censorship or conscious command which is characterised by the association of ideas, link after link in a chain of meaninglessly connected ideas follow each other. This primitive mental process which does not presuppose any conscious breadth, has, figuratively speaking, only longitudinal extension. Now thinking develops into a much more complicate process with, as it were, a three-dimensional extent. By attention consciousness acquires a greater breadth, a central focus and a peripheral region, whereby the apperceptive division into essential and non-essential is made possible. At the same time, purposive conception, »with a perspective presentiment of a thought not yet pronounced« *(James)* gives to thinking a teleological feature, which deepens it while adhering to intent and object.

The regressive change undergone by thinking because of an incidental paralysing of attention in the manic states of exaltation, will clearly illustrate the importance of the purposive conceptions for the development of thoughts. This importance has been pointed out with convincing clearness by *Liepmann*, in connection with his examination of the manic *flight of ideas.*

In the manic states the intellectual processes, besides an increased

pleasurable tone, also exhibit a swifter rate of movement. At least we receive the impression that the cerebral centres (memory centres) receive every associative (inner) and sensory (outer) stimulus in a state of increased preparedness, from which follows an increased associative activity. The lower system is in a state of sparkling movement. One idea evokes another, one word carries the next with it at a breathless speed.[1]) But impulse is only one of the conditions which further the development of normal thinking. The other condition is the regulating factor which determines the logical sequence and purposive course of the thoughts. This condition is the consciously systematising reflection which constantly adheres to a definite purposive conception *(Obervorstellung, Liepmann).* And this purposive conception steers the course of the impulse like an experienced driver, now checking, now furthering the associations, the result being a watchful censorship over the fields of memory which are in a state of preparedness for an awakening.

It is this latter condition for thinking which is lost in mania. Impulse is heightened at the cost of reflection. Mental life has lost its superstructure, the upper system, in the same measure as will, attention and apperception have become paralysed. The result of this regressive change appears in the symptom which we call *the flight of ideas.* This represents involuntary automatism. The higher dynamic factors are here set out of function. The stream of thought has been deprived of the conscious dimensions of *breadth* and *depth,* if by breadth we mean the compass of consciousness which makes room for censorship, and by depth the purposive relation. Thus the dimensions of the thoughts are reduced to one only and they run on in endless rows and series without meaning or aim, held together by automatically active associative conditions. Hence there is no saying where one may arrive in this flight of ideas. An example:

A manic woman meets her doctor on his round and greets him carelessly: »Good morning, Doctor. Did you sleep last night? Night-cap over the eyes. Con-

1) It may be pointed out here that the quickened rate applies more to the language-component of thinking, to tone and sound-images in the shape of rhyme and alliteration, than to the objective associations of ideas. The flowing swiftness *(decreased retention)* with which one word-image makes room for the next characterises the manic condition, whereas an *increased retention* reveals itself in the »sticking« quality of perseveration in dementia praecox, epilepsy, and other abnormal states.

The chief factor in the flight of ideas, however, is the absence of censorship and the elimination of purposive conceptions.

founded blind-worm! Captain, art thou sleeping down below? (singing) Go to Jericho To America, Africa, Asia, Australia. Wherever you like. Or read Shakespeare. Prince Hamlet, Chevalier de la triste figure. A fig for Zachariah! No, pears and apples for me, and the bliss of Eden and unlimited feçundity and forbidden things and Cain and Abel and Noah's ark and all the carrier-pigeons of the world«, and so forth.

We have pointed out above that the involuntary course of ideas is not altogether alien to the synthetically uniting and adjusting activity which in a higher degree characterises reflection. It is a commonplace experience that reflection sometimes guides ideational impulse, as it were, with a loose rein and a light hand, and without the feeling of effort which more or less accompanies attention. This form of mental activity, something between impulse and reflection, we call *imagination*. Hence imagination is a kind of productive release of the mind, in which impulse has the upper hand, and the freedom from all concentration gives preponderance to the influence of varying purposive ideas which, at the cost of their inhibitive function, further the associations. It is in this weakening of the inhibitive effect of reflection that imagination, often compared to a waking dream, is related to dreaming.

This view of imagination finds support in the studies made on the different ways of *reading*. *Wundt* distinguishes between *assimilative* and *apperceptive* reading. The former may also rightly be termed reading conditioned by imagination, the latter concentrated reading. Out of a series of incoherent letters which do not form a word we can, in a moment of strained attention, only take in the small number of six, this being a measure of the span of active attention. If the letters form a word, on the other hand, we can momentarily catch a much larger number (20—30) and that without altering the direction of the eye. This is done during a state of passive attention, and it is in this way most educated people read a book. The passive state renders possible the influx, the reproduction, of a large number of associated ideas. Actually, our eyes only catch a minority of the letters, the others are supplied secondarily, and the words as well as the context are realised in our consciousness by an act of assimilation, a manifestation of the faculty of creative imagination which characterises mental life.

Akin to the adventurous ramblings of imagination are the wide digressions from the subject in view which are common in maniacs and which originate in the inability to concentrate which marks these patients. As soon as they have to give an account of anything, and these garrulous patients always have something to tell, they become verbose, long-winded and extremely lavish in details. They cannot name a person without also mentioning his parents and other relations, they do not pass by a single thing without describing it without and within, their

sentences often bristle with parentheses inserted into each other like Chinese boxes, but in spite of this they do not lose the thread of the tale, even though they often let it go and are distracted by a thousand incidental circumstances. This garrulity differs from the flight of ideas, which only has longitudinal extension, in that it possesses a swelling breadth, but it always lacks depth and purposiveness.

Thus the normal structure of thinking undergoes changes in the manic states, in proportion as reflection and the faculty of attention diminish. There occurs every degree of transition from extensive breadth and wordiness to the complete flight of ideas. However, this latter is not exclusively characteristic of mania, it is also present in other forms of disease and it may be specially pointed out that sometimes epileptic patients may display touches of volatile thinking, though of rather a meagre kind owing to an associative limitation often remarkable in epileptics. In such patients, as also in stuporous, semi-stuporous and confused mental states during the course of a dementia praecox, we find the flight of ideas changed in a marked manner through the pronounced tendency to repeat the same idea, often recurring pertinaciously, a feature which we have mentioned above under the name of *perseveration.* Perseveration presupposes a peculiar state of irritation in the cerebral cortex, and its effect is manifested as a »psychical stickiness«, a tendency to revert incessantly to the same details of memories, ideas or motor impulses. The continual repeating of the same word or sentence we call *verbigeration.*

To the modifications of the associative process which are a consequence of the altered conditions of stimulation in different diseases we will return when we come to describe these forms of affliction.

The regressive simplification of thinking, shown in the flight of ideas, clearly illustrates the importance of purposive conception and conscious censorship. In proportion as reflection develops as an upper system out of the involuntary stream of thought, and thinking assumes the character of an act of volition directed inwards, its active impulses are taken over by a series of successive purposive conceptions, out of which the logical connection proceeds as an organic entity. The purposive conceptions are simple or composite connections of ideas (complexes), and they are of a higher or lower order, according to the position they assume as determinants in our thinking. The latter group themselves in a methodical manner below the former and these, in their turn, below the connecting ideas and principal tasks which constitute the central part of our endeavours.

As a simple example we might take *the task of describing a short summer journey*. The whole matter is here included in the purposive conception A. This conprises the detailed ideas B, C, D, into which enter the happenings of the first, second and third days. The events of the first day comprise a series of episodes, F, G, H, and so on. Those of the second day, the episodes I, J, K, and so on, and those of the third day the episodes L, M, N, and so on. Finally, each episode includes a large number of details, a, b, c, d, and so forth.

This task is fulfilled during a constant passing of the attention from one detail to another, as the tale proceeds, and each detail is developed under the guidance of a purposive conception which dominates the surging memory-images. What is essential is included, whereas a number of unimportant matters are left out. And while we work out the details of our account we never lose sight either of the principal task or of the relations of the various details to each other or to the whole story. We do not let one part swell disproportionately while we are stingy with other details, equally important. We measure out the fulness according to the relation of the different parts to the whole and in conformity with the plan we have adopted with regard to the purposive conception A. Our attention exercises a checking and restraining influence over the functional preparedness of the mass of memories and at each moment it cuts off the associations of details into which our story would otherwise digress. The best way of grasping the significance of those determinants of our reasoning, the purposive conceptions, is thus to keep in mind how the maniac loses the thread of his tales over any detail and strays off into a flight of associations.

LITERATURE.

Jessen, P.: Versuch einer wissenschaftlichen Begründung der Psychologie. 1855. *Høffding, H.:* Den menneskelige Tanke. Dens Former og dens Opgaver. 1910. *Bergson, H.:* Matière et mémoire. 1914. *Wundt, W.:* Grundzüge der physiol. Psychologie. 1908—1911. *Vannérus, A.:* Vid studiet av Wundts psykologi. 1896. *Jung, C. G.:* Wandlungen und Symbole der Libido. Beiträge zur Entwicklungsgeschichte des Denkens. Jahrb. f. psychoanalyt. u. psychopat. Forsch. B. IV. 1912. *James, W.:* Principles of Psychology. 1891. *Herrlin, A.:* Minnet och dess pedagogiska problem. 1909. *Ebbinghaus-Dürr:* Grundzüge der Psychologie. 1905—1911. *Liepmann, H.:* Über Ideenflucht. 1904. *Semon, R.:* Die mnemischen Empfindungen. 1909. *Ziehen, Th.:* Psychiatrie. 1894. *Freud, Sigm.:* Gesammelte Schriften. B. VI. »Das Ich und das Es«.

CHAPTER IX.

REASONING ALONG MORBIDLY CHANGED, ALTOGETHER DISSOLVED, BROKEN OR DERANGED LINES. DELUSIONS.

The expression *conscious clearness* imports that the thoughts succeed each other in good order, with *lucidity* and the measure of purposiveness which characterises normal life. Still, if figuratively we attach the idea of a certain luminosity to the word clearness, it should be accentuated that nothing changes more from instant to instant than conscious clearness. This is due to the constant changes in our attention, which alternately rallies and flags. With these rhythmical changes the span of consciousness also varies; it narrows in the same degree as attention with a firm grasp takes hold of certain ideas which are then raised to the greatest possible clearness, but widens when attention is dispersed. The thoughts are then allowed to spread over a larger surface, though in a fainter light, and this condition, when it has reached a certain degree of development, has been appropriately called *distraction.*

In common usage, however, the word denotes a splitting of our attention, corresponding to the literal sense of the term. With the main part of our interest we follow out a line of thought already begun, while we neglect other ideas and objects which claim us in a more outward manner. In a half automatic way we then carry out certain acts or cast an unseeing glance towards things which reach no further than to the periphery of our consciousness. What we say or do in this state, we are often unable to remember afterwards. We may mislay things, make misstatements, answer questions the wrong way, in a word, act more or less unknowingly, from habit or quite mechanically.

This state of distraction has many analogies within the pathological

conditions. A morbid distraction asserts itself when, against our will, an idea again and again forces its way into our consciousness and compels our attention. Such is the case in the compulsion phenomena, the *imperative ideas* and *phobias*. During the onset the patient is preoccupied, incapable of tearing his thoughts away from the idea, which involuntarily obtrudes itself, and which generally has a strong feeling-tone of morbid fear.

A pathological absent-mindedness is highly characteristic of certain mentally diseased patients. This is the case with katatoniacs during the state of self-absorption or *autism*, which either episodically or more enduringly distracts their attention and often quite suddenly, in the middle of a conversation, gives them an absent, unapproachable and introspective look. Paranoiacs, too, who are forced to listen to the »voices« or surrender to their suspicions and dreams of greatness in involuntary meditations, seem absent-minded and abstracted in their self-absorption.

Absent-mindedness is in itself a state of deficient synthesis. Hence it is often met with in psychasthenic mental conditions which by imperceptible gradations may merge into *dream* and *confusion*. In persons suffering from imperative ideas, this state of deficient synthesis is probably, as has already been indicated, the primary condition for the generation of the intruding compulsion. Through a pathological loosening or dissociation, present from the first, their consciousness involuntarily gives way to the intruding thoughts. And then the accompanying fear is a factor apt further to dissociate consciousness and hinder attention.

Dissociation or dissolution of the associative connections between the form elements of reasoning reaches its higher stages in the conditions which we call *confusion (amentia, delirium)*. Clinically, however, confusion is only a symptom which may appear in most forms of mental diseases and it is always a sign of far-reaching disorders in the functions of the cerebral cortex. In states of confusion — and the same is the case in dreams during normal sleep — there is such a radical uncoupling of the higher, connective (synthetic) forces of mental life, that the structure of normal thinking is more or less effaced.

During physiological conditions we may compare the cerebral cortex to a motor which, after a stop signal at the beginning of sleep, works, as it were, »marking time«. Life pulsates, but everything stands still, for the dynamic effect, for which this marvellous motor has been constructed, can by means of a simple manipulation, the will to sleep,

which is also provided for in the construction, be conducted into a nothingness corresponding to an adaptation for rest. This ideal physiological condition, however, hardly lasts longer than during the deep and probably dreamless sleep of the first years of childhood. Gradually the motor begins to get out of gear with regard to its possibilities of absolute uncoupling, and sleep becomes less deep. And as we begin to sleep lighter, that side of our mental life which we call dreams takes more distinct shape. The deeper the sleep, the more disconnected the dreams, as a rule; and our ability to remember them afterwards is correspondingly reduced or absent.

Similar conditions undoubtedly obtain in the pathological uncoupling of the function of the cerebral cortex met with in states of confusion, and the cause must presumably be a disturbance, by intoxication, trauma, etc., of the nutritive conditions in the cortex on which the unimpeded course of psychical activity depends. The deeper the confusion, the deeper and more disintegrating will dissociation be, and, by the exclusion of the higher regulating factors, purposive conceptions and complexes, it will efface the logically coherent structure. When finally dissociation, as it were, reaches the very foundation of mental life, it rends asunder the associative connection between the more elementary parts, perceptions, emotions and ideas, and reduces everything to chaos.

During sleep and in the functional states of confusion, which are fairly analogous to dreams, dissociation never goes beyond a certain limit. The conceptions themselves and the manifold associative connections which enter into their formation, are generally not dissolved. In the organic forms of mental disease, dementia senilis and general paralysis, we find, however, a further regression of mental life, which might be designated as *a molecular dissolution of the conceptions.* This dissolution proceeds through a destruction of the associative connection between the memories of perceptions (intersensory dissolution) or a break in the connection with a number of memories and ideas which give to each conception its fullness and make it easier of recognition.

Such a condition is described by *Liepmann* in the following manner. When owing to a conceptive disturbance, *agnosia,* a person does not recognise a certain object, for instance, an orange, this is not always due to the visual impression not being able to awaken the corresponding memories of touch and taste. Far more important for the identification are certain associations of ideas and conceptions which immediately

attach themselves to the visual image, ideas about the inward and outward nature of the object in question (the orange), its origin, use, way of growing, of being gathered and eaten. In this ideational way the identification is brought about with the utmost facility without it being necessary to awaken other sensory qualities (beyond the visual quality) entering into the conception. A break in these trains of associations results in the dissolution of the conception which *Liepmann* calls *disjunctive agnosia.* »Der disjunctive Zerfall ist enthalten in dem, was uns allen geläufig ist als *Verarmung der Begriffe.*« With regard to *apraxia* also Liepmann has adopted a similar view. (Cf. Chapt. XI.).

Though in functional confusion dissociation does not proceed so far as to this »molecular dissolution« and disorientation with regard to the conception itself (agnosia), yet all ordered connections between the conceptions fall asunder and orientation in time and space is thus rendered impossible to the patient. This dissociation of the mental connections is constantly revealed in the patient's confused manner of speaking.

The ideas succeed each other by leaps and bounds. Often the same word or sentence is incessantly repeated *(perseveration),* often meaningless or new-coined expressions *(neologisms)* are uttered which, in these cases, are to be regarded merely as whimsically and mechanically joined irritative phenomena or discharges from the motor speech apparatus, lacking the peculiar and often very mystical significance which the paranoiac attaches to them. Sometimes there are indications of volatile thinking with associations by similarity and contiguity, sometimes a more or less distinct constellation effect, the after-effect of a preceding impression or earlier idea. Sometimes we may trace the influence of a complex of ideas with a strong emotional tone dimly present to the confused mind. As a general rule volatile thinking is a prominent feature in states of manic confusion, whereas *perseveration, neologisms* and the fusion of syllables, words or sentences, so-called *contaminations,* rather characterise the confused periods of dementia praecox.

Case X. The patient is an elderly, periodically deranged lady Diagnosis: manic-depressive confusion. Her strings of words have been reproduced on the dictaphone: »Go back; go back! Siljan (a lake in Sweden), you will get. Jesus, uss, uss, in a worm, ass, uss, you little man; be quiet, Sissy, a wild beast it was, a cuff it was; can't you? Far away! Look what you get. You get the land of Jesus. The peg must on, you did'nt go. The veil of the temple rent in twain. Siljan, yes. Go to your den, Sissy. But wait a little! Yes, yes. But in the name of pilsen (?),

the name of Jesus. And so we get the end of this year. In the name of Jesus, name of the bride! Hark! what he says, what does he say? The thunderland. That I in his shape would sing a psalm. The shore of Siljan I never saw. You will get? Be quiet, was it Sissy? Was it the shore of Siljan? First the crown, no, what do you see? Clear the blood of Jesus, no, mine, thine; Silence for the speaker, u—u—uh. No, I did'nt see, oh, so quick, so wry, so wry — —.« The incoherence is very obvious, as is also perseveration. Associations by sounds and similarity (rhyme and alliteration) are, however, more marked in the Swedish original than in the translation. There is occasionally an association by contiguity, but we can hardly trace any constellations or complexes in this severe confusion.

Another example of the same kind is the following:

Case XI. Mrs. H., 35 years old. Confusion of a manic-depressive type. In intense confusion she talks on and on, something like this: »A rent that cannot fall, cooling water cooling water and cooling water again, and falling backwards again and funnel together again, cooling water and cooling wine, and then it was the same thing backwards again. Blue water, blue, blue, blue, or blue eyes and no amber and yet the same. — — — — — Whatever it was, it was moving, and there was no bean and sometimes no bean, that is only brown and brown and brown blood sometimes, it used to be red sometimes, but then there was nothing. It must only be brown and brown. My husband is brown and I am a blonde. And shake my plaits every time, but still there was no amber nor any such stone.«

As in the former case, perseveration and associations by contiguity occur here also. The new-coined words »cooling-water«, »cooling-wine«, may, according to what the patient stated after her recovery, be explained as motor speech contaminations in connection with the memory of »cold water and wine«, which she was given before her arrival in the hospital. Accidental impressions and memories are introduced even into fragmentary descriptions and may even evoke associations (constellations). Generally speaking, the case reveals an intense state of confusion and a dissociation which goes deep and excludes all logically regulating factors. It was of doubtful nature and the possibility of dementia praecox was not precluded.

If the ideational life, as was the case in these instances, is in a state of chaotic confusion, and if the patient's disorientation has thus reached the highest degree, we speak about *delirium* or *delirious states*. These are most frequently of an exogenous nature. They occur in delirium tremens and other forms of intoxication, in fever and infection, in psychogenous and traumatic psychoses, etc. The state of confusion is often complicated by hallucinations, which, as has been stated in a preceding chapter, in such cases are conditioned by dissociation no less

than by a central irritative cause. A regular symptom of the delirious states is a strong motor disturbance. Still the example above seems to indicate that the confusion may assume the character of a delirium even in an endogenous mental disease. According to the experience of the present writer this is more frequent in manic-depressive insanity than in dementia praecox.

A complication of a most serious nature, which may arise in different forms of mental disease (endogenous as well as exogenous), is the state called *delirium acutum*. The development of this delirium is probably always connected with grave bodily enfeeblement and a general toxaemia. A high degree of exhaustion (collapse) supervenes. The state of confusion, extreme disquiet, and excited behaviour which appears at the onset of this complication, subsides with the rapid decline of bodily strength. The voice grows hoarse and whispering, the patient cannot stay up, he tosses restlessly in his bed, picking at the bedclothes (»muttering delirium»). Consciousness becomes more clouded and disappears in a comatose state. The patient looks exceedingly weak; his features are wasted, haggard, and somewhat cyanotic; the extremities feel cold; the reflexes from skin and mucous membranes are reduced; the lips are dry and coated, the tongue swollen and dry; often there are small haemorrhages in the skin (scorbutic symptom); there is a slight rise of temperature (38.5° Celsius) and traces of albumin in the urine. In many cases death ensues.

Amentia denotes less severe forms of confusion. Dissociation does not develop to such a high degree as described above, and, accordingly, a certain influence of complexes, moods, etc., extant in consciousness or acting upon it, is rendered possible. The thoughts often assume a delusional nature and in this state of psychical twilight are rather similar to dreams during light slumber. Hallucinations often form a contributary factor and exercise great influence on the rising of the deranged ideas and their further development.

In the mildest forms of confusion the incipient dissociation often shows itself in a general incapacity for collecting the thoughts, an uncertainty of judgment and apprehension of the nature of the objects seen. Everything seems strange to the patient, sometimes ridiculous and laughable, more often peculiar, alarming and terrifying; people and surrounding objects seem changed, distorted and threatening; sometimes people look as if they were animated by unkind or evil intentions. The patient does not know what to believe; and has difficulty in grasping

what he sees. Under these circumstances his demeanour reveals an obvious irresolution. Such states often have a strong emotional tone. The patient is depressed and anxious, or suspicious and irritable. Self-accusation or vague ideas of persecution attach themselves to the impressions of outward changes; and these are consequently misinterpreted in a depressive or paranoid direction according to the nature of the prevalent emotion.

While dissociation is due to disorders of a deeply rooted nature which cloud consciousness and more or less destroy the structure of mental life, it is otherwise in that disintegration of the personality, that reasoning along broken lines, which we call *schizophrenia* (Bleuler).

We have stated that schizophrenia is a phenomenon of mental splitting which can be traced back to the normal psychical structure and therefore, when it attains pathological dimensions, may be called a morbid intensification or excess of a structural origin. We have also joined *Kretschmer* in venturing to suppose that this normally present tendency towards splitting is greater in the *schizoid* than in the *cycloid* type of personality. In spite of this disposition normal mental life retains a constitution which it seems apposite to call *monarchical*, as all ideas and acts of volition are centralised round the subject, the sovereign Ego. But just as the word »royal« in names of institutions and societies does not imply a royal presence everywhere, similarly our Ego is not constantly taking part in the psychical processes within us. The Ego leaves the work to be done by subordinate purposive conceptions. These represent a kind of offices in the psychical realm which, on their own account, carry out the details. During our waking hours and under normal circumstances there is, however, a most vivid co-operation between superior and subordinate purposive conceptions. All of them bear a very personal relation to each other and to the subject, and there is no thought within us, however hidden it may be, with which the subject is not on intimate terms. Psychologically this relationship may be expressed in the statement that all our thoughts have an Ego-tone and are accompanied by a more or less vague perception of egocentricity.

But even in a waking condition it is by no means rare that certain complexes of ideas claim our attention so strongly that the thought, or indeed, the very perception of our selves, disappears almost entirely. An investigator may be so absorbed in a scientific experiment that he has no room for the slightest thought of himself. In fact, certain complexes of ideas borne by a great interest can be left to themselves to

further the development of the work in question. Superior purposive conceptions direct the whole matter, and subordinate ones succeed each other; the Ego has no other part in the progress of the work but the extremely rarefied perception that all is being done by its prompting and under its patronage.

That the purposive conceptions in all mental work carry out an entrusted task in a fairly independent manner is plainly proved by the cases where their work goes on as half unconscious (subconscious) spontaneous thinking, or is actually carried on during sleep. In this way scientific problems and questions may sometimes be solved quite suddenly, as by an inspiration, or during an act which may rightly be termed *intuition.*

Such experiences agree fairly well with what we know from our dreams. The fact is that we cannot positively assert that logic and continuity disappear during sleep. Complexes of ideas which have dominated our consciousness in the waking state, may continue to develop their energy and, in a manner which, though fantastic, is yet not aimless, they may govern the continuity of thought. It is on suppositions of this kind that the well-known Viennese psychologist, *Sigm. Freud,* bases his interpretation of dreams as part of the so-called psychoanalytical treatment of hysteria and certain neuroses. The essential thing in these diseases is deemed by Freud and his school to be the expulsion from consciousness of certain memories with an intense feeling-tone, most frequently sexual in character. The complexes of ideas thus driven out of sight appear in the dream as a kind of wraiths and, owing to the fantastic tendency displayed in dream life, often in symbolic disguise. In their interpretations of the commonest dream symbols, however, Freud, and still more his followers, have been guilty of excess and cheap explanations which border on the ridiculous; but in spite of this, there is certainly a nucleus of truth in these theories. In chapter XVII we shall revert to the Freudian conception of dreams and the unconscious mental life.

What has been said here about the independence with which certain purposive conceptions and complexes may appear in the waking state as well as in sleep, also explains the sleeper's strange behaviour in the abnormal states which we sum up in the term *somnambulism.* We may say of these states that they represent a partial or fragmentary wakefulness. While the greater part of mental life, including the consciousness of self, is sunk in the deepest sleep, a certain complex of ideas may be in a waking state. It may then happen that the motor centres are

also found to be »awake« and serve the restlessly active complex by doing its errands. Such somnambulistic states generally develop during heavy sleep. If the complexes which are active during sleep, are to carry out their work, it is necessary that they should have been directed towards a special aim in the waking state and thus have acquired the living energy by virtue of which they find strength to »survive«. There must also be a certain over-excitement, and presumably a pathological disposition for motor automatism. Actions requiring a real train of thinking and logical power of combination are comparatively rare in these somnambulistic states. Still, such cases have been described by earlier as well as modern authors. In most cases, however, only commonplace sayings and doings occur, most frequently certain habitual actions and everyday affairs with no mental content to speak of.

The mental state in the so-called post-hypnotic suggestions is probably comparable to spontaneous somnambulism. Likewise the sudden onset of dreamy conditions, epileptoid or hysteric in character *(fugues)*, which, by an equally sudden lucidity and subsequent amnesia, vividly contrast with the patient's normal state. The essential feature in these abnormal phenomena is an extreme narrowing of consciousness, which makes a waking action impossible and renders the patient incapable of critically judging his conduct or controlling it in an orderly manner. His behaviour is governed by an impulsively active inspiration, an independent purposive conception *(monoideism)* which often carries through its purpose with an unscrupulous assurance. In this every prevision of the consequences has disappeared, and the leading motives, duties and obligations of normal life have entirely ceased to exercise their regulating influence.

In an earlier chapter, in different contexts, partly relating to the psychopathology of double personality, partly to hallucinations, we have already devoted attention to psychical splitting or *schizophrenia.* In these abnormal mental states we have seen how certain complexes, split off from the personal coherence, may gain independence. Hence one of the consequences of schizophrenia will be that the mutual co-operation, the methodical and purposive reciprocity between the processes of association cease to exist and mental activity becomes, as *Wernicke* has it, a »beside each other« instead of an organic whole. In volitional life, too, the conscious activity brings about higher (synthetic) unities which are dissociated in schizophrenia. The acts of volition are then reduced to automatic processes. Impulses and instinctive actions are the consequence. Thus in schizophrenia there is a rupture of the personal unity

(»ein Zerfall der Individualität«), the realm of personality becoming in increasing degree an *anarchy*.

The dramatic quality of these schizophrenic states, this form of reasoning along broken lines, especially met with in paranoic forms of katatonia, will appear from the following instance.

Case XII. S. A., a masseuse, 36 years old. Admitted to the Stockholm Mental Hospital Nov. 1st, 1902. As early as the summer of 1897, she had suspected the hall porter in the house where she lived of having turned away, from sheer spite and malice, the patients who came to her for treatment. However, she was able to continue her work till the autumn of 1902, though all along, as she subsequently stated, she noticed that people wanted to do her harm. At that time, however, her condition made it impossible for her to go on with her work. She began to notice that people came to the place where she lived in order to put poison among her clothes and let noxious vapours into her room. At last she became so harassed, »probably by a dynamo or fumes of chloroform«, that she feared for her life. In her terror she ran out one night to call in the police, but when in the street, she saw a man in white rushing at her, and she was so frightened that she ran on and on till she came to a hotel where some people she knew were staying. Here she was allowed to stay the night, but she soon noticed that the hotel attendants had been taught how to »poison the air for other people«, so she soon hurried away. In the street she was surrounded by schoolboys who shouted indecencies at her. She also met several persons who looked like physicians, and they cried out to her that she was going to be »violated to death«. In the evening of that day she ran out into the forest, a very long way, and everywhere she met people, »was followed by men with guns«, and distinctly heard how they cocked the triggers to shoot her. Then she suddenly heard a voice saying, »do not shoot, I believe it is that sick nurse.« Still she continued her way and all the time she heard tittering and whispering round her. When the moon came out, she caught sight of a long row of furniture vans driving towards her and they were full of people who were talking about her. Towards the morning she came near a railway station and went into a cottage to buy some food, but did not dare to remain, for there were some small children who called to her, »Hell's whore, you are going to be killed!« »Evidently they had been taught by their parents who knew about her«. She then ran to another place, but here she heard somebody say: »Oh, here is that woman who is going to be killed, then we shall have to keep the corpse in our house.« To be spared more of this, she again went away, but then she heard a voice, crying: »If she left the bag behind and went straight on, nobody would say anything to her«. She supposed this to refer to a bag that she had carried with her all the time and in which she had packed some important papers and other things that she cared for. In order to be left alone, she was willing to sacrifice these things, and so put down the bag in the forest and hurried on.

As is always the case in a paranoically deranged mind, it was here the patient's own imagination that filled her world with enemies and persecutors. While struggling with and trying to escape them, she had incessantly to give up all her own advantages and create the most horrid circumstances for herself. Her fears and suspicions run on as a continuous train of automatic thinking. This involuntary, partially subcon-

scious stream of associations reflects in her imagination everything that she fears from her persecutors and makes use of all the whims, ideas, and fancies which in any way imply a negation of her positive wishes and endeavours. S. A. hears herself insulted, accused, threatened with ignominy; she is laughed at, her modesty is outraged; she is wounded in the most sensitive spots or, in other words, just in those spheres of ideas where associative activity is strongest, and where every sudden flash of suspicion calls forth fancies and contrasting ideas of an unfavourable and disgusting nature. These (subconscious) associations which are split off from the Ego, and in which the anxious tension finds an outlet, result in hallucinations. Among other things, the episode of the travelling bag throws light upon this connection. Before her flight in the evening, S. A. had gathered together various papers and valuables and carried them with her in a bag. She herself was undoubtedly afraid of losing the contents of the bag, yet the very interest she took in it gave life to the contrasting idea that she would have to leave it in the forest; in the same degree as she abhorred this idea, it started the train of subconscious associations, and so the voice told her that »if she left the bag behind and went straight on, nobody would say anything to her«.

The aims and endeavours of our life and all the more or less vital interests associated with them, are consciously or unconsciously represented by a system of complexes with strong feeling-tone which are the determinants of our ideas and actions. I said consciously or unconsciously, for these determinants take the shape, partly of clear purposive conceptions retained by consciousness, partly also of dim rudiments of ideas, akin to the instincts. The nearer we get to what is vital, the stronger and more emotionally toned, but also the dimmer, do the determinant ideas become. The deepest and most powerful, before which all other determinants must give way, or sometimes even disappear, are the psychobiological *primary motives*, the instinct of self-preservation and the instinctive desire for happiness.

As soon as the most primitive form of the nervous system has developed, perhaps even earlier, the instinct of self-preservation has acquired a powerful ally in the sensation of pain. Everything that checks or threatens life, directly or indirectly, is accompanied by painful sensations, which immediately determine a conation, a movement from one position to another. The movement brings relief, and is continued till the painful sensation is removed. Thus hunger strives towards satisfaction, pain towards relief, the sensation of obstruction towards the removal of the hindrance. Sensations of pleasure and pain promote the formation of associations by contiguity, and a primitive constellated thinking is rendered possible, with a choice between two or more possibilities. In a higher stage self-preservation, through a richer development of these aids, is no longer self-sufficing. In man it finds a many-faceted expression in the desire for happiness. It is true that the desire of living is

the deepest and most powerful — the most wretched existence is better than none — but when the possession of life is ensured, life is not enough, we want to gain as much as possible of the advantages of life, as much happiness as possible. Every human being is animated by a tendency to form his life in accordance with his wishes and interests, let us say, in accordance with his instinctive desire of happiness. This is more plainly evidenced as soon as our immediate dependence upon an outward reality ceases and our thoughts are no longer dominated by the necessity of accommodating themselves to this reality. Hence this tendency shows itself most distinctly in our dreams, but in the waking state, too, as soon as attention towards the outer world relaxes, the tendency in question asserts itself. Our passive reflections and aimlessly gliding thoughts, our *day-dreams,* most often run in the grooves ploughed by our wishes, inclinations and endeavours. Our mind always blows in a certain direction, and the light freight of our passive ideas drifts through the soul before this wind. In the world of reality our hopes are frustrated, but in our dreams they are generally promoted, in reality we meet with obstacles and adversities but in our dreams a special providence protects us and leads us without let or hindrance towards the goal. This providence is our desire for happiness, *the purely organic consideration for ourselves, our disposition to sift our thoughts and only let through those that are pleasant, or profitable and favourable to ourselves.*

This rule also holds good of the forming of the ideational life in the mentally diseased and our experiences from dreams may also find applications there.

Thus it may happen that disease can positively serve the purpose of self-preservation and the desire for happiness, as is often the case with *hysterical insanity* (opportune psychosis), a mode of reaction which not infrequently appears in an incipient psychosis of a grosser nature, for instance, in cases of dementia praecox. Under such circumstances mental disease is more or less a manifestation of self-preservation, a means of escape from a disastrous situation when there is no other way out, or else the »flight into disease« implies a way of realising the need of happiness and creating an imaginary world which, like the dream, gives compensation for the disappointments of life or cause its calamities to fade into oblivion.

This forgetting, especially, is a not unusual retroaction on mental life by the strongly emotionally toned primary motives and is effected by a suppression of certain inopportune ideas unfavourable from the point of view of self-preservation and the need of happiness.

This suppression is the outcome of an intensified censorship of the thoughts under pathological conditions which is involuntary and has the nature of a reflex. Instead of a conscious purposive conception it is here the dim primary motive which exercises the censorship, and with unyielding firmness dismisses the inopportune ideas.

These circumstances recall the conclusions to which *Sherrington* arrived in his studies of the reflexes.

The common path of the neurones is open to different kinds of reflexes, but each kind is only let through in the order determined by its significance to the individual. In the first place admittance is given to the so-called *nociceptive* reflexes, which serve the purpose of protecting the animal from external injuries. In competition with the entero- and proprioceptive reflexes, these are *prepotent*. This practical regulation of the traffic along the common path is effected at the intercellular barriers which join neurone to neurone, and which *Sherrington* calls »synapses«. »The resulting unity in the activity of the nervous system from moment to moment is the very corner-stone in the building up of the individual whole, the creation of which is its special task.« Sherrington's view of the integrative action of the nervous system may be extended beyond the scope of physiology. He writes: »The interference of unlike reflexes in their action upon their common paths seems to be at the very root of the great psychical process of *attention.*« The teleological features which can thus be traced already in the physiological reflex phenomena are more clearly apparent in the conscious processes of thinking and attention.

We sometimes visualise *attention* as a kind of a search-light which sends out its shaft of rays now in one direction, now in another. This image is extremely incomplete, to say the least, since it conceives what is thought of or attended to as if it were a dead mass. Attention is something quite different from the search-light which moves from one object to another, and, having for a while revealed a group of houses on the shore, suddenly lights up a sailing-vessel which had till then been swallowed up by the darkness of the night. On the contrary, in the mind, by a peculiar mutual understanding between the centre and the periphery, the very objects of attention spring actively out of the dark when a determining impulse presents itself. In every introversive act of volition it is a question of an inspiring act, the effect of which is not only centrifugal, but on the contrary preponderantly centripetal. In every moment of thinking the ideas respond to the central impulse by placing themselves at its disposal and this associative inflow is the richer, the better the intelligence is equipped with regard to knowledge (memory) and gifts. Thus we have here to do with a real mobilising of ideas, and not with a merely passive illumination during a one-sided search.

However — and this surely forms an essential part of what we call

intellectual gifts — each impulse determining the content of consciousness involves not only a mobilisation of certain complexes and associations of ideas, which supply consciousness with certain associative stuff, or a preparedness, latent in its periphery, of ideas ready for use in a coming moment, but it also means *a suppression of large portions of the mass of associations which constitute our knowledge and experience.* This mobilising of ideas which takes place in all thinking, has accordingly an unmistakably *elective* character and thus its office is to be a serviceable instrument of censorship, which prevents the entrance of the unwarranted and inopportune. The censorship of the trains of associations thus effected, does the same duty as barrier guard on a larger scale as the »synapses« in a lower biological stage, certain psychical reflexes (associations) being now checked, whereas others are let through, according to their more prepotent, that is, personally significant, character. In an attempt to explain the hysterical states, and *more especially the suppression of all ideas or memories incompatible with the well-being of the patient or even threatening his existence,* we must bear in mind the above-described double-acting dynamic, which normally splits into one animating and one suppressing factor. Here, as always, the laws governing normal mental life give us the key to an understanding of the pathological phenomena. Thus repression (what Freud calls »Verdrängung«) and psychogenous (hysterical) amnesia show an effect in absurdum of the inhibitive influence normally comprising the negative side of the above mentioned *elective impulse.*

The development of thinking from a lower form of psychical activity, and the origin of mental censorship in the adaptation of the reflex life to certain teleological purposes will perhaps be more obvious in these pathological cases. Here self-preservation replaces the clearly perceived purposive conception, and thinking regains something of the nature of the reflex. Oblivion and repression of certain ideas are a kind of nociceptive reflex in the service of self-preservation. This interpretation agrees fairly well with the view of hysteria as a form of mental derangement corresponding to dream-life and the primitive mental states. For examples of psychogenous amnesia the reader is referred to Case IV, p. 144 and to other observations in Chapt. X.

In a rather one-sidedly introspective study of normal psychology it has been easy to overlook certain essential details of the structure of mental life. By observing the altered lines of reasoning in different forms of mental disease, psychiatrists have been able to fix their atten-

tion on the significance of these details. Such was the case in Liepmann's study of the flight of ideas which in a convincing manner pointed out the importance of purposive conception and conscious censorship for logical reasoning. In repression we have almost an opposite symptom which may illustrate the part which censorship plays in reasoning by showing us cases where it presents itself pathologically magnified as a kind of *reinforced barrier guard.*

We have stated above that the prepotent influence exercised on our mental life by the primary motives is always manifesting itself in an endeavour to reach and retain that which is most favourable and most attractive for our existence. This endeavour is really the innermost nucleus in all psychical activity, the secret motor in the stream of thought. The direction of the stream is a constant movement from pain to pleasure, from uneasiness and anxiety to relief and deliverance, from tension and emotional pressure to relaxation and rest, from impending peril to security. Affectivity is thus the deepest determinant, its synthesis of organic sensations is like a sensitive surface of water unstable and rippling reactively upon the slightest stimulus from the outer world. A constant striving towards well-being is accordingly a constant striving towards equilibrium. This equilibrium, the essence of which may thus be said to be affective deliverance and relaxation, can only be momentary, for a subsequent moment of life carries with it fresh anxieties and a fresh striving towards deliverance. All life is unrest.

Empirically, it is chiefly these psycho-biological primary motives which keep together in a functional unity the countless determinants of our ideational life and thus in all our doings give a dominant place to the personal point of view. This does not prevent the complexes of ideas from often being highly independent in their activity. This independence, which is partly conditioned by the normal mental structure, may sometimes be carried to such an absurd degree that, as shown by case XII, the complexes handle their business in the most heedless fashion. As stage-managers of the shifting phases of schizophrenia and paranoia they display their activity to the detriment of the most nearly affected spectator of the drama, the patient himself, and in utter violation of his advantage. In normal conditions, this is what happens in our dreams. The typically schizoid dreams with splitting of the personality and full of dramatic situations psychologically bear a strong likeness to hysteria and katatonia. In certain quarters *(Sollier)* hysteria has been regarded as partially a state of sleep.

Considering the great importance that the primary motives, the

instinct of self-preservation and the desire for happiness, possess for our mental life, and since all our striving is directed towards attaining and retaining that which is profitable and agreeable, we are tempted to ask: how is it that so many manifestations of mental disease are so unbearable to the patient? The answer is simple, and so far the explanation has already been given as we have seen how dissociation of the personality makes it possible for the most conflicting complexes to assert themselves. (Cf. Case XII). The origin of the conflicting complexes is natural enough. Contact with life not only fixes the purposive conceptions which are the mainspring of our endeavours, it also fixes a more or less vivid conception of the hindrances and difficulties to be overcome, of everything that now and in the future may stand in the way of our advantage and our happiness. It is these two main groups of complexes, the affirmative and the negative in relation to happiness which so often compete for ascendency, and when certain circumstances connected with the affliction, viz. dissociation and an emotion, isolate these complexes from each other and push one of them into the foreground, it is often the negative one, toned by fear and misgivings, that becomes predominant. All experience shows that anxiety and fear form complexes in at least the same degree as our more joyous emotions.

That this competition between the affirmative and the negative complexes attains its most dramatic poignancy in the schizophrenic and paranoic states with hallucinations and split personality will be clear from what has already been said. Still no splitting is necessary for the pathological exaggeration of either of these two conflicting tendencies, the only determining condition being here the morbid feeling-tone.

Even under normal circumstances, it depends on certain qualities in the personal mode of reacting, connected with the different *temperaments*, whether one or the other point of view will become predominant. *The sanguine* man is more hopeful and inclined to disregard all difficulties, *the pessimist is* always in despair and ready to conjure up all kind of apprehensions and unfavourable prospects. But in spite of all the dissimilarities between these natures which differ so much in temperament and feeling, they still retain a certain measure of the *sense of reality*. In them both this renders possible a relation to life that gives their striving for happiness a solid and palpable basis although, on the one hand, the sanguine man may often be inclined to aim

too high, while, on the other hand, the pessimist will aim too low because he underrates himself and overrates the difficulties.

It is quite otherwise in mental diseases where the emotional state not only, as in the sanguine and the pessimistic temperaments, discolours and to a certain degree disturbs the sense of reality, but often owing to its own strong feeling-tone deranges or utterly destroys this sense, so that the personal relation to the outer world entirely loses its objective foundation. Often, however, there is only a quantitative difference or a difference of degree between these two types of temperament and real mental disease.

If now we attempt to follow the changes a natural striving for happiness undergoes under abnormal subjective circumstances, we find the deranged sanguine temperament in the *maniac,* and the deranged pessimist in the *melancholiac* and the *paranoiac.* Even a normal person of sanguine temperament will generally have difficulty in judging of the soundness of his subjectively coloured fancies; the maniac has entirely lost his footing in reality and is carried away by an inner feeling of power and self-conceit to a flight beyond all possibilities. His emotional thinking often culminates in *delusions of grandeur.*

The pessimist never falls into the insouciance of the sanguine man, and often enough, just because he overrates and magnifies all difficulties, he will, under normal circumstances, bring sufficient energy into play to conquer them. The melancholiac is quite different. Here the outward difficulties have a paralysing effect. His self-confidence is morbidly reduced; life and its realities weigh upon him like a heavy burden that presses him to the ground.

The paranoiac is also a morbid pessimist, but of quite a different cast of mind from the melancholiac. The emotional reasoning of the latter, coupled with the loss of judgment and of the sense of reality, results in *ideas of self-accusation and sin;* that of the paranoiac in *delusions of persecution.*

In the psychogenesis of derangement we do not meet with any exception to the general rule that morbid changes in the emotional life precede and involve a change in the content of the ideational life. On the contrary, in this respect paranoia is on the same plane as mania and melancholia. In its essence paranoia is a typical emotional reasoning which, owing to a general deficiency of judgment, develops along deranged lines.

What then is the outstanding feature of all emotional reasoning? In an earlier chapter we have seen, with regard to the psycho-

pathology of perception, how all affects further illusions; and the distortion of ideas into false judgment and evaluations is nothing but an introversive form of the same phenomenon. Thus the influence of the affects results, *outwardly* in the deranged synthesis of the sense-perceptions i. e., illusions; *inwardly*, in the subjective distortion of judgment i. e. delusions.

When, under the influence of an intense anxiety, the melancholiac directs his attention towards himself, his anxiety has the immediate character of remorse. The emotion then involuntarily finds its expression in a false moral evaluation of his own Self. Without being directly aware of any wrong-doing, the patient feels as if he had a crime on his conscience, and this remorse constantly calls to life the feeling of some supposed misdeed of which he is dimly aware, though he cannot tell what it really is. In all of us there is an associative connection between an affect and its adequate outer causes, and under abnormal circumstances this connection produces a reversal of cause and effect. Normally anxiety does not occur as a spontaneous emotion without any cause. It is always the effect of a certain concrete fact. In mental disease, where the affect arises spontaneously, this primary emotion gives rise to a perception of the same concrete fact which under normal circumstances is generally the cause of the emotion. *Normally:* transgressions committed — contrition and remorse. *In mental disease:* anxiety, remorse — supposed transgressions.

Out of these spontaneous feelings of inferiority, worthlessness or guilt, the depressive ideas of sin and corrupt morals involuntarily develop. In his own eyes the patient becomes a guilt-laden victim on whom with a more or less florid imagination all the wickedness of the world is laid. As the feeling of guilt grows, his thoughts revel in fantastic details. Sometimes his self-contempt, hopelessness and despair rise to a paradoxical grandeur, with that pretentious exaggeration of his own wretchedness that French authors call *délire d'énormité:* »I am the blackest scoundrel that ever lived«, »I am sin itself«, »I am the Devil, Antichrist«, »the scarlet woman«, »the beast in the Revelation«, and so forth.

As has previously been stated, the abnormal features which belong to the symptom-complex of *mania* and the manic states originate from that intensification of certain functions of mental life which is briefly called *exaltation*. The unbridled energy which is manifested within the associative and psycho-motor sphere in volatile thinking and agitation, on the other hand, unmistakably testifies to the paralysing of the apper-

ceptive faculties, attention and censorship. Hence the essence of exaltation lies in an unbalanced exuberance of reactive power, and the consequence is an inadequate relation between cause and effect, stimulus and stimulus effect. The slightest touch makes the overstrained spring snap, the smallest things are magnified by the maniac, either directly or with an illusory transformation due to his lively imagination. An innocent word becomes a gross insult, a distant likeness causes him to mistake one person for another, a flea-bite becomes a stab. The exaltation of the maniac is generally pleasurably toned, but his mood is labile and an element of tension is very easily added to it which changes his high spirits into anger or bad humour. *Delusions of grandeur* are therefore the commonest shape of the pleasurably toned spontaneous perceptions of the maniac, but the quick changes in his moods frequently find expression in more or less fleeting *delusions of persecution.* On a superficial view an inexperienced observer may easily mistake a maniac for a paranoiac. The quick, generally acute development of the disease, the volatile mode of thinking, the interrupted or shallow coherence as to association and conclusion, which may sometimes run out into fantastic fabulation are, however, so typical of mania that they can scarcely be overlooked. As an example of this manic flight beyond all reality the following account may be quoted.

Case XIII. B., an official, 51 years old, has since the age of 28 repeatedly suffered from periodical attacks of mania. Towards the end of such a period he has written down an account of his impressions and imagined experiences in this

»Story from the Hospital«.

Discomfort and unfavourable dietetic conditions in his home had provoked in the patient a hypochondric attitude of mind, irritation, constipation, and occasionally perceptions of supernatural sounds. At his own wish he was admitted to the Lund Mental Hospital on April 5th, whereupon the depressed mood soon changed into exaltation. At the doctor's round on the 29th April, he noticed in Room Nr. 3 a patient who, as he supposed, had arrived during the night, and in whom he thought he recognised the reigning King. One day soon afterwards, when passing one of the wards for female patients, he fancied that he saw the same august personage in a window there, surrounded by his gentlemen in waiting, and acknowledging the patient's salutation. In another window he saw a lady whom he supposed to be the Queen, but she drew back in surprise when she saw that she was recognised. On the following Sunday, May 8th, he again saw the King in the same window as before. On May 9th, it was rumoured that the King had suddenly died. Early in the morning the Crown Prince, who had now succeeded to the throne, was seen talking to his mother who was sitting on the sofa in »the house of the registrar«. A versified congratulation was sent to him to celebrate his suc-

cession to the throne, and having read it, the new King, according to the messenger's statement, had been pleased to say: »All right«, whereupon he left the Hospital in the morning, but returned on the following day.

According to a telegram from the King of Portugal, the patient had been created Duke of Madeira on May 1st, and soon afterwards he was appointed Russian ambassador. At the same time the new Duke had been informed that a Danish lady of high rank, who had just arrived, had expressed a wish to make his acquaintance; consequently, he had written letters to her, but as he did not receive any answer, he soon disregarded her verbal messages, brought to him by the servants. A more interesting affair had turned up. Because of the King's death on May 9th, the Duke had sent a written message of condolence to the widowed Queen who caused her gratitude to be expressed to him. He now got the sudden inspiration that he would place himself at her disposal with a view to an eventual marriage. His first offer she had declined for the present, but according to the servant who had delivered his message, she had done so in words that did not preclude the possibility that she might arrive at a more favourable decision later on. When the new King returned to the Hospital on the following day, the Duke thought it right that he, as the head of the house, should be told about the Duke's proposal to his mother. For that purpose the letter of proposal with a ring enclosed, which the Dowager Queen had returned the day before, was despatched to the King in the course of the morning, whereupon the Duke went out for his usual midday walk. When he came back to his room, he found the letter lying on the table, and the ring on the floor. The Duke did not doubt that the King had come to the room after having received the letter, had left it there and, as a manifestation of his contempt for the writer, who was his subject, had with proud superciliousness flung the ring onto the floor; and accordingly the Duke was fiercely indignant at such a manifest and mortifying insult. He decided to leave at once and wrote to his lord, the Emperor, sending the letter to the King with the request that it should be despatched. But this letter too was returned to the Duke, and his request to be allowed to depart ignored. (!)

This crime against international law, preventing an ambassador from communicating with his sovereign and, moreover, detaining him as a prisoner, brought with it a declaration of war from Russia that very day. The Grand Duke, the Lord High Admiral who commanded the squadron of the Russian fleet lying outside Malmö, began a bombardment and made a descent upon the town. The new King hurried to Malmö to conduct the defence, but was killed in the battle together with all his brothers.

At the request of those around her, the Dowager Queen, the mother of the fallen King, now took over the government as Queen Regent; she was acknowledged as such by Russia, and summoned parliament to meet without delay in the Cathedral of Lund in order to choose a king. For the same purpose there arrived delegates from Denmark where the Royal House had likewise ceased to reign.

The Scandinavian Parliament which had assembled at Lund already on May 14th elected the Swedish Dowager Queen to be Empress of Scandinavia. On the same day the new Empress appointed the insulted ambassador, her former suitor, the Duke of Madeira to govern the realm of Sweden under the title of King, thus offering him the most complete redress. The establishment of the new government was saluted with 1001 shots. Satisfied by the exaltation of her ambassador, Russia

suspended all further hostilities. But the Duke, who was now King, continued his courtship of the Empress-Queen, encouraged by several go-betweens who informed him that the royal lady had expressed a more and more favourable opinion of his person and had also accepted two rings that had been sent her. The fact that she had made him King was also regarded as a sign that she meant to bestow her hand on him. And so it turned out, as a patient who was considered trustworthy told him, that the marriage took place on May 21st at 5 o'clock p. m. in the Hospital Chapel, the chaplain in ordinary to the King officiating; the informant had acted as the bridegroom's deputy and answered the marriage question in the affirmative on his behalf; the Dowager Queen was present in person and had also answered yes; accordingly the marriage by proxy was a settled fact. Moreover, the servants stated that the royal lady had spent the night after the ceremony in her new consort's room (No. 1), *though he, being a heavy sleeper, had not noticed this.* It was certain, however, that the newly married couple did not meet personally during the day, though they had often exchanged greetings from a distance. There were many opportunities for this, as the royal lady for the benefit of her health seemed to take part in various rural activities and, besides, they had intermediaries who carried letters, greetings and presents intended for keepsakes.

As she continued to reside at the Hospital and often behaved in a manner he could not understand, he came to the conclusion that she was, if not entirely, yet partially deranged, and he was confirmed in his belief by her omission to meet her consort and to set him free, which there was nothing to prevent her from doing, as she was in possession of sovereign power. Beyond doubt she had bad counsellors, who misled her and adopted absurd measures themselves. The King who had disappeared from the scene on May 9th and had been falsely stated to be dead, had in the meantime been living abroad. He suddenly returned to his realm and to everybody's surprise made his appearance in the Hospital on Sunday, June 5th, resuming the reign without meeting any resistance. On the same afternoon, at 2 o'clock, by order of the King, a crowd of faithless subjects and arrogant foreigners who had been lording it during his absence were executed by the sword in the market-place of Lund. Indignant at his consort's behaviour while he had been away, he formally divorced her at 12 o'clock that same night in the vestry of Lund Cathedral. The divorced couple, both insane, then stayed on as patients in the Hospital and were frequently seen to meet. — — — Since the King's return the Duke of Madeira had ceased to communicate with the Queen, whereas she had encouraged him by greetings and gestures to continue their acquaintance, and though she had done so even when the King was present, he did not seem to mind. However, the Duke decided not to stand in the way of the reunion of the royal couple, but on the contrary to do what he could to help in bringing it about. For this purpose he sent the Queen a formal letter of farewell on June 16th in which he, candidly and in cordial words, urgently requested her to forget the writer of the letter and exclusively devote her conjugal feelings to her first consort. She did not answer, which he interpreted as a sign that she agreed, and this was, in the main, the end of the romantic story. On August 5th, the King left the place, still incognito, and was not seen till one day at the end of the month when he walked in the meadow by the railway in ordinary civil clothes and accompanied by a gentleman in waiting. His consort had remained all

the time and had carried on the rural work for the sake of her health. Towards the end of August she moved into Lund and stayed with the bishop's widow, with whom she was sometimes seen driving out. The last time she passed the Hospital was on September 6th when she ordered the carriage to stop outside her former suitor's window and waved farewell to him through the open carriage-window.

On September 11th, the Duke sent out a written declaration that he renounced all the dignities he had assumed in the Hospital. His convalescence continued steadily, and in the following month the patient left for his home quite cured.«

Diagnosis: Manic-depressive mental disease.

It was with the above described »duke of Madeira« as it was with the immortal hero of Cervantes. Like Don Quixote our patient gradually returned to reason, and recovered his critical faculty and the normal use of his senses. When the wave of exaltation subsided, he regained his footing on earth and his fanciful romance ended. The maniac in his fabulating mood also resembles a playing child. And we need not trouble to ask if a child believes in the reality of the feigned personalities, princes and princesses, with which it invests its ordinary playmates, its dolls as well as the surrounding pieses of furniture, chairs and hassocks. The fancifal ideas so fill the consciousness of the child that there is no place for doubt. It is just the same with the fabulating maniac, and there is certainly no fixed limit between a trustworthy, though whimsical imagination and a more or less pathological tendency to lying. This can be said in regard to the child as well as to the maniac.

Our patient himself added the following explanation: »Lively play of imagination without criticism. Nearsightedness prevented the patient from recognising people with certainty at a distance, but a dim feeling gave him the impression that the people he looked at answered to those who occupied his thoughts; some resemblance may have contributed to this. The answers he had received to his letters and some cheap keepsakes which had been sent to him had come from other persons who had taken an interest in the prolonged dramatic situation.« At the end of his excited period the patient, as he told me, continued his fancies with a certain self-esteem and satisfaction, however, without any belief in their reality.

The delusions in mania are of a volatile rapidly passing nature. With the delusional derangement in the chronic form of mental disease called paranoia, matters are different. It must be regarded as a mistake when earlier psychiatrists considered *paranoia* to be the manifesta-

tion of a primary intellectual disorder, a morbidly altered perception, and the like. They assumed an essential psychological difference between the so-called »intellectual disorders« and the »emotional disorders« and looked upon paranoia as typical of the former, mania and melancholia as typical of the latter. Nowadays it is the general opinion that paranoia also originates in altered emotional conditions which, in their turn, trouble the comprehension and at an early stage fix complexes of ideas, most frequently of an unpleasant, unfavourable and distasteful kind.

So far delusions in paranoia develop under the same conditions as the delusions in melancholia and mania. Suspicions, delusions of disregard, insults and persecution, sometimes even delusions of grandeur, develop as involuntary thought-impulses under the influence of an existing emotion, which tends to promote illusions and derange the judgment. The difference between paranoia on the one hand, and melancholia and mania on the other, is to be found in their different affective character. In melancholia and mania the feeling-tone, however apt it may be to trouble and annihilate the sense of reality, is *autopsychical* in its origin and essence, that is, as a spontaneous pleasant or painful sensation it is an attribute of the consciousness of Self and is one of its qualifying properties.

The autopsychic feeling-tone is a pleasurably or painfully toned self-assertion, and when the feeling-tone swells into an affect, this attribute is not changed. Self-assertion is compressed into fear in the melancholic; in the maniac it expands and demands room, now with expressions of boastful complacency, now with bad temper and bursts of anger. Delusions of sin and self-accusation in melancholia, delusions of grandeur in mania, are the involuntary impulses in these two opposite autopsychic emotional phases. Paranoia is quite different. Here the primary emotional phase is of an *allopsychical* character, that is, it is not an attribute of the Ego as such, but *of the personality in its relation to other people and its environment.* Paranoia postulates a morbid dislocation of the reactive emotions evoked in us in our dealings with others or in contact with our environment. Under normal circumstances equanimity and our objective state of mind can only be disturbed by some actual cause if all inward reasons for anxiety are precluded. *The sense of relation* or *social adaptation* (»Samlivskänsla«, *Frey Svenson)* which fills us during intercourse with our fellow-men may become coloured by tension and annoyance, if we are treated tactlessly, unkindly or inimically. In the abnormally ego-centric personality (the

paranoiac) such primary feelings with their characteristic undertone of a painful tension are always ready to scent tactlessness, malevolence and enmity in others. The paranoiac is spontaneously in the state which, in a normal person, only arises after experiencing impertinent, disagreeable or hostile behaviour from other people. Along paths of association carefully prepared and ploughed by experience, the spontaneous affective state of the paranoiac gradually leads to delusions of disregard and persecution. What we call suspiciousness is this constant spontaneous perception, renewed in every contact with others, in its conflict with a gradually dwindling remnant of criticism and judgment. Suspiciousness always involves a certain amount of conjecture, and this conjecture, though still open to correction and self-criticism, forms the nucleus of a morbid belief which finally through various degrees of certainty at last reaches the firm ground of conviction. Any belief, and not least a morbid one, moves with something of the inevitability of gravitation towards this solid ground. It aims at a reality that is to be proved, a fact that is to be created, and outer facts can only be created by proofs from outside, by the testimony of the senses. The object of the belief is a certain surmised truth and its essence is an inherent endeavour to strengthen the evidence of it and realise it as an unmistakable fact. The presentiments, fears and hopes, which in vague outlines overshadow a morbid belief form, we presume, a kind of *causa finalis* in the evolution of hallucination.

As mentioned before, affective abnormality is always the source of delusions in paranoia. In promoting illusions emotion already assists in gradually forming an unshakable conviction out of a certain train of thoughts which has long been the object of pathological meditation. Hence cases of paranoia without hallucinations may be observed. A false interpretation of sense impressions, i. e. illusions, caused by a chronic, fixed emotional abnormality is sufficient for the evolution and systematisation of delusions. In other cases a deceitful and reductive effect, though in a much higher degree, and, I am inclined to think, often catastrophically convincing, is brought about by hallucination. Thus abnormal sensory phenomena and, above all, hallucinations, become a decisive stage-effect through which a morbid belief develops into certainty (Cf. Chapt. VII). In this morbid conviction *ideas of persecution* often dominate. But the heightened self-assertion in relation to the outer world, the pathological *ego-centricity*, has another aspect. *Allo-psychical* sensitivity is intimately bound up with an overrating of the Ego, and this is the fount and origin of a complex-forma-

tion of a different kind, viz. the *delusions of grandeur*. In pathological ego-centricity the tendencies towards exaltation and towards depression slumber side by side, and sometimes paranoia will develop more in the one direction, sometimes more in the other. Of course constitutional dispositions are here decisive. In a special part of this work we will discuss the matter at greater length.

Here we cannot pass by in silence the affective influence on psychic evolution of »a *feeling of inferiority*«, what the pioneer of German »Individualpsychologie«, *Alfred Adler*, calls »Minderwertigkeitsgefühl«. This doctrine, a well-known complement to the Freudian one-sidedness, is of the greatest importance for our understanding of certain characterological peculiarities appearing in cases where »a feeling of inferiority« works as a stimulus on the possibilities of self-assertion. The psychological interest here especially attaches to the indispensable need of compensation in one way or another, inevitably suggested by an affective trouble, and a corresponding permanent lack of mental balance. The ways out of the affective trouble and the modes of regaining mental balance, i. e. the possibilities for compensation, are of course unlimited in their individual variability. Most cases of this kind belong to normal psychology or to the borderland of psycho-neurosis and probably only a few to the psychopathology of delusion and paranoia. It probably depends on a constitutional deficiency in the intellectual and other personal qualities whether compensation will take an unfavourable or fatal course, i. e. will end in ideas of grandeur preceded by delusions of disregard, suspicion and persecution. Persons, affected with deafness or some physical deformity, who are badger-legged or gibbous, often suffer from a more or less actual or perhaps repressed affective trouble, and every experienced psychiatrist has met with cases of insanity, dementia præcox as well as paranoia, to the evolution of which the importunate distress of »a feeling of inferiority« has undoubtedly contributed as a deranging factor.

The allo-psychical affects and their impulses act as guides to self-preservation. We are all to a certain degree careful, feel our way and listen to the warnings of the instincts. Even the unpleasant feelings of adaptation with a spontaneous and rather brusque reaction, which we call *antipathy*, may, as *Dugas* seems to think, render self-preservation valuable services, but they may also in extreme cases act in the opposite way and lead to a deranged comprehension. If, with *Ribot*, we define antipathy as »a form of self-preservation expressing itself in preconceived ideas« (*agissant par anticipation*), this definition

will become the more pertinent, the more we approach pathological cases. The paranoiac is actuated by a kind of exaggerated and misplaced instinct of self-preservation, *agissant par anticipation;* and this point of view is applicable, whether the patient from a mistaken solicitude for his safety barricades his door and arms himself against supposed enemies, or fences round his body with hypochondriac precautions against imagined perils. The latter variation of the symptoms, *hypochondriasis,* is under certain circumstances a legitimate variety of paranoia. We have here the same misled instinct of self-preservation, even though the painfully toned perception of relation, instead of being of a social nature, has reference to environment, food, air and other necessaries of life.

The hypochondriac mode of reaction, or briefly *hypochondriasis,* is not in itself a disease, but is rather a sign of an increased somatopsychical irritability which upon the slightest provocation finds expression in painfully toned organic sensations, the so-called *somatopsychical affect.* The state of bodily health is thereby made the object of a number of fears, *nosophobias,* and these sharply defined complexes (somatopsychical ideas or, respectively, delusions) are met with as symptoms in the most varied forms of disease. *Hypochondriac ideas* are thus extremely common in neurasthenia, but they also colour real insanity and are present in melancholia, dementia praecox and paranoia, as well as in the senile and praesenile psychoses, etc. In the emotionally toned disturbances of the general sensibility (cénesthesie (Ribot), Germ. Körpergefühl) with abnormal organic sensations and paraesthesias which are so frequent in early stages of dementia praecox, a depression coloured by hypochondriac fears, is by no means rare. An inexperienced physician may under these circumstances easily mistake this disease for neurasthenia. With regard to the prognosis, this is a rather serious error of diagnosis. In more advanced cases of dementia praecox, etc., the somatopsychical delusions assume more obvious forms, while still retaining the hypochondriac colour. The most common of those ideas which concern the body-feeling are delusions of *negation, alteration or obsession.* The patient may be heard to hint that his body is wholly or partly dead, morbidly changed or decayed, that his brain is petrified, his stomach and intestines obstructed so as not to allow food to pass, that his heart is no longer beating, that the blood has ceased to run, and so forth. The negative ideas develop under an emotional influence, productive of illusions, which distorts the patient's comprehension in the direction given by the abnormal organic sensations. Sometimes the

patient is heard to say that he »has no soul«, that »he can never die«, »is already dead«, and so on; at other times his negations are directed towards the outer world and he declares that »everything is dead«, »all men gone«, »the world is empty«. Some of the symptoms here quoted coincide with the phenomenon of depersonalisation, which has been described in detail in Chapt. VI. A bewildering perplexity, sometimes auto- or allo-psychical in character, sometimes of a somato-psychical nature, enters into depersonalisation as a manifestation of defective synthesis. Hence all impressions, whether from inside or from outside, grow vague and *lose their actuality (Schilder).*

Frequently, in more advanced stages of dementia praecox, as well as in organically conditioned psychoses of various kinds, the somato-psychical ideas assume other fantastic forms. The patient does not think that he is suffering from a bodily disease, but deems himself bewitched, hypnotised, poisoned, treated with magnetic currents, electricity, and so on. With regard to delusions of negation and obsession as symptoms of a partial depersonalisation the reader is referred to what has previously been said on this subject.

A delusion is an index of morbidly changed thinking, a »substantive part« of it, coming within reach of our judgment. The bare presence of a delusion does not always denote the existence of a mental disease. But the delusions of the insane are practically always parts of a whole which presents such characteristic features that »the experienced physician will only in exceptional cases be in doubt as to whether mental disease is present or not.« *(Frey Svenson).* Hence by a delusion we mean an idea, entering into a morbidly changed reasoning, whose false content, at variance with reality, has its origin in elementary factors, perceptions and emotions which, when these psychical elements are morbidly changed, are synthesised to higher unities of a pathological nature in accordance with the general laws of thinking.

These morbid ideas are delusions properly speaking, and to them may be applied *Frey Svenson's* definition that delusions are »distortions of reality which cannot be corrected by force of reasoning.«

Still there are numbers of conceptions, morbidly changed with regard to their content, about which we *cannot* say that they are synthesised to higher unities in accordance with the general laws of reasoning. These conceptions become distorted or pathological in their content

essentially because of a mental dissociation. Among these must be included the undeveloped ideas in our dreams and the corresponding delusions in states of confusion, in drunkenness, delirium and a number of dreamlike pathological states of stupor. Here, too, belong the flighty delusion of grandeur in mania (Case XIII) and the fancies, often bizarre and eccentric, which in amentia and in certain states of bewilderment quickly emerge and as quickly disappear as apperception becomes clearer. Strictly speaking, the false ideas and hasty inferences which are the consequence of a dissociating affect, also belong here. Of all these delusions it is true that they are distortions of reality which cannot be corrected by force of argument, but this is only as long as and in the degree that the criticism of reason as a higher psychical court is put out of action by dissociation.

If we only compare false conceptions as to their value with regard to truth, there is certainly no difference between the two forms of false belief, *mistake* and *delusion*. On the other hand, we are undoubtedly entitled to insist on a distinction, if we take into consideration the circumstances which hinder the correction of the false conception. If these circumstances are of a *pathological* nature, e. g. morbid disorders of association or an abnormal emotional state, we speak of delusions, if they are of a *physiological* nature, we call the false conceptions, mistakes. If reason by a just evaluation quickly corrects the misapprehension due to an affect accompanied by illusions, we do not call this misapprehension a delusion. But again this term is justified both in the case when a morbid dissociation prevents us from correcting the emotionally toned false conceptions, and when these are caused by an abnormal affective state. The last-mentioned origin, more or less obviously combined with intellectual debility, we often find in the delusional development of chronic paranoia. Yet not all mistakes and misconceptions of a more *permanent* character are delusions, nor are they due to disorders of association. The non-appearance of a correction may be caused by mental immaturity, deficient culture, overwrought religious ideas, etc. If we desire to avoid the contradictory term »physiological delusion«, we should classify such phenomena under the heading of »prejudice, superstition«, etc., but we must always draw a definite line between phenomena of this kind and the delusions of the insane. »They are«, writes *Frey Svenson,* »mostly mass- or group-phenomena and are generally connected with a person's view of life or with his instinctive, sometimes even with his reasoned evaluations. They are often relics from previous strata of culture.«

It is a gross mistake, committed by some prejudiced authors who have occupied themselves with »historical psychiatry«, to apply the same psychical methods of evaluation and the same gradation to all epochs and historical periods, instead of altering their standard and shifting it a little for every step that leads back to bygone ages. The need for such an adjustment seems to me quite as obvious as the need of a similar adjustment within the same period in regard to differences of education, cultural development, age, and so on. Thus it is very wrong to regard such historical persons as, for instance, Peter the Hermit, of the time of the first Crusade, or Joan of Arc as simply insane. Joan of Arc, like so many other mediaeval personalities, was an embodiment of the spirit of the age, an intensified expression of all the superstition and error, but also of the fervent belief and ardour and the ideas living in the mind of the people. It was this that enabled them to sway the masses.

Summing up, we may say that delusions are due either to a morbidly changed ideational impulse, or to the absence of reflection caused by disorders of association and a deranged synthesis. In the former case which comprises certain more chronic forms of disease (paranoia, paraphrenia), we meet with the most profound disorders in the fundamental phenomena of reasoning, i. e. in perceptions and emotions. The latter possibility of the development of delusions occurs in a number of acute forms where confusion is the more or less dominant main symptom. Finally it should be pointed out that there are forms intermediate between these two in which both components of reasoning, impulse as well as reflection (the apperceptive faculties), are disturbed (dementia praecox).

Delusions may be either acute or chronic in character. *Delusion in the proper sense of the word, the unshakable pathological conviction, is always a chronic phenomenon.* Acute delusions are often changeable, fleeting and loosely rooted in incidental moods, in transient emotions, abnormal organic sensations, errors of memory or the senses. A clouded consciousness, bewilderment or loss of orientation favour their appearance. On the sudden clearing up of these symptoms they may quickly disappear. In organic forms of mental disease with reduced clearness and judgment (general paralysis), delusions of a fleeting, changeable nature and, with progressive dementia, of an absurd character, are of common occurrence. They come and go as ephemeral expressions of transient waves of emotion and affective outbursts. Sometimes the delusions are easily corrected, but often they show a disposition to in-

sinuate themselves again into the patient's consciousness. This is often seen in subacute phases of slight confusion (amentia). We likewise find this to be the case in the earlier stages of chronic paranoia, on the rare occasions when these come under observation, and in the so-called mild or abortive form of paranoia (Friedmann's paranoia). In more chronic states of delusional derangement the false beliefs are embraced with unshakable conviction and are no longer capable of correction.

It not infrequently happens, not only when a »Heilung mit Defekt« is evident, but also in cases where a former patient seems to have recovered his health in every other respect, that a delusion or pathological complex will remain stubbornly fixed in his mind. But in such cases the residual morbid ideas have often lost all influence over the patient's actions. It is true that they may remain as a vulnerable point which, if touched, may throw him into a bad temper or make him silent and grave, but they do not spontaneously affect his social conduct. Such *residuary* phenomena are not infrequently traced after a subsided mania or confusion; religiously coloured experiences and more or less fantastic ideas attaching to them are the most likely to remain uncorrected. The religious imagination may be extravagant even within a normal mind, and we must assign a certain validity to the different answers to religious questions about the why and whither of existence, even though we are amazed at human credulity. In the face of religious opinions it is at least practically right to be generous in marking the boundaries of the »normal«. Certain forms of belief seem less deranged simply because they come closer to conventional ideas; others, that differ more from the common conceptions made legitimate by habit, are more easily stamped as madness.

In less completely recovered patients, healed with a remaining defect or only improved, the residuary phenomena may have a more comprehensive character and be of graver importance for the future prospects. In other cases again, these residua of a past illness appear as an unmistakable lack of judgment which, together with other traces of lasting dementia, gives evidence of the higher or lower degree of infirmity which so very often follows upon certain forms of mental disease (dementia praecox).

LITERATURE.

Liepmann, H.: Über die agnostischen Störungen. Neurol. Centr. Bl. 1908. *Stransky, Erv.:* Über Sprachverwirrtheit. 1905. *Kraepelin:* Psychiatrie. *Bleuler, E.:* Dementia praecox oder Gruppe der Scizophrenien. Handb. d. Psych. herausg. von Aschaffenburg. 1911. *Wernicke, C.:* Grundriss der Psychiatrie. 1900. *Sherrington:* The integrative Action of the nervous System. *Ribot, The.:* Problèmes de psychologie affective. 1909. *Dugas, L.:* L'antipathie dans ses rapports avec le caractère. Revue philosophique. 1909. *Svenson, Frey:* Studien über die paranoischen Psychosen. 1917. *Gadelius, Bror:* Paranoia och paranoida tillstånd. Tidsskr. for nordisk Retsmedicin og Psykiatri, udg. av Henr. Dedichen. 1909.

CHAPTER X.

MEMORY AND DISORDERS OF MEMORY.

Memory is a quality inherent in every animal organism, perhaps in every living thing *(Hering, Semon)*, whereby, owing to a peculiar plasticity, every stimulus leaves behind certain traces or potential residua (engrams, *Semon*), which after a renewed stimulus are actualised as experience. These engrams are the vehicles of the latent memory. They are always in a state of functional preparedness and to them is attached the formative faculty which manifests itself in reproduction. With the absence of stimulus the functional preparedness of the engrams gradually decreases, whereas it increases if the stimulus recurs frequently (training the memory). Memory is assuredly conditioned by specific organic factors, and the plasticity mentioned above is a quality that in a very high degree characterises the central nervous system and above all the brain.

In his well-known *mneme-doctrine, Semon* unfolds a novel theory of memory as an omnipotent biological factor. Memory in the ordinary sense is only a special manifestation of *mneme*, the two active phases of which, *engraphy* and *ecphory* (inculcation and reproduction), always go together and universally condition all renewal, psychical as well as physical.

Starting from a theory which had already been propounded by *Hering*, Semon regards the development of a new individual out of a combined ovo-sperm cell as an organic manifestation of mneme. Mneme, as a powerful principle or fundamental form, thus embraces all life, and in the mnemic phenomena are included heredity and morphological reproduction as well as memory phenomena in the psychological sense. What chiefly interests us here is Semon's theory of the mneme as an intellectual factor, i. e. the psychological aspects of memory.

The essence of his mneme-doctrine Semon sums up in the following two principal theses. The *first* (»Satz der Engraphie«) reads: All stimuli which are applied to an organism at the same time, form together a simultaneous complex of stimuli

which, by acting *engraphically,* leaves behind in the organism a complex of engrams bound into a whole.

The *second* mnemic principal thesis (»Satz der *Ekphorie*«) reads: The recurrence (usually a partial repetition) of the same energetic situation which previously exercised the engraphic effect, has an ecphoric effect on a simultaneous complex of engrams. This repetition may be caused either by a more or less partial renewal of the original stimulus or by a mnemic stimulus.

Our actions and all our reasoning have their »historic basis« in memory. It is the abiding element in all that is fleeting, the *static* factor in the stream of thought. Memory is the means of retaining our experiences and of preserving them in the form of knowledge. It makes it possible to us to make use of what we have perceived through our senses, and by our reflection converted into conclusions and judgments, into understanding and knowledge.

When two or more impressions are received simultaneously, they are later revived in the form of an association by contiguity. This is the most primitive condition of our experience and thanks to this condition, even the first awkward movements of the child imprint on its mind certain experiences that promote development. The old proverb »the burnt child dreads the fire« is a drastic testimony to this. Thanks to memory, our experience of life increases every day, and in the adult normal person the store of memories comprises an enormous mass of details, differing quantitatively and qualitatively according to differences in education, gifts, interests and calling.

According to *Semon,* all simultaneously fixed impressions enter into the complexes of engrams as parts of a whole. What we call *association* is an engraphically conditioned affinity, which becomes apparent in ecphory. The reason why the perceptions which are combined into a simultaneous entity, appear in isolation is that each simultaneous complex is only reproduced fragmentarily, something like an incompletely exposed photographic plate in which the strongly lit details stand out from the dark part as light patches and points.

According to Semon, there is, properly speaking, only one form of association, the simultaneous. We have no difficulty in referring association by similarity to this form, for what we mean by this is the ecphory of such complexes of engrams as have certain details in common. Our memories, gathered into simultaneous complexes of engrams, follow each other like the leaves in a book, and these complexes are the more closely interwoven because each stimulus fades but slowly. This fading, which Semon calls the attendant stage of the stimulus, prolongs the impressions and, as it were, lifts the preceding impression to the same level as the succeeding one so that in this way *successive association* can be referred to simultaneous association. The *contrasts* too, small — big, beautiful — ugly, light — dark, life — death, which are learnt and experienced together, are simultaneous associations. Thus all

associations can, according to Semon, be reduced to the same fundamental form, and the associative connections, formerly a matter of much controversy, can be explained by the details of the engram complexes being united into one whole. And if we also include, as parts of this whole, the mnemic perceptions which do not rise to consciousness, or weaker stimuli not accompanied by distinct perceptions, we can explain the ecphory of these as an associative effect of imperceptible connecting links without having recourse to Herbart's hypothesis about »freely nascent ideas«.

All our thoughts develop out of original sensations, the engram complexes of which are often recalled (ecphory). These original sensations often cover a wide field and we have already seen how components from different sensory regions cooperate herein. Into the concept *»orange«* there enter sensations of vision, touch, taste and smell. With increasing experience and knowledge, there are added to these: ideas of the geographical distribution of the orange, its manner of growth and harvesting, its commercial importance, and so on. The range within which one idea can come into contact with other ideas continually widens and reproduction is facilitated, each concept being in this manner capable of being called forth from numerous realms associated with it. Every time an idea reaches concrete distinctness in our minds, this process is accompanied by more or less vivid perceptions from different spheres of sense and memory.

According as all these memories entering into the concepts may be referred to some definite sensorial modality, i. e., have a visual, tactile, motor or auditory character, we often find an individual preference for one or other of these modalities; and in this respect we may speak of *memory types* of a predominantly visual, tactile, motor or auditory nature. But in spite of a predilection for memories of a certain type, all these perceptive modalities are of course utilised in a fully developed human being and a motley variety of corresponding memories are incessantly woven into his ideational life.

In persons with a congenital or early contracted defect, such as blindness or deafness, the memory stuff is reduced, and those who are both blind and deaf have only their tactile and motor memories, together with memories of taste and smell, as a concrete basis for their ideas and conceptions.

That a rich mental life may nevertheless be developed in a naturally gifted person appears from the autobiography of *Helen Keller* who was deaf and blind. The strict limitation of the sensory impressions on which her experience of life had to be built up was to some degree compensated by the extraordinary keenness to which her tactile perceptions had gradually been developed, and her receptive

mind contrived in this way to absorb an impressive fund of knowledge, a fine and independent power of judgment, whether as regards ethical values or such things as are the objects of esthetic pleasure or cultural interest. We cannot here dwell upon the means by which an education adapted to her blindness and deafness, and endeavouring to make the most of the tactile perceptions, succeeded in opening a path through the darkness and aiding the natural receptivity of her lonely soul; the case of Helen Keller will for ever stand out as an amazing effort of human energy and purposeful perseverance.

In organic defects also, in connection with brain lesions, haemorrhages or tumours in the optical, acoustic, tactile or motor centres, reproduction along these sensory paths of corresponding memory components is rendered impossible, so that concepts from these quarters become inaccessible, whereas they may still be actualised along other sensory paths. Thus we see how a mentally blind person who is unable to name or conceive a certain object, for instance, a bunch of keys, will easily find the right name and the corresponding concept if we approach him along the auditory path by rattling the keys, or appeal to his tactile perception by letting him finger them.

It would, however, be unprofitable for the various purposes of reasoning if all ideas appeared with the same concrete distinctness. Merely by habitual repetition they lose their sharpness of outline and clearness of detail and by a methodical exclusion of all accessory matter they are abridged and generalised into the abstract form which we call a *concept*. It is of no significance whether the concept »dog« is present in our minds in the shape of a dachshund or a poodle, a lapdog or a foxhound, the essential thing is the qualities which form the concept. These qualities are what is most central and ever present in the constantly renewed sight of a dachshund, terrier, poodle, foxhound, etc., and it is by this repitition, which *Semon* calls the *homophony* of certain essential mnemic perceptions, that ideas are generalised into concepts.

In this thought-saving abridgment of ideas into concepts we are continuously assisted by the word, spoken or thought. Often our thoughts are formed with the support of word-symbols and in this again the predilection for a certain memory type becomes apparent. One person is mainly *auditive* and thoughts come to him accompanied by a faint consonance from the auditory centres; another is inclined to think, as it were, with his tongue and will generally accompany his ideas with faintly pronounced words (*motor type*). In addition to these two types there is a third, the *visually* disposed, and finally a fourth,

which is probably very common, *the combination of the auditive with the motor type.*

In the reproduction of ideas and concepts which is the prerequisite of our reasoning, we accordingly, even under normal circumstances, find a certain tendency towards *reperception* asserting itself whether reasoning is occupying itself with memory images of concrete objects or with general conceptions clothed in word-symbols. Reperception gives to the reproductive part of thinking something of the concrete vividness of perception, and it has long been put forward as a plausible explanation of hallucinations — »the voices«, no less than visual hallucinations and, in the former case, those which are auditively perceived as well as the motor-speech ones. The different memory types noticeable in different individuals thinking in *verbal forms* may, as we have pointed out in an earlier chapter, be supposed to cause the varying character of *verbal hallucination* which in most cases is auditive, often of motor type, and only in rare cases visual.

Most brain-anatomists and brain-physiologists *(Flechsig, S. Ramon y Cajal, Henschen,* and others) assume the existence of special perceptive centres, and of memory and associative centres distinct from these. *Ramon y Cajal,* in close accordance with *Flechsig*'s theory of associative centres, has put forward the following views on memory centres: The cerebral cortex is differently constructed in the sensory and the memory centres. From the psychological point of view also, there are reasons for assuming different substrata for the sense impressions and for our reproductions of what we have experienced. The memory images are not only fainter copies of our sense-impressions, but as they belong more intimately to our Ego, their psychological quality differs from that of the sense-impressions, which appear to our personality as something extraneous, independent of our will. It would be unlike Nature, so *Cajal* thinks, had she not provided a division of labour by using different nerve elements for such heterogeneous tasks. Weighty clinical reasons also support the assumption of special memory centres. Cajal tells of cases where there was complete blindness, owing to destruction of the visual centres in the occipital lobes, but where the power of recalling visual perceptions was undisturbed; and, on the other hand, of cases where the visual centres were unimpaired and the patient was able to see, but nevertheless, owing to a limited injury close

to the visual centres, was unable to remember the objects or had difficulty in recognising them. Cajal assumes two kinds of memory centres, primary and secondary, to which a third, higher centre must possibly be added. These memory centres are supposed to be unilateral, as a rule localised in the left hemisphere (in right-handed persons), whereas the perceptive centres are bilateral. The primary memory centre lies in immediate proximity to the perceptive centre by which the impressions are received and recognised and converted into simple ideas, which represent the object in their most concrete form. In the secondary centre, the simple ideas gathered from the different sensory spheres are synthetically amalgamated. Here the concepts are formed and the more general ideas which are no longer concrete images or copies of things in the outer world, but products of the creative activity of consciousness. »To these centres, or perhaps to still higher ones (tertiary, commemorative or observant centres?), we might localise the results of the constructive reasoning of science and the creations of the author's imagination, in brief, all those complicated and systematic mental constructions which are built up by deliberation, research and experience.«

Against these and other attempts at localisation, whether of a definite or only of a groping and cautious nature, strong protests have been raised both by leading psychologists *(Wundt)*, and by brain-anatomists of high renown (*von Monakow*). With regard to the sharp line of demarcation which *Meynert* and *Munk* drew between »perceptive cells« and »ideation (memory) cells«, *Wundt* holds that the perceptions, albeit in a faint and subdued form, enter into and form the most essential portion of our concrete ideas about objects. And as to the hypothesis of associative centres, this is founded on an assumption made in analogy with the anatomical observation of associative fibres connecting different regions of the cerebral cortex, an assumption which with no sufficient reason has been transferred to psychological conditions, though these are incommensurable with the physiological functions *(Wundt, von Monakow)*. In general, it may be said that the conclusions drawn from the study of aphasia, word-muteness, word-deafness, word-blindness, and so forth, whenever there has been any attempt to apply clinical observations to the functions of consciousness, have mainly been founded on these false analogies between »associative fibres« and the »association of ideas« and, consequently, have not brought any gain to psychology. In a previous chapter we have already dwelt on the vain attempts which have been made and are still being made by brain-anatomists to localise the various functions of mental

life, and we refer once more to *von Monakow*'s assumption of a co-operation between nerve elements spread diffusely all over the cortex, which by no means serve as special organs for certain acts or purposes but rather represent a keyboard on which the different elements incessantly accomplish varying purposes.

Semon also severely criticises all attempts at carrying through a circumscriptive localisation of memory. He sees no essential difference between the original stimulus (perception) and the mnemic stimulus, and for both he assumes the same substratum, as did *Ribot* long before him. A localisation in the ordinary sense, which seeks guidance from the different sensory modalities, is far too naive, since it believes itself capable of stowing certain memories into certain cells, other memories into others. True, each sensory modality has its privileged sphere (its »primäre Eigenbezirk«), but the stimulus also reaches other groups of cells, not to say the whole cortex. Thus the so-called *topogenous* localisation is always *gradual. Semon* illustrates this figuratively in the following manner. We picture to ourselves a large number of gramophones, placed in different parts of an opera-house, and set going for the purpose of recording a performance. While the orchestra performs the same overture, the result on the different gramophones is widely different according to the placing in each special case. We assume that one of the gramophones was placed close to the contrabasses, another among the cellos, a third in the stalls, a fourth in the balcony, and so forth. It is the same symphonic entity which is recorded by all the gramophones, but the difference in degree, according to the »Eigenbezirk« of each of them, will indeed be obvious.

Besides the *topogenous, Semon* attaches due importance to the *chronogenous localisation.* The simultaneous (or synchronous) complexes of engrams succeed each other in time as endless series; a circumstance the anatomical and physiological conditions of which it is more or less impossible to account for.

von Monakow makes clear *chronogenous* localisation in the following manner: He compares the brain to a musical box, in which the melodies are produced by a brass cylinder from which little iron pins project. The latter are so arranged that, when the cylinder rotates, they bring about a displacement in a row of steel vibrators fixed horisontally to the edge of a metallic plate. The cylinder is covered with a great number of these little pins, so placed that, when the rotation of the cylinder is adjusted in a certain way, a given complex of the pins belongs to a special melody. Just as impossible as it is to say that the melody is placed in this or that spatial locality on the cylinder, just as inconceivable is it of course that any

one should suppose that the reproduction of memories following the stream of thought is localised to a circumscript associative centre. Each cellular locality of the cerebral nervous tissue as well as each little pin on the moving brass-cylinder successively requires to be used in a teleologically fixed order, as inevitable in producing a melody as in every act of thinking. »Le fait«, writes *von Monakow*, »de vouloir localiser spatialement un processus se déroulant dans le temps est une contradiction in adjecto«.

In pathological cases a well-known proof of chronogenous localisation is found in the fact of retroactive amnesia after accidents *(traumata capitis)*, or in the gradual annihilation of stratum after stratum of memories, in general paralysis and senile dementia, which long ago led *Ribot* to lay down his *loi de régression*. We will return later on to this retrograde failure of memory.

Of course the directives indicated by von Monakow and Semon do not lead to a solution of the problem of localisation; if anything, they emphasise its extraordinarily complicated nature.

In the face of these insurmountable difficulties we are often tempted to ask whether we have presented the problem correctly. After all, memory is an act of the subject, quite as much as thinking .Strictly speaking it is one and the same act. And when I say, »I think«, »I remember«, I certainly give a more correct form to a universal experience than if I say, »the brain thinks«, »the brain remembers«. Is it really the case, that all these endless series of memories, for the recording of which the brain with its different sensory modalities is the necessary instrument, are also stored in the same instrument?

This question is answered decidedly in the negative by the neovitalists and by some philosophers concurring with them.

»It is, of course, conceivable that the inculcation of engrams takes place in a manner reminiscent of gramophone recording, but the power of grouping these engrams systematically and even the power of association by similarity and contrast, has not the slightest resemblance to any kind of combining process due to physico-chemical factors.« This opinion, expressed by *Hans Driesch*, is very similar to the view held by *Bergson*. The former localises only the substratum for the elementary engrams to the brain, whereas Bergson draws a sharp distinction between the memory reproduced in sensory-motor forms and »le souvenir pur«, and in his brillant work »Matière et mémoire« he advances the thesis that »pure memory« has nothing to do with the brain except in the experiencing of the present instant, which attaches it to the cerebral processes by which we react to the outer world. Bergson sees in the brain merely an organ that serves »certain static purposes«. It is »the nail on which the whole matter hangs«.

Bergson's argumentation is partly epistemological. He asserts that we are a prey to an illusion when we transfer the properties that we observe in *matter conceived*, to *matter per se*. The relation between a thing and its content, »le rapport de contenant à contenu« is such a property. It is certainly convenient to think of memory as being stored in the brain, but it is an absurd supposition. Why dare

we not, with regard to mind, assume the same duration, »une survivance *en soi*«, as we unhesitatingly assume for matter and the universe? Such a »survivance en soi« is a characteristic of »le souvenir pur«. Among the pathoanatomical experiences which might be interpreted as proofs of the supposition that our memories are stored in the brain, Bergson especially dwells on the aphasias, but in his opinion they rather support the conjecture that they are brought about by some injury to the sensory-motor apparatus which prevents it from doing service either centripetally or centrifugally. In this way Bergson would explain the abnormal mental phenomena observed in connection with the organic mental diseases.

Yet Bergson does not deny the existence of an organic substratum for memory, or rather for the actualisation of memory. »L'état cérébral continue le souvenir: il lui donne prise sur *le présent*[1]) par la materialité, qu'il lui confère, mais le souvenir pur est une manifestation spirituelle.« Memory as a coherence and synthesis is as little tied to the brain as is a melody to the instrument. The dispositions which find their expression in memory, and which are not only the condition for, but also the essential thing in memory — all that which corresponds to Bergson's »le souvenir pur« — appertain more to the player than to the instrument, and it is with reference to such a fundamental principle that Bergson says: »Avec la mémoire nous sommes bien véritablement dans la domaine de l'esprit.«

The suppositions advocated by *Driesch* and *Bergson,* although far from containing any absurdity, cannot be scientifically proved. We have thought it incumbent on us to touch upon them, however, as the gaps in our knowledge and the inadequacy of the exclusively physiological points of view in these questions makes the search for a theory of life imperatively necessary.

Let us, however, leave the insolvable problem as to *where* all those memory melodies are kept which during a long life have sounded from the central nervous system, as from a sensitive and more or less rich instrument. We are often reminded of their position in *time* when they are enacted within us in chronological order and synchronous connections. The *chronogenous* localisation of memory is undeniably more evident than the *topogenous.*

Under all circumstances and apart from every connection in detail, it is obvious that the capacity of memory is organically conditioned by and immediately dependent on the functional power of the brain. The power of engraphical plasticity is one of the most delicate vital functions of the nerve tissue, and, greatly taxed, it often shows relatively early signs of decline. This limits the capacity of memory.

Even in youth masses of memory details are lost, but we may say in general that we forget far less than we imagine. For though a thing may be forgotten in detail, its substance remains, and will leave more or less distinct traces in our personal appearance, our experiences, our

[1]) The italics are ours.

interests, and so on. We may also say that the demands made on our memory are to a certain extent simplified by reminiscences of the past constantly recurring in the present. Thus there is no original perception except in our earliest childhood which does not to a greater or smaller extent resuscitate (ecphorise) earlier impressions; and apart from habits, reiterated phrases and automatic movements, our life is a round of details continually repeated. Herein is revealed in different ways the repetition of memory details which *Semon* calls homophony and which, amongst other things, serves to make reasoning more economical, our ideas being thereby generalised into shorter and more easily handled concepts which, in their turn, are further abridged into word symbols. The ultimate consequence of homophony is the mechanisation of thoughts into automatic processes. The older one gets, the more does this tendency towards repetition and homophony grow. The personal adaptability to changing external conditions decreases, the plastic pliancy and mobility are lost and make room for a certain unwieldiness with habitual reactions, while, finally, in old age they are entirely merged in monotony and stereotyped habit. In later life one does not like to turn aside from the old grooves, one prefers to live in the past and constantly call up its memories, while every new thing is looked upon as a disturbance and is met with distrust. In the pathological cases these features of old age may become intensified in the most astounding manner, and interests and habits become automatised to the point of caricature. See further Chapt. XIII.

The power of inculcating new impressions, (Semon's *engraphy*), is thus the fundamental condition of memory and its most vital quality. On this plasticity depends the accumulation of memories, which tends to cease more and more when we have passed into old age and the power of inculcation diminishes.

However, not one but two forms of activity or functional factors enter into the conditions of memory: I. *The engraphic* (including *retention* which is dependent on the power of inculcation), and II. the revivescence faculty of the *engrams*, i. e. remembrance itself or *reproduction*, (Semon's *ecphory*). The first factor can only be tested by the aid of the latter, the power of inculcation (the »Merkfähigkeit« of German authors) and reproduction must accordingly be tested at the same time.

In testing the memory the material of reproduction employed con-

sists partly of impressions of an objective nature (pictures showing persons and objects, geometrical figures, etc.), partly of verbal impressions (numbers, letters, syllables, words and sentences).

In the memory test to which patients are subjected in clinical cases, it is sometimes sufficient to set them one of the following tasks. The patient himself reads or has read out to him in a distinct voice, a number of 4 to 6 or 7 figures (one by one), and after a few minutes, or possibly a little longer, he is asked to repeat the given number. Or else a short series of words or syllables are read out and after a little while he must try to repeat them. If the memory is very much impaired, or if the patient seems absent-minded, he should be directly requested to fix his attention on the number or the words he is given to repeat in the test.

As *Herrlin* has pointed out, it is necessary in many memory problems to make use of as simple and homogeneous a testing material as possible, and in addition to numbers and letters, *meaningless* syllables are considered specially suitable. These testing methods, which were first used by *Ebbinghaus*, have been varied in many ways. One of the commonest is the one used by *G. E. Müller*, the so-called hitting-method. Strings of meaningless syllables, arranged two by two, are learnt in trochaic rhythm (pyl-gŏn, nez-lĕif, pap-lŏt, dejp-tĕsch, gum-lĭt etc.) by hearing them called out or by reading them through a certain number of times. After the lapse of a certain time one of the accented syllables in the series, for instance nez, is shown or mentioned to the subject as a stimulus word, and it is then his business to find the corresponding unaccented *leif*. The number of hits after a certain time and a certain number of repetitions then constitutes a measure of how the memory functions.

A suitable way of testing the power of inculcation for certain cases and purposes is to let the subject read, or read aloud to him, a short newspaper-paragraph or a short fable or tale chosen for the purpose, preferably as rich in details as possible. After a little while when his attention has been diverted by conversation about other things, he is told to reproduce the tale or paragraph just read or heard.

This latter method of testing the power of inculcation is the most natural, since it approaches the normal conditions under which the details of our experience are inculcated. In general, the power of inculcation is the more at our service, the more our attention is caught and the more the experience is able to release a lively apperceptive activity having the emotional tone of interest normal to apperception. The experiences inculcated in daily life are always kept together in a synthetic unity, and the details which are fixed with due intensity in order to

be resuscitated later when needed, possess sufficient firmness to be reproduced thanks to the circumstance that they are parts of a synthetic whole. The details are notes in the melodies recorded in our minds, and this should be remembered in all problems of memory, indeed in every question of psychological detail. The power of memory and inculcation should always be tested in connection with the functions — apperception and attention, with appertaining feeling-tone — with which it co-operates in our consciousness to form the integrative process called thinking. Hence, it is hardly possible to arrive at a correct idea of the memory of an abnormal subject without, at the same time, testing his power of attention and apperception by means of the ordinary methods (*Ebbinghaus, Heilbronner, Masselon*, a. o.). In fact an inattentive and imbecile subject or even an apathetic paralytic, may under favourable circumstances display a far higher power of inculcation if his attention is attracted in a suitable manner than if the test is simply a matter of dry details, numbers and strings of words insufficient to stimulate a depreciated attention.

These precautions should be observed in all psychic tests. Thus, for instance, it is a common experience that imbeciles do very badly when given arithmetical tests of too abstract a kind, whereas the results of concrete examples which stimulate their attention in a suitable manner, turn out better than might be expected. A defective individual, who does not seem to know what five times two are, will often unhesitatingly answer questions put to him in a more attractive form: »If you are to buy five apples and each apple costs two pence, how many pence must you ask your mother to give you?«

Reproduction. The reproduction of memories enters as an essential feature into all thinking and conditions the involuntary portion of it which we call imaginative impulse. Most of our perceptions, indeed, after a certain period of development, nearly all of them, are built up of elementary memories. Every apparently new observation of an external object is an assimilation of old and new, or a rearrangement of old perceptive elements into new synthetical combinations.

The organic conditions of reproduction are the retention of certain engrams and their formative power when the stimulus recurs. This stimulus which incessantly awakens the slumbering formative power of the memory-substratum is psychologically analogous to the impulses which incessantly emanate from our thinking. The process of resuscitation thereby becomes purposive and establishes itself as a methodical censorship, a fact which constantly meets us within the higher

mental processes. As this part of the psychology of reproduction has affinities with that of thinking, we refer the reader to Chapters VIII and IX in order to avoid repetition.

Disorders of the power of inculcation give rise to an advancing loss of memory or the *anterograde* form of amnesia. An anterograde amnesia of a transient nature occurs after a psychic shock as a symptom of psychogenous mental disease and traumatic hysteria. More frequently, however, it occurs after traumata of a more organic nature, as in poisoning (especially by carbonic acid), after accidents involving injuries to the head, or after attempted suicide by hanging. In all these cases, the advancing loss of memory is generally of short duration, ceasing as the power of inculcation returns. These traumatic cases of advancing loss are frequently complicated by a *retroative amnesia* for a short period of life, comprising the events that immediately preceded the accident, the trauma or the attempted suicide. In most cases, however, this very limited amnesia is a phenomenon which does not disappear. In rare cases the retroactive amnesia may have a wider extent, memories from large parts of the patient's life before the accident being wiped out. Even though the gaps in memory caused by a trauma will gradually be filled up, the prognosis in severe cases of traumatic amnesia may prove rather unfavourable. This has often been the case after mine explosions. The closer in time the obliterated memories are to the accident, the slighter are the prospects of a restitution. Epileptoid seizures also bring with them a shock which wipes out the memory-traces of what happened immediately before the fit. Frequent epileptoid seizures as a rule impair the power of inculcation and consequently reduce the mnemic plasticity of the brain; epileptics of course generally have a depreciated memory.

More common than this transient paralysing of the power of inculcation after accidents is the *progressive* impairment of this power in certain organic forms of mental disease. In such cases the disorders of memory may go hand in hand with an increasing dementia, as in senile dementia or general paralysis. Or the organic processes may preferably attack the memory-substratum, whereby, at least for a time, amnesia and other symptoms of failing memory appear in a more isolated manner, as is the case in the form of senility which is called *presbyophrenia,* in the so-called *polyneuritic psychosis (Korsakoff's disease)* and in some relatively rare case of *lues cerebri.*

It has already been pointed out that the power of inculcation is always reduced in old age, and this is the more conspicuous in *senile*

dementia. In general paralysis, disorders of memory are among the earliest symptoms and the more the degeneration affects the cerebral cortex, the more the memory substratum loses its power of retaining new impressions, and so the progressive loss of memory keeps pace with the ever increasing dissolution of the other functions of mental life. This dissolution gradually goes deeper and deeper. In addition to the power of inculcating new impressions, the power of reproducing memories fixed before the disease or in its early course, also disappears. Layer by layer, and in inverse order to that in which they were acquired, the patient's fund of memories, knowledge and experiences crumbles away. The latest disappear first, then the earlier ones, and finally the very earliest, the patient's deepest and most firmly fixed personal memories and his most primitive knowledge of his name, home, age, occupation and social position. Thus anterograde amnesia in general paralysis is followed by *retrograde amnesia,* and the destructive process, if the patient lives on, usually does not stop until the whole mass of memories, with the exception of a few purely animal and vegetative remnants, is completely annihilated. In advanced cases of general paralysis it happens that we may convince ourselves in a surprising manner of the presence of a progressive oblivion to all new impressions. A paralytic who was told to sew a button on his coat himself, answered by asking us for a »candle«. A closer examination showed that he was stone-blind without apparently having the least notion of it himself. His apathy and disorientation in time were so extreme that he had settled down to the vague notion that darkness and night reigned around him and as, in addition, he forgot his impressions from one instant to another, he was incapable of forming any idea of his bodily condition. This example shows how far personal dissolution may progress in this disease and how memory disturbance is an essential factor in this dissolution. Memory is the connective chain in our personal coherence and it joins the fleeting moments into a *unity in time.* In this way also memory gives us a permanence, without which everything would stream past us in everlasting change. The existence of the demented paralytic is often an apathetic living in the *present* moment. But, on the other hand, this easily reconciles him to his fate.

This dissolution of the continuity of personal experience is generally met with in a still more unmistakable manner in *presbyophrenia* and *Korsakoff's disease.* The destructive processes in these forms of mental disease are not so violent as in general paralysis, and the limitation of the ravages of degeneration also makes the disorders of memory

more isolated. While the first form of disease is a characteristic variation of senile dementia, the cause of Korsakoff's disease is generally a chronic alcoholic intoxication. Only in rare cases does the disease set in after a septic poisoning in typhus, puerperal fever, etc.

The progressive failure of memory due to an impairment or complete loss of the power of inculcation would, by continually depriving the patient of contact with the past and sweeping away the present from under his feet, so to speak, keep his existence hanging in mid air, did not another symptom, viz. the *tendency to confabulation* and *paramnesia* give him the support of an illusory reality. In cases where apathy and stagnant unproductiveness are conspicuous, confabulation is lacking or is merely faintly indicated; but in all cases of presbyophrenia or Korsakoff's disease of a more productive type, where the imagination and associative activity are relatively vivid, a constant disposition for confabulation and paramnesia is also met with.

Here the paramnesias are inevitably caused by amnesia. An immediate loss of memory renders the patient incapable of remembering what has happened. The need of causality inherent in us all and which only the deepest apathy deadens forces him to snatch at the first explanation that offers. Lack of judgment and dementia facilitate the replacement of the lacking memories by earlier and inadequate ones. Thus he settles down more easily without even thinking of his sad situation which under other circumstances might trouble him or even make him think that he was persecuted and pestered by those around him.

The immediate failure of memory for recent events cuts off the patient from every possibility of a correct orientation in space and time. If he were able to grasp the situation, the past would split into two layers, a lower, more remote one constituting the sum of his memories and an upper, more recent one; which to him must appear as a black void. The present would then become a narrow streak of light, incessantly gliding forward, and every moment the black empty space behind him would widen. In each present moment he would only see the last link of as many chains of causality devoured by the empty space. Could he understand, he would have reason for despairing, but fortunately he does not grasp the situation as it is, because the explanation forces itself upon him, so to speak, by the *compulsion of a horror vacui*. Reminiscences of events from his earlier life which offer some similarity to the present, are involuntarily brought into his con-

sciousness. They associate themselves with the present as an explanation and replace the missing links in the real chain of causality.

As a typical example of a case of *anterograde amnesia* with paramnesia we quote the following.

Case XIV. A. P. of Laholm, aged 61 years. Admitted to the Lund Mental Hospital and treated there 13/11 1891—23/2 1895. Had taken alcohol in excess and was said to have had some attacks of delirium tremens. Patellar reflexes very nearly lost, otherwise no symptoms of polyneuritis. Traces of Romberg's sign; walks with a broad stride. The patient understands the questions put to him, but his answers reveal a strange confusion of ideas. His memory for recent events is almost entirely gone. The events which he remembers from the last few years he places higgledy-piggledy within the past. His thoughts seem almost exclusively occupied with old memories which are of the most vivid interest to him. Sometimes his head is full of episodes from »the masonic hall«, sometimes he has no time to talk because he must hurry to the »magistrates' court«, now he has been »out surveying a forest«, now he is seen eagerly looking for rings and other objects which he says he has lost. In a word he seems to live continually in events and conditions long past.

Towards those around him, physicians, attendants and fellow-patients, this man is straightforward and outspoken to a degree which is largely due to his mistaking them for others. In spite of constant assurances to the contrary, he believes that he is still in his native place, Laholm. If he is told that this cannot be the case, he agrees, but the next minute he has forgotten this and is again at Laholm. The room in the hospital he supposes to be either his own room at home or else a room in a hotel at Laholm which he mentions. He believes the year to be 1876, and as he sees the trees bare, he believes it to be October (early April). In further illustration of his incapacity for retaining new impressions some examples may be quoted. During the first part of his stay at the hospital, the following scene was repeated every day: We enter the ward, and the head physician (Professor Ödman) greets him in a tone as of glad surprise: »Why, that is Mr. P. isn't it«. The patient bows and says briskly, though not without hesitation: »Good morning, isn't that the doctor?« — »Yes, I am the doctor. How long is it, I wonder, since you saw me last?« P. ponders a little and then makes his usual answer: »I am sure it is a long time ago«. We leave the room, stay outside for half a minute and then go back again. — The same scene, the same questions, the same answers. P. searches in his memory to find out when the last meeting may have taken place and again says: »I am sure it is a long time ago«.

The following experiment may also be quoted. The patient has to write his name in a small red note-book, the vivid colour of which ought to have helped in fixing the memory image. He is also told to try and remember the book as well as the fact that he has written his name in it. Again we leave him and stay away about *five seconds* when one of us goes in, exchanging the usual words of greeting with P. The book is shown to him and he is asked whether he recognises his signature. »Certainly«, he says without hesitation, »I wrote that a little while ago. Somewhat offended at this superfluous reminder, he adds: »Indeed, my memory is not so bad, I am not as crack-brained as all that.«

We repeat the experiment and stay outside for *one minute*. Then we enter: »Why, isn't that Mr. P.? — Yes, isn't that the doctor? — Do you recognise this little book? — No, I don't. — Who wrote this? — I did. — When did you write this? — Well, I really don't remember. — I am sure it was a long time ago.«

He recognised his signature of course, but the accompanying circumstances were obliterated; the red note-book was forgotten. Thus these impressions were retained a little more than five seconds, but in spite of repetition one minute was long enough to efface them from his memory. — A couple of months after his admittance to the Mental Hospital the attendant reported that the patient complained of severe abdominal pain. An examination showed that he had left-sided inguinal hernia. After much trouble and a great deal of groaning and lamentation from the patient the intestine was replaced. When some hours later the physician came to see how he was, he had no idea of what had happened. He had already forgotten the whole thing. As not even these violently toned impressions, which are burnt into the memory of a sound man for life, could be retained by him, it is no wonder that he forgot less important things and could never learn the names of the doctor and of the place where he was staying, etc. When we wanted to convince him that he was in the Lund Mental Hospital, he was sometimes annoyed. »As if he did not know that his father had built the houses here«, and he declared, that »he recognised the buildings quite well, even if they are altered now and used as an asylum«, and he added, »now I come to think of it, there has been a fire here, and new houses have been erected«. If our patient woke up in the morning with a head-ache, he told long tales of how he had come home late from a glorious carousal. By a natural association between a head-ache and »a big head«, festive episodes from his life of old in the company of gay boozers, entered readily into his ideational life with all the vividness possessed by memories of yesterday.

Diagnosis: Chronic alcoholism. Korsakoff's disease. Anterograde amnesia with confabulations.

In a case of anterograde amnesia as pronounced as this, the power of orientation in time disappears. A signature just written, which P. recognises as his own, but identifies quite abstractedly and without accompanying circumstances, he refers to a time long past; an old memory which arises within his consciousness accompanied by certain vividly remembered details, he assumes to be a recollection from the day before. Moreover, what makes a memory appear »old«, is not only its pale colouring but also its perspective relation, i. e. a vague, rather emotional presence in the mind of all the more recent memories with a feeling of ability to ecphorise them at will. If this foreground, corresponding to months or years of past life, is lacking, perspective evaluation becomes more or less impossible and old memories step into the front rank as if they were recollections of yesterday. *(Ribot).*

Disorders of the power of reproduction. Under all circumstances inculcation is essential to reproduction, but there may be a disturbance of the latter even though the inculcated traces of memory lie undis-

turbed. Memory is then defective, functions slowly and tardily, or may have altogether disappeared, either as a whole or in some definite direction and with regard to certain, more or less significant periods of life, events, and circumstances; not owing to a real (organic) loss of the memory traces, but because of an imperfect preparedness in these. In such cases there is a functional impairment of memory *(dysmnesia)* or a loss of memory *(amnesia)* due to psychic inhibition. The former is the case in the *depressive inhibition* of the melancholic states where the impairment of memory is general and not limited to certain special spheres of memory. The patient thinks slowly, every act of thinking takes place with difficulty and with a feeling of pain and effort. In many cases this is merely a subjective feeling which cannot be proved experimentally, but in extreme cases *(depressive stupor)* the cause is presumably in some degree a real reduction of the preparedness of the memory substrata, due to the disturbances of a nutritive kind which must be supposed to be present in melancholia in greater or less degree.

Though memory is organically conditioned and all memory traces must have their substratum in the brain, yet memory is also a mental act which enters as an indissoluble component into thinking. We have seen above how the power of inculcation is essentially dependent on attention and its feeling-tone, and how reproduction is intimately bound up with the rousing impulses which constantly succeed each other during a purposive act of thinking. And if we look for a functionally organic reason for melancholia, it will be most natural to assume an impairment in the nutritive condition of the brain which would not only hamper the formative power of the thought substratum, but also, and in the first place, the synthetic thinking as a whole. The poor memory of melancholics must in the main be regarded from this point of view, and when a patient suffering from depression has difficulty in remembering his experiences, the reason is that his mental functions as a whole, his comprehension, power of collecting his thoughts, no less than his will and power of action, are impaired, and his energy in all respects insufficient.

In *mania*, it is true, there is an ease of reproduction which is exactly the reverse of the inertia characteristic of melancholia. But notwithstanding the ease with which ideas and memories, especially the motor-speech ones, are awakened, memory as a mental activity probably suffers a decline and the intensification only concerns the more elementary functions which find expression in uncontrolled and

volatile associations of ideas, in proportion as the rallying grasp of attention relaxes and the elective and censorial control of the reason over the mass of memories ceases.

Alcohol poisoning is also of a nature to increase the reproductive activity of the memory substratum. Alcoholic intoxication brings about a state very similar to manic exaltation. The vivid power of association and the talkativeness of the drunken man and of the maniac bear witness to a heightened formative power in the memory substratum, located especially in the *motor-speech* region. Here, too, the heightening power in question is in some degree due to the absence of regulating influences from the higher mental functions.

Hence, there is but little reason to speak of a heightened power of memory *(hypermnesia)* in mania or in alcoholic intoxication for, notwithstanding the elementary liveliness within certain spheres of memory, especially in the purely mechanical verbal impulses (general loquacity, rhymes and alliteration), memory as a conscious mental activity is generally reduced.

In close connection with the importance of the kinaesthetic sensations for our moods and emotional life, and with the part played by our motor memories, not least the verbal ones, as the means of expressing these moods, the motor and verbal centres are places of predilection both for the inhibition of melancholia and the increased functional preparedness of mania. As alcohol acts in the same way, first exciting and then paralysing, it sometimes seems to strengthen the manic-depressive symptoms. Thus we have observed episodical complete muteness in depressive stupor in cases of this disease complicated with chronic alcoholism.

Total amnesia, comprising the whole mass of memories and due to an inhibited power of reproduction, is certainly of very rare occurrence and when it sets in, it passes quickly. We are told of the well-known *Mary Reynolds,* a case of so-called double personality described by *Weir Mitchell,* that she woke from attacks of unconsciousness, probably of a hysterical nature, having lost all memories. She had to be entirely re-educated and again taught all things, great and small, which however seems to have taken only a short time. The same thing happened in a case, published by the present writer, in which a patient woke from a stupor which had lasted for nearly nine years, during which time he had been forcibly fed. When he recovered his senses, our patient had apparently forgotten everything, even the simplest thing was strange to him, and he had to be taught the nature and use

of the most ordinary objects. In such cases, however, we are rather concerned with a slow awakening after a pathological sleeping state than with a genuine amnesia. Our patient soon recovered and regained his old knowledge and accomplishments. Apart from what had happened in the stuporous episode he soon recovered the memory of his past life.

It is a different matter in those cases where the loss of memory is *opportune*. Here the awakening of memory often meets with firm resistance. Such is the case with the total amnesia in Cases XVI and XVII to which we will return in detail in the following.

More common in these cases, however, is a *circumscribed* amnesia. This form is always *psychogenous* in nature and due to an elective inhibitory process. Its causal factor must be sought in a definite motive, and it is thus psychically conditioned, although its mechanism is involuntary and functions in a manner uncontrolled by the patient. The psychogenous (hysterical) amnesia is equivalent to a repression of certain unpleasant ideas and recollections. Of course it has an opportune character, a circumstance which is intimately connected with the part played by certain complexes as dominating factors in the patient's thoughts and actions. We have already touched upon these cases in another connection (Chapt. IX, p. 213) and also to this form of a »flight into amnesia« we will return further on.

The reproduction of our memories, which in most cases enters into our thinking as an involuntary element, sometimes serves its own purpose and is then accompanied by a peculiar feeling-tone, which is the essential part of the phenomenon called *recognition*. Sometimes this phenomenon appears spontaneously, sometimes as a final act in our search for a name, an object, etc., when we direct our attention towards recalling them.

The psychology of recognition was first studied by *Alfred Lehmann*, later by *Høffding* and others. The investigations of these authors have shown that we must distinguish between the complex recognition, called by *Lehmann* »recognition with determination«, and the simple phenomenon that *Høffding* calls »immediate recognition«. In the former more complicated recognition, for instance of a landscape, a play, the contents of a book which we have seen or read long ago, we experience a series of percepts which one after another are identified within us with corresponding details of recollection. This finally gives rise to the expectation that some further details of the external image will be forthcoming, and when these, in ac-

cordance with our recollections, confront us, the recognition is complete. This recognition is accordingly based on an association by contiguity and is even regarded by *Lehmann* as quite simply an association of this kind.

In his work on »Memory«, *Herrlin* illustrates Lehmann's doctrine by the following example: »I am walking in a district which does not at once seem familiar to me. But suddenly I say to myself: I have been here before. For I certainly recognise that house and that hill. A little further on the road has a turning and below there must be a bridge across a small stream. I walk on, catch sight of the bridge and am at once sure of having been in this place before. The *sure* recognition thus comes about by my identication of my memory image of the bridge with my subsequent observation of the bridge; and it is, says *Lehmann*, extremely probable that the preceding uncertain recognition of the landscape was brought about in the same way. Memory images of the house and the hill, half effaced, were reproduced by the immediately preceding observations and when later, though with hesitation, they were identified with the sight of the real house and hill, an uncertain recognition was brought about. Then, when memory anticipated what was to follow next (the bridge) and this turned out to be true, the recognition became sure. And when at last I remember the circumstances under which I last saw this landscape, I have a »recognition with determination«.

Høffding made experiments with the immediate recognition of a note, a name, a colour or any other simple object and according to him this recognition is a mental fact of the simplest kind; he indicates its specific character by the term *quality of familiarity* (»Bekendthedskvalitet«). This mental fact *Høffding* designates by the formula $\binom{A}{a}$, *A* signifying the sensation and *a* the memory image, while the parenthesis denotes that we can only by an abstraction keep apart these two elements which coalesce in recognition.

This interpretation has been closely criticised by *Semon*, who sees in recognition a manifestation of *homophony*. Quite independently Semon arrived at a formula bearing great resemblance to that of *Høffding*. He calls the homophony *H*, the original sensation A_2 or, and the memory image, the mnemic sensation, A_1 mn. By the formula $H\binom{A_1 \quad or}{A_2 \quad mn}$ he indicates recognition, but Semon interprets this in exactly the opposite sense. His opinion is that the original sensation and the memory image are by no means fused, but are homophonously experienced as two different sensations. Besides *recognition*, or the complete homophony of two sensations covering each other, there is also a *differentiating homophony*, which just as immediately informs us of the difference between the objects (sensations).

The significance of homophony for the unity of the conscious processes and the feeling of affinity between different memories and layers of memories can hardly be overrated. It is homophony that creates the subjective feeling of continuity; our »empirical Ego« is conditioned by a consecutive and unbroken homophony between actual organic sensations and mnemic perceptions of earlier sensations. In pathological cases homophonic disturbances give rise to a feeling of change which results in phenomena of depersonalisation, or in delusions of negation, alteration and obsession. That a homophony between actual sensations and mnemic sensations does really take place in the way *Semon* has stated and cannot be regarded simply as a fusion or assimilation in the sense assumed by *Høffding* and also by *Wundt*, may be proved

by instances from every-day life. When the strokes of a clock have just died away without our attention having been directed to their number, we may leave it to our memory to reproduce them. The homophony between the conscious result of the reproduction and the dimly present mnemic perception of the strokes gives us the right impression of their number. A homophony of this indefinite but, nevertheless, guiding nature is often of good service to our inferences and is essential to the homogeneity and consistency of our conduct.

Recognition also has its psychopathology and hereunder must be included the many different kinds of »false recognition« *(fausse reconnaissance)*, described by mental specialists and psychologists. Demented patients are often heard to locate their delusions to the past and their more or less strange experiences appear to themselves accompanied by so vivid a memory-tone (quality of familiarity) that they are extremely confident in their statements. Patients who are by nature undiscriminating or demented identify themselves with prominent historical personages or, with lively invention, relate imagined events in their own lives of the most fanciful kind. Delusions of this banal form occur in paraphrenia and dementia praecox, climateric paranoia *(Kleist)*, senile dementia and Korsakoff's disease (cf. above). They possess a certain analogy with the false memory-tone which sometimes accompanies our dreams.

Paramnesias, delusions of memory, have been compared to sense falsifications *(Sully, Kraepelin)*, and some authors have spoken of memory hallucinations and memory illusions. The comparison with hallucinations must, in general, be regarded as rather far-fetched, for even in those cases where a demented delusion suddenly surges up in the patient and is recognised by him as an experience because of the vivid memory-tone, it will easily be understood that all essential points of correspondence with hallucinations are lacking. The term *memory illusion* is more adequate for the majority of these phenomena. We will subsequently give our reasons for this opinion.

First, however, we would like to say a few words about some typical forms of memory illusions. One of these is the so-called *déjà-vu* phenomenon. A great many perfectly normal persons will have had some experience of this. It usually comes quite suddenly on occasions of indisposition, fatigue or over-excitement. One has then a keen sense of the present situation in all its details having been experienced before. There are two places in »David Copperfield« where *Dickens* inserts a psychological reflection which proves that he had carefully noted this form of memory illusion. The criminologist *Hans Gross* and the

German physician *Anjel* quote characteristic examples from their own experience.

It sometimes happens that the *déjà-vu* phenomenon is accompanied by the same detailed sensations as recognition so that a whole series of details (A. B. C. D. — —) in the present situation are unrolled in complete correspondence with certain supposed memory details (a. b. c. d. — —) in the imagined experience. If one has got as far as C. with a sensation of vague recognition, it may be that one anticipates the appearance of D. with a growing feeling of agitated expectation, and when, in the next moment, this detail also appears, the false recognition is complete.

A French physician, quoted by *Lalande*, has narrated the following occurrence. »It was two o'clock in the morning. We were playing cards. It was a game of poker which had already been going on quite a long time. One of the players throws out a card, saying: »Five and five«. In this instant, and notwithstanding the commonplace situation, I suddenly feel that I have already, once before, heard exactly the same words spoken in the same game, in the same environment and with the same general feeling of exactly identical outer and inner impressions as in the present moment. Another player replies »Five more«. My impression then grows stronger still and with a feeling of anguish I now anticipate that the third player will say: »Ah, he has all the aces in his hand« — and actually, I have hardly finished thinking so, when the third man exclaims: »Ah, he has all the aces in his hand«. — All this happened rapidly and gave me a very painful sensation.«

In the mentally diseased we frequently meet with phenomena very similar to this. Not only in Korsakoff's disease, but in other forms of mental derangement, too, particularly in cases of dementia praecox, this form of memory illusion occurs. The patient then has the feeling that the events he experiences are mere repetitions of earlier occurrences. A patient who comes for the first time to a certain hospital expresses his firm conviction that he has already stayed there before, has been treated by the same physician, lived in the same room, and been surrounded by the same persons and articles of furniture, and so forth. Such observations have been published by a great many authors *(Forel, Kraepelin, Pick)*. Pick terms this symptom *paramnesia reduplicans*. It differs from the *déjà-vu* phenomenon in that the false recognition does not occur instantaneously, but only after a long series of experiences. Sometimes this form of memory illusion is bound up with some special event which appears to react on the patient's power of keeping the mass of memories together as a connected whole. The continuity is then broken, and the recollections arrange themselves into

groups which assume the character of separate episodes, among which the older ones become disorientated and take the shape of earlier experiences unconnected with the later ones. Sometimes these memory illusions may be confusedly embellished with very fantastic fabulations. This happened in the following case.

Case XV. Kristina P., 35 years old, the wife of a workman. Under treatment in the Lund Mental Hospital. Some time after her admittance she wrote a letter to her sister saying that she was in a mental hospital because she had been assaulted by robbers who had undressed her and pushed her into a bath and that she had given birth to a child in the administration building of the hospital, and so on. In a conversation some months later, she told the following story: Her father was a medical superintendent. She first married a man called Nils P. (her present husband), but the father of her first child was a man named Holm, and this child was born on the estate of Krageholm. Later on she divorced Nils P., and nine years ago she had married again, this time the head physician of the Lund Mental Hospital whose name was Lundin-R. He was the father of her third child. Lundin-R. is dead. When she »remembers« the circumstances of his death, she weeps copiously, tears running down her cheeks. While she was married to Lundin-R., so she continues her tale, she lived in the physician's residence in the hospital and she describes in detail what a pretty home she had, upholstered chairs, etc. Many times she accompanied her husband, the head physician, on his rounds and he wore a medal on his breast. He was very rich. After his death she lived with one of the doctors. One of the other doctors wanted to become engaged to her. All her children had had bank-books, but the doctors sent the children as well as the bank-books to town. Once she got a letter with 1600 *Kronor* in it, and she clearly remembers how the letter with her name on it was lying on the table in the work-room and that the nurses afterwards took it away from her. Her rings, too, were taken by the nurses. She really came here thirteen years ago to visit an aunt. Six months after her husband's death she went to her native place, S. Then a summons came from the doctors in the hospital that she ought to come to Lund for the sake of her children. For 6 months she travelled backwards and forwards between S. and Lund at the doctors' expense, because they wanted to have her with them. In all she has had six children (in reality only three). But she would not tell who was the father of the three youngest. Her story goes very much into details. She »reminds« me of a number of small matters, »memories we have in common« from old times, when she was married to Lundin-R. For instance: »Don't you remember when I broke off a twig and fastened it on Professor Ö.'s back, and we chuckled and had such fun,« or »that day when I was sitting with my baby in the administration building and you and your wife stood talking to me.« If we venture to doubt the truth of all this, she immediately and artlessly puts on the mien of a person who is absolutely sure of the veracity of her statements and is indignant that other people, even when they »have been in it all«, should be unreasonable enough to deny the facts. »As if I hadn't come with you on the rounds ever so many times,« or, »as if I hadn't chatted with you ever so many times in those years,« she says in a half reproving tone. Evidently she had not thought that I could be so »forgetful«.

Diagnosis: Confabulating form of paraphrenia.

A symptom diametrically opposite to the *déjà-vu* phenomenon is the feeling of unfamiliarity with the most commonplace things *(»jamais-vu«)* which may sometimes arise in normal persons, in connection with fatigue and overexcitement, and which reaches its highest degree in those pathological conditions we have described above under the name of *depersonalisation.* Strangely enough, it is, as *Herrlin* points out, the very same individual peculiarities and incidental circumstances, fatigue and overexcitement, that in one case give to new impressions the quality of familiarity they ought to lack, and in other cases eliminate it from impressions which ought rightly to possess it.

It seems difficult to find a correct interpretation of false recognition and its contrast, the *jamais-vu* phenomenon. The explanation varies according as we apply *Semon*'s view of homophony or accept *Høffding*'s or *Wundt's* theory of recognition. We have seen that Wundt denies to ideas any power of reappearing in consciousness and, accordingly, he thinks it wrong to regard reproductions as a kind of »faded duplicates of things«. Recognition is by no means founded on a comparison between a reproduced idea and sensory impression. According to Wundt, recognition is an assimilative process, an act of creative synthesis, in which certain dominating elements of earlier ideas combine with corresponding new impréssions. Thus there is never any question of actualising an earlier idea as a whole, but only certain parts of it, which in this assimilative process (recognition) become fused with the idea of the perceived object. The above described memory illusions are assimilative phenomena which, owing to *vague spontaneous sensations of a peculiar time-colouring,* derange the impressions in the same manner as we found it to be the case in pareidolias and other visual illusions. The feeling of recollection or the quality of familiarity which in these cases, unasked-for, presents itself in an inadequate manner apt to promote illusions, fails to appear in the *jamais-vu* phenomena. Possibly its absence is due to other dominant feelings (fear) and, as we have already pointed out, it is remarkable that the causes of these contrasting symptoms seem always to be found, either in an acutely reduced apperception (psychical fatigue), or in chronic disturbances of the synthesising faculty (psychasthenia, dementia praecox). For the rest, we refer the reader to what has previously been said about depersonalisation.

One of the practically most important details appertaining to the study of memory is the psychology of *evidence.* Owing to its legal significance it has been made the subject of experiments, the chief aim of which was to establish the necessity of precautionary measures in judging the evidence and depositions of witnesses summoned before a court. The quite normal unreliability of memory even under the most favourable circumstances appears very plainly from these psychological experiments.

One of the earliest experiments of this kind was made by *von Liszt*, Professor of Criminal Law, in his course of criminal psychology during the winter term 1901—1902. Some young men, coached by him, had rehearsed an agitated scene with a short quarrel, blows and a revolver-shot fired at one of the performers. With the exception of the actors, not one of the audience which consisted of undergraduates and civil servants had any notion that it was not all done in absolute earnest. Afterwards, those present were divided into groups and were heard as witnesses about the course of the scuffle after, respectively, a couple of hours, six days, a week, and five weeks. The mistakes included *omissions, additions* and *changes*. Out of three persons who had to give evidence shortly after the event, on the same or the following day, one made 11 mistakes in all, among which were nine omissions and two additions, another made ten mistakes, all omissions, while the third made eight mistakes, seven of which were omissions and one a change of detail; moreover, the third man was uncertain about another detail. With regard to those heard later it is worth noting that when a longer time had elapsed after the event witnessed the recollection showed a tendency towards additions, (or *tendency to expansion*, as it has been termed by William Stern). Thus the changes in respect of details were much more numerous in the evidence given five weeks later, and it was also found that in several cases the detailed statements misrepresented the facts still more upon cross-examination. This tendency to expansion is, as *Jaffa* points out, far more conspicuous among uncultured people than among the educated.

William Stern afterwards continued these investigations, partly under conditions representing an optimum for inculcation, and partly in order to ascertain the power of recollection with regard to local details, events, and situations under an ordinary, not maximal, concentration of attention. The most remarkable feature about *Stern*'s experiments, which were made with children and adults, is the great difference in the number of mistakes manifested in a comparison between the spontaneously rendered accounts and the results of questioning and examination — what *Stern* calls the »constrained statement«. While 6 % of the mistakes fall to the free accounts, 33 % appear among the statements brought out by questioning. In other words, the »constrained statement« shows a result that is $5^1/_2$ times as rich in error as that spontaneously rendered. *Stern*'s figures refer to experiments with children aged from 7 to 17 years. The same experiments were later made by *Rodenwaldt* with adults (soldiers); and he arrived at very nearly the same figures as Stern (in the free account 6 % of mistakes, by examination 32.3 %). In both cases the experiments were made under optimum conditions for inculcation. A picture with distinct figures and sharply defined details was shown with an admonition to observe it carefully and the subjects were heard shortly afterwards, their accounts being finally supplemented by a certain number of questions about details.

We cannot here deal with the often insidious sources of error which may lurk in the examination; the most important thing here is the constant possibility of suggestion which questioning carries with it. In legal examinations we know that it is as important as it is difficult to avoid suggestive questions. Entirely to escape the effect of suggestion in questioning is well-nigh impossible.

The unreliability of recollection is still more manifest in the experiments made by *Stern, Lipmann*, and others, in which no maximum attention accompanied inculcation and in which »the dead picture was replaced by the observation of local details«, such as a person's external appearance, the details of some experienced

event, etc., in other words, things corresponding more closely to what witnesses called before a court have to describe and to the conditions under which the data and observations were experienced. Here it became obvious how the trustworthiness of the power of inculcation differs in different people and how, even under otherwise normal circumstances, it may reveal an amazing and quite abnormal weakness. An interesting experiment of *Stern's* was to make the persons questioned underline such statements in written answers as they were sufficiently convinced about to swear to before a court. This showed that *an oath, even by unimpeachable persons acting in good faith, was by no means a reliable protection against false evidence.*

With regard to evidence respecting people's appearance, especially the colour of their hair, beard, clothes, etc., which data have been inculcated in the ordinary way and without any maximum attention, *Stern* is of opinion that in the main *they lack all trustworthiness.*

The manifest tendency towards the involuntary falsification of memories which appears in certain cases during these experiments, occurs far more in children than in adults. It is a well-known fact, of essential importance to educators, that the imagination in lively children during the years of play often has this overwhelming tendency to confabulation which renders the children themselves incapable of distinguishing between fiction and reality. Sometimes this, we are tempted to say, surviving infantile feature also reveals itself in adults, and where confabulating unreliability is very pronounced, we speak of *pathological lying (pseudologia phantastica, Delbrück).*

This feature is observed in certain psychopaths, as well as in hysteria, hypomania and rare cases of »chronic mania«. For forensic psychiatry the pathological lie has great interest since it frequently leads to fraudulent actions and a criminal adventurousness which become the objects of legal investigation.

Very often it is difficult to determine where conscious lying ceases and the pathological state sets in. A certain congenital treacherousness of memory sometimes combines with a vivid imagination and a taste for thrilling or romantic situations to make a person lose his footing in reality. Egocentrically disposed natures of this kind often have an irresistible inclination to exaggerate and pile on the facts. From literature we all remember immortal types of this description, Münchhausen and others, with their unsurpassed capacity for bragging, »drawing the long bow« and inventing facts. Between swaggerers of this type, though of less heroic dimensions, and the deliberate swindler there are all kinds of intermediate stages. Pathological lying frequently has an opportune motive and aims at certain personal advantages, but almost

just as often it runs on from mere habit to the detriment of the liar himself.

It is a common experience that the recollection of unpleasant and painful events has a greater tendency to pale and disappear from memory than recollections of the opposite nature. This circumstance may possibly be a faint indication of the opportune tendency which is so strikingly evidenced in *hysterical* and *psychogenous amnesias*. In hysterics we note how events of a distressing nature such as painful sexual scenes or other episodes which have been experienced under strong emotion are expelled so completely from the consciousness of the individual concerned that he remembers nothing afterwards. For the same reason we often see that persons charged with crime and convicts in good faith declare themselves to be innocent and persist in this belief. In such cases, the loss of memory is, as we have tried to show in an earlier context, a paradoxical effect of the elective censorship which characterises reasoning.

Here I may insert the following interesting case which came under my observation several years ago. Under the heading of »The Man without Memory«, this patient attracted a great deal of attention and, when he first came to the Stockholm Mental Hospital, not a day passed without telephone enquiries about his condition from most of the daily papers in Stockholm. In brief, his story is as follows.

Case XVI. »The Man without Memory«. On Dec. 15th, 1920, a man came to a small hotel in the capital and asked for a room. As he could not tell his name nor give any other information about himself, the police were advised and he was sent to Sabbatsberg Hospital. This man had arrived in Stockholm ten days or a fortnight earlier from the north of Sweden and had been peddling in the environs of the city, but on account of his total loss of memory, he had been advised to try to get into some hospital. This was his intention when he came to town and went to the hotel and so what happened was exactly in accordance with his own wishes.

In Sabbatsberg Hospital it is recorded that the man exhibited *complete amnesia*, embracing all his past life up to some date before midsummer 1920. He did not remember his age or whether he had been married, knew nothing of where he had spent all the preceding years or what had been his occupation. For the time immediately after that date (about midsummer 1920) his memory was somewhat incomplete, but for recent events good. He is now fully orientated in time and space and in his reasoning, comprehension, etc., he is clear and sound. No delusions or hallucinations. Voice, pronunciation and articulation normal. The mouth drawn somewhat to the right, with a corresponding flattening of the left naso-labial fold. For the rest, no pareses, and somatically nothing abnormal. The patient states that he has had to learn everything over again from the beginning and has been taught

the names and uses of objects by persons whom he has met. About very elementary things and conceptions he says: »That was the first thing they taught me.« Thus he has regained his knowledge of the letters of the alphabet and he is now able, though with some difficulty, to spell out the words in a book. He cannot write, nor read written characters.

On Dec. 27th, 1920, he was transferred to the Stockholm Mental Hospital. *Status* on admittance: The left naso-labial fold somewhat shallower than the right. No sensibility disturbances. The right thyreoid lobe palpable. The expression of his face is rather earnest and musing, corresponding well to the situation in which he finds himself. His attention is good and so is his comprehension. His answers come slowly and lingeringly. The comments he often makes upon the questions asked are not rarely quite characteristic of his peculiar position. When asked about his age, he says: »When I compare myself with other people's looks and age, I must understand that I am not new-born, but am old and have a past, and also that I have grown up as a child and have lived like other people, but about this I really know nothing, I can only understand that it must be so.«

A few days after his admittance to the Mental Hospital, a man who had read about the case in the paper and who suspected that »the man without memory« was an acquaintance of his who had long been peculiar, came to see him. Though he stated at once that our patient was quite a different man from the one he had expected to see, the strange thing happened that the visitor identified the patient as being a certain Johan August (Alfred?) X-n, with whom he had worked about fifteen years ago. On the next day he came again and then brought another mate from that time with him. Both recognised the patient as being the man X-n. To make quite sure, he had brought a photograph of the working gang from which one could easily convince oneself that the patient was identical with their old friend, Johan August (or Alfred) X-n. The patient himself, however, knew nothing of these acquaintances and said very positively that he did not recognise the visitors.

After his name had got into the papers, we were informed from places where he had lived during the last few years, that Johan August X-n was born on May 12th, 1881, in Kristianopel in the south of Sweden, and this was confirmed by the parish register of that place.

Through visitors and in letters a great deal of interesting information was now received, rendering possible a reconstruction of X-n's past life, though he himself maintained his wondering and questioning attitude, unable to recall or recognise a single detail among the many he was asked about.

A woman who came to see him recognised in him a person who had been a pedlar in the neighbourhood of her home two years earlier. X-n himself had not the slightest recollection of this. The place was unknown to him; he had not even heard the name before. With regard to X-n's person, all statements agreed. The visitors all described him as a decent and thrifty man with gay and humorous ways; his earlier comrades affirmed that he liked to tell funny tales and was even good at acting (!).

In letters from several persons living in a northern province information was received that a person of the name of Johan August X-n (who in one place had called himself Frihs) had in 1919 and 1920 worked as a woodman in various districts there, and had then been living in a farmer's house. This farmer, A-t, had a daughter, Riken A., with whom X-n had had a love-affair and by whom he later had a

child. When X-n wanted to marry Riken, her parents refused, because their daughter was not quite sound in her mind, and they would not allow him to stay in their home any longer. These events seem to have affected X-n greatly; he began to brood and behave strangely. He did his work properly, but now and again he stopped and stood meditating for a long time. He kept aloof from his comrades and had asked for a room for himself, which he also got. The neighbours found him very strange. If at any time they went in to him he was perfectly silent and hardly answered their questions. Generally, he went to bed when he had finished his work and stayed there till the evening, when he got up and wandered up and down the room singing till late in the night.

One Mrs. H. who, on behalf of the parish was deputed to look after the money settlements between the A-t family and X-n, stated that X-n had only with extreme reluctance submitted to the arrangement that he was to pay a certain monthly sum for the maintenance of his child. Mrs. H. writes: »Before we wrote the agreement about the maintenance, I made him read the law on the subject and I could see quite plainly that it hit him very hard. He stroked his forehead repeatedly as if desiring to clear his thoughts. I understood him so much the better since I knew him quite well. I asked him whether he would of his own accord pledge himself to pay for the boy up to the age of 15. He was willing to do that, but at the same time he thought that Riken's parents were asking too much (20 Kronor a month). Yet he signed the contract but evidently pondered much on how he would be able to manage it. This was done on Febr. 11th, 1920. He then stated that he was born in Kristianopel, on May 12th, 1881, and that he had not been at home since he went away as a young man.

Mrs. H. knew X-n from a somewhat earlier period when he had been nursed by her after his right leg had been injured. The scar of this wound is still visible, but the patient himself cannot give the slightest explanation of how he got it. At that time, X-n was gay and liked to have his fun, but already at Christmas-time, when he had been sent away from the A-ts, he appeared much depressed and behaved strangely. He *refused to speak* and only sat writing in a book that *»he was not going to say anything«*. At New Year 1920 he seemed better, but once more grew strange when it came to the arrangement of the money matters. When he came to pay Mrs. H. on March 15th, »he was very fussy about it, taking up his purse and putting it down again at least twenty times before he could make up his mind to pay«.

Another person stated in a letter »that X-n once had *a fit* in the writer's presence; he grew very pale, reeled to and fro and his arms and legs twitched spasmodically. Then he fell on his back, but soon got up again, though he seemed to have difficulty in breathing and was still pale. He asked for a glass of water, saying: »I cannot understand what was the matter with me.« Then he said good-bye and went out. According to the same informant, X-n had on another occasion been seen sitting for hours on a snow-plough without answering when spoken to and in many places in that neighbourhood his behaviour was such as to make people believe that he was a *deaf-mute*. The rural dean L. of Ockelbo writes about this: »On May 25th, a man came into a restaurant here showing a scrap of paper on which was written 'Can I get a room here?'. He was supposed to be a deaf-mute and was shown a room. He stayed there for nearly forty-eight hours but never uttered a word. In the daytime he sat on the sofa in the coffee-room and re-

fused to move. The parish constable was summoned, but when he spoke to the man, he only stared. The constable tried to remove him by force, but he showed fight till another man came to help. Once on the road, he went willingly. Though he was still silent, the others had the impression that he understood what they said to him. When asked whether his age was what the constable guessed, he nodded. To other questions he shook his head in reply. However, the magistrate decided that he was to be set free. In the evening of the same day in his wanderings he came into the kitchen of a house where he behaved so curiously that the constable was again sent for. When he came he said to the man: »Oh, are you here«, and the man nodded. The constable told him to come with him, and he left willingly. Probably he then remembered that it was of no use to offer resistance. They went to the local doctor who thought at first that the stranger was simulating, but he did not succeed in getting a word from him. From here the constable took him to the workhouse, half a mile from Ockelbo station. He stayed nearly a month there and then absconded on June 23rd. All the time he was in the workhouse *he never said one word*, and the wife of the workhouse-master told the dean that her opinion about X-n, who went by the name of »Frick« (Frihs?), was that he was simulating deaf-muteness. His face, when he was spoken to, showed that he could hear what was said.

Finally I may mention as a remarkable circumstance that a person sent me some books which had belonged to X-n and had been kept after he had left the neighbourhood. These books were popular pamphlets dealing with *»Hypnotism«*, *»Magnetic healing and life magnetism«*, *»Will-power«*, and so forth. It may be remembered that he had been seen writing in a book »that he was not going to speak«, before he began consistently to carry out his intention in the manner described. In a book of his, called »Hypnotism«, he had written his name and that of Riken A. and their initials in several places and besides entered some effusions to the effect that he looked upon his stay with the A-ts as »the happiest hours of his life«.

Of these happenings X-n disclaims all knowledge. When asked about Riken A., he says: »What is that? Is it the name of a person?« »No, I never heard that name before. No, certainly not«. He seems astonished to hear that it is a name and wonders whether it is the name of a man or a woman. When he is told that it is a woman and that he is the father of that woman's child, he laughs and says: »No really, this is a little too much«. He knows that he has never »taken up with any woman«. The names of places mentioned in the different letters are equally unfamiliar to him.

When, as described above, X-n ran away from the workhouse of Ockelbo, on June 23rd, he seems to have gone straight to the province of Jämtland. There he woke up to consciousness one day near »a feast which they called Midsummer«. He seems to have parted altogether from his former personality when, quite suddenly, he again plunged into existence without the slightest recollection of his former life.

He repeatedly told us that his first recollection was that he found himself in a place in Jämtland, called »— ås«, »Österås or Häggenås«, he could not remember which. In the room where he was standing there was a sofa against the wall; further, he noticed a telephone into which a couple of men, who were there, were talking. These objects, »sofa« and »telephone«, he believed were the first he learnt the

names of. Some one asked him to sit down on the »sofa«, and he heard that the man at the »telephone« was informed about a person who, while he was talking to somebody, had suddenly dropped down and later walked away without speaking. He supposes now that he himself may have been this person, though he knows nothing about the matter. On this occasion everything seemed strange and unfamiliar to him. He was searched by the two men and was found to possess a purse with money in it, but he does not know how much, and still less how he had got it. They asked him his name, but he did not know it, nor whence he had come or when he was born. About his subjective state of health he says that he was then as he is now. No headache, no faintness, no dizziness; he was asked whether he wanted anything to eat, but he did not feel hungry and, altogether, he hardly ever felt hungry, thirsty or tired.

He then remembers that he was advised to go about in the district to find work. He did that for quite a long time. He wandered from place to place and everything was completely new to him. The simplest things, flowers and trees, etc., he had never seen before. He understood that people lived in the houses where they went in and out. During his wanderings he saw a train coming and had never seen anything like it before. »It ran on a road of its own, and he walked on the road beside it.«

He had difficulty in getting work for he had none of the papers that people asked for and no testimonials from other situations. He was offered food and lodging and now and then he bought food himself. He thinks that he rambled about the country like this for a couple of months and wherever he came, he met with interest and compassion. People told him about the simplest things and explained to him what he did not understand. Sometimes they read to him out of the Bible and so he came to know what subjects it dealt with. Sometimes they laughed at him, for instance, when he did not know how children come into the world. Gradually he came to know about this and about the relations between the sexes. Still he did not know how a woman was shaped, and he felt no desire for the other sex.

Finally he succeeded in getting some work at wood-cutting and lived alone in a small hut. One of his earliest recollections was, he says, that he did not know how to undress in the evening and that others helped him. Simple expressions he understood at once, but there were many words which he did not understand and then he did not answer but sat silent.

A person in Häggenås writes about his behaviour during this time: »He came here about Sept. 1st and had walked all the way from Östersund. The only thing he remembered was that he came from Strömsund and had been in a neighbouring village looking for work. When, on Sept. 22nd, he came into my shop, he seemed to me peculiar and when I began talking to him and asked where he came from, he said his name was »Vivian Banjalyka« and that he came from Gästrikland. After having got the articles he wanted, not buying any coffee, tea or cocoa, otherwise the things most in demand among the woodmen, he said that he had never tasted such things. His answer interested me and I asked whether he had never used spirits or tobacco. This he also answered in the negative. From his fellow-workmen I heard that he sometimes worked all day long without eating any food. It was as if he had forgotten how to eat. He often sang and whistled. Sometimes he was talkative and then, at other times, he could not be induced to say a word.

On one occasion he had neither talked nor answered a word for a whole week. When he left in the middle of November, he had about 300 *Kronor* to take with him.«

He was now advised to go southwards, as it would soon be very cold in Jämtland. He then heard the name »Stockholm« for the first time and was told that it was the largest town in the country. He walked the thirty-six miles to Östersund where he got into the train after having bought a ticket which cost him a little more than 30 Kronor. He had never travelled by train before and made sure that he could stay in the same carriage all the way to Stockholm. Arrived in the capital, he bought new clothes and some small articles in which he meant to trade, for he had been advised to try peddling. He went into a shop »in a square near the lock, close to a lake with boats« and asked to be given 15 *Kronor*'s worth of odds and ends, which he got. But when he began his trading, he made no profit by it; he lost instead, because he did not know what price to ask for the things. He asked at random. He slept here and there at the farms. Then he bought new wares and gradually learnt to ask better prices, so that at last he made more money. He found peddling most interesting and though he had no recollection of having done this kind of work before, he thought it suited him better than working in the forests. He was advised, however, by persons with whom he came in contact, to try and find a cure for the loss of memory from which he was suffering and thus he came to the Sabbatsberg Hospital in the way described above.

During his stay at the Mental Hospital, repeated attempts were made to reawaken his memory by the aid of *hypnotism*. He willingly consented to the experiments, but the result was nil. We did not succeed in bringing back the slightest detail of his former life.

When the above-mentioned books, which had been found among his belongings, were shown to him, he turned over the leaves with a certain amount of interest and spelt the title »Hypnotism«; but he did not recognise the book nor his own handwriting in it. He persisted in his statement that he was not able to read anything written.

On several occasions he has been questioned about his relations to Riken A. and his paternity, about the liability he had undertaken, the contract he had signed, and so forth, but to all these questions and reminders he has always invariably answered that he cannot assume any responsibility in these matters, as they concern things and events with which he is entirely unacquainted. Some days after having been reminded about Riken A., he said that *he had now come to the conclusion that the best thing would be not to try any longer to remember the past: perhaps he would then come to know about some trouble or other of which he would rather be ignorant*. He also said of his own accord that he might perhaps have lost his memory owing to something disagreeable having happened. But he declares that he is not afraid of his past life, if anybody could recall its events to him. When asked whether he would not be pleased to know that he has a betrothed and a child, he replied that he would not like it at all.

In the night following an energetic attempt to recall within him the memory of Riken A-t in hypnosis, he had the following dream which he told of his own accord. »He was walking along a road leading to a village; everything was unfamiliar to him. Near the village he saw factory buildings with two high chimney-stacks. On the road he met a girl who said that her name was Riken A-t. The

girl spoke as the people in Jämtland do, she was neither tall nor short and looked very ordinary. He had never seen her before and she did not awaken any warm feelings in him, but seemed as much of a stranger as everybody else. She showed him the way and said that he might come with her; she lived in a cottage in the village. He followed and they came into a fairly large room where he had never been before. He remembers that the girl stood in the middle of the floor and spoke to him. He remained near the door and said nothing. He thought the dream so clear that he would be able to recognise the girl if he were to see her in real life.

X-n is very little suggestible, and all attempts at post-hypnotic suggestion have failed up till now. He is in the main refractory and stubborn by nature. This obstinacy has sometimes transitorily cropped up in a pathological manner with traces of real negativism. In the evening after an hypnotic séance he refused to eat and went without eating for several days. When attempts are made to make him read aloud a short story, he reluctantly takes the printed paper and remains standing, his eyes following the lines. He cannot possibly be induced to read aloud, but stands without uttering a sound or answering a question, staring fixedly at the paper and, without heeding the request to say why he will not try, he remains mute in obvious perverseness and persists in his unapproachable demeanour. After a little while he hands over the paper and says that he does not like to read aloud, because he has such a bad voice and is not accustomed to reading. When asked whether he would like to write, he answers in the negative. Repeatedly a pen has been placed in his hand and he has been told to copy a written text, but these attempts always fail owing to his obstinate refusal. For some time he was busily occupied in the ward in weaving ribbons. But when the first piece was finished, he refused to begin a new one. At present he is working in the shoemaker's workshop and seems interested in this occupation.

In a Roentgen examination of his head nothing abnormal was discovered.

This extremely interesting case has not yet reached its final development. It will be continued in the following. But, in spite of the new, rather surprising details, with which we shall meet in the second part of the patient's history, a discussion of the case with reference to the loss of memory is quite in place here. If we begin with X-n's arrival at Stockholm, there can be no question of simulation, at least not in the gross sense of the word. The patient's own wish to get into a hospital in order to recover his memory goes to prove that the loss is genuine. *But this view only applies to the above-mentioned period.*

There is no doubt as to the nature of the amnesia, and the difficulties in interpreting the case are not to be found at this point. The loss of memory is here indisputably of the opportune kind, the mental mechanism of which has been analysed in Chapter IX. To X-n the expense of paying for his child with Ricken A. was a heavy burden.

That it affected him profoundly appears unmistakably from what Mrs. H. related about his behaviour. Besides, he was already depressed by the separation from Ricken A. The circumstance that the girl was generally looked upon as mentally defective, and his fear of the responsibility he had incurred on that account, may also have contributed to X-n's wish to get out of the whole affair. Be this as it may, there is reason to assume that a powerful primary motive, the instinct of self-preservation, exerted its strong influence upon him.

For the development of a psychogenous amnesia we must presume a schizoid disposition. And the presence of such a disposition is beyond all doubt manifested in many of the above-described symptoms. However, it is questionable whether the split personality of X-n may be regarded as schizoid in such a way that he is to be characterised as hysterical. Is he not rather a schizophreniac and does not his strange behaviour correspond to our clinical conception of katatonia? These are the difficulties met with in our attempt to interpret the case.

As frequently happens in psychoses of an opportune nature (Germ.: »Situationspsychosen«) we find in the case of X-n *both hysteric and katatonic features*. The hysteria here avails itself of preformed katatonic tendencies and mechanisms in order to obtain the succour it is secretly aiming at. X-n, when he had got into the troublesome situation with Ricken A. instinctively sought refuge in forgetting. The split personality in katatonia undoubtedly promotes an opportune (hysteric) flight from reality in amnesia. In the beginning he tried in vain to get rid of his anxiety by masking his personality through changing his name and feigning deaf-muteness, and of course, in the last-mentioned respeet, he was greatly aided by his negativistic disposition. But in spite of the altered name and his consistent muteness, X-n does not seem to have felt safe as long as he was staying in Ockelbo. He ran away, and simultaneously or at some later date he seems to have had a hysteric fit. On recovering from this, his speech returned; now he took a more extreme step, but with the forgetting of his name, X-n, with which he was once forced to sign the fatal agreement, he also forgot the whole of his past life. He had no other choice.

It has been asserted, especially by German and American psychiatrists, that there exists a more or less striking resemblance between the state of mind in dementia præcox and the archaic mode of thinking in human races at a low cultural level. As already mentioned, the same correspondence is displayed in our dreams.

In the whole cast of his mind our patient reveals the inflexible ob-

stinacy and obdurate negativism belonging to katatonia. He is incessantly auto-suggested by these tendencies not to move, not to speak, not to remember, which fix his actions in a half animal manner, while, on the other hand, he completely lacks the susceptibility to hypnotic influence and the compliance with posthypnotic suggestions characteristic of the hysteric (cfr. Case IV).

A cloud of mystery overhangs the preparatory measures which the patient undertook before he finally succeeded in cutting himself off from his earlier life with all its painful memories and encumbering liabilities. He assiduously read books on »Hypnotism« and »Magnetic will power« sitting alone for hours and bringing suggestion to bear upon himself to refrain from speaking. We are involuntarily led to think of the auto-hypnotic manipulations of the Shamans when we read about X-n's strange conduct, how he walked up and down alone, singing to himself till late at night, and finally had fits. These fits as well as his whole attitude and the queer preparations he made before he managed to find in loss of memory a reliable protection against the dreaded consequences of his actions, have clearly a hysterical character. But he would not, surely, have taken this strange course unless he had disposed certain resources of escape within himself and availed himself of them with an almost animal instinct of self-preservation. Perhaps he would have contented himself with hiding behind his altered name »Frihs« and »Frick«, but he would have failed to turn a negativistic disposition into a weapon by refusing to speak for long periods.

The combination of the convulsive fits with the evolution of amnesia deserves our special attention. If the loss of the patient's memory was really preceded by a hysterical attack (as we have reason to believe from certain indications), this is not the first time I have seen a psychogenous amnesia appear in that way. Many years ago I had under observation an elderly woman charged with murder, who had previously pleaded guilty but immediately before a later trial had a hysterical attack after which she retracted her earlier statement and afterwards stubbornly denied all knowledge of the crime. In this case, too, it was impossible to shake her statements by hypnosis.

Another and more radical attempt was made to restore X-n's memory. Hypnosis had failed and the patient's own original wish to recover had, as it seemed, cooled considerably since he had been questioned about his relation to Ricken A. and told about his paternity.

In June 1922 I made an excursion with the patient and the overseer of the hospital to the parts of the country, Ockelbo and other places, where X-n had experienced the events here narrated, and where his strange behaviour at the time when he lost his memory was observed. We visited the workhouse in Ockelbo and went to Ivantjärn, a little village far away in the wooded country, and we chanced to find all the persons at home who had played a more or less prominent rôle in the above-mentioned incidents. I confronted X-n with the manager and the inmates of the workhouse, with Ricken A and her little child, her parents and Mrs. H., to whom X-n had to pay the money due to his offspring, and with many workmen in the neighbourhood. Though with mixed feelings they all greeted him as an old acquaintance but X-n disclaimed all knowledge of these people and went on without taking any notice of their protestations either of friendship or of sentiments of a warmer nature. Quite stiff, unaffeeted and without moving a muscle he turned off the argumenta ad hominem which reached him from every quarter, from Ricken A. with his own offspring in her arms and from his old comrades who reminded him of many an event they had experienced together in bygone days. Nothing helped. X-n met their attacks with the invariable and stereotyped assertion: »I never saw this woman«, »I have never known these people«, and so on. The only affective sign I observed in his mimicry in those days reflected, I suppose, an undoubted interest in the localities we passed through during our journey.

The result of my expedition may be summed up in a few words. X-n gave me the impression of being an excellent actor, which is by no means incompatible with his schizoid or rather schizophrenic constitution. Quite the contrary! And, in spite of his inaccessible, half-autistic behaviour, I am inclined to presume *that on confrontation with the formerly so well known localities and persons, his repressed memories, at least to a great extent, flowed back to him in an overwhelming manner*. From this period, I think, the opportune loss of memory was most probably replaced by conscious simulation? But, in that case, his unaltered obstinacy in denying all memories bears an unmistakable mark of his chronic negativism.

He left the mental hospital on July 10, 1922. On leaving he was much the same, yet he promised to inform me as soon as possible of any alteration in the state of his memory. Of course I was not a little surprised, when he returned to visit me in Stockholm on September 14, 1924. He said, he »had now come to tell me *that he had never lost his memory*«. He had become convinced that the whole affair could be explained through *»the hypnotism to which he had been exposed«*. With the unshakable assurance of the chronically deranged he gave me the most fantastic description of the strange events that had happened to him and his mysterious experiences.

In a striking manner a more or less vague emotional impression

of his own split personality had taken shape in wonderful fabulations. He had been told about a person who was found unconscious in a barn after having been assaulted and having received a heavy blow on the head. X-n identified himself with this individual and now he supposed that it was quite likely that, at the same time as he was lying in the barn, he carried on his ambulatory existence elsewhere. By hypnotism, so he believed, such a situation might be made possible. He still denied all sexual intercourse and even any close acquaintance with Ricken A. He also assured me that he had never worked as a pedlar. This statement, however, made by persons who knew his former life, was beyond doubt, and, of course, it is quite possible that the recovery from amnesia was not complete. However, a penetrating analysis of X-n's mental state seems very difficult because of his negativistic tendencies and delusional preoccupations.

It is evident that the conception of the opportune form of amnesia can be brought into complete accordance with the Freudian view of psycho-neurosis. In a loss of memory of this kind there will always be an inevitable conflict between the wish to recover and the fear of regaining the abhorred actuality of the remembrances. By the opportune forgetting, these become subconscious, and, the more complete the repression, the more urgently does the patient feel the need of being restored to the normal command of his experiences, the lack of which every moment puts obstacles in his way. But when, on confrontation with life, the memories tend to flow back and a possibility of communication with the subconscious split off personality, i. e. with the repressed memories, appears, the anxiety returns and again the censoring mechanism intervenes. These oscillations establish an instinctive, almost automatic control, which secures the persistence of the amnesia, making clear its often chronic nature and the difficulties in treating it. On account of the variability in the degree of repression there is, as we have learned by the above-quoted case, no fixed line of demarcation between amnesia and simulation or a more or less conscious lie. It is also easy to understand the unfavourable prospect of any attempt to unveil the repressed memories by hypnotism. In the interests of self-preservation »das Ich« merged deep in the subconscious domain of »das Es«, seems to keep careful watch over the fulfilment of its censorship. And it is not to be wondered at, if an obvious awe of hypnotism is sometimes shown by the patient himself. This was the case in the observation, published a few years ago by Dr. *Allen Gilbert* (Medical Record, Jan. 1921). In the title of this article: »*Amnesia — The sub-*

conscious warehouse« the author has embodied his theory of the subconscious mental life. I cite the following:

Case XVII. »Mrs. B. came to me Oct. 8. 1920, referred by Dr. James F. Bell. She had arrived at Portland at 7. a m. about one month previous with her past an absolute blank. Feeling hungry, she went to a near-by restaurant, ate breakfast, and from there went to a hotel to think over things and get her bearings.

So far as conscious memory was concerned, there was nothing, not even her name. The morning newspaper lay open before her in the restaurant. Realising that she had not much money, she took the telephone-number of an advertisement for an attendant in a hospital. She went to see the place and found to her disappointment that it was a Hospital for the Alaska insane.

When she went to register her name in the hotel, she started to write rather automatically without any definite idea as to what she was going to write. Automatically she wrote »Broo — —« and, having nothing in mind to complete a real name, she hastily added »ks«. When she came to my office, she insisted that her name must be something like »Brooks«, because that name seemed to feel all right to her.«

After having taken up her duties at the hospital she began »to keep a diary, so that, if anything further of an unusual nature happened, she would not be without knowledge of the crucial events«. The most interesting of these annotations were the descriptions of her dreams, in which certain rural and domestic visions gave some points of appui for the reconstruction of her forgotten life.

Regarding her physical state she wrote: »I don't seem sick but very nervous — with a sort of trembling inside«. This *trembling* is often noticed in her diary. »I trembled so inside and have a continual headache«. »That awful trembling comes on so suddenly that I have to go upstairs for a little while«. »I still have severe attacks of trembling and felt to day as though I was going to be sick«. Fear of being adjudged insane made her keep her trouble to herself. »I am still afraid to speak of myself to the Drs. here, although they seem very nice. If it were not an insane asylum I suppose I should feel differently«. »I am afraid my people, if I have any, will never understand such a peculiar illness. It certainly does not seem possible. »Aspasia, loss of memory«. (She means amnesia). »I know I have never heard of that before, anyway. I have a boy. But my husband, if I have one, what will he think? It will be suspicion the rest of my life«. Lastly she wrote: »I have made up my mind to consult a doctor to morrow. There is no use trying any longer to fight this battle alone«. And so she went to consult Dr. J. Allen Gilbert, a specialist on nervous cases.

She did not know her age but it was estimated to be about 46. There had been three menstruations in the past month and it seemed probable that she was in the midst of her menopause«.

»Hypnotism was refused for two reasons: 1) She was greatly afraid of hypnotism and 2) She dreaded being introduced suddenly to a memory of her past life, for she had an indefinite dread and fear of it as though she had passed through some great trouble or deep sorrow«.

As I have no intention of reproducing here the whole history of Mrs. B., I only quote certain parts for the purpose of making clear the above-mentioned fluctuation

between the fear of the forgotten past and the practical urgent necessity for recovery. The spontaneous flashes of memory which appeared in her dreams and spontaneously revealed themselves in states of distraction surprised her, but were also connected with a foreboding sensation »that her past contained things to which she had no desire to return«. »She described it — — as an uncomfortable feeling, when she considered the possibility of recovering her memory«.

When obliged to give up the hypnotic treatment, Dr. Gilbert tried to restore the forgotten past through the psychoanalytic method. He writes: »After she had relaxed perfectly with her eyes closed, I startled her out of her revery and asked her what she saw or thought? She seemed greatly surprised, seeing an old Doctor. She could not get his name, nor where he lived but could recall a number of things he said to her some time in the past. After sitting a while in an abstracted state of mind she looked up and said: »I have had typhoid fever at some time in my life. I do not know how I know it, but I feel sure that I have had typhoid fever«. — — — »Further attempts at psychoanalysis brought up large flocks of sheep, a man with a dog etc. This man later on proved to be her husband with a valuable dog they had on the place«. Yet »psychoanalysis seemed to worry her and make her nervous. It increased her depression and she felt sure that her memory of her past life would bring back some awful sorrow or tragedy, and she shrank from regaining memory.

One thing became manifest at the first consultation, viz.: that but little was to be got by asking her to concentrate her attention on the point in question. But if she were asked or allowed to talk on other subjects or on related subjects there would be flashes of memory just as though the subconscious was venturing up into the conscious but was frightened back as soon as it caught your eye«.

The above-quoted extracts may give some idea of the analytical method by means of which *Dr. Gilbert* succeeded in reawakening the life-history of Mrs. B. Little by little the gaps in her memory were filled, and the orientation in time and place and her lost personal connections as regards the relations to her family and social position restored. Briefly, the loss of memory had developed as follows: She was living with her husband and a son, about sixteen, on a country farm. Having gone to visit some ladies she knew »at the Olympia depot she became sick and could recall getting off the sofa a number of times to have a drink of water. The details from that time till she got off the train in Portland were still a blank« and do not seem to have returned as long as Dr. *Gilbert* observed her. Everything else she remembered. Her marriage had been unhappy. She is described as a very sensible lady, »she was refined in appearance, used good language and was far above the average in intelligence«. Her husband seems to have been a coarse nature, rather brutal. Her »whole life was utterly distasteful to her and associations other than her husband were entirely lacking«. At the time when her '*flight into amnesia*' was effected, »sorrows and worries were overwhelming, and, without going into details, there was an evident incompatibility that left but little upon which to base the longings of a human soul«. Her life had been a tragedy and, recovered, she now returned to the same conditions. »The husband in his ignorance came after her in anger rather than sympathy, because he had reached the conclusion that she had voluntarily left home«. »Only her mother-love could carry her back to conditions that were trying, to say the least«.

In every case of opportune loss of memory it is »perfectly evident«, as Dr. *Gilbert* says in his epicritical remarks on the above-quoted case, »that the amnesia is only apparent rather than real. Nothing is forgotten.« The results of the experiences of past life as to the knowledge of things and the ability of intellectual performances and accomplishments of a more or less automatic character, are in no way altered. The amnesia only dissolves the conscious power of overlooking the past, the orientation in time and space, and the personal connections and relations that life successively builds up. In short, opportune amnesia is the inability to use consciously the subconscious material, embracing certain periods of the past and at times the whole of life. In the latter case also the person's own name is usually forgotten. It was so in the above-described observations and I met with the same peculiarities in another case of complete amnesia I had occasion to follow a few years ago. I call him shortly, the man without memory, No. II. As in the case of Mrs. B. this patient, too, belonged to the hysterical type, and no symptoms of a schizophrenic nature were observed. Characteristic of hysteria, in contrast to dementia præcox, is the patient's susceptibility to hypnotic suggestions, but in cases of opportune amnesia we should not be surprised, if, for the above-mentioned reasons, nothing is obtained by hypnotic treatment. This was also my experience with No. II, although the memory was easily influenced in other ways during hypnosis, and circumscript amnesias could be realised as post-hypnotic suggestions (Cf. Case IV).

As a general rule it may be said that the clearer consciousness has been during the mental disease, the more complete will the recollection of it be after recovery. Yet there are abnormal states of epilepsy and hysteria where the patient apparently acts quite consciously, behaves properly and is able to carry out certain, sometimes fairly complicated tasks, without having the slightest recollection of them when he returns to a normal condition. When, during such episodes of spontaneous somnambulism, the patient sometimes commits criminal acts, absconds from his work or service, the subsequent amnesia is a symptom of significance in forensic psychiatry.

With regard to the interruptions in the continuity of memory which are the essential factor in certain classical cases of double personality, we refer the reader to an earlier chapter, where we have dealt in detail

with the importance of memory for the development of the consciousness of self.

In the treatment of patients, their removal from home to a mental hospital and back to their homes again, we always take into consideration the strength of the associations which are conditioned by the synchronous coherence of the memories. That it is not to the patient's advantage to be nursed in his home has been constantly seen. The morbid phenomena, delusions, hallucinations, etc., may be so firmly associated with other simultaneous impressions (enter with them into common complexes of engrams), that they are incessantly awakened by these impressions. A removal from one environment to another creates new associations and often breaks off the old ones with advantageous results.

Thus it not infrequently happens that a hallucinosis soon disappears when the patient goes to a hospital, but immediately returns if, on recovery, he is sent home too soon. Due time must therefore be allowed for the recovery and opportunity given for real healing, before a patient who has got rid of his symptoms is once more placed in an environment apt to resuscitate (ecphorise) them by association. On the other hand, it often affords relief and proves to be the only way to regain complete health to interrupt the hospital nursing at the right moment and restore the patient to freedom when he is on the way to recovery. For this reason, the removal of the patient from one ward to another, or even from one hospital to another may lead to improvement. In certain forms of confusion, abortive paranoia, prison and litigious paranoia, the disease is frequently so closely bound up with the environment and its circumstances that the possibilities of health or merely improvement depend entirely on the effect of new surroundings.

For the sake of completeness we may here add a few remarks. Under normal circumstances *a good memory* is a valuable asset of a good intellect, but it may also be observed as an isolated quality in mental defectives, *imbeciles* and *idiots*. We will return to this *hypermnesia* in the special part of this work. The abnormal power of memory, hypermnesia, is in such cases, for instance in »number artists« of poor intellect, a paradoxical feature, a monstrosity, if you will, characteristic of the disharmony of the mental development *(stigma degenerationis)*.

We have already spoken of the merely apparent hypermnesia in certain illnesses. Hypermnesia as a clinical symptom is of far less importance than its reverse, pathological loss of memory.

LITERATURE:

Semon, R.: Die Mneme als erhaltendes Prinzip im Wechsel des organischen Geschehens. 3. Aufl. 1911. *The same author:* Die mnemischen Empfindungen. 1909. *The same author:* Bewusstseinsvorgang und Gehirnprozess. Hrsg. v. O. Lubarsch. 1920. *Driesch, Hans:* Philosophie des Organischen. 1909. *Bergson, H.:* Matière et mémoire. 1914. *v. Monakow:* Die Lokalisation im Grosshirn. 1914. *v. Monakow* et *R. Mourgue:* Introduction Biologique à L'Étude de la Neurologie et de la Psychopathologie. Paris 1928. *Becher, Erich:* Gehirn und Seele. 1911. *Herrlin, Axel:* Minnet och dess pedagogiska problem. 1909. *Henschen, S. E.:* Om sinnes- och föreställningscentra i hjärnan. Hygiea 1919. *Cajal, Rámon y:* Studien über die Hirnrind des Menschen. 1900. *Ribot, Th.:* Les maladies de la memoire. 1889. *Janet Pierre:* Etat mental des hystériques. 1894. *Wundt, W.:* Grundzüge der physiol. Psychologie. 1908—1911. *Jaffa, S.:* Ein psychologisches Experiment. Beiträge zur Psychologie der Aussage, hrsg. v. W. Stern. B. I, 1903. *Stern, W.:* Beitr. z. Psych. d. Aussage, B. I—II. *Gadelius, Bror:* Fall av stupor. Hygiea 1894. *Gilbert, Allen:* Medical Record. 1921.

CHAPTER XI.

THE VOLITIONAL LIFE. WILL AS SPONTANEOUS STRIVING, INSTINCT, CONATION[1]) AND VOLITION.

Quite low down in the animal scale there is a trace of will in the susceptibility to irritation and capacity for spontaneous movement. The primitive creatures of this stage already possess the organic conditions of memory, conditions which, with growing experience, make it possible for them to adapt themselves to the outer world. From the very first these two forms of life, *memory* and *will*, are combined, and a cooperation between them is the condition of all development. Memory alone would not be enough.

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[1]) There are, I think, certain difficulties in translating the German-Swedish terms relating to will into English. It is of course necessary to choose the terms in a manner which, as far as possible, coincides with my personal aim as author. Yet hesitation is inevitable in view of the divergences in the English nomenclature applied to the subject by different psychologists and psychiatrists. The German-Swedish words, Trieb (drift), Triebhandlungen (drifthandlingar), as far as I can see, lack an entirely adequate equivalent in English. By »*Trieb*« we mean a spontaneous and instinctive, emotionally toned striving that yearns to be satisfied, and there is reason to suppose that the meaning of the German word, »Trieb«, — the Swedish, »drift«, — comes very near to that of the English word »*conation*«. I read in *Webster*'s »New Dictionary«, that Sir *William Hamilton* already mentions *conation* »as one of the three great divisions of mind which include desire and volition«. Psychologists in England and America, however, differ very much in the use of the term conation. *James Sully* makes it identical with conscious volition and says expressly, that »no actions of the organism which are carried out *unconsciously* can fall under the head of conation«. On the contrary *William James* does not, as far as I know, find the term conation suitable for his interpretation of the

With reason *Ebbinghaus* has maintained that the volitions are not elementary phenomena in the same sense as sensations, emotions and ideas. They are rather a species of fundamental form, of which the elementary phenomena are parts. Memory also is such a fundamental, or more correctly, vital form; but while memory has a *static* character, the nature of will is *dynamic*. All actual mental life presupposes motion, and volition coincides with this dynamic side of mental life.

Hence it seems plausible when *Bleuler*,[1]) agreeing with *Herbart* and *Semon*, sees in mneme the vital principle and basis of evolution. Mneme and will are thus the two primary qualities of life. They are indispensable postulates for the accomplishment of the creative organic schemes of nature as well as for the activity and progress of the human mind. It is in reference to this point of view we have reason to call memory and will primary forms of life.

In an earlier chapter we have already dwelt on the importance of movement as a fundamental quality of mind, and we have accepted the view maintained by William James, who compares thinking to a stream that is always flowing. In thinking volition is directed inwards, but will in its simplest and most general form is a movement directed outwards, characterised by motor features, reactions to the impressions conveyed to the mind by the sensory and sensitive nerves. In this more obvious form our volitions must be conceived as continuous effluences outwards from the stream of thought, while this stream receives constant affluences from the outer world in the shape of perceptions and impressions, which incessantly deposit fresh memories.

In view of the mutual relations of the psychical functions it is important to observe this interdependence of memory and will. Memory represents experience and knowledge, and the phenomena of mental life widen and grow, thanks to the amassing of experience. As we have already mentioned, the proverb »a burnt child dreads the fire« indi-

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will-problem, and obviously he does not draw the same line between the manifestation of conscious volition and will in the form of reflex and instinctive action as does *Sully*. »*Voluntary movements*«, he writes, »*must be secondary, not primary functions of our organism.* This is the first point to understand in the psychology of volition. Reflex, instinctive and emotional movements are all primary performances«. According to *James* motion is the main part, the very substance, of will, and conscious volition has developed from primary unconscious forms. *Wundt* expresses the same opinion on this point. The most explicit definition of these terms is given by *Craig and Beaton*. »Conation«, they say, »is the driving force of life, an urging or striving that the individual experiences in different ways, sometimes identical with his own conscious will and sometimes as a power not his own that drives his will before it«. »Volition« on the other hand, is »the conscious exercise of the will, closely linked to conation«. In using the term conation I have taken it in the sense implied by *Craig* and *Beaton*.

[1]) *E. Bleuler:* Mechanismus, vitalismus, mnemismus. 1931. Abhandlungen zur Theorie der organischen Entwicklung.

cates how indispensable memory is for development. But like will, memory has an organic condition, and its vehicle is the central nervous system; thus with the development of the nervous system, including the cerebrum, the possibilities of the volitional life inerease. The distance between the sensory and motor centres, the entrance and exit of the original reflex, widens more and more and finally makes room for human consciousness with its powerful stream of thought. The reflexive conversion into a motor reaction that immediately follows on a sensation, being the expression of will in its lowest form, is successively replaced by the obscurely motivated acts of conation, supported by instinct and desire, till at last in addition to these emotionally toned manifestations, strivings and tendencies, actuated by a more or less unconscious impulse, consciousness makes room for the fully developed will, which makes its choice between different motives and impedes every action till this choice has been made and a decision arrived at.

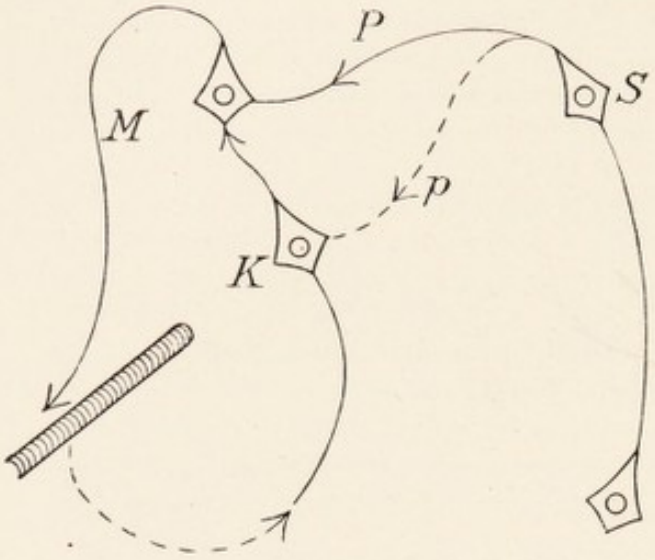


Fig. 22. (After James).

Meinert and, later, *William James* have already attempted a brain-physiological interpretation of the simpler volitional phenomena and their possibilities of development.

According to *William James*, it is the kinaesthetic picture of a movement or, in other words, the *memory* of the identical movement carried out earlier, that is the essential thing in the psychical process of volition.

When a stimulus from any of our peripheral sense-organs (see fig. 22) reaches the cortex (S), an impulse to movement is discharged from this organ into a motor cell (M). From M the impulse passes to the periphery and causes a muscle to contract. By the movement the sensations of the muscular contractions etc. are transferred to a kinaesthetic centre (K), and these sensations are retained here as a *memory*. Gradually a path (p) is made between S and K, and afterwards when a new impulse passes from S to M, there is a simultaneous awakening

of the retained motor memories in K, which may be psychologically stated as follows: when a sensation has once produced a movement in us, the next time we have the sensation, it tends to suggest the idea of the movement, even before the movement occurs. But this direct path of association between an impression and the memory of an earlier experience is not limited to the kinaesthetic memories but also extends to all other sensations which have been immediately awakened by the earlier movement. And in this way experience develops the faculty of anticipating the consequences of an action, which may directly inhibit this action.

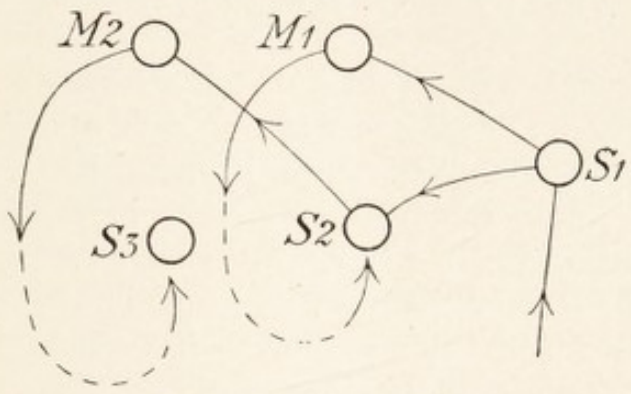


Fig. 23. (After James).

Applied to the above-mentioned example, »a burnt child dreads fire«, the process may be interpreted in brain-physiologial terms thus simply (see fig. 23). The sight of a candle-flame stimulates the visual centre S_1 and produces in M_1 a reflex movement, the painful effects of which have their centre in S_2. This centre discharges into M_2, the centre for withdrawing the hand, and this results in sensations of relief, S_3. Next time the child sees the flame, a path has been formed between S_1 and S_2, or, in other words, the sight of the candle recalls the memory of the pain before the movement in M_1 has had time to occur, and this movement is immediately inhibited by the innervation of M_2 from S_2.

A question concerning which different opinions have been maintained, is as to how far the first animal manifestations of life, the simple reflex and the primitive phenomena of adaptation, can be explained as physico-chemical processes or whether from the very first we have reason to regard the process from a parallel-theoretical point of view and suppose a psycho-physical mutuality. Surely the latter view is the more consistent, and by adopting it we escape an entanglement among unsolvable questions as to the moment in the developmental series when mental life came in as a »deus ex machina« (Wundt). Hence it is a plausible assumption that in those movements and vital phenomena which have the character of a reflex, a vague sensational life is already

present, and that these phenomena of adaptation may be looked upon as impulsive actions of the simplest kind.

On the other hand, we constantly see how the manifestations of the volitional life are, as it were, *mechanised*. Actions that have been conscious, sink to the level of mere reflexes and become automatic, that is, they cease to be conscious without thereby losing their purposefulness.

As we saw in the preceding part, it is in accordance with a general rule that every repetition (homophony) of memories finally leads to a mechanisation in which what is unessential disappears or is pushed into the background. As regards our ideas, the repetition results in the formation of abstract mental images, concepts and word-symbols. As regards our movements, on the other hand, they are shortened into a species of motor concepts, reflexes, and habitual movements, which in their turn mean a weakening of their psychical correlate. But this is by no means equivalent to the annihilation of the correlate, for much of what has in this manner sunk to a lower level and assumed the character of a reflex may again be raised into our consciousness by attention, when this is directed towards the execution of the movements. This attention which gives to the movement its conscious character is only necessary when we are to learn the movement in question; with increasing practice it becomes more and more unimportant and at last disappears when it has become altogether unnecessary. In all probability this attention means an innervation of the cortex in a wider area than the centres necessary for executing the movement. An ecphory of the kinaesthetic memories is thus the only thing needed for the further repetition of the movement: indeed, it often happens that a reawakening of other simultaneous memories may disturb the purely mechanical process of the movement. If a circumstance unfavourable to the quick execution of the movement happens to occur and the repetition of the movement on a later occasion be too much attended to, other memories also may be ecphorised through a spreading of the stimulus beyond the kinaesthetic engrams indispensable to the execution of the movement. The impeding elements are then recalled and act as an inhibitory influence on the action.

This often happens in *occupational neuroses* and in many cases explains the occurrence of *writer's cramp* and *stuttering, stage fright* and various forms of pathological indisposition. An involuntary anxiety confines attention to the details of the thing to be done, which will most readily succeed each other, the less one follows them

with one's eyes or tries consciously to control them. It is this very self-consciousness, due to anxiety, that so frequently deprives the psychasthenic of the freedom and ease of manner, without which one's whole life becomes difficult and uncomfortable. Here we refer the reader to what has been said earlier in connection with the phenomena of depersonalisation.

Hence when our actions become mechanical and more or less automatic in character, this is a desirable simplification which greatly aids the functional course of volitional life, the undue interference of inhibitory ideas being thereby excluded. The scope of our consciousness is then utilised in a rational and economical way, unnecessary impeding motives being suppressed and the action often subconsciously actualised, as is the case in our habitual movements. In spite of this, however, our more complicated and purposive movements require a perpetual change in the direction of our will, the earlier motor motive being thus constantly inhibited and replaced by a later one.

The automatic repetition of an earlier movement represents a circle (motor circle, *James*), and the psychologically essential thing in all motor systems formed by experience (see above, fig. 23) is that this circle is broken through and the earlier movement inhibited by our foresight (experience). When all inhibitory influences are removed, the circle is closed and the volitional life proceeds automatically in an ideomotor circuit. Under pathological circumstances, in *catalepsy, echo-symptoms* (see below), *perseveration* and the so-called *submissive automatism* (what German authors call Befehlsautomatie), this circuit is obvious. Fig. 24 illustrates in a simple manner the physiological process in *catalepsy*. By passively lifting the patient's arm we recall within him a kinaesthetic memory, a motor idea, and this idea (K) immediately communicates its energy to M, whereupon the energy in an incessant circle, K, M K, keeps the lifted limb in the passively given position, till it gradually sinks down, as the motor impulse slowly fades away.

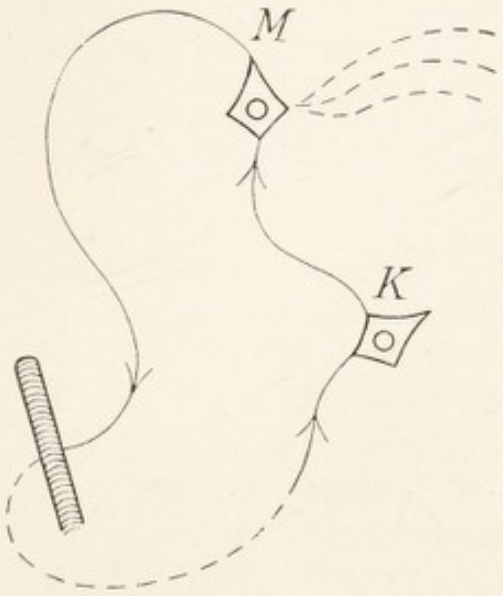


Fig. 24.

In *submissive automatism* (Befehlsautomatie), a symptom which we frequently encounter in dementia praecox,

the patient will invariably and promptly make a movement which has been suggested to him, sticking out his tongue, nodding his head, and so on, though the examining physician pricks his tongue with a pin every time it is put out, or the patient himself unfailingly hits his nose against the pinpoint when he nods. In spite of the repeated painful experience, the movement is continued, instead of being inhibited after the first time it was executed, in accordance with the diagram in fig. 23 illustrating the proverb of the burnt child that dreads the fire.

One condition for the carrying out of our movements without disturbance is that the cortical centres should be functionally efficient. With regard to paralysis of elementary movements, I refer the reader to text-books of neurology. Where *motor ideas* or more complicated habitual movements are concerned, which, with regard to the series of intentions entering into them, always have to be enacted in a certain systematic order, the localisation is extremely complicated, as it is, too, in the case of the intellectual conceptions, and in this case it is not enough that the motor centres are uninjured. The centres for these highly complicated motor memories are diffusely located in the cerebrum, and a disturbance of this automatism, the so-called *ideatory* apraxia (*Liepmann*), is therefore met with in the diffuse degeneration processes occurring in general paralysis, arteriosclerotic mental disease, and senile dementia.

Instances of »motor ideas« are such tasks as: lighting a candle or a cigar, folding or sealing a letter, washing one's hands, brushing a coat, lacing a shoe, threading a needle, etc. A series of systematically arranged volitional intentions enter into these movements, and in diffuse degeneration processes these systems are dissolved, the appropriate order of the details being disarranged, and certain items left out (short circuit, *Pick*). Thus we may see how a patient, being told to light a candle or a cigar, takes a match from the box and without striking it immediately holds it to the candle or the cigar. Or else he takes the whole box and performs a similar act with it.

In this dissolution of the more complicated motor processes due to organic disturbances, we also see that the mechanisation tends to become a circle with reiteration of the same movement ad infinitum. Thus in apraxia incessant repetition of the same movement is of common occurrence (*intentional perseveration*), instead of the direction of the movement being changed. When, for instance, a paralytic or other person suffering from a brain-disease has answered a simple question in a certain way, he will often repeat the same answer to other questions as well. Or when the patient has first been told to seal a

letter and has done so, aided or unaided, he may then, if asked to light a cigar, make the same rubbing movements with the cigar on a piece of paper or an envelope within reach as he has just performed with the stick of sealing-wax.

Often the dissolution of the motor conceptions *(apraxia)* is complicated by a dissolution of the intellectual conceptions *(agnosia)*. The patient then lacks a clear conception of the nature and use of things, and the intentional perseveration in the above examples is often most easily explained by assuming such a complication. Hence this repetition of a movement, again and again, is due to much the same cause that makes an infant constantly put into its mouth anything it can lay its hands on.

With regard to the localisation of the volitional life, it was generally supposed up to a few years ago that its centres, at least in man and the higher animals, were to be found in the cortex, and that the voluntary impulses follow the so-called pyramidal paths through the pons to the medulla. The study of numerous diseases during the last ten or fifteen years, of which we shall have more to say in the special part of this work, has, however, shown that the *subcortical ganglia* are important elementary organs of the volitional life, and that the discharge of the voluntary impulses also traverses the so-called extra-pyramidal track over the thalamus and the centres which we briefly call striatum and pallidum. Disturbances in these, »the striatum and pallidum syndrome« *(C.* and *O. Vogt)* are the cause of the motor disturbances which we find in such diseases as hereditary athetosis, on the one hand, and paralysis agitans on the other, both of which consist in disturbances brought about in different ways, of the automatic processes which as concomitant movements constitute an important part of our normal behaviour and are the elementary conditions of it.

A number of details go to make up our habitual movements, and an automatic interplay of nervous intentions in different directions constitutes what I have meant to indicate by the term »motor conceptions«. These complicated actions require for their instrumentation not only the cerebral cortex but also certain subordinate voluntary centres. For instance, when one clenches one's hand, one stretches it out at the same time, when one directs one's glance upwards, one involuntarily bends one's neck backwards and puckers up one's brow horizontally, when one walks one swings one's arms, etc. The intentions of these concomitant movements follow the extra-pyramidal path over the subcortical ganglia. A still more elementary and ever present subsidiary

factor in our habitual movements is the functional reciprocity between agonists and antagonists, flexors and extensors. Again this function and its free play are maintained by the subcortical ganglia. When the pallidum has been injured, the patient has difficulty in bending the extended leg, because the slackening of the extensors, which under normal circumstances sets in as a reflex, does not occur simultaneously with the innervation of the flexor muscles. A general stiffness such as we meet with in paralysis agitans is the consequence. Further clinical experience of the lastnamed illness and other sufferings, localised in the mesencephalon, strongly supports the assumption that the mimic reflection of our emotions has its substratum in the same bodies of the cerebral trunk, and that the chief of these, the thalamus, probably encloses or at least stands in immediate contact with the emotional centres in the mesencephalon.

The experience acquired by us during the last few years concerning the so-called sleeping-sickness, *encephalitis lethargica*, and especially the chronic form of this infectious disease, has greatly contributed toward enriching our knowledge of the importance of the subcortical bodies for the volitional life. Their undisturbed function is the condition for the automatic development of our movements. From disturbances in these bodies there sometimes follows a general stiffness, *akinesis*, sometimes motor anomalies of a scattered, spasmodic nature, *hyperkinesis*, and in addition to these disturbances alterations in the muscular tonus are frequently seen originating in lesions of the mid-brain or the connection of these parts with the cerebellum. As we know, the cerebellum has the very greatest influence on the coordination and the adequate adaptation of our movements.

The above mentioned localisation in the centres of the mid-brain of automatic movements and primitive impulses as expressions of lower appetites and emotions still inherent in man, seems to be a phylogenetic reminiscence of the independence which, during an animal stage of development, characterised these centres, *the thalamus system*. It is readily conceivable that this highly differentiated nervous apparatus is fully sufficient for the instrumentation of the undeveloped psyche in lower animals. In this stage, the inhibitory centres of the cortex are still lacking: the primitive will, bound to the impulses of the appetites, rules supreme, and in contact with the outer world it makes use of a rich field of possibilities of reaction to pleasant or painful sensations. With the development of the cortex these reactions gradually become more and more complicated and at last assume the character of a *choice*, but

within that range of the animal series in which the thalamus-system may be regarded as the most essential organ of animal mental life, the motor, affective and vegetative centres in the *mesencephalon* are no doubt sufficient for the satisfaction of hunger and sexual appetite, for warding off sensations of pain, for flight from danger and as a means of self-defence. The nearer we come to man in the animal scale, the more do the instruments of mental life advance towards the cerebral cortex, *(v. Monakow)*, and parallel with this tendency runs the development of volitional life, which, from being the primitive expression of appetites and emotions, finally reaches its highest form on attaining to the power of a conscious and rational choice.

The development of every human individual is a repetition of the biological development. A new-born child is what *Foerster* calls »a thalamus-pallidum being«, and only by means of an appropriate educative evolution does its cerebral cortex reach the state of ripeness in which volitional life obtains power over the higher centres. But the original preponderance within the lower, affective and vegetative centres again makes its appearance in the regressive dissolution which accompanies mental disease or old age. We shall return to this question later.

We began this chapter by stating that motion, the dynamic element, is the essence of will. This conception has been especially emphasised by *William James*. With the expression *ideo-motor action*, he would give us the very key to the understanding of the phenomena of will. »Our sensations and thoughts are but cross-sections, as it were, of currents whose essential consequence is motion, and which no sooner run in at one nerve than they run out again at another.« The popular notion that mere consciousness as such is not essentially a forerunner of activity, that the latter must result from some super-added »will-force«, is, according to *James*, the very natural inference from those special cases in which we think of an act for an indefinite length of time without the action taking place. These special cases, however, are not the norm. They are noteworthy inasmuch as action is here inhibited by antagonistic thoughts. »When the blocking is released we feel as if an inward spring were let loose, and this is the additional impulse or *fiat* upon which the act effectively succeeds.«

The blocking of consciousness by different impulses which bind each other, by antagonistic thoughts and motives that vie with each other

for supremacy, the *choice* between these, and finally the *decision,* are complicating features of volitional life in its highest development.

And it is in such cases that the decisive choice between the conflicting motives appears to be something more than a self-acting exertion of energy, unfailingly proceeding along the line of least resistance. The decision that sets consciousness free from the mutually blocking ideas, and places the prevailing motive in the fixation point of consciousness, which is identical with the ideo-motor focus presupposed in *James*'s explanation, has a subjectively convincing character of having been made by our own direct action. (Cf. fig. 25, C.). We have here the feeling of an autonomous decision, and we experience the decision as an act of our Ego, which thus seems to us to be ultimately determinant, and not infrequently so in the direction of the *greater* resistance.

It is these ultimate, or if we will, innermost sensations which modern psychology has tried to approach in a number of experiments arranged and carried out in an ingenious manner, specially by *Ach.*

Starting from *G. E. Müller's* and *A. Pilzecker's* so-called hitting-method, *Ach* proceeds in the following manner:

Strings of meaningless couples of syllables (for instance, pol-nec, raf-kol, san-jöl, lor-siv, and so on) are learnt in trochaic rhythm, repeated over and over again during the course of a certain number of days, until by constant repetition (75 — 100 — 120 times) a more or less firm association has been established between the coupled syllables. The associative resistance formed in this manner is then used by *Ach* as a measure of the »will-force« (association equivalent) in the subsequent experiments. This latter part of the experiment consists in hindering the involuntarily forthcoming association when the first syllable in one of the couples in the series learnt is pronounced, and replacing the association by a rhyme, a different order of the letters in the stimulus word, and so on. After a great number of repetitions the association equivalent (expressed in number of repetitions) grows so great that it can no longer be surmounted by the determining tendencies included in the task, and by varying the number of repetitions, a greater or smaller resistance may be offered to these tendencies. The associative equivalent thus becomes a measure of the force with which volition can react in conformity to a set task.

According to *Ach,* four »phenomenologic« features enter into the act of volition, among which the *actual phase* (»I really will«) is the essential thing in the phenomenon of volition. With regard to these experiments on the outskirts of empiricism and bordering on metaphysics it is impossible, however, to refrain from a certain scepticism as to the reliability of the results, and we shall not lose ourselves in

speculations on volition as an act of our inner self. For, though this part of the problem of volition unavoidably obtrudes itself on reflection, we must nevertheless leave it to philosophy (Cf. Part I, p. 85). Again the closely related question of »free will« includes points of view which are fruitful for philosophy, but remain useless for empirical psychology, as the obvious and objectively perspicuous is here thrown into the shade by the intuitively perceived. And if, therefore, we theoretically doubt that the problem of volition is definitively solved by our applying a mechanical rule of causation to it, and conceiving the course of our acts and their motives from a deterministic point of view, we still are of opinion that for practical reasons this view cannot be dismissed, and with the scientific reverence we owe to the established order of Nature we must term it, empirically, the only true one. If this view does not contain the whole truth, that is a natural consequence of the limitation and incompleteness of our empirical knowledge.

All attempts to grasp the autonomous »Ego« only leave us with our hands full of perceptions and sensations. This is the case, too, when we approach it with an »I will« as our starting-point. The nature of the feeling with which a volitional intention, for instance a movement, is initiated (»feeling of effort«) has been a matter of dispute. *Wundt,* who sees in the Ego an »an das Wollen gebundene Komplex von Gefühlen«, or more precisely »Tätigkeitsgefühlen«, regards this feeling as an indisputable fact of inner and even centrical character, whereas *William James* derives it from peripheral organic sensations, and quotes *Ferrier*'s experimental evidence in support of his view. Again in the case cited by Wundt, where the extremital musculature is paralysed owing to a haemiplegia, the subject may have a vivid consciousness of an intended movement, but this circumstance alone does not entitle us to suppose that the consciousness of intention is of centrical origin; according to Ferrier it is to be derived from that characteristic position of the respiratory muscles which initiates every energetic volitional effort. In attempts at breathing quietly, evenly and without intermission, the feeling of intention fails to appear.

Of late it has been proved by pletysmographical examinations that volitional intention is also accompanied by a vasomotor innervation which alters the blood-volume in the extremity about to make a movement, and *Gaspero* finds it plausible that the vasomotor condition awakens a »Bewegungsmöglichkeitsvorstellung« in consciousness, the absence of which is probably the psychological explanation of hysteric paralysis. Various experiences also seem to confirm the opinion that the »feeling of effort«, or the sensation of an outflow of energy from within which accompanies every »I will«, does not contain anything characteristic of this feeling, i. e. anything that remains when it has been deprived of the above-mentioned organic sensations. The same holds true of this feeling as of attention, and as a matter of fact, in both cases we have to deal with the same subject. In both cases we have a complete consciousness of effort and tension, which as a complex of

organic sensations from different muscular regions, etc., changes its content according to the direction of the volitional intention, which in one case is *inward* to a certain train of thoughts, in the other *outward* to a certain movement. Indeed, attention is nothing but a feeling of effort, and even a purely motor feeling of effort is attention. In both these situations, when we think, as well as when we will, we call the autonomous activity *apperception.* This activity has the effect that certain thoughts become actual in a special manner, since they are placed in the fixation point of consciousness; and strictly speaking it here depends on the nature of these thoughts and on their connection whether this fixation point is a mere transient phase of thinking or becomes the ideo-motor focus from which the movement emanates. If we look at the matter in this way, the feeling of effort also evidently becomes dependent on the content of our thoughts, their connection and direction: but this feeling, just like all other feelings, gets its particular colour and concrete form only on the peripheral detour by an addition of organic sensations. (Cf. Chapt. IV).

We have already stated that *Wundt,* in his interpretation of the emotions, maintains that the sensations of tension which constitute and accompany attention, always contain rudiments of an affect, and it seems to me that Wundt has given us the clue to the will problem when he defines *will as an affect.* If we have read Wundt aright, he thinks that every affect (impulse or emotion) that discharges its tension in motor paths, is in its essence volition. True, *Wundt* says that will as an affect differs from other affects in that it always tends towards and finds its solution. Hence, it would seem appropriate to speak of an undifferentiated affect and of affect as will. »When the content of conceptions and emotions which forms part of an affect, has from the very first this character of being directed towards release (of the inner tension), which content we then call *»motive«,* the whole process is enacted directly as a volition. Hence, the volitional processes differ from the affects proper in that their special affective content includes an aiming at a certain object (Zweckrichtung), which gives to the final emotional release the character of attaining this same object (Zweckerfüllung)«. The boundary between will and that which Wundt calls an effect proper is naturally fluid, for on the one hand the motive in an impulsive act is often unconscious, and on the other hand the special ideational content not infrequently assumes the character of a motive only during the course of an *affect.* Thus, for instance, a strong emotion often finds the most vehement expressions, which only gradually arrange themselves into acts for which a motive can be assigned: hence there are undoubtedly all kinds of transitions between an undifferentiated affect (an affect proper) and an act of volition.

Wundt does not hesitate to conceive as primitive acts of volition

quite motiveless and inarticulate symptoms of emotion, laughter and weeping, trembling and cramp, in other words all our emotional movements. This view coincides fairly well with what was said above on the development of the volitional life and its subcortical localisation in the animal stage.

With his view of the will as an affect, Wundt does justice to the intimate way in which the different mental components are bound together so as to appear rather as different aspects of one homogeneous process. *William James* emphasises the motion and the tendency inherent in thought to discharge its energy in an efferent reaction. But this motion is »the natural immediate effect of feeling, irrespective of what the quality of the feeling may be. It is so in reflex action, it is so in emotional expression, it is so in voluntary life.« Wundt also regards emotion as the mainspring of all volitional acts, for motion is with him equivalent to an emotional tension, which tends towards its release, and the thought only indicates the direction in which this release takes place.

In another respect also the two above-mentioned psychologists agree. Apart from the activity, they find nothing *per se* peculiar or characteristic in the essence of will. »Consciousness,« says *James,* »is in its very nature impulsive«, and »the essential achievement of the will, when it is most 'voluntary', is to *attend* to a difficult object and hold it fast before the mind.« According to *Wundt,* volition and thinking meet and coincide in an attitude common to them both, *apperception.* »Will and consciousness belong together from the outset, and when we wish to see a volitional process in an *outward act,* this differs from apperception as an *inward act,* only in its consequences and not in its immediate psychological nature.« What *James* calls »motor idea« and »kinaesthetic idea«, is to *Wundt* »die Apperception einer Bewegungsvorstellung«.

The active nature of apperception, whether it finds expression in an inward act, thinking, or an outward act, will, is manifested in the feeling we call *attention.* In the sensations of tension that enter into and accompany it, this feeling always has possibilities of growing into an emotion, but on the other hand it is the very inhibition of these possibilities that conditions attention and the direction of volition governed by apperception. A representative limitation of the emotional life, a golden mean of tension, is accordingly necessary also in the regulation of volitional life (Cf p. 108). *Will in its highest development is emotion bridled by attention, concentrated round a clearly conceived idea as the motive of the act.*

Summing up, we may briefly say that the essence of will is motion and that emotion is the exciting cause of this motion. Therefore we call emotion, in its original animal bondage, *impulse.*[1])

[1]) The word »drift« (Germ. »Trieb«) in the Swedish original cannot be rendered into English. Impulse means here an act of conation (= volition in a primitive stage). Cf. note p. 274.

Impulsive acts are volitions of a primitive nature, in which one sole motive, the satisfaction of desire, is prevalent. Here there is not yet a choice between different motives, though external circumstances may be a hindrance and render the attainment of the goal more or less impossible. Under these circumstances the impulse makes itself felt as appetite or desire. The motive of an impulsive act of conation is always one of the obscure incentives which we have earlier called *primary motives*. These primary motives are the organic animal instincts, the instinct of self-preservation, hunger and sexual appetite, and certain natural tendencies closely connected with these instincts, which secure the existence of the individual and the race, such as the maternal instinct, the instinct of affinity, and similar social instincts in certain beings belonging to the same species.

Hence, on the animal plane, the affective tension which is the inciting factor of will, according to *Wundt* its real essence, is an unsatisfied desire. Alongside with the development of mental life (consciousness), the manifestations of the emotional life become more complex. These manifestations of an energy disengaged from the organism have according to our psycho-nervous experience become differentiated in various ways and given rise to a many-sided specialisation of the emotional life. Referring to what we have said in Chapt. IV about the organic basis of the emotions, we will here again recall their connection with the instincts. This connection is easily exemplified. Situations which involve a menace to life or a peril to our well-being and our interests, fill us with terror, deadly fright and anxiety; anger and fury are summoned as a means of self-defence; hatred and jealousy are a natural reaction against circumstances and personal actions of a hostile nature, or anything obnoxious to our instincts. On the other hand, joy, delight and satisfaction naturally result as soon as a peril is removed or a barrier has been surmounted that rose against our desire for happiness, or against our natural instincts and needs. The instincts or primary motives, which are unconsciously active in animals, become conscious in the normally developed, cultivated human. By education and ethical development the instinctive life is curtailed and withdraws into the background to give place to actions determined by *choice*. In developed man, will is no longer a simple, reflexlike phenomenon, but a highly complicated process, in so far as he is capable of consciously balancing his motives and purposely determining his actions. In a choice between different volitional motives, such ideas always gain the upper hand as have *the strongest feeling-tone*. This is

a law of volitional life. Extremely passionate persons, therefore, are inclined to act rashly and without deliberation. Under such circumstances the uncontrolled will returns to some extent to the simplicity of the instincts. The aim of all education is to subordinate the emotional life to reasonable motives, or rather to develop the emotional life on a higher plane, thus giving to the motives founded on rational argument the strongest feeling-tone. Every important decision must therefore be preceded by quiet deliberation, by sober reflection; and that which we call self-conquest is the victory which a resolution formed on well-considered grounds gains over inclinations and natural instincts. But, by this conquest, the former has in a way acquired a stronger feeling-tone than the latter, and hence human volition rises out of the bondage which characterises animal instinctive action.

We ask the reader to compare what has been said earlier about the development of thinking, to what we have just said about that of will. It is to be observed that the account of volition really ought to have preceded that of thinking. Various circumstances have necessitated the order which has been followed. The attitude of will towards thinking is the primary one, for will, the origin of which is motion, represents an earlier stage of development. The two phases in the development of thinking, ideational impulse and reflection, correspond in the evolution of will to the two stages represented by *instinct* and *motive*. Yet *instinct (conation)* with its emotional content, is a more original phenomenon than intellectual impulse. The latter has as a rule its ultimate origin and inexhaustible source of inspiration in the former, and so the terms, instinctive thinking and ideational impulse, have almost a congruous sense.

All mental life begins on the animal level, and even in the human stage of development it retains its foothold in organic life. The substratum of our will as well as of our thought is the *body* with its various organs, its heterogeneous functions, organic sensations, and instincts. The brain of course is the prerequisite for the development of mental life, but it does not dominate from the outset. Hence it is more appropriate to say that *the entire body is the organ of the soul.* This thesis is also the consistent consequence of a parallel-theoretical view. According as mental life develops and the cerebrum assumes its extremely important rôle in man, will and thought are carried to perfection in *apperception,* the choice between different motives and the conscious censoring of impulse. Apperception limits emotion to the degree of feeling-tone and tension which is compatible with an attentive evaluation of the motive. This is indispensable, for all emotion, like every unbridled instinct, scatters attention, and while excluding reflection, again gives a sudden outlet to impulse and brings down the

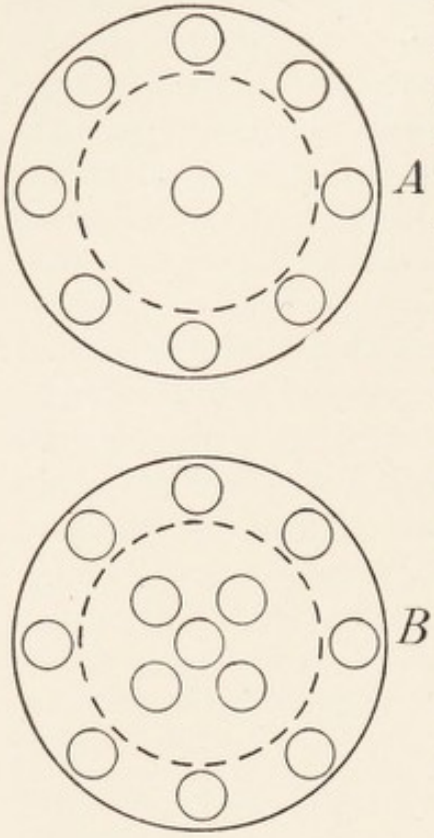


Fig. 25.

will to an animal (instinctive) level. Frequently emotion, in the shape of hidden desires, wishes and appetites, anxiety or fears, futhers constellations (cf. Chapt. VIII). It then often leads reason astray and deranges conclusions and judgments in a way that, in the paranoiac, leads to delusion. We have also seen that emotion, as a dominating primary motive, may so completely govern censorship that the latter, like a reinforced barrier-guard, unfailingly excludes from consciousness all such ideas and memories as are inopportune for a certain purpose (cf. Chapters IX and X). Thus all emotion has the power either to scatter and disable attention, or to derange and maim it. In any case it brings about a disturbance of the will and restricts our liberty of action.

We here refer the reader to the diagrams after Wundt, intended to illustrate the development of the will. In this development we distinguish three phases: A) *The instinctive act*, B) *The conditionally bound act of volition, and* C) *The choice.*

The outer circle in the three figures indicates the span of consciousness at the moment of action or the moment immediately preceding it. The smaller rings between this and the dotted inner circle denote such sensations and ideas as are without influence on the will. The ring that lies in the centre of the system, the ideo-motor focus, signifies the idea that is realised in action. In A, there is only one motive for action. It has no rivals. This situation is characteristic of the *instinctive act.* In B, consciousness has room for a number of motives, but the final decision is still *conditional and bound*, in other words, it is conditioned by certain factors which determine a constellation, and which necessarily force into the focus of action one single motive among the many which have for a while been blocking consciousness. Consistent *determinism* may reasonably question whether we are ever able to rise to a form of volition more free than that indicated by the situation in B. However, we sometimes have the vivid feeling of a personal choice, an autonomous intervention. It is this situation which *Wundt* has depicted in C. Two motives here vie with each other for preponderance; we feel a strong hesitation

before making up our minds for a decision and when, finally, we form a resolve and make our *choice*, we experience the active feeling of a free action, which is alleged in support of the indeterministic view. We have already stated that this feeling may be misleading, and that, from a purely empirical point of view, the strongest arguments may be adduced in favour of determinism.

LITERATURE:

Ebbinghaus, H.: Grundzüge der Psychologie. 1905. *Wundt, Wilh.:* Grundzüge der physiologischen Psychologie. 1908—1911. *James, William:* Principles of psychology. 1891. *Liepman, H.:* Über Störungen des Handelns bei Gehirnkranken. 1905. *Di Gaspero, K.:* Hysterische Lähmungen. 1912. *Ach, N.:* Über den Willensakt und das Temperament. 1910. *Jaederholm, G. A.:* Översikt över viljeproblemet. Psyke 1918. *Gadelius, Bror:* Gammalt och nytt beträffande mellanhjärnan och de basala gangliernas betydelse. Meddelanden från medicinska föreningen, Stockholm 1927. Etc.

CHAPTER XII.

PERVERSIONS OF INSTINCTS.

Even an instinct so deeply rooted in organic life as that of self-preservation, which seems to us the very nucleus of the will to live, may sometimes be silenced by pain or fear, and finally be overpowered by a contradictory desire more or less violently compelling the individual to suicide.

We may pass by those rare, sometimes doubtful cases, when a mentally normal person, hard hit by afflictions, misfortunes or illness, deliberately seeks death; we are here concerned with the numerous observations where the suicidal impulse is met with among psychopaths and in cases of insanity. If we estimate half the number of all suicides to be committed by the latter category, we can with safety assert that the greater part of the remainder are imputable to emotionally labile psychopaths. Incapable of self-command and blinded by a passing emotion, these psychopaths continually fall a prey to their own instinctive acts. Whenever any slight adversity upsets them, they entirely lose their head and, plunged in an unreasonable and faint-hearted despair, they put the cord round their necks, blow their brains out or throw themselves in front of a railway train. If they are in possession of a weapon, the hasty resolve may easily be diverted into other channels and result in murder or some other act of violence.

The suicidal impulse is extremely common among melancholics; but also katatonics, paralytics, and others, often require careful watching in this respect. In the katatonic, the suicidal impulse is sometimes conditioned by a strong depressive emotion (morbid fear), but may at other times appear as a blind and paradoxical expression of the morbid perversity which marks all manifestations of his will, and

which is known as *negativism*. It here appears in a peculiar way how the morbid inversion of the will to live, to which negativism may lead in certain serious cases of katatonia, is even able to extend its influence into the relatively closed domain of the vegetative and visceral nervous life, a circumstance among others which argues a deeper affective connection between body and mind. Thus, in some difficult cases, continued vomiting, retention of the urine, etc., accompany the patient's refusal of food, symptoms which more or less promote the obscure striving of the inverted volition towards annihilation. Of a more conscious character are the impulses of annihilation in those cases where the katatonic furiously violates his own body, tries to tear out his own eyes, bites his lips and tongue, fingers or toes, castrates himself or attempts in some other way to mutilate his sexual organ. The motives for these attacks on the sexual organs are, as a rule, less a general desire to destroy than distorted self-accusations and religiously tinged remorse.

The *feeling of hunger*, conditioned by the organic claims of life for the preservation of the individual, and the *sex impulse*, concerned with the perpetuation of the race, both exhibit peculiar deviations from the normal. A diminished hunger feeling may, of course, often be the cause of the refusal of food, though this symptom is rarely very pronounced except in cases of dementia praecox where the diminished feeling of hunger is combined with negativism. It is never, or at least very rarely, necessary to resort to forcible feeding of the manic patient whose hunger is dispelled by his agitation or ecstatic state of mind. Nor is forcible feeding necessary in the case of the melancholic, in whom the feeling of hunger grows slight as all the vital functions are lowered. His resistance lacks energy as compared with that of the katatonic. A little persuasion is enough; at the worst, he will have to be fed with a spoon, but tube-feeding need not be resorted to.

Leaving aside the rapacious hunger manifested in nervous and hysterical states, and the brutish voracity of paralytics, dements and idiots, we will briefly consider the craving for certain, otherwise uneatable or unappetising things, which occasionally manifests itself in nervous states and in degenerate persons. Well known is the irresistible desire of pregnant women — termed *pica* — for certain unpalatable things, for instance, charcoal, or sour things and peculiar spices, such as lemons, cloves, etc. The proneness to swallow stones, sand, sticks, etc., which is often found in dements, katatonics and idiots is less the outcome of a strange craving than of a perverted habit

passing into brutish voracity in which we can sometimes trace a negativistic perversion. Of greater interest is this perversion in certain more apparent cases of hysteria or katatonia with hysteric complications, well known already in olden times, in which the patient — generally a woman — attracted attention by her desire to put pins, nails, or other sharp objects into her mouth or other apertures of the body. After long wandering in the tissues, pins could be plucked out here and there through the epidermis, which was looked upon as little less than a miracle by those around her, especially as the patient herself usually denied all knowledge of how these things had entered her body. The hysterical desire to attract attention and arrange dramatic scenes is strikingly revealed in such mystifications. When of old these cases were complicated by other tokens of demoniac obsession, the devil generally had to bear the blame for having introduced the pointed objects into the body.

In a case found in an old account and published by me in my book *Belief and Superstition,* the obsessed girl stated, among other things, that the obsessing demon who called himself »Legeon«, ordered her: 1) to be untruthful and lie in everything she said; 2) to be *obstinate and contrary in everything towards everybody, and so on, and — — — 7) to attempt to take her own life, and if this were not possible in any other manner, to do it by means of pins.*

The close relationship between negativistic perversion and the impulse to inflict pain and injury on oneself appeared clearly in this case. The same is true of the following case in which the perverse tendency appears to be intensified to a *stereotyped suicidal impulse.*

Case XVII. Ester H., spinster, 42 years old. Admitted to the Stockholm Mental Hospital on Febr. 10. 1915. Parents dead; her mother died in a mental hospital. The patient passed through an elementary school and was of normal intelligence. For 18 years she worked at a book-binder's. She had to give up work on account of an injury to her leg and her health seems to have been frail in recent years. About ten years ago she was engaged and was on the point of marrying when her fiancé fell ill and died of tuberculosis in 1911 after about a year's illness. This bereavement seems to have affected her deeply. Her digestion became troublesome, and she suffered from constipation. It was then that she got the idea of swallowing sharp things such as nails and broken glass; she says herself that it was because a friend had told her that she had read in the newspaper that they would act as an aperient. In the same year as her fiancé died — though it is uncertain whether it was before or after she had begun to »eat« nails — she was treated in a hospital for prolonged constipation and was sent with the diagnosis of ileus to the Serafimer Hospital, where she underwent an operation. After four weeks' nursing in the latter hospital she was admitted to a home for incurables. During the following years, 1911—1913, her illness developed and assumed a grave character. The desire to swallow foreign bodies was extended to all kinds of articles, chiefly those that were pointed and sharp-edged. Besides nails and broken glass, she did not despise

hairpins, thimbles, bits of horn combs, pins, stones, and pieces of metal. Though carefully watched, she hid everything that suited her purpose. This course of diet brought upon her a chronic peritonitis with repeated attacks of ileus, and laparatomy had to be performed three times more during the years in question. H. always had a stubborn temperament and, after her illness began, she was irritable and restless; as a rule she slept badly. Defecation only after clyster. The patient was often refractory even to violence, but sometimes penitent and still. She herself connected her morbid state with the death of her fiancé. In conversation she was quite clear in her mind; her memory was on the whole bad without being grossly defective. In her attempts to get at the coveted objects she was extremely ingenious, as also in inventing motives for her acts. Gradually she developed a pronounced desire always supported by new arguments to do exactly the opposite of what she was told. Frequently she threatened to commit suicide but, apart from nail-swallowing, she never made any serious attempt to do so. Once she scratched herself with a blunt pair of scissors, another time she tied a handkerchief tight round her neck, etc. She developed all the more energy, however, in swallowing hard objects. She was admitted to the Stockholm Mental Hospital on Febr. 10. 1915. *Status* 13. 2.: Temp. afebrile. Tenderness all over the abdomen which was considerably distended. All the left half of the body analgetic, and the analgesia extended a good way beyond the middle line on to the right half. When her eyes were covered, the patient was not able to tell what object she was holding in her left hand *(astereognosis)*. The fields of vision considerably narrowed. In an examination made at the home for incurables, the eye-grounds were without remark.

On arrival, the patient refused to undress, offered resistance, and protested against being interned; »she was not mad«. Complained of pain in the stomach and said she ought to be taken to the surgical ward to be operated upon. During the first days she was exceedingly discontented and criticised everything. When spoken to, she answered lucidly in a whimpering voice. Appetite very bad. She remained irritable and discontented, irascible, stubborn and wilful. The nurse discovered shortly after the patient's arrival that she had got hold of some broken glass which she had hidden in her bed and put into her mouth. About a fortnight later she began to vomit after a clyster and had severe pain in the abdomen which was much distended and very tender. Gas passed out when enemata were given. As the swelling and tenderness continued, and fever had set in, the patient was taken to the surgical hospital for an operation to which she was now very strongly opposed. After a few days she was taken back to the Mental Hospital, but the abdominal pain continued, and thinking better of it, she now begged for an operation and was again transported to the surgical ward of the Serafimer Hospital. After laparatomy there were found in the large intestine handfuls of swallowed objects, mostly of a sharp and scraping nature, such as nails and tacks, broken glass, fragments of horn combs, safety pins and hairpins, stones and buttons. A couple of thimbles and divers other small objects had passed out when an enema was administered. All these things, which had chiefly collected in the flexura sigmoidea, but had given rise to lesions during their passage through the intestine and caused a general peritonitis, are preserved in the museum of the clinic of psychiatry. They represent a fair collection of scrap iron and fill a large glass jar. After the operation, healing and lessened abdominal trouble. Having become more tractable and sober-minded, and having repented and promised to mend her ways, the patient

was again removed to the hospital for incurables on May 3, 1915. She used to hint that sorrow and disappointment at the death of her fiancé had brought on her illness. While talking of this she would cry and add that life was no longer of any value to her.

During the following years, 1916—17, she was brought back to the Mental Hospital for short periods no less than three times. The reason was always the same, the desire to swallow divers sharp objects, besides her trying behaviour, annoying to the other patients. She was apt to exaggerate her morbid symptoms, thus, for instance, she kept her evacuations secret by using a newspaper as the receptacle and burning the faeces. She was never able to give any satisfactory explanation of her strange conduct. She died in 1919 from perforating peritonitis.

Epicrisis. In the case described, which was regarded as *hysteria* by the physicians who had previously treated it, we find, along with the characteristic disorders of the sense of pain (the one-sided analgesia) and the narrowed field of vision, the »flight into disease«, so distinctive of hysteria when life has lost all other attractions. This feature, together with the desire to arouse interest and compassion and the strong tendency to aggravate the symptoms, is in good agreement with the clinical picture of hysteria. More incompatible with it is the blind impulse towards destruction which governed her with irresistible force and constantly compelled her, in the face of all warnings and remonstrances to swallow the dangerous objects. This *stereoptyped impulse to destruction,* as well as the trait of refractoriness and unbending obstinacy which she always exhibited induce me to consider the diagnosis of *katatonia* more justified. The uncertain and evasive nature of the case from a clinical point of view is, however, not its least interesting feature. In the special part of this work we will dwell at greater length on the peculiar relation between hysteria and katatonia.

Perversions of the sex impulse. When we consider the extreme importance of the sex instincts in the shaping of human life, and their power of determining the fate of many individuals — *Siegmund Freud* and his school would say: of every individual — and knowing as we do how these instincts vary, even within the boundaries of the normal, in their development and individual formation no less than in the extent of their influence on our emotions and sensations, then we shall also be able to understand the significance of their perversion as well as the enormous number of more or less bizarre forms which the flora of mental pathology produces in this field. If the hunger-feeling and its demands in the hot-house atmosphere of culture and aided by man's inventiveness have taken into their service all the possibilities of our organs of taste and smell, all available means of nourishment, enjoyment and stimulus — what may we not expect from the hunger for living, when it is equipped with the infinitely richer inward and outward possibilities of sexual desire?

If we direct our attention to these *inward* possibilities, we shall

find that it is with the sexual instinct as with climate; we meet natures that are frigid, others that are temperate, and others again who may with reason be called tropical. I have, in an experience of many years, only met with one individual, an otherwise normal man, whose psychical structure represented the frigid extreme to such a degree that he might be regarded as completely *asexual.* Nevertheless this person was intellectually richly endowed, and if his statements were to be trusted, this shows that sexuality is not such an indispensable element of personality as is assumed by many *(Freud, Wulffen,* and others). And, as a matter of fact, it has been pointed out in support of this view that several very prominent historical personalities, (Narces, Origines, Abelard), were castrates.

Into all sexual psychology there enters a strongly subjective note which is determining for the attitude of the psychologist as to the significance to be attributed to erotic sensations for the general body-feeling and state of health and thus also for the character, will and intelligence. Authors who belong to a sexually more temperate environment have a different view of the rôle of sexuality from those who move within a milieu which is tropical in this respect. And the mental atmosphere in certain capitals of Central Europe is, indeed, *tropical* in this sense of the word. Again, race characteristics assert themselves in this respect; thus, according to all experience, Jews are extremely sensual.

There can be no doubt that *asexuality* as such is a pathological quality. Most frequently it is accompanied by general psychical inferiority, deficiency of will and energy, lack of character, and moral inferiority. Even relative asexuality (hyposexuality) must be regarded as a personal deficiency. As a rule it results in a certain dryness of temperament and a striking incapacity to enjoy fully the values of life and the opportunities for happiness. »Asexuelle Naturen sind keine freudigen und glücklichen Menschen,« writes *Wulffen,* and he adds: »Der Quell alles Lebens fliesst in ihnen nicht ursprünglich und reich genug.« The asexual individual easily falls a prey to bitterness and misanthropy. Many years ago the present writer in a study dealing with the brilliant author of »Gulliver's Travels« ventured upon the supposition that there are indications of this deep-lying cause of much suffering in the life-history of *Jonathan Swift.* Of course a hypothesis of this kind can only be put forward with reservation.

On the other hand, *hypersexuality* as such is by no means to be considered an abnormal quality, unless, under certain conditions, such as nervous overexcitement, incipient mental disorder, epilepsy, senility,

and so on, it is intensified to an uncontrollable height which, as we know, often finds the most unambiguous expressions in the states characterised as pathological lewdness *(satyriasis, nymphomania)*. In these cases the sexual instinct so engrosses the thoughts, word and conduct, that sexual lust is unmistakably present in the entire behaviour of such persons. They are incapable of governing their frequently absurd sexual impulses; they have lost all self-control and easily forget all restraint. They unblushingly commit acts that offend public decency, display their sexual organs in the street *(exhibitionism)*, masturbate in the presence of others, attempt to rape women without regard to their age; or, in the case of nymphomanic women, without hesitation throw themselves with brutish lust into the arms of the first man they meet and thus irretrievably sink into prostitution.

Though a strong sexual tension uncontrolled by will or reason easily finds an outlet in offensive, often criminal actions in the undeveloped or in morbid states, yet the high tension as such, as long as it has no power to break through the dam of ethical sentiments, is in itself nothing abnormal. On the contrary, the victorious struggle of will and reason against the lower instincts opens a road towards character-formation and a deepening of the emotional life which makes the personality particularly worthy of entering a higher and richer sphere of imagination and thought. It is this more or less successful struggle and the significance of the victory of the ideas over sexuality, the high tension of the latter and, finally, its complete repression, that *Wagner* has described in his heroes. With Tannhäuser, Lohengrin and Parsifal he marks the various stages on this road towards the highest development of the personality.

The importance of sexual tension for intellectual development and, more especially, for the creative power of the artist, is a fact now generally recognised. Everybody knows the lively influence of puberty on the imagination. The tension which is released in the awakening sexual instinct is transformed into poetical and religious raptures; it opens the mind to music and develops the yearning for beauty; it fills the soul with fair and vague dreams. This is especially the case with young women, whose sex impulse is more easily transformed. An early awakened moral feeling forces it into hiding, and so it hardly becomes conscious. Our Swedish poet *Karlfeldt* says that »every heart that loves and is mute will overflow with song«, and this is a beautiful as well as a true description of the transmutation which a hidden erotic longing may undergo. It is an old experience that love inspires the poet; he

creates more easily and better when his (erotic) longing has found its object in the woman he desires. The scholar is merely disturbed by love, whereas the artist is exalted, and, furthermore, the poet and artist are egged on by the desire to create, to individualise their yearning again and again; thus it follows that many artists are apt to fall in love during periods of productiveness. We know this to be true of *Goethe*, as well as of the great Swedish poet *Tegnér*. At intervals of several years the former had periods of renewed creative power and renewed longing for love; in his conversations with Eckermann, he himself made the characteristic statement: »Solche Männer und ihresgleichen sind geniale Naturen, mit denen es eine eigene Bewandtnis hat, sie erleben eine *wiederholte Pubertät*, während andere Leute nur einmal jung sind.«

That it is the repressed and subconscious desire and not the consciously observed craving which promotes artistic and literary production, is a fact to which *Schopenhauer* testifies from his own experience in the following words: »In those days and hours when the impulse to sensual gratification is strongest within me, not the weak longing that fills the emptiness of a glutted consciousness, but a burning desire, a violent appetite, just then, too, the finest powers of the soul, the better part of consciousness, are ready to develop their highest activity, even though all this remains latent as long as consciousness abandons itself to desire and is entirely filled by it, but it only needs a strong effort to change the direction and to fill consciousness with the highest mental power (from the realm of light), instead of this oppressive, violent and desperate desire (from the realm of darkness).«

The foregoing passage must not be misconstrued to mean that the sex impulse in itself is assumed to possess an inspiring power. Indeed, this is not the case. In this connection, the sex impulse only plays a part in so far as the nervous tension of which desire is the brutal expression may be diverted into other channels and stimulate other centres than those which effect the gratification of the sexual instinct. Besides these nerve paths of animal life, the infinitely complex instrument of the cerebrum is at the disposal of the organic tension, and when the sphere of the erotic ideas is excluded by an inhibitory act of volition, other and more spiritualised melodies may become audible. But the nature of the instrument, the gift, the genius, is the ultimate and essential condition determining the beauty of the melodies.

The physiological connection between the mental faculties and the

sexual instinct was formerly very obscure but recent studies of the so-called internal secretion hos resulted in a clearer insight. We know that the sex glands, besides their external secretory function serving the purpose of fertilisation, also are internal secretory organs. From this point of view, the sex glands are a link in a chain of endocrine secretory organs which are all intimately connected with each other, viz. the thymus, thyroid, hypophysis, suprarenals, pancreas, etc. All these glands are in intimate interaction and contribute by their endocrine secretion to the normal progress of metabolism and so also to a normal bodily and mental development. A disturbance of their function *(dysfunction)* is likely to cause serious disorders of nutrition and hence illness and mental disease.

In the light of these new discoveries and theories it seems reasonable to assume that the ferment of the affective life during puberty, and all the pleasure and pain, the »Sturm und Drang«, which mark this period of life, are obscurely connected with the endocrine secretion of the sex glands, and possibly of other glands. Abnormal conditions of puerperal strain within the region of the sex-glandular function may easily be conceived as leading to a *dysfunction* and so to mental disorder. This applies above all to persons predisposed to mental disease, in whom the repression of the sexual instinct, which under normal circumstances promotes mental development and maturity, may perhaps bring about fatal disorders and lead to neuroses and diseases of the mind. While referring the reader to Chapter IV of this work, where the hypothesis of an intimate connection between the organs of internal secretion and the emotional life was propounded, I should like briefly to indicate the importance and the physiological significance of the emotional tension resulting from the sexual instincts. That this tension affects different natures differently, is naturally due to the differing receptivity of the central nervous system, and to its differing power of resistance and development. One soul »overflows with song«, another is filled with a dark and mournful brooding. Inspiration and disease are seemingly diametrically opposed phenomena, but common to them both is the tension of the instinctive life, and in this manner they are like two fruits on one stem: one grows and reddens, the other withers and dies; the juice which is life to one, is to the other a poison that destroys. (Cf. Chapt. IV).

So far we have only dealt with the sex impulse in its *heterosexual* form, thus termed because its object is an individual of the opposite

sex. We will now pass on to the perversion manifested in desire for persons of the same sex, whether this desire is of a platonic character or demands gratification in a more brutal way. This abnormal direction of the sex impulse is called *homosexuality*.

The explanation of homosexuality has long been sought in the bisexual predispositions of the sexual organs. In certain lower animals there is a bisexual structure of the genitals, and the evolution (ontogenesis) of the human individual passes in quick succession through the whole series of biological stages (phylogenesis) which has led from bisexuality to monosexuality — here *Semon* finds a support for his previously cited hypothesis of the development as a function of mneme. Accordingly, even the human sexual disposition is bisexual, and a deflection of the normal sexual development entails a continued bisexuality *(hermaphrodism)*, or homosexual constitution. In the latter case the deflection is evidently limited to those parts of the genital organs (the sex glands) which have an endocrine, secretory function, inasmuch as the genital organs in homosexuals do not in themselves, that is in their external shape, exhibit any obvious anomalies. On the other hand, we frequently find that, with regard to certain *secondary* sexual qualities, both mental and physical, homosexual individuals display more or less striking abnormalities. The homosexual man often has a feminine strain in his temperament and tastes, the homosexual woman a masculine one. The former shows a marked taste for female occupations, he prefers needlework and embroidery to manly employments; in his dress he reveals a feminine love of finery and is fond of display. He will often dress in women's clothes (Fig. 26), is very partial to strong perfumes and shows a feminine bashfulness in the presence of other men. All this is characteristic of the disposition called *effeminacy*. Such a man thinks and feels like a woman.

Some years ago, a young man of homosexual disposition was granted exemption from military service on a certificate of mine, because he could not bear the idea of having to undress and sleep in the same dormitory with his comrades. This person, who had never had the slightest notion of heterosexual feelings, regarded himself as a woman and said that »in every respect he lived the mental life of a woman, though in the body of a man«.

In men with this absolute inversion of the sexual instinct it is the rule that from their school years and the earliest stage of puberty they have always felt strongly drawn towards their male friends in dreams and in sexually toned fancies, and that they never, during



Fig. 26. Effeminate man, dressed in woman's clothes. Hirschfeld.

adolescence or later on, have experienced even the faintest desire for feminine caresses; on the contrary they have repelled them with disgust and dismissed with real loathing the very idea of performing the sexual act with persons of the opposite sex.

With regard to the secondary physical sex characters, the skeleton is not rarely of a slim, feminine type with the pelvis of a woman. This, together with a layer of fat deposited on the hips, gives them a rounded form, and a suggestion of female breasts is not uncommon. Frequently the voice is weaker, and the larynx feminine. The beard grows more sparsely and the pubic hair terminates upwards in a sharp horizontal line as in woman whereas, normally, in man it diminishes gradually and reaches the navel in the middle line of the body.

These secondary differences are also to be observed in castrates and this is explained by the absence of the physical control over the sex characters that emanates from the endocrine parts of the testicle.

If, in certain men, homosexuality is of the above described absolute kind, it may in other cases be less unambiguous. The persons here referred to are in reality bisexual in nature, and the sex impulse is evinced in them by a periodically recurrent predominance for the homosexual tendencies, while at other times they have sexual intercourse with women and derive satisfaction in a normal way. In such cases the above-mentioned secondary feminine sex-characters are gene-

rally lacking, and the men in question are more manly in character and temperament. During their periods of homosexuality they are far more aggressive than the former, more effeminate group, who take up a passive attitude, and in cases of *pederasty (coitus per anum* or *inter femora)* play the female rôle, whereas the other type is the assailant. A form of sexual intercourse which is often satisfactory for both individuals is mutual masturbation. In women, homosexuality is hardly less frequent than in men, but owing to the more diffident nature of a woman's sexuality and her greater reserve, it is not so conspicuous. Whereas the sexual excitement of woman rather represents the desire for *contrectation,* that of man involves an impulse of *detumescence* (erection and ejaculation), and even homosexual women often find the satisfaction they seek for in kisses and embraces, at the utmost they practise mutual masturbation; in the most brutal cases *cunnilingus*. Hence sexual intercourse between women has in all ages been less liable to social condemnation, and the so-called tribadism or Lesbian love is not recognised by law.



Fig. 27. Man with female pelvis. (Hirschfeld).

Women with inverted sexual instincts have, as we have already indicated, a masculine taste, they give a masculine touch to their clothes, assume the habits of men and enter into tender relations of friendship with other women of normal type. The development of their body is in several respects masculine, even though the sexual organs in their outer shape appear normal. The voice is deep, the larynx well-developed, the breasts small, the pelvis narrow, their carriage and

gait are masculine. There is sometimes a distinct trace of a growth of beard, but this is not in itself a proof of homosexual tendencies.

Homosexuality must, under all circumstances, be regarded as an innate disorder, a perversion of disposition, even if its so-called acquired form is liable to be developed by masturbatory debauchery or, in women, by unsound matrimonial relations. Thus, impotence in the husband may lead to masturbation in the wife, and the resulting neurasthenia will sometimes lead to tender relations with women of a Lesbian kind. *(Wulffen).*

When the transgressions of the homosexual individual are still, in the name of public decency, made liable to legal penalty, this represents a view which, from the present standpoint of psychopathology, must be regarded as antiquated and unjustifiable. *For homosexuality is not a punishable moral defect, but an abnormal mental disposition and a perversion of the normal sex instincts created by certain organic conditions.* Even the most steadfast adherent to the older prejudiced view must perforce abandon his doubts in the face of the convincing proofs provided by the animal experiments of the last few years. Since these experimental investigations, chiefly carried out by the Vienna physiologist *Steinach,* are also of a nature to confirm the correctness of the hypothesis that the affective life is of organic origin, I will here give a detailed account of them.

Steinach's first communications about his remarkable experiments on sexual differentiation were published in Pflügers Archiv, 1912, and have since been added to by new publications in Zentral-Blatt für Physiologie, 1913, and in Wilh. Roux's Arch. f. Entw. Mechanik, 1916. The experiments are performed on guinea-pigs and mice. A young animal is castrated, and the gonad from the opposite sex is then inoculated intramuscularly or intraperitoneally. The result of this inoculation is that, whereas the generative parts of the engrafted sexual gland soon degenerate, the internal secretory parts not only remain alive but multiply rapidly; and it has been found that the hormonopoietic cells of the ovary, the so-called theca-lutein cells which, from the obliterated follicles, grow into the stroma, are more resistent than the analogous parts, the so-called cells of Leydig, of the testicles. It is to these internal secretory parts of the sexual glands that the development of the secondary sex characters seem to be due. Steinach, therefore, calls them *puberal glands.* The action of these glands is of a double nature, but always sexually specific, since it furthers the homologous sex-character, but checks the development of all heterologous sex-qualities. The truth of this seems proved by the undeniably very striking results at which *Steinach* arrived in his transplantation experiments. The effect of the transplantation of a male puberal gland on a castrated female is that all the previously checked male sex-characters are potently developed (the bisexual predisposition must be kept in mind), whereas the feminine qualities recede. The skeleton

parts of these *masculinised* females become more powerful, their hair coarser and rougher, clitoris develops into a penis-like organ, whereas the uterus grows smaller and the vagina narrower. At the same time the females thus changed become obviously masculine in their psychical qualities, they behave aggressively, attack the females and begin to fight the males. Steinach has shown by means of photographs that they may even surpass their brothers in size, weight and virility.

Just as striking, on the other hand, is the appearance of the *feminised* males. In these animals, in which Steinach, after castration, transplanted an ovary, the female puberal gland shows the same strange double action, at once checking and furthering. The masculine qualities give place more and more to feminine ones which eventually, in the most unambiguous way, impart their character to the looks, behaviour and psychical characteristics of the animal. Photographs show how the feminised male in a family comprising both sexes is not only much smaller and weaker than his normal brothers, but even slenderer and more femininely delicate than his sisters. The arresting action of the female puberal gland on the skeleton-formation has been depicted in detail by *Steinach* and *Holzknecht* in roentgen pictures; feminised mice show a uniform shortening of all the skeleton parts. This hyper-feminisation which, as histological investigations have shown, is always accompanied by a strong development of the cells of the puberal gland, is not confined merely to arrested growth of the body and to a change in its general appearance, it appears just as conspicuously in a growth and swelling, far beyond the measure of puberal maturity, of the teats and lacteal glands which in the feminine males are periodically adapted for lactation. At the same time the penis shrinks to a clitoris-like organ and the seminal vesicles show distinct atrophy. The psychic qualities of the animal are distinctly feminine.

The condition requisite for this development of the transplanted puberal gland is the castration of the experimental animal. If castration does not take place, the transplanted heterologous puberal gland will very shortly atrophy and be resorbed, for it cannot under those circumstances hold its own in a struggle for existence with the internal secretory cells of the homologous gland. The case is different when, after castration, both the testis and the ovary are transplanted. Here, too, there is a quick involution of the generative parts, whereas the internal secretory parts remain alive and proliferate; and it may happen, if the testes and the ovary become ingrown beside each other, that a bisexual puberal gland develops in which vigorous strands of the cells of Leydig are interwoven with the female puberal glands growing into the stroma from the obliterated follicles *(ovotestis)*.

Under these circumstances an artificial *hermaphrodism* develops, in which the experimental animal, besides retaining its original homologous sex-character and normal heterosexual instinct, periodically shows a heterologous manner of functioning. Thus it was found that the hermaphrodised males for a time react normally, they copulate with females and exhibit the combativeness and other psychical qualities of a male individual. Then follows a period when the female qualities become predominant; the teats swell, and the lacteal glands develop into productive organs. In its psychical bearing, too, the animal adapts itself for the female functions, it becomes more shy and reserved; thus it attracts the males and, when it submits to covering, defends itself in the manner of female animals, by kicking its hind legs. In these cases we have to deal with bisexual individuals and, undoubtedly, their bisexuality here arises from the bisexual puberal gland.

On the strength of these experimental results, *Steinach* draws the conclusion that hermaphrodism, be it somatic or psychical and, consequently, homosexuality too, are due to a bisexual development of the puberal gland, whether or not this bisexual gland is enclosed in an otherwise normally functioning testicle or in a generatively normal ovary.

This theory, which is applicable also to man, has led to operative measures in a couple of cases of which one, particularly, is of interest.

As far back as 1915, *Lichtenstern* had transplanted a cryptorchistic testicle in a castrate, and, as is usually the case, the cells belonging to the puberal gland were in a good state of preservation and capable of functioning. This person had had both testicles damaged in an explosion and had, therefore, been castrated. Afterwards he gradually lost all sexual feeling, he grew listless and apathetic, and the growth of his hair and beard showed distinctly feminine changes. After the transplantation was made, his sexual impulse revived, he recovered psychically, and the male sex-characters with regard to hair and beard returned. The man married and $2^1/_2$ years afterwards he was enjoying the best of health.

A case of homosexuality where treatment was advisable, offered itself in May 1916. This case, observed by Steinach and operated upon by Lichtenstern, took the following course.

»A gunner, 30 years old, had ever since puberty been homosexual and only during short periods had he felt heterosexual impulses. He had yielded to passive pederasty and was decidedly feminine in outward appearance. His face looked soft, he had a spare and thin moustache, well developed breasts and rounded hips. The voice was feminine. In the linea alba there was no growth of hair and, generally, the hair distribution all over the body was feminine in character. Psychically also he revealed distinct traits of softness and coquetry. Before the operation he bequeathed all his possessions to a male lover. Castration was here principally indicated by the fact that both testicles were tuberculously infected in a serious degree. He had of late felt no sexual stirrings whatever. After the castration a cryptorchistic testicle containing an abundance of Leydig's cells, was transplanted into the Musc. obliquus externus. On the other hand, the tuberculous testicles, with regard to the nature of the puberal gland, seemed very doubtful, and the histological details showed features that rather suggested theca-lutein cells than the cells of Leydig.

The effect of the transplantation was soon evident. Twelve days after the operation the patient had erections, and his sex impulse was now of a decidedly heterosexual character. His erotic dreams were concerned with women and not, as before, with men. He made erotic advances towards the nurse and had to be kept at a distance in this respect. The will in favour of his male friend was destroyed and he remembered with disgust his previous sexual relations. Six weeks after the operation he successfully accomplished coition with a prostitute and this was repeated in the following months, rendering him happy and grateful at the improvement of his sexual life. After some months he left the hospital restored to health, and his appearance was then considerably more virile. In the spring of next year, 1917, he fell in love, got engaged, and married in June. In July he wrote that everything

was all right; he lived happily with his wife and still thought with disgust of his earlier life. A year after leaving the hospital he was demonstrated by Dr. Lichtenstern. His sexual tendencies were then still normal and it is worth noting that there was a striking change in the secondary sex-characters. The breasts and the feminine rounded shape of the hips had disappeared. The intonation had become deeper and more masculine. The pubic hair was rougher and was distributed like that of a man; it now spread in the linea alba towards the navel, the moustache had grown and the arm muscles were more developed.«

I know nothing about the further development of the case which was published in 1918. Of course this single case does not warrant any conclusions as to the prospects of the future treatment of homosexuality. Steinach and Lichtenstern caution against hasty conclusions.

In his work: »Beschaffenheit der Keimdrüse bei homosexuellen Männern« (Arch. f. Entw. Mech. 1920), Steinach makes the following positive statement: »All hermaphrodite phenomena are genetically co-ordinate and can be traced to a hermaphroditically predisposed puberal gland, originating in imperfect differentiation. The histological examination of hermaphroditic animals and human beings has confirmed the correctness of this conclusion«. We will subsequently return to the latest researches in this field.

Though Steinach's experiments and a great many other experiences have taught the extreme importance of endocrine secretion for the *development*, not only of our bodily characters, but also of our mental life, we must not forget that there can be no question of anything but a reciprocal action of the brain and the peripheral organs, and that the brain as the *representative* centre of our memories, ideas, sensations and emotions is still always the principal organ.

It may, of course be possible to obtain satisfactory results from transplantation if it were performed during youth, while the mental life is still to a certain extent a blank page. This seems especially applicable to those cases where the psychic predispositions are bisexual in nature (psychic hermaphrodism) with possibilities of adaptation in both directions. But an attempt to change a sexual instinct, whose psychic disposition is entirely feminine, by transplanting a male puberal gland, or to try an organic »regeneration« with a view to obliterating and neutralising the old engrams from a cortex filled with homosexually toned experiences, would, *a priori at least*, seem very unlikely to succeed. Still we know too little about these relations to draw definite conclusions. At the utmost we may venture to make certain suppositions from our knowledge of other endocrine organs and their effect on the central nervous system. I am here chiefly thinking of the reciprocity between the brain and the thyroid gland. There are cases of Graves' disease which are more or less primary affections of the thyroid gland, but there are also degenerative forms of this disease, which must be regarded as essentially of central origin. Psychic symptoms (labile affectivity, restlessness and anxiety) occur in both cases, actual mental disease mainly in the latter, and the psychic symptoms in the degenerative form of Graves' disease may generally be looked upon as primary, even though

a certain deepening of the emotional excitability is derived from the hyper- or, respectively, dysfunction of the thyroid gland. The endocrine organs are regarded by certain authors *(Oswald, Tilling)* as »multiplicators« of nerve-irritation. Be this as it may, according to my own experience, operative treatment of the thyroid gland (thyrectomy) in the *degenerative* forms of Graves' disease has no great effect on the psychic symptoms, and it seems reasonable to suppose that the same would be the case, if Steinach's operation were performed in a case of homosexuality in which degeneration had deranged the mental predisposition itself in an irrevocable manner. In homosexual psychopaths we also often find the degeneration manifested in other traits of psychic inferiority, such as compulsions and phobias, intellectual or moral defects and criminal tendencies of other kinds, the latter also in the form of perverted instincts, such as *kleptomania, pyromania,* etc.

Recent research seems beyond question to emphasise the scepticism with which the operations on homosexual persons, inaugurated by Steinach and carried out by Lichtenstern and others, were regarded by many, a scepticism to which the present writer already gave expression in the first edition of this work. We are still in the dark as to the physiological relations in this unexplored region, and there is still great difference of opinion especially with regard to the anatomic substratum for the endocrine functions of the sexual glands, and their influence on the development of the secondary sex-characters and sex instincts.

As was stated in the preceding passage, Steinach is of opinion that the internal secretory part of the male sexual glands, the so-called puberal gland *(Lipschütz, Steinach)* consists of the cells of Leydig (interstitial cells, *»Zwischenzellen«*), a view also accepted by *Biedl, Ancel* and *Bouin, Lipschütz, Tandler* and *Gross,* and others, whereas other enquirers, such as *Stieve, Jaffé, Berberich* and others, adduce convincing reasons for the view that the seminiferous epithelium is the origin of those hormones that condition the sex instinct and the development of the secondary sex-characters. By ligation of vas deferens Steinach believed himself able to bring about a »pure puberal gland«, so to speak, the generative parts becoming atrophic and the interstitial cellular tissue increasing. The intensified sex impulse observed after such a ligation, which led Steinach to his attempts to bring about a *»rejuvenescence«* in this way, is, according to others *(Stieve, Jaffé* and *Berberic*[1]*)*, explained by the fact that, as the ligation causes a stagnation within the spermatic duct, there is a resorption of sperm-cells, which in its turn may be supposed to cause intensified rut. Further, the same authors consider that the increase of the interstitial cells is only relative, and that the annihilation of the seminiferous (epitheloid) parts by the ligation is never complete.

In the transplantation of testicles, the seminal epithelium degenerates very soon whereas, according to Steinach, the interstitial part of the gland proliferates. Still, it is apparent that the latter, too, is finally destroyed and supplanted by new connective tissue.[2]) Nor do the transplantation experiments definitely answer the question as to the part of the testicle in which its endocrine activity is located. An attempt of *Bolognesi,* cited by *Kauders,* to transplant testicles whose seminal epithelium had first been brought to atrophy through ligation, speaks against the

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[1]) Handbuch der inneren Sekretion, herausgeg. von *Max Hirsch,* 1927, B. I, pp. 197 a. f.

[2]) Cf. *Otto Kauder's:* Keimdrüse, Sexualität und Zentralnervensystem. Berlin 1928.

correctness of Steinach's theory, since this transplantation, despite the increased formation of interstitial cells, has not the slightest effect on the development of secondary sex-characters. The question as to the origin of the hormones which condition sex-maturity and the development of the secondary sex-characters is, accordingly, still a matter of controversy and perhaps, after all, *Biedl*'s earlier theory is correct, namely, that with regard to the male sexual glands we have to reckon with several kinds of hormones of different origin *(Kauders)*. One thing must be regarded as settled beyond doubt, viz. that the effect gained, either by »attempts at rejuvenescence« or by transplanting a testicle, is transitory, for the reason that sooner or later both seminal epithelium and interstitial cells will degenerate and disappear. Lichtenstern's account in 1924 of the further progress of the cases he had treated against homosexuality by castration and transplantation were not of a nature to contradict this general supposition or to remove the doubts that have arisen as to the effectivity of the operation.[3]) Animals are quite a different case. *(Voronoff)*. Here a transient rejuvenation may be of practical value for the purpose of preserving a certain breed of cattle. *Voronoff* (La greffe animale, Paris 1925) performs transplantation of testicles in the scrotum itself, and he seems to have arrived at more lasting results than those previously gained by subcutaneous, muscular or peritoneal inoculations. The better effect in this procedure may, as *Kauders* has alleged, be due to a greater actuation of the graft when it heals into its natural surroundings or even to an actuation by the transplanted organ of the experimental animal's own testicles.

As to the *female* glands recent continued research has made it probable that the sexual hormones have their origin in the ovarian follicles and the corpora lutea. The hormone emanating from the corpus luteum has a special influence on the alterations in the mucous membrane of the uterus following upon the follicular rupture and the descending of an egg *(Frænkel)*. Contrary to the earlier opinion, held by *Steinach*, the interstitial cells in an ovary whose follicular apparatus is degenerated do not produce any hormone (*Zondek* and *Aschheim, Westman*).

The new experiments and investigations have further shown that the *foremost lobe of the hypophysic gland*, besides the increts which activate physical growth and, as supposed, also metabolism, produces two sorts of sexual hormones, »prolans A. and B.« (*Zondek* and *Aschheim*). According to these authors the hypophysic hormones are the »motor« of the sexual functions; »prolan A.« giving rise to follicular maturation and »prolan B.« to lutein formation. The prolans have a superior, instigating, but no specific sexual function, and the so-called gravidity-reaction, invented by *Zondek* and *Aschheim*, is based on the abundance of prolan, especially prolan B., present in the urine during pregnancy.

These experimental discoveries of the intimate relation between the hypophysis cerebri and the ovaries are probably also applicable to the male sex. Already the experience of the aplasia of the testicles, the diminishing and insufficiency of their functions, which seems to be a constant symptom accompanying tumors and structural alterations of the hypophysic gland (acromegaly, dystrophia adiposo-genitalis etc.) tends to support our supposition of a corresponding hormonal influence of this gland upon the male sexual functions, also.

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[3]) Cf. Abstract of *Lichtenstern*'s work — »Die Ueberpflanzung der männlichen Keimdrüse«, Julius Springer, 1924 — in the Münch. med. Wochenschr. 1925.

Thus these questions are of a very complicated nature, and we are still far from a clear insight into the intricate hormonal relations regulating normal sexual life.

Not infrequently homosexual persons exhibit other symptoms of perversion, such as *masochism, sadism, fetichism and bestiality.* But these traits, in which we see further symptoms of degeneration, are by no means peculiar to homosexuality, they are just as often met with in individuals otherwise sexually normal.

By the term *masochism von Krafft-Ebing* designates »a peculiar perversion of the sex impulse in which the individual in all his sexually toned feelings and thoughts is possessed by a longing for being entirely and unreservedly subject to another person's will, a desire of being tyrannised, in every way humiliated, even violently treated, by this person. This idea is accompanied by sexual excitement.« The word masochism has been formed from the name of an Austrian poet and writer, *Lepold von Sacher-Masoch,* (born at Lemberg 1836, dead 1896) who, judging from certain of his novels, unmistakably suffered from this psycho-sexual anomaly.

Sadism is the opposite form of sexual psychopathy, characterised by the tendency to find sex excitement and pleasure in the infliction of pain; this term keeps alive the memory of the French marquis *de Sade,* who was born in 1740 and died insane in the Bicêtre hospital in Paris in 1814. The marquis, who was also a novelist and as such, among other things, has described »Les crimes d'amour« in four volumes, is described by Krafft-Ebing as »a monster and a case of habitual satyriasis with perversio sexualis«. This voluptuary only found satisfaction in sexual intercourse when he had beaten or stabbed his victims till the blood flowed. His greatest sensual enjoyment was to inflict wounds on the naked body of the prostitute and then bandage them himself.

In the two above-mentioned opposites of sexual perversion we recognise, as in most psychopathologic phenomena, a deflection and morbid intensification of normal traits. For all sexual passion manifests, and this the more intensely, the more it reaches its culmination, a tendency to submit to pain as well as to inflict it. »In der Wollust schlummern latent die Lust an der Zufügung und die Lust am Erleiden des Schmerzes«, writes *Wulffen,* and he adds: »Intoxicated by their sexual excitement, lovers become brutal in their caresses, they crush each other, hurt and bite each other. But in their voluptuous pleasure they endure it all as signs of affection. In man the sexual tension gives rise to a disagreeable sensation which grows into pain as the passionate impulse is intensified. It is the same in woman. The ejaculation, which to the man is the highest pitch to which his sensual passion can be carried,

is to her certainly not exempt from pain. Thus in all love pain and pleasure meet and are strangely intermingled.«

It would *a priori* seem remarkable if sexual pathology, with its unlimited fertility of invention, had not appropriated these highly seasoned ingredients of the desire to suffer and the desire to inflict pain and gone to the extremes of masochism and sadism. How often do we not find erotic literature tinged with this, with deviations in one direction or another! Indeed, we need not go to de Sade or Sacher-Masoch in order to find the voluptuousness of pain celebrated in belles lettres and song. Within normal limits masochistic tendencies are very common, especially in women. I open at random a book of poetry by the Dane, J. P. Jacobsen, who is rightly held in high esteem in Scandinavia. In a fragment written in his youth he depicts a nun, Faustina, who, in a passion of blasphemy and love, stands in her cell, where a scourge and a death's-head lie on the bare bed. From the »suffocating myrrh and heavy mist of hymns« she longs to get out into the evening, where the sun sinks like »a flaming red Moloch«, into whose arms the dark clouds sink with desire. »No«, she cries blasphemously, »there is no Christian faith in this«, and turning towards the crucifix she moans in baffled longing:

Why is Thy claim so mild, oh my Beloved,
And ever craving what is weak in me?
Why comest Thou not like Thy mighty Father
Once came to Mary? Lo, I wait for Thee!

Oh come in beauty, come in all Thy power,
In fiery love or else in lordly wrath!
I, faint with bliss, shall feel Thine arms embrace me
Or die beneath Thy feet where Thou goest forth.«

(She flings off her nun's garment and stands naked).

But Thou art silent. No one desires me.
Why is my body then so fair and white?
Oh that a bird of prey would tear asunder
These tender limbs, created for delight!« — — —

On the other hand, even a man's submission to the woman he loves may assume masochistic forms; and the henpecked husband may become like a dog in heat who not only endures everything at the feet of his mistress but, on the contrary, never gets enough of kicks and blows and knows no keener pleasure than that imparted by the whip or the birch. And as each of these perversions presupposes the other, there are also amazons who distribute their marks of favour with a cane and pant with pleasure in front of their bleeding victims.

Wulffen shows a picture of a woman of this kind, who kept a brothel in Berlin and was finally murdered, and in his great work »The Sexual Criminal«, there

are also photographs of the arsenals of instruments of torture, sticks, whips, straps, birch-rods, etc., which the police had confiscated in various large German towns, and which in the hands of the sadistic »masseuse« had added to the enticements of her studio.

In this connection we may recall the masochistic tendencies which sometimes developed among religious penitents (the flagellants). Religion and erotic feelings are so closely interwoven that we cannot wonder at religious piety serving as a cloak for sexual license whose real nature was not always clear to those concerned. Many a penitent and ascetic has, in his striving to kill the flesh and its instincts, slipped into the forms of pleasure which pain — especially in persons with a masochistic disposition — may call to life. The Norwegian author, *Kristian Schjelderup*, has, among others, recently attempted to show the correctness of Nietzsche's view of asceticism as »eine heilige Form der Ausschweifung«. From the history of religious life this author quotes a number of cases which plainly prove that fanatical self-torture has often evoked a feeling of bliss of whose crudely sexual nature no one can have a doubt.

Among the perversions discussed above, sadism is unquestionably from the forensic point of view the most important, since it may result in the vilest forms of criminality, such as assault and murder from motives of lust. We simply make passing mention of them here, referring the reader to text-books on the psychology of crime. Such murders are committed both on adults and children, and one of the most notorious criminals of this kind, (described with decadent pleasure by the French novelist *Huysmans*), is the maréchal *Gilles de Laval*, baron *de Retz (Rais)*, who was burnt at the stake in 1440. He had bestially violated great numbers of infants; and it was found out that he had killed some hundreds of children. For the sake of completeness we may also in this connection mention *necrophilism* as an example of sexual bestiality. *Michea, Lunier*, and others, wrote in the eighteen-forties of a sergeant, Bertrand, a kind of human hyena or worse, who slunk round church-yards, where he violated the newly buried female corpses or cut them to pieces, the latter process seeming to have yielded the greatest satisfaction to his sadistic tendencies.

A rather more innocent form of sexual perversion which, however, may sometimes lead the deranged to criminal actions, is *fetichism*. Even under normal circumstances it is not unusual that the contemplation of or the physical contact with certain erogenous zones, a beautiful neck, the hair of an armpit, a bared bosom, a naked foot, etc., will stir the sexual instinct. But, on the other hand, it is a rather strange and directly

pathological trait, when the sex impulse turns from the living body to the clothes, etc., that have been in contact with it. Writers on sexual pathology have described all kinds of fetichists to whom women's shoes, stockings and articles of underclothing represent a greater incitement to the sex impulse than the woman who has worn them. When such individuals, by fair or foul means, have become possessed of these relics they are, as a rule, not content with a platonic contemplation, but use them for masturbation. The desire for these things is often intensified by the fact that they can only be obtained by a criminal action, and thus fetichism often leads the pervert to thefts, assaults and violence. *Birnbaum* quotes as an example a young man who was driven to a violent attack on a woman because she was wearing a black velvet cloak. From his earliest youth velvet or plush had stirred him to sexual excitement and he was in the habit of buying such materials in order to masturbate in them.

Finally, before leaving the subject of sex perversions, we will briefly state our view of *onanism*, or *masturbation*. This very common practice of exciting the genital organ (glans penis or clitoris) by the aid of hands, feet or other objects and thus — with or without obvious effect (ejaculation) — obtaining sexual gratification, appears already in early childhood. Later on, at the age of puberty, it is extremely common, often owing to the seductive influence of companions of the same age or somewhat older. It is important that parents and educators should have their attention directed towards this easily accessible outlet for the awakening sex instinct but it is no less important that this abuse should be corrected by wholesome advice and not in unnecessarily intimidating words. Much harm has been done by painting this juvenile malpractice as a fatal vice, ruinous to body and soul, and quackery has here found fertile soil for the spreading of the most irresponsible literature. A dread of consequences, remorse and self-accusation have, in this way, indirectly done more harm than the physical loss of strength. The injury wrought by this latter factor must in most cases be deemed, if not imaginary, at any rate, very insignificant; and only those ignorant of the physiological facts can harbour any fear as to this side of the case. No, the dangers of onanism lie in quite a different sphere, and we can safely say that masturbation during the age of puberty which ceases when the disgusting nature of the practice is realised, is a harmless phenomenon which leaves no traces whatever behind, either in bodily health or the character. The wide-spread view that excessive onanism during the age of puberty often gives rise to

incurable mental disease is *absolutely erroneous*. Of course it cannot be denied that there exists a relation between onanism and mental disorders in certain cases (dementia praecox), but the connection is different to what is generally supposed, for the onanism due to morbid sexual excitement is a *symptom* of the already latent mental disease, and the incorrect conclusions of some good folk are a confusion of cause and effect.

In the same way, masturbation carried on during mature years is hardly thinkable apart from an abnormal disposition, but it does not fail to leave its mark. Besides shyness and uncertainty in the presence of others, a lack of self-regard and constant self-reproach, hypocondric and conflicting delusions are apt to develop under such circumstances and lead to serious mental disorder. The sense of guilt gives rise to a vulnerable self-consciousness in persons liable to onanism, and their morbid ego-centricity creates the suspicion that they have been found out and are, in consequence, treated with contempt.

Finally, psychopathologists rightly assert that onanism must be deemed conducive to the development of all kinds of sex perversions. This, not only because continued masturbation weakens the sense of sex reserve as well as the will to struggle against sex temptations, but also for the reason that it makes the impulse independent of its normal object and thus prepares the soil for the development of all kinds of combinations between the sexual desire and the most bizarre and unnatural things. (*Hoche, Birnbaum*). Thus it will happen in the case of psychopaths who, owing to strong infantile sexuality, early indulge in onanism, that masturbation cooperates with a vivid imagination and certain sympathies or antipathies rooted in an abnormal nature, to pave the way for various perversions.

It may be added that, apart from manual practices, the day-dreams of a person may overflow with unsatisfied and strongly stimulated sexual desires, giving rise to an imaginary sexual debauchery to such an extent as to justity the term *psychical onanism*. We will once more return to sexual life in Chapt. XVII.

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The correctness of *Wundt*'s theory of *will as an affective state* appears most plainly when volitional life is mortidly changed. This holds good especially in those cases where the normal balance between

impulse and reflexion, instinct and motivation has been lost. Here the affect again becomes predominant, the censorship is relaxed and attention scattered. One of the chief volitional phenomena of this kind is exhibited in *the compulsive and obsessive ideas* (Germ. Zwangsvorstellungen).

It is difficult in English, as well as in French, to find a term corresponding exactly to the German conception, *»Zwangsvorstellungen«*. This is more expressive than the words, *»obsessions and compulsions«*. Yet the use of these terms agrees, I think, with a practice current among English psychologists.

By *compulsions*, then, we mean what in German is called, *»Zwangshandlungen«*, or the inevitable sequence of an obsession having reached a certain strength. Disturbances of this kind, which are of great interest in the psychopathology of will, must not be confounded with the so-called *imperative ideas*, even if the suggestion contained in the terms used is suited to further this interpretation. Imperative ideas have nothing to do with obsessions. They are what the German psychiatrists call, *»Überwertige Idéen«*, and the nature of these symptoms has already been considered in chapt. V. Of course there is a marked difference between an obsession and an imperative idea, a difference which the German terms make clearer than does the English nomenclature. An obsession is always a thought which, like a parasite or a foreign body, intrudes itself into consciousness in the most unfamiliar way. In spite of the fullest insight into its often meaningless or absurd character and the earnest striving of the patient to get rid of the strange invader, the obsessive thought defies his will and, obstinately coming back, becomes a 'thorn in the flesh' which he tries in vain to expel. Of course the obsessive thought is in its nature a schizoid disturbance, a split off from the patient's personality and, as a foreigner, always heterogeneous and unfamiliar to his will. Not so with the imperative ideas. Here there is no rupture between the personal will and its object. The relation to consciousness is most familiar and homogeneous. In entire agreement with a person's interests and aspirations, it grows and swells and, because of an emotional exaggeration, at last becomes *too extensive and too familiar, i. e. imperative.* In relation to an obsessive idea the will seems rather atrophic or, in any case, pathologically weak, in the imperative idea the will is in a certain sense hypertrophic. In the former case a normal understanding and good critical sense are combined with volitional debility, in the latter clear discernment and a normal critical sense are both lacking and the inexhaustible but distorted will is wasted in more or less whimsical enterprises. (Cf. Chapt. V).

We have already (in Chapt. V) dealt with obsessive ideas and phobias from an emotional point of view, but in order to do full justice to these important symptoms, we return to them here.

In the older definition, given by *Westphal* in 1877, obsessive ideas, like delusions in paranoia, are rather onesidedly connected with, and interpreted as a *primary* disturbance of, the ideational life. In his well-known lecture »Über Zwangsvorstellungen«, Westphal characterises

them in the following manner. »By obsessive ideas I mean such as enter into an otherwise intellectually normal person's consciousness against or in spite of his will, without being conditioned by 'einen Gefühls- oder affektartigen Zustand'. They refuse to be repressed, they obstruct and traverse the normal course of ideas and are always regarded by the patient as abnormal, foreign to him and incompatible with his common sense. The content of these ideas may vary; often, indeed, most frequently, it is of an absurd nature and has no demonstrable connection with the actual train of thoughts; they are conceived by the patient himself as unintelligible, pouncing down upon him as it were, from the air!«

The obsessive idea is one of the many phenomena which are most easily understood when we take as our point of departure certain phenomena peculiar to the functions of normal mental life. The pathological nature of the symptom becomes intelligible when looked upon as the aggrandisement and displacement of normal features. Once again we remind the reader of the hesitation, the doubt and the significance of contrasting ideas for these phenomena, the scrupulous neatness, the fear of dust, infection and other nuisances, scrupulosity, etc. Well-balanced natures keep all this within reasonable limits, but in the affectively labile it easily develops into a rank growth; the distracting effect of fear weakens the faculty of apperception, and in the shape of obsessive ideas the involuntary thoughts obtrude themselves into consciousness where, if the affective strain becomes permanent, they soon give rise to compulsive actions. It is this invasion into the volitional life which at a certain stage of development makes of a person dominated by obsessions a socially unfree individual to such a degree that he must be regarded as mentally disordered.

To make a clear distinction. Obsessive thoughts must in all cases be recognised as pathological when they have passed beyond the physiological limits indicated above and appear as anxiety-toned ideas. But so long as they do not in any higher degree intrude upon the volitional life and endanger responsibility, they need not be regarded as symptoms of mental disease. In this respect they are like several other abnormal phenomena, for instance hallucinations, which do not alone constitute mental disease.

Among other signs of a psychopathical derangement obsessive ideas may thus be met with as episodic phenomena: brooding, insanity of doubt, phobias, onomatomania (i. e. the compulsion to find a forgotten word, or to use a certain word, e. g. to avert or conjure the Nemesis

attendant on a boastful remark); these different forms may succeed each other or exist at the same time. Numerous observations of this kind have been published by the earlier French psychiatrists, *Magnan* and his school, and in all of them the chief interest attaches to the compulsion phenomenon as a psychical stigma of a labile mental balance.

Sometimes the obsessive ideas appear in a more typical, complicated and progressive manner. When *Legrand du Saulle* described »folie du doute avec délire du toucher« he had in view a group of patients whose obsessions and compulsive actions were developed systematically, as it were, on a given pathological principle. This principle is to be sought in the patient's individuality and character. *Westphal*'s assertion that the content of the imperative ideas »steht in keinem nachweisbaren Zusammenhange mit dem früheren Vorstellungsinhalte« cannot be applied to these patients. It is, of course, difficult to decide when this predisposition has passed beyond the bounds of the normal, but the disorder may often be traced to a strangely hesitating, over-scrupulous and timorous disposition, already apparent in childhood. It is the impulsive, impressionable and anxious element (affective lability) in the patient's character to which the main interest attaches here (*Morel's délire émotif*). This constant uneasiness and anxiety, easily growing into fear, is joined to conceptions of different kinds which always, often with the fertile invention of volatile thinking, resolve themselves into certain distinct apprehensions and constantly recurring causes for fear, which gradually transform the patient's mode of living and force him into a system of curious habits that grow more and more peculiar and eccentric. In the early stages the patient feels impelled to exercise the greatest watchfulness against the many factors that may threaten his peace of mind. His daily life is troubled by a thousand considerations, in his intercourse with other people he is full of excuses and prevarications, infinitely ceremonious and circumstantial, but in spite of all caution and all evasions he is in a constant state of embarrassment, uncertainty, hesitation and anxiety. As the disease progresses, he becomes increasingly subject to sudden panic, and his watchfulness increases at the same rate. All these patients have one trait in common, a grotesque caution. The careful man always reckons with possibilities, but these individuals reckon with *possibilities in absurdum. Charcot* and *Magnan* describe a patient who had gone so far »as not to dare touch her purse which had been touched by her maid, who had touched a sofa, where a lady bitten by a dog had been sitting«.

Precaution can work in two directions and we distinguish of old between *altruists*, who are marked by a morbid considerateness and fear of hurting others, and *egoists* (misanthropes and hypochondriacs), whose fear is centred round their own selves. In both cases the clinical details are: *folie du doute* and various *phobias*, above all mysophobia, bacillophobia and the like (*cf.* p. 119), as well as the immediate result of these, such as the dread of touch, *délire du toucher*. I describe, in illustration, an example of this typical form of *obsessive mental disease*.

Case XVIII. Mrs. L., aged 62. In the Mental Hospital at Lund, during 1885—88 and later, with a short intermission, during 1890—1906 (?). Her grandmother had been mentally disordered. The patient's conversation is lucid and clearly logical, she seems highly educated and well read. Her memory is extraordinary and she recites long passages from works that she has not read for a long time. She has a good understanding of her disease and quite sees that her behaviour is absurd but says it is impossible for her to act differently. She shows the most pronounced fear of touch and does not allow anybody to come in direct contact with her person. When her room is turned out, or anything is done close to her for the sake of cleanliness or the care of her own person, everything must proceed according to an extremely elaborate scheme. She generally lies in bed. Her quilt and sheets are always arranged in the same way. The quilt reaches her knees; her nightdress is folded in a particular way, always the same. One arm lies bent across the chest and she has had it in this position for years. She allows nobody to touch it, as she would think that highly contagious, because the last person who touched her hand was her dead child. She dislikes the presence of other people, whether friends or physicians, and as soon as anybody but her nurse has been in the room, she wants the floor to be washed, the door-knob to be polished, etc.

After leaving Lund in 1888, she was for a time under private care. During that time, when she did not have a nurse who knew her wishes, she absolutely refused to have her room tidied and cleaned. A relation who visited her found dust an inch thick on her bed; and she set up a heart-rending wail as if in severe physical pain, when anybody tried to take steps in the interest of cleanliness. She was again admitted to the hospital at Lund in 1890. The following notes made on Dec. 31st, 1893 give an idea of her condition during the intervening years. The patient always shows the same morbid traits, which mark the smallest details of her daily life. She is the victim of a fear of touch, to which she now surrenders without the slightest resistance. And yet she has a perfect understanding of her deplorable condition, her intelligence and other mental faculties being entirely sound. In accordance with the morbid compulsion her daily habits are narrowed down to a scheme which is extremely harassing to herself and to those around her, the most punctual and rigorous attendance to its many trying points being an indispensable condition of her peace. The slightest mistake of the nurse or one of the few persons she allows to come near her produces paroxysms of fear and piercing screams. The fixed idea which appears to be the leading motive in this disordered mode of living, is her fear of everything that may come from outside and »may be unclean and contagious« (mysophobia). The patient has

a bath every other week, and the day of that bath is one of heavy work for the nurse. The preparations begin at 7 o'clock in the morning and occupy all the time till 5 in the afternoon, when the bath takes place. On those days no unauthorised person, that is, no one but the patient herself and her nurse, may pass on the stairs which lead to the bath-room. A number of detailed precepts have to be observed. Six different sponge and soap dishes are in use; *one* of them exclusively designed for a certain spot on the forehead where, many years ago, the patient was touched by a physician, another for a similar place on the cheek, a third for the right hand, and so on. On one occasion the nurse had made a mistake about the dishes and when the patient's ever watchful eye disovered this, she had a fit of panic with loud screams which rang through the whole building. It now became necessary to destroy the pieces of soap as well as the dishes, and it was not enough to throw them away, for then other people might touch them, and the mere thought of this filled her with dread. After the bath the nurse had to be careful that the patient's underclothing did not come into contact with the walls or the floor. Her underwear is placed beforehand in a handkerchief, the corners of which the nurse now seperates with two pins. All along she has to avoid touching them with her hands and when the chemise is taken out, this is done by two fingers nimbly grasping a button, with the most anxious care not to come near the material. The bathing-shoes stand all day on a specially provided paper cover so as not to touch the floor before being put on. The paper is afterwards carried out by means of two sticks. On a fixed day in the week when she does not take a bath, she lets the nurse pour water over her; she does not take off her chemise. Wet through, in her drenched chemise, she has the window opened, even in winter, stands by it for a while and then walks over to the fire to get dry. She cannot endure direct contact with certain objects. The duster is fastened to a stick and objects which have to be fetched out from under the bed are moved with soaped sticks. The nurse has to wrap a handkerchief round her hands before touching the door-knob or bringing in a basin. On one occasion a fork had been dropped on the floor and the nurse was begged to leave it there over night, the patient being sure she would not be able to sleep otherwise for fear the nurse's hand should have touched the floor in picking it up. The painful uncertainty in this respect would have been sufficient to keep her awake. Besides the nurse, only the head physician and the matron were allowed to enter her room. They were not allowed to sit down, but had to stand on a specially assigned spot of the floor and be careful not to touch anything whatever. An infringement of this rule would have brought on a nervous fit and would have been the cause of endless scrubbing. During my last years at the hospital I was Mrs. L.'s physician and enjoyed the advantage of her special confidence but, on entering and leaving her room, I had to be careful not to brush against the door-post. The visits to her were indeed rather tiresome as one had to stand motionless for a long while, sometimes for hours, but still they were not without a certain interest, as in spite of all Mrs. L. was often really entertaining, a well-educated and clever woman who had seen much of life before disease had completely isolated her and wrecked her socially.

We have stated above that fertility of invention and an abundance of associations, almost equal to the volatile thinking of mania,

further the development of obsession. This, together with the significance of the depressive emotion for the progress of the disorder, and its decidedly periodical nature in certain cases, would seem to some extent to support the theory that these disorders are of a mixed manic-depressive nature. *Wilhelm Stöcker* has tried to explain the evolution of obsessive ideas in this way, and asserts that these phenomena chiefly develop out of conditions »of a depressive character mixed with manic components«. Apart from the form of obsessive thoughts which are rooted in the melancholic patient's indecision and hesitation, the present writer has hardly met with these symptoms in manic-depressive insanity except in cases where there has been advanced degeneration. One of my patients, Miss X, whose compulsive extravagances are related in Case XIX, belonged to a family in which, through generations, the manic-depressive form of insanity was inherent. Here, as often in persons with a strong hereditary predisposition, the more typical evolution of a manic-depressive psychosis was obscured. Besides the early appearance in the history of her disease of obsessive ideas — here really in the form of stigmata degenerationis *(Magnan)* — the lucid intervals between the attacks of deep melancholy were replaced by a mental state of a mixed nature, corresponding to a *depressive mania* as described by German authors (*Weygandt and Kraepelin*). This state during, at least, the last twenty years of her life represented Miss X's habitual condition. Volatile thinking (»Idéenflucht«) and agitation were combined with depressive anxiety and, in accordance with Stöcker, I think that here the requisite psychological elements for giving rise to obsessions and compulsions were at hand. This interpretation is perhaps decisively supported by our observation that her obsessive ideas always disappeared as soon as the habitual mixed state was interrupted by an attack of true and genuine melancholy.

Yet obsessive ideas are not often met with in the manic-depressive form of insanity. On the other hand, our experience shows that these phenomena are of much commoner occurrence in the early history of the katatonic, and we have observed several cases of katatonia which in the earlier stages appeared in the shape of a compulsion neurosis (Cf. Case XXI). This agrees with our experience of the vague line of demarcation between the psychoneurotic disorders (psychasthenia and hysteria) and dementia praecox. In its essence the obsession is an affectively toned complex-phenomenon, and as such schizoid or schizophrenic in nature. The *Freudian views* of phobias and the psychoanalytic interpretation of obsession have been dealt with in other connections

in the present work. To avoid repetition I refer the reader to Chapters XIV and XVII, especially the latter.

In addition to the perversions of instincts dealt with above, certain forms remain to be mentioned which from the earliest times have been of interest to forensic medicine. I refer to the morbid desire to steal, *kleptomania,* to commit arson, *pyromania,* to *murder* and *suicide,* and finally to *vagabondism, dromomania* or *poriomania.*

Nowadays all these abnormalities are not generally regarded as delimited concepts of disease. The terms originated at a period when a great number of different mental diseases were conceived as *monomanias* or so-called *partial insanities.* By these were meant delimited forms of mental disorders, revealing themself in relatively detached symptoms, and it was supposed that all mental functions lying outside the domain of these symptoms were untouched by the disease. It is now generally agreed that such a conception was largely erroneous, and the conception of *partial moral accountability* — which was the forensic consequence of this doctrine of monomania — is considered equally erroneous. After this revision of the psychiatric view the above-mentioned disturbances of the instincts cannot be regarded as »monomanias«, but must now be interpreted as symptoms of some form or other of mental disease, psychopathy or morbid inferiority, even though the old names are retained. It cannot, however, be denied that the old conception of monomania contained a grain of truth. A splitting of the personality *(schizophrenia)* which may occur in psychopaths as well as in certain mentally diseased persons (hysterics, katatonics), makes it possible for the disorder to reveal itself in involuntary actions and compulsions which inevitably impress the observer as a manifestation of automatism, independent of the patient's character and volition in other respects.

Kleptomania. The morbid desire to steal does not often appear as a pathological *itch of the fingers* of so involuntary a nature that it must be regarded mainly as a motor impulse. More frequently the kleptomaniac is perfectly conscious of the unlawful action. The theft is then preceded by a strong feeling of anguish which grows in the same measure as the desire illicitly to possess a certain thing meets with opposition. If, under those circumstances, the patient gives way and puts the tempting object in his pocket, this is done far less from any real desire to possess the thing than in order to be freed from the unrest which leaves him no peace as long as the temptation is repressed. In these cases the kleptomania is to be conceived as the further complication of an obsessive idea, and thus it is *anguish* and not a desire to possess that gives irrepressible strength to the instinct to steal, in the

same way as when an obsession is developed into a real compulsory action.

There are, for instance, well-to-do persons who in shops and millinery establishments seize and hide on their persons various small articles which are generally of no value to them. Sometimes these pathological propensities have made them so well known that the thefts are either winked at or else the owners tactfully help them out of a situation which might otherwise lead to unpleasant consequences. Sometimes the patient tries to prevent awkward incidents by being accompanied by a trusted servant who watches his or her (more often her) doings, and intervenes if need be. Other persons yield to the temptation of putting various things, such as silver spoons, in their pockets when dining out.

When the kleptomanic obsession has gone on for a long time, it may, as it grows into a habit, assume the above-mentioned character of automatism and motor impulsion.

As a manifestation of obsessive ideas we meet with kleptomania in degenerate families where compulsive symptoms in some form or other often are innate. The obsessive disposition seems to be one of the mental anomalies that are strongly hereditary. Thus a certain Mrs. X suffered all her life from a morbid dread of dirt, dust and bacilli (mysophobia, bacillophobia), while a daughter of hers showed kleptomanic tendencies. This lady, notorious for her habit of pilfering silver spoons at dinner-parties had a sister, Miss Y, who had adapted her standard of living to suit her phobias and eccentric ideas, and though she was very well off, everything in her home bore the stamp of neglect, dirt and poverty.

Of an entirely different kind is the pathological dishonesty in those rare cases where thefts or similar criminal doings are inspired by the peculiar kind of stimulation that lies in the knowledge of wrong-doing or by the excitement involved in the risk of discovery during the act. The theft is then an adventure that brings diversion or furnishes an outlet for a morbid feeling of discomfort or anxiety. *Birnbaum* and others mention such cases.

I cite the following examples.

Cases XIX and XX. One of my patients, belonging to a degenerate family and suffering since her youth from periodic manic depression, was in that strange state of a mixed nature which *Kraepelin* terms *depressive or anxiety-mania.* Then she was very active, talkative and fussy, but at the same time she felt like a harassed, unholy spirit who was driven from one thing to another in constant unrest. And in everything she undertook, in all her peculiar, partly compulsive devices varied by her ingenious fancy, she sought diversion for her troubled mind. She was especially allured by things *that were forbidden.* By nature upright and honest to the core, she found in the compunction following upon an act of which she disapproved a kind of relief and deliverance from her anxious depression. Thus, for instance, she obtained a little relaxation for herself by stealing various small things, such as scraps of paper, stumps of pencils and bits of sealing wax, etc., which she furtively put into her

pocket on her visits to physicians and others. Of course this was mere innocent pilfering, but with less moral restraint, the same psychological motives might lead to more serious transgressions.

Thus one of my patients, B., a Doctor of Philosophy, was arrested many years ago on the charge of having forged railway tickets. Mental disorder being surmised, he was sent for observation to the hospital in Lund. B. had left behind him in the railway station a cigar-box which, on investigation, was found to be full of unused tickets for short distances on which the date-stamp had been altered and other manipulations practised. The examination showed that the motive was not a desire of profit, but had to be sought in other circumstances. B. had always been known as a crank, and many stories of his eccentric habits circulated among the students. Some autobiographical notes were procured from his home and these showed plainly that B. had been troubled with *abnormal ideas in the form of obsessive questions* (Germ. »Krankhafte Fragesucht«) ever since his early youth. This morbid compulsion was sometimes increased to the point of becoming an unconquerable brooding which caused him great suffering. B. was a philosopher, and his obsessive ideas particularly mirrored this side of his development. He was especially prone to ponder on the connection between his doubts and the faculty of memory. He writes, for instance: »The scepticism of which Wikner speaks in his anthropology cannot be of the same nature as mine, for mine is insanity pure and simple — — —. Properly memory is nothing but the faculty of saying exactly what I have experienced. Now, doubt and agitation ought to disappear, and yet I was present at W.'s inauguration and was troubled by the question whether I could get out without anybody noticing it, and whether I would hear better on the other side etc., — and this went on till I was forced to go out — —. One day when I met Strindberg on the rampart, I had doubts as to whether he would go home via Nygatan, Grönegatan or Södergatan, so that I had to follow after him to see down which street he went. Memory is never any good in fighting such doubts, even if I should succeed in releasing it ever so completely from doubt. The cause of my fear, that hinders me in my work, is of course always doubt, that is, uncertainty with regard to what is or real facts. — — If I could only free myself from my doubt of memory, I really think that I should get more peace, or at least get rid of the worst agitation.« Questions that obsess him are such as these: »Which is the longest way to the University, round the Bishop's Palace or along the Tomegapsgatan? Does the University barometer still forecast earthquakes? Is »Bore« still at his methaphysics? Has Rosenius any pear-trees in his garden? Was it an apple or a pear he was eating just now? Was that H. who went out? Was it to G. or C. or J., that the postman went. Did M. find G. at home? Which lecture had A. been to? Am I sane or mad?«

To this brooding and compulsive questioning were soon added a hypochondric state of mind with hyperaesthesia and pain in different parts of the body (neuralgias?) which kept him awake at night and drew from him loud plaintive cries. — In the course of the examination it became clear that B. who travelled much, had committed the forgery of the tickets and attempted to hood-wink the railway staff, mainly in order to procure an outlet for his inner unrest and the painful obsessive ideas in the excitement of the dangerous experiment. It is also possible that B.'s bizarre devices and the questions he asked himself in connection therewith can be regarded simply as the outcome of his morbid brooding and questioning. The Board

of Directors of the Medical Council, in conformity with my report, declared him to have committed the misdemeanour while in a state of temporary insanity.

Not long after this B. settled in Stockholm, where he caused a sensation by raising a number of ghosts in a block of offices. B. was, undoubtedly, a psychopath of the hysterical type.

Pyromania, etc. In cases of arson, we almost always find imbeciles or idiots (sometimes of an epileptic order) at work; morally undeveloped, and uncontrolled by inhibitory ideas, they yield to the naïve desire of seeing fire. This pathological desire often appears in persons of inferior mentality during the age of puberty and it is not seldom found in connection with other anomalies of the instincts. In a case observed and described by *Elander* at the Stockholm Mental Hospital, the outburst of pyromania followed upon masturbatory excesses.

What was said above about the psychological conditions present in kleptomania also holds good of the pathological conditions in pyromania, and the same conditions are, to a certain degree, found even in *homicidal* and *suicidal mania.* In the melancholic we sometimes meet with a certain state of indecision wherein, under the influence of obsessive ideas in the form of contrasting suggestions, the temptation to commit some crime will arise. In a shop or some other place where the patient sees objects lying about, he is tormented by the fear of stealing them against his will; if he sees a match, it gives rise to the idea of kindling a fire; and if his eyes fall on a pair of scissors, a knife, or some other sharp instrument, he immediately experiences the temptation to raise it against those standing near by or else against himself. As a rule these imperative suggestions do not lead to criminal action in melancholics; but as the same contrasting ideas occur in anxiety neuroses and in katatonia, and as it is not always easy to draw diagnostic lines of demarcation between these three states, it is necessary to be on one's guard. One of my patients (the diagnosis in this case was supposed to be melancholia) was driven to arson, with no other motive than these incessantly recurring contrasting ideas. In another case, with the diagnosis of anxiety neurosis, I had to yield to the urgent requests of the patient to put her into a strait-waistcoat during the fits of anxiety. Without this mechanical hindrance she did not feel sure of herself, when in the grip of the temptation to fly at some other patient, or at one of the nurses, to strangle and kill them.

In the cases of mental disease within my experience, where consciousness was in other respects untroubled and the thought of epilepsy thus precluded, but in which a sudden inspiration to use an accessible

weapon really led to murder, the further progress always showed that the character of the disorder was dementia praecox (katatonia).

Case XXI. Many years ago a student of theology consulted me for obsessions. The disorder developed gradually in such a way and in such absurd forms, that finally the diagnosis of katatonia was obvious. But apart from his bizarre impulsions, which often led him to commit absurd actions, his mind was clear and orderly and he was able to finish his studies and afterwards carry on his clerical work, though with some interruptions. When he was off duty for the benefit of his health, he stayed with his parents in the country. Here he was one day in the wood-shed with his old father who was also a clergyman when suddenly, for no ostensible reason, he lifted his axe against his father and dealt him a blow which killed him instantly. In the further progress the diagnosis of katatonia was inevitable.

In all cases of this kind, a first phase of strong fear is generally followed by a blunting of the emotions, and this is as a rule the immediate cause of the fatal invincibility of the impulses. The absence of feeling-tone here impedes the action of the repressing ideas which, in a normal person with sound reflection and a well-balanced emotional life, would assert themselves with a strong sense of horror and disgust.

Case XXII. A woman in the North of Sweden, after an initial stage of violent fear, committed a fourfold murder on her children by suddenly cutting their throats. After the crime her mind was clear, but she was perfectly indifferent. She soon sank into deep dementia. Diagnosis: dementia praecox (katatonia).

Here I will also briefly mention the cases in which a suicidal tendency suddenly, as it were, »derails« a person *(Birnbaum)*, and under conditions which the person concerned is later unable to explain, leads to murder or attempted murder.

Case XXIII. A man, aged 35, was admitted to the Stockholm Mental Hospital for observation. He had been arrested for attempted murder and murder. Driven by depression and fear he had long gone about armed with a revolver intending to kill himself. In this melancholy mood, he one day met a girl he knew and, after a short conversation, for no obvious reason — there was neither anger nor jealousy — he fired a shot at her, wounding her severely in the chest. After that he roved about in a state of confusion and, during his wanderings, came to a woman with whom he had formerly co-habited off and on. With his revolver and a joiner's gimlet which he carried hidden about his person, he wounded her and then went into another room where he killed two small children, one of whom was his own by this woman. It is noteworthy that the father of this man who, like the son, suffered at times from melancholia and wanted to take his own life, suddenly one

night many years earlier without the slightest reason fell upon two persons in the house where he lodged for a short time, killing one and severely wounding the other. He was declared insane and was later admitted to the Vadstena Asylum, where he killed himself by hanging. His father again had also committed suicide.

To this sad family history the remark may be added that in such cases of »hereditary suicide« a strong influence is generally attributed to suggestion. Still, in the cases here described, it hardly seems possible that suggestion alone could have brought on the fatal effect. More probably it must be assumed that the impulsively schizophrenic disposition can also be inherited, just as the predisposition to obsessive ideas and phobias, to epilepsy, etc., is undoubtedly transmitted by heredity.

Whereas some of the cases previously described as homicidal mania are now, in accordance with a revision of the old theory of monomania, ascribed to dementia praecox, other forms come under the head of epilepsy or moral inferiority. Among murderers of the morally inferior class, poisoners have from the earliest times been closely studied as a type of great interest to the forensic psychiatrist.

In Bremen, on Sept. 17th, 1830, a woman named Margareta Gesche *Gottfried,* née Timm, was executed for having put to death by arsenic no less than 14 persons, among whom were her two husbands, her father and mother, her brother and her children; her history has been preserved from oblivion in the »Neue Pitaval« and her advocate in court writes about her in the following words: »She is a caricature of a human being. Compared to many hot-blooded sisters in crime she seems like a spectre. She lacks every strong feeling, every passion. She is altogether a negation. Her mean egoism and vanity have withered every divine or human trait within her, and she stands before us like a phantom hung with tawdry finery. But the demoniac spirit within her is certainly not inherited. She has never felt any passion, never any hatred or vindictiveness. *She has never loved anybody.* She is timid by nature, *her inheritance is fear;* the rustle of a leaf will frighten her. She is soft and when she hears about people's sufferings, she easily cries. She visits the sick to comfort and nurse them; nevertheless she feels neither the slightest emotion nor a trace of compassion at the sufferings of her victims. A trembling coward under the slightest pain, she will quite coolly enhance the agony of her victims by increased doses of poison. In olden times this woman would have been regarded as a soulless vampire. While committing murder after murder, she found no difficulty in presenting to the world a virtuous demeanour, allowing herself to be loved and honoured for her Christian conduct and her charitable work among the poor and suffering.«

A strange trait, probably characteristic of many poisoners, is the attraction which the poison has for them. Frau Gottfried could never do without her »rat's-bane«. Wherever she went she took it with her. Poisons seem to have the same strangely alluring effect on certain psychopaths as heights and abysses have on others, and when there is moral anaesthesia, it hardly needs more than the strongly suggestive sight of the poison to provoke that itch which becomes a terrible habit, a desire. a diversion from tedium and morbid fear.

Such natures, suffering from the hysterical indolence that seems to have marked Frau Gottfried, are highly suggestible. Many years ago a poisoner of exactly this passive type was sent for observation to the Stockholm Mental Hospital. This man, X, was a farmer's son in good circumstances and he had just married a very good-looking young woman. Everything went well to begin with, but before long X's feelings grew cooler. A servant-girl of his parents', for whom he had a certain liking before his marriage, seems to have intruded between the newly married couple, and soon X began to prefer the servant to his young wife. But a more decisive factor in X's antipathy to his wife was the circumstance that his mother, to whom he was blindly devoted, openly showed aversion to her daughter-in-law, whereas she seemed to favour the servant. X had discovered arsenic among his mother's belongings and, in addition, there was in a chest-of-drawers an old bottle labelled »rapidly killing poison«, belonging to X's brother who had been a chemist's assistant. These two factors, the mother's antipathy to his wife and the easily accessible poison, exercised their suggestive influence. When the wife fell ill with influenza, X mixed an egg-nog for her, this was repeated three times before at last the wife died. In the egg-nog he had mixed not only arsenic, but also part of the contents of his brother's bottle, which was cyanide. While under observation in the hospital, X fell a victim to a hysterical (psychogenetic) insanity with hallucinations and sharp fits of anguish. He gradually recovered and during his continued stay in the hospital he made himself liked by everybody, especially the female attendants, on account of his quiet, amenable ways and gentle manners. After he had been declared to be of unsound mind, he was sentenced to ten years' hard labour and before his term was up, received the King's pardon.

Most poisoners belong to a common type, being without exception inferior psychopaths; the women, and even some of the men, are of a markedly hysterical character, sometimes of an active, sometimes of a more passive turn of mind, and in the latter case they are extremely easily influenced by external circumstances. It is mainly with regard to these latter that the question of moral responsibility can be raised.

The hysterical criminal is only a variant of the multiform type of the psychopathic personality, a type which dominates in the world of extremes, whether they be evil or good.

The many different elements, inclinations, tendencies, and interests that go to make up a human personality are each of them a psychic complex, a kind of State within the State, with more or less feeling-tone, and with an inherent disposition to become converted into action. Under normal circumstances they are subordinate to an ethical or at any rate a judicious and practical guidance. In the psychopath, this mass of motley ingredients lacks all uniform solidity, it ferments and is whirled around in unstable restlessness. The personality is no longer a State with a uniform Government, but an anarchy in which the power is usurped now by one, now by another complex *(Birnbaum)*,[1]) which, to use *Ziehen*'s expression, »monopolises all feeling-tone for its own purposes«.... All other ideas are levelled down for the benefit of one only. Ethical and moral values go to the wall defeated by whims and fancies, and in complete indifference or forgetfulness of all altruistic motives such persons' actions are determined on the spur of the moment, often by caprice

[1]) Über psychopatische Persönlichkeiten«. 1909.

or a sudden desire dictated, sometimes by vanity, sometimes by the love of pleasure or gain, and often merely by boredom. This latter factor is just as strong an incitement to crime in the morally inferior as any more positive impulse. The feeling of boredom is aggravated to a pitch of anxiety, and for Gesche Gottfried, of whom it was said that »fear is her inheritance«, the poison she carried about with her became a diversion and a relaxation. Many a chronic depression (or rather dysphoria) finds a vent in a kind of restless fidgeting, an incessant picking, pinching movement, scratching the hair or biting the nails, and this fidgeting may sometimes assume more serious forms. We have earlier called attention to such cases and would especially recall the case of Dr. X, described on p. 323. In the poisoner this fidgeting habit is a far more serious matter.

A murderess of the same type as Frau Gottfried was the Geheimräthin Ursinus, imprisoned in Berlin in 1803, on whom the famous Berlin physician *Heim* wrote an interesting report. To her death she disclaimed all complicity in two of the alleged murders, but confessed that she had given her footman arsenic. She herself wrote as follows: »In vain judges, psychologists and philosophers will endeavour to trace any deliberate purposes, prepared plans, calculating motives or consistent intentions. All suppositions, hypotheses and guesses will crumble to nothing, for all human perspicacity will be at a loss to discover any connection in a thing where there is none, and no object can be traced in an action which is entirely without an object.« She further talks about »her ruined health, her exalted state of mind, her irritable nervous system and her loathing of life«. Whereas it might be said about Gesche Gottfried that she had never loved anybody, *Heim* declares pretty plainly that »it is true that Frau Ursinus affected sensuality, but he was quite sure that she had never experienced any feelings of that kind.« This allusion to Frau Ursinus' sexual frigidity is remarkable, as the same indication is found in the description of another female poisoner, Rachel Dupont, veuve Galtié, on whom the French physicians Anglade, Pitres, and Régis published a report in 1904. Finally, we may mention the circumstance that Gesche Gottfried, judging from the available illustrations, suffered from a large struma.

In Sweden a certain murder trial made a great sensation in the 'sixties. The accused, a clergyman from a forest parish in Värmland, had first committed two cases of murder from motives of greed and subsequently he had attempted to kill a number of old paupers receiving parochial relief by mixing arsenic in the Communion wine. Several of them died. It was probably the success and advantage of the first two murders that suggested the idea of benefiting the parish by removing some decrepit old persons who were only useless burdens. This idea of benefiting the parish by the aid of arsenic, in itself shows L.'s moral callousness. It was his ambition to contribute to the prosperity of the parish, and the advantage in this case, rather abstract as far as he himself was concerned, weighed more with him than any scruple at making away with his neighbours wholesale. What is monstrous in this is the lack of respect for the significance of ethical values, considering L.'s profanation not only of his clerical office in general, but more especially of the act in which the naïve believer regards him as the mediator of the holy mysteries. It is understandable that L.'s pious biographer should look upon him as a devil incarnate, »a bat and a vampire«. L. confessed to three of the murders, but was probably guilty of something like 14 others. He took justice into his own hands and hanged himself in the prison, in 1865. The likeness between L. and the other poisoners here

described is striking in several respects. His personality shows the same motley compound of different qualities and the same moral hollowness beneath the outward ornamentation. In a certain way he was liked by his parishioners; in speaking, he could be seized by a fleeting mood; a pastoral letter published by him is animated by an undeniable zeal for sobriety and good order.

Those who are fond of symbols may find in arsenic, the most common of all poisons used for murder, an analogy between the qualities of this poison and the personality of the murderer; the white seemingly innocent powder on the one hand, and on the other, the superficially attractive criminal, gifted with certain prepossessing qualities and therefore all the more dangerous, hiding below the innocent surface a monstrous unscrupulousness and lack of moral responsibility.

Pathological vagabondism (dromomania or poriomania), long known to neurologists and psychiatrists, is only a symptom accompanying various diseases and morbid conditions. Its study coincides to a certain degree with that of pathological amnesia and double personality (*Cf.* Chapt. VI).

Charcot and his school have published comprehensive accounts of the presence of this phenomenon in hysteria, and instead of the rather vague term somnambulism, employed the name *vigilambulism* to indicate the patient's mobility and power of action. Among German psychiatrists, *von Krafft-Ebing* has dealt exhaustively with the importance of amnesias to forensic psychiatry and has shown that they may occur in epilepsy and hysteria as well as in connection with abnormal states of intoxication. Of late years, *Heilbronner* has asserted that vagabondism is less frequent in epileptics than in persons who show hysterical tendencies, whereas *Schultze* has tried to prove that the symptom is not rare even in unquestionable epileptics. When the abnormal state suddenly sets in without fits, and equally suddenly ceases, after hours or days, with amnesia for everything that the patient has done in the meantime, the symptoms are of so ambiguous a nature that, as a rule, we have to form our conception of the character of the case from the anamnestic accounts of the condition in the interval.

The forensic interest of vagabondism mainly attaches to desertion from the army, undertaken in an abnormal mental condition, or other misconduct during this state, generally thefts.

In the neurological and psychiatrical literature from the Great War, pathological amnesias figure very frequently. They generally occur as symptoms of traumatic hysteria in connection with shell explosions.

Pathological vagabondism is far from being always combined with subsequent amnesia, and very often it also occurs without any clouding

of consciousness. In this manner it generally shows itself in children. Vagabondism and the longing to abscond from home or school is undoubtedly not so rare an occurrence in nervous and defective children as we might be led to suppose from the relatively scanty literature on this subject. The immediate cause has often been regarded as a morbid discontent (dysphoric reaction) with a sudden impulse, called forth by circumstances at home or at school .At times a childish desire for adventure and a lively imagination may have been the motive power. In such cases poromania often appears as a periodical defect. It generally occurs in morally and intellectually defective children, and must under these circumstances be regarded as a serious sign of deterioration. In truants' homes and institutions for morally defective children, small vagabonds with an instinctive desire to hide themselves and to disappear periodically are by no means rare. In certain cases of epilepsy, where the vagabond instinct has appeared later in dreamlike states, *Raecke* thinks that a mechanism of habit developed during childhood may be supposed to play a part and subsequently determine the patient's impulsive conduct.

Finally it may be mentioned that the anxiety of the melancholic sometimes expresses itself in a restless tendency to wander about and vagabondise without intermission. He feels, as one of my patients said, »like the wandering Jew, doomed to eternal unrest«.

LITERATURE.

Kræpelin, E.: Psychiatrie. 8. Aufl. *von Krafft-Ebing, R.:* Psychopathia sexualis. 1889. *Wulffen, E.:* Der Sexualverbrecher. 1919. *Hoche, A.:* Handbuch der gerichtlichen Psychiatrie. 1901. *Birnbaum, K.:* Die psychopathischen Verbrecher. 1914. *Gadelius, Bror:* Till kastrationens historia. Hygiea 1914. *Moll, Albert:* Die conträre Sexualempfindung. 1891. *Breuer, I.* und *Freud, Sigm.:* Studien über Hysterie. 1895. *Freud, Sigm.:* Die Traumdeutung. 1900. *Bleuler, E.* und *Freud, Sigm.:* Jahrbuch für psychoanalytische und psychopathologische Forschungen. B. I—V. *Steinach, E.:* Feminierung von Männchen und Maskulierung von Weibchen. Zentr. Bl. f. Physiol. B. 27. 1913. *The same author:* Pubertätsdrüsen und Zwitterbildung. Arch. f. Entw Mech. B. 42. 1916. *The same author:* Verjüngung. (Swed. transl.) 1920. *Hirsch, Max:* Handbuch der inneren Sekretion. B. I. 1927. *Kauders, Otto:* Keimdrüse, Sexualität und Zentralnervensystem 1928. *Westman, Axel:* De kvinnliga sexualhormonen. Hygiea. 1931. *The same author:* Den främre hypofyslobens ställning inom den kvinnliga sexualbiologien. Nordisk med. tidskr. 1931. *Westphal, C.:* Gesamm. Abhandl. B. I. *Legrand du Saulle:* La folie du donte (avec détire du toucher). 1875.

Gadelius, Bror: Om tvångstankar. 1896. *Stöcker, Wilh.* Über Genese und klinische Stellung der Zwangsvorstellungen. Zeitschr. f. d. ges. Neurol. und Psych. B. 23. *Charpentier, Réné:* Les empoisonneses. Paris 1906. *Voget, F. L.:* Lebensgeschichte der Giftmörderin Gesche Gottfried, geb. Timm. Bremen 1831. *Vollert, A.:* Die interessantesten Criminalgeschichten aller Länder. 1867. *Donath:* Die epileptische Wandertrieb (Poriomanie). Arch. f. Psych. B. 32. *Heilbronner:* Über Fugues und fugueähnliche Zustände. Jahrb. f. Psych. B. 20. *Raecke:* Über epileptische Wanderzustände. Arch. f. Psych. B. 43. *Schultze:* Über krankhaften Wandertrieb. Allg. Zeitschr. f. Psych. B. 60. *Seige, Max:* Wandertrieb bei psychopatischen Kindern. Zeitschr. f. d. Erforsch. u. Behandl. jugendl. Schwachsinn. B. IX. 1911.

CHAPTER XIII.

THE REGRESSION AND SPLITTING OF VOLITION, ETC., IN MENTAL DISEASE. ANOMALIES IN GESTURES AND EXPRESSIVE MOVEMENTS (IN SPEECH, WRITING AND ARTISTIC ACTIVITY), STEREOTYPED MOVEMENTS AND HABITS.

Attention requires education. The child has difficulty in collecting its thoughts and easily gets tired. Its ideas are not ordered and are easily scattered. Only gradually does the grip of volition get firmer, thought becomes more concentrated, the fleeting motives of play are exchanged for more serious tasks, interest awakens and the attention becomes centred in a goal and absorbed in future aspirations. This ripening of mental life takes place during *puberty* and this age is more than any other a critical and trying time. It presupposes a normal brain and a sound nervous system; frail constitutions cannot bear the great strain of this period.

The mental diseases that develop during the years of puberty are, in a marked degree, characterised by disorders of volition. This is particularly the case with dementia praecox; but also disorders of a milder nature, when they commence in this period, assume, by the development of certain symptoms, such as impulsiveness, pathological fancies and whims, stuporous episodes, and so on, a character about which we may say that it rather belongs to a certain age than to a certain form of mental disease though, obviously, some of these cases may be conceived as slight (abortive) forms of dementia praecox. In the following we will deal more exhaustively with the characteristic symptoms in volitional life peculiar to this disease.

In the chronic degenerative conditions we meet with in organic

forms of insanity, the structure of mental life undergoes a *regressive* change. This is the case in general paralysis, senile dementia and to a certain extent also in unfavourable forms of dementia praecox. What has been written in a previous chapter concerning memory is of course also applicable to volition. Memory, the static part of mentality, is the postulate of the dynamic part i. e. the will. When the substrata of experience, the various fields of memory, are successively reached by the organic destruction, the will also gradually degenerates and disappears. In this regression the frail moral and intellectual superstructure of personality is first pulled down. The character, the result of ethical experiences, deteriorates and loses all the advantages acquired by education and culture. At last only the more or less rude egoism of natural instincts and the half animal tendency to give unrestrained vent to desire are left. But at the same time and in the most intimate connection with this moral decay the intellectual gifts and interests degenerate and disappear, the latter, as we often see, especially in dementia senilis, becoming mechanised in stereotyped habits. The prototype of successive regression is *dementia paralytica*, the emotional side of which we have already considered.

Changes in character. Even if we leave out of consideration those inferior individuals who, by nature, have a defective volition and with a brutish disposition often combine criminal tendencies, and who develop in a direction likely to unmask their moral inferiority, it still remains true that many natures do not easily submit to the restraint imposed by education. In their sense of moral responsibility individuals of course differ greatly. One is *upright by nature*, another *by constraint*, and between these extremes there are a number of gradations. But the constraint to respect order and good manners, the outward propriety required by social adaptation, the duties towards society and one's neighbours, are in many counter-balanced by character traits and ethical shortcomings which cannot be repressed without effort and watchfulness. Social propriety is more or less the product of a number of repressing influences, and innate dispositions are sometimes refractory in yielding to necessity. To these repressing influences belong, besides education, the example and influence of the environment, regulations, statutes, and, for officials, a watchful control. Under these disciplinary influences the associative apparatus which we call the *sense of justice*, is built up, its efficiency being the condition of social adaptation and balance. Every thought of some action of an antisocial or indecent nature instantly ramifies in this associative appara-

tus into an anticipation of the consequences, and this anticipation of the consequences immediately exercises its inhibitory influence. Decency, like so many other things, becomes finally by habit a *constellate thinking* which retains the direction of the current once set, as long as our mental life retains the activity of health in all details. In this way and, in critical moments, by clear rational arguments, moral defects and erroneous tendencies may be rendered harmless or kept concealed *until an incipient disease, general paralysis or senility,* breaks down the resistance of the will and confuses the judgment, which up to now has made it possible for the individual in question to avoid outrageous conduct. As a contributive cause we often find an intensification of the instincts and an exaltation of the tendency to self-assertion accompanying the incipient stage of the disease. A heedless abandon succeeds the former prudence, and the patient yields to his ruling inclinations with a complete surrender of the will and with perfect unconcern for the consequences. Even in cases where the character was originally better equipped and ethically harmonious, the progressive disease ruins volition while the higher feelings become obscured and the intellectual structure is thrown into disorder. Volition and intelligence are, as we have seen from the foregoing, intimately connected and in their highest development both equally dependent on apperception. When reflection, which intervenes repressively to examine motives and inducements, is no longer capable of acting, reactions are simplified to reflex-like short-circuits, and the patient constantly acts precipitately and without deliberation.

The altered conduct which is such a prominent symptom in *paralysie générale,* is caused by such a simplification of the cerebral mechanisms, when the substratum of the higher mental life, the ethical feelings, the judgment and the power of reflexion, is demolished by the progressive degenerative processes. In dementia senilis where, otherwise, the changes are not so radical as in general paralysis, the character is likewise brutalised; the emotional life recedes, and the will shows a decidedly egoistic tone. We shall return to this subject further on.

The reversion of volitional life to the simplicity of the reflex is also obvious in the manic conditions and, on the whole, in all such forms of mental disease as are accompanied by a crippling of the higher mental functions, the apperceptive faculties. Equal to *mania* in this respect are various forms of *confusion* and *amentia.* The intellectual processes in these exalted states are reduced to volatile rigmaroles, and a corresponding reduction of volition is met with in the form of a

desultory activity, often leading to agitation. The patient is animated by various proposals and plans, but he rushes from one to the other without being able to accomplish his projects. He is eminently a Jack-of-all-trades and very much alive, but he starts several things at the same time without having perseverance enough to continue. In this state of agitation every trace of motive and reasonable thinking at last disappears, and his will is reduced to a restlessly working reflex mechanism. The patient prattles, cries, laughs, sings, runs about, gesticulates, takes off his clothes, tears things, upsets the furniture, spills his food, makes himself filthy, and so on, all in a blind desire to be active, without sense or purpose. *Agitation* and the *flight of ideas* are parallel phenomena; the former is an outward, the latter an inward symptom of the »reduction« of volitional life in the absence of purposive ideas and motives for acting.

In *melancholia* and the depressive states, volitional life is charracterised by a painful sense of powerlessness and incompetence which hampers every attempt to work. Even before the simplest functions and the smallest duties of daily life, the patient has this sense of unsurmountable difficulties which he tries in vain to combat with agonising exertions. This is what we have earlier described as a *feeling of inhibition.*

Depressive inhibition implies a functional hindrance which concerns both the intellectual side of the volitional act and the motor outflow into the peripheral nerve-tracks. The endeavour to come to a decision often results in an unconquerable hesitation and to carry out one's decision means the facing of enormous difficulties. The patient may stand for a long while, irresolute and at a loss. When he begins to weigh the pros and cons, he can never make up his mind. It is a kind of mental *tremor* in which ideas and contrasting ideas vie with each other for preference and wrestle for the mastery. From such contrasting ideas real *obsessive ideas* may sometimes develop which, as we have already mentioned, may lead to criminal compulsions, for instance arson or other harmful acts.

The inhibition within the motor apparatus hampers every action, and makes all the patient's movements slow and cautious. It is sometimes aggravated to the condition of reactionless immobility which

we call *stupor*. This aggravation of the depressive inhibition, the *depressive stupor*, is passive in nature; the patient's limbs are flaccid, without tension. He lies down or sits motionless, is either incapable of doing what he is told, or else he can only move his body or his limbs in an uncertain, slow and fumbling way, often controlling his awkward movements with his eyes. The face is flabby and frequently marked by a gloomy expression. When spoken to, he either gives no answer, or the lips move without emitting any sound. Sometimes the depressive stupor may be shown to be distributed unequally at the psychic and psycho-motor points of volitional innervation. Whereas these latter points are the seat of the strongest inhibition and a real break has set in here, the apperceptive functions seem less affected. Even in his reactionless state the patient retains the power of apprehending tolerably well when he is addressed, and follows with a certain degree of alertness what is going on around him. Sometimes, and this is particularly the case in cycloid forms of mental disease, the disorder processes are of a strangely mixed order and the patient's outward, inhibited and immobile condition contrasts sharply with the inner rapid flight of ideas (retrospectively described). In spite of the stuporous inactivity, his features often reflect a certain cheerfulness and high spirits *(manic stupor)*. Sometimes the immobility is limited to the motor speech function while otherwise the patient displays a harassing anxiety *(improductive mania)*.

In a previous chapter we have already discussed *depressive inhibition* and emphasised the far-reaching nature of this symptom of mental disorder. When, in our account, we have considered separately its effects on memory, will, and so on, it must not be forgotten that these functional regions are parts of a synthetic whole. On the one side, we have an active manifestation of the mind, apperception and will, which, on the other side, we must conceive as being transmitted by the different memory-fields of the cortex. Under abnormal conditions there may arise a disorder in the functioning of these fields, which is sometimes very far-reaching, sometimes limited to a certain field. And, as we have already pointed out, the substratum of our language-memories is a field of predilection for inhibition no less than for manic excitement.

Depressive stupor is often clinically difficult to distinguish from the *passive* form of stupor so common in dementia praecox. Both these forms of stupor are characterised by slackness, but in their organic (pathophysiological) postulates they are probably quite different. In depressive stupor the functional preparedness seems lowered in the motor memory-field; in passive stupor (dementia praecox) we have reason to suppose that there is a heightened stimulation and greater functional preparedness in the motor centres of the cortex, while the spontaneous (ideatory) mental activity is paralysed and the psychomotor impulses accordingly fail to appear.

If this is the case (it is, of course, only a plausible hypothesis supported by clinical experience), the psychophysical postulates in depressive stupor and the passively stuporous conditions in dementia praecox are opposites. In melancholia the centre of gravity lies in a lowered motor functional preparedness; in dementia praecox it is to be found in the paralysing of all initiative or a splitting-off of the ideational mental activity from its motor points of attack. In depressive stupor the patient is conscious of his initiative, he makes attempts to move, he »wants to«, but is incapable of conquering the resistance in the centres. In passive stupor (dementia praecox) spontaneous initiative is absent, or else, owing to the splitting (schizophrenia) peculiar to this disease, the motor centres lie, figuratively speaking, beyond the reach of the impulses of the patient's own will.

That the functional preparedness of the centres is by no means lowered but, on the contrary, strengthened (heightened motor reflex-irritability of the cortex), is proved by the manner in which the patients react to another person's will. They are highly suggestible. Very often one of these patients will be seen standing listlessly on the floor, remaining motionless in the same attitude. In the middle of a movement he has gradually stopped from lack of initiative. The slightest touch, however, will make him start again. He takes a few steps forward only to stop once more till another touch gives him a fresh impulse to continue on his way.

The view that I have here sketched of a heightened cortical irritability with inhibition or, respectively, interruption of the spontaneous impulses seems to me still more convincingly borne out by *catalepsy* (flexibilitas cera). In the common cases where this phenomenon is well developed, the patient may be bent and twisted like a mannequin and his limbs given any position, no matter how tiring. All joints, even those of the fingers, comply without resistance with the passively performed movements, and the muscles retain the limbs in the position in which they have been placed (Figs. 28 and 29). Agonists and antagonists lend themselves with the greatest readiness to the passively given position and this is maintained, as we have already shown, by repeating the suggested movement in a constant cycle. (Cf. Fig. 24).

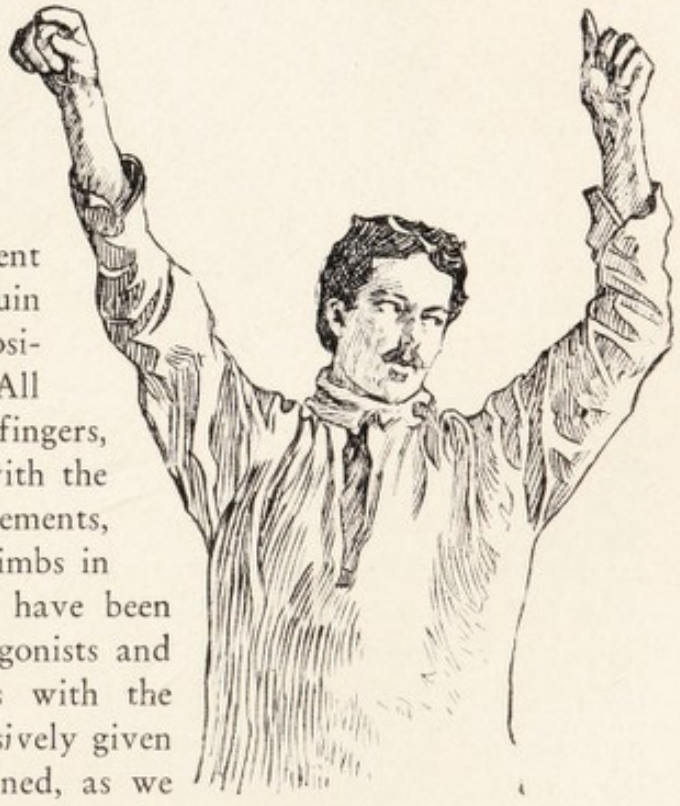


Fig. 28. Passive stupor. Catalepsy.



Fig. 29. Catalepsy.

In the passive stupor of dementia praecox or in reduced spontaneous mobility in cases of deficient development of the central nervous system (idiocy), the patient may prove suggestible to motor impressions and passively awakened movement-memories in other ways. Such is the case in the so-called *echo-symptoms*. In these the patient imitates and automatically repeats every word he hears spoken, it may, for instance, be the last words in every sentence *(echolalia);* or he imitates the mimic expressions *(echomimics)* or the gestures *(echopraxia)* which he observes in the face and bearing of his interlocutor (Fig. 30 *a* and *b*). These symptoms, too, testify to a heightened cortical irritability, spontaneous motor impulses being at the same time absent.

Another trait of heightened suggestibility which is often present in dementia praecox is the aforementioned *automatic obedience*. As the preceding attempt to interpret this symptom goes to prove (Cf. p. 279), the facility with which a given order is obeyed and carried out, points, here also, to a heightened cortical irritability while, on the other hand, the patient's inability to break away from the suggestion shows the absence of all spontaneous initiative.

In the passive apathies of stuporous or semi-stuporous nature which

are often met with in dementia praecox, we also see other traits which bear witness to the mechanisation of volitional life in the absence of spontaneous motives for action. We cite an example.



Fig. 30 a. Echopraxia.

Fig. 31. represents a sock which was knitted by a young female patient in the Stockholm Hospital, suffering from dementia praecox. She was quiet and tractable, but helpless and half stuporous. When she was started on a piece of work, she went on quite mechanically and she entirely lacked the ability to plan the work properly of her own accord. After she had been helped to start knitting, she was left to go on with it alone, and the result may be seen in the illustration. The leg of the sock would have become far longer still, had not the nurse intervened and made the necessary modifications in order to achieve a foot. Then she was again allowed to knit on by herself, with the result that the foot became as monstrous as the leg. The foot, too, would have gone on indefinitely, if the nurse had not once more taken it in hand.

Besides the above described stupor, there is also another form in

dementia praecox, the *active or tense stupor*, generally called *katatonic stupor*. The patient's conduct is now different. His carriage is more rigid. When sitting, he retains a stiff, frequently contorted attitude,

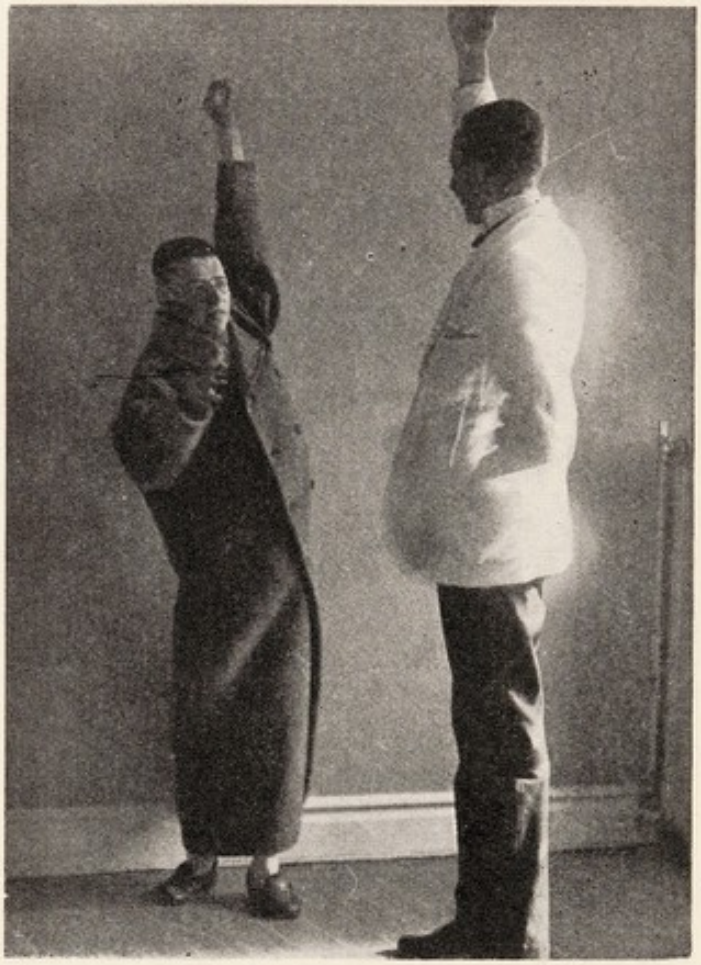


Fig. 30 b. Echopraxia.

with the limbs thrust out beyond the position of equilibrium which they occupy in an ordinary state of rest and ease.

When standing up, he keeps his limbs in expressive attitudes as if he were going to begin some action, perform some gesture or start running, etc., but had been suddenly arrested and turned into stone. In a lying position the body is just as tense and rigid. The head is often spasmodically lifted from the pillow and held in the air without support; the features set in a rigid grimace with pouting lips; the eyes are sometimes wide open with the gaze fixed, sometimes they are kept stubbornly closed. The limbs are also kept in unnatural positions.

The katatonic is like a person snapshotted in the middle of a movement and there is thus more of arrested movement than of rest in the

positions peculiar to katatonic stupor (See figs. 32, 33, 34).

If the physician tries to make the patient change his position by passive movements, he soon finds that these attempts to lift his arms, open his eyes, etc., meet with obstinate resistance. The muscles grow as hard as wood, and the whole motor apparatus offers resistance and assumes a state of rigidity. At times one meets with a strange blend of passivity and active defence, the former in certain groups of muscles, the latter in others, which proves how abruptly the different forms of stupor may pass into each other in katatonia. While the patient shows a tendency to catalepsy during the attempts to lift his arms, he may at the same time retain a certain rigidity in his legs or offer an invincible resistance, when attempts are made to open his tightly closed mouth. Changes in the outward conduct of the patient probably correspond to changes in the clearness of his consciousness. In passive stupor the patient sinks into a state of bluntness or confusion in which he takes no part in external events. In katatonic stupor he is relatively alert and understands fairly well what is happening around him. In this condition his volitional life is dominated by a strange tendency to resistance. The many manifestations of this tendency, so characteristic of katatonic stupor, are summed up under the term *negativism*. Besides the patient's general stubbornness and hostile tenseness, this term covers a great many isolated traits of refractoriness, such as his mutism and refusal to eat, his impulsive mania for destruction directed towards his environment or himself, his obstinate resistance to every movement or change, his violence and uncleanliness, his crossness and proneness to parry all questions by unmeaning queries or to foolish bickering, with idle digres-

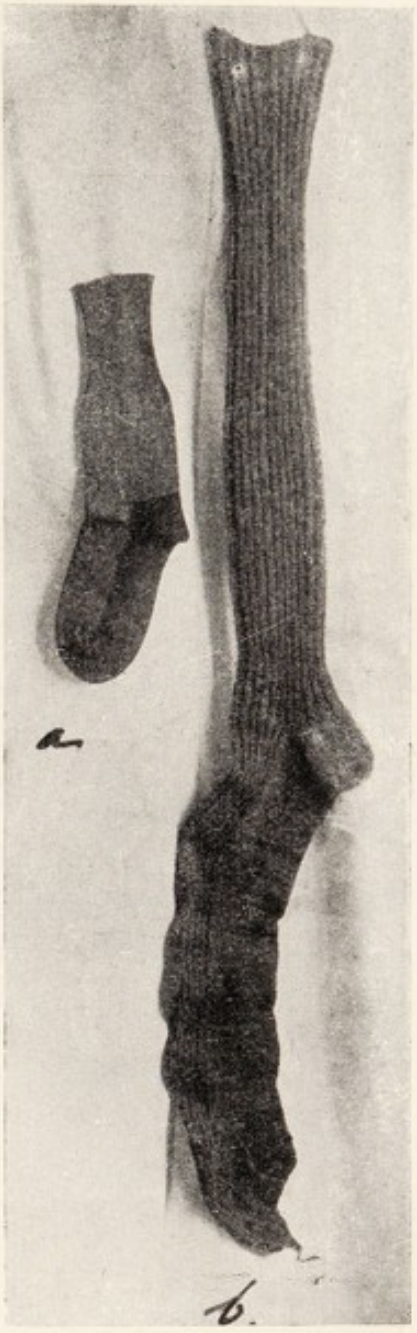


Fig. 31. a) An ordinary sock.
b) The sock knitted by our patient.



Fig. 32. Stereotyped position in katatonic stupor.

sions and »side answers« (Vorbeireden). But negativism seems to extend far beyond the limits of the direct influence of the will, indeed, purely vegetative symptoms like retention of the urine and violent vomiting may, in our experience, be counted among the manifestations of the reckless impulse to opposition which, in the more severe cases, so masters the patient's whole personality, that life itself is negated. — In retrospective conversations with patients who have suffered from a katatonic stupor, we often hear descriptions which plainly testify to the involuntary nature of that tendency to resistance which manifests itself in the negativistic symptoms. Thus the patient is conscious of the refractory impulses; he experiences them as something which dominates him side by side with his ordinary personal intentions but, at the same time, he seems to be merged in them to a certain degree, for often he does not experience them as a direct compulsion.

As negativism is not peculiar to tension stupor only, but appears as a very common symptom in all stages of katatonia and, now in one way, now in another, sets its stamp on the patient's conduct, the physician often has the opportunity of remarking the strange duplicity of the patient's will. He says himself that he is dominated by the idea of »doing so and so, or of not doing this or that«, but even if he feels these

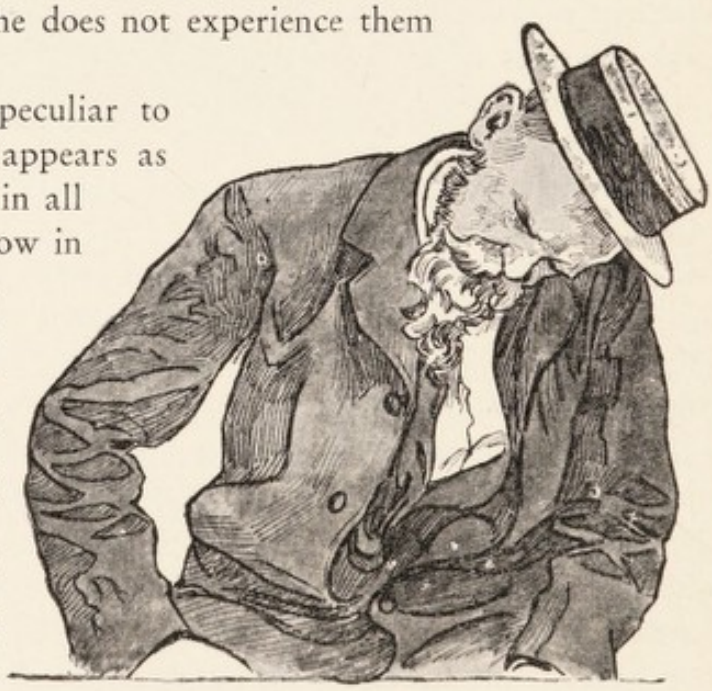


Fig. 33. Stereotyped position. Katatonic stupor.

impulses as something extraneous, his will does not offer resistance but, split as it is, strives to arrive at some kind of agreement. Then the patient will often make light of the whole thing and reason away the inconsistencies by the first explanation that comes handy.



Fig. 34. Stereotyped grimace in katatonic stupor.

There is no very obvious clouding of the patient's consciousness, still his comprehension is curiously veiled. The katatonic lacks in a remarkable degree the normal person's sense of logic, and to some extent reacts in the manner we all react in dreams, when the most unreasonable things and the most incompatible transitions seem natural to us and are experienced without protest.

Probably we here encounter the same obscure mode of reaction which is more immediately manifested in the condition that *Bleuler* calls *autism*. In that state the patient is introvert, apathethic and dreamy. The external world concerns him but little and remotely and even though, for an instant, we succeed in catching his interest, he soon becomes again absorbed in himself and resumes his former inaccessibility. The autistic attitude of the patient often seems to harmonise well with his negativism. His refractoriness and his shyness of reality meet, and he seems best satisfied with the comfortable repose which he finds within himself in a kind of intellectual twilight sleep. *Under these circumstances there is only a difference of degree between the autistic mode of reaction and katatonic stupor.*

The logical sense is a general expression of the synthetic demand for oneness which animates our higher psychical functions. Hence in sleep or illness, we are deprived of the combining element in the functional structure of mental life, when apperception, like the keystone in a complicated building, ceases to accomplish its work of unification. Then the whole structure is rent, and the subordinate parts, ideational complexes of various kinds, obtain a relative independence; but we do not notice the inconsistencies which naturally follow, for with apper-

ception logic, too, departs, from the will as well as from thought. When the katatonic lacks the sense of logic and, with his veiled comprehension, knows but little about the splitting in his mind, it is this which constitutes the essential difference between his mode of reaction to the compulsion that governs him and the full and clear consciousness, combined with a fair understanding of the disorder, that characterises those who suffer from typical obsessive ideas. Nevertheless, obsessive ideas are to be regarded as a schizophrenic symptom which may sometimes be the first step to katatonia.

As an illustration of the patient's mental disconnectedness and his peculiar, languid and misty conception of the contending motives which block his will, I cite two cases.

Case XXIV. A middle-aged man, J—n, suffering from katatonia, was for a long time under care in the Stockholm Hospital. For two years he refused to eat; during this time he was tube-fed three times a day and never made any resistance. On the contrary, he opened his mouth willingly enough as soon as the physician approached with the tube, swallowed it readily and with a pleased look. But if anybody else, one of the attendants or medical students in the clinic, tried to feed him, he resolutely clinched his teeth, and there was no possibility of conquering his resistance by arguing with him. J—n was up all day, formally he was quite clear and always communicative and affable towards the physicians at the hospital, but neither the steward, nor the attendants, nor any of the medical students who came to the clinic, could get a word out of him. If I asked him about the cause of his reluctance to be fed by anybody but the physicians, or why he did not answer their questions, he said to me kindly but firmly: »I only want to be fed by the physicians, Sir«, or »I only converse with physicians, sir«. During long periods J. stood all day long beside his bed, fully dressed, without moving from the spot, but incessantly rocking his body in a certain way. When I asked him the reason why, he told me that it was on account of his »little ideas«, and when I questioned him closer as to whether he did not find these »little ideas« strange, he answered with an indifferent smile that he did not, and with half foolish objections or scoffing questions evaded all further argument on the subject. Recently J—n has become conspicuously indifferent and is now clearly demented. At the same time he has been the victim of a number of dissociated and desultory delusions. Yet formally he speaks clearly and (willingly) takes part in the daily work in the hospital. His negativistic eccentricities have disappeared and he shows the harmless and quiet indifference that often characterises the chronic state of dementia praecox.

Case XXV. Another patient C. behaves in a similar manner. He, too, has refused to eat for long periods and during his first years at the hospital he was forcibly fed. At that time he was languidly stuporous and made scarcely any resistance. Now he looks like the photograph in fig. 35. From morning to night, year in and year out, he maintains the position seen in the picture. The grimacing countenance, too, is stereotyped. When attempts are made to conduct him to some other place, he

resists, sometimes more, sometimes less. At times he is fairly passive, on other occasions he is obviously negativistic. When he is addressed, he answers willingly, in a low whispering voice, and it is then noticeable that he systematically avoids certain nouns, for which he substitutes artificial circumlocutions. Thus he always says



Fig. 35. Stereotyped attitude retained the greater part of the day.

»division« instead of »year«, and when asked how long he has been in the hospital, he says: »four divisions and a half«. If he is questioned as to the reason for his strange behaviour, his refusal of food, his obstinate standing in the same place, his queer expressions, he vaguely indicates that »it has just happened so«, and that »that is the best way«, but never offers any further explanation.

Catalepsy, echo-symptoms and automatic obedience may be viewed as phenomena of splitting. A still more unambiguous state in this respect is *negativism*. In negativism the patient's will is impeded by *contrasting ideas*. He is continually forced to act contrary to the intentions which would be suggested to a mentally sound person in the same situation. Indeed, the patient perhaps often experiences a fragment of the right

intention, but it has hardly time to arise before it changes into its own contrast.

The part which contrast plays, not only in the psychomotor manifestations of life but also in our thinking, is unmistakable. What the antagonism between our flexors and extensors is to our movements, antithesis — i. e. ideas and contrasting ideas — is to our ideational life. Just as a movement becomes firm and supple and a grip of the spade or plough gets its necessary strength by a functional interaction between flexors and extensors, thus also our conscious resolutions acquire due firmness by a peculiar interaction between ideas and contrasting ideas. This interaction, which, with regard to muscular antagonism, is called by *Sherrington »reciprocal innervation«*, is probably a prerequisite of the normal course of all acts of volition. It constitutes an important and delicate detail of the normal mental structure, and it is at this point that the rupture has taken place in negativism.

In our discussion of depressive inhibition we pointed out that it is accompanied by a strange psychical tremor characterised by an invincible indecision due to the constant interference of contrasting ideas. In katatonic stupor there is no psychical inhibition with indecision and oscillation between »to do« or »not to do«. It is less a case of insufficient energy, which is not capable of a conclusive decision, than of a peculiar affective condition which determines all acts of volition in a perverted direction, and lets resistance and negation prevail in all intentions (negative suggestibility).

In connection with the contrast phenomena we will here mention the symptom described by *Bleuler* under the name of *ambivalence*. This symptom is also characteristic of the schizophrenic conditions, and it appears in various forms, 1) as an affective ambivalence with sudden revulsions from tenderness and kindness to hatred and dislike; 2) as an *intellectual* ambivalence, marked by an absurd inconsistency in argument, the patient denying what, a moment before, he had just as eagerly asserted; and finally 3) a volitional ambivalence with rapid alternation between »doing and not doing« a thing. These phenomena will be more fully dealt with in the special part of this work.

Besides negativism the splitting of the patient's volitional life finds other modes of expression. His intentions are continually crossed by strange fancies and whims, and this lends a peculiar angularity to his movements. When stretching out his hand for a greeting, he suddenly checks himself and makes some quite uncalled-for movements with his fingers before carrying out his intention. If he is to cross the floor, he

suddenly stops and stands still for a while with his foot lifted, before he continues, and so on. All his volitions are interrupted in this way by the interference of impulses, and his movements become jerky and staccato, with many deviations. This interruption of the volitional impulses is called »Sperrung« by German psychiatrists. This *obstruction* is quite different from the inhibition which accompanies melancholy and depressive stupor. Inhibition is marked by an insufficiency of energy, obstruction by split energy. The often intricate conduct of the katatonic differs from the indecision and vacillation of the melancholic in the meaningless nature of the obstructing motives. In the melancholic there is at most a conflict between two motives, which is painful to the patient, a situation of which he is clearly conscious; in the katatonic, on the other hand, there is an interaction of different impulses which are liable to succeed each other with abrupt scene-shiftings and unexpected transitions, the patient himself remaining indifferent and unmoved.

The splitting of mental life which marks dementia praecox and is especially conspicuous in katatonia betrays itself in a number of peculiar movements, expressions, gestures and modes of speech, giving rise to a strange mannerism thoroughly stereotyped in nature. The play of the patient's features, his manner of coming and going, sitting and lying, dressing and eating, his speech, handwriting and work, sewing or artistic activity, all bear the same stereotyped character, whose involved preposterous nature is often less due to each movement or detail in itself, than to a compulsory repetition, and this trait, *perseveration,* is the most essential fact of stereotypy.

Perseveration, too, may reasonably be regarded as the manifestation of a heightened reflex irritability in the cortex. In a dissociation of the volitional life and an interruption in its inhibitory influence (spontaneous intentions), it gives to each movement a tendency to return spasmodically and be repeated in an unchanging motor circle *(James).* In this there is a touch of psychic »adhesiveness« which, in contrast with the manic flight of ideas and agitation, gives to every idea or inducement to motion a tendency to hang on and obstinately return (what German psychiatrists call »Haften«).

We have already observed with regard to the katatonic stupor, how it fixes the patient in oddly contorted positions and attitudes in which we recognise a kind of arrested movement rather than balance and repose. The katatonic stereotypies and mannerisms in the patient's bearing and behaviour, with an interminable repetition of the same

motoric theme, seem to me of a nature to confirm the truth of this remark. For what we have already observed in stupor returns, though in a freer form, in the katatonic agitation which is characterised by the same stereotyped monotony. In both cases we find organic constraint, but while in stupor it has such a rigid character that only *one* movement can be repeated (catalepsy, stereotyped position of the body), here the field is widened and more complicated themes consisting of a great many different phases may run their course; the spasmodic repetition is not a stagnation in the same phase, but now changes into the incessant return of a series of intentions which form a mobile whole, whether this consists of certain words *(verbigeration)*, of writing movements or drawn figures, of strange gestures with the arms and legs or movements of other parts of the body, such as curious turnings and twistings of the trunk, of clownish pirouettes, grimacing, compulsive paroxysms of laughter, and so on.

We have already (Chapt. XI), in the localisation of the volitional phenomena, laid stress upon the importance which is now, after the experience of recent years, attached to the subcortical ganglia. The similarity between the akinetic and hyperkinetic symptoms observed in postencephalitic conditions on the one hand, and the passive stupor as well as tension-stupor and the stereotypies in dementia praecox on the other hand, renders it far from improbable that a disturbance of the *motor automatisms*, located in the mid-brain and the subcortical ganglia, is present also in the latter disease. The symptomatic conformity between these two diseases, which do not otherwise exhibit the slightest kinship, would then be easy to understand.

The accompanying illustrations will afford a better and briefer commentary than many words. Fig. 36, a and b, shows the same patient in different stages of the disease. In the first picture she is in a condition of passive stupor. From this it will appear that she is cataleptic. Fig. 36, b, shows the same patient in a state of katatonic exaltation, with distinct stereotyped movements. In fig. 37 we see examples of different forms of katatonic face-play *(paramimia)*, and in fig. 38 we reproduce a katatonic drawing with repetition of the same subjects. Figs. 39 and 40 also show, though on a higher artistic plane, the tendency to repeat details.

To the foregoing we will add a few words concerning the pathology of expressive movements, referring mainly to the varying testimony given by the patient about the state of his mind, in mimics as well as in speech, writing and productions of art. Since we intend to give a more detailed description of these symptoms for

each specific form of mental disease in the special part of this work, we will here only dwell upon phenomena of more general interest.

Laughter and humour. It is an old theory among psychologists that the ridiculous and laughable owe their effect to a contrast. »The ridiculous«, says *Høffding,* »postulates that we have for a moment allowed ourselves to be duped, taken aback, that we have been held captive by an illusion or high-wrought expectation, and that all was finally dissolved into nothing.« In »The Psychology of Laughter« *Herbert Spencer* has further developed this subject and given his theory of the physiological course. The stream of energy running in certain ideational paths is suddenly checked, lacks an outlet, stagnates and puts us in a state of strong tension which, in the absence of intellectual paths of progress, seeks a vent in motor paths. That the sensation of contrast in general has a strongly stimulating effect which immediately manifests itself in a reflex reaction is an old experience. When an unexpected noise breaks the silence around us, we start suddenly, and the more complicated reflex movement which manifests itself in laughter, is equally involuntary. Its special form is peculiar to the human species and we may suppose that already our prehistoric ancestors were familiar with its mechanism. The sense of



Fig. 36 a. Catalepsy.
Passive stupor.

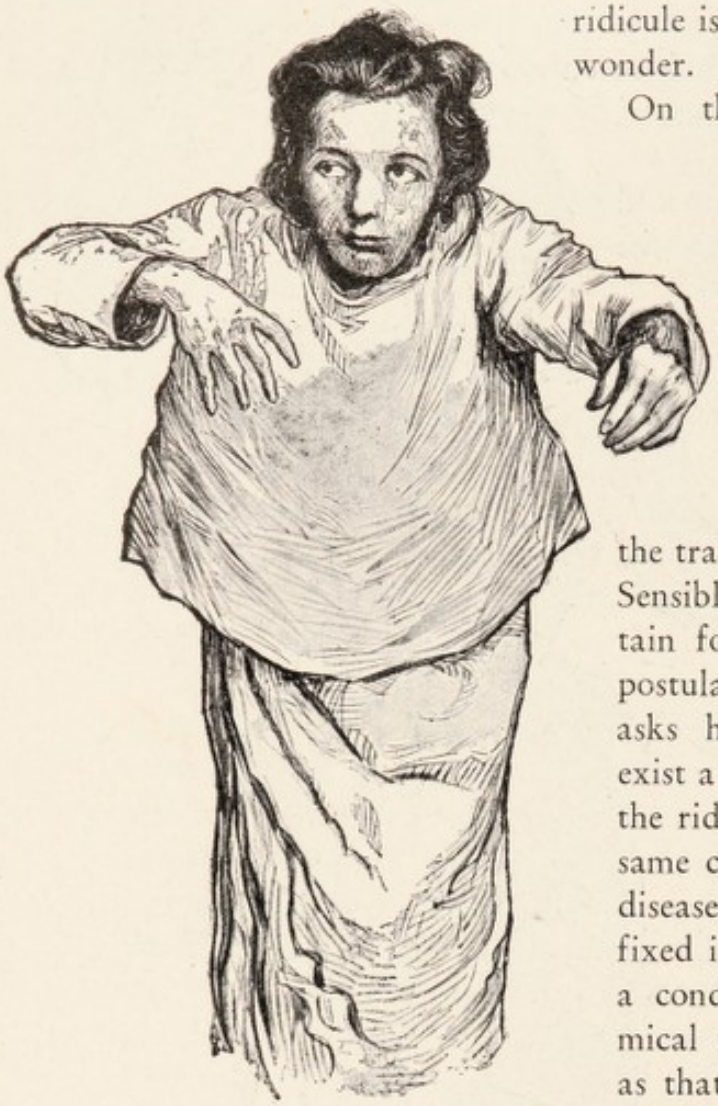


Fig. 36 b. The same patient in a state of katatonic exaltation.

ridicule is of course related to surprice and wonder.

On the other hand, *Bergson,* in his study of laughter, points out that the comical is dependent for its effect upon the absence of emotion. This is the essential difference between comedy and tragedy. The only thinkable reaction to the comical is a motor discharge; confronted with the tragical our compassion is awakened. Sensible of the similarity between certain forms of mental disorder and the postulate for the comic effect, Bergson asks himself whether there does not exist a »normal insanity« which imitates the ridiculous and »where one finds the same combination of ideas as in mental disease, the same strange logic as in the fixed idea«. According to Bergson, such a condition is found in dreams. »Comical absurdity is of the same nature as that of dreams. Every play of ideas is able to amuse us, provided that it reminds us to some extent of the play of ideas in dreams.« He says further: »To begin with, I will point out, as a characteristic trait, a certain general slackness in argument. The arguments that we laugh at are those that we know are false but which we might accept as true, if we heard them in our dreams. They imitate true argument just sufficiently to trick a mind that is on the point of falling asleep.«

Bergson's point of departure in the conclusions cited above was Don Quixote, the world-renowned prototype of the comical. In Don Quixote, »who always sees giants where we only have wind-mills before our eyes«, »the fixed idea« is obvious. The case of Don Quixote would undeniably be a grateful subject for psychiatrical investigation. However comic the effect, there is no mistaking the fact that Cervantes had an insane man for his model. Cervantes was greatly interested

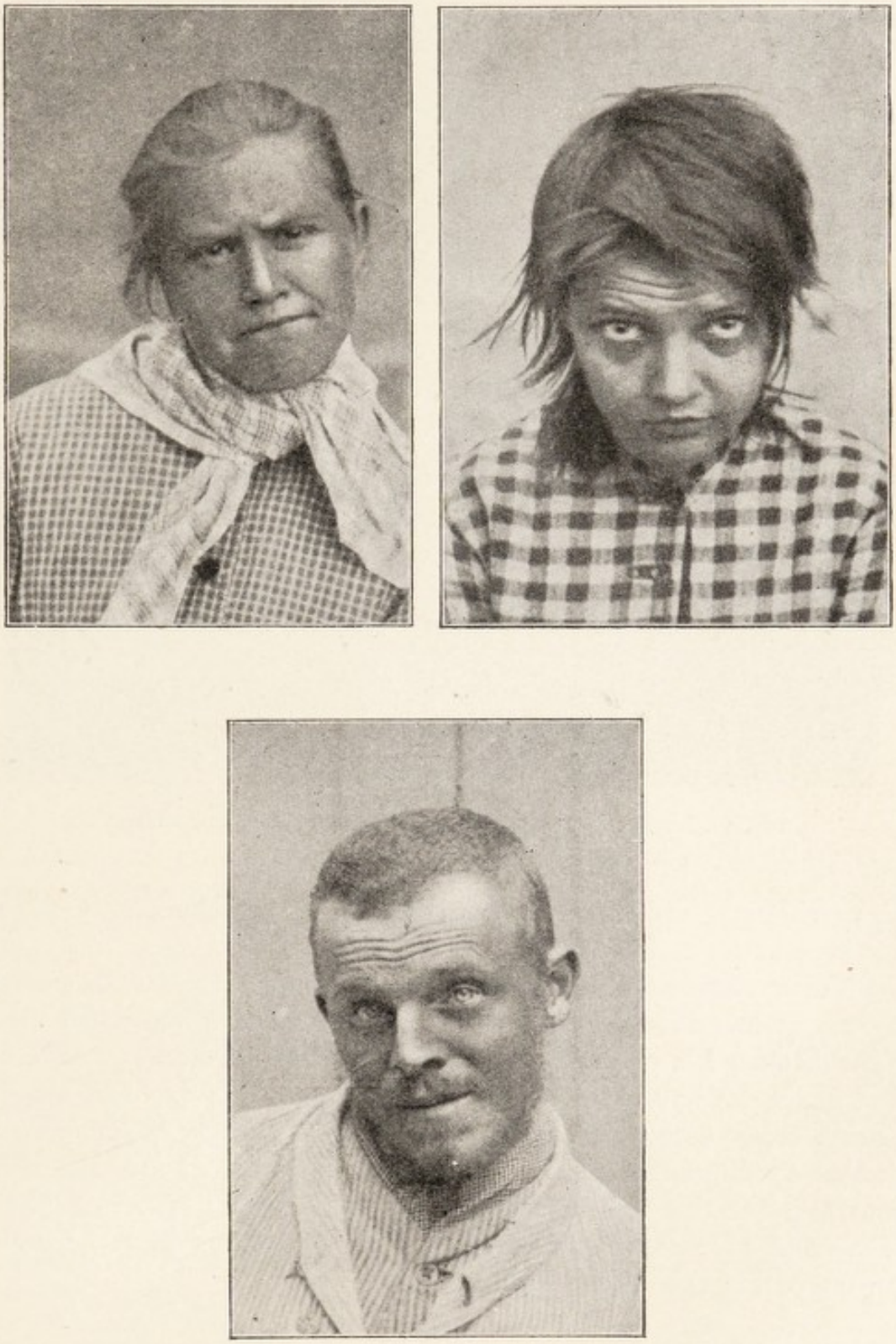


Fig. 37. Katatonic face-play.

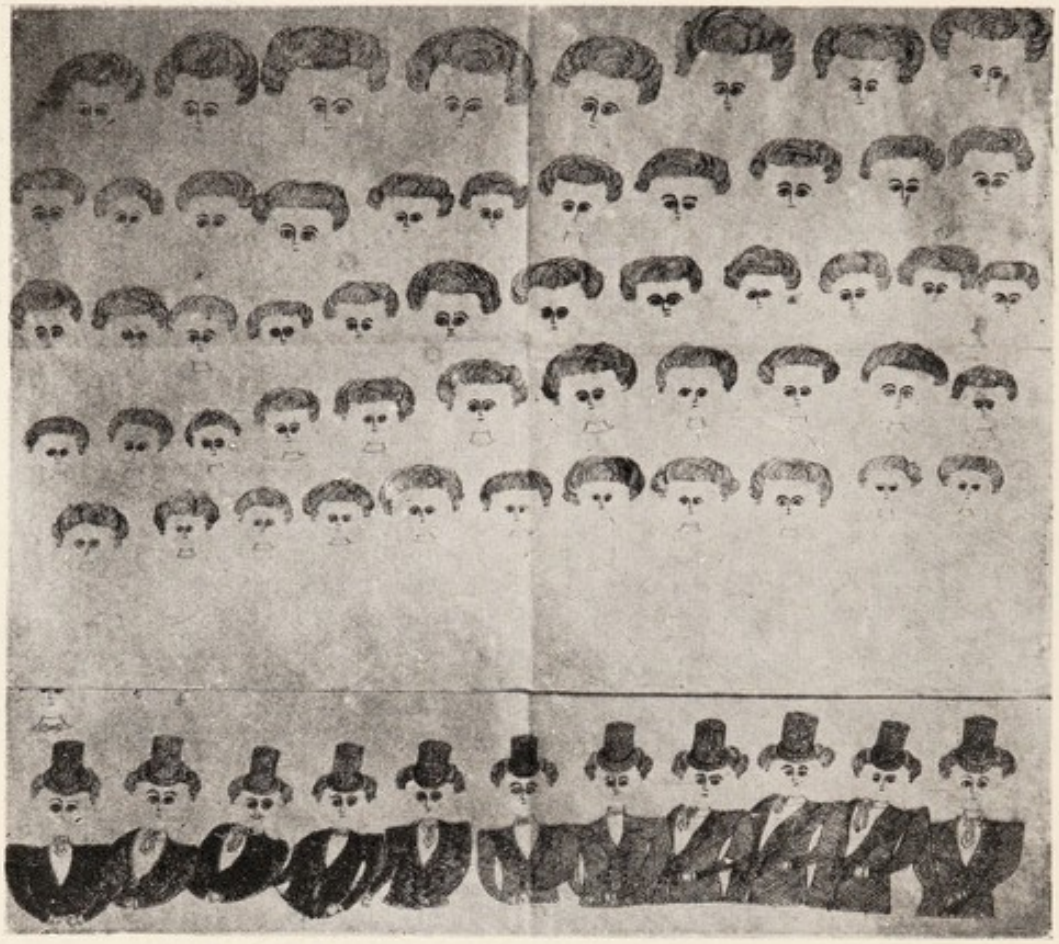


Fig. 38. Katatonic drawing with repetition of the same subject.

in psychopaths and in one of his short stories has abundantly shown his experience in this domain.

The correctness of Bergson's conclusions may doubtless be proved by cases taken directly from psychiatric clinics. According to his view, the ridiculous is a play of ideas, carried out in a condition of slackness and indolence approaching that of dreaming. And the man who is able to create a comic effect will also be able to reduce his intelligence to that condition. Bergson calls this state »a reversal of sound reason«, and asks whether this state has a name. Certainly, it has a name. The name of a rather characteristic form of mental disease. Here is an interesting case of this kind.

Case XXVI. Miss A., aged 45. Dementia praecox. The course of the disease changeable with remissions. For days and weeks fits of rage, anger and fractiousness, suddenly changing into violent weeping. Sometimes, quite unexpected transitions to a childish, sportive and gay good-humour. During these varying moods her intellec-

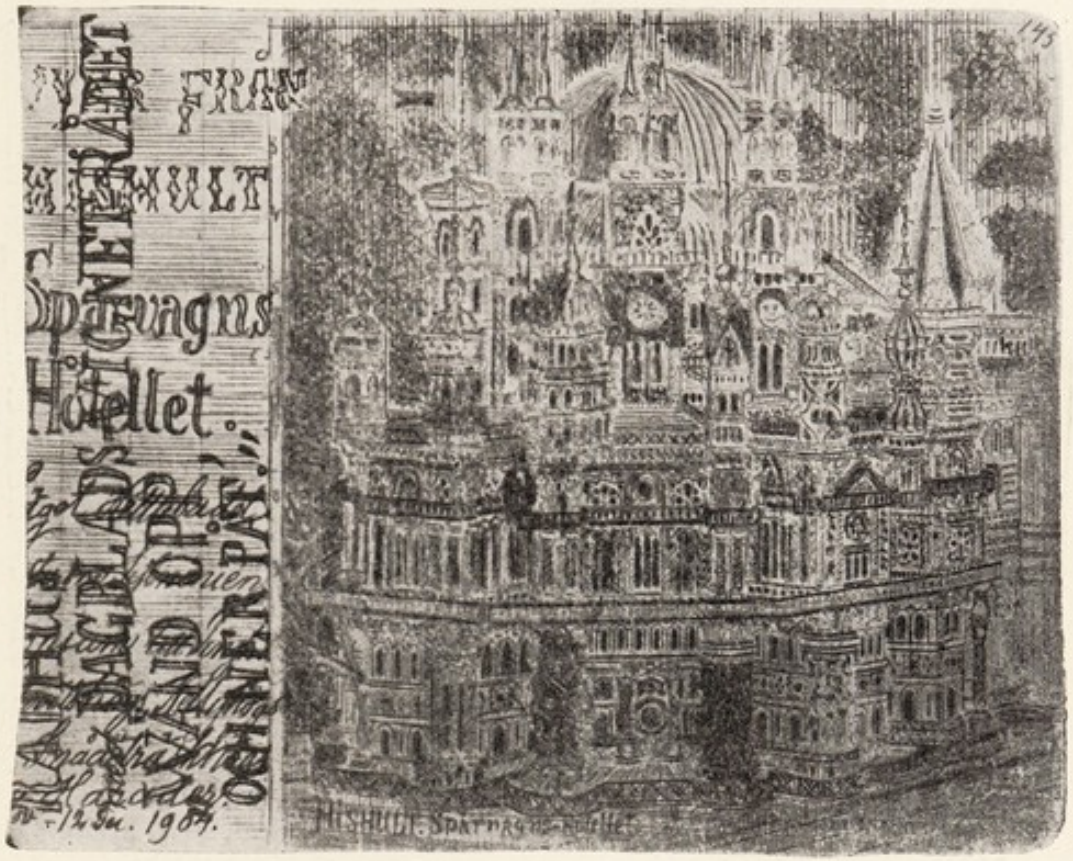


Fig. 39. Drawing showing the katatonic tendency to elaborate minute details. (Perseveration).

tual efforts often take the shape of an unbroken stream of disconnected sentences pouring without restraint from her lips in the form of questions, assertions and sallies, sometimes with explosive violence and the utmost rage, sometimes at a more leisurely rate and with less vehemence. In a sudden whim she will run up to a visitor, ask an unexpected question and without waiting for the reply, hurl question upon question, assertion after assertion at her interlocutor. If unacquainted with the patient, he will be thoroughly put out of countenance by this bombardment of questions and statements, so absurd, so wilfully defying all logic, as to make everybody wonder that the chaotic disorder in a confused brain can produce such violent effects. Some of her daily harangues were noted down, and this is how they ran: »What do you think, Professor? Does Niels X. find it amusing when Gertrud is tickled on her stomach? I have had a secret liking for Dr. A., but when he proposed to me, I brought up a mouthful of beetroots into the chamber and that had a cooling effect. It is much better to make a good meal in the morning with the inspecctor than to starve with ten women at dinner-time. The Rev. S. snuffs up Eva R.'s teeth. I think her teeth are as horrid as Captain B.'s butter-sauce. May one not eat porridge when one is broad across the hips? We got rat's dirt on the window-sill because I put coloured flowers on my hat. Upon my word, it was I who watched the entrance to Paradise, as long as Mathilda had brown beans for dinner. There is a fly in Ulla Winblad's trousers, and that sounds queer, as she has the



Fig. 40. Painting by an insane (katatonic) artist. (*Hill*).

back in common with Hallengren's brother. He was still-born and skimmed the soup himself.«

We see that it is always the most incongruous thoughts that meet and clash in the patient's questions and statements. Her way of uttering them is always precipitate, something suddenly enters her mind and she has to have her say. For the rest her moods are variable, but a certain degree of irritation is always noticeable and there is always a strong emotional background to her sayings. Sometimes she comes running with a laugh and seems conscious of the ridiculous nature of her fancies. Sometimes she is seized with a strong emotion and, rushing out of bed, cries anxiously: »Why did not the parish constable come for Miss G., before the penknife was mended?«, or: »The Professor cannot make me pound cinnamon for more than one at a time!«, or: »Isn't it wrong of Alfhild to curl her hair, when her father is so ill that he pees in his trousers?«, and so on. In the middle of all this confused talk, the patient may be heard to moan, »oh, God, my head is so dizzy«, so she seems to have some understanding of her disease.

The parallel Bergson draws between the emotional tone which a comic situation calls up within us, and mental disease or dreaming, gives us a key to the explanation of these interesting phenomena. The patient is sufficiently confused (or rather dissociated) for that »reversal of sound reason« to take place which is the postulate of the comic effect. Coin-

cident with, and in some degree the cause of, this confusion we notice the patient's distinctly affective condition. Without provocation she has fits of passionate frenzy or indignant moods. Sometimes she appears anxious, but more often a more complicated emotional condition prevails; her resentment and anger manifest themselves in a sarcastic and mocking tone; somtimes her face bears a sneering and derisive smile. If she had spoken a language unknown to those around her, the expression of her face, her gestures and the accents of her voice would probably have been interpreted as the fitting behaviour of an angry or excited person who was relieving her mind in curt or caustic words. In other words, our patient exhibits an unmistakable emotional state which under normal circumstances is the reaction to a more complicated situation, but in her appears spontaneously without visible cause.

We get angry and worry about certain circumstances in life; we accumulate in our minds the painful impressions we have received from other people's opinions which are contrary to our own but, at the same time, we may discover a glimpse of the comical in it all or instinctively look for it so as to obtain relief through laughter. Indeed, we often endeavour to use laughter as a weapon and so find a vent for our resentment. Very hot-tempered persons, who make use of other, more brutal weapons, are generally lacking in a sense of humour and ignorant of its power of relieving tension. Hence our appeal to the comical is a kind of immediate manifestation of the instinct of self-preservation and its purely organic postulates give to man in his difficulties a means of forging for himself a harmless and civilised weapon in the struggle for existence. He who can laugh heartily and infectiously even at small matters, conquers life's difficulties more easily, even at the risk of being regarded as a jackanapes, than the man who is deprived of this all-powerful reflex.

But the angry mood has other means at its disposal, and the better, the better it is motivated, than the cheap expedient of laughter. Clear and logical motives have at their command a system of associative channels through which the prevailing tension is relieved, whether it finds this outlet through argumentation in speech or writing, or in silent meditation. A well-informed power of judgment, like an easy conscience, soon steadies down; it easily conquers a passing tension, thanks to the freedom of its intellectual movements, and the sense of mental spaciousness which the power of weighing reasons and arguments with a clear mind always gives. It is stupidity and the corresponding pathological poverty of associations (epileptics) that takes offence if it has not the power of warding off with quibbling or paradoxes and by the aid of laughter.

The above-described case is interesting because it shows us once more how disease can reproduce certain states of the human mind and how, by internal organic processes, it can evoke *spontaneously* a mood which under normal circumstances requires some external cause (Cf. p. 223). This is only possible on the assumption that the one as well as the other originates in certain general structural facts which

have universal psychological validity, as far as human beings are concerned. That may also be the reason of the remarkable conformity between artistic and pathological phenomena, so often observed.

In our patient the associative breaks, owing probably to schizophrenic splitting, prevent her from obtaining relief by logical channels, but in connection with her katatonic disposition she has a proneness to paradoxical combinations and this tendency makes possible the constant transference of tensions into involuntary humour whose coarseness is in direct proportion to the violence of her outbursts of anger or indignation.

A schizophrenic and travestying humour with accompanying mad capers is nothing new for it was already universally appreciated in the Middle Ages. There was then a distinct class of very important people, the *fools*, to whom the wooden sword was sufficient protection, since they were perfectly safe from the onslaughts of their physical and social superiors by their power of evoking laughter. Most probably these fools owed their talent to a pronounced schizophrenic disposition. There is hardly any doubt that a really successful fool was actually insane. We need go no further than to Shakespeare's representation of these types, so indispensable at all entertainments in the Middle Ages. Nor need we hesitate as to the form of mental disease represented here. The fool type is common even in our own time and we find it in our mental hospitals diagnosed as dementia praecox. We also meet with less pronounced forms of this type in ordinary life. They are fostered by an innate disposition (often schizoid), but also by external circumstances prevalent at certain epochs and in certain sets and coteries. No one need go far afield to find favourable conditions for showing off such a disposition, for there are always people who appreciate a joke and a good laugh.

We return to Bergson's suggestion to make clear the comical by the juxtaposition of the dream and mental disorder. Just as a dream is a mental condition familiar to all of us, so also we do not lack the power of understanding a great many of the emotions and moods of the mentally afflicted. The purely volatile forms of punning, witticisms and jokes produced by the *maniac*, are no more alien to many of us than are the burlesque ideational somersaults characteristic of the *schizophrenic*, for both the flight of ideas and schizophrenia are nothing but disharmonious exaggerations of quite normal fundamental phenomena. An entirely physiological disharmony shows itself in the dream; and we are convinced that the differing type or disposition which may faintly tinge the practically quite normal person, leaves its mark on his dreams which in one case are more volatile, in another more determined by complexes, i. e. schizoid. With this is also connected our power of producing, or as listeners appreciating, fun in all its various forms. Social gatherings have their uses in giving us rest and pleasure, and the jesting reduces us to that state of lazy

enjoyment, which borders on sleep. It is in such passive states that jests are created and carry away their audience.

In modern comic literature we often come across drollery of the distinctly schizophrenic type which we mentioned above. It would be very easy to find hundreds of examples more or less strikingly like the foolish chatter of my patient. I refer chiefly to the burlesque whose essence is a jumble of incongruous ideas, in which a string of the most pompous and phonetically sonorous words are put together without a grain of sense.

The following is an example from a longer poem, in a Swedish comic paper, entitled

To the Bards.

In Zend Avesta's gloomy colonnades
A Phosphorus the golden section drew.
'Midst Capricornus' pallid marble gaols
Sat man enwrapped in robes of ethic blue.
Cacophonously lovely parasites,
Asclepiadics and theodolites,
Rubbed themselves two by two with vaseline.
Its pills the logogriph kept swallowing,
Male pistils from the caryatids did spring,
And chaos breathed a scent of margarine
Etc.

The ludicrous effect in comic poetry of this kind is heightened by the solemn rhythm and the magnificent procession of the words. The fool's cloak is thrown into noble folds, imitating a solemn dignity, but the more serious expectation is continually mocked at by the brandishings of the wooden sword. Thus the impression given is enhanced by the absurd contrast between matter and form.

A more striking similarity to the effusions of our patient will be found in the following parody on »textbook examples« in the Swedish humorous author Axel Wallengren's »Every Man his own Professor«.

»The hare-lipped vaccinator finds a nail in the well-dressed general's well. The pious counts pat the bald fisherman's roaring lion. The grizzled twins present a balloon to the obedient schoolboy's easily contented aunt. The victorious captain distresses the eminent brushmaker. Our noble teacher prefers to celebrate his iron wedding rather than corporal punishment.« etc.

Kraepelin has called attention to a dissociation between the purely motor elements in speech and the intellectual associative activity in dementia praecox. This leads to the quite mechanical release of words and grammatical expressions without coherence and often with strange combinations of (parts of) preceding and following words *(contaminations).* Thus *neologisms* are created, which closely resemble the slips of the tongue and verbal blunders which normally are often made unawares. *Stransky* has studied »confused speech« experimentally in

normal as well as insane subjects. On the strength of his experience of dementia praecox he thinks that the dissociation pointed out by *Kraepelin* to a certain extent coincides with the dissociation which he himself has found between the emotional life (thymopsyche) and the intellectual life (noopsyche) and which, according to him, is characteristic of dementia praecox (cf. p. 140). Stransky is undoubtedly right, in so far as logical coherence is inconceivable without feeling-toned purposive ideas; these and only these represent volition in thinking. If the feeling-tone is removed, the associated apparatus will act quite mechanically and it will then most certainly appear that the motor or auditive elements, active in speech, reading or writing, make their influence felt in a more or less automatic manner so that *perseverations, contamination* and *neologisms* crop up sporadically as the automatic process goes on. The result of all this is a strange jumble of disconnected words, mechanically scraped together, which is called *paralogy* or *word-salad* (Wortsalat. Forel). This form of linguistic confusion is common in schizophrenia, but in spite of the most incomprehensible speech often there is no reason for concluding that the patient suffers to any great extent from confusion with disorientation.

The same abnormalities in language which characterise the speech of the mentally disordered also appear in their writing. In manic conditions we find the ideas winging swiftly from one thing to another, while in katatonic conditions the sentences are formed in an abrupt, adhesive and perseverating manner, embellished with affected expressions, neologisms and contaminations. And as to the handwriting, the maniac's rapid, careless and negligent hand is as typical as the katatonic's intricate forming of the words with all sorts of ornamental flourishes. These ornaments are often quite stereotyped, and a constant repetition of the same word with bizarre breaks filled up with strange figures makes the total effect still more characteristic. In the handwriting of epileptics, perseveration is also an obvious feature; the repetitions in these cases, however, are in an essential degree due to the lack of associations and mental slowness, which are characteristic of the intellectual debility that follows epileptic fits. With regard to the handwriting of paralytics, arteriosclerotics etc., the reader is referred to the special descriptions of these diseases.

We have already in Chapt. II. considered how psychiatric experience has provided us with a means of clearing up many psychological questions concerning certain, rather strange cultural occurrences and

phenomena, which seemed inaccessible, at any rate to common sense. So in the criticism and psychology of art which especially concerns itself with artistic *modernism*, as represented by pictorial, sculptural and literary *futurism*, *expressionism* and *dadaism*, it would be of great value to gain some guiding principles for a sober evaluation of these eccentric schools, and I am convinced that these principles may be gathered from a careful study of mental derangement in certain forms of insanity. Referring the reader to the excellent work of *Hans Prinzhorn:* »Bildnerei der Geisteskranken«, we merely mention this in passing. Only a few remarks will be offered here. On the one hand it is worth remembering that a number of great artists, and exactly those who, owing to their gifts of inspiration, have become involuntary pioneers of the new art, have in great part been katatonics. It is strange to note how the symptomatic features in the production of these »pathfinders«, for instance the perseveration, the bizarre transformation of natural lines (Fig. 40) and the inability of the *autistic* mind to master the proportions of the human body, have more than anything been appreciated and imitated. And on the other hand it is important to remember the powerful influence of suggestion in this sphere of interest. The fact that even normal persons may have a schizoid constitution — for instance the many (phenotypically) normal heterozygotes in families with inherited schizophrenia — renders it probable that there also exists a constitutional inclination to support modern art and its »marvellous« modifications of natural forms and lines of beauty. With this suggestive responsiveness there have been the most favourable conditions for the spread of modernism. Hence among lovers of art of the said type, who have wearied of the traditional conception and its mass production, we constantly find enthusiastic promoters of the new spirit, which was symptomatically brought into existence and animated by the insane pioneers, whose *autistic shyness* of realism is always ready to welcome the principle »away from nature«.

That constitutional divergencies in taste and an emotionally-toned understanding are always more or less incompatible has become evident once more in this domain. But beside the convinced enthusiasts there are also many more neutral persons who are subject to suggestion. The modern art-principles are of course well suited to journalistic rapacity and many productive doctors of esthetics of our day have as an artistic ideal realised the originally katatonic principle »away from nature« resulting in the disfiguration of external forms and particularly of the human body. These curious extravagances of modern art have

been aptly termed »*dysmorphism*« by the late Professor *Salomonsen* of Copenhagen.

The correspondence between autistic insanity and the tendencies of modern art can be followed a step further. Just as autistic thinking, like our dreams, has been found to assume primitive and archaistic forms, so the aims of modern art incline towards an atavistic throw-back. The lines of beauty in dysmorphism coincide with those in the art productions of the African negro.

The mechanisation of volition in old age. Stereoptyped habits. An outstanding characteristic of old persons is their dependency on habits. When a sclerosis of the cerebral vessels or a primary senile degeneration of the nerve tissue sets in, the power of adaptation to changed situations or new objects declines. (Cf. Chapt. X). Memory loses its plasticity, and its function is reduced to a repetition and gradual simplification of old experiences. Old people dislike everything new and they exhibit a more or less distinct tendency towards automatism and stereotopy. Mental life thus becomes more and more unwieldy. But that is not all. Its apperceptive and combining (synthesising) function fails. This makes the continuity of the associative processes impossible. Concepts and concept-complexes, interests, experience and acquired attributes which, in the normal condition, readily cooperate, like subordinate parts of a machine, towards the production of a higher unity, now fall asunder and lose their coherence (*Wernicke:* sejunction; *Bleuler:* schizophrenia). Mental life lapses, as a half-conscious flickering, into a disintegrated activity along the paths where the reduced energy meets the least resistance.

The following interesting observation will illustrate, better than any lengthy exposition, the mental state to which we refer.

Case XXVII. Mr. X, an army officer of high rank, when aged 56, met with a bad accident. During field practice his horse reared and threw him. He sustained fracture of the skull and lay unconscious for a long time. Gradually, he recovered and when he could get about again there were no perceptible paralyses but he never got back his former bodily vigour. He retired from service and he was also unable to resume some other work he had had before. Vigorous as he had been, he was now a broken down man and was rapidly overtaken by an obvious apathy and senile infirmity in which certain peculiar symptoms were displayed in a quite

special manner. All his life X had been extremely punctual. He had also shown a striking interest in names and personal data, and his most read books were the calendars and personal registers.

During the first years of his illness he was bad-tempered and was often hard upon the footman who attended to his wants. His day was divided into a certain routine which had to be punctiliously observed, and it seemed to afford him satisfaction every time he could catch his servant in any omission. One of the man's duties was to enter his master's room every afternoon on the stroke of 6 o'clock to take him out for a walk. Repeatedly X put his watch forward half an hour to make it show 6 instead of 5.30. With his watch in one hand and his cane in the other, indignant at his servant's supposed negligence, he went into his room, dealt him a smart rap and angrily reproached him for his negligence. The servant's protests that it wanted nearly half an hour of the appointed time for the walk were of no avail; the patient was too satisfied with the opportunity of chastising his footman to allow himself to be influenced by any arguments.

His outward appearance was at that time fairly correct, he still carried himself with the assurance of a man of the world and those who only saw him in passing would certainly not have observed anything strange in the fine old man. In conversation he answered with a certain absentmindedness and showed little interest in what others were talking about, but as soon as a name was pronounced, especially of a member of the nobility, X at once became animated and jumping up from his chair, went to his book-case from which he took down a Peerage, or some such book. The same thing happened when he read his news-papers. Everything concerning a person whom he could find in the Peerage or the directory of the public services caught his eye and if it was a notice which served to complete his calendar items, such as an engagement, marriage, birth or death, an appointment, preferment or retirement, etc., he at once got out a pen and made a note of it in his calendars. On turning over their leaves, the pages were found to be covered with a scrawl which was illegible in several places.

Otherwise he took small interest in the day's happenings and passed by everything which did not directly bear on a matter suitable for his calendars. It was only the calendar skeleton of a person's life and circumstances that drew his attention and remained in his memory, for everything else he had neither ears, feeling nor remembrance. For his wife, children and relations, he showed a remarkable lack of solicitude, in this and other respects revealing a fairly advanced dementia. His craze for names and personal data developed into a peculiar nervous restlessness which found a vent in the usual scrawling in the calendars, and incessantly during the course of the day he would go from his chair to the book-shelves and back to the writting-table, carrying the calendar with him. He used up a considerable number of such books, as they soon becames covered with an illegible scrawl.

Sometimes, however, X sought diversion in translating English novels, as he had done before his illness. The translation was written down in quarto copy books containing about 200 pages. When I visited X, I found any number of these. They showed certain interesting features. At the start he had evidently directed his attention to the work a short while and done the translation quite consciously. One page, sometimes only half a page or only a few lines were filled with words, in a more or less illegible handwriting, clearly and connectedly rendering a short incident of the novel in hand. But soon it became impossible to recognise any distinct words

in the shapeless scribbling and then at last the pen had just gone up and down the paper filling page after page with perfectly unmeaning hieroglyphics, possibly with the exception of a single short word, that betokened a faint glimpse of consciousness in the otherwise complete mental abstraction. In fairly even lines page after page in the book was filled with these scrawls. On a later occasion the same thing was repeated. For a short while his attention held out and the writing showed conscious mental activity, then his attention flagged and the action again became an empty automatism, a series of meaningless muscular movements, clumsily imitating written characters.

Other books showed a different form of automatism, again a stereotyped repetition of earlier habits. In these books all the pages were scratched in holes by erasures. When once he had incorporated this activity with his tendency to automatic cycles, he obstinately kept on at it. The writing was still quite illegible, it absolutely lacked orthographic details, but nevertheless he had gone on energetically scratching it out. Page after page was perforated with large holes where his knife had carried on this meaningless work.

A third type of books shows the tendency to motor stereotypies in another form. In these books which — like all the rest — were supposed to contain translations from English novels, only one line on each page was written. Here, too, the illegible handwriting had no orthographic details. At this stage of his illness (in 1904), X was still seemingly correct in his demeanour, but in the night he was uncleanly and was messy at meals. As previously mentioned, his emotional life was extremely blunted.

I called on X two and a half years later when he seemed better in some respects. He was less dirty and a great deal more correct and well-behaved at table. His interest in calendars had, however, assumed still more stereotyped forms. He could now be seen in an incessant circular movement from his writing-table to the book-shelf, back to the table and then again to the book-shelf, driven by the same nervous unrest. With full appreciation of the emptiness of this motor instinct, his wife had substistuted a small stick for the pen and thrown away the ink. Without seeming to notice or ponder over the change, Mr. X opens his books, dips his stick into the empty inkstand and scratches with it in the calendar, whereupon he puts his book back on the shelf, and after a while the same procedure is repeated. With this change in the writing materials, the calendars last longer and things are less messy than before, when X was rather careless about the ink. He has never protested in any way against this simplification.

The last time I heard of him, in the spring of 1919, his condition was on the whole unchanged. He died a year or two later.

The senility from which X was suffering and which was accelerated and complicated by his serious accident deprived him of the power of following the occurrences of daily life with interest or of carrying out any intellectual work with a set purpose. Of course, the necessary condition for such complicated mental functions is that the cortical brain mechanism is unimpaired, in other words, that the contact between the neurones is normally maintained, rendering possible the compli-

cated and mobile interchange of energy- currents from one centre to another. The trauma probably produced serious ruptures in this net of nerve paths and when senility in its turn continued the dissolution of its numerous meshes, the whole mental activity was reduced from conscious and purposive thinking to an automatism along certain remaining channels.

One of the consequences of this gross dissociation must be that »the mutual concurrence, the methodical and purposive combinations between the associative processes fall away, and mental activity becomes a »beside each other« instead of an organic unity *(Wernicke)*. Hence the reduction (cf. p. 211) of the conscious volitions to automatic processes. Impulses and disconnected actions are the result and the gross organic rupture is often followed by a splitting and doubling of the personality. The episode with the footman is illustrative and needs no comment, and in senile sejunction it is not rare to meet with cases of a similar kind, where we have good reason to say, »that the one hand does not know what the other is doing.«

The interest in personal data, which had probably been inherent in X for a great many years of his life, represents certain systems of well organised and stable associations, and in the splitting of his personality, these remain, untouched by the general devastation, like the chimney-stacks of a burnt house standing out with caricatured distinctness. At first they are still animated by a conscious interest, but this dwindles more and more. Step by step we can follow the intellectual decay, till there is nothing left of his tastes and habits but an innervation of certain movements as of writing, and a kinaesthetic desire to run about and on the way manipulate the leaves of a directory in a certain manner. The *stereotypies* developed in this way are on the whole different — though there are certainly points of contact — from those imperative movements, indicated by the same term, which we meet with in katatonia. They are in this case the extreme rarefication of a once vigorous, intellectual disposition, soulless ghosts roaming about aimlessly since all interests are dead and nothing is left but a certain vague restlessness. This vague unrest is all that now induces X to perform the stereotyped manipulations. Every conscious purposive conception is gone and finally the outlines of the automatic movements become less and less defined. How automatically this mechanism works is best seen from the fact

Normally, in performing the movements of writing, a continual
a stick had been substituted for his pen.
that X never realised that there was no ink in the inkstand and that

interfoliation of the action with ideatory processes (conscious or subconscious intentions) is necessary. The most intimate interaction of the ideational life and the movements of the hand is required and in the case in question it is at this delicate point we meet with the advancing intellectual decay. In the earlier phases of the disease X writes some readable lines under the control of consciousness. Then, his absence of mind becoming more and more evident, he goes on scrawling illegibly and in a still later phase, he simply keeps on moving his hand without even stopping to observe whether his pen leaves any traces on the paper.

In this mechanisation of a purposive occupation which starts with a certain interest we find a gradual impoverishment of the accompanying ideas. With the increase of senility the volitional act, having, so to speak, no scope in the higher cerebral centres, sinks to the lower, purely automatic level. Whereas the kinaesthetic memories of habitual movements are relatively unaffected and the automatic intentions not reduced to short-circuits as in *ideatory apraxia (Liepmann)*, the disorder in this case results in an all the more evident annihilation of the intellect *(agnosia)*. There is of course no dissolution of the complicated habitual movements (motor concepts), only a complete disappearance of their purposive constituents. We have I suppose good reason in this case to speak of an intellectual impoverishment, or what *Liepmann* calls a *»Verarmung der Begriffe«*.

I have previously in this work called attention to the intimate cooperation between memory and volition and at the beginning of this chapter I stressed the opinion that the static mentality (memory and experience in its widest interpretation) is the postulate of the dynamic mentality, i. e. volition. Hence the senile impoverishment of the intellectual constituents of the actions coincides with the *regression* of memory considered in Chapt. X.

A characteristic of senile regression is always »eine Verarmung der Begriffe« and because of this intellectual decay an empty and petrified automatism often governs the manifestations of life in the aged. Their activity shows a monotonous sameness and lacks the freedom and intentional variability of younger days: it is reduced to a scheme of habits. The punctuality of these habits, the regular walks, the never-ceasing repetition of the same subject of conversation, the unchangeable entertainment with a game of patience, the constant devotional exercises, and all this in inevitable reiteration, is quite a common symptom of senile cerebral sclerosis and atrophy. Yet these senile

habits and their symptomatic significance are easily overlooked when they do not assume such dimensions as in the above-described case. Here these phenomena were, presumably through the singular complication with a trauma capitis, exposed with exceptional plainness and emphasised in absurdum. Just as the senile patient usually meets the slightest change in the daily round with obstinacy and stubbornness, so also here, but with extreme exaggeration of the refractoriness. Any attempt to divert the energy-currents into other channels than those ploughed by habit meets with resistance. The intellectual constituents of these habits being annihilated, the old man, constantly repeating certain movements, becomes an absolute automaton, be his outward appearance ever so venerable.

LITERATURE.

Bleuler, E.: Lehrbuch der Psychiatrie. 1916. *The same author:* Dementia praecox oder Gruppe der Schizophrenien. Handb. d. Psychiatrie, herausg. von Aschaffenburg. 4. Abt. 1. H. 1911. *Stransky, Erw.:* Über Sprachvervirrtheit. 1905. *Spencer, Herbert:* The Physiology of Laughter (Swed. transl. 1888). *Bergson, Henri:* Le Rire (Swed. transl. 1910). *Salomonsen, C. J.:* Dysmorphismen, smitsomme Sindslidelser før og nu med særligt Henblik paa de nyere Kunstretninger, 1919, and: Tillægsbemærkninger om Dysmorphismens sygelige Natur, 1920. *Prinzhorn, Hans:* Bildnerei der Geisteskranken. Ein Beitrag zur Psychologie un Psychopathologie der Gestaltung. Berlin. 1922. *Gadelius, Bror:* Senila dissociationsfenomen och deras rättsmedicinska betydelse. Tidsskrr. f. Nord. Retsmedicin og Psykiatri. 1910.

II.

THE CAUSES OF MENTAL DISEASE

CHAPTER XIV.

ENDOGENOUS AND EXOGENOUS MENTAL DISEASE.

The greater and more fateful an effect, the more anxious are we to learn its cause, and the question most frequently put to the psychiatrist by the patient's family is: What has brought on the disease? This question is so much the more feeling-toned, as a good deal of the old prejudice about the patient's own guilt, and the shame of being mentally disordered, etc., is often mingled with the interest of the relations. There really was a time (cf. Chapt. I) when it was quite generally believed that mental disease was due to sin, and even now it may happen that persons whose friends or nearest relatives have become mentally diseased, say: »But how is it possible that this man, who has always been so good and has lived such a regular life, has come to this?« Apart from the touch of naive selfrighteousness revealed by such verdicts, this view discloses how sadly incapable people are of regarding mental disease as mere disease. No virtue protects us against it. The most innocent maiden may swiftly be turned into a poor creature who evokes our pity and dismay. The warmest feelings may be swept away, the noblest strivings extinguished. None of these things affords any protection from mental disease, and it breaks down all that is best and finest in man more mercilessly that any other kind of suffering.

It is also important to remember how often the layman's judgment is wrong, in other respects too, with regard to questions concerning the origin of mental disease. A confusion of cause and effect is extremely common. For example, it not rarely happens that a depressed patient (melancholic or, perhaps, katatonic) in the earlier phases of his disease, before the changes in his mental condition have become obvious to those

around him, shows an increased interest in religious questions and is found reading his Bible or going to church oftener than he used to. When his depression markedly increases and the mental disease at last becomes unquestionable, those around him easily get the mistaken impression that the cause of the disease was religious brooding, whereas this must in fact only be interpreted as a first symptom, the expression of an incipient morbid anxiety with an increased desire to find relief and consolation in religion.

On the other hand, we often find that an incipient exaltation (mania, general paralysis) manifests itself in a growing relish for amusements and dissipation; the laxness and restlessness increase and finally pass into manifest mental disease, this being then explained as a consequence of the excesses. A vicious circle, it is true, makes excesses in Baccho et Venere, and especially the former, accelerate the development of the disease, but it is wrong to regard them as the primary causes. They are properly to be taken as early symptoms, in other words, as an effect of the insidious onset of the disease.

It is exactly the same thing when lay opinion attributes to *onanism* a rôle in the causation of dementia praecox. Onanism is a common phenomenon even in normal puberty, but the more excessive degrees of masturbation must be deemed an expression of the morbidly increased sexual stimulus, which is an early symptom in dementia praecox. Hence, here also, we have a confusion of cause and effect. It would be a good thing if popular notions in this respect could be corrected, for it has too often led and still leads to judgments, as hard as they are unjust, on the afflicted, who indeed are not to blame for their sufferings. And when this judgment is pronounced even by parents, who have transmitted the essential cause of the disease to their children, viz. the hereditary disposition, the unwisdom of the condemnation is still more outrageous.

With regard to onanism, whose supposed significance as the »cause« of mental disease has been radically misunderstood, we refer the reader to Chapter XII (p. 313).

If we wish to discover the real causal connection in a mental disease, we must in most cases be prepared to meet with great difficulties and extremely complicated conditions. The brain, which is the substratum of mental life, is, on the one hand, the bearer of a great many possi-

bilities, tendencies and dispositions, out of which disease may develop, and, on the other hand, it is an extremely complex and delicate organ, liable to injuries and disturbances by many different roads and in many ways, from within or without, directly or indirectly. There are *internal* and *external* forms of causation to which we have to direct our attention, and broadly speaking both these forms are generally to be found together, though now one, now the other, can be regarded as dominant.

The predominance either of internal or of external causes in the genesis of mental disease suggested to *Möbius* the terms *endogenous* and *exogenous* psychoses. The former are undoubtedly in the majority; indeed, we may doubt whether a mental disease ever breaks out in the absence of a certain, *hereditary* or *acquired disposition.* But this latter form of cerebral inferiority must none the less be ascribed to the enduring influence of external injurious factors (for instance, alcohol).

External causes. Injuries to the head, such as accidents, concussions, bullet wounds, cuts, etc., easily cause disorders of the brain and its functions through slighter or grosser lesions in its cellular tissue, tracts or vessels. They occasion wasting and loss of substance, haemorrhages and hence increased cerebral pressure and disturbances with more or less apparent paralysis of the vital manifestations of the nervous tissue. The same detrimental influence on cerebral avtivity may be caused by inflammations of the membranes, or by tumours or morbid changes in the vessels *(arteriosclerosis).* In the latter case the nutrition of the cerebral substance is impaired, and the physiological metabolism disturbed as a result of the morbid changes in the vascular walls. In arteriosclerosis haemorrhages through rupture of the vascular walls are often added. These are sometimes slighter and occur more or less frequently, sometimes more considerable. By a localisation in the projection centres they will give the *focal symptoms* so important for the diagnosis of arteriosclerosis. Syphilitic changes, in the form of meningites (encephalomeningites), gummata or morbid processes in the walls of the small cerebral arteries (endarteriitis), may cause similar symptoms through the destruction of nervous tissue, increased pressure of haemorrhages. Besides by the specific luetic alterations, the nerve substance and its vessels are also affected by the »meta-syphilitic«, (or rather modified luetic) processes among which we include the tabetic and paralytic changes. Particularly fatal are the paralytic changes, owing to their great extension and precipitous course. Whereas cerebral syphilis is often limitted to certain regions of the nervous tissue, dementia para-

lytica is a cerebral affection which assumes the character of an all-devouring mental disease. This corresponds well with its extension to all parts and layers of the cerebral cortex. The fact that other brain diseases, arising through haemorrhages or tumours, are far less destructive to the mental functions, is naturally due to their limited local extension. More general disorders, such as a muddled intellect, bluntness or even unconsciousness, are brought on by these diseases only in proportion to increased brain pressure, hence rapidly growing tumours yield psychic symptoms more easily than those developing slowly. Here I would also refer to the rare cases of acute *pseudotumor cerebri* observed in katatonia, which, after a sudden loss of consciousness, rapidly lead to death. *Alzheimer* has in these cases called attention to certain characteristic histological changes in the cerebral nervous tissue, while *Reichardt* emphasises that they are caused by a lacking correspondence between the capacity of the skull and the brain, when the latter has undergone a rapid increase in volume. Supposing that such an increase is always of an abnormal nature, both these authors may be right.

It is clear that the psychic symptoms from tumours and haemorrhages are especially due to their localisation. It has long been assumed that tumours in the frontal lobes would more than any others give rise to mental disorders, and a peculiar taste for smart sallies, puns and witticisms *(Witzelsucht)* has been mentioned as a characteristic symptom of these tumours. Yet there are many, and among them *Kraepelin,* who with reason doubt that this symptom is of any significance for the localisation to the frontal lobes. Nearly the same peculiarity appears in other conditions; they are common, for instance, in dementia praecox.

That tumours of the frontal brain should be especially of a nature to produce psychic symptoms is emphatically denied by *von Monakov,* and from my own experience I can mention a case in which a tumour the size of a walnut occupied a large space in the left frontal lobe without causing any pronounced change either in the intelligence or the emotions of the patient. This was a girl of twenty, who presented a picture of alertness and clearness of thought, as well as a rich and full-toned temperament which she kept well under control. It stands to reason that such cases strongly support the scepticism with regard to the localisation of mental life which we pronounced in one of our introductory chapters (Chapt. II).

It is a common experience that a great number of organic changes

in the brain — such as tumours, senile processes, arteriosclerosis, haemorrhages, syphilis, and others — may create a general psychic inferiority, and thus give rise to hysteroid symptoms and modes of reaction. Along with the organic symptoms, these patients may thus be capricious, fractious, given to exaggeration and simulation, have attacks of a psychogenetic nature, and so on.

Bleuler had made a close study of these conditions in an article, *»Physisch und psychisch in der Pathologie«*, and in this connection emphasised the importance of a correct presentation of the problem. The question to be put with regard to the causation of a mental disease is not: »Organic or functional? Physical or psychic?« The proper question is: »How far organic and how far functional?« We must, however, point out that this difference between »physical« and »psychic«, »organic« and »functional« by no means excludes a theory of parallelism; the two opposites do not mean the same thing as »with« or »without« a substratum. The concept *»organic«* simply implies that the changes in the vital (bio-chemical) processes which, in the functional forms, are transient and more benign disturbances of physiological conditions, here manifest themselves as destructive organic processes which leave behind them a demonstrable histological effect. *»The Psychic« is never, as it were, suspended in mid-air,* it must always be conceived as having its somatic equivalent.

Some *nervous diseases,* also, may be followed by mental disorder. Then the latter is often to be considered as a collateral effect of a common causative factor which, sometimes in an earlier stage, sometimes coincidently, brings on the former. This is the cause in *Korsakoff's disease* (or more correctly, syndrome) where we have on the one side the inflammation in the peripheral nerves (polyneuritis), including their origin in the spinal cord, and, on the other side, the changes that are localised in the cerebral substratum for the intelligence and especially the *memory,* in whose functioning the engraphic ability (the power of inculcation) is weakened or entirely paralysed. The causation of these collateral effects is a general intoxication, in most cases after chronic alcoholism, the injurious influence of which, perhaps indirectly, through a disordered metabolism, impairs the central nervous system. Korsakoff's syndrome has also appeared after typhus, puerperal fever, malaria, and beri-beri *(Kraepelin),* — though under these circumstances with a more favourable prognosis. Organic changes of the cerebral cortex in arteriosclerosis, brain syphilis, senile dementia, brain tumours and traumata also sometimes give memory symptoms which entirely correspond to the anterograde amnesia, etc., in Korsakoff's disease, so that the genesis of these symptoms is by no means uniform, though the mode of reaction remains unchanged in these different conditions.

Among the nervous diseases which are often accompanied by mental disorders we may mention *Sydenham's chorea,* which in a great many cases is assumed to be caused by the same toxic agent that gives rise to acute rheumatoid arthritis. Hence even this toxic effect may have collateral symptoms, on the one side the motor incoordination, on the other sleeplessness and psychic agitation, changing moods, distraction, inconsistency and confusion. In familial *Huntington's chorea,* which is a degenerative nervous disease of chronic nature, a frequently profound dementia develops parallelly with the motor incoordination.

A number of other brain diseases are now, like the last-mentioned, referred to disorders of the *corpus striatum.* Among *striate* and *pallial* diseases must be remembered the so-called *Wilson's disease* and the nearly related *pseudosclerosis (Strümpell).* These may both, (though more especially the former), be accompanied by mental disorders which conspicuously recall the symptoms of dementia praecox. With regard to the complicating psycho-nervous symptoms, *Paralysis agitans* has many points of correspondence with the *post-encephalitic* conditions which, owing to this general resemblance, have been given the name *»parkinsonism«;* in both cases disorders of the motor automatisms act repressively on the intellectual processes, and hamper attention, psychic adaptability and intention.

In *hereditary ataxy* (Friedreich's and Marie's diseases) psychoses may also set in. As a rule they are to be regarded as collateral phenomena of the existing degeneration, and there is no direct causative connection with the nervous diseases mentioned. Such was the case in a few observations, where I have seen dementia praecox arise in connection with these forms of degenerative nervous processes. Symptom combinations of this nature may sometimes be mistaken for juvenile cases of paralysis. In *multiple sclerosis (sclérose en plaque),* on the other hand, a direct causal connection between neuroglic foci in the cortex and the complicating mental disease is not precluded. The symptom-picture in the psychoses arising in connection with multiple sclerosis, is of varying character. Confusion and delirious states with hallucinations, paranoid ideas and dementia have been described by several authors.

Mental disease is of common occurrence in connection with *genuine epilepsy.* Not that we know what relation the attacks of convulsion bear to the psychic symptoms in these cases or how far the latter are imputable to the same morbid changes — though with a different localisation — as those that evoke the former. We only know that the

convulsions, in some cases at least, are forerunners of the extensive psychic changes summed up in the term *epileptic dementia.* These include a distinctive change of character, impaired memory and intellectual dullness. Apart from epileptic dementia, which is by no means developed in every case of epilepsy — there are famous epileptics in the history of the world — we find certain quite characteristic forms of mental disease in connection with epilepsy. The most typical are the so-called *psychic equivalents,* which appear as violent attacks of dissociation, generally accompanied by amnesia. As the name implies, these episodes have been identified with ordinary convulsions on the supposition that they were mental phenomena, caused by an excitation in the centres of the psychic functions. Absences and fugues may also be observed in connection with genuine epilepsy. These sudden changes in the patient's consciousness are often very difficult to distinguish from similar episodes of a hysterical origin, and only their connection with preceding, or succeeding, fits of convulsion is here a decisive factor.

Epilepsy during infancy is often followed by arrested cerebral development, *idiocy.* This is also the case in certain congenital bodily anomalies *(tuberous sclerosis),* in early developed inflammatory states of the cerebral membranes *(hypdrocephalus)* or certain degenerative processes of the nervous substance *(amaurotic idiocy).* In such cases the epilepsy is not idiopathic, but has only a secondary, symptomatic significance.

In rare cases mental diseases appear in connection with fits of migraine, and in delicate, enfeebled persons bodily pain may produce a transitory confusional insanity or a delirious episode of short duration.

In *infectious diseases* psychoses are a common occurrence, though they are seldom brought for treatment to hospitals owing to their often very acute, swiftly passing and rather symptomatic character. Occasionally they set in as an initial delirium (in typhus) even before there is any rise in temperature; in other cases they develop together with the fever, or they appear later at the critical fall of temperature (collapse delirium in pneumonia), or, lastly, during an afebrile period of the convalescence. Our experience does not give any support to a theory of different forms, or of a distinction between initial, febrile, infection, collapse- or exhaustion delirium. Of course, this does not preclude the possibility that in the various cases various substances injurious to the cortex and its functions may exercise an influence. In most cases, however, the chief agents are the toxins formed by the spe-

cific pathogenic bacillus in the various infectious diseases (typhus, pneumonia, erysipelas, influenza, encephalitis lethargica, small-pox, cholera, scarlet fever, measles, whooping cough, arthritis, and others). Moreover, in some cases, as for instance in measles, arthritis, etc., the high temperature may probably play a part. Still it is remarkable *(Kraepelin)*, that in many cases tuberculosis can be marked for a long period by a very high temperature, 40 to 41 degrees C., without any distinct influence on the psychic functions being observed. A third factor to remember is *exhaustion*.

There are good reasons for distinguishing between *fatigue* and *exhaustion*. In the former state, the subjective condition is an expression of the need of restitution by repose, felt by the body and especially by the central nervous system, and — whether or not, with *Mauthner*, *Trömner*, a. o., we assume the presence of a special »sleep centre« in the mid-brain — the sleep that comes to us at regular intervals with its dissociation of the conscious continuities is to be regarded as a physiological effect on the nervous tissue of the brain of the dissimilation (catabolic) products accumulated in the blood. When these products have been removed during sleep, consciousness reawakens, and the apperceptive forces again become active. In *exhaustion*, the moment for the need of rest and restitution has been neglected, the relation between assimilation and dissimilation has become disproportionate and, while a far-gone expenditure and oxidation of the active parts of the nervous tissue has taken place, the blood has become overloaded with waste-products whose poisonous effects on the nervous centres have exceeded the physiological measure. A pathological, extreme stage of exhaustion, collapse delirium, may be arrived at, which sometimes takes the unfavourable form of an *acute delirium*, described in a previous chapter.

Hence, in febrile and infection delirium these three factors may cooperate, now as more essential factors, now as contributive causes. Exhaustion may come on during the convalescent stage of a protracted infectious disease, and other circumstances, such as trouble, sleeplessness and insufficient nourishment, may upset the ratio between assimilation and dissimilation (biotonus).

Independently of infectious diseases, the above-mentioned causes as well as other unfavourable circumstances like hyperlactation, great loss of blood, privations, destitution and misfortunes, may sow the seeds of a chronic exhaustion, which finally passes into delirious or amentia-like conditions.

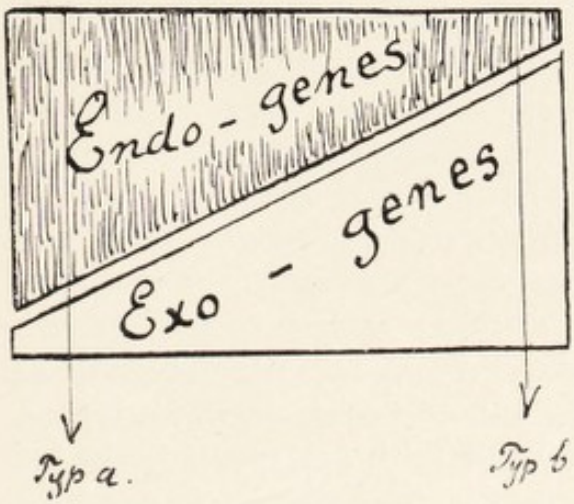


Fig. 41. Type a. Type b.

We mentioned above the rare occurrence of infection and febrile deliria in mental hospitals. Epidemics, however, furnish an exception, and this was the case in the autumn and winter of 1918 and 1919, when a serious influenza-epidemic raged in Sweden. We had then plenty of opportunity to follow a large number of mental disorders which had developed in connection with the »Spanish flu«; these confirmed our earlier theory of the causative connection and the importance of the endogenous factors in many cases of »infection psychoses«. If we attempt a grouping of the cases that came under our observation, we find slight uniformity. In most cases we recognise manic-depressive forms, or forms of dementia praecox, less often cases of delusional derangement. A more or less perceptible confusion *is the only exogenous feature* in these clinical pictures which accordingly, in conformity to the principle *a potiori fit denominatio*, must be designated as cases in which *endogenesis* is the essential causal factor. The genetic relationship in these cases, type a, is made clear by Fig. 41. On the other hand, we observed cases which, in connection with a more violent infection, were accompanied by an excessive confusion (type b). As Fig. 41 shows, the endogenous factors are here thrown into the background and, all individual modes of reaction being obliterated, a confusion due to cerebral poisoning becomes the essential feature. Only these cases (type b in the figure) can be regarded as infection psychoses in the proper sense of the word. Between these extreme cases, type a and type b, there are all kinds of transitions. The nearer a case lies to the former type, the more does endogenesis predominate; the nearer it comes to type b, the more obvious is the exogenesis.

Now we may ask, what will be the effect in a case (of type b), where, as just stated, an infection psychosis in the real sense is present? In ordinary cases such a psychosis presupposes a relatively strong resistance in the cortex, which only discontinues its functions after a violent toxic effect. Our clinical experience has given but little support to the theory of *Kraepelin*, likewise propounded by *Nissl*, that different toxins not only constitute a hindrance to the functionning of the

cortex, but that they also, by affecting different cell strata or by making their poisonous effect felt in different ways, give rise to specific forms of disease.

With regard to the relation of the pathogenic agents to the symptom-complex, opinions are sharply divergent. *Siemerling* differs entirely from *Kraepelin* and simply denies all possibility of even concluding from the clinical picture whether the case is endogenous or exogenous in character. *Bonhoeffer,* too, keeps decidedly aloof from the idea of a specific symptom-complex by means of which an influenza-psychosis might be distinguished from a mental disease in connection with typhus, pneumonia, etc., but assumes certain typically exogenous modes of reaction, *exogenous predilection types,* which, however, may just as well be evoked by traumata capitis, strangulation, apoplectic seizures etc., as by infections and intoxications. According to Bonhoeffer, these exogenous modes of reaction are: deliria, epileptic states of anxiety, dreamy episodes, hallucinosis, and amentia-like conditions, the latter sometimes more hallucinatory, sometimes more katatonic or incoherent in nature. If we set aside the »massive« trait of confusion, which is peculiar to and essential in most of these conditions, all the other details can hardly, it would seem, lay claim to a more typical exogenous character, a circumstance which has not escaped Bonhoeffer. It has especially proved impossible to distinguish between the terms »exogenous« and »endogenous« in epileptic and katatonic modes of reaction, and particularly when Bonhoeffer, on the strength of a few cases, includes among his modes of reaction an »exogenous mania«. *Kleist,* who lays great stress on these difficulties and calls attention to the exitement that is the first symptom of alcohol delirium and often appears at the beginning of a fever-psychosis, wishes to substitute for the concepts »endogenous« and »exogenous« the terms *homonomous* and *heteronomous.* In the first he includes all psychic cases (manic, melancholic, paranoic) in which there is a sort of continuity with normal mental life and which, accordingly, do not imply the difference in kind indicated by the term heteronomous. What *Kleist* means by homonomia is, if I understand him rightly, the same thing that I have previously designated as a more quantitative shifting, displacement or disproportion of the emotional, intellectual and volitional qualities whithin the mental structure, a pathological strengthening of certain characterological traits at the expense of normal self-determination. Heteronomia, on the other hand, includes more qualitative alterations,

i. e. symptoms that do not seem to accord with the original mental constituents. Yet I think there is in nature no distinct limit between homonomia and heteronomia, and I for my part am rather disposed also to see a homonomous symptom in the mode of reaction which more than any other marks all »massive«, exogenous factors acting upon the brain, viz. dissociation and confusion. This mode of reaction has its analogy in sleep and normal dreaming, and it seems to me that it can hardly be looked upon as altogether heteronomous. Some years ago, *von Muralt,* upon a psychoanalytical study of a case of influenza-psychosis, arrived at the conclusion that no essential dissimilarity distinguished it from a psychogenetic dissociation or an ordinary series of dreams. It would, says v. Muralt, be simply absurd (»barer Unsinn«) to refer the ample, personally tinged details to the effect of the influenza toxin. It was more probable that the somatic disease, by impeding the logical thought processes, had released the deliria which, as in natural sleep, had fantastically reproduced the patient's experiences and the conflicts of his life.

Specht, also, asserts against Bonhoeffer that no essential characteristic distinguishes the exogenous from the endogenous modes of reaction. In support of this view he adduces a state of depression which he observed in himself on two different occasions, once after a CO-poisoning, and on another occasion after influenza. Specht considers the disease to have been exogenous in nature on both occasions. Thus, according to Specht, there would be no fundamental difference between this exogenous effect of a mild nature and the more massive effect which, with a more vigorous assault upon the cortex, manifests itself as a dissociation. I am so far of Specht's opinion that I think the above-mentioned cases may both be regarded from the same point of view, but the point of view that I prefer is exactly opposite to that of Specht. The difference in reaction depends, I own, on the intensity of the external cause, but above all on the peculiar character of the psychic structure. The higher or lower degree of psychopathological liability implies *a fore-ordained propensity to fall in one direction or the other,* this being only in small degree governed by the exogenous cause. The trait of dissociation present with exogenous factors (Bonhoeffer, *Ewald*) is undoubtedly an expression of the strength of the injury, but dissociation as such, and its detailed symptomatology, shapes itself in accordance with the more or less deep-going paralysis of the higher system, i. e. the apperceptive powers. (Cf. Chapt. VIII).

The limited influence of the exogenous causes on the symptom-picture is moreover restricted to a certain difference in their tendency to select now rather the emotional, now rather the sensory, and now rather the motor centres, as the object of their stimulation. This must be explained by the supposition that the affected centre is a *locus minoris resistentiae,* rather than by the specific character of the effect of the poison or infection. Yet I do not think it impossible that certain poisons, as alcohol, haschisch, mescalin, etc., are to some extent exceptions to this rule.

We may add that *Kleist* assumes the presence of an individual, sometimes even hereditary, predisposition to infection psychoses; and this cannot be regarded as an absurdity if considered as a kind of idiosyncrasy for certain kinds of toxins. On the other hand, we come across cases where only a slight sensibility to infection is observable, though a repetition of endogenously conditioned episodes of confusion bears indubitable witness to a pronounced constitutional lability (autochthonous lability, *Kleist).*

Besides the acute infectious diseases, the most important of which have here been enumerated, those of a chronic nature, such as *tuberculosis* and *syphilis* should here be mentioned. The euphoria and light-heartedness which persist to the very last in tuberculous patients, are a curious universally observed fact which may possibly be connected with a particular toxic effect. *Ewald* is of opinion that the tubercle bacilli, like alcohol, have a special affinity for the affective centres. As outstanding features of the »tuberculous character«, *von Muralt* mentions »great liability to fatigue, weakness of will, lack of self-control, irritation, great emotional lability, a tendency to suspicions and hypererosia«. In addition, acute psychoses may also occur but, apart from the psychic symptoms in tuberculous meningitis, it may still in such cases be uncertain whether the disease is exogenous in nature.

The connection between syphilis and mental disease is far more indisputable and, in any case, of much greater importance. The interest here centres, on the one hand, in *brain syphilis* and, on the other, in *paralysie générale* and *tabetic insanity.* Beyond what has already been said about syphilis in its direct, possibly »post-tertiary« or »metaluetic« effects on the central nervous system, we refer the reader to the exhaustive account of these forms of organic mental disease in the special part of this work.

The differing action on the brain of the chronic infectious diseases

and the chronic intoxications, on the one hand, and acute disorders on the other, has been assumed by *Ewald* in agreement with *Bonhoeffer*. A general change may bring about a certain similarity with the endogenous predisposition. The presence of spirochaetae in the cerebral cortex in cases of paralysie générale, however, renders it probable that even here the toxins act directly and not only by the roundabout way of a general dyscrasia, whereas this is most probably the case in lues cerebri and in tabetic derangement, as well as in the alcohol psychoses.

One of the more important exogenous causes of mental disease is intoxication by alcohol and other narcotics such as morphia, opium, cocaine, etc.

The influence of alcohol on mental life has been studied in detail by several scientists, and it is chiefly *Kraepelin* and his school, *Rüdin, Aschaffenburg, Kürz,* etc., who have attempted by experimental studies to make clear the mode of action and the dangers of alcohol in use and abuse.

The symptoms of acute alcoholic intoxication are, on the one hand, a difficulty of apprehension, inculcation and the adaptation of impressions but, on the other hand, a facilitation of the simple motor functions and, in connection with this, an increased impulsivity. Purely intellectual functions, such as association, counting, etc, are unfavourably influenced even by quite small quantities of alcohol, but reading and the mechanical repetition of what is read are, to begin with, easier. Hence, the two components of mental life here concerned are differently affected by alcohol, the motor functions being furthered, the higher intellectual faculties hampered. The first-mentioned favourable effect of alcohol is perhaps chiefly due to the removal of a great many repressive elements, and the pleasure afforded by alcohol is therefore in the main a feeling of freedom and relief, a reversal of the affective state. As *Aschaffenburg* has shown by his experiments, this feeling has an entirely subjective value and is of no practical use. The persons on whom the experiments were made, were accustomed to alcohol and were themselves convinced of its favourable influence. Still it appeared that the improvement of output through practice, which as a matter of fact can be observed daily even after years of craftsmanship, was lessened after 36 gr. of alcohol. The result of these investigations was accordingly a subjective feeling of increased work but, nevertheless, an objectively measurable decline of capacity

What has merely been outlined in these experiments, stands out with brutal distinctness in acute alcoholic intoxication. The first stage is here a crippling of all restraining influences and an acceleration of the intellectual tempo in connection with psychomotor stimulus phenomena. When these have exploded like fireworks with various detonations, the paralysing effect asserts itself, with general exhaustion and despondency.

The after-effects of alcoholic intoxication do not entirely wear off, as we know, until several days have elapsed. *Chronic alcoholism* develops in a vicious circle. For, in order to free himself from a general feeling of drowsiness and depression, from fatigue and shivering, the drinker has recourse to the glass, and thus his personality gradually undergoes a far-reaching change of body and soul by a summation of this continuous poisoning by day and by night. This deterioration, which affects the central nervous system, is the essential feature in the condition which, after *Magnus Huss*,[1]) we call *chronic alcoholism.*

Chronic alcoholism, by a deleterious action on metabolism, brings about a general dyscrasia to which, among other things, the drunkard's liability to mental disease can be traced. Under these circumstances a number of toxins accumulate in the body which under normal conditions are removed by digestion and respiration. When this excretory mechanism becomes disordered by an affection of the lungs, a gastric or intestinal disease, this may suddenly give rise to violent symptoms of auto-intoxication, while the nervous system, deteriorated by alcohol, now becomes strongly affected. It is in this way *Bonhoeffer* proposes to explain the genesis of *delirium tremens.* How far alcoholic delirium can be induced by abstinence remains an open question. A number of authors, among them the Swedish psychiatrist *Wigert,* have cited cases showing that sudden abstinence may have this calamitous effect.

A more detailed account of chronic alcoholism and the alcohol psychoses, *delirium tremens, alcoholic hallucinosis* and *alcoholic paranoia,* developed out of this habitual state will be given in the special part of this work. *Korsakoff's* disease has already been briefly mentioned.

Finally it must be stated that many disorders which have been imputed to alcohol psychoses, have only a superficial connection with

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[1]) *M. Huss: Alcoholismus chronicus.* Stockholm 1849.

the excessive use of alcohol. Thus *depression* and *exaltation, dementia praecox* and *epilepsy* may break out under the influence of alcohol *(Stöcker),* and incipient psychoses may develop more swiftly. What is called *alcoholic epilepsy* as well as *dipsomania* are considered by several authors to develop in connection with latent epilepsy. With regard to dipsomania, this opinion has been supported by *Kraepelin* and more especially by *Gaupp,* but from another quarter it has met with criticism *(Pappenheim),* to which we shall subsequently return. As to the significance of alcohol for *heredity* I refer the reader to a later chapter.

During the last few decades, the abuse of morphia has spread among the civilised nations and chronic morphinism is not rarely the cause of a psychic disintegration, if possible of an even more terrible nature than alcoholism. Morphia, like alcohol has, broadly speaking, both a narcotic and an exhilarating effect, though volition is more strongly affected by morphia *(Kraepelin),* while at the same time a favourable affectively toned influence creating a change in the disposition and organic sensations causes a general well-being and stimulates and enlivens the intellectual processes. The effects on volitional life are in the long run *morally destructive,* and if we consider the speedy incidence of enfeeblement and dysphoria and the ease with which the body gets accustomed to the poison and, finally, the need of stronger and stronger doses for the return of the longed-for euphoria, we shall easily understand, how morphomania gradually forces its victims into a deeper and deeper degradation. The moral deterioration is often a conspicuous feature in the morphomaniac, and if the fiercely-desired injection can only be procured by cunning or lying, he rarely hesitates about the means and does not even shun criminal expedients. The depression that accompanies morphomania, the painful organic sensations and the loathing of life, may be intensified to anguish and violent unrest; hence abstinence is here more liable to cause senseless outbursts, confusion and delirium, the latter being not rarely, however, of a psychogenetic nature. This possibility must always be taken into consideration in abstinence-cures.

In regard to the question now before us, *opium* is of far less interest to the psychiatrist. Its rôle as a stimulant and narcotic, so important among opium-eaters or smokers in certain exotic climes, for instance in China, is of no significance to us. The use of opium in psychiatric practice as a sedative in melancholia or morbid fear does not entail any great risk. During my thirty-five years' experience as a psychiatrist I have not seen one single case where the remedial

use of opium has given rise to *opiophagism* whereas, unfortunately, a disastrous result of the prescribing of morphia is by no means rare. Hence when such an indication is present, the physician need not hesitate to prescribe opium, whereas with regard to morphia he will be wise to use it as an analgetic only in extreme cases.

Cocaine, falsely believed to be a relatively innocent drug before the knowledge of its action became established, was soon found to possess the same fatal properties as morphia, and indeed, to be able to undermine even more quickly the resisting power of the nervous system. Chronic cocaine poisoning is sometimes accompanied by insanity in the form of confusion or delirium with hallucinations (cocaine insanity). Even while consciousness is clear, hallucinations may occur (hallucinosis). In a case within my experience most of the senses cooperated in giving the most convincing stamp of reality to the falsifications. The patient, a physician, saw how white cotton-wool pellets changed in his hands into white mice. When he had gone to bed, he saw the mice come running across the floor, saw them jump into his bed, was conscious of their peculiar smell, felt them inside his night-shirt, caught them in his hands, and when he squeezed them a little harder he distinctly heard a strange crunching sound, but all the time he knew perfectly well that he was the victim of a hallucination.

Among other remedies and poisons which may in rare cases bring on deliria, we may mention *atropin, hyoscin, salicylic acid, quinine,* etc. Poisoning with bromids may cause phenomena of paralysis and incoordination (disturbances of speech), drowsiness and intellectual inertia (disorders of apperception), the symptoms thus showing a certain similarity to the simple form of dementia paralytica. If there is excessive use of alcohol at the same time, the similarity to the latter affliction may be still more obvious. Finally, accidents in the form of carbon monoxide poisoning may be accompanied by delirium with subsequent amnesia which may sometimes be of a retroactive nature.

We have already expressed the opinion that the psychic symptom-complex in the different infectious diseases, beyond the dissociation common to them all, does not exhibit such essential differences as to give us reason to postulate, as earlier asserted by *Kraepelin,* different forms of disease with a toxic action localised in different cases to different substrata in the cerebral cortex. Nor does our experience of acute intoxications make us abandon this view. Here, too, the dissociation is the essential thing, the symptom common to all cases. And however much the clinical picture may vary, owing to affective differences, pleasurably or painfully toned organic sensations, motor phenomena of stimulation or paralysis, hallucinations, and so on, yet this difference, whose specific (exogenous) nature we partly admit, implies

essentially the same dissimilarities, due to constitutional conditions, as we observe from case to case within other groups, such as manic-depressive mental disease, or dementia praecox.

It remains for us to mention the cases of intoxication due to metabolic derangement, i. e. *auto-intoxication.* All organic diseases, gastric or enteric; or affections of the liver, kidneys, lungs or heart, etc.; may, by their injurious action on the nutrition of the cortex, by insufficient oxidation of the blood or by a content in the blood of foreign ingredients, poisonous to the cortex and subcortex and so on, cause disorders in the activity of the brain; disturbances of temper and intelligence; irritability and depression (in diseases of the stomach or heart); episodical dissociation (diseases of the heart or kidneys); or the menace of obfuscation and annihilation of the intellectual functions (uraemia).

With regard to the forms of auto-intoxication associated with pathological conditions of the internal secretion, we refer the reader to what will be said under the next heading.

Psychogenetic causes. Among external causal factors we have to take into account the many difficulties that beset human life. Under this head come all the circumstances in private and social life that intimately affect the fate of the individual, the peace of his working-hours and his mental balance, such as economic difficulties, suffering and distress, bad hygienic conditions, adversities and calamities of various kinds which seriously menace his welfare. The majority of these causes are generally termed psychogenetic.

This leads us to consider the great importance of painful or fear-toned experiences, alarming situations, and psychic shocks, such as a violent grief, or impending peril. The effects of such blows, falling with sudden violence, are usually attributed directly to the strong emotion. Yet in supposing a direct transference of the effects of a violent shock from the psyche to the central nervous system we have good reason, on epistemological grounds, to put a mark of interrogation here. Nevertheless the view we have already indicated as to the way in which an emotion develops will perhaps make it easier to understand how a real *affective intoxication,* conveyed by the vegetative system, including the endocrine organs, may set in here, changing emotion into dissociation, stupor, etc. At the same time we get an explanation of the more unusual cases, in which certain bodily changes take place, such as the hair suddenly turning grey or the pigmentation of the skin becoming defective (vitiligo), after a deadly fear.

In a previous chapter (Chapt. IV) we dealt with the hypothetical connection of temperament and affectivity with the vegetative system and *internal secretion*, and we shall here touch upon the question of the disturbances which may be supposed to be due to auto-intoxication from the endocrine organs. In themselves, these causative factors are endogenous in nature, but in so far as they are supposed to convey exogenous effects, we have reason to dwell on them here, this question being highly important for the psychiatric causations.

In their relation to mental life, the secretory organs in general have a position that I feel tempted to call favoured and intimate; hence the activity of these organs is very easily brought into play by ideas, suggestion and auto-suggestion. It is, for instance, hardly possible to picture to oneself vividly a well-flavoured and juicy fruit without one's mouth watering, and in such cases we may rightly say that the idea is directly continued in vital processes in peripheral organs. A similar, very intimate correspondence exists between the psyche and the glands of internal secretion. That these circumstances, biologically speaking, are of the very greatest importance for the existence of the individual and the race, we can easily convince ourselves by the rôle that the digestive and the generative organs have to fill, and in their connection with these vital objects these organs are strictly speaking *primary emotional organs*. To a certain degree, all the endocrine organs belong, directly or indirectly — and in the latter case largely through a correlation with the sexual glands — to the sphere of suggestibility here mentioned, and to all appearance a morbid emotivity implies an increased liability to psychic reaction in the endocrine organs. If this be the case, and, for reasons immediately to be stated, it seems to me highly probable, then it is no longer inexplicable that a sudden shock or an incessant recourse to »the visceral substratum of emotion« may act upon the internal secretion so as to cause a hyper- or dysfunction which under unfavourable circumstances may become fatal. The endocrine organs that concern us most nearly here, are the *thyroid gland* and the *sexual glands*, but other endocrine organs may also be supposed to be acted upon in a similar manner, and we must remember that there exists a peculiar correspondence between all of them.

The modern view of *Graves'* disease as a thyreotoxicosis has pushed into the background a great deal of the interest in the »psychic factors« in the genesis of the disease. In *Eppinger's* detailed account of morbus Basedowii in *Lewandowsky's* »Handbuch der Neurologie«, these factors only receive passing mention. Now it is possible that there is an essential difference between the genuine morbus Basedowii and the so-called basedowoid disease, and it may be that it is rather in cases of the latter that the psychic factors play an important part in the development of Basedow's disease. We shall discuss this further later on.

From early times, however, in their interpretation of morbus Basedowii, psychiatrists have been mindful of the possible *psychogenesis* of this disease, and, independently of each other, *Peter* and *Mackenzie* have called attention to the strange correspondence existing between the acute phenomena of intense fear e. g., palpitation of the heart, tremor, exophthalmus, perspiration, heat, diarrhea, vomiting, polyuria, paresis of the extremities, etc., and the permanent and chronic symptoms

in morbus Basedowii. According to *Peter*, the ultimate cause is a morbid emotivity. It is on account of the presence of this sensitivity that a psychic shock is capable of bringing about psychic disorders as well as morbus Basedowii. While emotional disorders soon pass in most of us, they become permanent in the Basedow patients, »*parce que ce sont des ultraémotifs*«. The centres which are affected during the morbid fear and give rise to the above-mentioned symptoms would, accordingly, in Basedow's disease, be exposed to a continuous functional irritation. *Raymond* and *Sérieux* accept *Peter's* view, and *Hector Mackenzie* considers the matter in much the same light: »We have only to imagine the condition (resulting from severe terror) to become prolonged by a failure of the nervous system to recover its balance and to right itself, and we have a more or less complete clinical picture of *Graves'* disease.« The same theory is expressed by *Buschan* and *Putnam*.

Other diseases connected with disorders of the endocrine organs may be traced to a sudden fright. Thus *Pel*, as early as 1891, published a case of acromegaly in a young girl where the characteristic symptoms of disease developed in immediate connection with an event causing a sudden fright that happened during her menses. Later *Pel* published two more cases of acromegaly in women, also following upon a fright. Commenting on the occurrence of morbus Basedowii and diabetes in connection with fright, *Pel* expresses the opinion that the relation between the sharp emotion and the acromegaly in the three cases mentioned was probably of a more intimate nature, and not a mere coincidence. In this connection I will call to mind a case of vitiligo after exposure to peril of death, first published by *Welander* and then by *James Strandberg*. The latter suggests as a possible explanation an irritation of the chromaffine substance of the adrenals. If we here add the experience, gained by experiments, that a similar irritation, accompanied by increased adrenal secretion, appears after fright in cats, these examples will support our assumption that strong emotions are capable of injuriously affecting the function of the endocrine organs. The effect may possibly always be polyglandular, even though the immediate effect is most clearly evidenced in a single organ.[1])

Of equal importance as an acute shock is the effect of repeated psychic traumata, as also of long-continued suspense and anxiety during unfavourable external circumstances. In this way, too, Graves' disease may evidently develop, and a very instructive case of this kind has been published in detail by *Friedemann* and *Kohnstamm*.

With regard to the *sexual glands*, we should first realise the fact that there is undoubtedly a very intimate correlation between these organs and the thyroid gland; and *a priori* there are good grounds for the theory that the significance, which all experience teaches us that the sexual glands possess for affectivity, becomes intensified and actualised under pathological conditions by a cooperation of the *thyroid gland*, or of this together with other endocrine organs.

A second point to be urged is the double function of the sexual glands which at one and the same time are outwardly active glands of the most vital importance, and endocrine organs; their morphogenous significance for the individual vies with their genetic rôle for the race. We refer the reader to our remarks on *Steinach's* operative experiments on guinea-pigs and mice (Chapt. XII).

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[1]) Cf. *Hans Bab:* Neueres und Kritisches über die Beziehungen der inneren Sekretion zur Sexualität und Psyche. Jahreskurse für ärztliche Fortbildung. 11. Jahrg. H. 1.

During the last decades the significance of the sexual instincts for our mental life has received far more attention than was previously given to these questions, mainly through the work of *Freud* and his school. As a reaction against the neglect of earlier periods, and by their more just evaluation of the great importance of sexual life, *Freud*'s doctrines, in spite of all exaggeration, have lasting merit. The purely speculative form that he has given to the terms he often uses, e. g., »repression«, »conversion«, »transformation of *libido* into morbid fear«, and so on, may strike us as a kind of unscientific mysticism but, nevertheless, Freud has found good support for these terms in a great many carefully observed clinical cases, and in spite of their one-sidedly psychological structure, they are true as expressions of certain correspondences corroborated by experience. But it would undoubtedly have given a stronger support to Freud's doctrines — I pass by his many extravagances — if they could be expressed in physiological terms and could be translated into language that directly describes organic relations. These questions being far from ripe for exhaustive treatment, we must be content with vague suggestions and terms expressing guesses and suppositions. Still it seems to me that a more profound future knowledge of endocrinic relations will probably confirm the truth of the Freudian sexual psychology in certain details and give a proper visceral basis to »repression«, »conversion«, and »transformation of libido into fear« in an endocrinic hyperfunction, reacting on other secretory regions, above all on the thyroid gland, which easily becomes involved in certain predisposed cases.

How lively is the interaction of external and internal secretion, especially during puberty, in the functioning of the sexual glands! While the strongly turgescent *external* secretory apparatus acts its part as a vehicle of the sexual impulse in its most obvious form, the endocrine functions are in lively activity to stimulate the development and ripening of the secondary sex-qualities. Moreover, we may reasonably suppose that the richer development of mental life that puberty brings with it, and which goes forward to the accompaniment of a constant emotional ferment, in which all the organic sensations constituting emotional life collaborate in infinite variety with pleasure and pain, stress and anxiety, »Sturm und Drang« — we may suppose that this maturation too is sustained by the endocrinic sexual functions in their co-operation with all the visceral substratum of emotion.

Too great a strain upon this substratum may easily, where there is a predisposition, lead to a *dysfunction*, and the obstacles which society throws in the way of a periodical, natural release of the tension of sexual life, may conceivably sometimes further a development in an unfavourable direction.

We have already (Chapt. XII) expressed the supposition that the repression of the sexual impulse, and the tension caused thereby, may under such unfavourable circumstances cause neuroses and mental disease; and it is quite probable that the close connection then existing between libido and fear may be due to the fact that the intensified or morbidly changed secretion in the sexual sphere leads to a hyper- or dysfunction, respectively, in other endocrine organs. And in this connection we may perhaps particularly consider the thyroid gland.

It is in these ways that, especially during the years of puberty, the sexual organs and the thyroid gland may be supposed to enter as important elements into the morbid enhancement of emotivity. As to the sexual organs, *Kraepelin* long ago asserted that the mental disease called dementia praecox to which the »juvenile insanity« of earlier authors should be referred, may with reason be regarded as an

auto-intoxication psychosis, where the poisoning must be deemed to have a certain connection with disturbances in the development of the sexual organs.

Many circumstances go to prove that there is an intimate chemical correlation between the sexual gland and the thyroid gland, and in further support we may note a certain resemblance between, on the one side, the symptoms of dementia praecox and, on the other, the symptoms in morbus Basedowii and myxoedema. Not infrequently dementia praecox is complicated by struma and tachycardia; and peculiar vaso-motor phenomena such as acrocyanosis, dermography, and others, are common here; further we may note the often enormously increased salivation, the infiltration of the subcutaneous connective tissue of the extremities which resembles myxoedema, etc. Finally we may add that the blood-picture in dementia praecox may show conformity to that of morbus Basedowii and certain other diseases caused by endocrine disturbances.

However, as already noted, the intimate correlation between the sexual glands and other endocrine organs includes not only the thyreoidea. As we have previously seen, the sexual glands, in their normal evolution and activity, are strongly influenced by the hypophysis, and it is of course probable that the rest of the internal secretory glands also participate in this correlation which is an integrating part of the deepest substratum of our psycho-physical constitution, the vegetative system (*Kraus*).

During the Great War the knowledge of psychic traumata and their reaction on the central nervous system was enriched with an extraordinary number of observations, in some cases very well described. Psychogenous neuroses with pareses and disordered bodily functions of different kinds, psychoses taking a more or less acute course have been studied, and attention has especially been directed towards the factors liable to produce hysteria. Countries that already possessed a wide experience of the effects of *accident insurance* on the mind of the people (Germany), had even before the War a good insight into the dim, self-preservative, strongly affective ideas (»Begehrsvorstellungen«) which, in accordance with a mechanism, whose nature we have attempted to make clear elsewhere, are capable of producing *opportune* neuroses and psychoses, in a word hysteria. In the form produced by accident insurance (»Rentenpsychosen«), dissatisfaction with the insurance bonus is prevalent. In the service of self-preservation a constant feeling of discontent rules over the censoring mental mechanism (Cf. chapt. IX and X), and no sensations are admitted to consciousness but the painfully toned ones which confirm and justify the discontent. This is the foundation of a chronic sickliness which expresses itself in different symptoms, e. g. pain, paresis, contractures, and so on. The same or rather a far stronger incitement of the mighty primary motive of self-preservation was created during the war by *terror*. The atrocities of war rallied all life-

preserving tendencies in opposition to the impending peril awaiting the soldiers in the fighting line. Here only the strongest were able to endure, and the power of resistance of the nervous system was often broken by a *shock*. Exploding shells, drum-fire, surprise attacks with gas air bombs, bayonet charges constantly exposed the soldiers to frightful nervous tension to which no earlier war had shown any parallel. *Terror psychoses* with confusion, stupor and more or less lengthy states of dreaming set in immediately or soon after the shock, but lasting pareses or other functional disorders of various kinds also ensued. Finally, and it is essentially these conditions that are referable to war hysteria, there appeared in many a case inevitable relapses in the form of renewed dissociation, repeated fits or paralytic symptoms, etc., as soon as the man after regaining his health tried to resume his place in the fighting line. It is this »flight into disease« as a last resource, a makeshift in a desperate situation, that is such a conspicuous feature of *hysteria*.

In addition to the above-named situations in life, which test the individual's self-command and resistance to the hysterogenic impulses of the instinct of self-preservation, we may recall the examples of similar situations already given (in Cases IV, XVI and XVII). The distress of persons accused of some crime seems to offer special temptations in this respect. A »flight into disease or amnesia« is under such circumstances all the more usual as a person charged with a crime generally is far more susceptible to psychic disorder than his ethical superiors.[1]) Among evil livers, the threat of punishment and imprisonment (and above all of solitary confinement) is an often recurring cause of mental disease of a psychogenetic or hysterical nature (situation psychosis). Very remarkable are the »delusions of pardon« in prisoners for life, which *Rüdin* has described. Often imprisonment only has the character of a releasing factor, and then diseases of schizophrenic, paranoid or epileptoid nature break out. It is a common experience, however, that, strangely enough, manic-depressive disease is very rarely observed in convict prisons.

We have frequently touched upon the great importance of sexual life for the mind and we will again consider this much-debated question, now in connection with the significance that *Freud* and his school have assigned to sexual trauma as the cause of psychoneuroses. It has already been stated that we by no means underrate the value of

[1]) Cf. Chapt. XVIII.

Freud's contribution. But the master himself, and still more his disciples, have propounded theories and practical measures in connection with unwarranted hypotheses which invite criticism, hence I will add a few comments on the Freudian view of the sexual trauma.

Freud distinguishes two groups of neurotic disorders, which he calls *actual neuroses* and *psychoneuroses*. Of the former group the principal members are neurasthenia and anxiety-neuroses and he calls them actual neuroses because their development is due to actual and permanent sexual anomalies, such as abstinence, masturbation, etc. With regard to the actual neuroses it is Freud's merit to have called attention to the conversion of *libido* into anxiety, as we know, a very common occurrence.

To the psychoneuroses, besides hysteria, Freud also refers the obsessive and compulsive ideas. These are not actual neuroses, as their genesis is associated with certain *repressed* sexual memories, dating from a remote period of early infancy.

Freud's doctrine of *infantile sexuality* has rightly been opposed, both by psychiatrists and by psychologists. For my part, I find it inconceivable that absurdities, such as autoeroticism, polymorphous perversion, anal-eroticism, etc., should have been greeted as interesting and important discoveries. The infantile sensations and manifestations of life, to which Freud alludes, have certainly nothing whatever to do with sexuality, and Freud's principal error in this and in other things is that he strains the conception of sexuality and introduces it into spheres with which it has nothing to do. Freud's doctrine of bi-sexuality in the infant likewise belongs to the series of seeming discoveries which are practically errors. Sexual differentiation is completed in every *normal* individual already before birth.

How does Freud conceive the final differentiation of the bisexual disposition? This differentiation in a normal, that is heterosexual, direction takes place, he thinks, in relation to the parents, who become the objects of an infantile eroticism. The son's tenderness is directed towards the mother, the daughter's towards the father, but these incestuous fixations are soon repressed by a sense of guilt. What Freud teaches us of the importance of this so-called *OEdipus complex*, or the repressed incestuous sentiment, is without doubt one of the most doctrinaire views that this sex-theorist has propounded. According to Freud this myth, the OEdipus myth, is the consummation of the tragedy inherent in man's sexual development during infancy; and when we are still deeply moved by Sophocles' drama, it is because it calls up dim reminiscences of our early childhood in us all.

I have searched my own early memories, and I have asked my friends, but it has been impossible for me to find anything to support Freud's theory. It would seem then, that the OEdipus complex cannot be of universal significance.

Now, what is the rôle of infantile sexuality? Freud answers: it is this which, together with the sexual memories, deposited during childhood, returns like a ghost in the psychoneuroses. And in order to get hold of these sexual memories we must make use of *psycho-analysis*. The psycho-analytic method[1]) purposes to lift

[1]) In a special chapter I propose to return once more to the psychoanalytic treatment, summing up the scattered remarks upon the Freudian theory found in this work. (Cf. Chapt. XVII).

the repressed complexes out of the depths so as to make them conscious and help to relieve and annihilate the accompanying sexual affect (»*Abreaction*«). Into this psychomystical procedure Freud has introduced »the interpretation of dreams« as an important aid. Just as our long-forgotten sexual memories reappear as spooks in neuroses, obsessive and compulsive ideas and hysterias, so also they return in our dreams. But the dream never calls a spade a spade. It substitutes images and symbols, and in the art of interpreting dream symbols Freud and his school have developed an incredible sagacity. On closer inspection, however, the task is considerably simplified, for Freud has discovered the »extremely important« fact that nearly all the content of our dreams is a symbolisation of eroticism and sexual desire only. And the interpretation becomes simpler still, when we learn that it is sexuality in its most obvious and most original form, the sexual act, that is here veiled by seemingly quite innocent symbols. The dream symbols are in reality only concerned with one of four things: the male organ, the female genitalia, the sexual act and masturbation.

Freud has exaggerated the rôle of sexuality in life, and this may possibly be attributed to the fact that, as we have indicated in a previous chapter (Chapt. XII), the sexual impulse in a big city like Vienna has had a »tropical« influence on the clientele of the psychiatrist or neurologist. It is possible, and indeed probable, that individuals belonging to different races have sexual experiences of a very varied nature, and that early memories and reminiscences of childhood which lend countenance to the theory of the OEdipus complex are commoner in the Southern climate and the Jewish race to which Freud belongs. Nor is it impossible that exceptional cases may be met with in our latitude, which go to prove the truth of the Freudian doctrine, but such cases are rare, and we cannot accord universal validity to the doctrine as a key to the interpretation of the symptoms of hysteria. I readily admit that the hysterical symptoms may in many cases mask repressed sexual impulses which have been refused a normal »abreaction«, but it is inexplicable to me how Freud can assign this repression to the early years of childhood and not to a much later age when sex maturation has occurred. Of course at that age the sexual impulse with coincident temptations, often strongly abhorred in view of conventional decency, gives a more obvious reason for the repression and, consequently, a greater probability to the whole process.

Moreover, we may once more accentuate the influence which several other affective complexes exercise on the genesis of neuroses and hysteria, and the connection of these complexes with the primary motives (»Ichtrieb«), which Freud and his school have disregarded too much. The Great War has opened our eyes to the importance of the strongest among these primary motives, the *instinct of self-preservation*, and the part it has played in innumerable cases of *war hysteria*. For, in order to understand the universal phenomenon of hysteria, and its merely relative affinity with mental pathology, we must penetrate to the primary motives connected with the very will to live. The »Ichtriebe« and the »Völkertriebe« ultimately determine the acts of man and, in conflict with other instincts, and among them the sexual instinct, complicate mental life[1]) by splitting it and creating subconscious complexes, or complexes active in other ways within mental life (sometimes pathogenic). Even if we admit that in hysteria a repression of certain strongly emotionally

[1]) Cf. Gadelius, »Tro och övertro« II, p. 147 f.

toned conceptions has taken place, and that the pathogenic cause lies outside consciousness, there are neuroses and psychoses of a different kind — they may appropriately be termed psychogenetic — in which the pathogenic complex is not repressed but fully conscious (*e. g.* certain phobias). And even among those forms which belong to the actual neuroses, there are many cases that have nothing to do with sexual life but are allied to other and equally momentous conflicts.

Important evidence for the doctrine of infantile sexuality is found by Freud and his school in the cases of obsessive ideas and phobias in children, where psycho-analysis has successfully revealed the connection. Freud himself has published such a case of phobias in a boy of five whom he treated psycho-analytically. There is reason to doubt the suitability of a pediatrical practice of this kind, and it may be questioned whether psycho-analysis in such a case can get hold of anything but the preconceived opinions of the psycho-analyst which, as they are implanted in the child mind by suggestion, are bound to sully it in a regrettable manner. A strong protest against psycho-analytic intrusion of this kind was published years ago by the well-known child-psychologists *William* and *Clara Stern*. After pointing out that the intention of the psycho-analyst must have been to make conscious pathogenic conceptions repressed into the Unconscious, William Stern asserts that, when the dim sexual ideas vaguely present in the child's mind become conscious as far as this is possible, it must always imply what Stern calls an »*Entharmlosung*« of these ideas, in other words, a violation of their innocent character. Summing up, William Stern says: »Der Psychoanalytiker möge nicht denken, dass er hier noch Nutzen stiftet, nur unübersehbaren Schaden richtet er an. *Denn hier, wo es noch kaum etwas abzureagieren gibt, gibt es dafür um so mehr anzusuggerieren.*«

Finally, I will once more call attention to the risk involved in giving to the concept »sexuality« a much larger scope than it should have, as do Freud and his school. This is the case, for instance, with the Freudian conception of homosexuality. According to Freud, there is no distinct line of demarcation between homosexuality and sociality, the one passing into the other. Friendship between young men is attributed to homosexual tendencies, and it is easily understood how much harm may come from such points of view, especially when they are introduced into pedagogic writings. Here again we meet with the question of »Entharmlosung«, of which Stern speaks. Its dangerous influence is apt to sully the best and noblest feelings and poison them with scrupulous mental reservations and ponderings on questions which the youthful imagination ought to be spared.

Though I have largely adopted a reserved attitude towards the correctness of certain parts of Freud's sexual psychology, I will not deny that there are exceptional cases in which his doctrine may hold good. But these cases are mainly pathological. Childhood up to ten years of age, and often a few years longer, should be regarded as a neutral period of life in a sexual respect. *Walter Cimbal,*[1]) it is true, supposes that this »hormically neutral« phase of development only lasts for seven years, and he calls the following years, from seven to nine, a »praepuberty period«, during which the »neutral« state of mind is disturbed by the upsetting effects of the sexual hormone (»Präpubertätsrauch«). This differentiation of the

[1]) *Walter Cimbal:* Die Bedeutung der endokrinen Vorgänge für die Psychosen und Neurosen. Handbuch der inneren Sekretion. Herausg. von Max Hirsch. B. III. Lief. 4. 1928.

period for the incidence of sexual maturation seems to me, however, rather superfluous and uncalled-for. If due attention be paid to the extraordinary variations in the average age for sex maturation in different races and climates, it may be said as a general rule that a puberty which occurs considerably earlier than the said average age, is a more or less abnormal phenomenon and must be regarded as a *pubertas praecox*. I will return later to this *stigma degenerationis*.

Internal causes. As the most important of all etiological factors in the genesis of mental diseases *Morel* recognised *degeneration*, which in itself is a product of a great many injurious elements. By degeneration Morel meant a morbid change of the family type, which is transmitted from generation to generation by heredity, and gradually, by the continued action of harmful influences, tends towards the extreme degree of mental and physical incompetence, in a conservative as well as a reproductive sense, which involves the death of the family. Degeneration is not a biological retrogression creating atavistic types,[1]) but a morbid development of new types, carrying the seed of annihilation within themselves. Its extreme point is *idiocy*.

It is mainly on the nervous system that these degenerative influences leave their mark, degeneration being in the first place represented by changes in the nervous system. The gradual enhancement of the degenerative hereditary disposition can be followed from the heights of intellectual development down to the lowest degree of psychical inferiority. The successive stages in this progression begin with the psychopathies and neuroses and, passing through the endogenous psychoses — manic-depressive insanity, dementia praecox, mania and epilepsy — end in imbecility and idiocy. These stages thus represent an infinite variety of phenomena, which *Morel* attempted to unite in one large group, »les folies héréditaires«. After Morel, it was especially *Magnan*, who emphasised the immense significance of degeneration for mental pathology. In this progressive series of degeneration phenomena it is noteworthy that the milder degrees of degeneration occur in the shape of functional disorders, while gradually as we progress the changes become more and more organic. The degeneration which at first lightly, in the form of transient disorders, affects the most subtle of the functions, such as the feeling-tone, the tempo of the stream of thought and the synthesis and coherence of the psychic processes, next goes deeper, and by way of temperament and affectivity reaches the organic substrata of mental life; whereupon, impeding development and

[1]) *Cf.* what is said in Chapt. XVIII on Lombroso's doctrine of »the born criminal«.

organically disintegrating, it causes bodily deformity and an abnormal structure of the central nervous system, which entirely arrests or essentially restricts the development of mental life. The predisposition to psychic disorders which is rooted in degeneration shows itself, according to its strength, at an earlier or a later age.

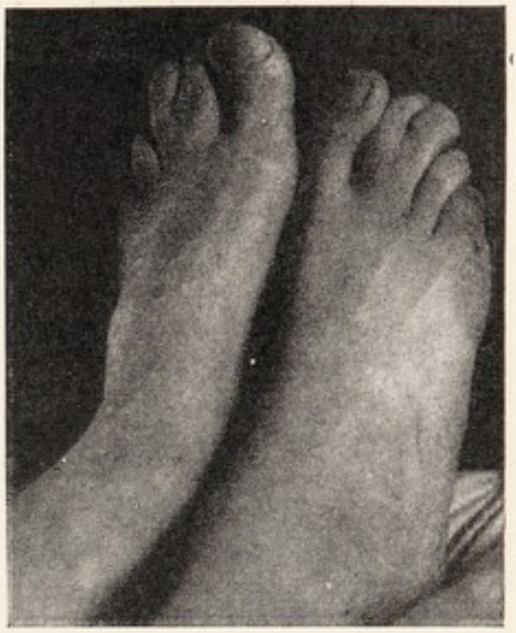


Fig. 42. Concrescent toes in a mental patient.

The gross forms of degeneration are manifested in *congenital defectiveness* and *idiocy*.

The injurious effect of the factors which, combined with degeneration, interfere with the development of external and internal organs of the body, reveals itself in the more or less marked deformations very often found in degenerates, now in one part of the body, now in another. Concrescent or supernumerary fingers and toes, defects in the palate and tooth-formation, in the soft parts of the face (harelip), anomalies of the skeleton, hernia, etc. are examples of such *stigmata degenerationis*. Sometimes these anomalies have the character of real monstrosities, and among the week-minded in our idiot asylums or homes for the crippled, we find a variety of such cases. Figs. 42—46 show different kinds of deformities.

It is now fairly generally assumed that the activity of the morphogenetic agency which regulates bodily development, is chiefly located in the endocrine organs. In these wonderful glands we place the starting point of the vital principle, whether we call it »instinct formatif« (*von Monakow* et *R. Mourgue*), »psychoid« or »mneme« (*Bleuler*), which according to a more idealistic biological conception is responsible for normal evolution. The adrenals, thymus, thyroid gland, hypophysis, and sexual glands, all contribute by their hormonal secretion to the development, growth and maturity of every individual. In certain cerebral anomalies (anencephalia, hemicephalia, microcephalia) we often find a deficient development of the adrenals; diseases of the thymus or of the thyroid gland give rise to deformities and dwarfishness; gigantism and acromegaly are connected with a hyperergasia in certain parts of the hypophysis, and an imperfect development of the sexual glands may directly or indirectly cause infantilism and abnormal fatty degeneration. In this influence regulating bodily development in normal individuals, there exists a most complicated reciprocity between the hormonopoietic organs, which mutually balance

and succeed each other in their activity in accordance with a division of labour that is one of Nature's most admirable contrivances.

It is still an open question whether chronically infectious and toxic factors, such as *syphilis, tuberculosis, and alcohol,* act by *blastophthoria,* that is, injure the sperm, or whether the cause is exogenous or *equicausal (Hæcker),* the mother directly transmitting the infection or poison to the fetus. With regard to tuberculosis at least, it seems probable that the disposition establishes a certain susceptibility and deficient resistance in certain tissues and organs, *i. e.* acts *equidispositionally.* Be this as it may, the three above-mentioned dispositional factors, and above all syphilis and alcohol, have been regarded as the most important of all the causes to which we can ultimately trace degeneration. Cf. the following chapter (XV).

I feel convinced that this theory does not fully explain the nature of degeneration. Is not death and its intermediary and predecessor, degeneration, something inherent in the order of things? And does not this apply to the collective units, the family and the race, as well as to individuals, who even under the most favourable circumstances have at their disposal a limited vitality only, confined to a restricted period, which sooner or later wanes and ebbs away in virtue of an inner necessity? It might be argued against this that families need not be collective units, though they may become such, according as they doom themselves to decay by repeated intermarrying under unfavourable circumstances. Reference may here be made to the following chapter and the example there quoted, the Spanish Habsburgs. But there is no reason to overlook Nature's *power of regeneration* or to put too narrow or pessimistic a construction on the doctrine of degeneration.

As is well known, the above-mentioned hereditary factors are the cause of idiocy, epilepsy and nervous disorders during infancy. Yet in many cases the cause of arrested development is more obviously exogenous. It may be due to other serious infectious diseases than those already mentioned (syphilis and tuberculosis), for instance *scarlatina,* various forms of *meningitis, encephalitis lethargica,* etc. Curiously enough, experience has shown, with regard to the last mentioned, extremely grave disease that in addition to other sequelae to which we will return later, it has often, not least in children and young people, brought on a change of character and given rise to moral blemishes, even sowing the seeds of a degeneracy tending towards crime. The localisation of the disease to the mid-brain and its vegetative centres affords interesting evidence of the significance of these parts for the development and undisturbed continuance of mental life. *Rachitis* is

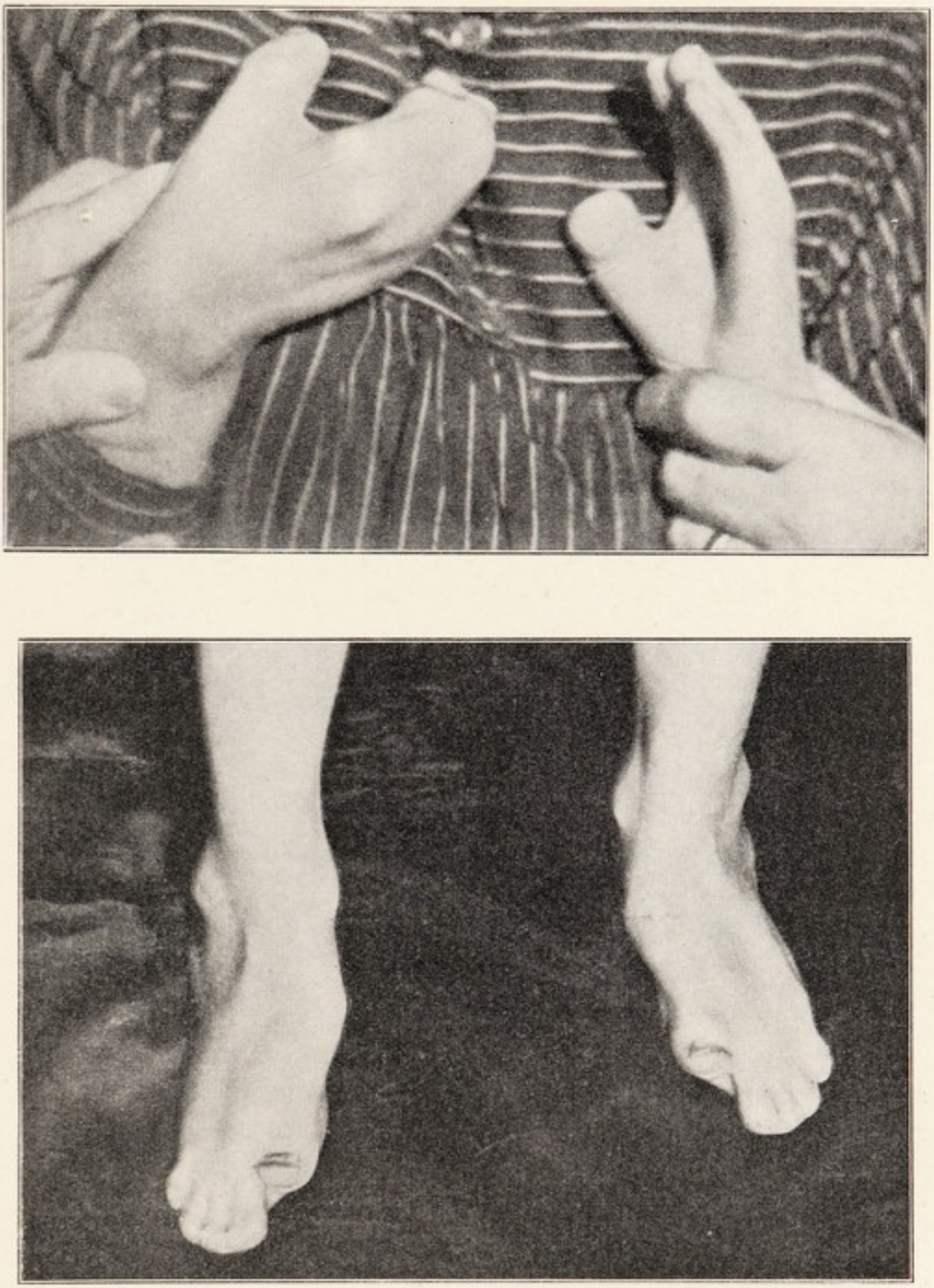


Fig. 43. Concrescent fingers and toes in an idiot of the acrocephalosyndactyl type. *(Apert).*



Fig. 44. Concrescent fingers in an idiot.

also, under unfavourable circumstances, the cause of deformation and arrested development.

In families with hereditary degeneracy we already find in the children *stigmata degenerationis* of a psychic nature, besides the aforementioned deformities. Such stigmata are, for instance, abnormal revulsions of temper; impulsive vehemence; moral defects such as pathological mendacity and dishonesty, cruelty to animals and, further, sexual precocity; masturbation; isolated talents at the expense of the general intellectual development (musical infant prodigies, arithmetical prodigies). To these may be added convulsions, nightmare, enuresis during sleep, a tendency to somnambulism and, finally, an early intimation of abrupt

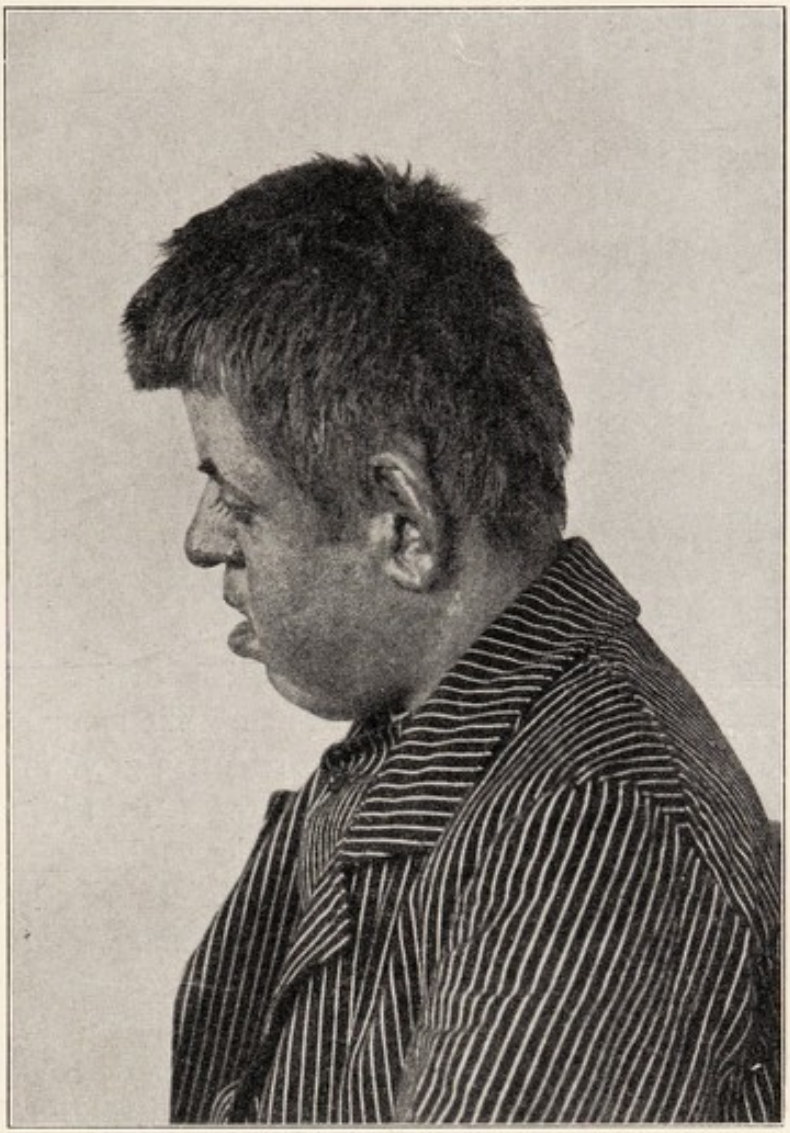


Fig. 45. Head of an idiot of the acrocephalosyndactyl type (Apert) with skeletal deformities shown in figs. 43 and 44.

changes of a cyclothymic nature; introversion and bizarre fancies; obsessions in the form of pathological inquisitiveness, folie du doute and precision deliria, etc. But the importance of any one of these traits must not be overestimated. It should always be kept in mind that the child's intelligence, undeveloped with regard to the apperceptive faculties, has a stronger tendency to distraction than the mature intellect. Attention is more easily diverted, the imagination is livelier, impulse prevails over reflection. Hence it is necessary to be careful in judging a child's actions, and not to be too hasty in assuming moral defects in the very young even if their statements are untrustworthy. The tendency to distraction of the undeveloped childish intelligence makes these patients very liable to fanciful fabulations as well as to transient



Fig. 46. Supernumerary finger in a case of insanity.

delirious episodes with hallucinations when they are attacked by an infectious disease with fever. Even obsessions and compulsive ideas which, according to my experience, are fairly common in children, need not imply any serious menace for the future. On the other hand, the presence of manic-depressive insanity and dementia praecox in childhood is a sign of excessive degeneracy, and the prognosis in these cases is more or less unfavourable. In connection with an infectious disease, however, the manic-depressive mode of reaction may appear distinctly during the course of a slight confusion, without this episode necessarily implying any real danger. Quite different and more portentous is dementia praecox when occurring in childhood. The supposition that these cases often grow in the soil of a precocious puberty *(Ziehen), agrees well* with my own experience.

It would seem appropriate here to mention briefly the circumstances that make certain ages, such as puberty and the climateric, critical times or *tempora minoris resistentiae.* These periods are most intimately connected with the sex-biological function of the individual, and accordingly they coincide, on the one hand, with sexual maturation, on the other with sexual involution and the beginning of senescence. The sexual glands are also internal secretory glands which, in order to accomplish the function in question, exercise an essential influence on the completion of sexual maturation. To the functions of the internal secretory glands, Nature has assigned one of the most essential tasks in that controlling activity that watches over and completes the normal development and purposive structure of the body, externally (morphologically and physiologically) as well as internally (psychologically). These glands represent a series of vital energising stations inserted into and participating in the activity of the vegetative system, and through this they, in their turn, come under the influence of the brain. Individually they are a kind of peripheral biochemical centres acting on metabolism and the somatic development, and in this respect, they function as agents and executers of that scheme for the bodily and mental development of the individual which is outlined in and constitutionally predestined by the hereditary

disposition. Where the bearers of these hereditary dispositions, the infinitely subtile genes, have their substratum we do not know, but it is probable that in the individual born with a complete structure and growing till sexual maturation, this substratum in some manner distributes itself among the endocrine glands and the central nervous system, awarding to the former a certain degree of biological independence. The pathological cases show conclusively that there exists the most intimate vital cooperation between this endocrine system and the vegetative-sympathetic system (vagus and sympathicus) including the centres of the latter in the mid-brain *(Leschke).*[1])

In this system of endocrine organs, the sexual glands with their hormonal activity take a leading position, corresponding to the extraordinary importance of these glands in external respects also. When their internal secretory activity becomes dominant during puberty, this easily leads to an organic disturbance of the equilibrium in the endocrinous system, till the functional rearrangement has been completed and the smooth interaction set in which is a necessary condition of normal development. These organic disturbances are accompanied by a psychic ferment and an emotional agitation which may easily, in pathological cases, develop into psychoneuroses and real insanity. As is only natural, this will especially be the case when puberty comes on during childhood, immature in other respects. We have touched upon this subject already and stated our view of the typically degenerative nature of these phenomena. When the *libido,* in rare cases, is prematurely forced on by morbid overexcitement (masturbation) it may, according to *Walter Cimbal,* give rise to infantile psychoneuroses which influence unfavourably the development of temperament and character. Actual tendencies to unsociality, unreliableness, cruelty and various kinds of dangerous propensities may under these circumstances produce youthful criminals or lay the foundation of criminal leanings which will break out somewhat later, at the ordinary age of puberty.

Between cases of this kind and those in which unmistakable insanity develops we find all sorts of transition states. Disorders of temperament and character, developing simultaneously with dementia praecox, show an interesting correspondence to certain postencephalitic changes in

[1]) *Erik Leschke:* Erkrankungen des vegetativen Nervensystems. Handbuch der inneren Sekretion, herausg. von Max Hirsch. B. III. Lief. 4. Leipzig 1928.

character, which, like those first mentioned, may lead to criminal actions and undertakings.

Puberty, then, may with reason be termed a *tempus minoris resistentiae,* the nervous system undergoing severe strain at this period. The brain has to accommodate itself to new hormone stimuli, and the mind to new impressions and experiences, a consequence of the altered organic processes caused by the maturation of the sexual glands, and the altered functions of the endocrine organs. Even under normal circumstances puberty is a period of »Sturm und Drang«, and the mental diseases which are developed at this age, may be regarded as a straining of the normal processes beyond the breaking point.

With regard to the significance of the influence exerted by the endocrinous system on the genesis of various psychic disorders — mental diseases as well as psychoneuroses and neuroses — we must realise the very different rôle played by these glands in different cases. For good reasons a lively protest has lately been made against the misuse of the term »endocrine« so often appearing in modern medical literature. At a psychiatrical Congress not long ago it was even proposed that the expression »endocrine« should be banished until greater clearness could be gained as to what the endocrine activities really imply. *Walter Cimbal,* who mentions this protest in Hirsch's »Handbuch der inneren Sekretion«, emphasises the necessity in each special case of defining as accurately as possible the extraordinary significance of the hormonal action both for the physiological and pathological causation. For instance, he points out how different the causation must be in those cases where the disease is a more direct and immediate effect of disturbances in the internal secretion, as in cretinism and Graves' disease, and in other cases where external harmful conditions and hereditary liability to disease co-operate with certain coincident functional stages of the internal secretion (*tempora minoris resistentiae*), in which latter case the endocrinous factor would more probably enter as an exciting cause. Again, in a third group of cases, the endocrine disturbance may give rise to an autointoxication, accompanied by nervous and psychical symptoms, where these do not strictly belong to the clinical picture and thus are best compared to the deliria and exotoxic nervous phenomena accompanying ordinary poisoning or an infectious disease. How complicated are the causations in a great many cases, where we may, nevertheless, assert the presence of an endocrine, often pluriglandular, disorder, will appear with sufficient clearness if we consider the large number of symptoms, generally accompanied by nervous and phychic phenomena, which may occur under the influence of disturbances in the vegetative system. Among these symptoms are all the disorders which affect the mechanisms regulating the body temperature, the secretion of water and the mineral compounds in the blood, fat, carbohydrate and albumin metabolism, sexuality, sleeping and waking, the blood-pressure and the secretion of sweat and saliva, etc. In the numerous diseases in which these disturbances in the regulating mechanisms, single or in typical groups, dominate, and in which the

pathological picture may be complicated by mental diseases and psychoneuroses, the internal secretory factor is sometimes more, somtimes less in evidence, the causative relations being most complex especially with regard to this factor. Since, in addition, the internal secretory factor, owing to the intimate correlation between all the endocrine organs, most frequently asserts itself pluriglandularly, it will easily be seen how tangled is this question of an »endocrinous genesis«, and how important it is to approach these causes with a certain caution. The frequent failure of the organotherapeutic treatment repeatedly attempted in certain mental diseases and neuroses in easily accounted for by the extreme complexity of the relations mentioned above. In scarcely any disease have the attempts been so often repeated and given such poor results as in *dementia praecox;* this disease can also be considered as a kind of prototype, when an illustration is needed of the enormously complicated causative relations in a mental disease of endogenous nature, whose genesis must, nevertheless, to all appearance be essentially influenced by endocrine disturbances.

In Chapt. II we touched upon *Fauser*'s theories. Following the methods on which *Abderhalden* based his »pregnancy diagnosis«, he attempted to show that the development of dementia praecox was connected with a dysfunction of the sexual glands (hebephrenia), possibly of these glands and glandula thyreoidea (katatonia). This was a very interesting new departure. Unfortunately there followed a rather speedy disappointment with regard to the serological method, which was proved by numerous critics to be but little reliable. But Fauser had taken one step further, assuming that the dysfunction of the sexual glands was the *primary* cause. From the very first I have held that Fauser's assumption was dubious. In hardly any other form of mental disease is it so incontestable and clear that the disease is the expression of progressive degeneration. Where there are cases of dementia praecox in the descendants, we frequently meet with psychopathic features and abnormal characters in the parents, and the schizophrenic symptoms in dementia praecox are only an enhancement and further development beyond reasonable measure of certain personal qualities, schizoid or schizophrenic modes of reaction, which are innate in diseased families (cf. p. 123). In view of these constantly recurring experiences it is but little credible that we should find the primary cause of the disease in a limited part, the peripheral organ. The bearer of this hereditary inferiority is the organism as a whole, but in the first place the brain and the nervous system. Still, we seem justified in assuming that the endocrine organs contribute very essentially to the development of the disease, even though the first causes of the pathogenesis lie deeper. There is an intimate correlation between the hormonopoietic organs and the brain, and in a previous chapter we have pointed to this interdependency between the brain and the liquids of the body as the substratum for temperament and affectivity. Certain disturbances in the endocrine glands may surely, if we assume a primarily weakened central inhibitory mechanism, develop into chronic, morbidly fixated affective phenomena, like the Basedow symptoms. A continued enhancement of the function may easily pass into dysfunction with subsequent autointoxication, and out of the aforementioned interdependency between the brain and the endocrine organs there arises a *circulus vitiosus* which, in unfavourable cases, soon leads to the rapid development of the characteristic morbid process.

Mollweide, one of the authors who criticised *Fauser*'s theory of a primary dysfunction of the sexual glands, asserts that dementia praecox belongs to the group

of endogenous degenerative processes which *Edinger* has characterised as »Aufbruchskrankheiten«. *Pick* had arrived at the same opinion much earlier, when he sought to explain the development of dementia praecox as »ein Versagen der vitalen Kapazität des Gehirns«. But degeneration, as we have already endeavoured to show, manifests itself not only as a sudden break in development, but also in a destructive morbid process. We hold it probable that Pick is right in assuming that the vital capacity of the brain is the first to give way, but this capacity includes an inhibitory and controlling action on the vegetative and endocrinous systems, and when this fails, the possibilities of an autointoxication present themselves.

The old hypothesis concerning the connection of the sexual organs with dementia praecox, and the supposition made long since, amongst others by Kraepelin, that this disease is a form of endogenous degeneration, accomplished by means of autointoxication, come into their proper place and their proper light, if temperament and affectivity are interpreted as above. We have not yet arrived at a confirmation of the correctness of these suppositions.

The period of life called *the climacteric*, when the involution of sexual life sets in and the ageing of the body begins, is a critical time during which the predisposition to mental disorder becomes stronger. This period comes some ten years earlier to women than to men. Its effect on their psychic health is more powerful; it may even be questioned whether there is any corresponding period at all in the life of men. The climacteric is also a period of adaptation to altered endocrine conditions, and the forms of disease, involution paranoia (*Kleist*) and late katatonia (Germ. Spätkatatonie), which then usually appear, the former in women only, agree in many respects with the symptom-complex of dementia praecox.

It should further be noted that every period between puberty and the climacteric marking different phases in the sexual life of women, brings on a greater liability to mental disease. In labile states of equilibrium and in attacks of acute disease (manic-depressive insanity, dementia praecox) the periodicity often coincides with menstruation. In more permanent states of exaltation we often meet with increased agitation during the menstrual period. The intimate correlation between the mind and the functions of the sexual glands also reveals itself in a menostasis during periods of depression or other forms of psychic disorder. Pregnancy, parturition and lactation sometimes cause an increased predisposition and prepare the way for factors (exhaustion, loss of blood, infection), which cause a mental disease to break out where endogenous conditions are already present.

Finally we may call attention to *advanced age* and *the senile* and *arteriosclerotic* changes. Even under normal circumstances old age is

a time characterised by psychic decline, and the liability to mental disease is then greater.

Just as puberty often sets a peculiar, and not seldom diagnostically ambiguous, stamp on the conduct of the mentally diseased — with a predilection for certain symptoms such as stuporous conditions (manic stupor, improductive mania) or bizarre fancies and impulses, — so on the other hand, we see how old age often has a decided tendency to push the depressive state into the foreground. It is an old experience that depressive feelings are the reflection in mental life of the bodily changes and the vital decline that characterise advanced age.

The Relation of Mental Disease to Personality. Diseases or Modes of Reaction?

The old adage, that »there are no mental diseases, only diseased persons«, has generally been accepted as a paradox, but it cannot be denied that the more central the disease with regard to the personality, the more it coincides with the personality, whose activity is displaced, deranged, split or disintegrated, according to the manner in which the disorder interferes with and changes the mental processes. Starting from the conception of the structure of mental life that I have already set forth, and with the view I have propounded above as to pathological predisposition being a latent preparedness or inherent potentiality of structural changes, I have great difficulty in regarding a mental disease as a nosologic object, seizable *per se,* in other words, as an entity. On the one hand the personality is healthy or mainly healthy, on the other partially ill, mainly ill or altogether ill; this is the scale indicating the fluctuating boundaries between health and illness.

The opinion I have stated above on closer inspection agrees fairly well with the view expressed by *Kretschmer* in his doctrine of temperament. As far as the two main groups of endogenous insanity are concerned — manic-depressive insanity and dementia praecox — Kretschmer sees hardly anything new in the disease of a nosologically qualitative character, but rather an enhancement of the biochemical peculiarities distinguishing one or the other type of character. When this enhancement of constitutionally given processes goes beyond the normal, there will develop, without any new factor being added, a manic-depressive mental disease from the cycloid type of temperament, and a dementia praecox from the schizoid.

Kretschmer's view especially with regard to the immediate development of dementia praecox from the schizoid type of temperament, has been much disputed. Yet it seems to me that Kretschmer is right.

The currents of psychic life which incessantly pass through our consciousness and fill it with a stream of emotions, ideas and volitions, are determined as to their quality by our innate constitution, and, because of the influences of new impulses from without and within, they give room to fresh currents from moment to moment. But these currents and ever-varying mental processes, whose motley, changing elements *memory* holds together in the continuous entity we call *our personality*, always develop, in health as well as in disease, in conformity to the same psychic laws.

Hence we must not forget that normal mental life, too, has its *endogenesis* and *exogenesis*. Among the outward circumstances which we include in the exogenesis, there are the material, more or less hygienic conditions of life, the air we breathe, the food we are nourished upon, and the work that occupies us, as wells as the vicissitudes of life which act on our emotions in the form of strain and excitement, joy, or sorrow, disappointment and anxiety or satisfaction, relief, and pleasure. All these are influences of the same nature as those under which a mental disease develops. In any case we are dealing with reactions whose modifying influence on the innate disposition will only in rare cases be able to transform it or give it a new direction. Whether these reactions take a normal or abnormal shape, is thus essentially dependent on the factors entering into the endogenesis.

Because we regard the mental diseases, in ignorance of their organic substrata or for purely theoretical reasons, as individual modes of reaction, subject to the same universal laws that govern normal life, we can on good grounds renounce the generally accepted view, according to which the psychoses are entities or nosologically seizable objects. According to the psychological interpretation here indicated, they should simply be considered as attributes and qualities referable to the psychic processes and the structural change developing in different forms and directions under abnormal circumstances.

The points of view admitted by *Birnbaum* in his doctrine of the »Aufbau der Psychose« are easily fitted into this theory. In the »building-up« of a mental disease there are two factors at work, which Birnbaum calls *pathogenesis* and *pathoplasticity*. »Taken all in all,« writes Birnbaum,[1]) »the dynamic development of a

[1]) *Karl Birnbaum:* Handbuch der Geisteskrankheiten, herausg. von *Oswald Bumke*. B. 5. Berlin 1928.

psychosis shows an interaction and intertwining of pathogenic and pathoplastic forces and results, which find their expression in the complicated nature of the final clinical product. In this diversified functional web we find as an important oustanding fact that the pathogenetic and pathoplastic processes, each running along lines that lead to definite changes, gradually, through the influence of one course of phenomena on the other, may acquire new qualities. Thus the process underlying the changes which indicate the early stage of schizophrenia, furthers the growth of certain pathoplastic formations of paranoid character and promotes their systematisation. In the final stage of this disease, these formations are dispersed, and the condition is now more permeable to psychic functional mechanisms of elementary or primitive nature. But the original pathogenetic disturbance exercises its influence on psychoplasticity not only in the shape of changes, but also as a modification of quantitative nature. In the early stage of paralysis, for instance, wide scope is given to pathoplastic symptoms (of characterologic genesis), whereas this feature is considerably lessened during the progress of the disease.« In this reciprocal influence of pathogenic and pathoplastic factors we find the explanation of the structural changes and disorders that a mental disease exhibits during its course, as well as the fluctuations of this course in a progressive or regressive direction (»im Sinne des Abbaues oder der Weiterführung der Psychose«. *Birnbaum).*

When Birnbaum regards the mental diseases as something »extrapersonal« which intrudes into and appropriates »the apparatus of personality«, availing itself of »the material within the personality«, we catch a glimpse of early views with reminiscences from the days of the doctrine of monomania. And it cannot be denied that the doctrine of monomania, as I pointed out many years ago in my book on »Obsessive Ideas«, must still be allowed a certain degree of legitimacy. Mental life, owing to its structure, may even under normal conditions come into conflict with itself *(cf.* p. 316). In the mechanism of obsessive ideas no less than in schizophrenic splitting (stereotypies, hallucinations, etc.), we see phenomena emphasised which are already found in germ under normal conditions, and this more especially in the schizoid type of temperament. If this circumstance be taken into account as well as the limitation given by Birnbaum to the concept »personality«, it will be found less difficult to reconcile the above-mentioned disagreement with the views I have expressed. Thus Birnbaum holds that »the complex of bio-psychic forces and dynamic factors of which personality is composed,« which in normal life is »a supreme determinative source of power« and »a directive centre of activity — — for that very reason possesses corresponding significance for the altered vital phenomena during a mental disease.« And when the same author finally admits that, with regard to the genesis and development of a mental disease (»Aufbau der Psychose«), we find the same extensive and multifarious relationship between *personality and psychosis* as between *pathogenesis and pathoplasticity,* it seems to me, in so far as I have understood Birnbaum's rather vague manner of expression, that there is no great difficulty in making his theories as to »der Aufbau der Psychose« agree with the thoughts I have expressed on this subject.

As *Birnbaum* says, a mental disease appropriates the »apparatus« of personality, its »mechanism« and »accumulated experiences«. Here

he touches upon an important question, which must not be passed over, viz. the question about the substratum of mental disease.

The distinction made from the earliest times between *functional* and *organic* diseases is highly misleading, not to say incorrect. Every mental disease, indeed, every neurosis and psychoneurosis, has its substratum. The human soul cannot float freely in mid-air, in every individual it is a melody played on its organic instrument, the body, including the brain. Personality, then, has its substratum and its instrument in health as well as disease. The shifting contents of the stream of thought are woven together and become a personal life-melody, thanks to a constantly recurring *leit-motif* of consonant organic sensations, the *empirical Ego*. The subject in an abstract sense, the Ego that plays on its instrument, belongs entirely to metaphysics. In this simile, a mental disease may be likened to a disharmonious, broken, confused musical creation in process of disentegration, where the cause of all discord and lack of harmony is to be looked for in damage to or defects in the instrument of a palpable organic nature. To the psychiatrist this is, *within certain bounds,* the leading point of view. But there is another point of view, more relevant to certain *»functional«* conditions. For just as an instrument may be spoilt by discordant notes, the causes of which can be removed by tuning and by better playing, there are also personal blemishes and defects which, though they cannot be repaired by organic measures, yet are fortunately accessible to the pedagogue as well as to the psychiatrist. The large borderland occupied by the neuroses, often lies mid-way between these points of view, and neither the pedagogue nor the physician ought ever to despair.

There has been a theory, recognised already by the German classic psychiatrists, that the soul (»die Seele an sich«) cannot fall ill; it is only the body that is ill *(Friedreich)* and to use psychological viewpoints in the classification of mental diseases was early regarded as »ein an und für sich verdächtigen Princip« *(Flemming).* Similar thoughts have lately been expressed by *Kurt Schneider.*[1]) He draws a distinction between *psychopathology* and *pathopsychology*, and rules out the latter concept from psychiatry, giving the following reason: »Inasmuch as the conception of disease only refers to bodily conditions and has its origin in general pathology, its transference to psychical

[1]) *Kurt Schneider:* Der Krankheitsbegriff in der Psychiatrie. Monatsschr. f. Psych. und Neur. März 1921.

matters is unnecessary. Even in psychology, the concept »pathologic« remains associated with the body. And, »da es nun aber im Seelischen *selbst* keine Krankheiten giebt sondern stets nur Variationen, Abnormiteten«, the term »pathopsychology« will in Schneider's opinion fall by its own absurdity, if anything else be meant by it than a psychological view of matters, or, as Schneider has it, »als eine besondere psychologische *Methode*«.

The view taken by a modern psychiatrist such as Schneider coincides to a certain degree with the opinion I have already set forth but, in its solicitude for the traditional pathological line of thought, it also approaches in a somewhat risky manner to the ancient theory of the »soul« as a metaphysical object removed outside the bounds of medical science. The psychological content of a mental disease — whether the term psychopathology or pathopsychology be used seems to me a matter of indifference — is quite as legitimate a material for scientific study as anything else, and cannot stand in the light of our interest in the pathoanatomical substratum, as far as this is accessible to investigation. But it is obvious that the pathological conceptions acquire a different character when, in the absence of palpable organic changes, they are made the subject of psychological study.

I now revert to the dictum quoted from *Birnbaum,* and ask the question, what »mechanisms« and what »apparatus« in the personality are appropriated by mental disease, and how far is it possible to locate the functional areas affected by a psychosis?

The last few decades have enriched our knowledge of the nerve-physiological relationships by a series of important discoveries, which have been of essential benefit to psychiatry and which even now justify a number of conclusions for which formerly all support was lacking. But for the present the consequences of these conclusions must be followed up with the greatest caution. To psychiatry this means a new orientation, an investigation into the nature of mental diseases on the basis of new constitutionally biological standpoints. It is said with truth by *Birnbaum,* in *Bumke*'s large »Handbuch der Geisteskrankheiten«, that psychiatry has entered upon a new era. Still, this new era is only dawning, we see nothing clearly but must for the most part be content with guesses and hypotheses. However, modern psychiatry is so entirely dominated by these new suggestive departures, that they cannot be passed by in silence.

The important results of recent research, to which I here refer, and

which concern different intimately associated domains, are the following:

1) The discovery of the importance of the midbrain and the subcortical ganglia.
2) Clinical and neurological observations in the field of internal secretion.
3) The modern doctrine of the constitution and the research work in heredity.

Referring the reader to what I have said in Chapter II of this work concerning the localisation of mental life, I will here only dwell very briefly on the, to a certain extent revolutionising, points of view which have been the consequence of a series of new experiences and discoveries in the field of nerve-pathology, made during the last twenty years. I allude to the clinical and pathoanatomical investigations carried out by *Strümpell, Wilson, C.* and *O. Vogt, Foerster, Bostroem, v. Economo, Jacob,* and others, on the so-called amyostatic symptom-complexes *(Strümpell),* and the diseases of the *corpora striata (C.* and *O. Vogt),* including paralysis agitans, pseudo-sclerosis and Wilson's disease, and also to encephalitis lethargica *(v. Economo)* with its chronic states ensuing in unfavourable cases, especially the so-called »parkinsonism«. The results of these investigations all indicate the midbrain as the seat of the disease, and the conclusions to be drawn from this involve much more than the localisation of merely neurologic phenomena. All these diseases, besides the purely motor symptoms (akinesia, hyperkinesia, tremor, choreic and athetoid phenomena of incoordination, etc.), also involve psychodynamic disorders and changes in the temperament and the emotions, that is, disorders of the greatest psychological interest, inasmuch as they concern the lowest, animal levels, the involuntary automatic part of the structure of mental life.

For our knowledge of the physiology of the brain, these results are of the greatest value. In an important respect they complete the results gained with regard to localisation in the latter half of the 19th century by the discovery of the projection centres. We now know that the midbrain is in some degree responsible for the psycho-motor mechanism of volitional life, and that this responsibility was formerly erroneously attributed to the motor centres of the cerebral cortex. As to the sensory centres in the cortex of man, it was already known that a loss of these centres makes a person stone-blind and stone-deaf; but it was also known that higher animals, for instance dogs, when deprived of their brain hemispheres, still had some degree of sight and hearing

left, thanks to the circumstance that a fraction of these animals' psycho-sensory activity has its seat in the primary sensory stations in the thalamus, while in man it is entirely removed to the cortex.[1]) The knowledge of the optic thalami and their functions does not belong to the latest scientific acquisitions, but what has long been known about them is seen in a new, comprehensive and clearer light since the discovery of the functions of the striate ganglia.

In his excellent »Vorlesungen über den Bau der nervösen Zentralorganen«, *Edinger* pointed out, as late as 1911, as an illustration of the imperfection of our powers of observation, »that up till now we neither know the functions belonging to the *corpus striatum,* nor the symptoms which appear when this organ is stimulated or destroyed.« However, from the fact that this part of the cerebrum is invariably present in the whole animal series, from the fishes up to man, we may conclude that its function must serve extremely important purposes.

This supposition, based on the results of comparative anatomy, has led to a clear insight via the aforesaid clinical experiences. Referring the reader to a previous chapter (Ch. XI), and to the special part of this work, I shall here only briefly point out that both volitional life, and probably also the intellectual processes in their normal structure, are dependent on the accompanying automatic movements (Germ. »Mitbewegungen«), and on the psycho-dynamic mechanisms that are released by the centres. Accordingly, it cannot be denied that the motor rigidity and mimic immobility which characterise the so-called parkinsonism, are also in part a psychical affliction which affects the patient's intellectual efforts as a psycho-dynamic inhibition, distracted attention, diminished adaptability, and the lack of intention *(Mangel an Antrieb),* termed by *Hauptmann*[2]) the »psychic correlate to akinesia«. A certain insufficiency and meagreness in the results of the patient's observation and apprehension is the consequence.

Since the earliest times anatomists had directed their attention towards the midbrain and from the days of *Descartes,* the »seat of the soul« had been sought in its different parts.[3]) *Sömmering* assigned a *sensorium commune* to this region, which

[1]) According to *Edinger*, the entire location in the cortex, of the higher senses of man, sight and hearing, is possibly due to the circumstance that these senses have become »associative« and therefore more completely absorbed by our thinking, which is located in the cortex.

[2]) *Hauptmann:* Der Mangel an Antrieb — von inneren gesehen. (Das psychische Korrelat der Akinese). Arch. f. Psych. u. Nervenkrankh. 1922.

[3]) *Cf.* p. 53.

concept was generally accepted during the last century; its *raison d'être* abundantly evidences the penetration and intuition of earlier scientists. It has long been surmised that the sensible tracks from the different parts of the body met here in a cluster; and when it was known, in the latter half of the 19th century, that the thalami contained motor as well as sensible and sensory tracks and centres, and when the presence of the subcortical ganglia in the whole animal series was also known for a fact, it is not to be wondered at that these parts should be brought into the foreground in the new attempts to locate certain psychic phenomena. The rôle which *Meynert* and *Taine* assigned to these centres in the genesis of hallucinations, has already been mentioned.

It was the impressive discovery of the projection centres of the cerebral cortex that for a time diverted attention from the midbrain, but when this locality again aroused the interest of investigators, the midbrain revealed itself as a most abundant source of discoveries. The return of scientific interest to these parts has gone hand in hand with a fresh swing of the pendulum of research in another respect: I mean the new leaning towards humoral pathology which characterises recent times. For this branch of research the midbrain is a fixed starting-point, inasmuch as later investigations have shown the centres of the vegetative nervous system to be located here. From nuclei in the thalamus, the wall of the third ventricle and the infundibulum (including tuber cinereum), issue the tracks along which all details in the regulation of metabolism and the visceral functions of the body proceed. Here, then, are located the most important of the *regulation centres* of animal life, among them the centres of our instinctive life, of hunger, thirst, and sexuality. But this is not all. Experience shows that the emotional life, (temperament and affectivity), has its substratum here. For even though we know no delimited centres with regard to this part of our personality, which is the deepest foundation of our mental life, yet it is the sympathico-vegetative interaction between the brain on the one side, and the body and its metabolism on the other which constitutes this substratum. It should be added that it is now almost universally assumed that the optic thalami contain affective centres,[1]) and certain clinical experiences (*H. Head* and *G. Holmes*) render it probable that the pleasurable or painful feeling-tone with which we react to our organic sensations, that is to say, the most essential part of the complex forming our Ego, arises through a function of the optic thalami *(E. Leschke)*.[2]) This circumstance alone is undeniably calculated to rehabilitate the early conception of a *sensorium commune*, which for a long time had been brought into discredit. Finally, this *sensorium commune* in the thalamus is, in an even more vital respect, the very core of our mental life, since injuries to these parts, even very slight ones, cut off the main line, as it were, to the lighting apparatus of consciousness, which, figuratively speaking, ramifies in the storey above, that is, in the cerebral cortex, into a thousand »small lamps«, which here furnish the illumination. On the other hand, a quite considerable loss of substance in the cortex — or, as recently shown[3])

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[1]) Cf. the thalamic theory of emotion of W. Cannon p. 108.

[2]) *Leschke, Erich:* Erkrankungen des vegetativen Nervensystems, cited above.

[3]) *Dandy, W.:* Removal of right hemisphere for certain tumors with hemiplegia. The Journal of the Amer. Med. Assoc., 1928. The author is of opinion that in those cases where the operation was successful and the patient survived it for many years, no psychic defects could be traced.

by the American surgeon *Dandy*, even the removal of the entire right hemisphere — only causes at most a somewhat perceptible diminution of the conscious clearness when half the number of the »small lamps« are put out of action, but never entirely extinguishes consciousness. This fact, pointed out especially by *Fabritius*,[1]) agrees with the observations made by *v. Economo*, *Firchl*, *Pette*, and others, which are cited in support of *Mauthner*'s and *Trömmer*'s hypothesis of a *sleep centre*, located in one of these parts, the thalamus or its immediate vicinity. Finally, the unconsciousness which accompanies epileptic fits may with good reason be connected with a vascular cramp in the midbrain, which puts out of action the centre of consciousness. Leschke bases this hypothesis, inter alia, on *O. Foerster*'s observations made directly on the bared brain during an epileptic seizure.

The connection between internal secretion and the central nervous system still remains relatively obscure. Apart from the hypophysis, which has direct nerve communications with the midbrain (*Ramon y Cajal*, *Stengel*, *Greving*, a. o.), the regulating action on the endocrine organs is transmitted by the vegetative nervous system. But even if this influence is not brought to bear directly, but as *Cimbal* considers probable, through »eine Umstimmung der gesamten Tonusverhältnisse des sympatischen Nervensystems«, yet the dominance of the midbrain over the endocrine system, no less than the action of the internal secretory glands on the brain, is a fact securely founded on clinical observations and experimental investigation, and this fact has led us to suppose that under unfavourable conditions this reciprocity may develop into a *circulus vitiosus*. As a proof of the dominance of the midbrain over the vegetative nervous system, sympathicus and parasympathicus (vagus and pelvicus), it is worth while to point out that this system not only falls under certain nuclei in the wall of the third ventricle and the thalamic tract, but also seems to possess a higher regulative centre, a *cortex sympathicus* in the striatum.

Our knowledge concerning the interdependence of the central nervous system and internal secretion is, as far as man is concerned, mainly the result of conclusions drawn from clinical experience. Here it is sometimes the midbrain, sometimes the endocrinous system, that is held responsible *in the first place*, the endocrinous system, strange to say, even in such diseases, (*e. g.* morbus Basedowii), as are constantly accompanied by nervous, sometimes also by psychic disorders.

In this respect, we find in different authors such a divergence of opinion as is hardly to be explained except by supposing such an *intimate connection between the peripheral glandular organs and the centres of the midbrain that, whether the pathogenic causes attack this connection in the periphery or in the centre, the effects are the same.* Under these circumstances the interpretation of the genesis of the endocrinous diseases is easily influenced by the special interest of a scientist and the frequently somewhat one-sided direction this gives to his atten-

[1]) *Fabritius, H.:* Über Störungen des Bewusstseins bei lokalisierten Gehirnaffektionen und ihre Abhängigkeit von der Lage des Herdes. Monatschr. f. Psych. 1924.

tion. Hence, it may perhaps be partly owing to the importance of the surgical incision for Graves' disease, and of the organo-therapeutic treatment for myxedema, that these diseases are generally considered *thyreogenic*, the central disorders of a primary constitutional nature which are present in at least a fair number of instances being left out of consideration. A parallel to these examples is found in another disease of endocrine nature, namely, *diabetes*. For in spite of the extreme importance attaching to the discovery of *insulin* in the treatment of diabetes, there are one or two judicious investigators — I mention especially *Leschke* — who regard this disease also as being a »central-vegetative disorder in the regulation of the carbohydrate metabolism«[1]) whose point of departure is the midbrain. The undoubtedly degenerative character of diabetes and its frequent familial correlation to mental diseases also contribute to show this central origin.

The same thing seems to be true of *tetany* and the *tetanoid conditions, spasmophilia, infantile eclampsia*, etc., which since 1896 *(Vassale* and *Generali)* have been supposed to be due to an insufficiency of *glandulae parathyroideae*. Authorities now hold that tetany mainly coincides with a disturbance in the calcium regulation, and in some cases it is considered doubtful whether a disturbance in the function of these glandules is of any account, even secondarily. »We know now that other endocrine organs may also be active in the genesis of tetanoid conditions *(Leicher)*. But we also know that all these conditions, passing by the endocrine glands as intermediate stations, may be immediately released from the aforesaid central stations for the vegetative nervous system« *(W. Jaensch)*.

Jaensch devotes a special chapter to: »Einige Bemerkungen zu *K. Landauer*'s 'Tetanoid'«, and quotes exhaustively the views of this author on the subject. Landauer distinguishes three forms of the pathological phenomena he calls »tetanoid« viz.: 1) an endocrine form, 2) a thymogene tetanoid caused by affective influences, and 3) the cerebral form. Spasmophilia and tetania in a proper sense correspond to 1).

In spite of this varying genesis, the syndrome of the disease (»Das Gros der Erscheinungen«) is always the same. Yet »liegen häufig — vielleicht immer — den Symptomen Störungen des Mineralstoffwechsels Zugrunde«. I suppose this may be plausibly interpreted as a constant vegetative symptom which (secondarily (?)) is apt to provoke others. As to the cerebral form, which according to *Jaensch* has its origin along the psycho-vegetative reflex-curve through which the cortex may be coupled to the subcortex and its vegetive centres, Landauer asserts: »dass das Tetanoid bei allen cerebralen Erkrankungen vorkommen kann, und es erscheint nur

[1]) *Erich Leschke:* Op. cit.

plausibel, dass sein Auftreten nicht durch die Ätiologie ‚sondern durch den Sitz der Störung bedingt ist.«[1]) In this connection *Jaensch* supposes that the same genetic variability marks Graves' disease »wenn es dort auch nie so scharf formuliert wurde, wie wir es hier zu tun berechtigt sind.«

These facts certainly tempt us to give a wider scope to the old concept »system diseases« and to include therein a great part of heredo-degenerative conditions, neuroses and psychoneuroses (neurasthenia, hysteria, epilepsy, etc.). And when the influence of the cortex is coupled to the system connections between these lower nervous layers, psycho-physical systems of a higher order come in as well, and entitle us to include the large degenerative groups of mental diseases in the above-mentioned clinical concept and under the same homogeneous point of view. Several years ago *Loewy* expressed an opinion in the same direction with regard to dementia praecox.[2])

As to the influence of the sympathico-vegetative system on the metabolism of the body, that is, on assimilation and dissimilation, and by this means on the affective life and the psychic processes as a whole (cf. p. 114), it now seems to be the generally accepted view that the antagonism which was earlier (in 1910) assumed by *Eppinger* and *Hess* on the ground of pharmacological experiments, and which led to the establishment of two types of reaction, *vagotonia* and *sympathicotonia,* must be conceived as a functional reciprocity, which can best be compared with that prevalent in motility in the constant interaction of flexors and tensors (Leschke). In any case the relation between vagus and sympathicus seems to be of a synergic nature rather than an antagonism.

The vegetative nervous system has of late been an object of interest to a great many scientists, and the investigations carried out by *F. Kraus* and his fellow-workers have especially been noticed. According to Kraus, the functional difference between *vagus* and *sympathicus* is due to disturbances in the ratio between the potassic and calcium ions in the organism, and by experiments on the heart Kraus has arrived at the conclusion that an increased potassium content brings on the effects in which vagus becomes predominant, whereas an increase in the proportion of calcium makes sympathicus prevail. The formerly assumed antagonism between vagus and sympathicus has thus been replaced by the chemical contrast between the electrolytes potassium and calcium. According to Zondek and Reiter the presence of these electrolytes, and the changing constellations into which they enter, form the vitally important background for the hormonal action of the endocrine glands (»Ionenmilieu«).

These biochemically deepened points of view, to which we will subsequently

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[1]) Cit. after *W. Jaensch:* Grundzüge einer Physiologie und Klinik der psychophysischen Persönlichkeit. Berlin. Springer 1926. p. 445.

[2]) *Max Loewy:* Dementia praecox, intermediäre psychische Schicht und Kleinhirn-Basalganglien-Stirnhirn-Systeme. Beih. z. Monatschr. f. Psych. u. Neur. 1923. H. 20.

return, can, as it seems to me, hardly prevent us from still speaking of individuals who in their habitual attitude come nearer to the vagotonic type, and others that approach the sympathicotonic pole.

While *Kretschmer,* in his conception of the relation between *bodily structure* and *character,* pays special attention to the peripheral parts of the vegetative system, the endocrine organs, and their influence on the bodily and mental development of the personality, there are other scientists who have more directly in view the central stations of the vegetative system in the midbrain and the influences from the cortex coupled in there. Theories of this kind are represented particularly by the brothers *E. R.* and *W. Jaensch,* and the recently worked-out doctrine of the latter[1]) concerning two types of personality, the *tetanoid type* and the *basedowoid type,* forms a sort of counterpart to Kretschmer's aforementioned doctrine of temperament, which is severely criticised by Walter Jaensch. The tetanoid (T-type), the basedowoid (B-type) and the compound types (BT-types), which are often seen, are, according to W. Jaensch, normal bio-types of personality with floating transitions in a pathological direction. The one type (T-type) tends towards *tetany* and *epilepsy,* the other (B-type) towards morbus Basedowii and hysteria. »The T-type seems predominantly to dispose for somatogenic neuroses«, whereas psychogenic influences prevail in the B-type. The former represents a »physio-vegetative reflex-curve«; the latter, owing to the coupling between the cortex and subcortex (midbrain), represents a reflex-connection called by W. Jaensch »psycho-vegetative«. The question »vagus or sympathicus« is said to play only a secondary part in this theory, but this does not prevent the pure T-type, as is the case in tetany, from having on the whole a vagotonic stamp, whereas the B-type and the BT-type, in accordance with conditions in morbus Basedowii, provide room for vagus as well as sympathicus. Jaensch here recalls the recently proved difference with regard to the origin of vagus and of sympathicus, the former developing immediately from the midbrain (palaeencephalon) as a true cerebral nerve, the latter having a more secondary connection with the central nervous system. »And so«, thinks the author, »it may conceivably happen that sympathicus at least in some cases comes into more immediate contact with the neencephalic cerebral parts and thus becomes more directly subordinate to the higher sphere of mental life than the always primarily palae-encephalic vagus.«[2])

In the above-mentioned T- and B-types of personality, certain purely vegetatively neurologic qualities are coupled with primitive psychological modes of reaction in regard to observation and the visual apprehension of simple images. Special weight is attached to the galvanic irritability of the muscular system, mimic peculiarities, the brilliancy and moisture of the eyes etc., that is, phenomena now of vagotonic, now of sympathicotonic character; and as to the psychological peculiarities, a rather curious attention is devoted to the difference between the two types in an *eidetic* respect. This refers to the different ways of apprehending an image displayed, to the varying subjective impressibility, and to the nature of the after-images and ideational phenomena which involuntarily follow on its inspection. The larger mobility and associative susceptibility in the B-type contrast sharply with the ten-

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[1]) *Walter Jaensch:* Op. cit.

[2]) Op. cit. p. 332.

dency of the T-type stiffly to retain after-images of a physiological nature and its propensity to perseveration in the ideas evoked by the images or series of letters. By giving calcium to the subjects, the brothers Jaensch succeeded in suspending for the moment and to a certain degree the qualities characteristic of the T-type, including their eidetic mode of reaction. This latter seems to appear most clearly in children and young persons, but the characteristic qualities are also retained by adults; and as an example of a man of genius belonging to the B-type Walther Jaensch mentions *Goethe*, while the great physiologist *Johannes Müller* is given as an instance of the T-type.

If we review the qualities of these two types carefully noted in Walther Jaensch's[1]) detailed comparison, we find such great differences both in a mimical respect and with regard to moods and intellectually associative features, that we can hardly hesitate in assigning to the T-type representatives of inhibition and depression, to the B-type those representing intrapsychic mobility and exaltation. Nor has this escaped W. Jaensch: »The subcortiform T-type,« he says, »is mainly and enduringly depressed, whereas the B-type is more cheerful, though at the same time so much the more liable to varying moods«.[2]) On the other hand we are not astonished to find that Jaensch has often discovered schizoid traits in personalities of the T-type, organically dependent on the mid-brain (vagotonic). But on the whole the T- and B-types display no essential similarities to Kretschmer's two mental types, a fact that Jaensch is careful to point out.

I shall not undertake to estimate the value of these attempts at dividing humanity into two types of personality with regard to their different mode of reaction in a physio-vegetative and a psycho-vegetative respect. There is much in Jaensch's work that will be met with a certain scepticism by psychiatrists; but, on the other hand, it is surprising that his deep and thoroughly worked out theory on the structure and functioning of the central nervous system has been so relatively little noticed by them. Jaensch's attitude towards Kretschmer and his doctrine of temperament is of a certain interest in this connection and shall therefore be briefly dealt with here.

In the foregoing I have repeatedly referred to Kretschmer's wellknown work »Körperbau und Character«. His collocation of different physical types with different temperaments and characterological dispositions, and hence also with different forms of mental disease, has aroused much attention and criticism. Kretschmer's suppositions are briefly these: the *cycloid* and *schizoid* types originate in constitutional endocrinic conditions of different kind. In correlation to the cycloid character, and from the corresponding biochemical (hormonal) formula for metabolism and morphologic development, there is formed the external bodily shape that Kretschmer calls the *pyknic* and considers typical of the cycloid type. By a pyknic physique Kretschmer understands a morphological type, distinguished by a relatively large head, chest and abdomen, and a disposition for fatness in the trunk, while the extremities retain a certain slenderness. To the schizoid type, which with regard to the physical morphogenesis seems to have a more graded (decidedly polyglandular) range of variation, belong the *leptosomic* (asthenic) and the *athletic* bodily structures. The leptosomic body possesses slender forms and and is often tall and lanky,

[1]) Op. cit.

[2]) Op. cit. p. 331.

whereas the athletic build is characterised by a strongly developed skeleton and musculature. In addition, a number of hypo- and dysplastic, more or less deformed and defective types (infantilism, feminism, eunuchoidism, and dysgenitalism) often go with the schizoid character. It is especially noteworthy that these individuals, whose somatic development is abnormal, frequently become afflicted with dementia praecox.

With regard to the terminology, *cycloid — schizoid*, we may add that these terms were gradually exchanged by Kretschmer for the words *cyclothymic* and *schizothymic* during the discussion which followed on the appearance of the first edition of his work. Now Kretschmer[1]) distinguishes three forms within the cyclothymic group: the *hypomanic*, the *syntonic (Bleuler)*, and the *melancholic* (»Schwerblütige«). Among these the syntonic represent the normal state between the oscillations »cheerful — sad«, and around the cycloid normal type there close up, on the one side, the hypomanic psychopaths and, on the other, psychopaths of a more melancholy and depressed temperament. While these three cyclothymic types of temperament enter quite easily into the development of the sphere of manic-depressive insanities, relations are highly complicated when we turn to the schizothymic temperaments and their intimate association with schizophrenia. Even here Kretschmer distinguishes three types. For the sake of greater psychological clearness he is inclined to substitute the term *psychesthetic-autistic* for »schizothymic«. As the basis of his classification he takes the concept *»psychesthetic proportion«*, that is, the varying ratio between internal sensitiveness and external coolness. Starting from this, Kretschmer refers to the schizothymic the following types: *hyperesthetics*, gentle, introverted, nervously irritable idealists; *anesthetics*, cold or coldly nervous, queerly eccentric persons (»Sonderlinge«), indolent, callous, and weak tattlers and, midway between these psychopathic extremes, the *schizothymic* normal type, the coolly energetic, systematically consistent and quietly aristocratic. A common feature uniting the different variations of the schizothymic character, is found by Kretschmer in a characteristic tendency to *autism*, in different degrees of self-sufficiency or, respectively, introversion.

While keeping in mind these details, I shall use the original terms *cycloid* and *schizoid* in the following, for the sake of greater simplicity.

Jaensch's exceptions to Kretschmer's theory of the genetic correlation between bodily structure and character coincide to a certain extent with the criticism directed against it by many authors (Rittershaus, Weidenreich, Jaspers, Gruhle, Kolle,[2]) etc.). Broadly speaking the question of this correlation is still unsolved. Kretschmer's theories are no doubt in some degree correct, even though their range must be considerably reduced in favour of other genetic factors, such as race and environment, etc. Passing by this controversy which is not yet closed, I will only touch upon the special way in which Jaensch has treated the question, in so far as I have already dwelt on it in the foregoing.

According to Jaensch, Kretschmer's chief mistake is that in the juxtaposition of

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[1]) *Ernst Kretschmer:* The chapter on »Temperamente« in Bumke's »Handbuch«, 1928.

[2]) A synopsis of the critical investigations to which Kretschmer's work has given rise is found in *I. L. Entres'* exhaustive exposition: »Die Ursachen der Geisteskrankheiten«, in Bumke's »Handbuch«, B. 1.

bodily structure and character he has correlated morphological conditions and psychic phenomena, although these are incommensurable since they belong to widely separated planes of development. Kretschmer starts from certain peripheral vegetative factors, the endocrine glands, while Jaensch directs attention to the subcortex and cortex. The biotypes of the latter are dependent on »factors altogether different from the endocrinous, for instance, on central nervous conditions (»Höhlengrau, Zwischenhirn«), which govern, not only the endocrinous system, but also the regulation of metabolism in general (»Ionisation, Wasser, Zucker, Alcali-Säuregleichgewicht usw.«), and above all they are dependent on the relation between the cortex and the subcortex.«

It seems rather astonishing to find this criticism directed against Kretschmer from this quarter, inasmuch as Jaensch in several places asserts that the higher and lower within the nervous system are closely coupled together (»Physiologische Integration«, Hertwig, »Psychophysiologische Integration«, Jaensch). Keeping this thought in mind I have already spoken about relationships of the nervous system which, so to speak, form functional units, and it can hardly be doubted that the endocrine organs, the vegetative nerve tracks, the subcortex and cortex are thus closely coupled together in one unity. Starting from this we can easily understand the shifting — here, too, a kind of »wandering towards the cerebrum« — of the morphogenetic and psychogenetic influences which, in an early stage of development, phylo- as well as onto-genetic, must be supposed to be anchored in the endocrine glands, before the formation of the brain is completed.

Among authors who have dealt in detail with these still rather obscure questions, *von Monakow* and *R. Mourgue*[1]) should also be mentioned. By these authors the »formative instinct«[2]) inherent in the growing fetus is located during the early embryonic stage in the elements of tissue from which the endocrine organs are developed and which, on account of this task, get the start of the organs which are developed out of the ectoderm. When, later, the brain has reached a certain stage of development, the »auto-regulation« of its further differentiation is removed to *plexus chorioideus*. Following other authors, v. Monakow and Mourgue assign to this plexus, in connection with the ependyma, and the neuroglic covering of the brain-vessels, the important task of protecting the functions of the completed brain. Hence these nervous tissues are presumed to combine in forming a *»barrière ecto-mésodermique«*, regulating the stimulation brought on with the blood.

From what we have already said about the midbrain and its vegetative centres as a kind of agents in the connection between soul and

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[1]) *v. Monakow* et *R. Mourgue:* Introduction biologique à l'étude de la neurologie et de la psychopathologie. Paris. Felix-Alcan 1928.

[2]) A certain resemblance between the »formative instinct« of these authors and the »entelechia« of the neovitalists is acknowledged by themselves, but they seem to be anxious to point out the essential difference between their »auto-regulation«, located in certain organs, and the assumption of the neovitalists *(e. g. Driesch)* of an undefined, purely mystical creative force, which propels everything. The secrecy of Nature on this point seems unquestionable, and the mystery is almost inevitable.

body, we can, in spite of all differing opinions in a number of details, yet draw the conclusion that these parts of the central nervous system are of far greater interest to psychology as well as to psychiatry, than was surmised a few decades ago.

Within a lower section of the animal series, and while the brain-hemispheres are still in their earliest stage of development, the midbrain provides animal mental life with the necessary substratum for that degree of perception and feeling, power of observation and primitive will, that corresponds to the demands of existence and, in the first place, to the craving of the instincts for satisfaction. Parallel with the growing demands the cerebrum (neencephalon) develops; the sensory-motor centres (projection centres), after having shifted to the cortex, acquire increasing importance as the chief stations of perception, sensation and will, and between them the associative apparatus is gradually developed whose intellectual loftiness makes man the lord of creation. In the psychic development of every new-born individual the starting-point is always a repetition of the phylogenetic stage when the midbrain was the seat of the animal soul; only with the maturation of the hemispheres does mental life widen, realising its inherent possibilities and its human dignity, and at the same time moving up to a higher storey. But this does not mean that the basement is vacated. All through life the midbrain is and remains the firm foundation without which the whole superstructure would be unthinkable. Here there remains, now and ever after, the »bedrock Ego« (German authors call it »Tiefen-Person«) which can be regarded as the very fountain-head of the personal life of man. Whether our needs here lead a subconscious existence, repressed and confined, or rise into consciousness from the midbrain as from a fountain steaming with animal heat in the shape of instincts, desires and wishes; and whether this goes on with gladness and a love of life, or in depression, unrest and anxiety, in any case this earth-bound bedrock Ego is and remains the *fons et origo* of our personality and the necessary dynamic condition for its growth. For without this driving force, the cerebrum and the associative apparatus upon which a »higher Ego« is nourished, would never develop. And even in the highest stage of soul-formation, when culture and morality, expressing the »sublimation« of the lower forces, have reached the highest summit of ennoblement that the animal-human substance can possibly attain, the »bedrock Ego« of the midbrain survives in all of us like an earth-bound Caliban, though bridled and made useful.

We are now prepared to answer the question which was asked

above. Which are the »mechanisms« and the »apparatus« within the personality that are appropriated in the development of a mental disease? The answer to this question may be directly gathered from what has just been said.

Nearly fifteen years ago, the German psychiatrist *M. Reichardt* of Würzburg pointed out the midbrain and the brain-trunk[1]) as the »Zentralstelle« where we have chiefly to seek the substratum of mental life and the parts which are first affected in the outbreak of mental disease. Later, *Kleist* and *Küppers* adopted a similar view, and of late this opinion has gained more and more ground, in proportion as clinical experience has widenend our knowledge of the midbrain. In his »Allgemeine und specielle Psychiatrie« (1918), Reichardt draws a line of demarcation between »Seele« and »Reich der psychischen Erscheinungen«, in the more differentiated and associatively complicated sense we assign to the concepts »thinking« and »intellect«. It is »die Seele« that Reichardt locates in the brain-trunk, whereas »the realm of psychic phenomena« has its substratum in the cortex. Regarding the mental diseases Reichardt holds that there is no warrant for locating them in the cortex. »In nearly all mental diseases«, he writes, »the root of the disorder is not located in the cortex of the brain, but in its trunk (Zentralstelle)«, even though in certain instances it obtains expression in mental symptoms referable to disorders »im Reich der psychischen Erscheinungen«. All *endogenous* forms of mental disease and psychic inferiority have their »Zentralstelle« in the midbrain. Psychopathies, dementia praecox, paranoia, mania and melancholia are *primarily* due to morbid changes in these parts. Only in cases where a poisoning or infection *secondarily* or *primarily* — the latter usually in exogenous forms of mental disease — disturbs the function of the cortex, does this form part of the substratum for the disease.

This new conception of the endogenous insanities being located to the midbrain seems to me the most important gain of psychiatry during the last twenty years. A number of long known peculiarities and cha-

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[1]) By brain-trunk, as a rule, we understand the central part of the cerebrum which is left after the removal of both hemispheres (neencephalon). Accordingly the brain-trunk corresponds most closely to *Edinger's* palaeencephalon. The midbrain, in our comprehension of this anatomical concept, consists of the parts of the brain-trunk that with regard to the embryonal development are called telenencephalon and diencephalon. (On this subject, see *Ivar Broman's* excellent little book »Människohjärnan«, Lund 1926).

racteristics in the symptom-complex of these mental diseases might be advanced as arguments in favour of Reichardt's assumptions.

The condition essential to bodily and mental health is a harmonious reciprocity, a vital synergia, of the different organic functions of the body; in this connection we are mainly interested in the functional interchange which takes place between the cortex and the midbrain. But only if the cortex is predominant, does this reciprocal influence show evidence of the equilibrium which characterises a sound and well-balanced personality. To a certain extent this equilibrium is the result of education and culture and, as long as there is deficient development in these respects, the balance between the emotional and intellectual sides of mental life is labile. In children and in persons at a low cultural level, the reactions still retain something of an animal unreflectiveness. These individuals are still in the nervous condition that we find in an unbroken horse when, easily frightened and unaccustomed to the bridle, he bolts away. The midbrain with its emotive centres has in this situation the upper hand, and the un-controlled emotional and instinctive life finds an outlet in violent bursts of temper and impulsively rash enterprises. Different races too show obvious differences with regard to the habitual balance prevalent between the higher and lower centres. In the hot-blooded inhabitants of the South the emotions dominate, and the Latin race shows less restraint than the Teutons.

Another, more physiological, way of expressing the same thing has been adopted by Russian scientists of *Pavlov*'s school. The experimental studies of the latter on the »conditioned reflexes« comprise chiefly an examination of the activity of the brain hemispheres. *Ivanov-Smolensky* assigns to the tasks of the neencephalon, first the *»activité créatrice«* of the associative apparatus, and secondly the *»activité conservatrice«* of the hemispheres, i. e. *memory* in the higher, individual (ontogenetic), sense, which holds together all the experiences of life and renders possible the education and development of the personality. To the tasks of the midbrain and the subcortical ganglia belong, on the other hand, the »unconditioned reflexes«, whose functions are phylogenetically conditioned, transmitted by heredity, founded in the constitution of the family, and hence not individual. The reciprocity between the centres for the conditioned and the centres for the unconditioned reflexes is the physiological substratum for personal development.

In how far the common saying that »the *inhibitive centres* in the cortex are not developed«, is justifiable, whether inhibition is a function especially of the frontal lobe or it has a more diffuse origin from the associative apparatus as a whole, we do not know; observations may be quoted in support of the former opinion as well as of the latter. On the other hand, it is probable that the midbrain, as the fountain-

head of the emotively dynamic strand in the mental structure, none the less has its *representative centres* in the cortex[1]) and that, consequently, a certain feeling-tone of warmth and interest can keep the stream of thought moving without necessarily having recourse to the primary power station in which the dynamic charge has its deepest origin. Nevertheless, the latter is a main depôt of our emotional life, and it can hardly be doubted any longer that especially the conditions of high tension which characterise our emotions have their origin in the midbrain. The impotence of the cortex before these surging waves (»émotion-chocs«) is another proof that our theories as to their deeper origin are correct.

I shall only mention in passing the disharmony in the interaction of the cortex and the midbrain which marks certain psychopaths, and which represents a kind of infantilism in the relation between the vegetative-emotional part of mental life and volitional life. Under these circumstances volition remains undeveloped and is subordinate to the half animal influences emanating from the midbrain. To these psychopaths belong the *hysterics* and a great many mental defectives suffering from psychoneuroses and psychasthenia in some form or other. We may also include the »explosively emotional temperament« described by *Wimmer* which is so often the basis in the outbreak of psychogenetic psychoses and neuroses.

Let us now proceed to consider the mental diseases so far as they may be deemed to have their origin in the midbrain and not merely on account of a disharmonious interaction, due to an innate disturbance in the functional mutuality between the midbrain and the cortex. »The more serious a mental disease is,« writes Reichardt, »the more does it injure or even annihililate the innermost nucleus and the deepest roots of personality. Only on the supposition that the very nucleus of the psyche is afflicted, is it possible to explain the fact that these patients are under the influence of and act according to an overwhelming impulse, and it is only by taking into account such a purely elementary and irresistible impulse that we are able to understand to some extent their purposeless (and insane) actions. It is this more or less irresistible impulse that robs the Ego of its (relatively) free will. The disease here dominates the Ego.« Reichardt seems to take 'impulse' in its widest sense, in other words, it means an affective influence from the deepest nucleus of the personality in the midbrain (»Zentralstelle«), which acts differently in different forms of insanity and which, in a more or less noticeable degree, characterises every psychosis of endogenous origin.

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[1]) Cf. p. 108.

On this point it is a good aid to our insight into the causes of the endogenous psychoses to range the theory of Reichardt side by side with Kretschmer's doctrine of temperament. This is a quite natural combination, because the constitutional hypothesis of the latter coincides in the main with the pathoanatomical view of the former. Hence it seems to me that they are both aiming in the same direction.

Kretschmer, too, seems inclined to suppose that the different temperaments, being hereditarily conditioned, constitutional dispositions, have their source in the deepest parts of the central nervous system, which enclose the centres of a large number of wholly vegetative functions. Thus the respective opinions are not so entirely without points of contact as asserted by *W. Jaensch* in his criticism of Kretschmer's theories. When the centres in the midbrain become diseased the regulation of the vegetative system is disturbed. Certain qualities inherent in the temperaments may then become exaggerated or formed on abnormal patterns, though retaining their essential qualitative nature. For example, a slight degree of permanent depression or a strain of earnestness which, on the whole, has determined a person's outlook on life but, on the other hand, has not prevented him from having always and with reason been regarded as a perspicacious, sound and prudent man, may in connection with certain external, or internal, releasing causes, suddenly become intensified and grow into a morbidly ungrounded anxiety, which so monopolises this person's thoughts, attention and will, that he must be considered insane or psychically abnormal. This anxiety hovers up into his consciousness as an involuntary, all-powerful menace, it lays a black veil over his existence and though, on reflection, he finds it unreasonable and inexplicable, his reason finally becomes incapable of warding off its influence. The dark cloud-bank of depression spreads, corrupts the judgment and drags down the sufferer into black despair.

But moods and feelings of a contrary nature may also in the same manner, independently of external causes, fill the mind with an enraptured pleasurable feeling which, in the manic conditions, grows to morbid exaltation. The emotional impulse ascending from the lowest depths of mental life asserts itself even more powerfully when, in the shape of schizophrenic compulsion, bizarre phobias and obsession-phenomena of varying nature, it intrudes upon consciousness, and, as the associative apparatus gradually loses its power of resistance, impairs in a greater or less degree the influence of the intellect and the independence of the will. These forms of a morbid compulsion are of course

quite intelligible; as every one knows, the instincts may, even in normal life, silence both intellect and will and lead to actions whose dominant animal impulsivity reveals their primitive origin. In this respect the sexual instinct possesses a special power of reducing the intellect to silence and putting the will out of action.

However, it is a common experience that mental diseases of the above-named kind, with an origin independent of external causes, do not impair the intellect in the sense that the patient is no longer able to keep his thoughts connected or express himself clearly. On the contrary, it is observed, frequently to the astonishment of those around him, that the patient speaks lucidly and logically, in spite of his displaying other, distinct signs of mental suffering. And this is not only observed in melancholia and mania, it holds good, generally speaking, even of other forms of endogenous insanity, such as typical paranoia and delusional forms of dementia praecox (paraphrenia). This circumstance in itself is a reason for distrusting the old supposition that mental diseases are chiefly localised in the cerebral cortex.

Hence, it is probably in the midbrain and its centres that the affective disposition[1]) and temperament and all the emotional qualities most deeply rooted in our physical constitution have their origin. If the truth of this supposition be granted, it of course becomes an inevitable consequence to locate the primary symptoms in the majority of degenerative psychoses in the midbrain.

We have previously paid attention to the hypothesis of *W. Jaensch* regarding the different starting-points for a pathogenetic interaction between the brain and the vegetative system (»B- and T-types«). This interaction and reciprocity between higher and lower centres, the postulate for the integration of the nervous system, is established in two ways, from the cortex by sympathicus, and from the subcortex in great part by vagus, which nerve, contrary to sympathicus, has its origin in the palaeencephalon (midbrain) and is of a cerebral nature. The question, »vagus or sympathicus«, is put in the background by Jaensch as being of more secondary interest, because the influences and symptoms from these nerves always reveal themselves as mixed states. Yet the B-type is in great part a sympathicotonic complex the T-type a vagotonic one. The cortical connections of sympathicus *(psycho-vegetative reflex-curve)* are, as mentioned by Jaensch, probably of a mobile, passing, and more functional character, and although mental influences — as was supposed by *Landauer* in regard to a special disease (tetanoid) — may provoke vegetative symptoms, there are good reasons to believe that the same symptoms in the case of a primarily subcortical origin (*physio-vegetative reflex*) have a tendency to be

[1]) What the Germans call »Gemüt«.

far more constant, and prognostically more unfavourable. Perhaps we may venture to interpret the prognostical difference in the light of the inequalities between the psycho-vegetative and the physio-vegetative tracks, the former having connections with mental life of a passing or intermittent nature, the latter lying, so to speak, outside mentality and being the offspring either of a constitutional predisposition or of inflammatory processes. However this may be, *Jaensch*'s hypothetical »psycho-vegetative reflex-curve« gives us a guiding formula, applicable not only to mental diseases but also to many psychogenetic states in neuroses and psychoneuroses (neurasthenia, hysteria and epilepsia). Syndromes which are often of an organic nature and of a physio-vegetative origin may develop in hysteria — called already by *Charcot* »la grande simulatrice« — along the psycho-vegetative track. Of course, as previously stated, we have good reason to assume that if an especial combination of symptoms (what we call a syndrome) is located in a certain part of the nervous system it may be provoked by influences of a more central as well as of a more peripherical origin. This I suppose is the case for instance with morbus Basedowii, and as to the development of the endogenous mental diseases I am rather inclined to apply the same view.

Birnbaum's theory, which distinguishes between *pathogenesis* and *pathoplasticity* in the development of mental diseases, is well suited to make clear the interaction of the cortex and the subcortex, and to define what is primary and what secondary in the localisation of the psychopathological phenomena. In the typically *endogenous* mental disorders the pathogenesis probably originates in the midbrain, and their somatogenetic nature is most closely allied to the connection between the subcortex and the body by way of the vegetative system and its centres. The secondary thing in the symptom-picture or, in other words, that which Birnbaum refers to pathoplasticity is, on the contrary, due to the more mobile and varying relation to the cerebral cortex, and the different manner in which this contributes to the clinical course in the shape of delusions, hallucinations, etc.

In the typically *exogenous* mental diseases, the conditions are probably quite the opposite and the pathogenesis, especially in such forms as are more essentially marked by *confusion*, takes its rise in the cortex. This is the case in *infection and intoxication deliria*. But here also the pathoplastic factor is connected with the interaction of cortex and subcortex, and its manifold changes are due to the midbrain being involved in the development of the disease. For it must be kept in mind that the mobility of the associative apparatus is dependent on the dynamic influence of the feeling-tone, and this feeling-tone may be traced to the midbrain. Only through this reciprocity is it possible, in the exogenous forms, for the many different pathological pictures to arise, which, according to the degree of the cortical lesion, alternate between

an amentia-like insanity and the kaleidoscopically varying symptoms of a delirium or a hallucinosis.

As a clear consequence of the invariable laws of Nature we may suppose that the views advanced by Birnbaum as to the origin of mental diseases can also be applied to the normal processes of the mind. Instead of pathogenesis and pathoplasticity, we may here speak of *psychogenesis* and *psychoplasticity*. The deep source of the stream of thought is the midbrain; the details of the mental structure, the varied pattern of the ever advancing, never completed texture begins in the cortex, or rather, the cortex is its instrument. The midbrain as the primitive organ of the emotions and instincts has charge of the dynamic factors of the stream of thought, the cortical associative apparatus of its contents.

Our knowledge of the localisation of mental life, a question that has occupied physicians and philosophers for thousands of years, and has at times been as burning as the quest of the art of gold-making, has thus been increased. But this addition to our knowledge is still of the same elementary nature as that gained earlier by the discovery of the projection centres of the cortex. Our claim that we are able to locate the mental processes, in the same sense that this problem was conceived by earlier brain-anatomists, rests, as I have pointed out in Chapter II of this work, on an illogical formulation of the question, and is as absurd as the thought that we should be able to locate in an instrument all the melodies that can be played upon it. Like the melodies, the mental processes are successive and cannot be located in space. The only conceivable thing is a chronogenetic localisation. This circumstance clearly shows the deficient logic of the aspirations that animated earlier brain-anatomists (von Monakow).[1])

I will now return to the vegetative types of regulation fixed in the mid-brain which we recognise in the different temperaments. The observations which gave Kretschmer the clue to their classification into *cycloid* and *schizoid* are referable to the study of two large groups, manic-depressive insanity and dementia praecox. In this I find the strength of Kretschmer's theory rather than a weakness. I have just pointed out the strict conformity to the laws of Nature which governs the mental life of man under all circumstances and which enables us to draw many important conclusions with regard to normal psychology from phenomena appertaining to mental pathology. Details unnoticed in the normal structure are magnified by disease and displayed in a conspicuous manner. In passing I mention *Liepmann*'s well-known study of the flight of ideas and the inferences he has been able to draw as to the importance of the purposive ideas in normal thinking.[2]) The same may be said of Kretschmer's conclusions.

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[1]) *v. Monakow et R. Mourgue:* Op. cit. p. 22.

[2]) Cf. p. 195.

With the patient as his starting-point he extended his examination to comprise the lineage and family to which the patient belonged. He made the striking observation that the unquestionable constitutional disposition in which the suffering is rooted, is also discoverable in the other members of the family as a more or less outstanding trait. The types described by Kretschmer are to be regarded as *normal variants* of the human character with its different modes of reaction, determined by disposition and temperament. The qualities which distinguish them do not, then, appear in such disharmonious proportions as to disturb the personal equilibrium of the mental structure in any way. But an exaggeration of these qualities may easily change the psychic structure so as to shift it in an abnormal direction. The floating transitions between health and disease belong to the borderland occupied by the psychopathies. Then, out of the normal types the disposition for a mental disease develops in the same degree as the qualities belonging to the type are disproportionately exaggerated. In Kretschmer's opinion it is by no means an indispensable condition for the development of a disposition to mental disease, or for the outbreak of a psychosis from this disposition, that an external, infectious or toxic, factor should supervene. In other words, a new agent, essential to pathologic development, is, as maintained by other psychiatrists, not necessary. The constitutional predisposition carries within it the seed of disease. In contact with life, and often in puberty, this seed determines an inherited insufficiency of mental balance. At any time and without any palpable external cause, it may fail and give way in a predestined direction. Hence there are cases of such an exclusively endogenous nature that for the manifestation of mental disease predisposition is alone responsible. This does not prevent the pathogenesis from being in other cases more complicated, and here there is a more or less wide margin for external causes, sufficient, so to speak, to fill the glass to the brim.

On this point, i. e., with regard to the possibility of an entirely constitutional endogenesis, there is a wide divergence of opinion, as I will subsequently show. For my part, I agree in the main with Kretschmer.

The intimate connection of mental diseases with the constitutional traits that can be traced in different manners and in slighter form in healthy members of the families where diseases occur, has been treated by me in two papers, as far back as 1910.

In an address to the Swedish Psychiatrical Society,[1]) in 1909, I pointed out the desirability of devoting a closer study to the human types of personality, and the character variations in normal psychology. This would lead to a better understanding of certain forms of mental disease, which one-sidedly clinical studies in psychiatry cannot evaluate alone.[2]) »This does not mean«, I further said, »that we need lose sight of the medical points of view. On the contrary, normal psychology is also brought into contact with physiology. For normal mental life also has its *chemismus;* each thought, act and emotion has its substratum in the neuro-chemical processes, and every character, if I may venture so to express it, undoubtedly has its given neuro-chemical equation. If we except such diseases as are due to a quite unquestionable exogenous factor, e. g., trauma, intoxication and infection, every mental disease is an abnormal dislocation of the character, an exaggeration, often *in absurdum*, of peculiarities present in an earlier generation, in one or sometimes both parents.« After a few words on the circular type, which exhibits a certain »insuffiency of the regulating and controlling faculty of the brain«, and around which type the manic-depressive mental diseases in their different forms are grouped, I continue:

»For the study of human types and the transition of these types into abnormal characters or real insanity, the psychiatrist has abundant opportunities, not only among patients in the hospitals, but also among their nearest relations, parents, brothers and sisters. Certainly every psychiatrist has made observations in his consulting-room, giving the clearest evidence of the fact that mental disease often is a development *in absurdum* of a certain type of character. I cannot but say a few words about an experience of this kind, which seems to me obvious and unambiguous — I mean the special type I would call *praekatatonic*, which is almost all-pervading among parents or brothers and sisters of the patients suffering from dementia praecox. The different variations of this type change, it is true, just as much as processes in the manifest mental disease, but one trait is common to them all, a certain irrationality and imperviousness to argument«. And further: »Among the *praekatatonics* there are a great many who definitively shut their ears to arguments and are entirely preoccupied with some craze or other. All this is still within the limits of normal life, but we frequently meet with cases in which it is not easy to distinguish between physiological and pathological obstinacy, between a mental reserve due to stupidity and an organic reserve due to inflammatory processes, and we ask ourselves: Is not the katatonic inaccessibility, negativism and stubbornness of will a further development of the disposition revealed in one of the forms described, and for which I have suggested the name *praekatatonic?*« The similarity between Kretschmer's types of character and those indicated by me in 1910 is unmistakable.

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[1]) *Bror Gadelius:* »Paranoia och paranoida tillstånd«. Tidsskr. f. nord. Retsmed. og Psyk. 1910.

[2]) Cited from the author's address: »Några ord om ärftlig sinnessjukdom och äktenskapslagar«. Sv. Läkaresällsk. Förhandl. 1910.

In its application to various fields of research such as the study of religion and myth-formation, the history of culture and art, etc., modern psychology may derive much useful information from psychiatric experience. A constitutional affinity between all human beings, and the floating boundaries between health and disease render fruitful an interchange of experiences between psychiatry and normal psychology. And, as often pointed out, it is an indisputable truth that human mental life develops according to uniform laws, whether its development follows normal lines, or these lines have become disturbed or broken by disease. If this were not so, it would be a thankless effort to attempt to realise the patient's way of feeling and thinking by the light of introspective experience and the observations made on our fellow-creatures.

The symptoms of a morbidly changed emotional life, such as delusions and bizarre fancies, are natural phenomena and as such quite comparable to normal feelings and ideas; the former have just as much right to be observed by the investigator as the latter, and we have no reason to pass them by as worthless wreckage or lumbering meaningless objects. If we do not understand their hidden meaning, it is often due to some deficiency in our power of apprehension.

Yet there are no doubt limits to our understanding. If the symptoms of a mental disease are to be accessible to our mind, the relation between the patient's emotions and delusions must develop in an adequate manner, according to universal psychological laws. Or else, a certain affinity between our own introspective experience and the patient's peculiar mode of thinking and reacting must bring about this understanding in half intuitive ways.

The cooperation of feeling and thought forms such an indissoluble synthesis within the psychic structure, that all thinking must, for reasons already given, become an affective act. In ordinary usage, the word »feeling-thought« or »affective thinking« has a narrower import, the *lack of objectivity* being taken as its essential connotation.

When we call to mind that the slightest personal interest, whether of an intellectual, practical or moral kind, which enters into our daily life, always gives our actions an emotional tone, it is easy to understand that our capacity for objective thinking, that is, our capacity to see reality as it is, will certainly never attain to photographic exactitude. Our views will always be at least coloured, in some cases altered or shaken, by moods and feelings.

What we call »a cool head« does not imply absence of personal interest or want of affectivity. It is only a useful trait, which protects our actions from being formally disturbed and logically deranged. Persons of this cast of mind never run the risk of being confounded by an emotional shock. Their affectivity is always of the representative kind, the existence of which we stressed in a previous chapter (cf. p. 108). An inflexible purposiveness may in persons of this kind be compatible with a clear judgment and apprehension of reality, but a more or less egocentrical point of view often causes an opportune deviation from reality, a deviation which may be quite unpremeditated and unconscious. Thus the coincidence of a personal judgment with an external fact may of course vary in the same person from moment to moment. Our daily experiences of these variations in ourselves will afford good help in our critical estimation of others.

Yet in considering our capacity to understand the more or less subjectively coloured thoughts and judgments of other people we have to keep in mind that the question is complicated by the fact that there is a difference in the lack of objectivity *not only in degree but also in kind.*

As long as the difference is essentially of a quantitative order, the feeling-tone does not deviate from the universal human modes of reaction to a degree that makes it difficult or impossible for one person to follow and realise another person's line of thought. And this is as a rule true whether the individual is normal or morbidly changed. If we start from the most objective observer conceivable, there is a richly graded scale of conditions for the genesis of an individually coloured outlook on life. Between the attitude of the most sober objectivity and the opposite pole e. g. an unquestionable paranoiac, who in egocentrically-toned subjectivity entirely remakes the external world, there are shifting mental states which our introspective experience help us to comprehend. In all these cases we are chiefly concerned with variations in the grade of affective thinking, and we have hardly any difficulty in grasping the thought-combinations which are developed in persons led astray by an abnormal affective orientation. In these abnormal states, whether they take the form of suspicion, depressive remorse or exalted self-sufficiency or whether or not they become psychoplastically complicated by delusions of persecution, pretended sinfulness and moral corruption or imagined virtues and splendour, the pathogenesis has always an emotionally-toned postulate which is accessible to our understanding.

But how impenetrable and beyond reach of common sense comprehension are, in comparison with these forms of insanity, the autistic and katatonic states of dementia praecox with all their absurd and bizarre volitional tricks and impulses! In this connection we may

once more remind the reader of the divergencies in thought and feeling, which we encounter when persons of different temperamental types meet. The *cycloid* individual may be incomprehensible to the *schizoid*, and thus what I called common-sense understanding cannot be of general application. As we have previously seen, the constitutional basis of personality varies, and different temperaments and affective modes of reaction may give the lines of thought and the outlook on life such a different direction that mutual understanding, even under normal conditions, is difficult. It is the lack of *structural affinity* that hampers psychical interchange.

The divergencies which so often separate persons of different temperamental types, are, above all, concerned with opinions of a strongly affectively toned content, especially as regards questions of religion, politics and art. These divergencies are easily widened into a chasm when the temperamental type tends to become pathological. In matters relating to human progress the psychopaths especially can claim our interest. And when we consider the extraordinary achievements by which the borderland between psychical health and insanity has contributed to the evolution of culture, we must also keep in mind the many exaggerations and fanciful products of an expansive or bizarre imagination, products of affective thinking, which, when encountering opposition, either gave rise to fruitless quarrels or were reduced to grains of truth. Thus the temperamental divergencies have often been useful promoters of evolution. The dissimilarity in taste and views represented by ideas of a highly affective character has always divided men into irreconcilably opposed parties. Such ideas, often bizarre, or rather, pathological, separate one temperament from another, and this always implies that the inherited disposition of the one is entirely unable to respond to just that originality which, in the other, is emphasised by abnormal exaggeration. This, as we have seen in a previous chapter, applies especially to certain tendencies in modern art, the pioneers of which were schizophrenic geniuses *(van Gogh, Cezanne, Ernst Josephson* and others). The strong inclination towards an archaisation of the ideal of beauty, which marks the exclusive modernists, may have its equivalent in the above-mentioned primitive character of the katatonic's way of reasoning which is assumed by some psychiatrists. Even this special schizophrenic mode of thinking will perhaps be more easily understood by one observer than by another, for since the difference between divers types of temperaments touches all humanity, why should

psychiatrists be excepted? The schism, which now separates the followers and opponents of psycho-analysis, may afford evidence of the limitation, exercised by the every nature of affective thinking both on the objectivity of research and also on the ability of different research-workers to understand each other.

If, starting from normal mental life, we would seek to give a kind of formula for the understanding of the mental diseases, we would first have to ask, what are the conditions essential to an undisturbed course of normal mental life?

I set out with the assumption that these conditions are the following:

I. *The irritability of the fully developed brain in accordance with its specific energies and the different stores of engrams at the disposal of these energies.*

II. *The maintenance and modification of the irritability within physiological limits through the blood-mass.*

III. *The activity within centres regulating the irritation, or, respectively, apparatuses with the task of normalisation.*

With regard to point I, the conditions seem on the whole to be so convincingly clear, that no comment is needed. It refers to the brain as an organ of the intellect and insists on its irritability as a prerequisite of the stream of thought and its incessant flowing caused by external and internal stimuli.

With regard to the morbid deviations in irritability, we should already at this point take account of quantitative variations which may be innate. For it is quite possible that the nervous substance, apart from the *secondarily* nutritive, respectively in themselves pathogenic, circumstances, may sometimes be endowed with a lower degree of irritability and sometimes with a reactiveness which far surpasses the normal. The »lowering of the convulsive tolerance« (Frisch), which in the modern view characterises epilepsy, may in the majority of cases be due to circumstances connected with such secondary disturbances, and which should thus properly be discussed under points II and III but, at the same time, it is not improbable that a convulsive disposition of a *primary* nature may be present in rare cases. Strictly speaking, these cases, always rare, are the only ones that deserve the appellation »true« epilepsy. The extreme variability of the nervous tissue with respect to

quality and to its functions as the organ of emotion and intellect is probably also in some degree connected with a constitutionally variable irritability. But this question is so difficult that for the present it would seem wise to regard it as insoluble.

As to point II, its first part is unambiguous, whereas the second refers to circumstances which require a few words of explanation, and this will involve my touching upon point III at the same time.

A number of facts argue in favour of the supposition, which I consider inevitable, that the body with all its organs forms an entity which contributes to the stimulation of the brain. With regard to the localisation of the irritation in the brain, we must, however, keep in mind the distribution of rôles already mentioned, which is important for the understanding of the structure of human mental life. It is the interaction of and the intimate connection between the lower and higher centres, between the cortex and the subcortex, which account for the rich details of the mental structure, but it is the predominance of the cortex over the subcortex which renders a harmonious development of this structure possible.

A disturbed interaction between the cerebral cortex and the midbrain, deranging the normal balance of these parts, is generally — except in the cases where the former is primarily affected (exogenous forms of confusion) — due to a pathological irritation, or rather to a weakness combined with increased irritability (»reizbare Schwäche«) of the subcortex.

The emotional foundation of our personality, what the Germans call »*Gemüt*«, arises as a result of the stimuli which reach the brain from the body and which principally influence the subcortex.

Most mental diseases, therefore, begin with more or less apparent affective disorders, and this also goes to prove the correctness of our supposition that the endogenous forms of mental disease begin in the midbrain or, more correctly expressed, have their organic substratum in subcortical disturbances. It is these emotional or, respectively, affective primary symptoms that displace, derange and, in conjunction with a more or less conspicuous pathologic complex-formation, split the normal structure of the mind, or, in other words, upset the psychophysical integration normally prevalent between the lower and higher parts of the edifice of personality.

Pathological disturbances in the subcortical functions, then, presuppose not only an increased irritability within the affective centres, but also an insufficiency, due to weakness, in the regulation of bodily

metabolism. In these disturbances the relations are highly complicated owing to the *circulus vitiosus* which develops here with the vegetative nervous system as the intermediary agent. It is possible that the disturbances in the regulation are always the primary cause, and that the increased irritability of the affective centres is a consequence of the disturbed metabolism it implies.

The rôle which I have assigned to the influence of the hormones on the origin of our affects and the awakening of our instincts, a rôle which cannot, surely, be disputed, speaks for the irritation being dependent on the composition of the blood-stream and not least on its hormone content. In this connection I will, however, once more emphasise that in many quarters — and I cannot entirely acquit myself in this respect — the influence of the endocrine organs has hitherto rather too broadly been taken for granted. As I have already said, the functional relations are here extremely complicated and still obscure to us.

The metabolism of the blood and the tissues and the rôle here played by the endocrine organs seem to depend on a number of details, complicated almost beyond surveyability. There is universal agreement as to their intimate connection with the vegetative nervous system, but with respect to this system and its mode of functioning, we are not clear. Departures indicating quite a new view of the problem have been made, and opinions are greatly divided. The viewpoints vary, and the many bio-chemical details, concerning, on the one hand, the visceral organic functions and what happens in the tissues themselves, and, on the other hand, that which takes place in the blood-stream with its content of more or less vitally important ingredients, have not so far been brought together so as to allow of a more comprehensive view.

Research is still in the preparatory stage of analysis, and this fully explains why every attempt to penetrate into the genesis of mental diseases has more the character of theoretical schemes and programmes than of finished conclusions. And these programmes are strongly coloured by the individuality of the various investigators. This is especially the case with the interpretation of those forms of mental disease where perverted metabolism may with reason be supposed to play an important part. Thus, for instance, in epilepsy and dementia praecox.

The decisive importance which a specialist attaches to metabolism and its perversion in regard to the genesis of *epilepsy*, finds expression in the words with which *Frisch* concludes his latest work.[1]) Having described the lability, characteristic of epilepsy, within the vegetative system, metabolism and the interchange between blood and tissues, he

[1]) *Felix Frisch:* Das »vegetative System« der Epileptiker. Berlin 1928.

quotes the view held by *Spielmeyer* and *de Crinis*, that the structural changes observable in the brain of the epileptic must be considered *secondary* and due to the vegetative disturbances appertaining to this disease. He concludes by saying that all this »lehrt uns den Irrthum erkennen, die Epilepsie als eine reine Nervenkrankheit anzusehen«.

There is here undoubtedly a certain depreciation of the supremacy of the brain as against the vegetative system. *Frisch*, it is true, sees in the constitutional disposition the essential cause of the disturbed metabolism, but, following *Friedrich Kraus*, he ascribes to the vegetative system a functional independence and does not seem to locate this constitutional disposition either in the cortex or the subcortex, attributing, as he does, an autonomous power of regulation to the peripheral tissues. Nevertheless, *Kraus* assumes a regulatory cerebral apparatus of superior rank.

»*The vegetative system*«, a term that I have used in this work, is not equivalent in sense to »the vegetative nervous system«, but is much more comprehensive. The term was originated by *Friedrich Kraus* and indicates a new orientation in this field, so important for psychiatry. In »the vegetative system« Kraus includes not only the vegetative nerves, sympathicus and parasympathicus (vagus), but also the endocrine glands and the whole physiological system of biochemical processes which, in the peripheral organs, exercise an influence on metabolism, or rather, on the interchange of substances between the blood and the cellular tissues. In this regulation Kraus lays the chief stress on the *membranes* of a colloid-lipoid nature,[1]) which enclose the cells and now transmit, now check the substances present in the vicinity of the cells. As integrant links in these extremely complicated processes Kraus and Zondek[2]) enumerate the following chemically active factors, »water, colloid- and salt-electrolytes, a combination of antagonistically active cat-ions, buffers,[3]) hormones, endo- and exogenous stimulants and poisons, and the driving activity of certain catalysts«. The whole process is regulated by the vegetative nerves, but activity in a vagotonic

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[1]) »Die Membranen selbst sind — chemisch betrachtet — ein Gemisch von Kolloiddelektrolyten (Ampholyte, via Eiweiss, Lipoide).« Fr. Kraus and S. G. Zondek: Über die Durchtränkungsspannung. Klin. Wochenschr. 1922. 36.

[2]) *Fr. Kraus* and *S. G. Zondek:* Op. cit.

[3]) »Buffers« = a solution of electrolytes of such a kind that a dilution or an addition of an acid or a base very inconsiderably changes its hydrogen ion activity.

or sympathicotonic direction is again determined by the calcium and potassium concentration, just as the constellations K/Ca are postulates for the effect of the hormones (Zondek).[1]) Thus, within the »vegetative system« the processes are interactive in an extremely intricate manner, and the connection is still on many points obscure. This domain is extremely difficult of access, inasmuch as only the blood and the waste-products of the body in the urine, etc., can be examined, whereas the vital manifestations of the internal tissues are beyond reach. The blood may be a kind of reflected image, often inverted, of conditions within the tissues — as for instance, the inverse proportion of water and common salt in the blood and tissues of the epileptic — but blood-examinations *alone* cannot give exhaustive answers to our questions, for examinations that leave out of account the dissimilarity of the blood and tissues only yield imperfect information.

Kraus has introduced the term *»Tiefen-Person«*, here translated as »bedrock Ego«, and this *»Tiefen-Person,* phylogenetically much older than the »cortical Ego«, has its substratum in the »vegetative system«. Though this »vegetative Ego«, as long as it is located in the visceral organs, may be supposed to assert its egocentricity in a low animal fashion, and undoubtedly does so even at an early animal stage, yet the concept *»Tiefen-Person«* postulates a promotion of the animal soul to the midbrain. Kraus also seems to assume this »promotion«, for he says: »die Tiefen-Person wird zusammengehalten durch das Striatum«.[2]) Yet, it is reasonable to suppose that the vegetative system retains no small portion of its autonomy and its independent regulative power, the more so as the morphogenesis of the body, including the brain, during fetal life is undoubtedly due to a regulation which is entirely effected by this system, including the endocrine glands, until this important duty in a greater or less degree is transferred to the higher centres of the midbrain.

We need not say that the supposition of a regulating apparatus is still only an inevitable hypothesis, the probability of which, however, is evident. With regard to its localisation the French psychiatrist *LHermitte* writes, with reference to the works of *Jean Camus*[3]): »Sans qu'il soit permis de préciser son siège exact, nous sommes autorisés

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[1]) *S. G. Zondek:* Die Bedeutung des Antagonismus von Kalium und Calcium für die Physiologie und Pathologie. Klin. Wochenschr. 1923. 9.

[2]) *Fr. Kraus:* Vegetatives System und Individualität. Med. Klinik. 1922. 48.

[3]) *Jean Camus:* La regulation des fonctions psychiques. Paris medical. 1922.

à penser que le dispositif régulateur du psychisms doit siéger, non loin du centre vigile, dans cette région cérébro-basilaire où l'expérimentation et l'anatomie nous ont fait découvrir l'abondante floraison des centres organo-végétatifs. Grâce au fonctionnement de cet appareil *paléencéphalique* tout proche des centres des fonctions mentales instinctives, des instincts de la vie de relation, de l'instinct intellectual aussi (Naville, 1924) les fonctons de la sphère *néoencéphalique* (corticale), peuvent s'exercer dans un harmonieux equilibre et la pensée s'enrichir des nuances appropriées de la vie affective.«[1])

At a very early stage in the development of the central nervous system another regulating apparatus, as we have mentioned above, is supposed to exert its influence on the morphogenesis of the brain. Later on this influence, probably in proportion as the centres of the midbrain attain functional maturity, adapts itself to the task of serving as a barrier between the blood-stream and the nervous substance in order to modify the stimulation. As we have already indicated, this *barrière ecto-mésodermique* is formed by the choroid plexus, the ependyma and the glia-covering around the cerebral vessels *(von Monakow* et *R. Mourgue).*

The presence of centres to regulate stimulation explains the ordered and regular course of the rhythm which marks all vital phenomena under normal conditions, not least the psychic ones. Cyclic phenomena are of vital importance to our mental life, and the periodicity which characterises the course of a great many mental diseases should be seen against the background of this fact of normal psychology.

I have already touched upon the universal law governing the rhythm of movement,[2]) and its application to the psychic processes. With rhythmic fluctuations we are, introspectively, confronted when we follow the alternating passive and active times in the stream of thought. In one moment consciousness, more passive, expands, giving place to the ideational impulse. Its state is more diffuse, often to the point of volatile imagination. In the next active moment our mind concentrates to get a clear conception of the thought-material received.

Further, we find the same rhythmic movement when we exchange the intervals of rest for the effort of our working hours. A rhythmical dissociation in the cortical centres of the brain is a necessary and important prerequisite for the balance between assimilation and dissimila-

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[1]) *Jean LHermitte:* Les fondements biologiques de la psychiatrie. Paris 1925.
[2]) Cf. p. 187.

tion and of course for the alternation that divides existence into states of sleep and states of waking.

Much has recently been written about the existence of a *sleep centre.* The functional importance of this regulating centre is still problematic, even though its existence seems probable.

The first to assume a special sleep centre was *Mauthner,* in 1890. He arrived at this assumption by observations on a disease called *nona,* (nearly akin to encephalitis lethargica) and the pathoanatomical experiences he drew from cases of this, often fatal, disease. When the so-called sleeping-sickness made its appearance, this question became of more immediate interest, and Mauthner's view was adopted by *Trömner, v. Economo, E. Hirschl, Filimonoff, Pette,* and others, though the theories as to its seat in the midbrain differed somewhat.

Lucksch, however, following *Pavlov,* has expressed views on the essence and mechanism of sleep quite different from Trömner's. Sleep is equivalent to »internal inhibition«. An inclination for sleep sets in when- and wherever a repeated stimulus reaches some part of the nervous tissue of the brain. From the over-irritated place the propensity to sleep spreads, possibly in toxic ways through some kind of fatigue-products, to other parts of the brain (irgendwo«, as *Pavlov* has it), even the deepest. The propensity to sleep accordingly arises in the cortex, and the »sleep centre«, according to Lucksch, is no autonomic centre. Sleep is complete, however, when the said propensity reaches the midbrain, whose function in the waking state is to convey to the cortex and further transmit the stimuli coming from outside. The term »sleep centre« is thus considered also by Lucksch to be erroneous. At the same period (1924) another German psychiatrist, *Seidersleben,* expressed a similar opinion and pointed out the physiological improbability of Trömner's supposition, that an irritation of the sleep centre would bring about sleep, while a paralysis would cause sleeplessness. »Is it conceivable«, asks this author, »that this limited space should begin its activity only at the moment when the vitality of the surrounding parts is reduced, and suspend it as soon as these parts have been restored by rest?«[1])

It seems probable *a priori* that sleep, the assimilatory phase of our existence, should be dominated by vagus, and the waking state, with its many occasions for increased dissimilation, by sympathicus. This theory goes quite naturally with that of *Jaensch* regarding a »physio-vegetative« and a »psycho-vegetative reflex-curve«, of which the former, belonging to the midbrain and vagus, transmits more purely somatogenous influences, whereas the latter has more of a sympathicotonic character and represents the relations between the subcortex and

[1]) See further my resignation address: »Gammalt och nytt beträffande mellanhjärnan och de basala ganglierna«, from which the above quotation is taken. Meddelanden från Medicinska Föreningen 1927. 2.

the cortex during the waking condition. In any case, whatever influence may be ascribed to a sleep centre in or near the thalamus, it is highly probable that the alternation between sleep and waking is immediately connected with the metabolism of the central nervous system and the requirement of a periodically recurring assimilatory process of renewal. But against the background of this physiological rhythm and the great importance of a normal condition in the relation between assimilation and dissimilation — what *Verworn* calls »biotonus« — we may adopt a hypothesis, long since set forth by the Dutch author *Jelgersma* (cf. p. 115), though it chiefly concerns the manic-depressive contrasts, mania and melancholia. In accordance herewith we may consider several periodically proceeding abnormal conditions as regulatory disturbances of the biotonus. This, as I mean to show later, does not preclude the possibility that toxic factors often play the part of conducive or releasing causes, but the chief importance must nevertheless be attributed to the deficient central regulation.

The *periodicity*, or rhythmical recurrence, prevalent in a great many different forms of mental disorders, such as manic-depressive insanity, dementia praecox, epilepsy, thus points very plainly to the existence, under normal conditions, of regulating forces (centres or apparatuses) which maintain at a proper balance the vital stimulation pouring in through the blood-stream. This normalising activity exercises a certain moderating influence on the feeling-tone and keeps the affective life within the »representative bounds« of which I have spoken in another context (Chapt. IV). It checks the excessive irritation phenomena which in the affectively labile person express themselves in momentary loss of associative balance and deliberation. What I have said above about the interaction of the cortex and subcortex, and the importance we must attach to the superiority of the former, undeniably implies a limitation with regard to the validity of our supposition that all endogenous forms of mental disease begin in the midbrain, since a disturbance of this interaction is often the first sign of disorder. We must, in other words, imagine that a regulating activity of a higher order has its seat in the cortex. Cortical conditions of weakness, which either permanently or transitorily (periodically) lessen or abolish the control over lower centres, may of course be innate, even if their insufficiency only becomes manifest during a later, more critical period of life. In other cases the inferiority of the cortex may be acquired through lesions of the head or toxic influences.

On the same grounds as *Lucksch*, who, following Pavlov, denies the autonomous importance of the sleep centre, and lays the chief stress upon cerebral metabolism and its claims, we may adopt the same view with regard to the midbrain and its other, affective, motor, vegetative, and vasomotor centres. They are none of them autonomous in the sense that they always take their own way, but are rather to be conceived as a kind of acting managers, subordinate to the cortex as long as its regulating activity is undisturbed. In how far the regulating activity of the cortex arises from certain circumscript organs (centres), or, which seems more likely, is to be regarded as the manifestation of a supreme form of vitality appertaining to the normal brain-substance, is a matter of which we know nothing definite. Clinical studies of bullet wounds, especially in the frontal brain, carried on during and after the Great War, support the assumption that a controlling apparatus of a higher order is to be looked for above all in the frontal lobes.

Evidence of this localisation is provided by the disturbances exhaustively described by *Feuchtwanger* after observations on 200 cases of lesions of the frontal brain. Among the commonest symptoms are mentioned: emotional disorders in the form of irritability and deficient affective inhibition, a reduction of the affective evaluation which normally gives to things their personal significance, weakened control of the instincts, voracity and enhanced sexual impulses, hysteroid conditions, disturbances in the functions of will and attention, lowered spontaneity, lack of enterprise (»Antriebsschwäche«), unreliableness and motive disturbances, etc. We will revert to this subject in the special part of this work.

The unsatisfactory activity of these higher regulation centres appears most clearly in the abnormal conditions which take a periodical course with sudden onsets, — manic-depressive insanity, circular forms of dementia praecox, epilepsy — but we must not overlook the permanent chronic insufficiency of other cases. Such a deficient control of the affective life of a more permanent nature is the primary cause of that chronic state of morbidly increased affectivity with which we meet in chronic states of mania and which confronts us in pathological ego-centricity in the typical manifestation we call *paranoia*. As the deepest cause of the development of paranoia, especially with regard to the interaction of the cortex and subcortex, we can with reason point to the formula »reizbare Schwäche«. Here, too, the increased irritability in the affective centres of the midbrain prevails, owing to a manifest insufficiency within the associative apparatus in the cortex.

Among the different states that may succeed each other in periodical mental diseases *confusion* is in itself a symptom which there are good grounds for locating in the cortex. It is otherwise with *inhibition, stuporous states* of depressive, or, respectively, katatonic character, *retention* in the process of thinking, and the *changing moods* consequent thereon, *perseveration,* and *volatile thinking,* etc. All these phenomena are undoubtedly to be referred to the disturbances which interfere with the normal reciprocity of the higher and lower centres, whether the pathological causes primarily influence the midbrain and are mainly located there, or also extend their effects to the cortex.

For our comprehension of all these symptoms of varying nature, our experience of the post-encephalitic states has afforded some guidance. I have already pointed out how the undisturbed course of volitional life is largely dependent on psychodynamic automatism in the form of concomitant movements, which originate in the elementary contributions of the subcortical ganglia to the volitional processes. But in thinking, too, there is an important motor factor, »the stream of thought«, and the introverted intentions resulting in the processes of thinking must surely be checked in different ways, or otherwise disturbed, when these psychodynamic factors (originating in the midbrain) fail to appear in the akinetic conditions, or, as is the case in hyperkinesia, are deranged. *Hauptmann* has attempted to show how akinesia relaxes attention and psychic adaptability. (Cf. p. 411).

In a work, which attracted a great deal of attention,[1]) Kretschmer has tried to make clear the development of the different mental diseases, especially that of various paranoid forms, by a psychological analysis of certain radicals entering into their structure. The idea in general was not new: several years ago it was followed up by the well-known Danish psychiatrist *Fredrik Lange,* and later by *Tilling,* who held that, for the outbreak of the mental disease as well as for its further development, »die psychischen Grundqualitäten« are the chief factors. Kretschmer, in this study, sets out from a preliminary attempt to find certain general »fundamental concepts« in a »Characterlehre«. These fundamental concepts are, according to him, 1) the capacity of receiving impressions (»Eindrucksfähigkeit«), 2) the capacity of retention, 3) the intrapsychic activity, and 4) the capacity of conduction (»Leitungsfähigkeit«). Retention is active in two ways; it checks the immediate outflow of the impressions (Wiederaustritt) in the form of outward reactions, and it also keeps the impressions »as living factors of mental life«, that is, as material for further

[1]) *Ernst Kretschmer:* Der sensitive Beziehungswahn. Ein Beitrag zur Paranoiafrage und zur psychiatrischen Characterlehre. Berlin 1918.

elaboration. In the conductive capacity are comprised the associative adaptation of the impressions *(thinking)*, and also their reactive manifestations in the form of *affective* and *volitional phenomena.*

In spite of a largely different handling, these fundamental concepts of Kretschmer's coincide with the different aspects of the structure of functional mental life which I have investigated in detail in another chapter of this book. The expression »psychic structure« is also used by Kretschmer.

Yet it seems to me that, by more definitely setting out from the most general features of the functional normal structure, i. e. from *movement* (the stream of thought) and its dynamic and statodynamic qualities, we should gain the advantage of greater simplicity and lucidity. Into the dynamic qualities of the stream of thought which comprise the capacity for receiving impressions as well as thinking and will (intrapsychic activity and conductive power), there also enter emotional reaction and the retentive factor bound up with it. All these fundamental concepts are summed up by me in the *tempo,* which is a dynamic synthesis of them all, a general expression of the form of movement, resulting from its various psychic components. It is clear that the retention factor and the change of mood causally linked up with it, are here of essential importance.

In proportion as the retention factor acts in cooperation with the power of inculcation, it also plays an important, stato-dynamic part as a necessary condition for the personal continuity of our experience of life. Disorders of retention enter, dynamically or statodynamically, as symptoms into most mental diseases.

Modern psychiatrists have doubted whether there is a real increase of speed in the rate of the mental processes in manic conditions. This objection seems of small importance, as long as a greater volatility of the impressions can at the same time be demonstrated *(Isserlin).* It is possible that, apart from the apperceptive disturbance, only the factor which we, like Kretschmer, call retention, is altered in mania. In this *reduced retention,* which causes each impression to be immediately wiped out by a following one, lies then the condition essential to an accelerated tempo. This is exactly what is meant by the term »flight of ideas«. In melancholia, on the other hand, there is increased retention, and the dynamic disturbance is here connected with a reduced vitality in the fields of memory in the cortex (difficulty in reproduction) and at the same time an impaired power of inculcation.

The statodynamic importance of retention is most clearly seen in dementia praecox, where strongly affectively toned complexes and memories become the cause of the splitting of the stream of thought. The same factor, enhanced to the psychic »adhesiveness« characteristic of schizophrenia, meets us here in the form of perseveration and stereotypies.

These static-dynamic disturbances have frequently a cramp-like, hyperkinetic character, and their agreement with the hyperkinesias in »parkinsonism« confirms the probability of the symptoms being located in the midbrain. Further support for this supposition is afforded by the pathoanatomical changes observed in the subcortical ganglia in cases of dementia praecox.

The intimate relation between the affective, motor and vasomotor centres (thalamus, striatum and pallidum, etc.) in the midbrain, and the close connection between the latter and the vegetative system on the one hand and the cerebral cortex on the other, thus open up possibilities for an insight into the many constellations of

symptoms with which we meet in different forms of mental disease, though we are still far from understanding these complicated connections in detail.

The view here set forth gives us a starting-point, both for our conception of normal mental life and for the pathological changes in the functional structure, its quantitative shifting, its splitting, delusional derangement and decomposition. The cause of every change of this kind must be sought in morbidly altered conditions of stimulation and in an impaired interaction between the cortex and the lower centres. The immediate cause in the majority of case of endogenous insanity we take to be disturbances within the vegetative system. Perverted metabolism gives rise to an auto-intoxication from which processes may develop with floating transitions from functional disturbances, capable of restitution, to *organic* disorders, decomposing the nervous tissues, in quite the same way as the effect of a poison of exogenous nature (alcohol, morphia) may gradually culminate in a chronic, destructive process.

If before proceeding any further, we ask of what nature these irritative factors are which reach the brain through the blood-stream, the answer is that as yet we know very little about them. The gaps in our knowledge are filled out by hypotheses. Some of these, which I shall mention here, have scarely more than a historical interest, others, and especially those which build on the probability of endocrine disturbances are, perhaps, very plausible, albeit, owing to our imperfect knowledge, they deal rather summarily and in a somewhat prejudiced way with the biochemical relationships.

With regard, firstly, to manic-depressive mental disease, it is remarkable that *Meynert* as early as 1876 regarded depression as a toxic phenomenon. Later, *Stransky* followed Meynert in looking upon the manic-depressive psychosis as an endocrinous disturbance, and *Rittershaus* has expressed the opinion that in every case of manic-depressive mental disease not having a purely symptomatological character, the most natural supposition is that a hyper- or, respectively, hypofunction within the endocrine glandular apparatus forms the essence of this disease. For certain cases Rittershaus has even proposed the name »endocrinogenous affect-psychosis«, a concept that comes fairly near to the »affective intoxication« assumed by me in cases of psychogenous origin.

This quantative change in the activity of the hormonopoietic organs can easily be supposed to pass into a para-(dys-) function, and this dysfunction has been considered characteristic of dementia praecox. Rittershaus seeks to explain in this way the cases tested with Abderhalden's serum reaction, in which, though the diagnosis had indicated manic-depressive insanity, a positive result was obtained. It may of course be supposed that the blood-serum already shows traces of dys-

function, and hence ferment-formation, even before the clinical picture has had time to exhibit patent changes. That the content of poisonous substances in the blood is richest in the forms of disease which most violently attack the brain substance, is *a priori* probable. Hence, the examination of epileptics seems to have been especially profitable.

It has been stated that the quantity of urea and uric acid is diminished prior to epileptic seizures. The nitrogen retention which has thus been observed, answers, according to *Allers*, to the albumen circulating in the blood. This is not of the highly molecular kind deposited in the tissues, but consists of decomposition products of a poisonous nature. According to investigations made by *de Crinis*, the quantity of albumen in the blood increases immediately before the epileptic seizure and parallel with the blood-pressure, and sinks again after the seizure has passed. The same is the case with the lipoid content of the blood, especially cholesterin, which is supposed to have an antitryptic effect and to inhibit the fermentative decomposition of the circulating albumen. It has been supposed that the cholesterin content of the blood is derived from the central nervous system through a toxic influence on the protective lipoid enveloping of the nerve-cells. The »lipoid balance« affected in this manner has been deemed to cause a fatal disturbance in the functions of the nerve-cells and possibly lead to their final destruction (de Crinis). Fragments of atrophic nerve tissue and destroyed cells are absorbed by special cell-elements designed for their removal, such as leucocytes, lymphocytes, adventitial-nuclei and glia-cells (Alzheimer). These in their turn are broken down and all this waste matter is believed to pass into the blood, and through their incomplete digestion, the poisonous albumen-bodies are formed which, in their turn, attack the still vigorous nerve tissue.

The above-mentioned changes in the blood of epileptics, the increased quantity of albumen together with the rising of the blood-pressure, the increase of cholesterin, etc., are all summed up by de Crinis in the term *serologic equivalent*.

As regards the lipoid content of the blood, a young Swedish scientist, *Sven Stenberg*,[1]) has continued the earlier investigations by means of a larger material, and has found that the cholesterin appears in increased quantity in most acute mental diseases; Stenberg connects this circumstance with the affective liveliness clinically observed in these cases.

In affectively blunted, chronical cases of dementia praecox, on the other hand, the cholesterin values in the blood decrease. Stenberg assumes that the augmentation has certain hormonal causes and parallels his observations with the cholesterin increase, found by several authors (Blix, a. o.) in diabetes. If we recollect the glycaemia and glycosuria often demonstrated in cases of episodical fear, for instance in examination funk, etc., these observations with regard to the biochemistry of affective life are of no small interest.

Only some few years ago it was supposed that in every case of organic mental disease an autointoxication arose in the aforesaid manner, and not a single, but several sources were assumed to furnish the poisons circulating in the blood *(Zimmermann)*. By the use of Abderhalden's serum reaction, a great many scientists, *Fauser, Kafka, de Crinis*, claim to have proved that the albumen constituents foreign to the blood

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[1]) *Sven Stenberg:* Psychosis and Blood Lipoids. Acta medica scandinavica. Vol. 71. 1929.

may originate from very different organs. And as regards the hormones and anti-hormones which circulate in the blood in certain mental diseases, they may also be conceived as the expression of a regulating and restoring activity (reparation tendencies, as Stransky has it).

This view, which cannot yet be said to be entirely abandoned, would probably explain the acute swelling of the thyreoidea, which is often found in psychogenous insanity and in dementia praecox *(Wigert)*.

That *Abderhalden*'s dialytic method which, about the time when the Great War broke out, was considered so important for the explanation of the genesis of mental disease, gradually came to be looked upon with distrust, by no means implies that there are any theoretical errors in the principles on which the method is based. It is more probable that it has pointed in the wrong direction because it is so difficult of application and because of the numerous sources of error to which it easily gave rise. One of these sources of error was to be found in the too subjective interpretation of the results to which it often tempted the enquirer. We must remember, however, that this method still has experienced and judicious followers among psychiatrically schooled serologists. Hence the conclusions which have previously been drawn by the aid of this method, need not be entirely wrong. *Kafka*,[1]) for instance, has recently stated that since the dialytic method had first become known, he has employed it in about 6000 cases of schizophrenia and has again and again been surprised to find how often and manifestly the triads (»Abbautrias«), cortex, sexual gland and thyreoidea, were observable in the serum.

The endocrinous participation in the genesis of mental disease is still a very burning question, even if we have now arrived at a clearer understanding of its very complicated nature. Thus, in *cramp diseases* recourse has often been had to internal secretion and its disturbances to explain their genesis. Some hypothetic theories of a rather ephemeral nature may be noted here. Just as glandulæ parathyreoideæ in their time were supposed, and are still in certain quarters supposed to play an important part[2]) in the genesis of *tetany*, the adrenals have been indicated as the locality for the rise of *epilepsy*. Several years ago, *H. Fischer* believed himself able to show experimentally that an increase in the function of the adrenals increased the epileptic liability to cramp, and this led to attempts to cure epilepsy by removing one adrenal. Recently, *Altenburger* and *F. Stern*[3]) have located a cramp-inhibiting centre in the back lobe of the hypophysis. They claim that they have far more frequently found traces of hypophysis secretion from this lobe in the cerebrospinal fluid of non-epileptics than in that of epileptics, in whom this secretion is often lacking even in the ventricles. Now and again, discoveries of a similar kind are published, and the literature abounds in details which are unlikely to become the basis of any definite conclusions for a long time to come. The more perfect the biochemical methods of investigation become, the more complicated have these vital relationships proved to be.

With regard to the quality of the blood in pathological conditions, the old ways

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[1]) *V. Kafka:* The chapter on »Serologie der Geisteskrankheiten« in Bumke's »Handbuch«, B. III. 1928.

[2]) Cf. p. 414.

[3]) *H. Altenburger u. F. Stern:* Zeitschr f. d. .ges. Neur. u. Psych. B. 112. 1928.

have led to no result. The »blood-crises«, marked by a polynuclear leucocytosis with eosinopenia followed by eosinophilia, which *Lundvall* has described in dementia praecox and which preceded the katatonic exacerbations, are considered by *Wuth*[1]) to be due to the psychomotor agitation. Wuth thinks the same is the case with the relative lymphocytosis with variations in the number of the eosinophile cells which has been considered a prognostically unfavourable sign in dementia praecox by *Schultz*. Since *H. Fischer* and *Fr. Schlund* have called attention to the circumstance that every change in the muscular tonus that sets in under the influence of the vegetative nervous system, acts on the number of lymphocytes in the blood, it is difficult to see how any great importance can *a priori* be ascribed to the number of these form-elements. Yet it is possible that the presence of the leucocytes in different forms and the proportions between them may have a greater value. Occasional observations, such as the connection between the alcalescence of the blood and the eosinophile cells demonstrated by Zimmerman, may perhaps point in this direction, though we have as yet no means of explaining these relationships. All in all, we have good reason to say that the result of these time-absorbing corpuscular examinations of the blood-picture has been rather meagre.[2])

Some of the biochemical changes in the composition of the blood are no doubt of more importance. Its alcalescence is supposed to be below the normal in epilepsy, and increased in dementia praecox. Nowadays great importance is generally attached to the acid-basic balance of the blood. Variations in this relation probably provide a factor intimately connected with those disturbances of metabolism which give to the blood-stream its poisonous and cramp-releasing qualities. A great many other factors belonging to the »vegetative system« enter into these complicated relationships, and reference may here be made to what was said about epilepsy. The real nature of the organic poisons which attack the central nervous system in a more or less deleterious way is still unknown, and the conception of the factors which contribute to the morbid alteration of the blood has become more and more complex. One author attaches supreme importance to one factor, another to something else, and at present the greatest confusion prevails over the whole field of research.

Though *Frisch*, as was said above, is unwilling to see in *epilepsy* a purely nervous disease, he yet seems inclined to reckon it among the endogenous diseases by the stress he lays on its constitutional nature. As to *dementia praecox*, several modern psychiatrists have taken a step in the opposite direction and quite contrary to current opinion consider it an exogenous disease.

The theory that *dementia praecox* is a toxic psychosis was long ago expressed by the Scotch psychiatrist *Bruce*, in 1906, and in Sweden

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[1]) O. Wuth: Bumke's »Handbuch«. B. III, p. 175.

[2]) Cf. *Torsten Sondén:* A study of somatic conditions in manic-depressive psychosis. Uppsala 1927.

by *Vestberg* (1908), and *Lundvall* (1912). In America this view has been resuscitated by *Henry Cotton*[1]) and others.

Cotton is of opinion that a great many cases of »functional« mental disease within both the manic-depressive group and dementia praecox, paranoia, etc., are not due to hereditary transmission, constitutional disposition, etc., but arise by an intoxication from chronic infection foci somewhere in the body (»masked infection«). Such foci may be seated in the teeth and jaw, in the tonsils, or in the abdomen or intestine; and Cotton, who states that he has, in the course of four years, treated 1400 cases of this nature and employed operative incisions of various kinds, even extraction of teeth, etc., considers that he has reached a percentage of recoveries as high as 80 %, against 37 % previously. Cotton has had many adherents, *Hunter, Graves, Stewart,* and others, but has also met with strong opposition. Without mentioning Cotton's followers on the European continent, I will only state that in Denmark and Sweden too voices have lately been heard in support of a view which lays the chief stress upon the exogenous factors in the genesis of dementia praecox. The weightiest contribution to this discussion comes from the Dane *Paul Reiter,*[2]) whose employment of the *Walbum* treatment[3]) with metallic salts in dementia praecox has attracted a certain amount of attention.

On the strength of his own, evidently very careful, investigations, Reiter has arrived at the result that one of the most common causes of death in dementia praecox is to be found in a chronic gastro-enteritis. He finds this cause probably more frequent than tuberculosis, which disease has by some scientists been found to stand in a peculiar, hereditarily conditioned correlation to dementia praecox *(Luxenburger).* We shall return to this in the next chapter. The gastro-enterites in dementia praecox are of differing kinds, sometimes of a hyperematic-edematous nature, sometimes diphtheric-ulcerous. They are often complicated by hepatic disturbances which, however, Reiter regards as se-

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[1]) *Henry Cotton:* The etiology and treatment of the so-called functional psychoses. Summary of results based upon the experience of four years. Amer. Journ. of Psych. B. II. 1922. Ref. Centr.bl. f. d. ges. Neur. u. Psych. 1922.

[2]) *Paul Reiter:* Zur Pathologie der Dementia praecox. Gastrointestinale Störungen, ihre klinische und ätiologische Bedeutung. Copenhagen 1929.

[3]) This treatment aims at stimulating the power of the body to counteract poisonous influences through a heightened antitoxin-formation. Walbum has shown by his experiments that metallic salts in extremely dilute form act in this direction, in other words, serve as catalysts.

condary. If we except the above-named American authors and some few others *(Buscaino, Lingjerde)*, the presence of gastro-enterites in dementia praecox has, strange to say, as Reiter remarks, been overlooked up till now.

The good results which Reiter ascribes to the Walbum treatment in dementia praecox — though these results can hardly be said to have been unanimously confirmed — have to a certain degree supported his supposition that gastro-intestinal disturbances play an important part in the genesis of this disease. Reiter's view of the causal connection is mainly that schizophrenia is to be regarded as an *»exogenous type of reaction«*.

Reiter, who otherwise expresses himself very cautiously, is yet of opinion that research with regard to dementia praecox and its origin has at present drifted into a back water, inasmuch as the heredo-degenerative and endocrinous view has shown itself unsatisfactory.

Though Reiter places the gastro-intestinal disturbances in the foreground, it is hardly possible not to find a certain correspondence between his view and that of *Bonhoeffer*. For my part, I have already put forward an interpretation which for certain cases[1]) seems to agree with that of Reiter. Nevertheless, his hypothesis suffers from a certain onesidedness. For *the mode of reaction* — which ultimately determines whether the psychosis, »evoked« by gastro-intestinal disturbances, takes shape as schizophrenia or as manic-depressive disease etc. — can in its specific nature never be supposed to be dependent on the intoxication. Hence it will in any case be impossible to overlook either the heredo-degenerative influence or the endocrinous and sympathico-vegetative life-equation, so intimately connected with the constitutional qualities. That research has here been confronted with seemingly insuperable difficulties, by no means signifies that it is on the wrong track.

A young Swedish psychiatrist, *T. Lindner,*[2]) starting from somewhat the same assumption as Reiter, has dealt with the intricate question of the genesis of schizophrenia. But Lindner builds up his view on postulates which include both the endocrine system and the midbrain. In schizophrenia he sees an expression of chronic states of infection or intoxication »owing to a lessened immunity due to hormonal or central disorders«. Immunity is regulated, partly by the endocrine organs, among

[1]) Cf. the cases, which I call »cases of type b«, referring to fig. 41, p. 377.

[2]) *Torsten Lindner:* Några synspunkter på det aktuella schizofreniproblemet. Hygiea 1928.

which the adrenals, the thyroid gland and the liver are supposed to be active, partly also by the midbrain. These statements Lindner has from authoritative sources. A special significance is ascribed by Lindner to a reduction of the »de-poisoning« capacity of the liver, but a defect in the subcortex also has an injurious effect on the formation of immunity bodies. A Japanese scientist, *Sato Akira,* reports having isolated a hormone out of the liver that has a de-poisoning effect on certain toxic substances (histamins), and these are considered by *Buscaino* »to be the ultimate cause of the schizophrenic symptoms through an elective influence on certain parts of the brain« (quoted after Lindner). The disturbances of the hepatic function which bring about a decrease of its hormonopoietic capacity are supposed by Lindner to be due to an endocrinous insufficiency of polyglandular nature (thyroid gland and adrenal), and »it might be conceived that doses of liver-extract in schizophrenia might further de-poisoning within the organism«. Moreover, since a decrease (?, cf. p. 445) of cholesterin in the blood has been found in dementia praecox and this has been believed to be »an expression of lessened immunity«, and an increase of the cholesterin content is said to be the consequence of a liver therapy, Lindner expects good results from the use of liver-preparations in this disease. The near future will show whether he is right.

The afore-mentioned metabolic disturbances, especially the content of poisonous constituents in the blood-stream (imperfectly dissolved albumen, foreign to the blood, etc), are probably largely the same in endogenous and exogenous forms of mental disease. For the latter, however, there is an additional circumstance of importance, namely, that the blood-stream here contains a specific *agent,* whether this consists of infectious toxins or of poisons in the ordinary sense, such as alcohol, etc.

Hence we may find imperceptible gradations between functional and organic diseases, yet the distinction in the more typical cases between endogenous and exogenous processes is all the sharper. The degenerative process, resulting in a decomposition of the nervous tissue and a subsequent gliosis, with which we meet in dementia praecox, is mainly of an endogenous nature, whereas an exogenous process is the cause of *paralysie générale.* But of course it is quite possible that the double contribution of endogenesis and exogenesis gives rise to cases of a floating transition between endogenous and exogenous diseases. The endogenous processes are not in the same sense as the exogenous incommensurable with the processes which normally accompany our mental life. For there is no great gulf fixed between normal metabolic processes and the course of an auto-intoxication. Qualitative changes do not here require the addi-

tion of a *new agent,* they are the result of altered relations and proportions, i. e. of disturbances in the biochemical equilibrium. If a man has had his thyreoidea removed by an operation, or if the function of this gland is radically changed through illness, there sets in such a thorough change in the equilibrium conditions, as to bring about organic processes with psychical and physical symptoms, which swiftly lead to death. In a similar way the functional mental diseases are undoubtedly caused by a change or derangement of the normal; and if in dementia praecox these altered biochemical processes at last appear in so obvious a form that we do not hesitate to call them organic, this is probably due to the circumstance that the nervous tissues of the brain, when there is an enduring regulatory insufficiency, become at last irreparably injured. And experience shows that destruction then first of all overtakes the substratum for temperament and affectivity. Many authors differ from this view, especially with regard to the genesis of dementia praecox. *Kahn,* for instance, contrary to *Kretschmer,* holds that the *schizoid* type of temperament, which the latter has, as it were, extracted from the schizophrenic symptom-complex, is not alone sufficient for the development of dementia praecox. For schizophrenia to supervene, the schizoid disposition needs the addition of another factor which Kahn calls »die endotoxische schizophrene Noxe«. What this new factor is, neither Kahn nor his adherents tell us. According to Kahn we have here to do with a specific heredity-factor; and »die schizophrene Noxe« is, accordingly, involved in the endogenesis. This view, essential to Kahn's interpretation of hereditary transmission in dementia praecox, has thus nothing in common with the above-mentioned exogenous hypotheses of Cotton, Reiter, and others. Kahn holds similar views with regard to epilepsy. To him the »epileptoid« (Bleuler) is not yet to be regarded as an epileptic, since the presence of typical fits is the necessary criterion for the diagnosis of epilepsy. For the genesis of idiopathic epilepsy also, Kahn accordingly demands two causal factors inherent in the disposition. This theory, which has possibly a special significance for our understanding of the hereditary transmission of epilepsy, will be discussed in the next chapter.

The boundary line between endogenous and exogenous is, however, the only line it is possible to draw, in psychiatry, with any degree of certainty, yet this line has *only reference to the etiology* and at most marks the difference between the more typical cases in the diagram in fig. 41, p. 377. In other respects we meet with nothing but floating transitions in the relation of the various forms of disease, and every

attempt to keep distinct the one from the other is only a violation of Nature.

Even *Kraepelin,* towards the end of his life, revised his earlier view of the independent nature of the various forms of disease and of their relation to each other. He explains the floating transition between different forms which he admits by the theory that mental diseases have three modes of expression, »symptom-registers« or scales, conditioned by the structure of human mental life. In proportion as the injuries to the cerebrum in the various morbid conditions are of a milder or a more devastating kind, the nature also of the corresponding symptoms changes. The milder scale, according to Kraepelin, comprises the delirious, paranoid, emotional, hysterical and instinctive symptoms; the more violent includes the encephalopathic, oligophrenic, and convulsive effects (epilepsy), while an intermediate form is represented by schizophrenia. Hence Kraepelin appears to think that a disease which strikes deep in its effect on the brain tissue, need not necessarily be referred only to one of these symptom-registers. He seems to find it quite conceivable that a schizophrenia may exhibit incidental manic-depressive symptoms, and epilepsy in its evolution pass both a manic-depressive and a schizophrenic stage.

Kleist's pronouncements tended partly in the same direction when, instead of endogenous — exogenous, he proposed the terms *homonomous — heteronomous.* The homonomous effects of a milder, merely releasing cause, are, according to Kleist, developed along a symptom-register which is *constitutionally postulated.* The heteronomous effects, which presuppose a more »massive« violence, on the other hand, are *alien to the constitutional preformation. Specht, Ewald, Weidner,* and others, follow Kleist in this opinion. I refer the reader to what is said in an earlier part of this chapter, and will return to the subject later on.

The view here set forth may undoubtedly, if we do not attach due weight to the constitutional condition, but regard the heteronomous possibility as the essential element, lead to something like a *»Vesania typica completa«.* As is well known, about 70 years ago *Heinrich Neumann* asserted that, apart from idiocy and cretinism, there existed only this one form of mental disease, and that all other forms were only different stages in its development *(H. Neumann:* Lehrbuch der Psychiatrie, Erlangen 1859). In the 'sixties, this opinion had a spokesman in Sweden *Gustaf Kjellberg.*[1]) On the other hand, it cannot be denied that the only way of escape from the ever tangled skein which, now as before, meets the psychiatrist in every attempt

[1]) *G. Kjellberg:* Om sinnessjukdomarnes stadier. Uppsala 1863.

to distinguish the different forms from each other, is a resolute scepticism, a general resignation in face of the impossible.

Hoche has long held that we must desist from classifying the mental diseases and simply for these substitute the concept *»symptom-combinations«*. Bumke expresses the same thought when he says that in the more typical cases we only possess certain *»Orientierungspunkte,* durch deren Heraushebung das ganze Terrain eingeteilt wird«.[1]) But the extent of the forms grouped around such more typical cases is and will always remain vaguely dependent on subjective views.

This is undoubtedly the case with regard to manic-depressive insanity and dementia praecox. Like *Wilmanns,* one authority extends the former at the expense of the latter, while another does the reverse *(Urstein).* Similar difficulties meet us in the differential diagnosis between epilepsy and manic depressive insanity *(Pilcz, Rittershaus).* The same causal factor, a similar course, and similar symptoms, unite these diseases or groups of diseases. Hereditary transmission — alcoholism in the parents — is common to both, and traumata capitis are frequent in the anamnesis in one as well as the other. In the course of a manic-depressive mental disease epileptoid seizures may occur, and in epilepsy we often meet with brusque reversals of mood. *Kahlbaum,* as early as 1863, pointed out the correspondence between periodical mania and epilepsy. Aura-like phenomena may precede manic-depressive attacks; and epileptoid disorders in childhood, such as convulsions, pavor nocturnus, enuresis, somnambulism, sometimes foreshadow the development of a manic-depressive psychosis. The »affective epilepsy« described by *Bratz* is also a symptom-combination which might be regarded from this point of view.

Accordances analogous to those between epilepsy and manic-depressive insanity may undoubtedly also be observed between *dementia praecox* and *epilepsy,* indeed, it may with good reason be asked whether they are not even more conspicuous here. With regard to heredity, *lues* is more often than alcohol the common feature, while in the anamnesis for both these diseases the latter factor takes the part of a releasing cause. In forensic interest, these diseases compete with each other. Stubbornness and perseveration, epileptoid seizures, stuporous conditions, deliria and vivid hallucinations often render it difficult to keep the clinical pictures distinct. Add to all this that ambulant somnambulism

[1]) The italics are ours.

(fugues) has an unquestionably schizoid character in epilepsy and can with difficulty be distinguished from hysteriform absences. Finally, dementia is common to both diseases, and the patho-anatomy reveals resemblances. In the latter respect, the gliosis especially shows a certain accordance (large, fibre-forming glia cells, ameboid cells).

Now, what conclusions have been drawn from this inextricable coherence in which (apart from typical cases) the different forms are linked together and merge into each other? Here is a gleaning from recent literature: *Rittershaus* like *Hoche* and *Bumke,* goes the whole length and denies to manic-depressive insanity the character of a psychotic entity, seeing in it only a symptom-combination which may occur under the most varying etiological conditions. Similarly *Popper,* about the same time detaches from schizophrenia a *schizophrenic mode of reaction,* supported by abundant material from the great War. And finally, *Weidner* contemporaneously publishes a case of brain tumour with a paranoid symptom-complex which gradually passed into an agitated condition, followed by »stupor, hallucination and confabulation«. Weidner interprets the pathological picture in agreement with Kleist and sees in the earlier symptoms a homonomous (here *egocentric)* mode of reaction, which by degrees, in connection with a quantitatively growing lesion of the brain, passes into what is, from the constitutional point of view, a heteronomous symptom-complex.

With regard to the above-mentioned *paranoid* or *egocentric* symptom-complex, the reader might perhaps argue that in paranoia we have a rare, it is true, but still fairly distinct form of disease, and that here at any rate the »mode of reaction« point of view is not applicable. In my opinion there is no ground for hesitation, all the more so since paranoia more than any other form of disease has been difficult to delimit and, in this respect, is still subject to various interpretations.

In the special part of this work I propose to return to the discussion of this subject, and now merely recall *Specht's* attempt to explain paranoia as a manic-depressive symptom-combination; and, on the other hand, the close relationship between paranoia and dementia praecox, with Kraepelin's middle-form *paraphrenia* as the connective intermediary.

In paranoia, too, the disease begins with changes in temper and affectivity, and taking into account the unfavourable prognosis of the typical cases, it does not seem to me unlikely that here too a morbid process is in progress, even if, *parallel with a slower abnormalisation,* it is not intensified to an affliction of destructive, grossly organic

character. That this, though rarely met with, may nevertheless be the case in paranoid processes, is shown by *Weidner*'s above-noted observation, and I myself have in recent years had the opportunity of observing two cases of brain-tumour, one apparently acute, the other probably chronic, in which the tumour developed parallel with the paranoid symptoms. As these two observations are of a nature to elucidate the *relation between exogenesis and endogenesis* in the origin of mental diseases, I will give a short account of them here.

Case XXIX. Y., an unmarried woman aged forty-seven, had been employed in the confectionery department of a big ware-house and afterwards started a business of her own. Admitted to the Stockholm Mental Hospital 4/8 1927. She was then quite collected and clear in her mind. She said that her shop had been a losing concern during the last year and attributed this to unfair competition and persecution from the big firm by which she had been employed. She was sure she had the most striking proof of having been persecuted. Customers gathered outside her shop, laughing and criticising her wares, people she knew cut her, unknown persons rang her up on the telephone advising her to »close the shop«. A girl who was her assistant confirmed her suspicions and finally she advertised the business for sale »owing to machinations«. A purchaser presented himself but no sale eventuated. At the outset she had no notion of the origin of these persecutions, but gradually she began to turn her suspicions to the large firm and wrote to its manager to complain. Little by little she became more and more nervous and agitated, slept badly and sought refuge in a boarding-house near Stockholm. After a few days her condition was aggravated. Her delusions of persecution and suspicions grew more and more crazy. She locked herself up, shrieked and was unruly, refusing to let the servants come into the room, and threatening them with violence. After admission to the hospital she soon grew quiet. She now declared that unknown people had been listening while she spoke over the telephone; when she went out to the boarding-house she observed that a suspicious car followed her, and »in the train there was a spy«. She thought the food of the boarding-house had a queer taste; she got pains after having eaten it, and believed she had been poisoned. She was sure that a lady living in the next room had something to do with this and, hence, had a quarrel with her. Denies having heard any »voices«.

After a short time in the hospital there was considerable improvement; she corrected her former mistaken ideas and thought that her delusions of persecution had lacked foundation. She was dismissed and was again to stay for a time at a boarding-house before beginning work. Her improvement was not of long duration. In the boarding-house her suspicions returned, this time directed against a dentist who lived in the room next to hers and whom she accused of having poisoned her. She declared she could no longer endure these persecutions, and thought it would be better for her to take her own life. After about a week she was again admitted to the hospital. On her arrival she complained of indisposition and nausea, which symptoms were at first thought to be psychogenous. Some days later she complained of pains in the right side of the head and at the same time a certain slur in her speech was noticeable. Then, *in the course of a few days*, the most unmistakable

symptoms of a brain-tumour developed. The deficiencies of speech became more and more serious, symptoms of paraphasia and apraxia set in. She was unable to point out objects named to her. A knife she called »a watch«, and a ring »a monk«, and she used words for the things around her which were distorted and difficult to understand. According to an entry in the casebook of 14/9 1927 she was friendly and smiling and seemed to take pains to please everybody during the examination; she could tell her name, but was unable to answer the simplest questions of orientation, called the examining physician »merchant« and did not know his name; when it was repeated to her, she immediately forgot it. Affectively and intellectually she was extremely blunted. On that day she could strike a match and blow it out when told to do so, but three days later she was completely apractic and incapable of handling a match or using soap and water. She could no longer name letters that were pointed out, nor write her name; could not distinguish between objects shown to her, and when a pen with which she was going to write, was exchanged for a bunch of keys, she tried hard to write with them. She accordingly displayed the *intentional perseveration* (cf. p. 280), so common in gross cerebral disorders. When she was shown, for instance, a newspaper, she could not say what it was, but when the word was impressed upon her, she went on calling everything that was afterwards held up for her to look at — a knife, a pencil, a watch — »a newspaper«. Feeling of pain reduced in the whole right side of the face, in the trunk and the extremities. Distinct paresis in the right lower facial nerve. Romberg's sign undecided, but tending to be negative. Walks unsteadily with short steps and dragging the right leg. Vivid reflexes. Babinsky and Trömner negative on both sides. Stasis papillae, most distinctly on the right side (14/9, 27).

Diagnosis: Rapidly developing tumour in the left temporal lobe.

The patient was taken to a surgical hospital on 17/9, where trepanation was performed in order to lessen the pressure. The tumour was considered inoperable and the patient died after a final stage of coma.

There are reasonable grounds, I think, for interpreting this case according to the same points of view as those adopted by *Weidner* in a similar case. During an earlier, *homonomous*, stage the tumour releases a disorder of paranoid character, chiefly of constitutional origin. Later, in proportion as the tumour rapidly grows, the symptom-complex is changed, and the mode of reaction acquires the *heteronomous* character which is indicative of tumours and other gross cerebral lesions. In the first-named stage it would seem plausible to assume that an irritative reaction of the affective and sensory (auditive) centres has furthered the evolution of the paranoid disposition. Yet, in the absence of an anatomical examination it is impossible to strengthen this supposition by a post-mortem inquest. Hence the following case was more conclusive in this respect.

This second case of »brain-tumour and paranoia«, lately observed by me, is even more interesting on account of the probably very slow

growth of the tumour. As a particularly good example of *paranoia hallucinatoria*, I have cited it twice in the first Swedish edition of this work. Part of the account will be found as *Case IX* in this volume, p. 183; hence I will merely add some details here.

Case XXX. Miss X, born in 1865, of a good family, intelligent and clever. As far back as 1905 she had, while on a visit to Norway, episodically heard »voices« and manifested a number of deranged ideas about threatening dangers and political persecution. This episode, though undoubtedly of a paranoid hallucinatory character, was of fairly short duration, and during the following years up till 1914 she bore herself quite normally, was socially active and generally regarded as an unusually pleasant and able person. In 1914, the disease again developed. Certain psychogenetic factors, the responsibility of looking after an invalid friend, who had been confided to Miss X's care during a long journey, had probably their share in this. For the further progress of the disease I refer the reader to the detailed account in Chapt. VII, Case IX (p. 183).

While the patient was staying at the hospital in Stockholm, her condition remained on the whole unchanged. Happier periods, when she was companionable and occupied herself with painting, displaying both interest and unimpaired talent, alternated with periods of anxiety, when she was wholly absorbed by her deranged ideas and constantly, day and night, tormented by »the voices« and a great many abnormal, extremely embarrassing organic sensations. She generally had the greatest possible liberty, went into the town, and could be sent away temporarily to friends living in other places. During her anxious periods she liked to stroll about and make observations. She thought she could feel with her hands the way the »currents« were conducted, which currents resulted in »voices« and physical persecution. Everywhere she could trace the dastardly outrages of »the league«. The Great War was its work; and if any friend of hers fell ill and died, she at once thought that her enemies had had a hand in it. With the same positiveness and formal clearness she always enlarged on her ideas about these persecutions, to which she ascribed a world-political character with a purpose of destroying, for the furtherance of evil, everything ideal and good in her country, and the reason why she was so harassed by »these scoundrels« was, that she was chosen to unmask their dark machinations. She was very desirous of telling everybody about the results of her observations. It was her mission to spread the revelation of »the league's« doings. Hence she was always willing to tell the students in the psychiatrical clinic what she had gone through since 1914 and the conclusions she had drawn from these painful experiences, which she would describe in a fascinating and dramatic narrative, speaking for hours together. During the autumn term of 1927 she felt weak and tired and did not give the impression of the same mental vigour as she had displayed earlier; the convincing enthusiasm of her addresses was still there, but the reports were not of as firm a texture as before; she lost herself in details, and now and again her memory failed her so that she had to fall back upon my help when she felt that she had lost the thread of the narrative. This happened in the middle or at the end of November, 1927. Soon after she felt more languid and had to take to her bed. Now the disease developed with a distinct blunting of the intellect and an ever increasing

drowsiness. This passed into a state of coma which was unbroken during the last days before her death. She died on Dec. 28th, 1927.

The *post-mortem* showed a tumourous formation in the midbrain. Upon formalin-induration and histological examination by Dr. F. Wahlgren, it was found to be of the size of a dove's egg, of firm consistency, and situated in the *corpus striatum dext.* »The tumour shows a grey, even section-surface, it is distinctly delimited and lies mainly within globus pallidus, but extends into the nearest parts of putamen. It is surrounded by a narrow zone of softened brain-tissue. It is papillomatose in nature; on a stroma of loose, vascular connective tissue there are large, irregularly rounded or polygonal epithelial cells. Around the tumour there are numerous wide vessels surrounded by an infiltration of round cells and a few so-called fatty cells. It does not seem to have any connection with the ependyma of the ventricle system, but may be regarded as having originated from some aberrant ependyma, possibly from the plexus chorioideus. Though it must probably be counted among the species of tumours which have been described in the literature as forms of cancer originating in the ependyma, this tumour had no criteria of malignity« (Dr. F. Wahlgren).

In view of what has been said of the midbrain as a substratum for the affective origin of mental disease this observation is of very great interest. The location of the tumour in the subcortical ganglia and its probably very slow growth would seem to warrant the supposition that it has here really played a part in the development of this singularly clean-cut case of a hallucinatory paranoia. The episode of disease setting in nine years before the final outbreak, I think it most likely that the origin of the mental derangement was of endogenous nature; yet there are good grounds for supposing that the exceptional vividness of the hallucinations was occasioned by the location of the tumour to the subcortical ganglia. We must then in the first place (and in accordance with an earlier opinion expressed by *Meynert* and *Taine* on the genesis of hallucination), think of the irritation of the primary stations for sight and hearing in the optic thalami. Further there is good reason to keep in mind the physio-vegetative centres in these parts, as being possible substrata for the manifold and troublesome paresthesias of the patient.

The case furnishes good evidence of the truth of the above mentioned view, that the constitutional disposition is of decisive importance for the clinical aspect of mental diseases, thus giving the symptoms in earlier stages a *homonomous* character. And this holds good whatever the releasing cause may be. Intoxications, infectious diseases as well as brain-tumours and other pathologic processes all give the same result. Only with very gross lesions or in the final stage of the disease does an *heteronomous* phase set in.

This is true in regard to dementia praecox as well as paranoia, and it is almost the same in regard to diseases of so clearly an exogenous nature as, for instance, *paralysie générale*. Of course in this disease the homonomous are even in an earlier stage mixed up with heteronomous (i. e. organic) symptoms.

What, then, causes the difference in the development of paranoia and dementia praecox? Probably the different effect of the affective tension, according to the differing firmness and power of resistance of the individual constitution. On the one side, the frailer the synthetic coherence of the personality, the greater the disposition for dissociation or splitting (schizophrenia); on the other, the greater the resistance met with by the morbidly increased affectivity, the more essential to the clinical picture will its deflection into associative tracks become. The latter is the case in paranoia.

It is especially French psychiatrists (*Magnan* and his school) who have devoted attention to this constitutional difference, between *»le délirant chronique«* (the paranoiac) and »le dégénéré«. The degenerated patient shows a permanent lack of balance; he totters at the slightest blow and is constantly falling ill. He has no power of resistance, and insane periods of differing kinds follow each other in his life; sometimes they are acute, rapidly passing *(délire d'emblé)*, sometimes more lingering or delusionally deranged in character *(délire systematisé)*. *Le délirant chronique*, on the other hand, owing to the greater firmness and resistance of his psychic constitution is erroneously not included by Magnan among les dégénérés.

When *Kraepelin* separated »les délires chez les dégénérés« of the French school into manic-depressive mental disease and dementia praecox this was no doubt conducive to a greater prognostic clearness as to the different forms of »le délire systematisé«. Further *Kraepelin* partly corrected his earlier misconception of »le délirant chronique« when he fixed the type of disease that he calls *paraphrenia*.

Delusional insanity (Germ. »Verrücktheit)[1]) may with reason be said to comprise both typical chronic paranoia and Kraepelin's paraphrenia. To a certain degree it is equivalent to Magnan's *délire chronique avec évolution systematique* and is thus a disease developing »en général à l'âge adulte des individus sains d'esprit, n'ayant presenté jusque là aucun trouble intellectuel, moral ou affectif«. In other words,

[1]) For want of an English term corresponding to the German word »Verrücktheit«, I have in this work ventured to use as synonymous expressions: »delusional insanity« and »delusional derangement«.

it appears in persons with a more robust mentality, which contrasts strongly with the degenerate and frail condition that characterises the schizophrenic. The fragility of the latter, however, is not only a weakness, viewed prognostically, it also implies a strength. For acute functional dissociation and splitting of the mental structure is (or rather *may* be) a protection against that unfavourable transformation of the personality, which progresses associatively, and which is characteristic of the more resistant mental state in cases of delusional systematisation (paranoia and paraphrenia).

We have already pointed out an essential similarity between *confusion* and *sleep;* we will here call attention to another resemblance. It is true that confusion is fairly universally conceived to be an exogenous mode of reaction, but already from sleep as a physiological, and psychophysical, fact we can *a priori* draw the conclusion that this symptom (dissociation) does not really possess the heteronomous character which some writers *(Kleist, Ewald, etc.)* would assign to it. It occurs quite frequently as a transient episode even in the endogenous forms of disease. We are familiar with psychogenetic dissociation, which we have supposed to be caused by an autointoxication of extremely acute nature, where a hormonal disturbance possibly plays an active part. Further, we know states of deliria and dissociation arising symptomatically both in manic-depressive insanity and in dementia praecox and epilepsy. In these cases also the cause of the more or less complete dissociation of the mental structure is probably to be found in an autointoxication in which poisonous matter circulating in the blood-stream more or less violently attacks the brain and especially its cortex. We must not forget, however, that possibilities are frequently afforded for neutralising these poisons. Hence I think it is worth noting that pathologic dissociation often carries with it the purifying and liberating effect given by sleep, and confusion will often favourably influence the course of a mental disease. Thus, in the main, the exogenous states of confusion have a non-malignant course, and the same is true, as a rule, of the acute cases of dementia praecox where confusion is predominant.

Yet, prognostically, there is a great difference between the acute states of confusion and, on the other hand, the schizophrenic destruction and the paranoic transformation of personality. But if, as above maintained, pathologic affectivity is, so to speak, the connecting link between dementia praecox and paranoia, the schizophrenic splitting in the former disease and the transformation of personality in the latter are, of course, symptomatically quite different.

A continuous interaction between the affective life and the intelligence, accompanied by a certain high tension, marks the paranoiac, he lives in a constant state of anxiety, translated into forebodings and fears, expectations and suspicions; but though this may continue for years without interruption, nevertheless, he seems capable of relaxing the

affective tension in associative ways, and this probably in accordance with the constitution here described. The paranoiac's anxiety and fear never rise to such demolishing heights as in dementia praecox; they never reach the same degree as the destructive anguish in unfavourable cases of katatonia, or in the violently explosive »Sturm und Drang« of hebephrenia.

An exaggeration of normal egoism, a *pathological egocentricity,* is the essence of paranoia, and the innermost cause of this disturbance is an abnormally intensified affectivity. *Affectivity* and *egocentricity* are most intimately connected concepts, indeed they may be said to be the same thing seen from different points of view. Egocentricity is an expression of affectivity, and the latter is a characteristic of egocentricity. At most we can say that affectivity in its animal origin is a wider, more primitive concept, inasmuch as it probably lacks the egocentric character at a low level of development; still, its biological task is always, objectively, to *protect the individual.*

It is, as I have already pointed out, by the interaction between the somatic-vegetative substratum in the midbrain and the cerebral cortex, i. e. between affectivity and intellect, that *temperament* and *character* unfold themselves. The essential function of intellect in the normal human being consists in a repressing and controlling action, a constant domination over the more immediate impulses of affectivity. It is with reason that the paranoiac's intellectual development is assumed to be deficient in regard to the controlling influences of judgment and critical faculty. This deficient development, the weakness of the protective power of judgment against the continuous affective strain, is a necessary condition for the evolution of paranoia. It is this disharmony, the predominance of the affective tendencies over the judgment which constantly, by shunting every impression on to the wrong track, leads to a derangement of the conception of reality. The mistakes are made at the moment of the event, and it is of slight significance that another evaluation subsequently asserts itself; the error has been committed and the correction is only theoretical, without feeling-tone, for the affect is entirely on the side of the misconception. Though the paranoiac may retain his sense of logic, he is already at an early stage governed by his affective tendencies, and when his conception of things again and again takes the wrong direction, this is because the direction is determined by the affect, not by his judgment.

The change in the conception of mental disease to which I have referred above, and which began to be evident in German literature several years ago, agrees well with the views I have expressed in the previous parts of this book. In an introductory chapter I stated that three pathological modes of reaction, originating in the functional structure of the human mind, may be considered universal. These are the *manic-depressive*, the *schizophrenic* and the *paranoid* (egocentric) mode. They arise as constitutionally given (homonomous) symptom-combinations whenever the brain reaction is changed in such wise as to allow us to speak of disease, and whether the stimulation is of an acute irritative yet passing (functional) nature, or develops into a destructive (organic) process. These modes of reaction are also, as universal experience now seems to indicate, independent of the origin of the etiological factors, and accordingly retain their homonomous character under greatly varying etiological conditions and whether the releasing causes be external or internal. The cases which more or less *typically* represent these reactions may reasonably be marked off, and hence we obtain three large groups of mental diseases of an *endogenic* nature within which the varying etiology justifies a more detailed classification with a number of subdivisions. But for the typical cases we must not forget the *atypical* ones, especially as these are undoubtedly the more numerous. On this point it is important to pay due attention to the fluid transitions, the crosses and hybrid forms of different modes of reaction.

The constitutional (homonomous) mode of reaction is of course the starting point for our systematical division of mental diseases into special forms. Yet there are often forms of insanity in which the etiology is the main point for the grouping of the psychoses, and under the etiological heading most of the cases of a plainly exogenous nature are to be placed (e. g. intoxications and infectious insanity, paralysie générale etc.).

As regards the endocrinous mental disturbances, I think they are generally inherited, i. e. constitutional. Yet there are cases of this kind (morbus Basedowii, myxoedematous insanity) in which external influences, psychical and physical, play a considerable part in the evolution of the disease. The essential contribution of the endocrine glands to the constitutional substratum gives to these organs a special importance. For the rest I refer the reader to the diagram given in fig. 41 and its polar arrangement in types a and types b.

To the aforesaid three pathological modes of reaction we must

add yet another one with fluid transitions towards them all, viz. *confusion.*

When a morbid disturbance of the cortical functions passes beyond a certain limit, all individual reactions are dissociated and, as a constant symptom, we meet with confusion, the appearance of which denotes that the lesion to which the brain in these cases is exposed, more or less obviously renders impossible the synthetic mental processes. Dissociation is naturally a relative phenomenon and the symptoms have a wide range, from a haziness bordering on unconsciousness to a delirious confusion and amentia-like perplexity, differently coloured according to the individual reactions. But in all these shifting states we find as the most essential element an apperceptive impairment, with a more or less complete functional *disintegration of the psychic structure,* and here we again recall the fact that dissociation is mainly a symptom from the cortex, whereas unconsciousness is a symptom from the midbrain. Its different degrees of acute (functional) disintegration have their counterparts in the *chronically fixed* cases of dementia praecox, conditioned by irreparable destruction. The term »dementia« usually postulates a more or less comprehensive destruction of the nervous substance and in this sense is always of organic character. Hence the signification of the name »dementia praecox« is in many cases rather inadequate.

These four modes of reaction and their floating transitions to each other exhaust the possibilities of *psychic* symptom-combinations. The reactions which in addition to these are released by endocrinous, toxic, endotoxic or traumatic factors within different regions of the central nervous system, are outside the psychic sphere. Such reactions are in the first place convulsive motor symptoms and other irritation phenomena coming within this domain, including *epileptoid seizures,* which most frequently come on during absolute unconsciousness. These convulsive symptoms, without being peculiar to any given form of functional or organic psychosis, may, to the same extent as the psychic modes of reaction, occur under widely differing etiological conditions (hysteria, epilepsy, paralysie générale, lues cerebri, brain-tumour, arteriosclerosis, and so forth).

These convulsive or other irritation symptoms probably in the first place concern the cortex less than other parts of the central nervous system , such as the midbrain and the subcortical ganglia, the cerebellum, and the spinal cord. For the development of a constitutional liability to convulsions, *Fischer* has adduced as an essential factor certain endocrinous influences, and more especially the significance of a hyperfunction

within the *adrenals* with an increased secretion of adrenalin. But, like many others, this attempt at locating the causes of epilepsy to one of the endocrine organs, rests on too loose a foundation, as the foregoing discussion will have made clear.[1])

If it is generally more correct to speak of *manic-depressive, schizophrenic, paranoic, confused* and *epileptoid* modes of reaction than of sharply defined disease entities, then we may once more enquire how it is that now one, now the other of these modes of reaction predominates? Is it a mere matter of chance, or is it due to the milder or more severe nature of the metabolic disturbances (auto-intoxication or other factors), whether now one, now another of the said reactions manifests itself?

Kraepelin records a case of strumectomy taking an unfavourable course, in which, besides tetany, first a typical mania and afterwards a katatonia set in. Such cases are surely very rare. When, for instance, manic states initiate a progressive exogenous mental disease (paralysie générale), the symptom-complex develops on the same lines for some time, but then it either changes into a depressive phase (circular paralysis) or it will pass into a remission or be darkened by a growing dementia. And in those rare cases which begin with a katatonic or demented incipient phase, I have not, beyond this typical complication, observed any symptom-complex which might have inclined one to think that the condition had passed on to new modes of reaction during its progressive course. If, again, we consider the slight deviations from the normal structure which are often the habitual state of persons liable to mental disease, we shall find how the unstable equilibrium here inclines in a certain direction and at last shows an unmistakable tendency towards one or the other of the aforesaid types of reaction. The same is the case with the praepathological qualities met with in parents or near relations of the patient, when he belongs to a family with strong hereditary tendencies.

Thus everything seems to me to argue in favour of the supposition set forth in one of the introductory chapters, that there is always an individual predilection for a deviation in a definite direction. This does not preclude the possibility that the constitutional disposition is more complicated in certain cases, so that two or more modes of reaction may blend in a kind of cross between the pathological types. But then

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[1]) Here the reader is especially referred to the aforementioned work of *Felix Frisch:* »Das vegetative System« der Epileptiker. (Cf. p. 435).

as a rule, one is of a more unessential and superficially symptomatic character, as may be the case, for instance, when a manic- depressive or delusionally deranged strain is observed in the course of a dementia praecox.

Our analysis of the psycho-pathological elementary phenomena against the background of normal mental life gives us reason to assume that all disorders beginning within the affective sphere and not immediately resulting in a complete disintegration of the normal structure (dissociation, deliria), develop in one of three directions representing typical modes of reaction. These are: 1) *disturbances in the tempo of the mental processes;* 2) *a splitting of the personal integration;* and 3) *the aberration of the stream of thought through an abnormally emphasised Ego-tone* (pathologic egocentricity).

The same laws according to which normal mental processes run their course with their individual characteristics, are valid, too, for the morbid conditions. If the former are constitutionally determined and tempered (cf. p. 111) so are the latter, and the development of a mental disease undoubtedly depends on metabolic disturbances in a definite direction according to a given life-equation, which does not allow any deviations from the »somatic fate« which, following *Tandler,* we include in the *constitution* concept.

Assuming, then, that the endogenous modes of reaction are constitutionally conditioned, we mean by constitution the deepest and most essential factors inherent in the hereditary disposition itself (the *genes),* by which our fate is shaped, in health as well as in sickness. Accordingly the modes reaction are ultimately conditioned by certain qualitative dispositions in the hereditary entities, whose nature, through the unfavourable crossing between two individuals, constitutes the deepest foundation of degeneration and disease. This is the conslusion which I propose to discuss at greater length in the next chapter.

LITERATURE.

Kræpelin, E.: Psychiatrie 1909. *Same author:* Die Erscheinungsformen des Irreseins. Zeitschr. f. die ges. Neur. u. Psych. 1920. *Bleuler:* Lehrbuch der Psychiatrie 1916. *Reichardt, M.:* Allg. und Spez. Psychiatrie 1918. *von Monakow:* Die Lokalisation im Grosshirn 1914. *Ziehen, Th.:* Die Geisteskrankheiten des Kindesalters 1917. *Bonhoeffer:* Aschaffenburgs Handbuch f. Psychiatrie 1912. Über Infektionspsychosen.

Same author: Die Infektions- und Autointoxikationspsychosen. Monatschr. f. Psych. u. Neur. 1913. *Kleist, K.:* Postoperative Psychose. Berlin 1916. *Same author:* Schreckpsychosen, Allg. Zeitschr. f. Psych. B. 74. H. 4—6. *Same author:* Die Influenzapsychosen und die Anlage zu Infektionspsychosen. Berlin 1920. *Specht:* Zur Frage der exogenen Schädigungstypen. Zeitschr. f. die ges. Neur. u. Psych. 1913. *Ewald, G.:* Zur Frage der klinischen Zusammengehörigkeit der symptomatischen Psychosen. Monatschr. f. Psych. u. Neur. 1918. *Fischer, H.:* Ergebnisse zur Epilepsiefrage. Zeitschr. f. die ges. Neur. u. Psych. 1920. *Rittershaus, E.:* Die klinische Stellung des manisch-depressiven Irreseins. Zeitschr. f. die ges. Neur. u. Psych. 1920. *Popper, Erw.:* Der schizophrene Reaktionstypus, Zeitschr. f. die ges. Neur. u. Psych. 1920. *Weidner, C.:* Hirntumor und paranoisches Symtombild. Zeitschr. f. die ges. Neur. u. Psych. 1920. *Wigert, V.:* Die Frequenz des Delirium tremens in Stockholm während des Alcoholverbotes, August—Septbr. 1909. Zeitschr. f. die ges. Neur. u. Psych. B. 1. *Hitschman, Eduard:* Freuds Neurosenlehre 1911. *Freud, Sigm.:* Analyse der Phobie eines fünfjährigen Knaben. Jahrb. f. psychoanalyt. und psychopath. Forschungen. Red. v. Jung. B. 1. 1909. *Same author:* Drei Abhandlungen zur Sexualtheorie 1905. *Stern, W.:* Die Anwendung der Psychoanalyse auf Kindheit und Jugend. Mit einem Anhang von Clara und William Stern. Zeitschr. f. angew. Psychologie. B. 8. 1914. *Abderhalden, Emil:* Abwehrfermente. 4:te Aufl. 1914. *de Crinis, Max:* Die Beteiligung der humoralen Lebensvorgänge des menschlichen Organismus am epileptischen Anfall. Berlin 1920. *Stransky, Erw.:* Aschaffenburgs Handbuch der Psychiatrie 1911. Das manisch-depressive Irresein. *Kretschmer, Ernst:* Der sensitive Beziehungswahn. Ein Beitrag zur Paranoiafrage und zur pyschiatrischen Charakterlehre. Berlin 1918. *Zimmermann, R.:* Eiweisspaltgifte. Allg. Zeitschr. f. Psych. B. 74. H. 4—6. *Biedl:* Innere Sekretion. *Bab, Hans:* Beziehungen der inneren Sekretion zur Sexualität und Psyche. Jahreskurse f. ärztliche Fortbildung 1920. 1. *v. Muralt:* Analyse eines Grippedelirs. Allg. Zeitschr. f. Psych. B. 76. H. 4. *Gadelius, Bror:* Sinnessjukdomarne och den inre sekretionen. Hygiea 1914. *Same author:* Om hysteriens väsen. Allm. Svenska läkaretidningen 1916. *Same author:* Alkohol und Geisteskrankheit. Internat. Antialkoholkongressens förhandlingar 1907. *Same author:* Om cellstraffets psykiska verkningar. Förhandl. vid Kriminalistkongressen i Stockholm 1911. *Lange, Fr.:* De vigtigste Sindsygdomsgrupper i kort Omrids. 1894. *Morel, B. A.:* Traité des dégénérescenses de l'espèce humaine. 1857. *Same author:* Traité des Maladies mentales. 1860. *Magnan, V.:* Leçons cliniques sur les maladies mentales. 1893. *Kahlbaum:* Die Gruppirung der psychischen Krankheiten. 1863. *Kahn, Eugen:* Konstitution, Erbbiologie und Psychiatrie, Zeitschr. f. die ges. Neur. u. Psych. 1920. *Same author:* Über die Bedeutung der Erbkonstitution für die Entstehung, den Aufbau und die Systematik der Erscheinungsformen des Irreseins. Zeitschr. f. die ges. Neur. u. Psych. 1922. *Tandler:* Konstitution und Rassenhygiene, Zeitschr. f. angew. Anat. u. Konstitutionsl. 1913, cited from Kahn. *Hammar, Aug.:* Några endokrina synpunkter rörande själsproblemet. Uppsala 1921.

See also the foot-notes in this chapter.

CHAPTER XV.

MENTAL DISEASE AND HEREDITY.

The importance of heredity for the genesis and spread of mental disease is so generally recognised that it is taken into account in the marriage-laws. That at least is the case in Sweden. But if we want to learn from recent research what is known with certainty in this respect, the answer will be less satisfactory. For the fact of heredity is not one of those well-authenticated and carefully analysed natural relations, which can be pointed to at any time and on which regulations for promoting the health and welfare of mankind can be based. Heredity research has still to face so many obscure and unravelled relationships, that its practical application *(eugenics (Galton)*, and *euthenics)* is as yet in its first, groping stage. And, indeed, it was not until our century that this branch of research assimilated the knowledge of the mathematical conformity to law which is evidenced in the reappearance of hereditary predispositions. This conformity to law had been observed experimentally and described in detail by the Austrian Augustinian monk, *Gregor Mendel* (1822—1884) as early as the sixties, though the brilliant results of his life-work were long consigned to oblivion. Being rediscovered long after his death, they became of fundamental importance in later research-work.

Before the application of the Mendelian laws had given to the doctrine of heredity its exact character, and had indicated the way to a still distant goal on clear and well-defined lines, this doctrine was based on a collection of observations, some of which were indisputable while some were probable but not proven, and others again were interpreted in an exaggerated and onesided way; and in this jumble of observations no one could tell with certainty where truth ended and error began.

In literature, the importance of heredity took the form of a terrible fate, and men listened to the prophets of evil with solemnity and awe.

A Zola, an Ibsen again preached the old word about the iniquity of the fathers which was to be visited upon the children unto the third and the fourth generation. Psychiatrists and neurologists gave their support to this literature. In their study of heredity phenomena they proceeded in a way which indeed led to most impressive results, but without leading to the truth. They imagined they could show the importance of heredity by presenting easily comprehended examples to the public. This was the method of *Morel, Lombroso, Féré, Déjerine,* and with them the whole series of well-known theoreticians on degeneracy. The most unfortunate of the inmates of mental hospitals, idiot-asylums, and even prisons, were studied, and some one of these was sure to belong to a family whose history would illustrate in manifold ways even the most momentous pronouncements on the inexorableness of degeneracy. The *pedigree* of these individuals was referred to, and it was clear to everybody how the mental devastation had spread from father to son and onward to the grandson and great-grandson. People were convinced that these pedigrees contained the whole truth, and it was long before everybody saw clearly that they represented at most a fraction of the truth, and that this fraction could not, to the exclusion of everything else, be made an exponent of the dangers threatening the offspring by way of heredity. For example, if some investigator believed he had found out in this way that the essential cause of mental disease in a certain person could be traced to his great-great-grandfather who had been an alcoholist, he would then have overlooked fifteen-sixteenths of the available possibilities, considering only one sixteenth, inasmuch as every person in the fifth generation is descended not from one but from sixteen persons, provided there has been no close intermarriage, which would naturally reduce the number of ancestors and concentrate the inheritance by reducing the possibilities for an infusion of sounder hereditary factors.

These new points of view were introduced by *Galton, Ottokar Lorenz,* and others, and thus, instead of the misleading family tree, the more profitable ancestral tree came into use.

For the purpose of tracing hereditary transmission within a family, Lorenz made use of the Habsburg family, a study which another able genealogist, *von Stradowitz,* has since followed up.

If we take the mentally diseased infante *Don Carlos,* the son of Philip the Second, as our point of departure, we find his ancestral tree as shown in Table I. This concrete example shows us not only the

typical structure of the ancestral tree, but it also furnishes a comprehensive view of the hereditary taint.

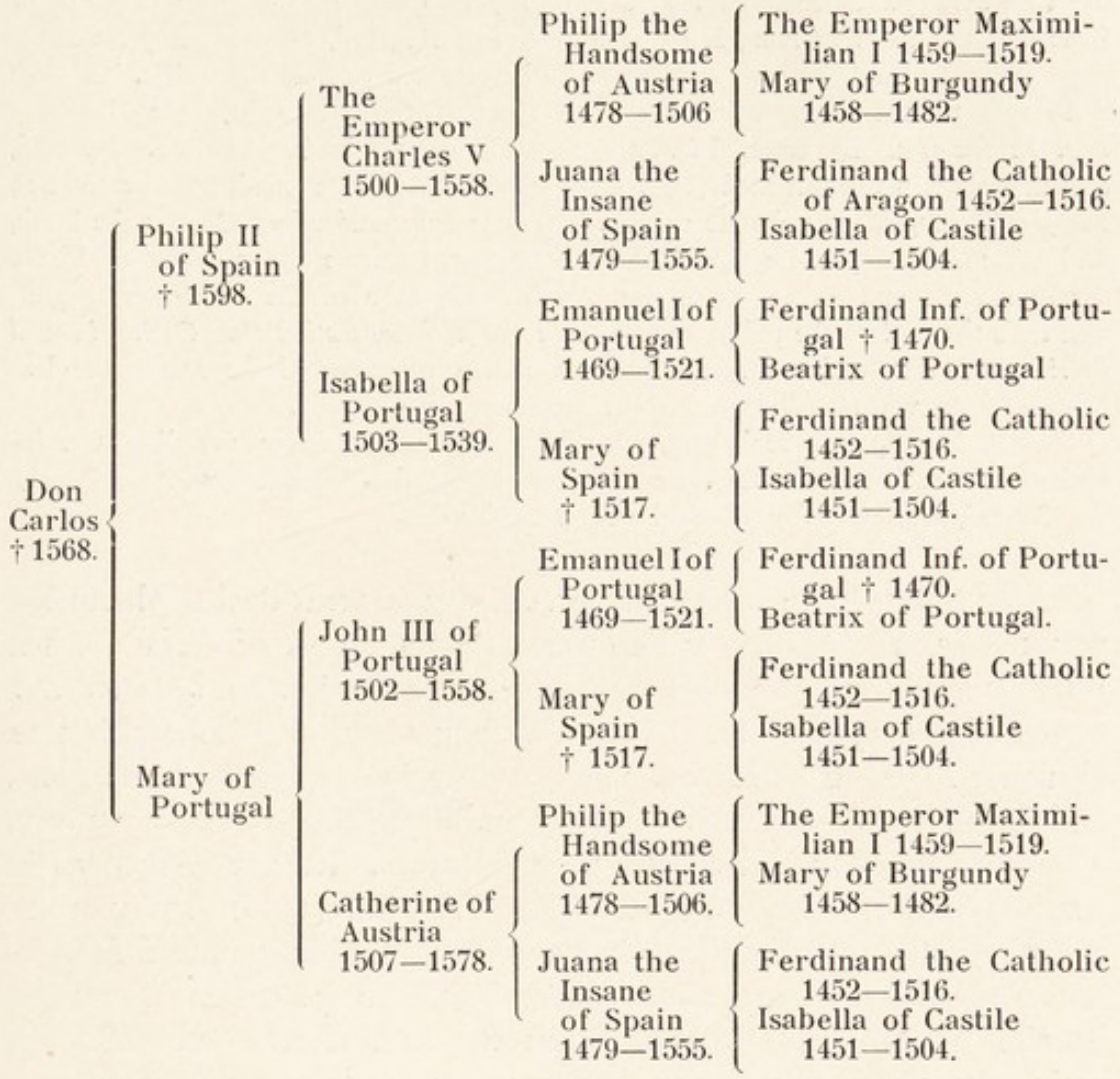


Table I.

It is well known that the Spanish branch of the royal house of Habsburg showed a steadily increasing degeneracy. In *Juana*, called the *Insane*, wife of Philip the Handsome, degeneracy breaks out in definite mental disease. She died in 1555, and historians testify that she was brutishly dull-witted. The infante *Don Carlos*, son of Philip the Second, was a descendant of the insane Juana in the third generation.

We must go far back in time to trace the origin of this manifest hereditary taint. Juana was the daughter of two eminent personalities, Ferdinand the Catholic and Isabella of Castile; the latter was one of the greatest women in history. Among the 14 ancestors of Ferdinand, there is none from which the pathological disposition can be supposed to come. It is different with the excellent Isabella. Her father, John the Second of Castile, was a morally deficient person, and her mother, Isabella of Portugal, became insane in old age. Both were descended from English

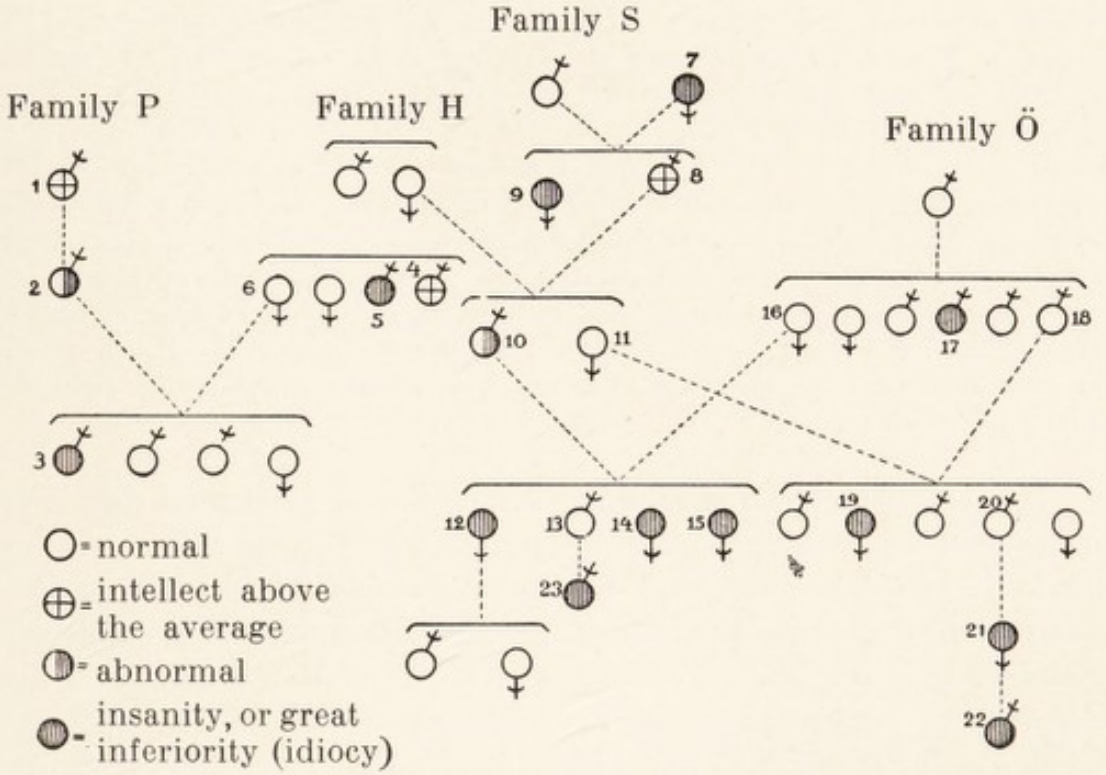
princesses. John's mother, Catherine of Lancaster, was a half-sister of Isabella's grandmother, Philippa of Lancaster. Even in the ancestral tree of Philip the Handsome, Juana's consort, in the fifth generation, among sixteen names we twice find the said Philippa of Lancaster. This Philippa, who was the daughter of John of Lancaster and sister of King Henry the Fourth of England, exhibited a great many abnormal traits and, like her half-sister Catherine, was addicted to drink. Through these two women degeneration has in all probability entered into the Habsburg line. In the mentally diseased infante, Don Carlos, the heritage had accumulated, and appeared in concentrated form. His father, Philip the Second, and his mother, Mary of Portugal, were double cousins. The paternal grandfather, Charles the Fifth, and the maternal grandmother Catherine of Austria, were the children of Philip the Handsome and Juana the Insane. An intensification of the hereditary disposition seals the fate of the unlucky infante. *In the fifth generation Don Carlos, instead of sixteen ancestors, has only six.* He is a convincing proof of the danger of close intermarriage, when pathological traits are innate in a family.

In the last Spanish Habsburg, too, the cumulative effect of the disastrous inheritance from Juana the Insane is apparent. Philip the Second's grandson, Charles the Second, was mentally diseased and died childless.

A question that, at the time, gave rise to a great deal of discussion was that of the change or uniformity in the forms of disease, when insanity was transmitted by inheritance in a family. In 1901 *Vorster* expressed the opinion that »the prevailing view of polymorphism or changing forms in heredity is not generally in keeping with the facts, and that in manic-depressive insanity and dementia praecox, especially, a uniform heredity is decidedly preponderant«. After investigations in Swedish hospitals *Vestberg,* like Vorster, found (1906) that uniform heredity is the rule. On the other hand, *Eibe,* having examined families whose members, parents and children, had been treated in the mental hospital of Aarhus (Denmark), arrived at a different result. This is easily explained, for if the diagnoses are made symptomatically, a multifarious (polymorphous) variety and a constant transformation will always be found. But if the two principal groups are kept in view, it will as a rule be found that manic-depressive psychoses are innate in certain families, dementia praecox in others. This is no doubt due to the circumstance that the actual inheritance is a fixed, fundamentally essential factor, the constitutional element of predisposition, and the mode of reaction inherent therein. *Sioli* wrote, as early as 1885, after an examination of the heredity of twenty families: »As to the influence of heredity on the type of mental disease, it can be stated in general that in the great majority of cases heredity gives rise to the psychosis and determines its form, while in a small number of cases external

circumstances give rise to the psychosis and will then have an essential influence on the type«. It is thus a certain norm of reaction which is transmitted by inheritance, but within its wide bounds the symptoms may be of the most polymorphous kind, and we find melancholia, mania, stuporous, confused, amentia-like or paranoid conditions in infinite variety. Hence Vorster in connection with the opinion quoted above reflects that »from the classifying point of view, the theory gains probability that manic-depressive insanity and dementia praecox, in spite of their multiplicity of symptom pictures, are still to be regarded as uniform disease entities«.

For the general orientation of the reader in these questions, and to illustrate some noteworthy features which crop up in the study of family heredity, I give two tabular summaries of some families in which a hereditary taint is very prominent.



Cases 3), 5), 9), 14), 15), 19) and 21) have been patients in the Stockholm Mental Hospital.

Table II.

Table II shows a large group of families related to each other, in which manic-depressive insanity predominates.

Short notes on the families in Table II. *Family P.:* 1) Unusually intelligent and socially prominent. Excessive use of alcohol. 2) Very musical; abnormal, periodically melancholic. 3) Son of the latter, very talented. Musical and artistically gifted. Of a bigoted and eccentric nature. After a depressive initial phase, a long-continued condition of manically tinged derangement. After a few years' remission, he had a depressive relapse during which he committed suicide. *Family H.:* 4) Restlessly active and socially prominent in an unusual degree. 5) Mentally diseased. 6) Sound; married to 2) and mother of 3). *Family S.:* 7) Mentally diseased, melancholic. 8) Son of the latter, one of our most excellent artists during the first half of the nineteenth century. 9) Twin-sister of the latter, suffered from periodical mania. 10) artist like his father (8), labile, probably periodically insane (manic-depressive psychosis), married to 16, family Ö. 11) Healthy, married to 18, family Ö. 12) Mentally diseased for 7 years, nursed in the Vadstena Mental Hospital, amentia-like form of manic-depressive insanity with a strong admixture of paranoid ideas. Then for many years healthy, very lively, active and energetic. 13) Healthy; high government official. 14) Mentally diseased; manic-depressive periods of varying nature, here, too, a distinct admixture of deranged ideas. Threw herself out of a window in a depressive phase and sustained various injuries, in consequence of which she wasted away and died insane. 15) Sister of 12 and 14, typical manic-depressive psychosis. *Family Ö.:* 16) Mother of 12—15, healthy. 17) The latter's brother, mentally diseased; psychosis of unknown-nature. 18) Healthy, married to 11, of family S. 19) The latter's daughter, suffered since her youth from periods of a manic nature, sometimes also from fits of melancholia. Her habitual condition is a mixture of depression and restless anxiety (anxiety-mania, *Kraepelin*); compulsive ideas and compulsive actions. The case has previously been described, Case XIX. 20) Healthy. 21) The latter's daughter. When nineteen, she went through a favourably proceeding mental disease of doubtful form, rather like an acute katatonia. Married and has a son, 22), who is an idiot. 23) Son of 13, unusually gifted, is said to have suffered from slight schizophrenia with obsessions during the years of puberty, now sound.

In each of the related families, P. H., S. and Ö, mental disease is innate, and by intermarriage between them there is the risk of a summation in the descendants of the presdisposition inherited from two quarters. In the earlier generations the disease is undoubtedly manic-depressive. It is true that, on the whole, it retains this character in the descendants, but owing to the strong admixture of traits of derangement, hallucinations, imperative ideas, etc., it shows a distinct tendency towards deviations in an unfavourable direction (cases 3, 12, 14, 19). Finally, in 21 we see a pathological picture of a more doubtful nature, and it may be asked whether the diagnosis katatonia is not the most correct one for this case. At any rate we here meet with a katatonic mode of reaction. The same is possibly true of 23). Besides the cases of mental disease contained in Table II, we may note that two brothers

of 13) died in early childhood of diabetes. (They do not figure in the table).

Hence it is quite possible that in families where manic-depressive insanity is innate, there may appear some cases in a later generation where the diagnosis dementia praecox is ultimately inevitable. How should we interpret these cases? Must we assume a progression of the nature here indicated, by which, against the rule of the uniform inheritance of mental diseases, the manic-depressive mode of reaction passes into (?) or is succeeded by (?) a disposition for dementia praecox? Considering our previous statements as to the floating transitions between different forms of disease, this fact should not astonish us, but the ambiguous modes of reaction in these mixed types are not necessarily to be regarded as a progressive degeneration. They may just as well be due to a new, complicating, predisposing element, transmitted from another family through a seemingly sound (heterozygote) parent. *Cf.* 16) and 18) in Table II.

Nor will I deny that the opposite case may be found, and that the circumstance that dementia praecox has taken root in a family does not prevent the appearance of a manic-depressive insanity. Yet such cases seem to be very rare (Rüdin). We will subsequently return to the mixed modes of reaction resulting from a summation of various predisposing elements; in the meanwhile, for an illustration of the above-mentioned »progressive« possibilities of inheritance, I refer the reader to *Table III.*

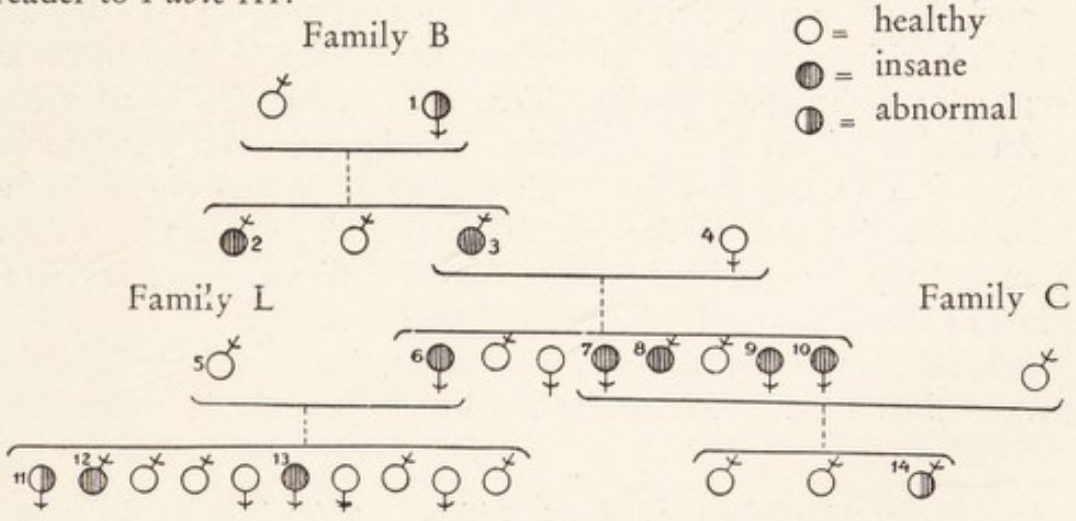


Table III.

Short notes. 1) »Queer and peculiar«. 2) Mentally diseased, in the Uppsala Mental Hospital. 3) Mentally diseased. Typically manic-depressive. Stockholm Hospital. 4) Sound to the core and energetic, of German nationality. 6) Mentally

diseased. Diagnosis unknown. 7) Mentally diseased. Nursed in the Stockholm Hospital till her death in 1918. Mixed form. Periodicity with manic tinge. Gradually developing affective dementia. 8) Typical *dementia praecox,* died in the hospital. 9) Typical *dementia praecox.* Extremely dull-witted. 10) Unclear form, periodical like 7). — In her marriage with 5) (healthy), 6) had ten children, of which 11) was abnormal, 12) »demented since his early college years« *(dementia praecox),* and 13) mentally diseased (dementia praecox?). In her marriage with C. the above-named 7) had three children, one of them is a son, 14) morally defective.

It can scarcely be altogether denied that the old doctrine of *degeneration,* propounded chiefly by *Morel,* has a great deal of truth in it in spite of several crude exaggerations.[1]) For it is beyond doubt that a degeneracy progressing from one generation to another has the power of creating increasingly unfavourable forms of disease in a diseased family and of deteriorating the hereditary possibilities to such a degree as to make extinction the inevitable consequence. We must keep in mind, however, that this is only the case under particularly adverse conditions and such unfavourable circumstances are indeed, as we may conclude from the above, present when hereditary factors *from two sides* meet and are added together. On the other hand, it should be remembered, that an influx of sound predispositions may have a regenerating effect on an already afflicted family.

The French-Russian authors, *Minkowska-Minkowski,* some years ago published a study on heredity comprising the descendants during 150 years of two persons, F. and B., of which one was mentally diseased, the other epileptic. From this study the following facts appear: 1) Both families show the most obvious possibilities of regeneration as long as the pathological predispositions are crossed with sound genes. 2) An influx of favourable qualities, intelligence, energy and social ability, often accompanies the predisposition for mental disease in families harbouring such a taint (cf. Table II). 3) The descendants show an explosively increased frequency of mental disease when representatives of the respective families F. and B. intermarry.

With regard to the doctrine of degeneration as formulated by Morel, I should like to add a few words. The presence in Table II of

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[1]) Among other things, the so-called *anteposition,* by which is meant the appearance of mental disease at an earlier age in younger generations, has been taken as evidence of the progressive nature of degeneracy. But anteposition is, according to *Siemens,* a phenomenon which has been assumed owing to an inadvertency, inasmuch as persons belonging to *older* generations, and diseased at an early age, have for obvious reasons not been able to form families.

a case of idiocy, 22, seems to confirm the inexorable rigour of progressive degeneration. But since we know that the conditions determining the occurrence of idiocy may vary, and that some of them, being quite external, may be said with more or less certainty not to touch the *genes*, it is difficult to tell how far idiocy must be ascribed to heredity, because it is often found to have nothing whatever to do with it.

In judging each special case of heredity it is of the utmost importance to keep distinct the *phenotypical* and the *genotypical (Johannsen)*. Only qualities that have their origin in the genotype are heritable. Their substratum is the *chromosomes* of the ovum and the sperm cells. With these they are transmitted after fertilisation to the new individual, which begins its existence with the germ-formation after a splitting of the chromosomes, a re-grouping and reduction of these small bodies bearing the heritage, have taken place. This determines the extent of the genotypical characters. All the charapters of an individual are in sum phenotypical, and these latter have accordingly a much wider scope. The phenotypical characters are of course partly *primary*, that is, genotypical, partly secondary, i. e. *acquired* by the individual. We know that acquired characters are not considered heritable, and hence the unhygienic or in other respects harmful circumstances to which the individual may be exposed during his early growth and development, have nothing to do with the question of heredity. But it is still a disputed question whether chronic intoxication by alcohol, narcotic drugs, etc., or a syphilitic infection can bring about such deep-going changes in the body-tissues of an individual as to damage his sex-glands lastingly; if so, acquired pathological changes would be capable of a sperm-destroying effect, called by *Forel, blastophthoria*. We can hardly entirely dismiss the possibility of a blastophthoria by alcohol or syphilis or both combined, and it is difficult to explain in any other way the *genesis* of degeneracy in certain families. But blastophthoria is by no means fully proved, and from the experiments made on animals no reliable conclusions can be drawn. Much of what is called alcohol degeneration can be explained by the wretched hygienic and ethical social conditions in which the children of drunkards grow up, or by alcoholism in the mother which acts harmfully on the growing fetus, and so on. And as to the so-called hereditary form of syphilis, this is surely as a rule a misnomer for an infection of the fetus in the womb. We shall return to these questions later on.

More important than the injuries which may be supposed to arise by the transmission of an infection or intoxication from the mother to the growing fetus, are perhaps the *traumata* befalling children born prematurely or under unfavourable circumstances necessitating forceps delivery, such as a too narrow pelvis, too quick an outflow of the liquor amnii, a complicated fetal position, etc. The consequences of such injuries which frequently endure in the shape of lesions to the brain, hemorrhages and subsequent gliosis, etc., have up to now been far too little investigated for us to draw any safe conclusions with regard to their significance and frequency. But especially in mental debility and epilepsy the consequences of these kind of traumatic factors have probably often been wrongly put down to the already heavily laden account of heredity. As to epilepsy, several of the earlier authors have held that it is not to be regarded as a heritable disease to the degree that has been generally assumed. This view of the exogenous origin of epilepsy has for more than forty years been advocated by the eminent French neurologist *Pierre Marie.*[1]) The explanation of the apparently familial occurrence of epilepsy may, as Marie says, just as well be that the predisposition for pelvic narrowness is heritable, and so the consequences thereof may show themselves in several individuals among a group of brothers and sisters. *Russel Brain*[2]) thinks that the reason why epilepsy, as found by him, often occurs among the first-born in epileptoid families, is that traumata at birth are frequent *releasing* causes. But as we have already said, the significance of such traumata is still obscure. A Swedish investigator, *E. Rydberg,*[3]) has lately planned a close inquiry into this extremely important question, and already a preliminary notice published by him shows the significance for the development of debility and epilepsy which may be attached to intra-

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[1]) *Pierre Marie:* Notes sur l'étiologie de l'épilepsie. Le progrès médical. 1887.

[2]) *Pierre Marie:* Presse médicale. Janv. 1928.

[3]) *E. Rydberg:* Om intrakraniella blödningar hos nyfödda med hänsyn till prognos och följdtillstånd. Sv. Läkaresällsk. Förhandl. Maj 1929.

In a more elaborate work the same author draws his conclusions from 48 cases. Here he writes: »Epilepsy is a frequent condition consequent on cerebral injury from birth-trauma. Among 48 post-examined cases epilepsy was encountered in 19, and in 1 case 3 attacks of unconsciousness and vomiting without convulsions had occurred.« Most cases were of the Jacksonian type. *E. Rydberg:* Cerebral injury in new-born children consequent on birth-trauma; with an inquiry into the normal and pathological anatomy of the neuroglia. 1932. p. 145.

cranial hemorrhages during delivery. Rydberg's material comprises 41 cases which he has followed long enough to establish the prognosis of the traumata. He gives the following table:

I. Idiots and imbeciles	14 (15)
II. Epileptics without intellectual defects	3 (4)
III. Extensive paralyses	1
IV. Smaller disorders from the nerve-muscular apparatus of the eye	6
V. Dead before the age of 6 months (in consequence of the brain lesion)	4
VI. Healthy	10 (11)

Hence, with regard to the causes of mental debility and epilepsy, it is necessary to take into account these possibilities. The causes may, however, be numerous. Besides the sperm-injuries mentioned, through alcohol, lues, etc., and traumata at birth, it is clear that infectious diseases, meningites and encephalites in infancy, rachitis, and finally endocrine disorders of various kinds, with or without hereditary predispositions, may lead to a development of mental inferiority as well as epilepsy. Nevertheless, we shall see later on that heredity often plays the principal part in the origin of mental debility and epilepsy, and more especially so in certain typical forms.

Modern heredity research has revised our views of degeneration in several respects, but before we pass on to these attempts to utilise psychiatric experience according to more exact and purposeful working methods it will be appropriate to give a brief outline of the essential features in *Gregor Mendel*'s epoch-making discovery of the laws of inheritance.

The Mendelian law of hybrid segregation reveals itself in its simplest form in the cross-breeding of certain plants and animals. If a redflowered mirabilis jalapa is crossed with a white-flowered one, we get in the next generation (first filial generation, F_1) a hybrid type, *intermediary* with regard to colour, with pink flowers. But the following generation, F_2, which is produced by self-fertilisation and reproduction of the pink flowers, yields flowers of *three* different colours, red, pink, and white, and these occur in the ratio 1 (red), 2 (pink) and 1 (white), or in other words, 25 % of the flowers are red, 50 % are pink, and 25 % white.

On continued self-fertilisation and reproduction the red specimens will yield exclusively red flowers, and the white exclusively white ones, whereas the pink always repeat the development of three different kinds and always in the same proportions, 1, 2, 1. The red and white ones are similar or pure in their genotypical

constitution, i. e. their hereditary predisposition, and they are therefore designated *homozygotes*, whereas the flowers with the phenotypical character pink are rudimentarily dissimilar in their constitution and are called *heterozygotes*.

The same relations as in the reproduction of mirabilis jalapa, can also be observed in the crossing of black and white specimens of the so-called Andalusian fowls. The heterozygotes have a fine bluish grey colour. In such cases the mixed forms are of an intermediate type. In other cases, the one hereditary character is *dominant*, while the other is pushed into the background, i. e. recessive. A certain snail, helix hortensis, has partly unicolorous yellow shells, partly yellow shells striped with five black bands. Here the unicolorous character is dominant, the striped design recessive. This implies that in a cross between the two specimens all the heterozygotes in the F_1 generation are non-striped, and thus *the homozygotes and heterozygotes of non-striped type cannot be distinguished from one another*. The striped shells are, on the other hand, all recessive homozygotes.

In splitting or segregation of the simple nature here referred to, we are only concerned with two characters, or with a *monohybrid* type; but in other cases a larger number of factors are included in the hereditary process, and things are then very considerably complicated (dihybrid, polyhybrid segregation).

To enquirers who have occupied themselves with the problem of heredity in man it now seems evident that the Mendelian law is applicable here also, at least with regard to a great many human qualities and diseases. Naturally in most cases conditions are so extremely complicated, that the results so far arrived at seem very vague and uncertain.

Among normal characters which experience shows to be inherited in a manner consistent with the Mendelian law, we may mention the colour of the eyes and the hair. Brown eyes dominate over blue, and dark hair over fair, curly or frizzy hair over smooth. The facial type, too, is, as investigations of the Habsburgian chin and lower lip go to prove, of a dominant character. Even with regard to such, seemingly simple, somatic conditions relations may be pretty complicated, since two or more hereditary units are often bearers of the characters examined. This is the case, for instance, with the colour of the skin in racial mixings between negroes and white people.

If now we pass on to pathological characters, malformations and abnormalities, we find similar conditions prevalent. Some of them are reproduced according to the simple Mendelian principle as dominant or recessive characters. Thus albinism, achondroplastic dwarfishness and ordinary dwarfishness, hereditary deaf muteness, retinitis pigmentosa, myoclonus-epilepsy, etc., are considered recessive. Brachy- and polydactylism, hereditary diabetes, hemeralopia, certain neuroses and psychoses, Huntington's chorea, etc., are, on the other hand, con-

sidered dominant. Sometimes the transmission of the inheritance is complicated by the pathological characters being *sex-linked*, and then individuals of the opposite sex, though phenotypically sound, transmit as heterozygotes the inheritance to the descendants of the opposite sex. This may also be expressed as follows. The hereditary character is dominant in one sex, recessive in the other. This is the case with ordinary colour-blindness (red-greenblindness) which rarely and only in very highly intensified heredity afflicts women, though as recessive heterozygotes these serve as transmitters of the inheritance. In hemophilia, which also follows the Mendelian law, there is a sex-linkage of a more complicated, not yet fully analysed, nature.

Somatic diseases associated with nervous degeneracy, malformations, etc., are often very difficult to elucidate from the point of view of heredity, and a great amount of laborious study has been devoted to them. As an example I may mention *Herman Lundborg*'s large work: »Medizinisch-biologische Familien-Forschungen innerhalb eines 2232-köpfigen Bauern-Geschlechtes in Schweden«, in which the eminent Swedish race-biologist comes to the conclusion that the myoclonus-epilepsy innate in this family, and otherwise very rare, has a simple Mendelian character of recessive type. Another family-investigation, carried out in Norway, is the one made by *Kristine Bonnevie* on the so-called *Drangedal family* within which an achondroplastic dwarfishness has appeared through many generations, since the beginning of the eighteenth century. Achondroplasia shows the same hereditary qualities as myoclonus-epilepsy. In the peasant-family examined by Lundborg (the Lister family) there was also a typical mental disease, dementia praecox, and it was clear from Lundborg's observations that this must be supposed to be transmitted by special genes. There was no combination between dementia praecox and myoclonus-epilepsy; the diseases were inherited independently of one another. Here may further be mentioned the large work of *Torsten Sjøgren*,[1]) recently published, on a form of idiocy, which seems to be more frequent in Sweden than in other countries. I mean the *juvenile form of amaurotic idiocy*, first described by *Spielmeyer* (1906). For this form of degeneration *Sjøgren* has found a familial transmission of the recessive monohybrid type. In a hereditary respect it is quite different to the infantile form *(Tay* and *Sachs)*. The comprehensive investigation of Sjøgren has been largely

[1]) *Torsten Sjögren:* Die juvenile amaurotische Idiotie. Klinische und Erblichkeitsmedizinische Untersuchungen. Lund. 1931.

rendered possible by the generally good and exhaustive condition of the parish registers in Sweden. The affected families were scattered over a great part of this country and the disease thus located to a number of different circumscript places. In his own 39 cases, whose pathogenetic history Sjøgren has followed through generations, the causa morbis most often seems to be *consanguinity*, and, according to the recessive form of transmission, ancestors who are phenotypically sound but heterozygotes, have shown a marked tendency to increase. Thus according to the Mendelian proportion, 25 %, for the monohybrid recessive inheritance, it happened that the disease, when it broke out, often affected several children in the same generation of a family. In these cases there was of course reason to assume that both the married parties were heterozygotes.

Among these family-studies for the purpose of elucidating the nature and hereditary transmission of familial diseases we must also include *Entres'*[1]) and *Meggendorfer's*[2]) investigations on *Huntington's chorea.* In the hereditary recurrence of this disease a dominant heredity is manifest. As the actual outbreak of the disease with choreatic-atactic symptoms often does not occur until an advanced, praesenile age, it sometimes happens that the praemorbid psychic phenomena, in the shape of more or less prominent symptoms in intellect, feeling and character, are overlooked, and a transmission of the disease from parents to children then takes place. It is this heredity, characteristic of dominant transmission, from parents to offspring, which has long been called *direct* inheritance.

Among anomalies of development with a simple dominance which accords very closely with the Mendelian proportions, we might mention the ancestral tree of a family with brachydactylism, published by the American enquirer *Farabee.* Here, among the descendants of short-fingered members of the family, we meet with very nearly as many cases of brachydactylism (36) as normal children (33). *Siemens*[3]) quotes this observation as a striking example of accordance with the Mendelian figures for dominant heredity when one parent is affected.

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[1]) *J. L. Entres:* Zur Klinik und Vererbung der Huntingtonschen Chorea. Berlin 1921.

[2]) *Fr. Meggendorfer:* Die psychischen Störungen bei der Huntingtonschen Chorea, klinische und genealogische Untersuchungen. Zeitschr. f. d. ges. Neur. u. Psych. B. 87. 1923.

[3]) *H. V. Siemens:* Einführung in die allgemeine und specielle Vererbungspathologie des Menschen. Berlin. Julius Springer. 1923.

An interesting form of heredity is the so-called *heterophenous* form. By this we mean that *one* idiotypical gene manifests itself phenotypically in qualitatively different diseases. Typical cases of a heterophenous transmission have been pointed out by H. Siemens[1]) in families where the special form of mental debility which is called *tuberous sclerosis* is manifest. Among the ancestors there are here strange tumour-formations in kidneys and heart, further, especially in the face but also on the trunk, symmetrically placed naevi of the kind called adenoma sebacaeum, and finally, in the second or third generation of the offspring, multiple tumours in the brain in conjunction with epilepsy and idiocy. It is of course mainly the latter form of disease which is called tuberous sclerosis. The genotypic connection, however, between naevi, tumours in kidneys and heart, and the cerebral disorder appearing as an epileptic form of debility is plainly revealed. Thus tumours and naevi appear in the earlier generations, the tuberous sclerosis accompanied by naevi only in the final stage of this evidently dominant and very disastrous transmission which terminates in idiocy.

Instead of the *nervous inheritance,* from which earlier psychiatrists and neurologists supposed that now one, now another disease would originate, we must now, on the strength of race-biological investigations, assume that every disease is inherited through a special predisposition. Such older concepts as *latent qualities, hidden predispositions, atavism,* and even the *doctrine of degeneration* as a whole, now become more intelligible. But environment, too, may determine the development of a heritable character. Just as certain flowers, for instance primula sinensis rubra, have a disposition for white flowers which, however, only develops when they are cultivated in a hothouse, we must often assume that certain mental predispositions only attain development under the influence of external circumstances. To this *para-variability* of predispositions we will return later on.

The simplest example of a latent character is offered by the Mendelian formula for monohybrid segregation. We assume, in certain rats, a crossing between the characters black and white, the former being dominant, the latter recessive. The parental generation, P, is followed by the first filial generation, F_1, all black. In the next generation, F_2, three are black and one white. The white colour is here a latent character, and under certain conditions it may long remain latent. For if the heterozygotes in the F_1 generation are fertilised by dominant homozygotes (for the character *black*), then the character *white* may remain

[1]) *Siemens:* Op. cit.

latent through a great many generations, till it finally appears when two heterozygotes are crossed. This Mendelian rule is applicable to certain recessive diseases and malformations in man alluded to above, and also comes into play in the genesis of mental diseases of the recessive type.

The investigations published by *Lundborg, Sjögren,* and others, clearly indicate how fatal close intermarriage may be in diseased families and especially such where familial anomalies are recessively transmitted. As long as healthy members of such a family, who of course may be heterozygotes, marry outside the family, the disease may, like the character »white« in the rats, be kept off for generations, but if two cousins marry, they run the risk, even if they are phenotypically sound (heterozygotes), of their children becoming diseased in the ratio 1:4 (25 %). Idiopathic deaf muteness, for instance, is such a *simply* recessively transmitted disease *(Siemens),* and by the intermarriage of cousins in diseased families, the healthy parents get deaf mute children in the proportion here stated. And of course it may easily happen that of two children one is healthy, the other diseased.

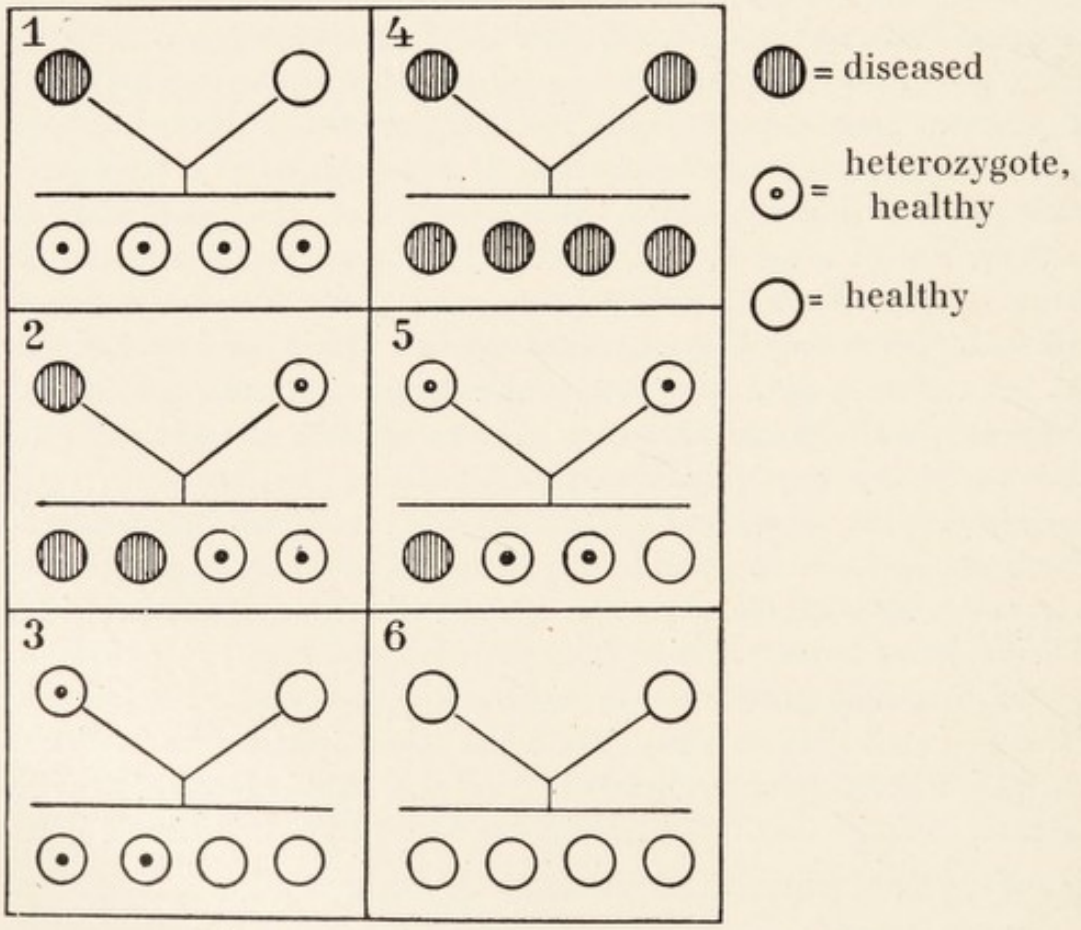


Fig. 46. Simple recessive inheritance, after Rüdin.

When a mental disturbance breaks out quite suddenly in a family where both parents are healthy, one naturally wonders at the cause of such a disease. In cases of dementia praecox the answer may be read above. See also Fig. 46, picture 5.

In some cases the latent character occurs under more complicated conditions, when it is made actual by a constellation of circumstances. In crossing experiments, conditional circumstances have proved determinant for the origin of certain characters, and similar conditions may be supposed to be present in the actualisation of a predisposition for mental disease. In these, often very obscure, associations there enter, sometimes a paravariability owing to external circumstances, sometimes a so-called *mixovariation*, by which is meant that, for the development of a certain hereditary character, a hereditary factor is dependent on the influence of other hereditary rudiments. According to the different influence of such rudimental factors, the development of a character is suppossed to vary within fairly wide bounds. This is the case, according to several authors, with congenital myopia, and also with some other, more complicated, bodily as well as mental characters (*Siemens*[1]) such as height, harmonious development of the features (beauty), musical talent, intelligence, and so on. With regard to the hereditary transmission of mental disease, with the vague results at which different enquirers have arrived here, too, one is tempted to assume mixovariation. We shall return to the probably very complicated interaction between different hereditary factors later on.

Finally, confronted with the problem of the genesis of a mental disease in an apparently healthy family where exogenous causes can be excluded, one must not entirely overlook the possibility of the formation of a new predispositional factor by *idiokinesis* or *mutation*.

Several investigators have attempted a detailed application of the Mendelian laws of heredity to the origin of mental disease, and especially *manic-depressive insanity* and *dementia praecox* have been closely studied. In general this latter form of mental disease is considered *recessive*, thus by *Rüdin, Lundborg, Hoffmann, Kahn* and others. According to the Mendelian principle a recessively occurring disease would develop in the manner shown in the diagram of Fig. 46.

The difficulty of judging in each special case of the prospects for the offspring is obvious upon a glance at the diagram. And it should be strongly emphasised that our heredity diagrams must still be re-

[1]) *H. W. Siemens:* Op. cit., p. 122.

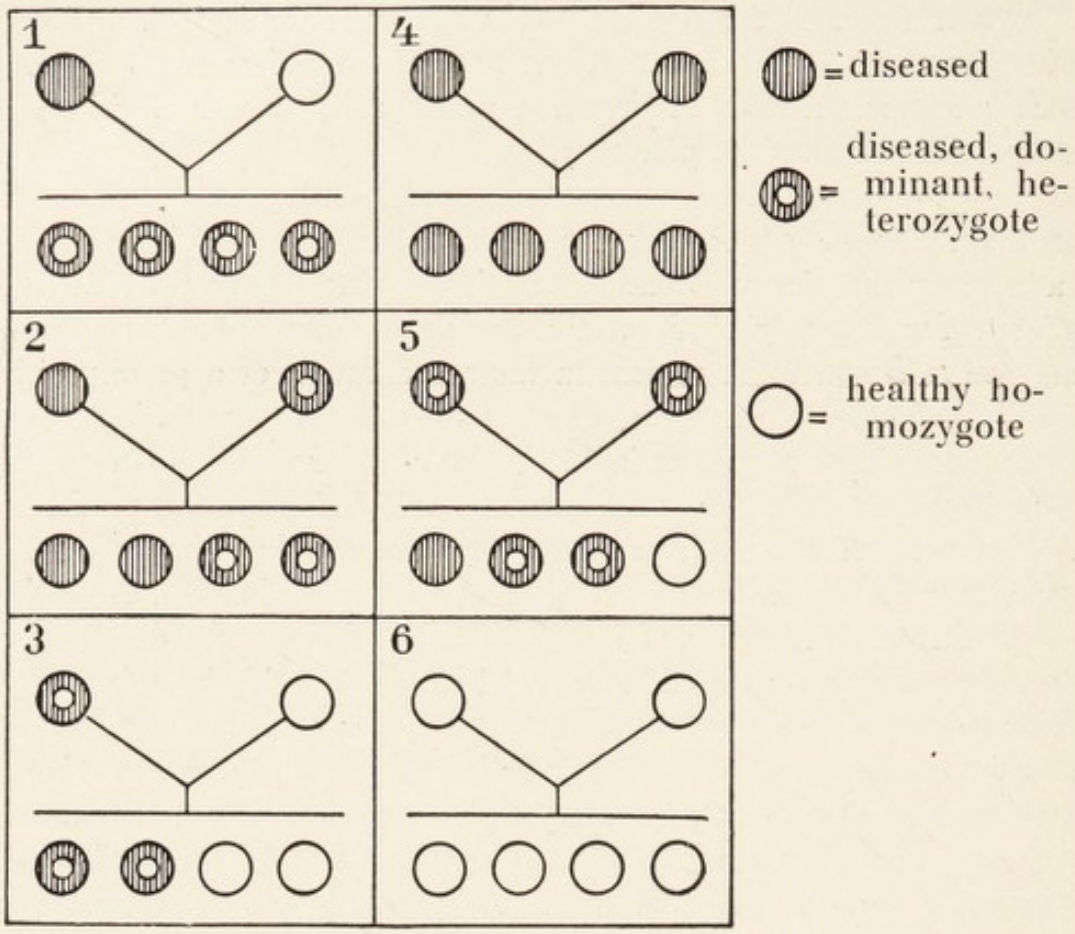


Fig. 47. Simple dominant inheritance, after Rüdin.

garded as very unreliable, and hardly of any practical value as a guiding scheme for the physician. Only if both parents have been diseased, would it be possible to predict the fate of the children with any degree of certainty. They are then all diseased, at all events with regard to predisposition and constitution, even if circumstances should so ordain it that the disease remains latent and never breaks out. This being the case, we must always count upon unexpected possibilities which make all calculations uncertain. In other cases where entirely healthy individuals marry, or where one perfectly healthy person marries another who has suffered from dementia praecox, it may be difficult to decide whether the healthy ones are genotypically healthy, in other words, whether they are homozygotes, or only seemingly free from the predisposition, i. e. heterozygotes. In cases 3), 5), and 6) (diagram, fig. 46), both parents are healthy, but the possibilities alternate according to the presence of the recessive heterozygotia in one or both parties. If the father as well as the mother come of diseased families, or are cousins and belong to a family where dementia praecox

is congenital, then, if the diagram represented the hereditary transmission in this form of disease, 25 % of the children would be exposed to the risk of becoming insane. The diagram, however, mainly shows the course of inheritance in cases of *simple* (monohybrid) *recessivity*. Yet here we have reason to consider it misleading, for according to all experience dementia praecox is not a case of recessivity of monohybrid form, but of *dihybrid* proportions, which reduces the risk for the offspring from ¼ to 1/16. Nevertheless the prospects in close intermarriages may become worse in diseased families when two healthy heterozygotes marry, than when one parent has been (or becomes) mentally diseased but the other is perfectly healthy. In that case (fig. 46, 1), all children may remain healthy, even if the recessive heterozygotia finds expression in a number of psychopathic peculiarities and traits of a distinctly schizoid nature.

If dementia praecox has been supposed to follow the laws of a *recessive* character, the hereditary predisposition to the manic-depressive form of insanity has, on the other hand, been held to be *dominant*. The diagram in fig. 47 shows that with a dominant disease we have to reckon with even more fatal possibilities.

When mental disease occurs as a dominant character, all heterozygotes, according to the Mendelian point of view are mentally diseased, and hence the number of abnormal individuals in the filial generation becomes much greater with dominance than with recessivity. According to the diagram there are 17 in the former case, as against 7 in the latter. As to the certainty with which we can draw conclusions about a person's hereditary predispositions, exactly converse conditions prevail in dominance and in ressecivity. Thus every sound person belonging to a family with a dominant heredity (manic-depressive insanity), would posses sound genes and only be capable of producing sound sexual cells. A sound member of such a family is, in other words, always a homozygote. But on the other hand, the dominant heterozygote, who is always abnormal, may have inheritance rudiments for sound children, and the consequence would be that a marriage between two abnormal heterozygotes in a manic-depressive family need not necessarily turn out as unfavourable as a marriage between two diseased members of a recessive family (dementia praecox), as these latter are always homozygotes and hence only capable of producing diseased sexual cells. (*Cf.* Fig. 46, 4, and Fig. 47, 5).

From the diagrams here reproduced designed to show the application of the Mendelian proportions in recessive and in dominant heredity

it will appear that the study of the hereditary transmission of mental diseases cannot lead to correct results if no account is taken of the healthy series of children that may be produced with favourable crossings even in diseased families. But as such series of brothers and sisters do not contain any affected subject, they fall outside the psychiatrist's scope of observation, and hence they have been disregarded by earlier psychiatrists. Thus only the diseased individuals have been included, and indeed chiefly the most diseased family groups, and thus much higher values than the Mendelian proportions have been arrived at. Hence the importance of heredity and degeneration has come to be overrated, and sufficient notice has not been taken of the possibility of regeneration which may be introduced into a diseased family by means of favourable crossings. Even if the most diseased parts of the stem be doomed to destruction, yet fresh shoots are constantly detaching themselves, with possibilities of life and regeneration.

It is thus an extremely difficult matter to confirm the applicability of the Mendelian laws in psychiatrical investigation. It demands very careful attention to divers sources of error and a shrewd critical sifting of the statistic material in accordance with methods *(Weinberg, Rüdin)* which even mathematically are based on correct principles.

Even before the concept »heterozygotia«, after the rediscovery of Mendel's principles, had furnished the explanation of the transmission by healthy persons of a pathological inheritance, *Jenny Koller* and *Diem* had pointed out how frequently this happened. The investigations of these enquirers undoubtedly represent a great advance in the development of psychiatrical research on heredity. *Jenny Koller* came to the conclusion that psycho-neurotic disorders among the nearest relatives occur, for healthy persons in 59 % of the cases, for the mentally diseased in 76.8 %. *Diem,* who renewed Koller's investigations with a number of mental patients five times as large, with which he compared a relatively large number of healthy individuals, has still higher figures for the hereditary predisposition burdening the healthy individuals — 67 %, as against 78 % in the mentally diseased — and the difference between the healthy and the diseased seems relatively small if the comparison is made in the lump, without distinguishing either the degree of relationship or the nature of the inherited forms of psycho-neurotic abnormalities. But if these are set down in special columns we shall

find the difference more convincing. This is done in Table IV where *mental disease* (incl. *epilepsy), nervous diseases, alcoholism, apoplexy, abnormal characters* and *suicide* are taken separately, and the healthy and the mentally diseased are placed side by side for comparison, according to the presence of the respective abnormalities, 1) in all relatives, 2) in parents, 3) in indirect heredity (grandparents), and 4) in collateral relationship. Table IV has been worked out by Diem in accordance with Jenny Koller.

	In all relatives			In parents			Indirect		Collateral	
	Healthy	Diseased		Healthy	Diseased		Healthy	Diseased	Healthy	Diseased
Mental diseases	7.1	38.3	(5.4)	2.2	18.1	(8.2)	4.0	10.9	1.0	9.3
Nervous diseases...	8,2	2.0	(0.2)	5.7	1.0	(0.2)	1.3	0.2	1.2	0.8
Inebriety	17,7	16.0	(0.9)	11.7	13.3	(1.2)	4.9	1.8	1.3	0.9
Apoplexy	16.1	4.1	(0.3)	5.9	3.2	(0.5)	9.7	0.7	0.5	0.2
Abnormal character	10.4	14.9	(1.4)	0.4	12.8	(2.2)	3.7	0.7	1.0	1.5
Suicide	1.1	1.0	(1.2)	5.9	0.5	(1.5)	0.6	0.3	0.1	0.2
Total...	66.9	78.2	(1.2)	33.0	50.3	(1.5)	29.0	15.2	5.0	12.7

Table IV.

This table, then, shows that mental disease is present in parents of the mentally diseased 8.2 times more often than in parents of healthy individuals, and collaterally 9.3 times oftener in relatives of the former than in relatives of the latter. Abnormal characters are 2.2 times more frequent in parents of those affected than in those of the healthy. Jenny Koller has formulated her conclusions in the following points: 1) An inherited predisposition to disease among healthy individuals is much greater than is generally supposed. This gives us some intimation of the *activity of regenerative factors.* 2) Apoplexy, dementia senilis and a great many nervous diseases are, so far as we can trust the experience gained, of no importance for the question of heredity in the genesis of mental disease. 3) The strongest hereditary factors are mental diseases and abnormal characters. 4) Alcoholism as a hereditary factor requires a closer investigation and has to be divided into two main factors: a) a hereditary predisposition for drunkenness and mental disease, and b) a direct intoxication of the spermatic plasma in the sexual organs of the drunkard (blastophthoria).

One of the chief errors of earlier heredity research was the supposition of a fusion and blending of the heredity-components of the parents into one common mass. This erroneous view is still found in Galton's doctrine of ancestry, which distributes half of this mass to each of the parents, a quarter to grandparents on both sides, one eighth to great-grandparents and so on. Mendel's doctrine of hybrid-segregation postulates the supposition of fixed genes which occur, without blending, in conformity to law, and form the characters of the individual. Between the paired genes there occurs, according to Mendel, a *competition;* in their power of asserting themselves they are by no means equal, but, according to the prevalence of one or the other, they become dominant or recessive. A recessive character which disappears in the first hybrid generation, may reassert itself in the second. This *Galton* considers inexplicable, as also the fact that the different individuals in the same generation neither resemble each other, nor the parents (Rüdin).

In our day heredity research starts from entirely different postulates. Now we no longer speak of »la famille neuropathique« as one large group in which degeneracy whimsically asserts itself, now in one form of disease, now in another. We do not reckon with *one* starting-point only, but with many, and these starting-points are the *genes*, which are kept distinct as transmitting units. The mathematical exactitude of Mendel's ingenious new departure has been accepted with enthusiasm, and there is a general conviction that his ideal scientific method is universally applicable. True, it has long been recognised that psychic qualities and character traits are not transmitted according to the same simple principle as the colour of a flower, but nevertheless there is a general endeavour to bring even the psycho-biological results into agreement with Mendel's figures and proportions. We have nothing but praise for the method, even though we must feel a certain despondency as to the prospects of reaching the intended goal, as long as the start is made from points which are all unknown. For *what* and *which* are the genes which are the bearers of psychic inheritance, whether we are concerned with normal mental qualities and traits, or abnormalities in the shape of psychopathy and insanity?

First of all, we must try to realise that the expressions »heritable character«, »heritable disease« are misleading, for it is neither the character nor the syndrome of pathological qualities which we call insanity that are inherited, but only predispositions towards them. In other words, in accordance with our conception of mental diseases as abnormal modes of reaction, we can say that *hereditary mental dis-*

eases are such as develop out of a hereditarily transmitted predisposition to one or the other pathological mode of reaction. Hence it is also evident that, even in endogenous diseases combined with hereditary predispositions, external circumstances intervene and modify the hereditarily influenced human qualities. Both in health and disease there is good reason for attaching great importance to exogenesis. The hereditarily influenced predisposition to human qualities and traits of character is the seed, environment is the soil in which this predisposition develops. External influences may on the one hand arrest the development of a tendency, and on the other release and provoke one, and in this respect heredity research has shown that the genes vary in their independence of exogenous influence. From this point of view, the possibility of transmitting *acquired* characters should not perhaps be too categorically denied.

Thus with regard to the genes as hereditary factors, it may likewise be of the greatest importance to make a distinction between the *general inheritance and inheritance in a more special sense.* Strictly speaking this distinction coincides with the contrast between *exogenesis* and *endogenesis.* For, with regard to the mental life of man, we reckon among the generally heritable modes of reaction all such results of external circumstances, the nature of which is determined by the general state of the nervous system and psychic structure of the individual. For instance in the exogenous state of intoxication following upon a sufficiently large dose of alcohol, there is revealed a mode of reaction of a nature that may be *generally* heritable; in alcoholic intolerance and pathological inebriety, on the contrary, a *special* factor appears (Rüdin).[1])

A fair degree of *independence* is generally attributed to the genes, which are the bearers of the inheritance. Since modern heredity research has arrived at a fuller understanding of the structure of the fertilising ovular cell, we see, by virtue of Mendel's discovery, in the subsistence of the genes, probably limited to the chromosomes, a confirmation of *Weismann*'s[2]) supposition of the continuity of the spermatic plasma. This continuity which consolidates the individual with the family for innumerable generations and transfers immortality from the former to the latter, is woven through the ages like a textile fabric composed of

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[1]) *Ernst Rüdin:* Erblichkeit und Psychiatrie. Zeitschr. f. d. ges. Neur. u. Psych. B. 93. 1924.

[2]) *August Weismann:* Gesammelte Aufsätze über Vererbung. 1892.

the lasting threads of countless genes. But in spite of the continuity of the idioplasm, heredity is by no means a monotonous process. The infinite variety which every living being develops during hereditary transmission, and which, nevertheless, does not exclude conformity to law, is the more prominent, the more numerous the genes of which Nature avails herself. Hence the variety reaches its highest pitch in man, and this appears especially when by means of heredity research we try to follow the development of his mental qualities in health and disease. In more simple cases, Mendel's doctrine gives us a very clear and easily understandable insight into the causes of this variety; but the richer the variety, the more intricate is the hereditary transmission, and we cannot understand the conformity to law unless we consider a multitude of complications.

We have already shown how environment influences genes. But these are also interdependent in different ways which have been the subject of a great many hypotheses.

Already in lower animals possessing a small number of chromosomes, Mendelian inheritance may be complicated by a mutual »coupling« between genes. Variations in these coupling conditions seem to arise through the phenomenon described by *Morgan* as the »crossing over« of the chromosomes, in which an exchange of genes takes place between the crossing chromosomes, which split at the crossing-place and fuse each with one fragment of the opposite chromosome. Numerous theories have been put forward in order to make the calculations from the material agree with the *ratio mendelica* to be expected under different circumstances (mono- and dihybrid crossing, etc.). But the assumed conformity to law may be likened to a thread which, owing to the many complications, has become entangled in the most inextricable manner. Such complications with regard to the mutual relations of the genes and to their phenotypical occurrence have been described, apart from the valency between two or more simultaneous genes and their eventual coupling to the sexual chromosomes. In the heredo-biological literature recourse has been had to many hypothetical concepts of this kind. The commonest are *homomery*, when several genes cooperate and uniformly cause *one* phenotypical quality; *polyphenous inheritance*, when a gene is the origin of several such qualities; *heterophenous inheritance*, when a gene, under the influence of other genes or exogenous influences, reveals itself now in one, now in another normal or abnormal phenomenon;[1]) *epi-* and *hypostasis*, when a gene suppresses, or inhibits, the phenotypical formation of other genes,[2]) etc.

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[1]) *Cf.* earlier remarks on hereditary transmission in tuberous sclerosis (p. 480).

[2]) The concepts *epi-* and *hypostasis* refer to the reciprocity of two different pairs of genes, and correspond to the dominance, respectively recessivity, of the *allelomorphous* genes, i. e. genes belonging to the same pair.

The almost illimitable difficulties which beset psychiatrical heredity research are mainly connected with the question as to what qualities and characteristics are the expression of the units to be regarded as genes in the development of mental diseases? For since the genetic factors possess something of the »metaphysical« inaccessibility that belongs to the »Ding an sich«, we must start at the other end with certain accessible phenomena, in other words, with the *phenotypical forms,* syndromes and modes of reaction, in which the hereditary predisposition, the genotype, reveals itself. And so we find ourselves in the midst of the many groping attempts of the present day to find among the infinitely varying symptom-complexes the *essential forms or groups of symptoms* (Germ. *»Formkreise«*) which may be said to represent the phenotypical branching of the pathogenetic foundation of inheritance, i. e. the genes.

As a last link in the development of psychiatry, its clinical part here merges with heredity research. In spite of all scepticism with regard to the prospects of reaching the distant goal, all psychiatrists will surely meet in the hopeful expectations which may with reason be entertained of the interchange of experiences between psychiatry and heredo-biology. Both these sciences, as *Rüdin*[1]) remarks, are still developing, and of psychiatry this is true not least with regard to diagnostics. »Nur die stetige gegenseitige Ausnutzung der Erfolge auf den beiden Gebieten kann zu neuen Gewinnen auf dem eigenen Gebiete führen.« From a superficial symptomatologically differentiating principle along the lines first indicated by *Kraepelin,* the psychiatrical diagnostician has gradually reached the constitutional point of view. In the disease entities at which Kraepelin had arrived, we now see not only pathobiological phenomena of individual character, but familial phenomena which, transmitted by heredity from generation to generation, grow and develop, or, in the best and most favourable cases, are smoothed out and disappear. Hence, present-day heredity research in psychiatry has so far mainly taken its starting-point in those diseases, or rather, more uniform groups of diseases, the elucidation of which is one of Kraepelin's very greatest merits. Attempts have been made to follow the inheritance of manic-depressive insanity and dementia praecox, and as typical family traits Kretschmer's cycloid and schizoid types have generally been accepted. Besides all ante-Mendelian calcu-

[1]) *Ernst Rüdin:* Erblichkeit und Psychiatrie. Zeitschr. f. die ges. Neur. u. Psych. B. 93. 1924. *Cf.* also *Kraepelin-Lange:* Psychiatrie. B. 1. pp. 247 and ff.

lations*(Echeverria, Féré)*, much work has been done for the exploration of the heredity of epilepsy, but here the clinical starting-point is more vague and uncertain, and there has been much diversity of opinion about its essential phenotypical form (Germ. »Formkreis«). On the whole, psychiatrical heredity research still lacks firm holds; as an example of the uncertainty in this field, the following may be adduced.

As early as 1911, *Rüdin* had supposed, with regard to manic-depressive insanity, that it was a case of hereditary transmission of a *dominant* character, whereas for dementia praecox he was more inclined to assume a transmission of a *recessive* nature. However, continued investigations have shown that the results of the calculations do not come very near the Mendelian proportions, unless in both cases the matter is assumed to be more complicated.

With regard to the transmission of the cycloid type, it is true that the majority of enquirers agree that everything points to its dominant nature, but the possibility of making clear the real facts is shrouded in such obscurity that the interpretations so far have only the value of hypotheses. *Hoffmann*[1]) discusses at length the complications which may here be held possible. By the side of a simple dominance, he does not preclude the presence of a so-called *homomeria*, by which is meant, as already explained, the dependence of the phenotype on several genes, just as in other cases we may suppose the phenotypical final result to be caused by a constellation of circumstances in which exogenous factors also intervene, at any rate such factors as age, sex etc.

A sex-linkage of the manic-depressive inheritance has been assumed by some few enquirers, owing to the greater number of women affected. Hoffmann himself, though he cannot explain the predominance of women patients, is less inclined to assume a sex-linked inheritance of this type, at least not for more than *part* of it.

Hoffmann, too, is not averse to the thought that it is not necessary to suppose *one* uniform factor as the genesis of the cycloid inheritance, or, more correctly expressed, the *same* combination of genes for every case. It is true, that clinical experience speaks in favour of the uniformity of the manic-depressive forms of disease, but it is quite possible that heredity research may be able to upset the conviction of clinicians.

What seems remarkable to the clinician need not, as Hoffmann

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[1]) *Hermann Hoffmann:* Studien über Vererbung und Entstehung geistiger Störungen. 1921. Berlin. Springer.

points out, be surprising to the heredo-biologist. Though, broadly speaking, the manic-depressive forms give the impression of a dominant transmission, yet in the same individual the idioplasm may, besides dominant genes, also contain pathologic genes of a recessive nature. In assuming this, Hoffmann not only has in view the possibility of *atypical* cases in the proper sense where, besides cycloid factors, there is also an admixture of schizoid units of inheritance, but also the possibly complex nature of cycloid genes. And, »since in the differentiation of the two constitutional groups — manic-depressive insanity and dementia praecox — we still find ourselves in the initial stage and cannot make out the broad features, we cannot as yet in each case distinguish the typical from the atypical«.[1])

The complicated nature of the manic-depressive disposition has also been accepted by other investigators on heredity.

Reiss pointed out (1910) that a tendency towards uniform hereditary transmission can often be observed in cases of a purely depressive nature, and *Kleist* would keep apart the manic and the depressive component of the inheritance. The latter author, as well as his disciple *Herz*[2]), finds that the generally accepted view is marked by a certain narrowness with regard to the fundamental cycloid qualities. Their origin is traced solely to the emotional life as a temperamental factor excluding everything else. Kleist, on the other hand, distinguishes among the manic-depressive forms a feeling-toned type of temperament and two other types, which he calls »Motilitätstemperamente« and »Denktemperamente«; and in the study of hereditary transmission in diseased families, not least in cases which appear *atypical,* it is not, according to *Herz,* sufficient to reckon with cycloid and schizoid features. He is of opinion that there are mixed forms of mental disease, where we may be led to understand the peculiarity of the clinical picture in the light of certain qualities in the patient's brothers and sisters or other members of the family among the ancestors or descendants. And without being obliged to assume an admixture of schizoid features to the group of manic-depressive symptoms, Herz thinks it possible by introducing an extended list of qualities to obtain an insight into the genesis of a number of atypical cases. Besides the anomalous moods (hypomania and depression) we must take into account such constitutional qualities as have reference to the peculiarity of motility and of the intellectual functions, in other words, what Kleist calls »Motilitäts- und Denktemperamente«.

Thus it is far from certain that the group of manic-depressive symptoms (»der Formkreis«), as now generally conceived, constitutes a *uniform* starting-point.

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[1]) *Hermann Hoffmann:* Op. cit., p. 120.

[2]) *E. Herz:* Zur Frage der sogenannten Mischpsychosen. Zeitschr. f. d. ges. Neur. u. Psych. B. 116. 1928.

In another respect, too, the boundaries must be vague, giving *a priori* a trait of uncertainty to heredity calculations. It must always be a precarious undertaking to sort out persons of a certain temperamental type, grouping them, as must here be done, under the headings *mentally diseased, psychopaths, normal.* And more especially so since the enquirer has to have *a large material at his disposal,* which is so widely branched in time and space that only a small portion can be made the subject of his personal judgment. He very often gets his information secondhand, from family traditions, letters and personal history, and the standard of strictly scientific objectivity must frequently be considerably lowered.

In the term *cycloid* we must admit a wide range of variations even within the boundaries of the normal. Nature herself has meted out the destinies of men so as to let one extreme group move in the sun, the other in shadow, and it would be pedantry to demand a psychical ideal of health when it comes to designating a person as psychically healthy. We must be content with less; or the world would be populated with psychopaths and mentally deranged persons. The typically insane subject is easy to discover, so is the typical psychopath, but the floating transitions are still there. For among these bright and joyous individuals, lively, smiling, careless, incessantly active, accessible and companionable, indeed »slightly hypomanic«, whom are we to reckon as psychopaths and whom as mentally diseased? And on the other hand, among those whose path in life is overshadowed by fear and anxiety, often exaggerated by futile worries, among those who are more or less weighed down by the burden of existence, the cautious, easily depressed, by nature full of hesitation and indecision, the misanthropists and hypochondriacs, often dissatisfied or extremely sensitive and impressionable — who can, especially in cases not personally observed, be capable of a just estimation of one or the other of these varying types, heading them respectively »mentally diseased«, »psychopath«, or »normal«?

We must further remember that in all inheritance calculations the headings here mentioned have reference to the *whole life* of the individual. The difficulty in this respect asserts itself in all forms of mental disease, not least in the manic-depressive group. From the point of view of heredity we hardly regard anything but the endogenous factors. True, these factors may be brought to light, be revealed and released by external circumstances. But in our calculations exogenesis and endogenesis are like the chaff and the wheat. They must be separated from each other. How is this possible? If a person succumbs to melancholia when he is fifty or sixty, he must be included among the mentally diseased and regarded as the bearer of a manic-depressive inheritance.

Often it is impossible to take into account the possibility of a complication with senile or arteriosclerotic changes, owing to a lack of knowledge of the case. The same is true of other releasing factors, such as influenza, *traumata capitis*, and other causes. The symptomatic form which characterises the case must be decisive, even though exogenous factors have caused its outbreak. Further, statistical calculations cannot embrace the cases which only by escaping these adverse external circumstances have remained sound to their deaths! If a person dies at thirty, forty, or fifty, without having been mentally diseased, we cannot help labelling him as normal, even though we may suspect that he would have become insane, had he lived longer.

With puberty many of life's difficulties begin, and puberty is most likely the greatest danger, a sunken rock on which many a light craft has capsized and gone down. Hence those who die as children before this critical period are not included in our calculations, except in rare cases and apart from idiocy and convulsions. Thus we do not know where to find what we are looking for till it is revealed in the phenotype. The whole thing may therefore seem like a game of blind man's buff and of small value. With regard to mental diseases, Nature never offers us the material in such a way that we can convince ourselves that there is a »ratio mendelica«. In this respect every conception and subsequent childbirth is, for the present, a mere chance as regards the new human life. The unpropitious possibilities which the Mendelian proportions allow, may sometimes come out like several black balls in succession, sometimes it may be the reverse. If then, in both cases, production ceases, the former case gives us the dismal view which in earlier days made investigators draw their conclusions from the most unfavourable turn of the die and so led to the hopelessness of the old doctrine of degeneracy. In the latter case things take on a brighter hue. The truth lies somewhere half-way between these two extremes, and if we want to approach the real proportions, we must reckon with both.

The trustworthiness of the results gained by heredity statistics so far, as we have seen, rests on the range of the material on which they have been based. In regard to the seeming capriciousness of nature in both directions *only a very large material* will give sufficient scope for the many sources of error to neutralise each other as far as possible. Nevertheless it is, at least for the present, only in such diseases where the hereditary transmission shows a *simple* dominance or recessivity

(*cf.* above, pp. 477 ff.) that its conformity to law can be proved statistically. In *manic-depressive insanity, dementia praecox,* and *epilepsy* conditions are too complicated. This is especially the case with the first of these groups, whose delimitation offers the greatest difficulties. From the calculations made by *Hoffmann, Rüdin, Wimmer* and others, it is difficult, not to say impossible, to get any idea of the intricate nature of the hereditary transmission of this disease. We may say that everything speaks in favour of a dominance, but this dominance cannot possibly be simple (*cf.* Fig. 43, p. 483). Simple dominance would, if one parent was suffering from manic-depressive psychosis, according to the diagram (Fig. 47, 1 and 3) result in a morbidity in the offspring of up to 100 %, respectively 50 %. This latter figure would appear if the diseased parent were a heterozygote.

In heredity questions of this subtle kind, the concepts based on the Mendelian law for a dominant respectively recessive inheritance in its simplest form are of course too primitive to be applicable. Yet when we attempt to unravel the hereditary transmission of manic-depressive psychoses it will be well to keep in mind their *dominant* character which mainly implies that we here often meet with *direct inheritance.*

The possibilities for a pathologic inheritance in this direct form have been examined by *Hoffmann* in families where one parent had suffered (or was suffering) from manic-depressive mental disease. Hoffmann has taken into account, no less the above-mentioned difficulty in delimiting and labelling the material, than the possibility of the disease breaking out late in life, and has grouped his observations according to these two points of view. He makes a distinction between those cases where the disease concept is taken in its »narrowest sense«, and those in which it is taken in a »narrower sense«, and in the »widest sense«. To the first of these groups he refers the pronounced psychoses, in the second he also includes the hypomanic and depressive temperaments, and in the third, in addition, certain normal or at least non-pathological character phenomena of a cycloid nature.[1]) Including these groups in every part of his investigation, he divides this into four sections according to the age of the youngest child, over 60 years, or over 50, 40, and 30 years, respectively. I only give the figures which

[1]) *Hermann Hoffmann:* Die Nachkommenschaft bei endogenen Psychosen. 1921. See also *V. Wigert's* detailed report in »Betänkande och förslag till steriliseringslag«, returned by the committee of experts, 30 April, 1929.

Hoffmann obtained after conjoining the four sections. Out of a total of 124 children:

39	belong	to	group	1	(narrowest sense),	*i e.*	31.4	%
59	»	»	»	2	(narrower sense)	» »	47.5	%
75	»	»	»	3	(widest sense)	» »	60.5	%

The dominant character of the cycloid inheritance is shown beyond doubt by these figures which are regarded by Hoffmann as too high for the assumption of a recessive transmission. Direct inheritance also seems far more frequent than in dementia praecox. A continuous inheritance through several generations, however, is not found as often as the figures would seem to show. In a material comprising 61 families, Hoffmann was only able to demonstrate a continuous inheritance through 3—4 generations in 7 cases.

It cannot be denied that Hoffmann's investigation, with the »widest« sense given to the cycloid inheritance, has a certain value. Yet for natural reasons his material is too small to convince us. His figures also seem rather high. Out of Rüdin's 650 subjects, c. 75 % came from sound parents.

If we consider the figures of group 3 (»widest sense«), and start from the supposition that these above all express the hereditary transmission of the cycloid temperament, whether this be transmitted by healthy persons, psychopaths or mentally diseased subjects, then the natural assumption is that the dominant quality is especially linked with the cycloid (normal) trait, and that it is only when other factors supervene — perhaps disorders of regulation (see below), oncoming exogenous causal factors, etc. — that the cycloid temperament is reinforced in a pathological direction and finally passes normal limits.

In an investigation comprising 224 families with 1183 children published by *Wimmer* in 1922,[1]) manic-depressive insanity was found in the father or the mother in 112 cases (43 times in the former, 69 times in the latter). This makes very nearly 25 % of all the parents. Among the children, 103 suffered from the same disease (96 brothers and sisters, 7 half-brothers and half-sisters[2])), which also appeared

[1]) *August Wimmer:* Sur la transmission héréditaire des maladies mentales. L'encéphale. 1922. See also *Wimmer*'s latest work Sindssygdommenes Arvegang. Kbhvn. 1929.

[2]) The presence of mental disease in the half-brothers and half-sisters of the proband is supposed by *Rüdin, Hoffmann* and *Wimmer* to be far more common in manic-

collaterally (»uncles and aunts«) in 50 cases, and in paternal and maternal grand-parents in 28 cases. Further, within these families 33 persons had committed suicide; in all probability these had also suffered from manic-depressive psychosis. Alcoholism and psycho-neurotic disorders of other kinds were finally found in 25 cases, but only in one of these dementia praecox.

Wimmer's calculations also do not agree with the assumption of simple dominance. In a »Frequency Table« he gives the number of diseased children in the above-mentioned 224 families »roughly as 25 %, or, adopting *Weinberg*'s method of statistical calculation, as 32.9 %«.[1]) The figures agree fairly well with those of Hoffmann, and are probably too high here also, for Wimmer has surely drawn rather wide limits and included some cases of cycloid psychopathy among the diseased. Wimmer himself observes, referring to one or two examples in his ancestral tables, that the expected hereditary transmission is »not unfrequently broken, inasmuch as outwardly diseased parents have outwardly sound children«, and that the manic-depressive insanity often occurs capriciously and considerably more sparsely than might *a priori* be supposed.

Hence, the observations show that hereditary transmission in manic-depressive insanity, even though dominant, is by no means simple. Hoffmann's supposition of a homomeria or, possibly, secondary influences, such as age, sex, etc., has already been mentioned. According to Rüdin, the figures arrived at would be consistent with a complicated trimeria, in which two hereditary factors were recessive, one dominant. But at the same time he thinks that they might also be brought into agreement with the assumption of a ten- to twelve-fold, or even higher, dominant polymeria.

Wimmer, like Hoffmann before him, has called attention to the possible interaction of the genes and certain endocrine factors. In the significance of puberty and the climacteric, and in the experiences gained from Graves' disease, Wimmer finds a support for such suppo-

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depressive families than in the recessive transmission in dementia praecox. This is easily understood, since the postulate for the genesis of mental disease in recessive heritage (Fig. 46) is surely a heterozygotia in *both*, pheno-typically healthy, parents which can only be surmised to happen twice consecutively through an unfavourable accident.

[1]) Quoted from Wimmer's latest work on heredity in the insane: Sindssygdommenes Arvegang.

sitions. I will return later on to the possible influence of the endocrine glands on the actualisation of innate predispositions.

With regard to the risk of inheritance in manic-depressive insanity it cannot be denied that even the expert is strongly impressed by the occasional cases which crop up within his personal range of observation. I myself have had experience of the saddest kind of families where one of the parents has suffered from periodically recurrent mania, or hypomania. In one of these cases where the father suffers from periodical mania and the mother is sound, two out of three children have inherited the disease; the two sons have had the first attacks already at the age of puberty, whereas the disease of the father did not manifest itself until about the age of forty (anteposition).[1])

With such cases before us, and having regard to the dominant nature of the manic-depressive psychosis, we may, in spite of the more favourable prognosis and the periodicity, feel disinclined to give this disease a more advantageous place than dementia praecox from a hereditary point of view. The clinical course of the latter disease will also, owing to its more organic nature and the great significance which especially puberty has for its outbreak, often eliminate the severest cases. But I have already warned the reader against drawing hasty conclusions from too narrow a psychiatrical experience, which may easily lead us back to the old doctrine of degeneracy. We must not forget that manic-depressive disease involves a threat which, so to speak, appears with the visor up, whereas the recessive hereditary transmission that marks dementia praecox may be compared to a foe whose treacherous presence can never be foreseen. *Direct* heredity is commoner in dominant transmission than in recessive transmission. Probably direct transmission in dementia praecox only takes place if the healthy parent belongs to a diseased family and is heterozygous. *As a rule the schizophrenic inheritance has more frequently a collateral form or presents itself as an atavism.*

I have previously pointed out that, according to the diagram for simple recessivity, hereditary transmission proves more favourable when one parent is a sound homozygote and the other is (has been or becomes) insane, than in cases where both parents are sound heterozygotes. But this only applies to the next generation. For in the former case all the children become heterozygotes, a circumstance which may mean twice as great a menace for the later descendants as in the latter case, where 25 % of the children may be supposed to be eliminated by the disease, 25 % become sound homozygotes, and 50 % become heterozygotes. And even if the figures in dihybrid recessivity have to be very essentially reduced — with regard to the diseased from $^1/_4$ to $^1/_{16}$ — yet the diagram (Fig. 46) will show the possibilities of inheritance. In view of the prospect that the descendants of two sound heterozygotes will, up to 6.25 %, sooner or later fall a prey to dementia praecox, we have every reason — contrary to what is the case in cycloid families — to distrust the psychically sound in such cases where a collateral inheritance may be feared, or where a schizophrenia has occurred in an earlier generation. In certain quarters it has been calculated that a schizoid heterozygotia would be present in

[1]) *Cf.* note on p. 473.

50 % of the healthy population, and that accordingly the predisposition to dementia praecox has an alarming extension. Such calculations must be regarded as unconfirmed suppositions; but the impending danger is scarcely overrated in regard to tracts and communities where isolation makes close intermarriage very common. *Cf.* p. 481.

To give definite figures for the risk of inheritance in dementia praecox meets with insuperable obstacles. Direct inheritance can here very rarely be demonstrated. But the prospects for later generations seem all the more threatening. According to *Wimmer*, with whom *Rüdin, Zoller*, and others agree, the risk of inheritance in marriages between heterozygous, apparently sound parents lies between 3.1 % and 6.25 %. But if we take into account the increased menace with direct inheritance, we must no doubt raise this figure to 9 % *(Hoffmann, Rüdin, Entres).*

It has already been mentioned that in the recessive hereditary transmission which as all experience shows characterises dementia praecox, we must assume a complicated course. A *dihybrid* combination of genes (dimeria), of which one is dominant, the other recessive, is held to correspond approximately with the occurrence of the disease. The schizoid character must, according to *Kahn* and *Hoffmann* and others, be referred to a dominant gene or a complex of genes; but for the genesis of dementia praecox another hereditary factor is needed, and about the nature of this factor opinions differ. According to *Kahn*, dementia praecox is a morbid process of organic nature, which does not break out, unless an endogenous agent supervenes, and this agent is an autointoxication of a special nature, characteristic of dementia praecox, »die endotoxische schizophrene Noxe«. The gene of this process is supposed to be recessive.

Hoffmann sees the matter differently and maintains points of view which on the whole agree with those that I have previously put forward. The schizoid disposition is normal in itself and, according to Hoffmann, to be found in everybody; we have seen in the preceding part that it enters into the structure of the human mind. But a strongly pronounced schizoid disposition, tending towards the abnormal, characterises the psychopaths in families where dementia praecox is innate, and this always implies a liability to this form of mental disease. Hoffmann thinks that no new agent is needed for the outbreak. This is brought about by a disturbance of the regulative correlation between the hereditary predisposition and certain forces which control irritation, and for persons with this disposition puberty is a critical period. Without entering

into any close analysis of the endocrinous basis for the straining irritation which puberty involves, Hoffmann presupposes an interaction between the puberal tension and the regulation and thinks the efficiency of the latter is decisive for the prognosis. If I have understood Hoffmann rightly, he presumes a special gene as the bearer of this regulation, necessary for an undisturbed and normal development. The author does not develop as clearly as might be desired his theory of this rather negative disposition, which is supposed to lead to an insufficiency, or even a loss, of the controls which help a normal youth over this critical period. It seems to me that this theory of Hoffmann's comes very near to a concept often met with in the work of the eminent Danish heredity investigator *Johannsen,* but looked for in vain in German literature, *viz. »the loss of a gene«*. Perhaps the oversight of such points of view as are connected herewith is due to the more positive nosological theory of the mental diseases as entities, a theory instinctively held in spite of all modern concessions. With this theory, Kahn's supposition of a special agent causing dementia praecox is in good keeping. If, on the contrary, we accept the view set forth above of the endogenous mental diseases as different modes of reaction determined by the constitution, then the disturbed regulation supposed by Hoffmann, and regarded as the insufficiency or loss of a special inheritance factor, will easily and simply fit into our view with regard to schizophrenia. It seems to me plausible that a similar argument would apply to the manic-depressive forms, for, here too, the thought of a decrease or a loss of the controlling forces of mental life is quite natural, as I have tried to show in a previous chapter.

With regard to the connection of the cycloid as well as the schizoid disposition with a distinct biochemical constitutional formula, in which the contribution of the endocrine glands seems to have decisive importance for the mental and physical development, I refer the reader to what I have already said. That the endocrine organs, to a certain degree, and in collaboration with the vegetative system, may be supposed to be bearers of the hereditary predispositions, is certainly a view which can be supported by good reasons. This is presumably chiefly true of the physical development and the pyknic, respectively asthenic and athletic, physique described by Kretschmer, whose correlation to the different temperaments has to a certain extent become generally accepted. As to the *dysglandular* physical type, which »predisposes« to schizophrenia, its supposed connection with endocrinous disturbances is already indicated by the name.

In several places I have expressed the opinion, in accordance with what experience has shown, that there exists no sharp line of de-

marcation between the manic-depressive and the schizoid types. They cannot be placed side by side like dominoes, they are better represented by two intersecting circles, which have a field of vague, mixed forms in common. This opinion which, since 1916,[1]) I have often expressed, has gained more and more ground in recent years. In the German literature we find some few intimations to that effect even earlier. Thus, dealing with the periodical schizophrenias, *Bleuler* writes long ago that »they may well be regarded as mixed forms (»Mischformen«) with manic-depressive insanity«. Since 1920, these questions have been more and more often discussed. A number of authors *(Bleuler, Rüdin, Mauz, Hoffmann, Kahn,* etc.) have devoted much attention to them, and since heredity research has come into the forefront of psychiatrical interest, an explanation of these atypical conditions has been sought in a hereditary combination of genes from both parents. Rüdin mentions that this possibility is touched upon by *Wagner von Jauregg* as far back as 1901. Recent literature contains a great many descriptions of *pyknic,* often *circular* forms of schizophrenia; and some other forms of a schizophrenic nature, more difficult to interpret, have been explained as the product of a crossing between a pyknic bodily constitution and certain hereditary traits having a schizoid origin. Thus for instance, *Mauz*[2]) interprets *paraphrenia expansiva* as an admixture of inheritance rudiments of cyclothymic-circular qualities with the schizophrenic factors. In the genesis of obsessive neurotic syndromes, *Hoffmann* thinks it probable that there is a combination of cyclothymic and schizothymic factors, and *Lange* (of Munich) sees the explanation of a case of paranoia with a peculiar hypomanic tinge in family traits of the circular type on the one hand and, on the other, the schizoid-paranoid. Finally we may mention *Jens Smith*'s large work »Atypiske Psykoser og heterolog Belastning«, 1924, in which the Danish psychiatrist has arrived at the following result based on a careful family investigation:

»1) When several different (manic-depressive and schizophrenic) parental factors are brought together, this results in the occurrence of numerous cases of mental disease in the offspring.

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[1]) *Bror Gadelius:* Några ord om sinnessjukdomarnas gruppering. Hygiea 1916.

[2]) *Mauz, Fried.:* Über Schizophrene mit pyknischen Körperbau. Zeitschr. f. die ges. Neur. u. Psych. B. 86. 1923.

2) About half of these cases are of a purely manic-depressive nature, in the other half we meet with mixed symptoms. Here we may find cases of the kind described by *Urstein,* in other words, manic-depressive states passing into schizophrenic final stages, as well as continuous forms of disease, which sometimes impress us with their manic-depressive character, or which may still after a long schizophrenic course, lasting up to twenty years, reveal something of the typical mood of the former psychosis. Or we see morbid processes with a remitting course, in which there are symptom-complexes, now of the nature of one psychosis, now of the other, or in whose course one attack has the stamp of schizophrenia, the next of manic-depressive insanity. And finally, we may meet with pathological pictures, in which we surmise the presence of an epileptic disposition, owing to the malicious temper of the patient or some peculiar clouding of his consciousness.

3) Among the descendants of sound persons, in whose brothers and sisters atypical forms of mental disease have occurred, we find psychoses with a combined symptom-complex.

4) Finally, it is indicated as a possibility that the manic-depressive factor may exert a certain influence on the development of schizophrenia; *Smith* bases this supposition on the fact »that a larger number of schizophrenic children are born when one of the parents is manic-depressive and the other schizophrenic, than when a schizophrenic marries a psychically sound person«.

In connection with Jens Smith's study of »heterologous heredity« I would again refer the reader to the ancestral tables in previous pages of this chapter (Tables II and III) and to my comments on them. Here it is of special interest to recall what Smith says in item 4): by the above observation »wird es angedeutet, dass doch vielleicht die manisch-depressive und schizophrene Anlage nicht ganz unabhängig von einandern bestehen«.

But it is not only between the manic-depressive disease and dementia praecox that we meet with an exchange of symptoms, under the above-mentioned hereditary conditions the same is true also of these two groups on the one hand and *epilepsy* on the other. I have already dwelt on the opinion expressed by *Pilcz* and *Rittershaus* that there is an affinity between *epilepsy and manic-depressive insanity*. Other authors *(Saitz, Ugoletti,* and *Krisch)* have described a combination of these

diseases in some rare cases, and I give a similar description in detail in the special part of this work. The influence of heredity on the development of this case was unmistakable. *Rüdin* also points out that in every demonstration of such combinations special attention must be paid to the importance of the hereditary factor.

It is the same with the combination *epilepsy — dementia praecox.* Cases of this nature are described by me in the special part of this work. *Bleuler* and *Vorkastner* accept the possibility of such a combination, and the latter does not think it unfrequent. *Rüdin* seems to be of the same opinion, for heredo-biological reasons. Even *Kraepelin* has not been able, in a case of dementia praecox with regular epileptic seizures, to settle the question whether a symptomatological interpretation or the supposition of an accidental combination of diseases were the most plausible.[1])

The symptomatical boundaries of epilepsy, however, are extremely vague in themselves, and what »genuine epilepsy« is we do not yet know. *Féré* (1890) was one of the first to emphasise the heterogeneity in the concept »epilepsy«, and he preferred the term *»less épilepsies«* as being more correct. But from the viewpoint of heredity he classed them together as equivalent phenomena. This was misleading in so far as he also included among the epilepsies convulsive diseases of various kinds such as tetany, spasmophilia, eclamptic conditions, cramp of the glottis, etc. He agrees with the American, *Echeverria*[2]) (1880), as to the impending danger of a *direct inheritance,* which, according to Echeverria's tables, must be estimated at 50 %, if the children who have died in convulsions during infancy are included.

Even before *Mendel*'s time this opinion met with opposition. *Morel* denied the direct transmission of epilepsy. *Delasiauve, Baillarger,* and *Foville* speak with much reserve of this possibility. *Lasègue* seeks the causes of epilepsy in traumata capitis or a spontaneous deformation of the cranium, and, as I have previously mentioned, *Pierre Marie* has until quite lately kept to his opinion, expressed already in 1887, that epilepsy is due to *exogenous* causes, traumata in birth or infection in infancy, and hence cannot be regarded as a hereditary disease.[3])

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[1]) Cited from Rüdin.

[2]) *M. G. Echeverria* (New York): The Journal of Mental Science. 1880—81.

[3]) *Cf.* the present author's paper in Hygiea 1929: Är ett »antingen — eller«, äktenskapsförbud eller sterelisering, beträffande epileptikern ett berättigat samhällskrav?

The conception of the direct and fatal nature of the epileptic inheritance remained prevalent for a long time, however, and it is only the more recent systematical observations on Mendelian principles that have shown its unreliability. For present-day research has now made all authorities agree that the earlier statements were exaggerated. In all other respects the hereditary transmission of epilepsy is still shrouded in obscurity, and this vagueness especially characterises the starting-point of the investigations, the delimitation of the concept »genuine epilepsy«.

From this nosological entity we must subtract all the cases with epileptoid seizures of a symptomatical nature which physicians of earlier days were not very particular in setting apart. These are, besides brain syphilis, paralysie générale and cerebral arteriosclerosis, symptomatic epilepsy in connection with tuberous or lobar brain-sclerosis, amaurotic idiocy, myoclonic epilepsy, Huntington's chorea, uremia, encephalitis, traumata capitis and brain tumours, endocrinous disturbances and certain intoxications. To this may be added that nowadays a sharp line of demarcation is drawn between epilepsy and a number of convulsive diseases during infancy, tetany and spasmophilia, etc. *(Husler, Rüdin).* This does not preclude, however, that genuine epilepsy may occur in children also, and it is sometimes difficult to distinguish it from convulsions of a different kind.

When speaking about the inheritance of mental diseases we already touched upon our opinion on the connection between the cycloid and schizoid types and the normal structure of human mental life. In the question of epileptic types and the genes here under consideration, a similar background will surely facilitate our understanding of this problem. In this we must not forget that in every individual there is a purely physiological liability to convulsion, in so far as a sufficiently intense stimulation, mechanical or chemical, may result in a convulsive fit. The difference between an epileptic and a normal person has been stated by *Frisch,* in his studies on epilepsy,[1]) as being a »lowering of the convulsive tolerance«. In children we are likely normally to find the threshold of tolerance at a low level before the higher, inhibiting and regulating centres of the cortex have had time to develop. But it is by no means precluded that a still lower level may be found in

[1]) *Felix Frisch:* Die pathophysiologischen Grundlagen der Epilepsie. Zeitschr. f. d. ges. Neur. u. Psych. B. 65. 1921. — *The same author:* Das »vegetative System« der Epileptiker. Berlin 1928.

spasmophilous children, in certain cases possibly congenital. Otherwise, it would be strange that a larger number of children did not suffer from convulsions than is now the case. In this connection I recall what has been said previously of the significance of the »vegetative system«, including the endocrine organs, for the development and irritability of the brain. With regard to the genesis of epilepsy, *Frisch* lays the chief stress on the disturbances within this system, and accordingly refuses to consider epilepsy as a pure neurosis. That more centrally located regulatory centres and protective apparatuses also play an important part in keeping the cerebral irritation within normal limits, I have already pointed out. Here too, then, we are led to the supposition that the predisposition for epilepsy, partly at any rate, lies in an insufficiency of genes or the loss of a gene, respectively, in the same manner as has been supposed for the genesis of manic-depressive psychosis and schizophrenia. Here we have probably to deal with a disturbance of regulation of a more elementary organic nature, and it is conceivable that an inferiority, in certain respects, of the genes responsible for the normal development of the midbrain has an essential share in the genesis of genuine epilepsy. *Hoffmann*[1]) who, like *Rüdin*,[2]) thinks it likely that the type of genuine epilepsy is different in different cases, supposes it to be brought about by a cooperation of two etiological factors: the cerebral disposition for an increased irritability and an endocrine auto-intoxication which may vary in nature.

In determining the types of epilepsy, other research workers have started from the psycho-pathological traits which have from the earliest times been regarded as characteristic of the clinical symptom-complex of epilepsy. In this way an analogy to the cycloid and the schizoid type of character has been established. The following qualities are regarded as characteristic of the epileptic: intellectual dullness and limitation, affective irritability and impulsive vehemence, egocentric reserve and positiveness; when met with in persons who have never had any convulsive seizures, these traits constitute the character which *Bleuler* calls *epileptoid*, and in which he sees genuine epilepsy in its first stage of development. Certain ancestral tables will corroborate the existence of this epileptoid type. It occurs through four generations in numerous individuals of a family described by *Roemer* (1910), where

[1]) *Hermann Hoffmann:* Die Nachkommenschaft bei endogenen Psychosen. Berlin 1921.

[2]) *Ernst Rüdin:* Der gegenwärtige Stand der Epilepsieforschung. IV. Zeitschr. f. d. ges. Neur. u. Psych. B. 89. 1924.

the paternal grandfather of the epileptic proband was a drunkard and his maternal grandfather an epileptic.[1]) *Hoffmann,* who reproduces this family tree, is in doubt, however, about the existence of the »epileptoid character« and points out that a quite considerable schizophrenic inheritance (mostly of an indirect nature) seems to him conspicuous in epileptic families.

Certain somatic symptoms, especially *migraine* and *left-handedness (Steiner),*[2]) have been noted in this connection. Disorders of speech such as stuttering, etc., sometimes go with left-handedness. As to the connection between migraine and epilepsy, this has not yet been proved. *Rüdin* points out that migraine is of no importance in families where epilepsy has gained ground, even though persons who suffer from migraine often show epileptoid characteristics. *Viggo Christiansen*[3]) entirely rejects the otherwise fairly common opinion that epilepsy is present in c. 5 % of all cases of migraine. If, in spite of these and other objections, we refer migraine to the group of epileptoid symptoms, we shall at once find a conformity with the supposed dominance of the latter, for migraine also has a dominant transmission. A characteristic which even in the early psychiatrical literature *(v. Krafft-Ebing)*[4]) was frequently coupled with epilepsy was *somnolence* and certain states of *sleep-dazedness.* These states, like the somnambulism related to epileptic absences, are of no small interest to forensic psychiatry. In a verdict given by me as to the responsibility for one of the most serious railway disasters that have ever happened in Sweden, I submitted that the examinee, an engine-driver X, had acted in a state of abnormal somnolence at the moment of the collision. Besides other epileptoid qualities, such as a fiery temper, obstinacy and positiveness, X was troubled with a frequently observed difficulty in returning to clear consciousness after having been awakened from sleep. Epileptic seizures had never been observed in him, but genuine epilepsy had occurred in his family in three generations, in an uncle, a sister and a niece.

Bleuler's »epileptoid type of character« has been accepted by *Kahn,* but the latter asserts that another essential factor is also necessary for turning the epileptoid into an epileptic. According to Kahn, epilepsy develops by the coincidence of two factors or genes.[5]) One of these factors is the *epileptoid* disposition which, in Kahn's opinion, repre-

[1]) *Roemer:* Zur Symptomatologie und Genealogie der psychischen Epilepsie u. der epileptischen Anlage. Allg. Zeitschr. f. Psych. B. 67.

[2]) *G. Steiner:* Über die familiäre Anlage zur Epilepsie. Zeitschr. f. d. ges. Neur. u. Psych. B. 23. 1914.

[3]) *Viggo Christiansen:* Migrænen. En klinisk Studie. København 1925.

[4]) *v. Krafft-Ebing:* Lehrbuch der gerichtlichen Psychologie. 3te Aufl. Stuttgart 1892.

[5]) *Eugen Kahn:* Über die Bedeutung der Erbkonstitution für die Entstehung, den Aufbau und die Systematik der Erscheinungsformen des Irreseins. Zeitschr. f. d. ges. Neur. u. Psych. B. 74. 1922.

sents a type with a fluid transition to the normal. The epileptoid may belong to the psychopathic group, it is true, but does not constitute the disease we call genuine epilepsy. This exhibits itself in seizures, and has also the character of an *organic process* which, finally, in unfavourable cases, takes a *destructive course.* The above-named three features, characteristic of genuine epilepsy, only develop, says Kahn, when the epileptoid disposition coincides with the other factor, *»die epileptische endotoxische Grundstörung«*. It is during the further development of this destructive process, that the above-mentioned traits in the epileptic character become more pronounced. The qualities we already saw indicated in the epileptoid, show themselves more and more clearly as the dementia advances. This, then, according to Kahn, is in every respect a phenomenon parallel to the one described in the genesis of dementia praecox. *Schizoid* and *epileptoid* are not enough, the former predisposition requires the addition of »die endotoxische schizophrene Noxe« in order to develop into dementia praecox, the latter becomes what we call epilepsy only when coinciding with a predisposition to the above-mentioned destructive process.

Whether Kahn's hypothesis be right or wrong, it is unmistakable that most investigations agree as regards the correspondence of the figures indicating the hereditary transmission in dementia praecox and in epilepsy.

The altered views as to the risks of the *direct* transmission of epilepsy from parents to children of later research workers, have been expressed in figures by Kraepelin in the eighth edition of his *»Handbuch«*. He had himself, in his latest calculations (1913) of the inherited predisposition to epilepsy in parents of epileptic children, only found it in 7.8 %; Lange in 8 %, Petges and Cardenal in 6 % of the cases (Kraepelin).

The first attempt at applying the Mendelian laws in calculations of the heredity of epilepsy was made in 1911 by the Americans *Davenport* and *Weeks*. The results at which they arrived were considered to agree with the supposition of a *simple recessivity;* but, owing to the rather heterogeneous nature of the material, the investigation cannot be considered of great value (Rüdin).

The following calculations have greater significance, even though the material on which they are based may seem rather scanty. They are intended to make clear the alleged risk of a *direct transmission of epilepsy* from parents to children. I quote the following figures after Rüdin:[1])

[1]) *Ernst Rüdin:* Der gegenwärtige Stand der Epilepsieforschung. Zeitschr. f. die ges. Neur. u. Psych. B. 89. 1924.

Herm. Hoffmann (Tübingen): From 8 married couples in which *one* parent was a genuine epileptic there is an offspring of 32 children; of these 5 died during infancy, and, among the 27 survivors, 3 manifested epilepsy. The result is thus 11.1 %.

Klaus (Hamburg-Friedrichsberg): 55 epileptics, 157 children, 20 dead. Of the surviving 137, genuine epilepsy was manifest in 13 = 9.48 %.

The Americans *Thom* and *Walker: 7.85 %; Else Sachs* (summary table, regarded by Rüdin as only »vorläufig«): 23 epileptic mothers, 5.63 % epileptic children; 25 epileptic fathers — no epileptic offspring. *Collins* gives the figures 2.53 %, and *Burr* has only found 6 epileptic children among the descendants of 1 449 epileptic parents — statements which Rüdin does not accept without reserve.

To these investigations may be added one lately published by *Fr. Küenzi* (Bern),[1]) the material of which comprises 51 epileptic fathers and 44 mothers suffering from genuine epilepsy. Of these, 33 men and 29 women had been under hospital care as indoor patients, 18 men and 15 women as out-patients. The descendants of the men: 89 + 54 = 143 children; those of the women: 77 + 37 = 114, from which number 6 have to be deducted (out-patients) owing to lack of information. The result with regard to the *direct* transmission was as follows. In the children of the male indoor-patients who had reached an age of more than twenty years, genuine epilepsy was observed in 8.3 % of the cases. Among the offspring of male out-patients in 10 %. Both groups together: 8.8 %. For the female patients, the corresponding figures were: 5 %, 0 %, 3.5 %, respectively.

Thus the latest investigations as yet seem to point in the direction indicated by *Rüdin* and *Entres.*[2]) The course of heredity is held to be *recessive* in some complicated form, and direct transmission is rare. Its average frequency is estimated by Rüdin at 9 %, a figure corresponding to that arrived at by *Hoffmann* when calculating the risk of hereditary transmission in marriages where one of the parents had suffered or was suffering from dementia praecox.

Both Hoffmann (1921) and Rüdin (1924) express themselves with great reserve. Hereditary transmission may be held to vary in different cases. It has not been proved, even in the remaining cases when all symptomatic forms have been excluded, that these cases of *genuine epilepsy*, »compared with each other, are etiologically, clinically and genotypically equivalent and uniform in nature« (Rüdin). Here we can also include the rare cases with a direct transmission of ostensibly dominant character. Such a case is met with in the often quoted family tree published by *Oberholzer,*[3]) in 1913. In this case, however, the fatal force of the

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[1]) *Fritz Küenzi:* Über das Wiederauftreten von Epilepsie unter den Nachkommen von Epileptikern. Monatsschr. f. Psych. u. Neur. Juni 1929. B. 72.

[2]) J. L. Entres: Handbuch der Geisteskrankheiten. Herausg. v. Bumke. B. 1.

[3]) *Emil Oberholzer:* Erbgang und Regeneration in einer Epileptikerfamilie. Zeitschr. f. d. ges. Neur. u. Psych. Bd. 16. 1913.

heritage transmitted directly through several generations is mitigated. There are no longer any seizures. Only epileptoid conditions and mild forms of psychic epilepsy remain. Thus it seems to be these latter who are of a more resistible or dominant character. The observation by *Oberholzer,* like the one quoted above from *Roemer,* may perhaps be alleged in support of *Kahn*'s theory that two factors, the epileptoid and the destructive, would be necessary for the genesis of genuine epilepsy. The first step towards a regeneration would then be that the destructive element disappears and only that factor remains which manifests itself in epileptoid traits, or, contingently, certain forms of psychic epilepsy.

Kraepelin's supposition that epilepsy can more frequently be considered the consequence of *an injury to the germ* caused by alcohol or syphilis, than due to hereditary transmission, undoubtedly rests on an insecure foundation. All observations adduced as evidence of a germ injury (blastophthoria) by alcohol are, according to Rüdin, unreliable, since they do not keep distinct those defects in the form of inferiority and psychopathological qualities of a different kind that are due to hereditary causes of an older date, from others which may possibly have been brought on through alcoholic influence. True, it may be said that the question of blastophthoria has long needed re-examination after all the exaggerations of which research has been guilty in an earlier stage. As yet no positive results have been gained. Judging from the latest investigations, the risk for the offspring seems very slender in those cases where alcoholism is not *ab origine* complicated by a hereditary predisposition. Recently, *Boss*[1]) examined 1246 children, descending from 572 persons, »from the healthiest possible stock«, who had been addicted to alcoholic excess (»Trinkern«), and among them he found neither physical nor psychical inferiority in any remarkable degree.

With regard to *syphilis* as a cause of symptomatic epilepsy in children, we refer the reader to the foregoing. How far problems of heredity in the proper sense are connected with this exogenous factor, is an open question. The visitations, unto the third and to the fourth generation, by which the »iniquities« of the fathers were punished, have surely lost the scientific authenticity which once enhanced the impression and constituted the appeal of Zola's tales of the Rougon-Macquart family or Ibsen's »Ghosts«.

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[1]) *Medard Boss* (Zürich): Zur Frage der erbbiologischen Bedeutung des Alcohols. Monatsschr. f. Psych. u. Neur. 1929.

Every organism produced by sexual generation is naturally a hybrid, inheriting its qualities from two sides. The so-called »pure line« *(Johannsen)* along which runs hereditary transmission in lower plants and animals where the idioplasm is constant owing to *self-fertilisation,* lacks every correspondence — broadly speaking — in male and female organisms, and the higher we rise in the animal series, the more complicated the heredity problems become.

Only in such extremely rare cases where it has been possible to study the hereditary transmission in *twins from one egg,* do we find conditions in man that approach the clear course of the »pure line«, and where we are able, inter alia, with a certainty approaching experimental exactitude, to separate the genotypical from all the modifications of the phenotype which have to be attributed to exogenous influences. As yet such studies have been possible only in a small number of cases, and the paper recently published by *Luxenburger*[1]) is without doubt the most remarkable in every respect. It is mainly the hereditary transmission of *dementia praecox,* to which this author has directed his attention.

Luxenburger's material comprises 6443 cases of dementia praecox on which, then, he has based his investigations. Out of these probands $100 + 2 \times 3 = 106$ were twins. This formula indicates that in three pairs of twins both twins were mentally diseased. The »partners« of the remaining 100 twin subjects were then watched by Luxenburger, till they had reached or passed the critical age for the onset of manic-depressive insanity, dementia praecox, respectively epilepsy. The results are divided into different groups with regard to such circumstances as allow conclusions to be drawn as to the probability of one-egg twinning. And in this respect importance is above all attached to similarity of sex and to external resemblance, bordering on identity, in features, bodily structure etc. With the material thus grouped into: 1) those of similar sex and identical appearance and 2) those of dissimilar sex and not identical in appearance, Luxenburger arrived at the following interesting result: Beginning with group 2, there was not a single case of dementia praecox among the twin-partners of the schizophrenic subjects whereas in group 1 nine out of ten partners of the diseased subjects sooner or later succumbed to dementia praecox. The

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[1]) *Hans Luxenburger:* Vorläufiger Bericht über psychiatrische Serienuntersuchungen an Zwillingen. Zeitschr. f. d. ges. Neur. u. Psych. B. 116. 1928.

tenth individual died at the age of 43, and it is therefore quite possible that he, too, would have been afflicted, if he had survived. In group 2 the twins were most probably of uniovular origin.

Luxenburger's investigations afford good evidence of the fruitful reciprocity prevailing between clinical psychiatry and heredity research. It has already shown results which have deepened our knowledge of the genesis of mental disease. Besides other things, the above-mentioned observations are a weighthy argument against the, even quite recently, asserted opinion that dementia praecox is a disease of mainly exogenous origin. But on the other hand, Luxenburger shows that the twins in the uniovular cases, in spite of their origin from the same inheritance material, exhibit sundry differences, both with regard to the time of the onset and the individual characteristics of the pathological picture. Those cases are most homogeneous where both twins fall ill at relatively short intervals in puberty. The commonest forms of disease under these circumstances are a hebephrenia or a katatonia running a rapid course. These two symptom-complexes approach each other most closely, according to Luxenburger, and may be looked upon as the phenotypically purest expression of a hereditary predisposition. If the onset is slower in one of the twins, we generally find pathological pictures with a paranoid admixture, and in such cases Luxenburger traces the influence of environmental (pathoplastic) factors, or, in other words, the expression of a paravariation.

With regard to the transmission of the *manic-depressive mental diseases*, Luxenburger thinks that he can likewise draw certain conclusions as to the degree of conformity in the uniovular twins. Here the concordance is perhaps even greater than in dementia praecox. Sometimes both twins showed manic conditions, sometimes depressive; and it might happen that one was depressed while the other was excited. Nevertheless, Luxenburger saw no case where a pure mania characterised one twin while a pure depression appeared in the other, as may be the case in brothers and sisters generally. On the other hand, a circular course of disease often seemed to be conspicuous. From these observations, which accord in some degree with the earlier suppositions of *Reiss* and *Kleist*, we may perhaps be compelled to assume that a cyclic course always implies two genes. However, the number of twins suffering from manic-depressive disease was not large enough for Luxenburger to draw either the last-named or any other far-reaching conclusion. As to the time of onset, nearly the same was noticed in

manic-depressive insanity as in dementia praecox; and the more nearly coincident they were, the greater the concordance with regard to the clinical picture.

Concerning *epilepsy*, Luxenburger is unable to draw any conclusions from the two cases with which he has met in his studies of twins.

Among endogenous psychoses, dementia praecox does undeniably more than any other justify the view of the fateful nature of hereditary mental diseases which was generally associated with the concept *degeneracy* in bygone days. In families with an ebbing vitality the powers of annihilation often seem to have recourse to this scourge, against which no remedy has as yet been discovered. In this respect, dementia praecox can only be compared with *tuberculosis*, and Luxenburger's observation[1]) that tuberculosis is the cause of death up to four times as often in not-insane brothers or sisters of persons suffering from dementia praecox, as in individuals of the same age in the average population, has surely a deep biological significance. As yet we have little knowledge of this subject, but the correlation of these two diseases, active in different ways, though degenerative in the same degree, urges upon us the desirability of continued studies.

If now we return to the question of degeneracy, the essential in this concept undeniably stands out with increased clearness in the light of modern heredity research. *Johannsen*, the well-known Danish investigator of heredity, defines it briefly as »loss, destruction or disturbance of the genes«. »This will most frequently involve a certain debilitation of the individual in question; but the matter is not always so simple; the loss of a gene need by no means always import the same thing as debilitation.«

Even if our theory in general corresponds with the essential nature of degeneracy, its nearest causes are often obscure in the special case. In crosses, unfavourable qualities may unexpectedly appear, if one of the individuals is a heterozygote, and this may be impossible to decide. New qualities may also, quite independently of crossing, be produced *by mutation*, and others disappear without it being possible to tell to what the mutation is due. As Johannsen points out, it may also be

[1]) *Hans Luxenburger:* Tuberkulose als Todesursache in den Geschwisterschaften Schizophrener, Manisch-Depressiver und der Durchschnittsbevölkerung. (Ein Beitrag zum Konstitutionsproblem). Zeitschr. f. d. ges. Neur. u. Psych. B. 109. 1927.

thinkable that the dispositions of two degenerate individuals with regard to a defect present in both of them, may supplement each other, and in that case we may get a *regeneration*, a more original, robust type resulting. However, it must depend on each single case whether such an *atavism*, or a return to a more original type, is to be regarded as an advantage, since that which seems a regeneration from a biological point of view may be degeneracy if judged by cultural or other standards. *The concept »degeneracy« is thus a matter of judgment.*

This point may be illustrated in the simplest way by race-biological examples. »Since white forms of sweet peas, like many other white-flowered species of cultivated plants, have probably arisen through the loss or change of genes, this is a symptom of degeneracy, from a biological point of view, irrespective of whether the white forms are more or less resistant than the original ones.« And the degenerate forms produced by crossing (of sweet peas) exhibit »colour types, in beauty and splendour far surpassing the original purple-blue form, which has not been subject to any degeneration and nevertheless in the long run seems rather dull.« (Johannsen). »Is all this,« says the same author, »without parallel in human life?« »Geniuses,« he replies, »men of one-sided gifts, and above all presumably certain types of characters, artistic or artists in their own conceit, often seem to have weak points in their constitution. And it seems as if persons of impressionable temperament have a diminished inhibitory faculty in various directions. In as far as this is due to a loss or change of genes, we may speak of degeneracy — just as the rich varieties in colour and shape of sweet peas are produced by the degeneration of a more original, as it were, firmer, more complete genotype, which keeps back the possibilities. This genotype is equivalent to a more robust constitution — that of the wild, original types.«

It seems to us that Johannsen, in expressing himself as above, has given a formula applicable also to the question we have touched upon above. Throughout this work, we have maintained the view that a mental disease must not be conceived as an entity in the old sense, which grows with its characteristic symptoms like a plant from its seed, but as a disproportional derangement within the normal mental structure. This agrees well with Johannsen's theory of a loss, or enfeeblement, of certain inhibitory elements in the inheritance material. Degeneration robs mental life of the firmness and solidity characterising the normal, but, on the other hand, and as a consequence of this deficiency, the

inhibitory failure may favour the development of types possessing a high creative capacity and an artistic imagination of the richest colour. Yet, in other unfortunate cases, we meet with the more unambiguous manifestations of degeneracy taking the shape of mental diseases. The families we have grouped together in Table II furnish instances of this. Several members, especially in the earlier generations, were eminent personages, among them a famous Swedish painter (of the family S.). His twin sister suffered from unmistakable manic-depressive insanity, inherited from her mother.

It seems to me a reasonable assumption that the lack of inhibition and self-control which appears with increasing evidence in different forms of the cyclothymic disposition — from a hypomanic liveliness and exaggerated vitality to a fully developed manic flight of ideas and agitation — must be referred to a disorder, or an absence, of genes which in normal conditions contribute to the greater solidity and better regulated censorship of the psychic structure.

That this normal solidity, however favourable it may be for the ordered purposes of practical life, for clearness of thought and logical sequence, may easily be supposed to constitute a hindrance to creative power in poetry and art,[1]) may here be pointed out in connection with what has been said above. There is accordingly no psycho-pathological mystery in the circumstance that of the twins mentioned above, the brother was an eminent artist and the sister a piteous sufferer with frequent periods of manic exaltation. With regard to the other extreme, depression, it is quite as reasonable to suppose that the loss of a gene (or perhaps, a gene-complex) may cause the lowering of control within the vegetative system that promotes the influx of disagreeable organic sensations and the lack of moderation with which the painful feeling-tone asserts itself in the depressive conditions.

In S.'s grandchildren the mental disease breaks out in a fatal manner, three granddaughters suffer from manic-depressive insanity, and three of their brothers and sisters die at an early age, two of them (not indicated in the table) from *diabetes*. One brother is healthy and socially prominent, but he has a son who has been slightly deranged.

As has previously been mentioned, the forms in which the manic-depressive heritage appears in later generations of the family S. show a touch of the *schizoid* and to a certain extent *paranoid* character. In the paranoid psychoses, whether these approach the manic-depressive or the schizophrenic types, environmental factors probably play an important rôle. There is no sharp line of demarcation

[1]) Cf. p. 197.

between psychogenetic delusional insanity and paranoia in other forms. Thus there is no reason for a one-sided exaggeration of the heredo-biological point of view. Johannsen has warned against such an exaggeration, and botanists as well as zoologists are constantly finding reasons for taking into account the significance of environment. The following statement, quoted from a popular essay by a well-known zoologist, may undoubtedly in every detail be applied to the syndromes of pathologically deteriorated mental qualities which constitute mental diseases. *Nils von Hofsten* writes as follows: »The characters are reactions indicating the way in which the organism responds to the external influences. It is not the response that is heritable, not the red or white colour, not the fat or the lean body, but the specific manner of reacting to the environmental influences. In the primula, a capacity for reacting to low temperatures by a red colour, to high temperatures by white flowers, is inherited. The possible, (or at least distinct), responses are two in this case. In others, there are more possibilities of reaction, *i. e.*, the character may be modified in more ways than two, and then there will frequently be found regular transitions between the extremes.«

The reactions which are formed out of germinal elements into mental qualities, under normal as well as abnormal circumstances are more or less dependent on external influences. But when we speak of genes with reference to the development of mental diseases, we must not forget that all abnormal mental qualities are a distortion of normal ones. This distortion of the normal must accordingly be traced more or less to a germinal disposition which in its nature can hardly be conceived as a positive quantity but rather as a negation, an inferiority, a minus, in respect of the positive quantity given in the genes under normal circumstances. Even this impairment in any part of the inheritance material may, I think, be caused by external circumstances. Thus mental qualities, whether they are normal traits or symptoms of mental disease, may be, as von Hofsten has it, »reactions which are responses to environmental influences«.

Hence, it is by no means incompatible with general biological and psychiatrical experience to assume that inherited degeneracy is associated with the loss or disorder of a gene and a »diminished inhibitory action in various domains«. Certainly we have reason to suppose that the fundamental feature in all degeneracy, physical as well psychic, is to be found in a weakening, respectively, an extinction of the normalising forces which regulate bodily development, including the nervous system and the brain, and so also the maturation of mental life and its maintenance within normal functional limits. As to mental life, it is probable that the normalising activity has been taken over by the brain, and we have reason to suppose that it is here represented by forces which regulate certain deeper-lying vital functions. With regard to bodily development, including that of the brain in an earlier stage of development, the normalising centres must, on the other hand, be localised to the vegetative system and the endocrine organs. Patho-

logy teaches us that a deficient embryonal condition or a morbid change of these organs gives rise to malformations, disorders of cerebral development, and idiocy. That the endocrine organs are important for the cerebral functions later on, too, not least through their influence on the emotional life, we have previously stated.

Hence degeneracy, according to the degree of insufficiency of the inhibitory and normalising forces and the significance thereof in different stages of development in the life of the individual, must be supposed to exhibit different stages, from the slighter, functionally less severe, to the loss of such genes as cause an organic disorder and disturbance of the fundamental plan according to which the individual is built up. We may accordingly imagine a certain sequence in this scale of different expressions for hereditary degeneracy, thus: manic-depressive insanity, dementia praecox, other endocrinous disorders (diabetes, struma), epilepsy, and idiocy. With regard to the last-named form of disease, which shows rather an isolated occurrence (cf. Table II), we should, however, judge with caution. It has already been stated that here heredity is very questionable, since the morbid disorders may be exogenous in nature. Still, it may of course happen that Fate distributes the hereditary factors of the same circle of brothers and sisters with amazing inequality. After favourable combinations, they are abruptly caught up, as it were, in a capricious and sudden gust of wind and undergo a strong reduction. As was the case with the great Swedish poet Esaias Tegnér and one of his brothers, the former was endowed with the gift of genius, the latter was an idiot, and undeniably it seems *as if in certain hereditarily degenerated families* (Table II) *the range of variation in this respect were wider than is normal.* But then, on the other hand, it often happens that the genes are distributed in such a way that certain excellent qualities, musical talent, mathematical intuition, a fabulously good memory, etc., are combined in the same person with the greatest defects in other respects. Is there in such apparently hap-hazard casts of the dice any intelligible causal determination? Is it chance or law, mutation or conformity to Mendelian principles that governs inheritance in these monstrous cases? Nobody knows.

An obvious fact, long since described by psychiatrists, which in its time served to refute *Lombroso*'s erroneous conception of criminality as an atavism (cf. Chapt. XVIII), is the hereditary correlation of mental disease and crime. The family tree in Table V furnishes a suitable illustration.

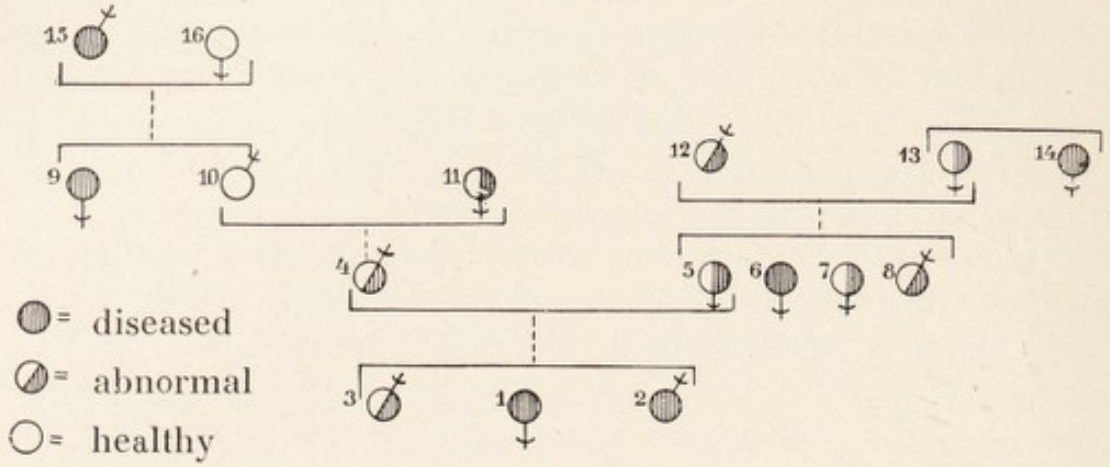


Table V.

Short notes. 1) M. K., born Ä., married and divorced. Hospital care in Stockholm. Typical katatonia. Greatly improved, she went to America. 2) Condemned to death for double murder and robbery. During the period of observation in the Växjö Mental Hospital he became insane. Has now for many years been a patient in the same hospital. Diagnosis: dementia praecox with psychogenetic development. 3) Queer character. Jealous without reason. 4) Father of 1—3. Abnormal character. »Theosophist and mystic«. »Had visions«. 5) Mother of 1—3, abnormal, ungovernable temper, extremely jealous without reason. 6) Insane (dementia praecox). 7) Inferior individual. 8) Inferior individual. Criminal. (6—8, brother and sisters of the mother). 9) Aunt of 4), insane (dementia praecox). 11) Mother of 4), abnormal, harsh towards her husband, querulous temper, obstinate. 15) Grandfather of 4), insane. 12)—13), parents of 5), both abnormal, the former inferior, the latter »vain«. 14) Sister of 13), insane (dementia praecox).

In the family in Table V the majority of known members seem to have been abnormal characters, criminally disposed or mentally diseased, and the disease in question is *dementia praecox*. It is probably no uncommon experience among psychiatrists to find this form of disease presenting itself in this way, foreshadowed by an abnormal (praekatatonic) disposition and accompanied by criminal tendencies. Among the forms that break out in prison, dementia praecox is the commonest besides the epileptic and paranoid psychoses, whereas manic-depressive insanity is extremely rare in this environment. In view of these observations we are tempted to enquire, whether the hereditary correlation between criminality and dementia praecox in such cases may not be explained largely by a constellation of qualities already apparent in the earlier stages of dementia praecox, such as the stubborn adherence to some frequently imperative idea, the automatically unfree mechanism of volition, and the strong affective tone?

In these respects there is not a little resemblance between *dementia*

praecox and Huntington's chorea. The choreatic symptoms are often preceded or accompanied by a serious ethical degeneracy and loss of will-power. The patients show weakness of character, sink into alcoholism, vagabondism and immorality. They commit arson, attempt murder, and often behave in a wildly destructive way during impulsive outbreaks of rage. These experiences, quoted after *Entres,*[1]) also agree with the observations made by *Meggendorfer.*[2])

In regard to the question of the organic substratum of moral inferiority, it is of undeniable interest to compare dementia praecox, Huntington's chorea and certain postencephalitic character anomalies. In all these diseases the seat of the morbid changes is the midbrain. In how far the hereditary predisposition in the shape of an insufficiency, respectively, a loss of genes, especially threatens the midbrain, we do not know; we can at the utmost venture a definite opinion as regards Huntington's chorea. With respect to the predisposition to dementia praecox this hypothesis is in some degree probable; nor is it unreasonable to conjecture that the midbrain, as a locus minoris resistentiæ, and only on that assumption, becomes a starting-point for the postencephalitic disorders. The importance of these cerebral parts no less for the normal development of volitional life than for that of temperament and affectivity, may perhaps guide us in the above-mentioned difficult problem of the organic substratum of the ethical feelings. With regard to dementia praecox, Huntington's chorea and encephalitis lethargica, there is the additional patho-anatomical correspondence that the morbid changes are located in the midbrain as well as in the higher centres of the cerebral cortex.

That mental debility and ethical inferiority go together, is a well-known and recognised fact. Heredity research can present many illustrative family-trees, where the two factors, intellectual and moral inferiority, run parallel through many generations. *Goddard* has published such a genealogy[3]) which throws a strong light upon the heredity of debility, even though the Mendelian proportions are difficult to trace in this undoubtedly *dominant* course.

From a certain Martin Kallikak, psychically sound himself and having ten children by his equally healthy wife and, besides, an illegitimate healthy son by an imbecile woman, two groups of offspring descend, comprising respectively 496 and 480 persons, belonging to five generations. The comparison which Goddard has been able to make in his investigation is striking. On the one side an entirely sound and prosperous progeny, on the other, the illegitimate group, within which the inheritance from the imbecile mother expresses itself in the most deplorable way, a great many members of that group being imbecile or given to debauchery, drink,

[1]) *J. L. Entres:* Op. cit.
[2]) *Fr. Meggendorfer:* Op. cit.
[3]) *H. H. Goddard:* The Kallikak Family. New York. Macmillan 1912.

immorality and prostitution. About 189 members of the family, Goddard had reliable information; of these 143 were imbecile and only 46 psychically sound; 3 of the remaining members suffered from epilepsy and 82 died in infancy.

The supposition made by *Davenport* and *Weeks* (1911), that imbecility and epilepsy often go side by side in affected families, seems to have been accepted to a certain degree by *Hoffmann*, who assigns imbecility partly to the epileptic group of symptoms and partly to the schizophrenic group. With regard to the social danger of imbeciles, these affinities to different character types and modes of reaction undoubtedly merit attention.

The question of the connection between heredity and crime must not, however, be allowed to overshadow that of the effect of external influences and the significance of the soil and mental atmosphere in which an individual develops. By rather too one-sidedly stressing heredity, modern science seems finally to have reached the point of underrating the importance of environment. Of this underrating *Johannsen* has expressed himself in the following way: »Mendelian eugenics distinguish sharply in principle between phenotype and genotype. It is their ideal to deal with the special elements of the latter. But heredity is a far more complicated matter than was suspected during the first days of Mendelian enthusiasm. In order to point out how extraordinarily difficult this matter is, it will be sufficient to recall polymeric factors, coupling and segregation, sex-limited inheritance, and incomplete dominance varying with environment and sex. Referring to these phenomena, we must warn students against the naïve belief that human characters constitute simple dominant or recessive qualities. Mendelism evidently leads to pronounced determinism. This also holds good with regard to criminality. There can be no doubt that there are combinations of factors which under given external conditions must lead to the development of characters dangerous to society. But whether this warrants the assumption of genotypes which always result in criminal reactions is a different matter — quite apart from the relativity of the concept of crime. A genotype which under certain external conditions, harmful influences, and so on, makes the individual act wrongly might under different circumstances lead to good and even superior qualities — let us remember the two varieties of wheat, one of which grows to the best advantage in rich soil but fails in meagre soil, where the other variety gives the best crops. And we must not forget that there are communities which originate from deported, runaway or at least »undesirable« persons.«

Concerning the development in certain families of ethical defects

and criminal tendencies, *Rath* has come to the conclusion that »those qualities within a complex of mental constituents which are decisive in the crimes committed, are inherited according to Mendelian laws in such a way that the normal hereditary factors dominate over those which predestine the same person to be a criminal«. It is obvious that such investigations, with the extremely vague and undefined »hereditary factors« and »genes« here in question, cannot be very productive of results. The presentation of the problem is too vague. *Kant*, it is true, has declared that each separate branch of nature research only contains so much of real science as there is mathematics in it, but this dictum, which has been adopted in heredity research, can only secure for us the promised gain on the assumption that we know what we are calculating. The doctrine of heredity is an exact branch of »natural science«, giving us results of a mathematical trustworthiness, as long as we keep to simple, homogeneous or at any rate circumscript qualities, such as the colour and shape of animals and plants, or other morphological or pathological details, for instance supernumerary fingers and toes, colour-blindness, the Habsburg lower lip, haemophilia, etc. Yet we easily lose our bearings if, without the necessary qualifications, we pass on to psychic peculiarities, abnormal characters and qualities, and the intensification of these qualities into mental disease.

We cannot here pick out certain qualities or analyse in detail the concrete symptom-pictures and their genes; we must keep to certain general modes of reaction of a more typical nature, and so far psychiatric heredity research has had to limit itself in the main to the three large groups of disease, manic-depressive insanity, dementia praecox, and epilepsy. But we have very good reasons for assuming that the constellations of genes which are the bearers of these modes of reaction are of a fairly complicated texture. A change in this texture may perhaps explain their merging into each other and their occurrence in a certain sequence (cf. above) in families where degeneracy shows a tendency to progress.

Finally, with regard to the importance of heredity for certain types of disease of *exogenous* nature, the foregoing statements are naturally applicable in so far as the above-mentioned modes of reaction in these forms enter into the symptom-picture. Thus, for instance, in paralysie générale concerning which *Magnan* already expressed the opinion that the disease is dependent on a hereditary predisposition (cf. also *Pernet*).

The characterogenous and constitutional conception of the predisposition to the chief endogenous types of disease which is more and

more widely adopted in our time, has indicated a more definite line of advance to psychiatry. Besides the pathological symptoms it is important, from this point of view, to observe in the patient's family all nuances of these symptoms shading off towards the normal, and hence certain temperamental characteristics, emotional qualities and intellectual peculiarities, apparent in different families, should be observed in connection with more sporadic cases of mental disease. The intimate bond of union between normal psychology and psychiatry is now being still more closely knit by the science of heredity.

LITERATURE:

Morel, B. A.: Traité des dégénérescences de l'espêce humaine. 1857. *Lombroso, Cesare:* Der Verbrecher (L'uomo delinquente) 1887. *Féré:* La famille névropathique. 1894. *Baer:* Der Verbrecher. 1893. *Lorenz, Ottokar:* Lehrbuch der gesammten wissenschaftlichen Genealogie. 1898. *von Stradowitz:* Über die Untersuchung von Vererbungsfragen und die Degeneration der spanischen Habsburger. Arch. f. Psych. B. 35. *Sommer, R.:* Familienforschung und Vererbungslehre. 1909. *Vogt, R.:* Om Arvelighed. Tidsskrift for nord. retsmedicin och psykiatri 1909. *Rüdin:* Einige Wege und Ziele der Familienforschung mit Rücksicht auf die Psychiatrie. Zeitschr. f. d. ges. Neur. u. Psych. Bd. 7, 1911. *Lundborg, Herman:* Medicinisch-biolog. Familienforschungen. 1913. *Rath, Carl:* Über die Vererbung von Dispositionen zum Verbrechen. 1914. *Rüdin:* Studien über Vererbung und Entstehung geistiger Störungen. 1) Zur Vererbung und Neuentstehung der Dementia Praecox. 1916. *Pernet, J.:* Über die Bedeutung von Erblichkeit und Vorgeschichte für das klinische Bild der progressiven Paralyse. 1917. *Johannsen, W.:* Arvelighed i historisk og experimentel Belysning. 1917. *von Hofsten:* Ärftlighetslära. 1918. *Same author:* Ärftlighetslärans problem. Husmoderns Läkarbok. Del II. 1929. *Hoffmann, Hermann:* Ergebnisse der psychiatrischen Erblichkeitserforschung endogener Psychosen seit dem Jahre 1900, etc. Zeitschr. f. d. ges. Neur. u. Psych. Ref. Bd. XVII. *Koller, Jenny:* Beitrag zur Erblichkeitsstatistik der Geisteskrankheiten im Canton Zürich. Arch. f. Psych. Bd. 27. *Diem, Otto:* Die Psychoneurotische erbliche Belastung der Geistesgesunden und der Geisteskranken. Arch. f. Rassen-Gesellschafts-Biologie 1905. *Sjövall, Einar:* Alkoholen som rasförsämrare. 1912. *Same author:* Alkoholen som sjukdomsorsak. 1916. *Minkowska, Fr., et Minkowski, Eug.:* Famille B.... et famille F.... Contribution à l'étude de l'hérédité des maladies mentales. Ann. méd.-psychol. 1920. Juillet-Août. *Gadelius, Bror:* Några ord om ärftlig sinnessjukdom och äktenskapslagar. Hygiea 1910. Etc.

With regard to other works used for this chapter, the reader is referred to the foot-notes.

III.

THE TREATMENT OF MENTAL DISEASE.

CHAPTER XVI.

PRINCIPLES OF THE MODERN TREATMENT OF MENTAL DISEASE.

In the first of our introductory chapters we gave an account of the treatment of the mentally diseased in bygone days. This treatment either wore the undisguised aspect of gross negligence and brutal cruelty or, at best, was a system of severity, compulsion and mechanical restraint. The naïve views and doctrinary prejudices of these ages, however, explain and redeem this attitude.

Time gradually exercised its mitigating influence; cells were substituted for cages, the strait-jacket (camisole) for iron fetters, but for a long time yet cells and strait-jackets were considered the most indispensable of all the adjuncts belonging to the equipment of a mental hospital. We have already described the movement originating in England, presumably as a reaction against the cruelties to which the old mode of treatment had led in that country as elsewhere. It was now demanded that the care of the insane should be entirely free from forcible measures and all use of mechanical restraint was condemned. In the middle of the 'sixties, this movement reached Germany and gained the support, among others, of *Griesinger*, then the most eminent German psychiatrist.

To begin with, hardly anything but the use of the strait-jacket was condemned. Experience soon proved that the strait-jacket was not so indispensable as had been supposed. It has gradually come to be regarded as a detestable instrument, and is now discarded. At the beginning and middle of the eighties, the spirit of reform again wakened to life. This time the resuscitated movement was directed against cells and the isolation of mental patients. Since then, the voices

condemning the cell-system have grown more and more numerous; most psychiatrists would reduce the isolation as far as possible, a minority consider that it can be dispensed with altogether. So much is certain, that isolation is necessary only in exceptional cases and for short periods. The words »detention« and »confinement« are perfectly unwarranted in the modern care of the mentally diseased.

The modern treatment of mental disease is based upon two principles:

The first is: *Forcible measures, isolation and restraint must be avoided.* The second: *Never to let the patient be left unattended, but to have him under constant and careful supervision.*

This programme for the care of the mentally diseased has given a new appearance to modern mental hospitals. The large, costly, but sadly prison-like cell-wards have disappeared, and the plans for mental hospitals resemble those of ordinary hospitals. There are of course a large number of ward-rooms for the care of the patients, according to their different states. The possibility of a suitable distribution in accordance with their alertness, behaviour, social accessibility, capacity for work, cleanliness, etc., is carefully considered. For this rational distribution of different categories, the system of detached buildings (the pavilion-system) for the different wards is most convenient, and our recent mental hospitals are built according to this system. In this way the restless and unruly can be more easily separated from the quiet and tractable. With regard to the indoor arrangements, I will especially call attention to the so-called *supervision wards.* (Germ.: Überwach-Abteilungen). They are ordinary hospital ward-rooms, spacious and light, and serve as admission wards for acute cases instead of the old cell-divisions, or in general for all such patients as need special treatment. Besides these supervision wards, there are special day-rooms and workrooms for quiet and chronic patients, and for those convalescents who are allowed out of bed and need occupation. These latter, however, I pass by and return to the supervision wards.

In a well arranged mental hospital there are several (five or six) supervision wards for either sex. Thus one at least for quiet and tractable patients, one at least for the semi-excited and uncleanly, and two for the unruly. The quiet patients must not be disturbed by the excited ones, and the dirty and uncleanly must, for reasons of hygiene and for the comfort of the cleanly patients, be kept well apart from the latter. Immediately attached to the supervision wards there are spacious bath-rooms. In the modern care of the insane, baths are most

important therapeutical agents, as tepid baths have a quieting and soothing effect. Besides the bath-rooms, there are a few small one-bed wards, connected with the supervising wards, intended for patients who feel annoyed by the company of others or who for some reason have a disturbing influence of the inmates of the common ward. These ward-rooms must be situated in such a way that the assistants in the supervision ward can easily see to the patients quartered there. All the doors between the separate wards and the supervision ward are open. No mentally diseased patient must be shut in and thus be withdrawn from supervision.

We will here briefly indicate the theoretical principles governing a rational care of the insane.

With the therapeutical agents at our disposal, such as rest in bed, bath treatment, sedatives and narcotics, we can never get to the root of mental disease. These measures are only indirectly beneficial. The nucleus of the disease is inaccessible to us. But the conditions under which the morbid predispositions are developed are to a certain extent determined by the environment, and the mode in which the patient reacts to this is not without influence on the course of the disease. Whether a mental disease grows slowly like a tumour which gradually and fatally encroaches upon the body-tissues, or sets in acutely like the eruption of an eczema on a sensitive skin, it is of course obvious that external conditions have no direct influence to change the nature of the evil, but they may in one case serve to moderate and mitigate, in another to irritate and aggravate the disease. The reciprocity between the patient and his environment finds expression in him in a gamut of opinions, sensations and moods which, however elusive and in their nature dependent on the disease, are yet to a certain extent determined by external circumstances. The patients show an infinity of different moods: they are friendly, happy, gay, boisterous; irritable, suspicious, hostile, unreliable, furious; brooding, anxious, agitated or disconsolate; and in judging these different states of temperament and mood, besides the immediate expression of the morbidly changed mentality, we must also consider the mode of reaction to a different treatment and the plus or minus which is the direct effect of the treatment.

In other words, the insane as well as the sane have a psychic equilibrium, corresponding to the greatest possible rest and satisfaction, and this mode of reaction, which can only ensue from a kind and soothing treatment, is the first requirement for the regeneration of a diseased mind. A troubled, irritable or anxious mind cannot with im-

punity be exposed to exciting impressions any more than a delicate skin to irritants. Hence it is the duty of the psychiatrist to show the utmost consideration and, as far as possible, prevent the development of the disease; above all he must not conjure up any latent possibilities

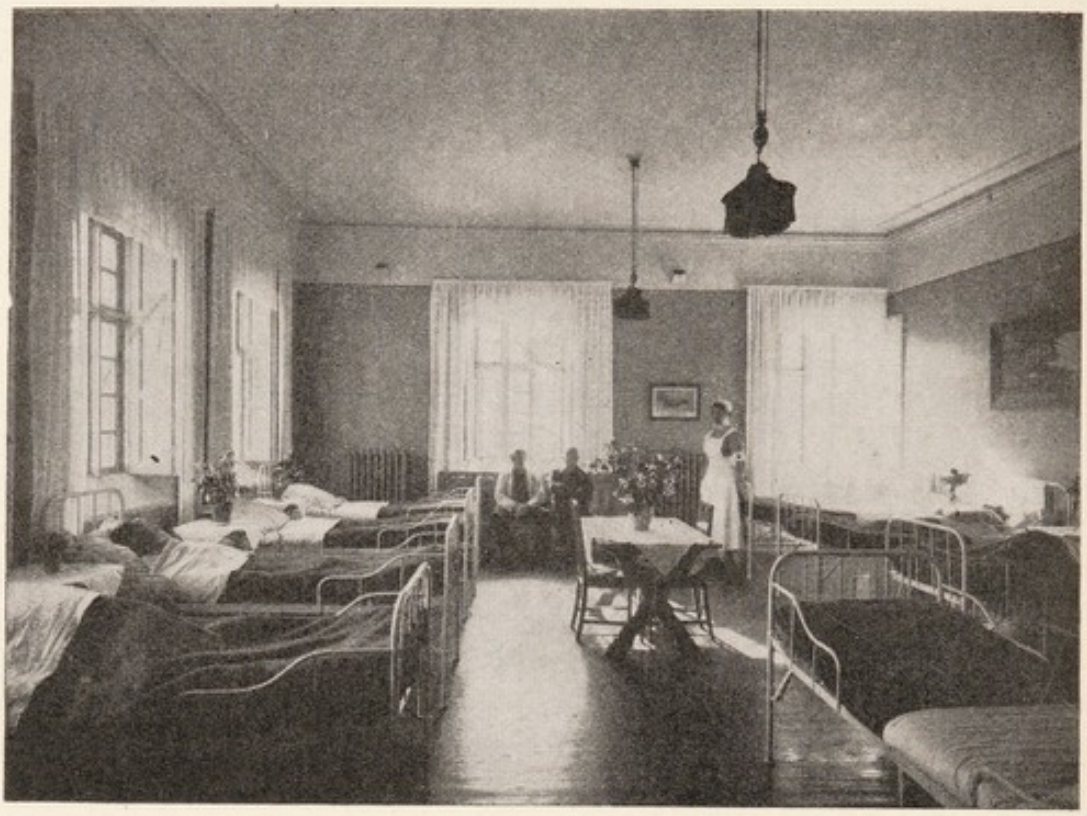


Fig. 48. Supervision ward for male patients in the Stockholm Hospital.

by a violent system of confinement. Against this rule many sins have been committed in earlier days which must now be atoned for in the modern care of the insane.

There are also other advantages accruing from the introduction of supervision wards and rest in bed.

In the first place more favourable conditions for the study of the patients are afforded. In the supervision wards they are under constant observation, every movement, every word can be closely watched by a vigilant and experienced attendant, and afterwards reported to the physician. Minor changes in the course of the disease can be more correctly estimated, and the effect of the administration of medicine more regularly controlled. This arrangement, then, affords the very best opportunity for a careful observation of the patient. What a difference from the time when a sufferer from acute mental disease was simply

placed in a cell! The patient was observed once or twice a day, each time for a couple of minutes, and was otherwise left to look after himself. Owing to this severe treatment, certain symptoms were in danger of being distorted, partly accessory features becoming intensified during the seclusion, while others, of a rather scarce occurrence, were never noticed — in a word, the scant observation of a patient, often agitated by the solitary confinement, gave an incomplete, and in many respects misinterpreted picture.

All experience proves that milder treatment not only affords better opportunities for studying the patient, but also results in less severe forms of disease. Formerly, at the time of cages and iron chains, the mental hospitals were full of a deafening uproar. Much later, in the days of cell-treatment, the *furibundus* mania that is now practically unknown still existed. Delirious conditions (delirium acutum) taking an unfavourable course were then probably far more common than now. The reasons for this have already been indicated. The pathological possibilities were actualised to their utmost limits by an irrational and violent treatment. The prognosis of mental diseases has probably also been improved through milder treatment, in so far as a great many manifestations of vehemence and excitement, artificial products of a bad regime, must needs influence the issue unfavourably.

In this connection we may mention the suggestive effect which the supervision wards, with their beds and their aspect of infirmaries, exercise on the patient. He generally comes to the mental hospital urgently protesting that he »is not mad«, »is not insane«, etc. He is then reassured by an assertion that he is ill, and this assertion gains considerable weight if he is simply treated like an ailing person and put to bed. Gradually his protests cease and he unresistingly accepts the suggestive influence; everything resembles an infirmary, nothing puts him in mind of a mental hospital or conveys the idea that he »is mad«. Otherwise in olden days, when the cell treatment would generally increase the patient's protests, his disgust and indignation. »What offence had he committed, to be treated like a prisoner«, was a thought which again and again would cross the patient's mind and kindle in him a feeling of implacable hatred to mental hospitals.

Apart from the benefit accruing to the patients from rest in bed, the external infirmary-like character imparted to the mental hospital elevates and ennobles the impressions daily received by physicians and attendants in the performance of their duties, impressions essentially determining the interest devoted to the care of the patient. How dif-

ferent were the daily rounds in the oldfashioned cell wards where most of the arrangements spoke the language of violence; where the visit of the physician for a short while relieved the solitude in a row of barred cells, revealing the cruel effect of seclusion on beings who had long been abandoned to the company of the demon of their suffering; wild gestures, angered faces, befouled bodies, torn bed-clothes, in cell after cell the same desperate condition, without real help or care — while doors were opened and closed, and the callous snap of locks and



Fig. 49. Supervision ward for female patients in the Stockholm Hospital.

rattling of keys gave voice to the principle on which the whole system was based. If nevertheless the physician could preserve a humane outlook, if in his daily work he was filled with compassion for these miserable sufferers whose rage seclusion could render harmless but not mitigate, how hard it was for him to foster in his attendants, living in this atmosphere of violence and restraint, other qualities than harshness and contempt towards fellow-beings who were treated in such a manner. More is needed than the personel conviction and well-meant admonitions of the physician in order to inspire the proper attitude towards the mentally diseased in nurses and attendants. The living example, the practical arrangements, the atmosphere of a home

— all this was necessary for gradually giving to the personnel a humane understanding of the patients and of the need for gentleness.

But the conversion of mental hospitals into real homes for the sick has had an even more far-reaching influence. Relatives and friends of a patient who are allowed to visit him cannot but carry away with them from their visits unanticipated good impressions, very different from what they had previously expected. It goes without saying that the cell-treatment is largely responsible for the disrepute into which the old mental hospitals had fallen.

During the many years that the present writer has been medical superintendent of the Stockholm Mental Hospital, public opinion about this institution has undergone a very conspicuous change. This change has mainly been wrought by the modernisation of the institution in accordance with the latest principles applied in the care of the insane, but the really effective cause has undoubtedly been that the different departments of the hospital have been thrown open to the relatives and friends of the patients during visiting hours. I shall never forget the suspiciousness, and the arrogance, distinctly tinged with distrust, demonstrated by the visitors during my first years, and many were the allusions made concerning the regime of the hospital and the treatment of the patients. Since, by the permission of the authorities, the cells have been vacated and pulled down, and the old seclusion wards changed into light and pleasant sick-rooms (supervision wards), and nothing prevented the visitors from satisfying themselves as to the nature of our arrangements for the care of the patients, the main cause of the strained and painful relations between the physician and the public has been removed and is now replaced by candour and confidence.

On admission all patients are placed in the supervision wards, which act as observation and examination departments. Their chief function, however, is to provide rest in bed.

The indications for rest in bed are naturally numerous, and important as is the active worth of the treatment, it is no less valuable as a prophylactic method. As to the former point of view, no one judging from experience can doubt the benefit of rest and quiet in an acute mental disease. Rest is a universal remedy for some of the factors which directly cause or favour the genesis of mental disease, and most patients come to the hospital in a state of overexcitement which inevitably calls for rest and tranquillity. The total effect of those factors which act harmfully on the nutrition and recreative condi-

tions of the body, such as overstrain, deficient nourishment, lack of sleep, trouble and adversity, acute and chronic diseases, parturition, lactation, etc., reveals itself, with a varying influence on the conduct of the patients, as a general exhaustion of the brain and nervous system. According to the different forms of the disease and the constitutionally postulated traits that determine its course and final issue, mental exhaustion acts differently in different cases. We are therefore to a certain extent justified in generalising the treatment, and making it our main object to remove the nervous prostration. Hence the chief indication in mania as well as in melancholia is recreative treatment, confinement to bed and as far as possible complete rest. To most psychiatrists nowadays it seems evident that the excited, prattling and wildly gesticulating maniac craves repose quite as much as the silent melancholic whose motor activity is repressed, or the patient who is deliriously confused owing to prolonged lactation, influenza, etc.

Not only in acute cases, but in chronic states also, experience shows that occasional outbreaks of excitement can be successfully treated by confinement to bed. They take a milder course and may not infrequently be cut short. This is especially true in episodically occurring, though not regularly recurrent attacks lacking the nature of periodicity. But even in periodical psychoses this mode of treatment is indicated, being to a certain extent preventive and mitigatory; and it is important to put the patient to bed in time, as soon as the well-known signs show that excitement is coming on, though it has not yet broken out. Unfortunately, our experience of the reliability of this method in periodical psychoses is not particularly encouraging, and I hardly remember any single case where the expected attack has been with certainty averted thereby. But our expectations of a method of treatment which merely consists in providing the external conditions for rest and quietness, must be kept within reasonable limits; we can hardly demand that its effectivity should go deeper than to the disarming of those outward irritants that easily have, or have already had, an exciting influence on the labile mind. For it cannot be expected to reach the inner, cyclic, still rather unknown and inaccessible factors which cause the more or less regular recurrence of the attacks. But even so it seems a great advantage if the treatment tends to make the attacks progress less violently, or if only the periodically disordered patient, who was formerly »tended« in a cell, can now without difficulty be induced to stay in a properly made bed in a general ward. I willingly admit that even this advantage often fails to appear. Then we have a

sedative agent in the *prolonged baths,* which frequently do a great deal of good even in severe cases. On the other hand, it fairly often happens that an excited and boisterous patient, contrary to expectation, willingly resigns himself to a rest in bed and submits to this treatment without much difficulty.

The question may, however, be raised as to *how far* we should go in our zeal for this mode of treatment, and in our striving to make seclusion superfluous. May it not be objected that, if one or two excited and unruly patients are placed in the same room with quieter ones, these latter will be disturbed? Is it, on the whole, possible to escape the risk of sacrificing the consideration for the majority out of regard for one or two whose isolation is not thought desirable? And even if we try to avoid this contingency by silencing the boisterous patient by the aid of narcotics, do we not run the risk of gradually poisoning him downright? Are not, to use the expression of an old German psychiatrist, »these narcotic snares around crura cerebri« far more dangerous to a patient than mechanical restraint?

All these objections and doubts as to the possibility of employing this treatment are unquestionably more or less justifiable, and the present writer is not prepared to assert that the isolation of agitated patients can be avoided under all circumstances. Much depends on the practical arrangement of the supervision wards with sufficient resources for extensive treatment by baths, and on the competence and sufficiency of attendants, etc., all this being mainly a financial question. In Sweden, there are generally greater difficulties than abroad — especially in our provincial hospitals. Because of the lack of accommodation the average type of mentally diseased admitted to hospital care is of a more unruly character, as room must first of all be found for the severest cases. Where the care of the insane is better provided for — and this has been the case in Stockholm for the last ten years at least — it is unnecessary to give special attention to the most unruly, as all can be admitted and can be placed *at once,* which is of essential importance for the treatment. Neglect and previous cell treatment during a couple of months in a work-house or lazaret are sufficient to give a violent turn to the disease and to promote the growth of inveterate asocial habits which will subsequently hinder the treatment in common supervision wards.

In several places abroad, where a larger number of attendants are employed than in Swedish hospitals, seclusion is avoided by the presence of one or, if necessary, two attendants or nurses in the isolation

room in cases of violent excitement necessitating removal from the other patients. To this we might, no doubt rightly, object that a locked door, against which the patient throws himself in vain, is more to the purpose than a living wall of attendants. Where resistance is absolutely necessary, passive mechanical resistance is preferable, for isolation in the company of attendants with whom the patient engages in a desperate struggle is less profitable than real seclusion behind a locked door.

It should especially be emphasised here that the demand for peace and quiet in the supervision wards ought not to be neglected. Hence it is not advisable to reduce this demand on the pretence that the mentally diseased live so exclusively in their own world, each within his sphere of ideas and fancies, that they do not distract each other. This may be true to a certain extent, indeed, patients sometimes make the most astonishing assertions, that they have heard nothing, that they have slept well, that everything has been quiet and peaceful, even on occasions when the night nurses have reported a great deal of disturbance. But on the other hand, we often hear complaints from patients, and it is then the duty of the physician immediately to take steps to stop any disturbance and, possibly, as a last expedient, to isolate the most troublesome patient.

On the pattern of some German asylums, the doors of the separate rooms in the unruly wards of the Stockholm Hospital have been provided with panes of thick glass, and so the patient need never be left without the necessary supervision.

However, isolation must alvays be regarded as an extreme measure. Before this is resorted to recourse must first be had to all available soothing agents, such as prolonged baths (35.5^0—36^0 C.), packing in wet sheets, and medicinal treatment — in all cases with caution. Isolation is an acknowledgement on the part of the physician that he is powerless and wholly unable to quiet the patient; it should be regarded by him as a forced deviation from principles once adopted by which he must abide as far as possible. This view should be a guarantee against the return to cell treatment.

Non-restraint in the treatment of the mentally diseased in the so-called supervision wards is also, as previously mentioned, of prophylactic importance for the chronic condition in incurable cases. The seeds of many antisocial qualities, such as destructiveness, uncleanliness, etc.,

which disease carries with it, may be weeded out in time by careful supervision, or at least be arrested in their growth. But in spite of all care and all the regulations of a good hospital discipline, here we often meet with an organic hindrance, viz. the progressive decline accompanying certain unfavourable forms of mental disease. It would indeed be naïvely optimistic to believe that educational efforts could have any effect on such types of disease as dementia paralytica, certain cases of dementia praecox, or senile dementia, etc., in which the mental deterioration has a fatal character and often knows no limits. And it is a fact that there may be morbid irritations, even in chronic cases, such as hallucinations and abnormal organic sensations, a heightened sex impulse, etc., which drive the patient to constant excesses and continuously raise an obstacle to all discipline. On the other hand, it cannot be denied that habit is a force and a useful counterpoise, and that mental patients sometimes allow themselves to be led towards good as well as evil, even more than sane persons.

In the days of the cell system, the patient was his own keeper, his own educator. He was left to himself and could do what he pleased. The dangers of seclusion are easily seen. Tearing the clothes from their bodies, rending their blankets and bed-clothes, masturbating, and smearing themselves with urine and excrements, these are the monotonous pastimes which seclusion offers to the mentally diseased. Neither education nor culture afford protection against this. When the inhibitory influences of consciousness are paralysed, the patient involuntarily follows the call of his instincts and gives himself up to them without any sense of propriety. But as he is often unable to exert his will in his more or less confused state, he will frequently submit to a protecting hand which, vigilantly and kindly, keeps his conduct within the limits of decency, and provides constant humane care and attention.

Among the diseased who were formerly isolated on account of violence, seclusion would often foster a spiteful and hostile temper. As the cells were also used for punishment, the whole system had the character of brutal correction. This excited suspicion and destroyed the patient's confidence in those around him. Prison physicians, who have ample opportunities of following the development of mental disease in criminals during their seclusion in cells, have abundant experience of how greatly solitude nourishes the patient's ideas and allows him to get more and more entangled in them. They see how the silence and the strained attitude of listening in the lonely room favour the rise and progress of hallucinations, and how this mode of treatment

provides an excellent soil especially for the delusions of persecution and secret espionage etc., entertained by patients of a paranoid disposition. And if this is so, what must have been the evil consequences of cell treatment when it was applied for lengthy periods to persons who were already ill!

A treatment so universally adopted as confinement to bed may easily deteriorate into a mere convention, and especially in chronic cases, rest in bed may turn into a deeply rooted habit. In certain, by nature inhibited and negative states, such as melancholia and dementia praecox, there is sometimes reason to guard against the risk of confinement to bed, quite as much as against the danger threatening an injured or broken limb from rest and immobility. For volitional life, too, may suffer atrophy from inactivity, and ideational life have its bizarre contractures. The former should be forestalled by watchfulness, the latter are easier to prevent in time than to stop in an advanced state. We are not here speaking metaphorically or symbolically, there exists a real correspondence between the disorders of motility and those of mental life. Left to itself, the patient's whole mental life shrinks into an attitude of negation, he cannot be moved and inch; ultimately, in a certain sense he becomes a victim to the rest cure. Thus, even if this mode of treatment is indicated for a time, and if it is necessary at first to ward off all external irritants from the centres of the patient, on the other hand, a time must come when arousal is an equally important indication, and when susceptibility to the stimulations of normal life should again be prepared. In many cases, therefore, it will be found useful to let the patient fairly soon get up for an hour or two, try his hand at light work, take a walk in the open, etc.

The restitution of a mentally diseased person to more or less complete health may be said to have, broadly speaking, two phases viz. healing during rest, and the return to ordinary life. In those cases where complete restitution is impossible, the patient may yet in many cases be re-educated under the protection of the hospital so as to become an active member of society within a modest sphere.

With regard to the attempts at reanimation and re-education of the chronically insane a few words may be said on the significance of a suitable occupation. This is especially appropriate in many cases of dementia praecox, when the morbid process has ceased, and there

remains a state of indolent apathy, to which a too lengthy rest in bed has possibly contributed. Hence the possibilities yet existing for reviving the seemingly apathetic patient and for making of him a useful worker must not be left out of sight. A purposeful, kindly disposed staff will be able to work wonders in such cases, and it is the duty of every leading psychiatrist to spur the ambition of his helpers in this direction. It is also important to choose the proper moment, and not to wait till the patient has become so wrapped in autistic inaccessibility as to render futile all attempts to fix his attention on any simple form of employment. Thus, in good time, an *active therapy* should be substituted for bed-treatment. But, on the other hand, I do not share the opinion of those who, like Dr. *Simon* in Gütersloh,[1]) have practically abandoned the bed-treatment for »the more active therapy« even in acute cases.

Simon is certainly right in saying that the »cell artefacts« of olden times have of late years been replaced by »bed artefacts«. Hence as a reaction against exaggeration, which may unfortunately have this bad effect, the *»more active therapy«* has its great value. But, the circumstance that a mode of treatment is injurious if employed indiscriminately should not discredit it in general. It would be throwing away the good with the bad, if we accepted the more active therapy uncritically as a kind of radical measure and universal remedy in the treatment of mental diseases, and held bed-treatment with supervision to be superfluous.

With a sphere of work where so little can be achieved by direct therapy as in the care of the insane, it is only to be expected that opinions will change now and again, nay, that they will even to a certain degree be subject to the same capricious fluctuations as for instance fashions and theories of life, and the enthusiasm with which Dr. *Simon* in Gütersloh embraces his »more active therapy« undeniably suffers somewhat from the one-sidedness that marks the pioneer. According to statements from physicians who have visited Dr. Simon's hospital and informed themselves of his »more active therapy«, the number of patients working there approximates to 100 %, a figure which makes us suspect that Dr. Simon carries his principles to a point where the creation of »artefacts« can hardly be avoided, though they may be of a different kind from those caused by confinement to bed. We must not forget that a forced occupation therapy, though active in its form,

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[1]) *Simon:* Aktivere Krankenbehandlung in der Irrenanstalt. Allg. Zeitschr. f. Psych. B. 87 u. 90.

is still of the same expectant kind as the passive rest in bed (*Hellweg*)[1]) Yet to the question as to which of these two ways to recovery or improvement is best suited to prepare the way for the healing powers of nature, rest or a disciplinary urge to work, I think the answer will be self-evident. For reasons fully discussed above and based on about fifty years' experience it seems to me that there can be no grounds for doubt. Of course I am firmly convinced that confinement to bed is the only proper mode of treatment in every case of acute mental disease. Thus I share and would like to emphasise the scruples professed by *Hellweg* as to the employment of the more active therapy in acute cases of manic-depressive mental disease and in cases of confusion, whether of exogenous or endogenous nature. If, for instance, a depressed melancholic in an acute phase is placed in a shift of workmen, he may be filled with a sensation of being led to the scaffold, and the physician who acts thus, sets at naught all old-established psychiatrical experience. We cannot sufficiently warn psychiatrists against the risk of such onesidedness. It is a different matter in cases that have passed beyond the acute stage. In such cases especially where the diagnosis of dementia praecox is indicated at the outset, it is important to counteract the negativism and autistic tendencies of the patient in good time by means of a more active therapy. And whichever of these two methods is employed, in just appreciation of their value, the patient's personality and individual traits must always be carefully studied. *Individualisation* is the only protection against a hackneyed application of the treatment; and the occupation-therapeutist runs the same risk as anybody else who sees a panacea in his own special method. And this danger perhaps lies treacherously in wait here, because the more active therapy-school constitutes so to speak the extreme contrary to psychoanalysis, since it avoids examination and exploring conversations with the patients in order to prevent the fixation of delusions and hallucinations. One would think that a forced activity would be the surest way to get rid of these symptoms and to raise hindrances to their evolution. But with the practical application of this principle one runs the risk of getting a very defective knowledge of the actual mental states of the patients. The whole treatment revolves round one single principle, »distraction through occupation«;

[1]) *Hj. Hellweg:* Om arbetsterapien (enl. *Simon*, Gütersloh). Summary of a paper read at the IV Northern Psychiatrical Congress in Helsingfors, 1929.

the psychological basis is simplicity itself. This is not entirely a merit. Simplicity affords too much scope to onesidedness.

Yet I will not deny that Dr. Simon, with his »more active therapy«, has been a stimulating force in the care of the insane; and though I would strongly emphasise my opinion that mental hospitals must remain infirmaries and not be turned into workhouses, I am none the less fully convinced that occupation-therapy is beneficial, above all in chronic cases. In so far as this has been overlooked, Simon's initiative has come as a reform, and his energetic efforts to vary the employment, and his well-defined system of simpler and more complicated tasks suited to the patients' different capability of attention and orderliness, are in all cases extremely valuable. But on the other hand, I have learnt by long experience that confinement to bed is more effective than temporary isolation in occasional outbreaks of excitement, even in chronic cases. Hence, while giving each of these modes of treatment its due, the wisest plan is to observe carefully the indications in each case and avoid all exaggeration. The important thing is to use them, severally or suitably combined, *at the right moment* and without prejudice.

Simon's active therapy has attracted great attention, not least in Sweden. The Swedish Government recently granted a sum for a delegation to study hospital buildings abroad, in Denmark, Germany, Holland and Switzerland, and the report made was largely concerned with this question. Besides a number of other asylums in these countries, Gütersloh in Westphalia was also visited. To amplify my own statements, I quote some passages from the Report showing the general impressions received by this delegation, in which psychiatrical authority was represented by Dr. *Einar Lauritzen.*

»Besides the occupation of the patients with work, Simon's mode of treatment includes several other factors of similar psychotherapeutical effect. Among such factors we may mention the unremitting solicitude and the arrangements for entertainments and pastimes for the patients between working hours and on Sundays, and also the systematic removal of all factors which may excite them and thus disturb the atmosphere of order and quiet whose beneficial influence on their minds is supported in every way.

The effects of the treatment with regard to the outward appearance of the patients and the whole character of the institution were generally found to be extraordinarily favourable, and were very striking in comparison with asylums, otherwise of a similar kind, where this mode of treatment had not been adopted.

How far this mode of treatment — which largely employs suggestive measures and relies above all on the influence of the environment — is able to cause actual recovery in certain cases, must, according to information given to the delegates, so far be regarded as uncertain. But experience from institutions where this method is employed has shown that it is undoubtedly a means of facilitating the discharge

of no small number of patients, especially in such places where charitable relief is organised for mentally diseased persons not living in hospitals.

As will appear from the report of the delegates on the visits to the different institutions, the organisation of »the more active therapy« varies a great deal, even with regard to the local arrangements, irrespective of the possibilities offered by the planning of the asylum. One superintendent may concentrate as much work as possible, even handicrafts, in the wards, another prefers common work-rooms outside the wards. The introduction of occupation-therapy does not seem to call for any fundamental alteration in the general type of asylums.«

This handsome verdict makes generous acknowledgement of the importance of Simon's method as a creditable advance in the care of the insane. For my part, I am anxious to point out — whether or not in agreement with the opinions of the Swedish delegates, must remain an open question — that *the more active therapy is valuable as a reaction against the exaggerated use of bed-treatment, but not as a new measure introducing a reform in the care of the insane.*

In the treatment of mental patients, rest in bed within our so-called supervision wards thus remains an established *type* — a type which, in spite of its more passive nature, yet in many respects possesses a disciplinary power. However universal in character this type may be, it does not preclude individual treatment. On the contrary, it promotes such treatment by inducing an attitude of confidence towards the physician. And it is hardly necessary to recall the universally acknowledged fact, that it is by the bed-side that the physician comes into the most intimate contact with his patient and most easily gains his confidence.

Concerning the treatment of the patient according to the nature of his disease (by baths, medication, organo-therapy, etc.), reference is made to the special part of this work. In this connection I only wish to point out that, in proportion to the accessibility and candour shown by the patient, the essential thing in this treatment is generally the moral influence of the physician, which is an immediate consequence of the patient's trust in him.

As we have already mentioned, the modern asylum regime affords better opportunities for examining the patient, and not least his mental state. *Nowadays patients have much more to tell the physician than in the past.* Clearly, this is not merely due to the circumstance that formerly, when the asylum was a kind of prison, the physician was regarded by the patient as a gaoler and was addressed accordingly; it is also due to a general change in the mental level of the patients. Formerly, accommodation in the hospitals was extremely limited, and

the few rooms had to be reserved for the severest cases. All quiet patients had to be treated at home or taken care of in some other way. Mild forms of disease, among them a great many border-cases needing observation, depressive states, etc., were practically excluded from specific treatment in a hospital. But nowadays, it is these very cases, especially in psychiatrical clinics and mental hospitals in the neighbourhood of large towns, that offer a very profitable material for psychic examination and treatment. And, of course, *psychoanalysis* in its original practical sense has become more or less indispensable in the modern treatment of mental patients.

However, the psychoanalytic practice of the psychiatrist must under all circumstances be free from preconceived opinions. It must be animated by an *individualising principle,* but this principle is by no means applied to everything that goes by the name of »psychoanalysis«, and certainly not to the method of examination and treatment inaugurated by the well-known Vienna physician, *Siegmund Freud,* to which I shall devote a separate chapter in the following.

All psychotherapy, which is based on the patient's entire confidence in the physician, employs *suggestion,* as far as tact, consideration and insight into the nature of the disease render it advisable in each separate case. In this respect aptitude and experience are the chief factors, we cannot learn from books, and theories seem to me of small value in treatment of this order. I may also add that many cases of mental disease lend themselves but little to this mode of treatment, and it is always important to act with prudence, discrimination and forethought. At the same time we must remember that for the mentally diseased it is an even greater necessity than for other sufferers to take the physician into his confidence and look to him for advice, guidance and consolation.

Hypnotic treatment of the insane, except for its use in certain cases as a method of examination (Cf. *Case IV* and *Case XVI),* is of strictly limited value. From suggestion during hypnosis several modern psychotherapeutists have turned to treatment in the waking state, considering it more important, and at the same time they have aimed at the rational substitution of the personally more acceptable policy of persuasion for the artificial and mechanically imposed character of suggestion. The well-known works of the Bernese physician, *Dubois,* are a good guide in this domain.

The modern principles concerning the care of the insane were first applied in Sweden in a few hospitals in the early nineties, the pioneers being Professor *S. Ödman* (b. 1836, d. 1927) superintendent of the Lund Asylum, and *Axel Envall* (b. 1844, d. 1912) superintendent of the Kristinehamn Asylum. During the last twenty-five years, both the Government and the Medical Board have devoted much attention to the care of the insane, and among those who have worked most effectively in this field I may mention the late Director General, *Kl. Linroth.*

Finally it should be remembered that it is not all mentally diseased who need institution care. Besides those who under favourable circumstances may be treated at home without any risk to themselves or others, there are a great many patients, largely chronic cases, that ought to be placed otherwise.

In addition to the mentally diseased, imbeciles and idiots also have a claim to the protection and care which their more or less helpless condition requires. In this respect, too, our time is marked by a lively activity, and the systematical organisation of schools and asylums for the weak-minded has been generously supported by the municipal authorities as well as by the State. So far the care of imbeciles and idiots has been largely left to the local boards, aided by a government subvention, but it is certainly to be desired that the whole matter should be made over to the State. The care of imbeciles and idiots in Sweden has for many reasons developed independently of the care of the insane, and has only coincided with the latter in those cases in which the weak-minded have at the same time been mentally diseased and thus admitted to an asylum. More will be said about this in chapter XVIII and in the special part of this work. (Cf. also *Alfred Petrén:* »Grunddragen av sinnesslövårdens utveckling i Sverige«, 1918, and another work by the same author. »Redogörelse för sinnesslövården i Sverige«, 1926, both dealing with the care of imbeciles and idiots in Sweden).

A cheaper, and for certain categories of mentally diseased patients more suitable, mode of treatment than that in asylums is *family care,* now very largely in use abroad and first attempted in Sweden at *Korsberga,* Småland. The patients enjoy much freedom and are engaged in suitable work, such as agriculture, cattle-farming and other rural occupations. The credit for the successful development of the colony at Korsberga is chiefly due to Dr. *Emil Lindell,* the late head physician of the Växjö Hospital, and its leader for many years. In the neighbourhood of Stockholm, too, family care of insane patients living in a colony supported by municipal grants, has been started under the guidance of Professor *V. Wigert* and Dr. *G. Elander.* It would undoubtedly be desirable that other colonies after this pattern should be established in different parts of our country.

Alongside with an increasing humaneness in the care of the insane, solicitude for the sufferers has led to an attempt to improve their social circumstances and smooth the way for them in their contact with society. Policlinics, municipal nurses and charitable relief help the mentally diseased to obtain in good time the treatment, in or out of asylums, of which they stand in need, and at the same time it is attempted to find suitable means of existence for patients discharged from the asylums. Protection, as far as possible, from distress and anxiety increases their chances of enduring health. This extension of the care of the insane from the sphere of the asylum to life outside offers rich promise for the future. It is, as especially *Wigert* among Swedish psychiatrists has pointed out, more than anything else suited to inspire the general public with confidence in the psychiatrist and a better understanding of his work, and I would add that the modern zealous efforts to spread the interest in *mental hygiene* aim at pulling down the last remnant of the walls which in the popular view have long separated mental diseases from physical suffering.

LITERATURE:

Kraepelin: Hundert Jahre Psychiatrie. 1917. *Hoppe, H.:* Ein Gang durch eine moderne Irrenanstalt. 1906. *Svenson, Frey:* Om anstaltsvård av sinnessjuka. Verdandis småskrifter. 1921. *Dubois:* Les psychonévroses et leur traitment moral. 1909. *Petrén, Alfred:* Den sinnessjuke och samhället. 1913. *Wigert, V.:* Om verksamheten vid Hjälpbyrån för psykiskt sjuka i Stockholm. Hygiea 1921. *Gadelius, Bror:* Sinnessjukdomar och deras behandling förr och nu. 1913.

See also the foot-notes in this chapter.

CHAPTER XVII.

PSYCHOANALYSIS AS A THEORY AND AS A MODE OF TREATMENT.

Since this section of my work claims to deal with the practical aspect of the matter in question, i. e. with the treatment of mental disturbances, the reader will perhaps think it strange that he is forced once more to plunge into theoretical speculations. Yet this is an inevitable consequence of the nature of psychoanalysis and its foundation in the Freudian teachings. Its very essence is theoretical, and its mode of treatment will stand or fall with its theory.

Very few medical doctrines have aroused such general interest in our time as the psychoanalytic movement, and hardly any scientific name within the last fifteen or twenty years has so frequently been on the lips of the public as that of *Sigmund Freud*. The most irreconcilable opinions encounter each other in the matter, and the parties to these discussions do not belong to a narrow circle of physicians and medical students only. Philosophers and theologians, psychologists, scientists and men of letters, neurologists and psychiatrists have taken part in the contest and entered wholeheartedly into the combat. All over the world *Freud* has gained a hearing, his ideas can be traced everywhere. They are to be found in modern fiction and drama, no less than in works dealing with religious subjects and education.

Hence, it is saying too little to call psychoanalysis a doctrine of medicine. It lays claim to a far wider attention.

The questions involved in psychoanalysis concern highly delicate subjects which many people are unable to touch upon without a certain amount of affective stress. They also come so near to the extreme limit of our knowledge that it is impossible not to wonder whether the firm conviction with which the Freudian doctrines are embraced is not rather sustained by the trust of Faith than by the sober approval of know-

ledge. In discussions on the subjects, it is at any rate impossible not to realise the wide scope they afford to emotional thinking, or to observe how easily an affective note will creep into the argument, a note less common in the debating of medical questions than in the treatment of religious subjects.

Many people have welcomed psychoanalysis as a well-timed rousing call and a new departure of the greatest importance for human development. But on the other hand, there are many who regard it as an expression of the tendency towards whimsical exaggeration inherent in the spirit of our age. So far psychoanalysis is looked upon as presenting certain similarities to modern art, inasmuch as both offer to a multifariously disillusioned humanity, if not new lines of thought, at least a fleeting diversion. To many it may be difficult to understand why psychoanalysis, with its often extravagant, not to say entirely distasteful doctrines, has been welcomed so enthusiastically in many quarters. But if the fervour in one camp has been great, criticism has been fierce and hostile when it has turned against the conceptions which constitute the essence of the Freudian doctrines.

Yet in one thing all must surely agree: only one of the most eminent intellects could have compelled this universal interest. And *Freud* is undeniably a great intellect. But is he, then, also that benefactor of mankind that so many people consider him to be? And in how far can his teachings be presumed to have lasting value?

Merely as a contribution to the discussion, and without pretending to pronounce a final verdict, I will state my view of the value of psychoanalysis in the following. In a way it will be a summing up of the views which I have already expressed on different pages in this book, as well as in various other works.

No value will be attached to my words among the »faithful«. But one or two of my readers may possibly appreciate a statement of my attitude. The more so, as I wish above all to assert that if psychoanalysis is to be included in the general education of a physician and among the academic subjects at the medical schools, there are certain imperative demands which the doctrine must necessarily comply with.

I have said above that it would be to underrate the scope of *Freud*'s doctrines, were we to consider psychoanalysis as merely of medical interest. Maybe it is precisely because it possesses rather the vague character and fluid boundaries of a creed, that it has been subjected to such severe criticism, not least from psychiatrists. Hence the adaptability of Freud's doctrines to so many spheres of human thought is no standard

of their real worth. This must rest on other qualifications, and in the following it will be my principal object to examine how far psychoanalysis can be considered the concern of medicine, even *in a strictly scientific sense.*

What is psychoanalysis? Has not every conscientious psychiatrist who conducts his investigations with thoroughness the right to claim this designation for his own method? Whether this method be planned in one way or the other, still it has always in view a thoroughgoing analysis of the patient's psyche. Why then should this name be applied exclusively to the Freudian mode of procedure? After all, this seems a rather unwarranted monopolisation which even savours of extravagant advertisement and conveys a hint of charlatanry! But the supposed novelty of these doctrines and the relief they claim to bring have secured for them an ardent reception and an unprecedented popularity. The term »psychoanalysis« has made its way and become firmly established. It is no good remonstrating now.

I return, accordingly, to the question: what does this term imply in the special sense in which it is accepted by public opinion? A clearly worded answer to the question: »What is psychoanalysis?« is given by the Scotch pedagogue A. S. *Neill* in one of his well-known works,[1]) and as I cannot find a simpler answer at the same time more exhaustive in its brevity, I quote this author who is strongly influenced by Freud:

»Psycho-analysis is the name of the technical process by which a Freudian *makes what is unconscious conscious.* The patient talks freely about anything that comes to his mind; he relates his dreams and the associations they call up. The analyst's aim is to let the patient discover his unconscious processes, and he is really a guide who keeps the patient on the lines. The more the patient finds out for himself, the better is his cure. The analyst offers no suggestions, preaches no creed. He is a scientist who gives the patient a portrait of himself; rather he watches the patient paint his own portrait, drawing the patient's attention to what is important.«

This concise exposition renders in brief what is essential in *Freud*'s doctrine of psychoanalysis; it gives us a hint of its double claim to be no less a method of treatment than a psychological principle. But quite

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[1]) *A. S. Neill:* The Problem Child. London 1926.

unintentionally, the author of this definition has laid his finger on the irremediable weakness of psychoanalysis. When he touches upon the analyst's guidance of his patient and the production of the »portrait« of the latter, he reveals the vulnerable spot of the Freudian doctrines which, as we shall see, is concealed in the extremely obscure relation between the method of psychoanalysis and its theory. Starting from the definition quoted, we will, however, proceed to consider the questions in their proper order.

According to Freud, the greater part of our personality is made up of the Unconscious, which chiefly contains the animal fund of our mental life, organically conditioned instincts, appetites and desires, and, in Freudian parlance, constitutes *das Es*, as opposed to our conscious Ego, *das Ich*. But the line of demarcation between »das Es« and »das Ich« by no means runs between consciousness and the Subconscious,[1]) and the psychogenesis of neuroses is not only a conflict between these two strata of our mental life. The conflict is enacted between »das Es« and a subconscious part of the Ego. During the growth and education of a child, under the influence of moral considerations and in deference to the demands of duty, religion and the conventions of social usage, there begins a *repression* (Verdrängung) of the desires and in the first place of the passionate impulses of the sexual instinct. Out of the Ego there develops a »Super-ego«, an »Ego-ideal«, and its action goes deep, reaching far below the threshold of consciousness. In this manner the *censorship* is developed by which repressed elements of the Unconscious are inhibited from emerging into consciousness. The *resistance* which frequently causes difficulties in the course of psychoanalytic treatment is thus easily explained. The Ego and the Super-ego, play an important part in the formation of what *Freud* calls *das Vorbewusstsein*, the preconscious.

The division of mental life into a conscious and an unconscious part constitutes the essential postulate for *Freud*'s psychoanalytical teaching. Without this foundation the whole construction becomes meaningless. »Unseren Begriff des Unbewussten gewinnen wir also aus der Lehre von der *Verdrängung*. Das Verdrängte ist uns das Vorbild des Unbewussten.«[2])

The Subconscious, as it is described by *Freud*, is, however, highly complicated in its structure. It contains the *repressed* elements which

[1]) In the following I use the terms »unconscious« and »subconscious« as synonyms.
[2]) *Sigmund Freud:* Gesammelte Schriften. Bd. 6. Das Ich und das Es.

differ dynamically from the simply *descriptively* Subconscious. The latter constitutes the sum of our latent memories which may at any time, by means of association through outward or inward stimuli, be received into consciousness, are *»bewusstseinsfähig«;* whereas the repressed elements are kept back by the Ego-ideal and are thus in a far higher degree excluded.

The formation of these theoretical assumptions is, however, intimately associated with the Freudian doctrine of *infantile sexuality* and is in the first place connected with the fixation of infantile sexual life on the parents. Here we meet with the *Œdipus complex* as the central element. To this *Freud* constantly recurs; it is to him the infallible guide to all those labyrinths of investigation into which he has been led by his fertile imagination. The fact that the Œdipus complex has been fruitful to *Freud* even in spheres so far removed from the psychic treatment of neuroses as religious psychology and folk-lore,[1]) is easily explained if we remember the importance for the development of the Ego-ideal which *Freud* attaches to the relations between children and their parents. »Das Ichideal,« he writes, »ist also der Erbe des Ödipuskomplexes und somit Ausdruck der mächtigsten Libidoschicksale des Es.« The speculative import of *Freud*'s doctrines is easily comprehended by the aid of a few examples. We need only remember how he himself and even more so his followers, have continued, with fanciful inventiveness, along the path indicated by the Œdipus-complex. The son's fixation upon the mother, his ambivalent relation to the father with possibilities in two directions, on the one hand submission and reverence, on the other hatred and hostility, have been an inexhaustible source of conclusions and interpretations to Freudians, no less in clinical cases than in intellectual questions and problems. A complete universality is ascribed to the Œdipus complex, and if to this we add the confabulating ease with which the Freudian school draws its material from dreams and symbols, it is not difficult to understand that the problems which have been subjected to psychoanalytic sagacity are various and manifold. In his work on »Analyse der Phobie eines 5-jährigen Knaben« (1909),[2]) *Freud* has made use of the child's relation to the parents with a fertile speculative imagination, better befitting a teller of fairy-tales than a scientist. But infantile sexuality is deemed sufficient, not only to explain the genesis of insanity, of obsessions and

[1]) *Sigmund Freud:* Gesammelte Schriften. Bd. 6. Das Ich und das Es.

[2]) Jahrbuch für psychoanalytische und psychopathologische Forschungen. Red. v. Bleuler u. Jung. Bd. I.

phobias, of sexual perversions such as homosexuality, sadism and masochism, but it also claims to be able to explain certain religious psychological phenomena, for instance, the primitive concepts of Totem and Taboo, the Madonna-cult and so forth. Even the dualism God-Devil, fundamental in most religions, is thought to mirror the ambivalent feelings of the child in its relation to its father. Religion to Freud is a return to an infantile mode of thinking.[1])

The Subconscious. Though I have previously touched upon the much-debated question of the existence of the Subconscious, yet, owing to its fundamental importance for the Freudian doctrines, I will here return to it for a moment.

Breuer, at one time Freud's fellow-worker, emphasises that the concept »the Subconscious« must be understood metaphorically. By forgetting the metaphorical character of this and similar expressions we may easily land in an unscientific »mythology«. This epistemological warning from his collegue has deterred neither Freud himself, nor, still less, his followers. The manifold details in his »metapsychology« are also of a nature to lead one astray in a »mythological« direction. Thus, for instance, his fundamental doctrine about the *»repression«* of sexuality, the assignment of the *Ego-ideal* and the *censor* to the *Subconscious,* etc. All this is apt to inculcate the conception that the Subconscious is a kind of appartment in or antechamber of consciousness.

The earlier school of psychology, as represented by *Wundt,* dismissed all reference to subconscious phenomena as unscientific. According to Wundt the content of our consciousness is the sole subject of psychology. But *Wundt* even emphasises the importance of rejecting the conception of consciousness as a room, a platform, or a stage where ideas and emotions appear as actors. Consciousness is only an enduring form of our mental life, but at the same time the only form of mental life with which we have reason to occupy ourselves. The assumption of psychic phenomena and processes of a *subconscious* nature is, in *Wundt's* opinion, entirely groundless. Similarly, the existence of subconscious phenomena is denied by a good many psychiatrists, thus for instance by *Ziehen* and, more recently, by *Bumke.*

For my part, I have already (Cf. p. 88) proclaimed an attitude with reference to this question, which differs from that of *Wundt, Ziehen,* and *Bumke.*

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[1]) *Freud,* in his brilliant little book »Das Unbehagen in der Kultur«, published in 1931, says: »Für die religiösen Bedürfnisse scheint mir die Ableitung von der infantilen Hilflosigkeit und der durch sie geweckten Vatersehnsucht unabweisbar, zumal da sich dies Gefühl nicht einfach aus dem kindlichen Leben fortsetzt, sondern durch die Angst vor der Übermacht des Schicksals dauernd erhalten wird.« Religion postulates »eine Einschüchterung der Intelligenz«. »Um diesen Preis, durch gewaltsame Fixierung eines psychischen Infantilismus und Einbeziehung in einen Massenwahn gelingt es der Religion, vielen Menschen die individuelle Neurose zu ersparen«.

Consciousness has other properties besides being merely an abstract form of our mental life. *Wundt* assigns to it the significance of an *inner field of vision*, and with this there follows in every conscious act the feeling that *my own Self* controls the situation and is placed in the centre of the field of vision. This feeling gives to everything that occurs in our consciousness the characteristic quality which we call *Ego-tone*. Not even phenomena which are enacted in the most peripheral parts of consciousness escape this Ego-tone. And since this tone is in reality that which gives to the mental processes the quality we call consciousness, it seems to me all but absurd to maintain the view that the psychic processes are always conscious. I agree with *Freud* in believing that mental life has a far wider scope, and that the conscious processes only constitute its upper, personally representative stratum.

I have attempted to prove in the foregoing that this Ego-tone, together with which the mental processes constitute an upper, conscious stratum, is in itself only a perception or, rather, a very complicated complex of perceptions. The Ego-tone is what I have called the *empirical Ego* and must not be confused with the *autonomous Ego*. What this, our real Self, is, cannot be made the subject of our introspective study. If it is a monad, an immaterial fixed star that radiates thoughts as the sun radiates light, then, at any rate, it is a metaphysical and not a scientific matter. Maybe that this autonomous Ego, to which we involuntarily assign the genesis of our thoughts, is an illusion created by the feeling of a purely physical individuality. In it may be contained the »*cogito-ergo-sum*-feeling« by which, in his day, *Descartes* allowed himself be impressed. Be that as it may, the psyche is a world of its own, a highest form of life animating all that system of organs and organic activities which constitutes our corporal personality. On this account merely, we are compelled to look for the genesis of psychic phenomena outside consciousness. It is not consciousness which thinks. Even if the unknown *fons et origo* of our thoughts pours out some of its stream into this vessel, yet it is neither in consciousness or Ego-tone (empirical Ego, *i. e.* Ego-complex), nor in our body or brain that we locate the focus from which the radiation of thoughts takes place. In its quality of form, consciousness is a *passive* phenomenon.

A number of psychic phenomena, both under normal and abnormal circumstances, simply cannot be satisfactorily explained unless we assume that the boundaries of our mental life stretch far beyond the scope of consciousness. On the other hand, there is no reason for denying that this is so, simply because we are unable to perceive a manifestation of psychic life unless it takes on a conscious, that is, Ego-toned shape. When *Leverrier* assumed that an invisible and hitherto unknown planet must exist in a certain place within our solar system, since such an assumption would be the only possible explanation of certain disturbances in the movements of another planet, surely this reasoning could not be called metaphysical simply because it led to the assumption of the existence of a thing which no eye had yet beheld. And is it not the same with our personality and the processes within its domain which we cannot explain unless we suppose the existence, outside of consciousness, of a source of energy, an Ego or a thinking substance from which these phenomena emanate? On this point, it is impossible for me to rest satisfied with the view held by *Wundt*, *Ziehen* and *Bumke*. They are doubtless agreed that the attempts of materialism to explain mental life as the product of secretions or as a specific development of energy in the brain involve an absurdity. They take for

granted that there is a fundamental difference in the essence of psyche and soma, but beyond the bounds of consciousness they fall into obvious inconsistency.

They do not deny that conscious thinking-processes are constantly interrupted by intervals, but curiously enough they seem to conceive these lacunae as occupied by a, *psychically mute*, automatism of the brain. If we do not wish to accept the doctrines once maintained by the great champions of materialism, *Molleschott*, *Vogt*, and *Büchner*, we cannot regard the body, including the brain, as anything but the instrument of mental life. But a violin which lies untouched on a table plays no melodies of its own accord, and the purely physiological automatism of the brain can at most be compared to the spontaneous creaking of the sounding-board or the sounds emitted by a slackening string due to changes of temperature and moisture in the air. Just as this creaking and the spontaneous sounds make no melodies, so also physiological automatism, in the shape of physico-chemical processes, blood-circulation and metabolism, incessantly going on within a living brain, cannot become thoughts, judgments and conclusions. But if we equate consciousness and mental life, we must needs imagine that the psychically mute breaks in the chain of mental processes are filled up with the brain's physiological manifestations of life. This incommensurate link between a process uncoupled from consciousness and its continuation actualised after a short while, cannot possibly explain the remarkable fact that the continuation, when recoupled to consciousness, not only starts again at the point where it had become interrupted, but often reveals every sign of having been progressively improved. Such progress necessarily implies an addition of thoughts, judgments and conclusions having come into existence during an interval of »psychic muteness«. But nothing can come out of nothing, and it must, then, be considered an unreasonable assumption that the »psychic muteness« of the interval should be as absolute as it must be, if the physiological automatism of the brain *alone* were responsible for the continuity of an interrupted thinking-process. Faced by the imperative *either — or* of the question: »Who thinks?« — soma or psyche? — Wundt, like Ziehen and Bumke, has assumed an attitude which entirely excludes the assumption of a direct causal connection between the brain and the psychic processes. And, as long as the incommensurateness of the psychic and the physical is insisted on, we are bound to assume that, if an interruption occurs in the conscious processes, this is not identical with psychic muteness. We must, therefore, suppose that psychic processes can go on even outside consciousness.

I have already expressed my view that the Ego-tone is an essential attribute of consciousness. But here we must bear in mind how little this Ego-tone is actually concerned with the problematic subject. Who, after all, has not frequently experienced that he thinks best when he succeeds, so to say, in removing the conscious feeling of himself, letting the thoughts flow on of their own accord? In other words, *the less con-scious* one is, the easier the thinking. Though we cannot draw any conclusions from this experience as to the origin of our thoughts, it is obvious that it would least of all favour the notion that the psychic processes are necessarily tied to our Ego-toned consciousness. At any rate, it is manifest that too strong an Ego-tone which is sometimes tinged with anxiety will tend to stupefy and will inhibit fantasy-formation and the power of association.

Yet since every introspective decision must be realised within consciousness our assumption of »subconscious« processes is one made *a posteriori*. Nevertheless, such an assumption is scientifically justified when fancies, thoughts and conclusions bearing

the peculiar stamp of inspiration or intuition suddenly present themselves in consciousness. *Bumke* endeavours to explain away »subconscious thinking« as being an obscurer, »unanschauliches Denken«, peripheral or not formed into word-symbols but still present in consciousness. This argument is unsatisfactory and fails to make the phenomenon of inspiration agree with the descriptions, over and over again made by philosophers, scientists[1]) and poets,[2]) as well as by people of quite moderate gifts. And if we include the evidence which may be drawn from psychiatric experience, from the psychopathology of hallucinations, hysteria, schizophrenia and senile sejunction, the reasons put forward by Bumke against the assumption of subconscious phenomena will be even less satisfactory. This, of course, does not preclude that many of the phenomena that Freudians refer to the Subconscious are actually conscious. Owing to their less definite, peripheral nature or their character of »unanschauliches Denken«, they appear unfamiliar, and this more especially in persons who are not very observant. In other cases it is often even less necessary to have recourse to the Subconscious for an explanation. If, for instance, I compare the psychoanalytic view of the connection between phobias and a repressed Oedipus-Complex or any other infantile »trauma« with my own considerable experience of similar cases, I am forced to conclude that, *if there is any associative connection at all with a »hidden« ground,* the psychogenesis has in spite of all taken place in consciousness. We must bear in mind that *in most cases of obsessions we have to do with fairly intelligent persons who, because of incessant mental rumination, are trained in self-analysis.* And, lastly, there is, in most cases, no reason to assume that upon such an emotionally-toned connection there follows a *repression.*

Accordingly, I find no reason for disputing the existence of subconscious phenomena. Yet I have the impression that Freudians misuse the concept by interpreting it too literally. Further they have uncritical recourse to it when they regard every unvillingness on the part of the patient to lay bare the secrets of his soul as »repression« and »subconscious resistance«.

The more one has gained the patient's confidence, the clearer one sees that real repression is far more exceptional than one would believe. Thus to introduce psychoanalytical treatment with a romantic gesture as a mystical unveiling is quite uncalled for. Apart from the schizoid

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[1]) Many authentic descriptions of such experiences have been published. I may refer for instance to the work of *Wilhelm Ostwald:* Grosse Männer. Leipzig, 1909, and especially to the biographical notes on Julius Robert Meyer, further to the autobiographical communications of the great French mathematician H. Poincaré in Bull. de la Societé Astronomique, 1908, etc.

[2]) As to the cause of this nature related by poets, there are many statements for instance by Goethe of the intuitive manner in which inspiration came to him. It seized him rather demoniacally, and came upon him so quickly that he had great difficulty in getting time to write down the inspired verses. He felt himself quite passive. A sublime influence made use of him »wie es beliebt und dem er sich bewusstlos hingebt«.

and schizophrenic conditions, that is, hysteria and hysteroid complications in some mental diseases, I think the Subconscious plays a far less important part in the pathogenesis of neuroses than assumed by Freud.

Psychoanalytic reasoning has diffused itself into an extremely shallow, trivial psychology. It does not consider the possibility of the patient being a bit of an analyst himself. It disregards the conscious resistance and forgets that, to quote a Swedish poet,

»In every heart there is a locked door,
a secret room whose key no one will find,
and in its lamps, the oil that burns
the secret is that once will die with us«.

Thus, after all, there is a common human characteristic to which the poet has given this fine and respectful expression. True, many a secret, thus carefully locked up, and whose quite conscious resistance the psycho-analytical pick fails to force, may be a complex out of which, under certain constitutional conditions, a neurosis has been developed. This resistance will give way only in the case of an unrestricted confidence, and we may have good reason to ask whether the Freudian doctrine with its prejudices is of a nature to inspire this confidence.

One might be tempted to apply to *Freud*'s numerous disciples all over the world the opening lines of the poem from which we have already quoted.

»How easily men's cheeks will flush!
The many voices that measure hearts
Judge quickly though they know so little«.

And who runs a greater risk of having to flush with indignation at an over-hasty judgment, than a person who gets into the hands of an orthodox Freudian, full of sex-psychological learning but insufficiently schooled in psychiatry and perhaps by nature lacking the qualifications for becoming a good psychologist!

To *Freud repressed sexuality* is the all-important cause of neuroses and hysteria. This brings us to one of the weakest points of psychoanalysis, the extreme onesidedness of *Freud*'s mode of thinking. Now

and then he may find himself forced to some concession, but, broadly speaking, all his writings are based on this theory of sexuality.

One glance at the propagation of the neuroses, more especially of hysteria, in old and in present times, must convince us that Freud's view is untenable. The history of nervous anxiety, the study of the religiously tinged psychic epidemics, mass hysteria, demoniacal possession and witch-trials supply convincing evidence of the exaggeration in Freud's doctrine of the part assigned to sexuality.[1]) If, further, we consider war hysteria, insurance hysteria, hysteric manifestations in prisoners committed for trial, hysteric hypochondria and the »flight into disease« of aging women, disappointed in life, we find that the causes of hysteria are many and various. The same holds true of the neuroses.

Freud's attitude towards the genesis of *war hysterias* proves, as *Bumke* has pointed out in his criticism, how farfetched are often the reasons of which Freud avails himself to carry home his argument of sexuality. He admits, however, that the sexual origin of war hysteria is not yet proved. »But,« he adds, »the opponents of psychoanalysis in whom the aversion to sexuality has proved stronger than their logic have made haste to announce that the investigation of the war neuroses has definitively refuted this part of the psychoanalytic theory. In this they have been guilty of a slight confusion. If the investigation — not very exhaustive so far — into the war neuroses *has not contributed to prove* that the sexual theory of the neuroses is *right*, this is quite a different thing from *proving* that this theory is *wrong*.«[2]) It seems to me that there might here be reason to answer *Freud* in his own words, though with the alteration that *Freud's belief in the predominant importance of sexuality* »has proved stronger than his logic«, for, as *Bumke*[3]) has it, »was it not *Freud* who introduced the theory of sexuality and does it not rest with him to prove it?«

In *Freud*'s conception of the all-important significance of the sex instinct, his doctrine of *infantile sexuality* is the most remarkable ele-

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[1]) Although I willingly admit that sexuality may have entered into these religiously tinged forms of hysteria of ancient times, yet fear and anxiety are the deepest and principal sources of the nervous troubles. The emotions roused in connection with a universally prevalent conception of the dualism of *heaven* and *hell*, was alone responsible for the splitting of the human soul and its preparation for ecstasy as well as for diabolic possession. Fear is an all-powerful background in most cases of religious superstition. And I think that physiologically there is no reason to assume that this form of emotion depends in its essence on a hyper- or dysfunction of the sexual glands. (Cf. the experiments of *Cannon* and *de la Paz* p. 106). In war-hysteria this consideration regarding a plausible hormonal origin is even more applicable.

[2]) *Freud:* Gesammelte Schriften. 11. p. 253.

[3]) Die Psychoanalyse. Eine Kritik. 1931.

ment. It constitutes the very nucleus of his professed discoveries and is the foundation on which he has built up the theoretical postulates for his mode of treatment.

Infantile sexuality. Though the first awakening of the sex-instinct occurs in connection with puberty, at which age it becomes a conscious want, we must not overlook the fact that this awakening is preceded by a lengthy period of dawn which can be followed step by step during childhood. Students of sexual pedagogics who do not accept the Freudian views regard the early years of childhood up to the age of seven as a period of sexual indifference, when the children hardly take in more of their sex-difference than what pertains to their clothes. There are exceptions, however, and many have memories from the age of five or six already, which are indubitably tinged by a dawning, wistful sexuality. Such features grow more and more distinct till at pubescence the sexual instinct throws the mental life of the young into a state of violent fermentation, often with eruptive strength. The maturation of the sex-instinct may be reckoned from the time when the young girl has her first menstrual flow, at about twelve or thirteen years of age, and when the boy of about fourteen has his first pollution. But the »storm and stress«, frequently so harassing to sensitive young minds, which belong to the period of adolescence, do not reach their climax till later, at the age of sixteen to eighteen. With regard to the abnormally early maturation *pubertas praecox,* I refer the reader to what I have written in an earlier chapter (Chapter XIV, p. 401).

According to *Freud,* infantile sexuality plays a far more important part than the foregoing brief exposition would imply. Its first period is fixed at the earliest years of infancy, and the first object of the undifferentiated infantile sex-impulse is the child's own body. *Freud* calls this period the *Narcissistic* phase of sexual life. The name is of course adopted from the classical myth of Narcissus who saw his own body reflected in the clear spring and was enraptured by it. The impulse is then differentiated and directed towards certain parts of the body, the mouth and the anal and genital zones being parts where the slumbering instinctive life centres in primitive feelings of a pleasurable nature. Such feelings are awakened in taking milk from the mother's breast, and this *»oral-eroticism«* also finds expression in certain habits peculiar to children at the moment of falling asleep, sucking the thumb or hand, or together with the hand a piece of the sheet or blanket, etc. (The German word for this habit is »Ludeln« or »Lutschen«, I have not been able to find a corresponding English term). Not less frequent, according

to *Freud*, is the infantile »*anal-eroticism*« which makes the young child remain stubbornly sitting on the chamber-pot. As a matter of fact, *onanism* may in these early years be induced by sensations connected with defaecation and urination.

After this »auto-erotic« initial stage with its »polymorphous perversion«, there follows — I am still quoting *Freud* — the most important phase of sexual development in the child. Now the obscure and undifferentiated sex-impulse is directed towards the parents. The son extends towards his mother, the daughter towards her father, tender feelings of a vague sexual nature. To these *Œdipus and Iocaste complexes Freud* attributes the importance of being the deep foundation of nervous disorders in later years. These complexes of a naïve incestuous nature, love for the mother and aversion to the father, *Freud* assigns to the age between three and five years.

In his book »*Traumdeutung*« (1900) *Freud* writes: »Nach meinen bereits zahlreichen Erfarungen spielen die Eltern im Kinderseelenleben aller späteren Psychoneurotiker die Hauptrolle, und Verliebtheit gegen den einen, Hass gegen den anderen Theil des Elternpaares gehören zum eisernen Bestand des in jener Zeit gebildeten und für die Symptomatik der späteren Neurose so bedeutsamen Materials an psychischen Regungen.«[1])

I have already alluded to the ambivalent nature of the son's feelings towards his father. The aversion, enmity and hatred to the rival father frequently, in *Freud*'s view, develop into a vague desire to kill him. From this extreme the child's feelings oscillate in the opposite direction. The head of the family, the father, becomes an object of reverence and of a submission tending to adoration. But the reverence easily turns into fear and awe. The child dreads his father's vengeance. Punishment for his sexual desire for the mother looms large and thus the *castration complex* in one form or another develops within the child.

The *Œdipus complex*,[2]) with or without a *castration complex*, is only actual to the child during the short period from three to five years. Towards the close of this period, the child begins to react with

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[1]) Traumdeutung. 1. Aufl. p. 180.

[2]) A corresponding attitude of the daughter towards the father, combined with hatred towards the mother, was mentioned by *Freud* already in his work *Traumdeutung* (1900). To judge from his later writings, however, his conception of the fixation of the relations to the parents it not quite so simple as indicated here. *Freud* seems to hold, rather, that the children's attitude towards the parents may evince certain complications, according as their sexual life at this early age is still of a bisexual disposition.

vague moral stirrings, the Ego-ideal begins to develop, the complexes become repressed and are from now on excluded from consciousness by the Censor. Under normal conditions there follows a period of latency which lasts till the age of puberty.

During this period of latency, and even far beyond it, the Œdipus complex, now repressed to the realm of the Subconscious, »das Es«, retains the feeling-tone which supported it in the years of childhood, and since it has not been allowed a natural outlet, it may be likened to an unexploded shell lying forgotten beneath the soil. When, much later, the explosion takes place, it is in the form of what, in Freudian parlance, is called *conversion*. This means that the vital energy of the sex impulse is transferred to other centres and manifests itself as hysterical symptoms. Bearing in mind the intimate connection that exists between the sex-glands and other endocrine organs, we find nothing improbable in this conversion. Yet, to my mind, the necessary condition is that the repressed element is a mature sexual libido; but since the present instance deals with a child of five, *Freud*'s assumption becomes preposterous. Equally doubtful is the assumption of a long period of latency in which the Œdipus complex with its vital energy is supposed to have been lurking underground like a loaded shell. It would certainly be difficult to find scientific support, either of a physiological or a psychological nature, for such an argument.

Freud's theory of infantile sexuality has met with criticism from the majority of psychiatrists, and many prominent psychologists have agreed with them. My own unsuccessful endeavours to find some support for the Œdipus-complex correspond in everything with the experience about which *Hoche* writes: »Ich habe mich ehrlich bemüht, in langen Jahren Jemanden zu finden, der seine Mutter begehrte und den Wunsch hatte seinen Vater totzuschlagen. Es ist mir nicht gelungen. Anderen erfahreneren Kollegen geht es nicht anders. Der Œdipuscomplex fährt in der Litteratur herum wie der fliegende Holländer auf den Meeren; jeder spricht von ihm, einigen glauben an ihn, aber niemand hat ihn gesehen«. *Bertrand Russell*, in his work on Education, speaks strongly against the universality of the Œdipus-Complex, and in reviewing Russell's book in a well-known Scandinavian journal *Høffding* expresses his opinion that Freud has indecorously debased Sophocles' great drama where the tragic development rests on the circumstance that Œdipus came to marry his mother, entirely unaware of their close relationship.

Having quoted a passage from a work by Henry Beyle (Stendahl), in which the author describes how he loved his mother and hated his father, *Bumke* adds: »Danach wird man zugeben müssen, dass eine sinnliche Liebe eines Kindes zu seiner Mutter vorkommt. Dass Sie häufig ist, bestreite ich«.

It is, of course, not impossible that one or two instances may be found that seem to prove the truth of the Freudian doctrine. Early recollections

which confirm the Œdipus-complex are perhaps commoner in Southern climates, and perhaps also among the Jewish race to which *Freud* himself belongs, but these cases are at all events rare, and there is nothing to bear out any universal importance of the doctrine as a key to the interpretation of hysterical symptoms. For, however willingly I may admit that the hysterical symptoms *may* in many cases be a disguise for the repressed sexual instinct which has not been allowed a normal *Abreaction,* it is still inexplicable to me that *Freud* should assign the repression to infancy and not to a far later period when sex-maturation has set in, and when both the sexual desire and conventional morals give a more obvious raison d'être to such a repression and make the whole process far more plausible.

As to the importance of the sex-instinct in early childhood, it is true that we may be justified in supposing that the sex-hormone from the exocrinously immature sexual glands exercises a certain influence upon the mental life of a growing child, in cooperation with other hormones, the thyroid gland, adrenals, thymus, hypophysis, and others. But if we keep in mind that the secondary sex-qualities do not develop until the age of puberty, it seems unlikely that it should be physiologically right to include, as does *Freud,* among the manifestations of the sexual instinct a large number of indefinite phenomena due to extremely vague and undifferentiated pleasurable and painful sensations from different organs. *Freud*'s supposition that these sensations form the fabric of an affective tone, strong enough to create the Œdipus complex and sufficiently powerful to maintain the explosive possibilities of the repressed instinct during a latency period of many years, seems to me a theory of fanciful and unscientific character. This, I think, is the view most common among psychiatrists of the present time.

With regard to the *rapport* between mother and child several of the adherents of *Freud* go to extremes in following out his ideas. The most natural and necessary breaks in this *rapport* are to them psychic traumata which may induce neuroses. Thus *Otto Rank*[1]) speaks of »*pre-OEdipal*« traumata which may be inflicted on the child at birth. Not through cranial injuries — in these he is less interested — but through the cutting of the umbilical cord and the severance from the mother's body.[1]) *La Forge, Réné* et *Pichon*[2]) attach special importance to weaning, assuming that this, too, may cause a psychic disturbance which will later on make the child look for the source of all happiness in life within his own personality to the neglect of all outward things. During school years such a child shows self-absorption and abstractedness, obstinacy and a stubborn behaviour. These qualities

[1]) Zentr. Bl. f. die ges. Neur. u. Psych. 1927.
[2]) Zentr. Bl. f. die ges. Neur. u. Psych. 1927.

may develop into real neurosis and even result in schizophrenia. Here we recognise the Freudian view of insanity, especially dementia praecox, as a remaining at the infantile Narcissistic stage.[1])

The reliability of the Œdipus complex is a vital necessity to the whole structure of the Freudian doctrine. He writes: »The neurotic regularly displays part of the psychic infantilism. He has either not been able to free himself from the infantile trend of psycho-sexuality or he has turned back to it (checked development or regression). In his unconscious mental life, therefore, the incestuous fixations of the libido are still playing, or will begin to play, the principal rôle. *We have found that the relation to the parents, when it is dominated by incestuous longings, is the nuclear complex of neurosis.*«[2])

But not only his theory of the pathogenesis of neuroses, also his »metapsychology« rests largely on the validity of the Œdipus complex. And, indeed, even the religious, or rather the antireligious orientation which fills a large part of Freud's later writings proceeds from his »discovery« of the Œdipus complex.

For obvious reasons, then, it has been of the utmost importance to give to this doctrine a basis as wide and solid as possible, and this explains why Freud enters upon ethnologic-psychological speculations.

In his work *»Totem und Tabu«*, according to *Thomas Mann* »die rein künstlerisch höchststehende unter den Arbeiten Freuds«, he tries to show that the Œdipus complex already exists in the remote infancy of mankind. Here, he thinks, we meet it in the obscure phenomenon called *totemism* which has been variously interpreted by ethnologists. With the significance Freud claims for it, the Œdipus complex is now not only responsible for the genesis of present-day neuroses, but it also determines the entire social and moral development of our race.

Freud's »Totem und Tabu. Einige Übereinstimmungen im Seelenleben der Wilden und der Neurotiker«, is built upon a hypothesis derived from *Darwin* and further worked out by Atkinson and the ethnologist W. Robertson-Smith.[3])

[1]) It is easily understood that some psychoanalysts who have strayed on to this Œdipal and pre-Œdipal path may, like an adherent of Freud, well known in Sweden, go so far as to find the whole raison d'être of religion itself in the yearning for a reunion with the mother and for the Nirvana of the foetus in the womb.

[2]) Totem und Tabu. Vierte Aufl. 1925. p. 24 (the italics are mine!).

[3]) According to a statement by Professor *W. Schmidt-Mödling*, one of the most prominent representatives of the modern historical school within ethnology, the names Atkinson and Robertson-Smith carry but little authority. The only work by the former is a short paper of seventy pages, published in Andrew Lang's »Social origin«. Atkinson and Lang were cousins.

Darwin assumed that primitive man, following the habits of the anthropoid apes, lived in small tribes. These primitive communities were, according to *Atkinson*, formed by one grown man with a number of women and a troop of children. When the male children were approaching adult age and thus might incur the jealousy of the head of the clan, they were expelled. In these small groups of men belonging to the same ancestry, and each constituting a clan, there prevailed an idea of close relationship to some special animal (tree or plant). This was the clan's totem, and persons belonging to the same clan (totem clan) were not allowed to marry each other (exogamy). This information and a number of details with regard to the totem animal, its sacrifice and relationship to the head and other members of the clan, derived from the writings of Robertson-Smith, were conjoined by *Freud* and amalgamated with the Œdipus complex which at that time, in 1912, had long been an established fact to him. In his »Analyse der Phobie eines 5-jährigen Knaben«,[1]) he had made the observation that fear of the father (castration complex) could by a »displacement« change into fear of an animal, and thus Freud was equipped for discovering once more the Œdipus complex in the customs, practices and religious ideas of primitive man. This complex accordingly proved an ancient possession of the human race. No wonder that it should reappear in the infancy of everybody and eventually haunt the majority of neurotics! The following is a quotation from *Freud*'s exposition:

»The sons expelled from the primary herd finally conspired together and killed their father, ate him and appropriated the women. Acting thus, they satisfied the same hate-impulse (against the father) which is a normal infantile trait and the basis of most neuroses, but which often leads to an unconscious repression of feelings, especially towards animals. The eating of a slain man is a natural thing to cannibal savages. The cruel ancestor had no doubt been the envied and dreaded model of each of the brothers. By the act of devouring him they achieved an identification with him, each appropriated a small part of his strength. The totem meal, perhaps the first feast of mankind, would be a repetition and a commemoration of this memorable, outrageous deed that was the beginning of so much: social organisation, moral restrictions, religion.«

Psychoanalysts have felt aggrieved because *Freud's Totem und Tabu*,[2]) highly valued by the faithful, has not had the attention from competent authority that might have been expected. At the request of the »Kultur-wissenschaftliche Gesellschaft« in Vienna, Professor *W. Schmidt-Mödling* has stated the reason for this silence. The answer was given, in 1928, in a lecture which was subsequently published,[3]) and the severity with which *Freud*'s opinions are rejected seems, to my mind, annihilative. After refuting the ethnological reasons advanced by *Freud* in

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[1]) Jahrbuch f. psychoanalyt. und psychopathol. Forschungen. Bd. I, 1909.

[2]) *Rank* calls this work: »die gewiss bedeutendste und wohl für immer grundlegende Leistung, welche die Psychoanalyse auf dem Gebiet der Geisteswissenschaften zu verzeichnen hat«, and *Wittels* is of opinion that »Totem und Tabu« has become »die Locomotive, die den Triumphwagen Freuds rund um den Erdball gezogen hat«.

[3]) *W. Schmidt-Mödling:* Der Œdipus-Komplex der Freudschen Psychoanalyse und die Ehegestaltung des Bolschewismus.

support of his statements, *Schmidt-Mödling* sums up his opinion in the following words[1]):

»I believe that immediately after *Freud*, in 1912, made his Œdipus complex, in conjunction with the origin of totemism, the starting-point of all religion, morality and social order, I pointed out that this was an amazing error, even from an ethnological point of view alone. But viewed psychologically, the theory was certainly an error of the worst kind. To assign to half a dozen childish zoophobias, which allowed of I know not how many other and better explanations, the importance of actually being the headstone in the foundation which has to support the origin of all human civilization: I cannot remember, even in a century so rich in theories as ours, ever to have met with such an enormous discrepancy between facts and theories as this. I could but wonder, at the very outset, that a highly-gifted man could have fallen a victim to this mad illusion, and that it could be adopted uncritically as a new gospel by his friends and disciples far and wide.

But the really inconceivable thing is after all that the theory which the author himself at first only put forward seemingly with the greatest diffidence, as a tentative one, was yet by its originator all of a sudden declared to be unshakable truth. And this without any alteration whatever and in spite of the far-reaching development of ethnology in the bygone sixteen years. How is this extraordinary fact to be explained?«

Repression and *conversion*, *»das Ich«* and *»das Es«*.[2])

The successive *repression* of the infantile incestuous ideas reveals to *Freud* the presence of an Ego-Ideal, whose growing activity represents the paternal influence and the progress of education. The repression being realised, the Ego-Ideal, functionally present in the *»Vorbewusstsein«*, here undertakes the *censorship*, thus preventing the repressed ideas from re-entering consciousness.

Although I find great difficulty in admitting the validity of the Œdipus complex and infantile sexuality, yet I readily accept repression and censorship as psychological facts. And it is Freud's great achievement to have exhaustively investigated and promoted our knowledge of these phenomena.

With good reason *Freud* assumes *repression* to be almost synonymous to *amnesia*, yet he considers its psychological nature rather obscure. In Chapt. IX p. 213 I have ventured to interpret the *repression phenomena* as the enhanced manifestation of a dynamic quality, characteristic of the mental structure. I have repeatedly in this work,

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[1]) *W. Schmidt-Mödling:* Op. cit.

[2]) The term was invented by *Groddeck*. (See: *Freud* Gesammelte Schriften B. VI p. 367).

and especially in connection with the problem of opportune amnesia, touched upon the *censorship* which is teleologically active in the service of self-preservation. Even under normal circumstances and in ordinary thinking the censor functions as »a double-acting dynamic factor divided into one animating and one repressing element«. Its elective effect on the mass of associations furthers our thinking and its abnormally exaggerated manifestations meet us in »the repression of all ideas and memories which stand in the way of our well-being or even threaten our existence«.[1]) I refer once more to the affinity between this censorship, whose function in opportune amnesia is obvious, and the mechanism which reveals itself in the *nociceptive* reflexes (*Sherrington*).[2]) This mechanism constitutes a censorship already in the animal stage, and there its life-protecting nature is undeniably akin to the guard duty of the »Ego-ideal«.

When repression has begun, the possibility of *conversion* is also present. The vital energy of instinct-toned conceptions, of unsatisfied desires, changes into anxiety; and as this anxiety can but seldom exist floating in mid-air, it attaches itself to some kind of conception which then, carried by the anxiety-tone, enters consciousness in the shape of a phobia. But by other paths, too, through other nerve-centres and tracks, conversion may afford an outlet to the repressed energy of affective life. And thus the neuroses and hysteria set in, with a string of symptoms inexplicable to the patient himself, such as involuntary movements, hysteric fits and other convulsive phenomena, paralyses, contractions, vomiting, nausea, etc. The repressed desire which is not allowed discharge (»sich abreagieren«) in a normal way and is forced by the Censor (the »Ego-ideal«) to keep hidden, masks itself in a thousand ways and breaks out wherever it can along subconscious by-paths. The neuroses accordingly — and this no doubt is a fundamental truth — are the result of disconnecting the vital energy of emotional life, including sexual life, from the centres which do service as their natural means of expression and transferring it to centres for other movements and other organic functions, which are thereby thrown into pathological states of irritation and influenced abnormally.

In so far as the symptoms of the neuroses are a disguise in pathological form of repression, the first rational step towards healing is clearly to unmask them. This, in *Freud*'s view, can be done by means of psychoanalysis, that »makes what is unconscious conscious«.

There is no doubt that *Freud* has deepened our psychological knowledge through his conceptions of *repression* and *conversion*. At the same time his teachings and

[1]) Cf. Chapt. X Cases XVI and XVII.
[2]) Cf. p. 212.

method of treatment have not escaped severe criticism. They are, in their one-sidedness based on unproved assumptions, on a generalisation of experiences which are not general, on exceptions made into rules. This verdict must be passed upon his theories of infantile sexuality and the Œdipus-complex, and also upon the exaggerated importance which he attaches to the sexual instinct in the development of the neuroses. If, like *Freud*, we equate instinct with sexual desire and in all repressed affective tendencies see the cloven hoof of sex, the whole of psychoanalysis, as a method of treatment, becomes a meaningless hocus-pocus. Under these circumstances, there is no scientific justification for calling an examination an »analysis«. It resembles fishing in troubled waters, in which the angler is sure beforehand of what he will find on the hook, since he has fastened it there himself. *Allers*[1]) has characterised the way in which the Freudians have proved their conclusions by a similar metaphor. They contend that nobody is able to judge of psychoanalysis unless he has tested its method himself. To this *Allers* replies: »If a man comes to me saying 'I have found chlorine in this substance' and, when I want to know how he set about it, answers, 'Well, I dissolved it in diluted hydrochloric acid', he cannot very well expect me to make an after-test by using the same method«.

The claim to scientific accuracy made for psychoanalysis has been as resolutely dismissed by other psychiatrists, *Isserlin,*[2]) *Kronfeld,*[3]) *Hoche,*[4]) as also by *Bumke*[5]) in his recently published criticism.

In spite of all that *Freud* has written about the *Ego-ideal* and the possibilities of *sublimation,* the most serious error that impairs his doctrine is, in my opinion, *his degradation of human consciousness.* He never tires of reappraising the relation between »das Ich und das Es« and he assures us that »das Ich ist ein armes Ding«. »What we call our Ego remains essentially passive in life, we are animated by unknown, uncontrolled powers.« The opposition to psychoanalysis is, in *Freud's* opinion, deeper-rooted than is generally supposed. According to him, it originates in man's naïve self-conceit and self-importance. »Three times,« says *Freud,* »this self-conceit has been wounded in its most

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[1]) *Allers:* Über Psychoanalyse. Berlin 1922, p. 16.

[2]) In a review of *Freud's Gesammelte Schriften, Isserlin* writes: »Es ist ein ungewöhnlicher und ausserordentlicher Eindruck, den man erhält, wenn man die in diesen Bänden vereinigten Abhandlungen wieder auf sich wirken lässt. Ungemein viel Geist, bedeutende Intuition, hartnäckiges Ringen um die Wahrheit aber leider gebannt in den Rahmen einer fixierten Idee, welche alle wahre Induktion hemmt und die gedankliche Bewegung unfrei erstarren lässt.« (Centr. Bl. f. die ges. Neur. u. Psych. Bd. 42). In the same manner *Kronfeld* appreciates »den Wert Freudscher Ideen als geistvoller Anregungen«, but adds: »Mit der Wissenschaft und ihren Masstäben sachlicher Strenge hat die Lehre nichts zu tun.«

[3]) *Kronfeld, Arthur:* Über die psychologischen Theorien Freuds und verwandte Anschauungen. Leipzig 1912. P. 119.

[4]) *Hoche,* quoted after *Bumke.*

[5]) *Bumke, Oswald:* Die Psychoanalyse. Eine Kritik. Berlin 1931.

sensitive spot. First by *Copernicus,* when he proved that our earth is not the centre of the universe but only an insignificant portion of it, a drop in the ocean, a grain of sand in the Infinite. The second time, when *Darwin* and *Wallace*[1]) showed man's descent from the animals and thus swept away his prerogative of creation. And finally, »Human pride has suffered its third and most poignant outrage at the hands of modern psychologic research which tends to prove to the Ego *that it is not even the master of its own house, but has to be content with scanty information of what happens unconsciously within its mental life.*«[2])

Thus *Freud* places himself as the third in the succession of men who have proclaimed the truth to mankind and pronounces the last weighty argument in favour of the insignificance of man. And yet one must wonder whether he has really ranged his own consciousness and its inspirations along with all the valueless dicta of »scanty information« which proceed from »das Es«. If *Freud* is right, what then would the message of an apostle of truth be worth? An inspiration drawn from the »scanty information« of instinctive life, from the sexuality of an aging man! Under such circumstances we could not attribute to his words the weight of a grain of sand.

Unfortunately, *Freud,* in his attempts at a psychological application of *Darwin*'s theories, is far more Darwinian than Darwin himself. It is evident that he disregards epistemological considerations and so is liable to turn an intellectual somersault of the kind indicated above. In whatever light we view his words, they are with equal facility shown to be nonsensical, and if his disdainful revaluation of human consciousness impresses his readers unpleasantly, it is not because it wounds their »naïve self-conceit« but because it violates all logical reasoning. Hence, when *Freud* within the field of psychology places

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[1]) When *Freud* mentions Wallace among those who have »wounded the self-conceit of mankind«, he falls into gross error. Alfred Russel Wallace differs radically from Darwin precisely in the question here concerned. It is true that, like Darwin, he regards the development of man's bodily organs, including the nervous system and brain, as having an animal origin. But on the other hand, he finds it preposterous that man's intelligence, moral qualities and ideal aspirations should be explained as owing their origin to a natural selection and a gradual development out of animal qualities. The faculties of a loftier nature which meet us in civilised man are still lacking in savage races and primitive men. Wallace, then, is of opinion that a higher intervention has taken place which justifies our belief in a more spiritual origin of human nature.

[2]) *Freud, Sigm.:* Vorlesungen zur Einführung in die Psychoanalyse (Kleine Oktav-Ausgabe) p. 301. The italics are mine.

himself on a level with *Copernicus* within natural science, he forgets that this position is already occupied by a greater authority. I of course refer to *Kant*[1]) who has once for all rehabilitated human consciousness and placed it outside the phenomena of physics.

In Chapt. XI, I stated my opinion that, according as the cortex cerebri develops and is differentiated for higher tasks, the evolution of volitional life can be followed from the primitive stage of instinct to the higher forms of conscious action. The same rule applies to human intelligence, and here consciousness can lay claim to the same sovereignty.

Now it is certainly true that the development of the cortex began at a relatively early stage within the animal series, but even in the higher animals it only contains the motor, sensitive and sensory centres of projection which, supported by an organ for associative possibilities growing between these centres, have taken over the responsibility for the demands of the instinctive life located in the midbrain. From the primary stations in the midbrain the leadership is transferred to these cortical centres, and a greater precision in the power of the higher animals to adapt themselves to the outer world provides them with ever more reliable weapons in the struggle for existence. But, be it noted, the central element in the animal soul is instinctive life, and its substratum is the mid-brain. The integrant cortical parts, the centres of projection as well as of association, in the higher animals, too, entirely and exclusively serve instinctive life.

In man the case is different. Comparative anatomy as well as the study of embryological development show that although his brain is built on the same pattern as that of animals, the final crowning of the structure is now completed. And, with this, evolution has taken a step forward which Freud overlooks. His view, anatomically expressed, is founded on the assumption that the mid-brain is still dominant. As we have attempted to show in this work, he is right *to a certain extent,* as far as neuroses and mental disease are concerned. But with regard to normal psychology his doctrine is faulty. The characteristic feature of normal man is the predominance of the cerebral cortex.

The principle of morphologic repetition unveiled by comparative anatomy, and its completion with the development of the cerebral cortex in man, have their parallel in the instrumentation of mental life. Each integrant part of the nervous system has at its disposal, as it were, its own strings which, considered phylogenetically as well as ontogenetically, are retained also in man. In the foregoing we have shown that this even holds true with regard to the mid-brain as the organ of instinctive life and the affects. But with the completion of the cortex the mental instrument has become stringed for higher performances, and man has other means of expression at his disposal than purely animal ones. With the continued development and maturation of the association centres of the cortex a new element has been added. These cortical organs of association have an incomparably greater compass in man than in the highest animals. Thus man's consciousness has become

[1]) Cf. Chapter II, p. 59.

his highest faculty. *The gloom which probably reigns within the mental life of even the highest animals, is transmuted in man into the clearly conscious visibility which has created in him an inner world, wide enough to enclose not only his own person but, what is more, the whole universe.*

Summing up, it may be asserted that consciousness is the seat of the highest faculties of the human mind and of its most decisive personal forum. In this work, it is true, I have given exhaustive proof of the existence of abnormal conditions — in neuroses, mental disease and cases of arrested cerebral development — where we have reason to say that »the Ego is not master of its own house«, but it is an absurd generalisation of these observations from mental pathology, when Freud, as a normal experience, maintains the statement that »the Ego and consciousness are nothing but miserably insignificant appendices to »das Es«. Nor is human consciousness characterised by the *passivity* which Freud ascribes to it. On the contrary, consciousness is, metaphorically considered, the stage and point of departure of mental dynamics at first hand. The »Ego-Ideal«, if we are to use this mode of expression, always has its dwelling-place in consciousness. Everything pertaining to higher human qualities originates and is planned here, thus *also the censorship*. But becoming consciously framed and through consciousness mentally introduced it may gradually be taken over by »das Es« i. e. the unconscious. In other words, it turns into instinct and habit, and as an interest-toned impulse is incorporated as second nature in civilised man. Though involuntary and subconscious, it regulates our thoughts and our acts. Like the manifestations of volitional life the intellectual and moral faculties, too, are partly mechanised. (Cf. p. 278).

Thus in the human mind a never-ceasing dynamic mutuality and correlation goes on between »das Ich« und »das Es«. And this is just as much the case in ordinary thinking as in inspiration and intuition, though the unconscious activity in these phenomena seems much more evident. Nor is there any difference in those mentally deranged forms of thinking which result in neuroses and insanity.

As already stated, *repression* is not a phenomenon exclusively connected with the development of neurosis and hysteria. It plays a part in every form of thinking, normally as well as pathologically. Whenever a strongly feeling-toned conception or thinking process, which for a time has followed its course in consciousness, is handed over to »das Es«, it may undergo a favourable or unfavourable (inopportune) development there before reappearing in consciousness. The former is the case in the rather surprising phenomena of intuitive intellec-

tual activity which we call inspiration, the latter may be a stage in the evolution of neurosis. When again confronted with the Ego, the favourable conception may be accepted, whereas the unfavourable one is disapproved of and rejected. The disapproval being of an opportune nature, the inopportune thoughts or instinctive demands are again and again repressed in the development of a neurosis or psychosis. But often such *mental rumination* is not excluded from the conscious observation of the patient himself. A striking »example of this ruminant interaction between »das Ich« und »das Es« is afforded by the early stage of delusional insanity (chronic paranoia), but in cases of neurotic obsession also, the evolution to a certain extent lies within the reach of consciousness. I here refer the reader to chapter X and to what has been said about the most characteristic form of repression, the opportune (hysterical) amnesia. Finally there is, I think, a marked difference in the tendency to unconscious thinking and repression phenomena between the two temperamental types of mental constitution, *the schizoid* and *the cycloid*. In primitive man as well as in the schizoid type in general, a natural turn for personal splitting and unconscious activity is more obvious than in types of a cycloid character.

Yet in spite of constitutional differences the Freudian statement that »'das Ich' nicht Herr ist im eigenen Hause« has no sense except in cases where a deficiency in man's conscious faculties brings about a pathological derangement in the interaction between these faculties and instinctive life.

By giving to the word *libido* a wider meaning than it has in current usage, *Freud,* in agreement with *Jung,*[1]) has somewhat modified

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[1]) Between *Freud* and his disciple *Jung* there is a noteworthy difference in this respect. True, Jung has accepted Freud's doctrine of the Œdipus complex, but, according to *Jung,* the impulse in which this complex reveals itself, for instance the desire of the adult to escape from the unrest and deceptions of this world to a mother's arms, is not a manifestation of a sexually tinged incestuous yearning. More probably it shows a distressed soul's need for rest, warmth and consolation, in so far as it is not, as the Norwegian author *Richard Eriksen* thinks, a symbolical way of expressing the religious person's irrational impulse to be born again. In the beautiful *cult of the Virgin* practised in the Roman Catholic church, both these forms of a psychical need are undoubtedly satisfied, without any of them involving a longing of a sexual kind.

The concept »libido« may possibly be misunderstood as used by Jung, but hardly as used by Freud. »Alles geistige und religiöse ist nur verwandelte Sexualität.«

the onesidedness of his theories. In the word *libido* which in current usage has a sexual connotation in the purely animal sense, *Freud* also includes the impulse to devotion of a more mental nature which exalts a man's strivings and idealises the bonds between human beings. But, quite apart from the inaccuracy, such an extension of the sense of the word *libido* easily causes serious misunderstanding. Thus when *Freud* and his followers, under the heading of *homosexuality,* group together bodily passion and purely mental attachment, sexual desire and friendship between persons of the same sex. Even if we admit that the boundaries between friendship and love *may* be undefined, more frequently between women than between men, there is no reason whatever for generalising these border-cases and casting suspicion on friendship by dragging it down into a region which ought always to be considered abnormal. One does not give a new name to a thing, even though it is made more palatable by an addition. A steak is a steak and no one would think of calling it »onion« or »pepper«, even if the addition of these ingredients make it more savoury. And in the same manner, friendship is *friendship,* and it will certainly not become a homosexual relationship even in cases where an undifferentiated sex life, like an unconscious undercurrent, lends to it its youthful charm.

The line drawn by *Spranger*[1]) between *erotic love* and *sexual desire* is here appropriate. Friendship in the years of youth *may* be erotically tinged, but only a man under the influence of an imperative idea will make the diagnosis »homosexuality« in such cases. I stress the term »diagnosis«, since homosexuality should always be considered an abnormality, whereas the friendships in question are as innocent as they are normal.

I have previously dwelt upon this detail of the Freudian doctrines and the harm it has occasionally done. The movement among the young which, especially in Germany, under the name of the *Wandervogelbewegung,* has for its object the founding of boys' organisations for promoting a healthy open-air life by walking tours has been stamped by an orthodox Freudian as masked homosexuality.[2])

A pedagogue has indeed reason to be on his guard against certain dubious characters who ingratiate themselves with the young for transparent purposes, but it is an act of misguided zeal to stamp publicly in

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[1]) *Eduard Spranger:* Psychologie des Jugendalters. Leipzig 1928.

[2]) *Hans Blüher:* Die deutsche Wandervogelbewegung als erotisches Phenomen. Ein Beitrag zur Erkenntniss der sexuellen Inversion. Berlin 1912.

a pamphlet as suspicious a youthful movement of this kind, sound in itself. This is to sully the young people's imagination, to quell their enthusiasm and needlessly call up fears which are surely groundless.[1])

Dream interpretation. Now when a physician who has been equipped in the Freudian school, and has without protest adopted the doctrine of infantile sexuality, is to carry out psychoanalysis of a neurotic patient, the object is to fetch up out of the unconscious, as out of a deep well, the repressed memories. This may seem a hazardous proceeding since the well goes deep down into the patient's early infancy. It is, then, if it is a case of hysteria, a good thing to know that there is sure to be an Œdipus complex hidden in the slime at the bottom of the well, and even if the patient raises objections and the complex attempts to wriggle away like an eel, *dream interpretation* affords a net in which, sooner or later, the ugly fish will be caught without fail. *Dream-interpretation* is an element in the practice of psychoanalysis which will help to overcome all difficulties. For, though the repressed instincts with their hidden desires cannot be prevented from revealing themselves in the shape of dreams, yet they are forced by the vigilant Censor and an »advising« part of its organisation called by *Freud* »das Vorbewusstsein«, i. e. the »preconscious«, to cover their nakedness with a *symbolic disguise*. The care with which the preconscious provides for the proper disguise of the dreams also, according to *Freud*, serves another purpose. For by its agency sleep is protected, since it averts all disturbing, brusque, straightforward elements from the dreamer. *Freud* considers that he has penetrated the symbolism of dreams and gives us the key to it in a number of clearly worded indications. The ease with which *Freud* reads the dream symbols is evidently due to the fact that he looks at everything from a sexual angle. The number of the things hiding behind the masquerading of these dream scenes is quite small, four or five objects in all; the male and the female genitalia, the normal gratification of sex desire or its satisfaction in a different manner, and so on. Long and narrow objects, such as umbrellas, church-spires, Zeppelins, are symbols of *one* thing; hollow objects, or such as are capable of acting as receptacles, are *opposite* symbols, and so on. *Freud*'s spe-

[1]) I have already in an earlier chapter (p. 393) mentioned the sharp criticism by *William* and *Clara Stern* directed against the Freudian psychoanalysis of children.

culative fancy in this respect is caricatured science. The man who starts on a flight of ideas in this manner and leaves it to associations of similarity and contiguity to direct the course, may arrive *anywhere* or *nowhere*. There are not two things, be they ever so incongruous, between which it is impossible to build a bridge by the aid of meaningless rigmaroles of association. The stock of words will never run short, *so long as one knows one's goal.* And *Freud* knows it. If it should be necessary — and I have already pointed out that this is very often the case — to search for the cause of a hysteria or a neurosis in circumstances entirely different from repressed sexual desire, well, then one need merely look about for another dream symbol. But if the dreams again happen to be concerned with umbrellas, spires, bags or cigar boxes, there is no difficulty whatever in rushing towards the goal by another associative path if one is only sure where one wishes to go or, in other words, if one has a *preconceived opinion.*

The following will serve as an example: If a hysterical prisoner committed for trial should dream that his physician took away his umbrella just as he was going out in a violent rain-storm, it may be a plausible interpretation — plausible in the sense upheld by psychoanalysts — to tell the man in question that his dream means that his attempts at simulating mental disease will fail (umbrella = protection = assistance in a resort within reach = simulated mental disease, which is taken away from him, i. e. seen through by the physician).

Briefly stated, we have here entered upon a mode of reasoning by which we may as easily prove the existence of an Œdipus-complex as the thesis that »the moon is a green cheese«. In psychoanalytical literature, and not least in *Strömme*'s book, widely read in Scandinavian countries, there are plenty of similar examples! The objection may perhaps be made to my argument that there is after all a difference between imaginary cases, such as the above, and those drawn from real life. The objection does not touch the main point. The main point is *Freud*'s belief in the truth of the symbols. The evidence for the results arrived at in his *»Traumdeutung«* is entirely valueless because it is not unprejudiced. The uncritical belief in the all-importance of sexuality is present to his mind as a *causa finalis.* Thus he arrives where he wishes to arrive. It is an easy thing to create symbols. Insert any other article of faith into your reasoning and start out on a flight of ideas in the psychoanalytical style, and it will be extremely simple to arrive at a symbolic confirmation of any kind of surmise. This is what I have wished to point out.

A characteristic example of the lack of criticism within the Freudian school is found in a remark by the psychoanalyst *Fr. Wittels* about *Freud*'s earlier disciple *Alfred Adler*. The latter cut himself off from the esoteric Freudian set in 1911, and has followed his own course since his apostasy. *Wittels* writes: »*Adler* was one of *Freud*'s most prominent disciples. He had only one failing, he was unable to analyse. The phenomena of unconscious mental life were difficult of access to him. His dream interpretations were often easily corrected by uninitiated persons, and while he occupied himself with the patients, he was rarely able to penetrate to those depths which *Freud* and many of his disciples constantly reached. I do not believe *Adler* to be lacking in gifts. He *did not try*, and therefore he failed.« It may be added that *Adler* was well aware of the master's onesidedness already at this period. He differed from him on many points to which I will return later. The consequence was that in his dream interpretation he arrived at a symbolism entirely different from that approved by *Freud* and his orthodox followers.

In German as well as in English-speaking countries, Freud's doctrine of dream interpretation has won eager admirers, but at the same time it has met with severe criticism from other quarters. Among his adherents, after the falling away of *Adler, Jung* and *Steckel* — though as a dream interpreter the latter may be regarded as a Freudian even after his apostasy — we may mention *Silberer,* who died young, *Sadger, Groddek, Rank, Abraham, Reik* etc. With the exception of *Bleuler* and *Schilder,* the majority of psychiatrists are inclined to criticise. This made Sadger write already a long time ago: »If a person otherwise endowed with common sense and a normal intelligence does not understand the least of the secrets of mental life unveiled by Freud, he is either a professional psychologist or a psychiatrist.«

Among »professional psychologists« may be mentioned Dr. *A. Wohlgemuth,* whose »Critical Examination of Psycho-Analysis« (1923) undoubtedly tends to support *Sadger*'s opinion with regard to Freud's opponents. In Chapter III he deals with the Freudian psychology of »dreams«.

Freud builds up his doctrine of dream-interpretation on what he calls »the fact of dream distortion« (Tatsache der Traumentstellung). There are of course dreams of a simple nature whose significance is clear, but these offer no special interest to psychoanalysts. The distorted dreams, on the other hand, need an interpretation, because they are disfigured and their *manifest dream-content* has to be distinguished from *the latent* content. Most of them express a *»wish fulfilment«* and the wish that

presents itself in the dream must be an infantile one because the dream is a piece of the past life of the infantile soul. In other words the foundation in these cases is a repressed Œdipus-complex. Sometimes, when the *latent* nucleus of the dream life is the child's wish to kill his father, the veiled and tempered manifest dream may express itself as sorrow for the death of the father, while in other cases the child's incestuous fixation on the mother hides behind a more or less variegated disguise seen through by the help of the Freudian symbols.

About these »Tatsache der Traumentstellung« Dr. *Wohlgemuth* eagerly exclaims: »But where have we a fact? Where? Where a proof? Nowhere! Nowhere in the whole of the vast amount of psychoanalytic literature is there a scientific proof, not a shred of one!« And in another connection he adds: »If the patient is told by the psychoanalyst that he, the psychoanalyst, has been successful in unmasking, in unearthing, an infantile wish — — — — — — — — then there are two possibilities: the patient may admit that he may possibly have had such a thought, remembering or not remembering it, or he may deny that he ever had the wish, or that even the thought ever occurred to him. If, then, he admit it, there is the proof, if he deny it, this very denial indicates a resistance, and the stronger the denial, or resistance, the greater the proof of the exactness of the analysis. Therefore the analysis is correct in every case. Q E. D.«[1])

The Freudian doctrine modified and completed by Adler and Jung.

In *Fr. Wittels'* book on *Freud*[2]) one may read an interesting but rather indiscreet description of the esoteric spirit prevalent among the circle of young students of psychoanalysis who gathered around the master at the beginning of this century.

For psychology it was an undeniable advantage that the harmony within this closed coterie dominated by Freud, was soon disturbed through the independent attitude of *Adler* and *Jung* and their final desertion. *Adler* forms a satisfactory complement to his teacher's theoretical onesidedness. *Jung*, too, religiously minded as he was, seems at an early period to have opposed Freud's limitation and his theory of the

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[1]) The unreliability — to say the least — of dream interpretation is also seen, according to *Wohlgemuth*, in *Freud's* analysis of his own dreams. For unknown reasons, *Freud* has not in this instance made use of his otherwise »infallible« symbols. Wohlgemuth quotes an example of such a dream which has been interpreted by Freud. He criticises in a very drastic manner this interpretation which he finds arbitrary. Why not also in this instance apply Freud's well-tried symbols? If this is done, Freud's own dream reveals an Œdipus complex, a result quite different from that arrived at by the master himself.

[2]) The French translation of *Wittels'* book available to me bears the title: »Freud, l'homme, la doctrine, l'école«.

predominant importance of sexuality as a basis for life philosophy. The extended concept of the *libido,* constantly endowed by Freud with the traits of an earth-bound Caliban, was raised by *Jung* to a nobler level, and took the shape of an inspired *Eros* as conceived by Socrates and Plato.

With his doctrine of the importance of *»the feeling of inferiority«* *Adler* has extended the range of psychoanalysis and brought the doctrine as well as the effectiveness of the treatment a step forward. He has himself given the name, *»individual psychology«,* to this extension of the range of the psychoanalytical doctrine. However, in accepting this term, the share taken by *Jung* in the completion of the Freudian teachings must not be forgotten. Still, since Jung's contribution, as already mentioned, is mainly a spiritualised revision of Freud's sex-philosophy, I will confine my description to a few words concerning the doctrine propounded by *Alfred Adler.*[1])

It is true that *Adler,* like *Jung,*[2]) allows a wide scope to sexuality, but at the same time he asserts that sexual symptoms in the neuroses are often secondary. They indicate a direction which the sense of inferiority will easily take, but what *Adler* calls a primary complex has in itself nothing to do with sexual life. The sexual conflicts are means, not causes. »They become a most expressive language by means of which the neurotic convinces himself and others that he is an inferior individual.« The primary suggestion arising from a feeling of inferiority is the *protest,* the *instinct of compensation,* that is, the often involuntary and unconscious methods, adopted in a thousand different ways, of rehabilitating the inadequate Ego and creating a compensatory psychic structure, a something in which wounded and unsatisfied ambition may recover poise and security. When other and better expedients fail, neurosis, or, if the worst happens, mental disease, will set in (cf. p. 224). In the symptoms one then recognises a large number of possibilities for giving expression to the struggle for compensation of the individual who is either physically or mentally inferior — often both at the same time — whether he has failed socially or has been balked and disappointed in other respects. But the »protest« is far from developing morbidly in all individuals who suffer from inferiority complexes. Quite the contrary. It is *Adler*'s great merit that his theory has a universal

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[1]) Cf. p. 224.

[2]) See *Jung's* extensive mythological treatise: *Wandlungen und Symbole der Libido.* Jahrb. f. psychoanalyt. u. psychopathol. Forschungen, Bd. III and IV.

human application. While *Freud*'s much-debated discovery, the Œdipus complex, is of no interest whatever for normal psychology, *Adler*'s points of view are more instructive and fruitful. The enormous influence of an inferiority complex on the personal development of many an individual cannot be denied. The imperative need to disguise and compensate for some physical defect or mental incapacity through intense self-assertion in another direction has been an incessant spur in the lives of many people. The latent possibilities of development thus receive a constant stimulating influx of strength and nutrition, and something corresponding to *Freud*'s »sublimation« will be enacted by means of psychic elements, fundamentally distinct from sexual factors.

Thus many cases of an interesting mental development of human traits and qualities, in a normal as well as a pathologic direction, may be traced back to the effects of this impulse of compensation. The frequent conspicuous assurance and self-confidence of the hunchback, the peculiar ready wit and characteristic mentality of the court-fools are well-known examples of the instinctive need to alleviate the inferiority complex and identify oneself with a second nature which brings compensation and satisfaction. May not Demosthenes' stutter have contributed essentially to making him the most splendid orator of his time? And, on the other hand, is it not possible that the dwarfed arm of William II may have had a heavy share in the development of certain traits of character, unfortunate to his country?

In connection with Adler's doctrine of the compensation impulse and as a complement to the Freudian theory of sublimation, I will remind the reader of the frequent experience that as a rule suffering will promote a person's mental development far more than success and happiness. Mental conflicts and prolonged emotional tension are of course often the causes of neuroses, but under more fortunate circumstances they promote mental growth in a much higher degree than inward security and well-being. The compensation impulse is, generally speaking, an instinctive striving towards relief and poise, and from this point of view Adler's theory is extensively applicable. An examination of the production of creative imagination in poets and writers leads to the same result as does the analysis of neuroses, hysteria and insanity. Hence the psychoanalysts are right when they find a correspondence between, on the one hand, those cases where the inner tension produced by unsatisfied desires and mental conflicts leads to mental progress by sublimation and, on the other hand, those cases where the possibilities of sublimation are lacking. In these latter cases the striving towards balance and relaxation will fail, giving place to a disintegration of feelings and thoughts which results in disease. In the first-mentioned

cases, the intellectual disposition is the primary conditioning factor, and innate gifts not rarely afford protection against disease by facilitating the sublimation. This, however, does not preclude that genius and neuroses often occur together. Still there have surely been many writers and poets who, like Goethe, have had the experience of being relieved by the aid of their pen from the excess of tension and restlessness. And it is with regard to this sublime form of »abreaction« that another psychoanalyst, *Pfister*, speaking of gifted people, artists and poets, gives the advice that complexes should be left alone or at least treated with caution. Adler's point of view may well arouse the misgivings of a true Freudian. Keeping in mind the whole import and wide application of the compensation idea, it may be questioned whether psychoanalysis, with the physician's claim to confidence in the degree insisted on by Freud, may not in many cases of a neurotic nature be considered injurious at the outset. Anyhow it is of the utmost importance in the exceedingly complicated cases with which the physician has to deal, above all to avoid preconceived opinions.

In this respect Adler's new departure has caused psychoanalysis to develop towards more unprejudiced scientific research. With the one-sided sexual theory of the Freudian school, examination and treatment become merged in each other. And this is the point where not only the unreliability of the theories but also the risks of the therapy are rooted. Nothing but a careful, really individualising examination can settle whether psychoanalysis is practicable as a mode of treatment. Undoubtedly, there are cases where the self-surrender implied in such treatment should be avoided.

As an illustration of these remarks I borrow the following example from our great authoress *Selma Lagerlöf:*

> In one of her short stories *Selma Lagerlöf* has pictured a man, who sacrificed his happiness to the woman he loved. He was married and contented with his life, but one day he found reason to believe that his wife loved another man, and not wishing to stand in the way of her happiness he stole away from his home. Everybody, even his wife, believed him to be dead. No one but himself knew the secret of his heroic act, and in his solitude this silent knowledge yielded a sense of power which furthered his spiritual growth. He came into touch with the Salvation Army and grew into an inspired preacher who carried away the rapt congregations. But the secret often burnt on his lips, and one day he succumbed to the temptation of making his sacrifice the subject of a religious discourse. He betrayed himself then, but the very moment he had done so he felt how the richness of his soul melted away. Inspiration and power were taken from him, and the gift of the Word was gone for ever.

Whether this story is founded on a concrete fact, I do not know. At all events there are experiences of the same kind which may be worth taking into account by the psychoanalyst. They indicate to us the existence of an *art of living* whose principles are quite contradictory to the demand for passive self-surrender insisted on by psychoanalysis.

How does psychoanalysis work? The technical procedure, intended to reduce the patient to a passive condition in which *unresistingly he gives a free vent to his associations,* cannot in itself be effective. The conviction I have already expressed, that »repression« is a less frequent phenomenon than Freud asserts it to be, gives me reason for assuming that the success of the treatment rests on quite different grounds than its power of »making the unconscious conscious.« What is called *»abreaction«* will certainly not be effected simply because a repressed »complex« is raised into consciousness by means of questioning, dream interpretation, or other conjuring tricks. If it were really so, well, then all conscious complexes would disappear of their own accord, as decidedly they do not. An abreaction can only be induced by the help of the physician's influence. The more supported by his authority the patient is, the more successful will the physician be, when dealing conversationally with the analysed person, in making the complex loosen its grip. For we are not asked to believe that the complex simply evaporates like a kind of marsh gas, which, in spite of every resistance, is forced to rise to the surface out of the subconscious. Surely this is not Freud's opinion, and we should do him a great injustice were we not to recognise the decisive importance which he himself attaches to the patients' confidence in his physician. He gives the most detailed advice and information about the method the psychoanalyst must adopt, during the various phases of the extremely delicate treatment, in order to be able to carry it through satisfactorily.

Pierre Janet long ago established the fact that psychoanalysis, like so many other methods of treatment, acts by way of *suggestion.* It is to-day what mesmerism and animal magnetism were in times of old. This verdict, however, even though the Freudian theories may to a greater or smaller extent prove untenable, does not give psychoanalysis its due.

Freud himself admits that the effects of his therapy must be ascribed

to *suggestion*. But it remains to determine what suggestion is. Freud says of his teacher *Bernheim* of Nancy, whose book on Suggestion he has translated into German: »Bernheim could never say what suggestion was, nor how is was brought about.«[1])

Freud claims to have discovered the secret of suggestion in his theory of *»the transference«* (Die Übertragung). His interpretation of the process is briefly as follows: —

While the repressed complex is laid bare and becomes conscious in the course of the treatment, the fixated libido is set free and seeks a new object. The physician will become its natural object, and his female patient's tender yearnings are now fixated on him. She cannot think or talk of any one but him. His suggestive power over the patient is, then, due to this transference. It is an important element in the development of the treatment, and a necessary condition for its success. But it is likewise an essential condition that the physician, in the delicate situation in which he finds himself, *never* for a moment forgets his character as physician. He must meet the more or less plainly expressed intentions of the patient, who is longing for love, with tact and a never-failing self-control. He must explain to her that such feelings are not rare during the treatment. They are transitory, however. They belong to a stage soon passed, and will disappear of themselves. Assuming that Freud is right, it cannot of course be denied that tender emotions of a sensual nature on the part of female patients are liable to increase their confidence in a tactful psychoanalyst who is entirely actuated by his sense of responsibility as a physician. Further it seems quite probable that a Platonic love, as a divertive element, might in itself effect a cure. Herzberg[2]) thinks it possible that the patient, when she has come to feel an affection for her physician, may lay aside her symptoms simply to meet his wishes, as a shild drops a bad habit to please its parents. This more neutral reaction, pointed out by Herzberg, may of course apply to male patients as well. In certain cases, on the other hand, with female patients of a more grossly sensual type, the »transference« may necessitate a discontinuance of the treatment, as Freud himself points out. Inasmuch as the origin of the neuroses in infantile sexuality is of an ambivalent nature there is, however, nothing to prevent the psychoanalyst from adapting Freud's theory of trans-

[1]) Freud, Sigm.: Vorlesungen zur Einführung in die Psychoanalyse. Die Übertragung. 1930.

[2]) Herzberg, Alexandre: Die Heilfaktoren in der psychoanalytische Behandlung. Med. Klin. 1928. II.

ference to the different sex and mode of reaction of the patient. Both the infantile tenderness towards the parent of the opposite sex and the hatred of the parent of the same sex has its range of varying shades of feeling which, during the transference, are reflected in the patient's behaviour towards the physician. The latter then, owing to the transference, takes the place, now of the loved one, now of the hated one. But when the analysis has been carried through, and every resistance conquered, an abreaction of the emotional tension has been accomplished. The whole procedure then seems to end in a feeling of gratitude, peace, and reconciliation which, by the Norwegian Freudian *Strømme*, is compared to religious conversion. For, curiously enough, among the adherents of the antireligious Freud there are people to whom psychoanalysis has become a religious outlook on the world.[1])

How far the transference theory presented by Freud is capable of bringing greater clearness in the problem of suggestion as a psychological phenomenon than Bernheim was once able to do, I leave it to the reader to decide.

The »flavour of eroticism« which undoubtedly attaches to psychoanalysis according to the Freudian principles will disappear of itself as soon as a wider scope is given to the theory of the neuroses. For a perfectly objective and unprejudiced analysis which avails itself of all the experience hitherto gained, by *Jung* and *Adler* as well as by

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[1]) As I pointed out in my introductory remarks, it is quite natural that psychoanalysis should be regarded by many as a philosophical creed rather than a scientific theory. Nor is it perhaps difficult to understand that one or other of Freud's followers has overlooked the attitude of the master towards religious problems since he himself has long shown doubt and vacillation in these questions, as *Edgar Michaelis* has tried to show in his interesting »Die Menschheitsproblematik der Freudschen Psycho-analyse, Urbild und Maske«, 1925. The fact that Freud the older he has grown, has tried more and more to conceal his original more ideal nature behind a mask of pessimism and contempt of mankind, is due according to Michaelis to external adverse circumstances. And as a matter of fact, Freud's doctrine of the relation between »das Ich« and »das Es« implies a *bipolarity* which presents possibilities for a development in diametrically opposed directions. He himself, owing to a purely subjective attitude, has happened to pause at »das Es«. *Jung*, on the other hand, like the Norwegian *Richard Eriksen*, has gone in the opposite direction. Thus a sharp line is drawn between the earthbound life of the instincts, and the higher aims of the Ego which have found their expression in the Eros concept of Platonism. These higher aims establish the ascendancy of the Ego over »das Es«, an ascendancy which Freud, curiously enough, has lately disavowed in spite of his former views of »sublimation« and »the Ego-ideal«.

Freud, will without doubt be able to dispense with the *»transference«*. The physician will then more easily gain the unlimited confidence of his patient than if he makes use of the Freudian convention in season and out of season and invariably harps on the same string.

Psychoanalysis and insanity. Freud regards the neuroses as the result of a conflict between »das Es« and »das Ich«. In the psychoses this conflict, according to Freud, is played out between the Ego and the Ego-ideal on the one hand, and the Ego and the external world on the other. The psychogenesis of the mental diseases is, in its broad features, regarded as a *regression* to a primitive stage of development. The lowering of the libidinous instinct to the level of *Narcissism*, and the *anal* and *oral* (sadistic) tendencies which have been believed to be present in the feelings and thoughts of the mentally diseased, here coincide with the decisive importance Freud ascribes to infantile sexuality.

Freud seeks to explain the refractory inacessibility to psychoanalytic treatment on the part of the mentally diseased by this regression to the infantile stage. Owing to the »Narcissistic« nature of mental diseases, every attempt at a *»transference«* meets with insuperable obstacles. The connection of the sexual impulse with the outer world (Objektbesetzung) is rendered impossible by the *Narcissistic* preoccupation with the Ego. While recognising the difficulty of access to psychiatry, which he has tried to explain in this way, Freud, nevertheless alleges that he has »succeeded in catching a glimpse of what is beyond the Narcissistic wall«.

It is a matter of course that the Œdipus complex and all the doctrines of ambivalency and the psychology of primitive peoples supposed to be connected with the complex, incessantly appear in the background in all psychoanalytical interpretations of the development of the mental diseases. Certain leading points of view are given by Freud with regard to the Ego, the Ego-ideal, and their relation to each other and to the outer world. In *melancholy* the distance between the Ego and the super-Ego is increased. The latter (which is always identical with the conception of the father) becomes a stern judge incessantly reproaching the Ego with sins. The ambivalent feelings for the father which enter into the Œdipus complex become fixed in the melancholic in a hatred which, liberated from its normal fixation (Objektbesetzung), attaches itself to the Ego. Thence the self-accusations of the patient and the resentment against his own Ego which often increase to a suicidal impulse (Narcissistic identification). In *mania* as well as in *dementia præcox* and *paranoia* the independence of the Ego-ideal is gradually reduced. Its superiority is absorbed in the

Ego, which now becomes more and more inflated with a self-complacency which easily rises to ideas of grandeur. The prerequisite for these changes in the attitude of the Ego to the Ego-ideal is always, according to Freud, the Narcissistic uncoupling from the outer world. This seems to be most conspicuous in *dementia præcox* where an extensive identification of the Ego with others, parents, brothers and sisters, etc., as well as with external objects and relationships gives rise to the self-absorption (autism) of schizophrenia. In *paranoia* the patient's relation to the outer world seems less conspicuously Narcissistic, inasmuch as the ideas of persecution, at any rate, are ascribed to other causes, if I have understood the psychoanalytic interpretations rightly. The dependence of the Ego on the watchful criticism and censorship of the Ego-ideal is projected to the outer world and so regarded as a constant, troublesome espionage and persecution. In all Narcissicism, Freud says, there is »a disposition to manifest homosexuality« and, according to *Freud* and *Ferenczi,* repressed homosexuality is often one of the causes of paranoia. The point of departure here is the view that the supposed persecutors are usually of the same sex as the patient, which is by no means always the case. Here as always, the ambivalency of love and hate is supposed to explain the intensity of the latter affect in the paranoiac. Other psychoanalysts are more inclined to interpret ideas of persecution as reminiscences of the anal-erotic stage of sexuality. Thus, for instance, Ophuijsen and Starcke,[1]) who try to show that »der Verfolger ein Stück des eigenen Kotes sei, von dem man sich nicht losreissen wolle«. (!) In other connections, especially in the analysis of certain symptoms in melancholy, elements of Sadism have been found, the infantile origin of which is supposed to be oral-erotic. This perversity is of course connected with the violence done to the mother through suckling.

The above will suffice for the reader to form an idea of the contribution made by psychoanalysis to our knowledge of the mental diseases. Before the psychiatrist has well accustomed himself to this point of view, so far from the psychiatric highways, he is startled by the speculations of Freud and his disciples. Even though I readily admit that in the expression »the Narcissistic wall« there may be a significant deepening of the corresponding term *»autism«*, I still doubt whether psychoanalysts have been able to make any valuable discovery by »the glimpse they have succeeded in catching of what is beyond this wall«.

Freud regrets that »psychiatrists do not study psychoanalysis, and that psychoanalysts see so few psychiatrical cases«. This gives me an opportunity to touch briefly, in conclusion, on the qualifications necessary for the practice of psychoanalysis.

In Norway, where Freud's doctrines are regarded with unconcealed admiration, the question whether non-professional men should be al-

[1]) Cited from *Schilder, Paul:* Entwurf zu einer Psychiatric auf psychoanalytischer Grundlage. 1925.

lowed to practise psychoanalysis has been much debated. For my own part I must urgently counsel against such a concession in the question of venia practicandi. Psychoanalysis claims to be a method for the treatment of nervous and psychically diseased persons, hence it is a matter of course that it should not be taken out of the hands of physicians to be left in those of quacks. Few methods are so exposed to further bungling by laymen as psychoanalysis. Even as practised by physicians it has developed certain aspects which, from a mental hygienic point of view have proved to be of doubtful value. What would be the consequence if any prattler were allowed to lay out this bait for diseased minds? According to my own long experience, it may cause serious harm to a mental patient if he happens upon a psychoanalyst without psychiatrical training. I could mention several cases among my colleagues in which the psychoanalytic treatment has been just as misplaced as if they had employed a remedy in a physical disease without assuring themselves of the nature of the disease or its diagnosis. Thus an essential condition for a psychotherapeutical practice should be, not only that the psychoanalyst is a physician, but also that he is an experienced psychiatrist.

LITERATURE.

Breuer, Jos. und *Freud, Sigm.:* Studien über Hysterie. 1895. *Freud, Sigm.:* Die Traumdeutung. 1900. Jahrbuch für psychoanalyt. und psychopath. Forschungen. Red. von *C. G. Jung.* (Herausgegeb. von *Bleuler* und *Freud),* B. I—V. *Freud, Sigm.:* Gesammelte Schriften. Internat. Psychoanalyt. Verlag. *Freud, Sigm.:* Kleine Schriften zur Sexualtheorie und zur Traumlehre. Internat. Psychoanalyt. Verlag. 1931. *Freud, Sigm.:* Schriften zur Neurosen-Lehre und zur psychoanalytischen Technik. (1913—1926). Internat. Psychoanalyt. Verlag. 1931. *Freud, Sigm.:* Vorlesungen zur Einführung in die Psychoanalyse. Internat. Psychoanalyt. Verlag. 1930. *Freud, Sigm.:* Totem und Tabu. Einige Übereinstimmungen im Seelenleben der Wilden und der Neurotiker. IV Aufl. 1925. *Freud, Sigm.:* Das Unbehagen in der Kultur. 1931. *Hitschmann, Eduard:* Freuds Neurosenlehre. 1911. *Siebert, Karl:* Freuds Theorien in ihrer Entwicklung. 1928. *Bratt, Iwan:* Neuros-Problemet. Stockholm. 1930. *Strömme, Joh.s:* Nervositet. Svensk Övers. 1925. *The same author:* Sjeledypets Sprog. Oslo. 1932. *Jørgensen, Carl:* Psykoneuroser og Psykoterapi. Kritisk Oversigt. København. 1932. *Blondel, Ch.:* La Psychoanalyse. Paris. 1924. *Allers, Rud.:* Über Psychoanalyse. 1922. *Kronfeld, Arth.:* Über die psychologischen Theorien Freuds und verwandte Anschauungen. Systematik und kritische Erörterung. 1922. *Bumke, Osw.:* Die Psychoanalyse. 1931. *Zweig, Stefan:* Freud. La Guérison par l'esprit.

Trad. p. Hella et Pary. *Wittels, Fr.:* Freud. L'homme, la doctrine, l'école. Trad. p. Herbert. 1929. *Wohlgemuth, A.:* A critical examination of psycho-analysis. 1923. *Salewsky, W.:* Die Psychoanalyse Sigmund Freud's. 1931. *Wach, I., Kronfeld, A.* and others: Das Problem der Kultur und die ärztliche Psychologie. Sechs Vorträge. 1931. *Schmidt-Mödling, W.:* Der Ödipus-Komplex der Freudschen Psychoanalyse etc. *Eriksen, R.:* Erotikk og Livsanskuelse. Oslo. 1928. *The same author:* Eros. Psychoanalyse og Religion. Oslo. 1930.

See also the footnotes.

CHAPTER XVIII.

TREATMENT OF THE MENTALLY DISEASED FROM THE POINT OF VIEW OF CRIMINAL AND CIVIL LAW.

An important consideration in the treatment of the mentally diseased is their position in the eyes of the law, and the manner in which civil and criminal legislation views them and their acts.

I. *Criminal responsibility in relation to mental disease.*

It is a well-known fact that the mentally diseased have often proved themselves pernicious to society, committing crimes or offences while labouring under mental aberration or from morbid motives. Hence it will often happen that a person charged with crime is found upon examination to be mentally disordered, and therefore exempt from punishment in the eyes of the law. He is then placed under proper care and treatment by competent authorities and kept under such supervision that society will in future be protected from his criminal tendencies.

For those cases which Swedish authorities on criminal law *(Thyrén, Westring)* sum up under the term *total abnormality*, and among which, besides the mentally diseased, imbeciles also are included, Swedish criminal law contains the following statute (chapt. 5, § 5):

»An offence committed by a person out of his senses, or one deprived of his reason by illness or senile debility, shall be exempt from punishment. — If anybody, by no guilt of his own, happens to fall into such mental confusion as not to be conscious of his conduct, an act committed by him in this state of unconsciousness shall be exempt from punishment.«

Provisions concerning the determination of the state of mind of a person charged with crime were communicated in a Royal Letter to the

Collegium medicum (Commission of Health) as early as March 9, 1826. This letter directs that »if a person charged with crime is alleged to be insane or to have been insane when committing the offence, and the question of his being excused from criminal liability is raised on such grounds, the court shall carefully observe the existing provisions with regard to criminal cases, in order to gain the necessary evidence and, after having procured a physician's certificate as to the state of mind of the accused, hand over this certificate together with the report of the trial to the Commission of Health« (now the Medical Board) in order to obtain an opinion on the case before passing judgment«.

From a calculation made by *G. Schuldheis* for the period 1865—1894, we find that in Sweden, in spite of the provisions in the Royal Letter here quoted, no less than 1,702 psychically abnormal or insane persons were sentenced without any medical authority having been heard, and that the presence of mental disorder had been overlooked by the courts in 69 % of the cases. For the following period of twelve years, 1895—1906, *O. Kinberg* carried on these investigations and proved that in at least 15.3 % of the whole number of condemned persons the courts had failed to detect mental disease or psychic abnormality. In order to prevent such inadvertence in cases of serious crimes, the Riksdag of 1908 moved that the advisability be considered of bringing in a bill providing for the compulsary mental examination of a person sentenced to death or penal servitude for life in one of the inferior courts. In the new Swedish »Law for the Insane« (1929) more satisfactory and detailed ordinances are given for this examination in every doubtful case.

Besides total abnormality, *semi-abnormality* and *reduced accountability* also have been made the subject of legislation, and Chapter V, § 6, of the Swedish criminal law still in force contains the following provisions:

»If any-one who has committed a criminal offence is found, through bodily or mental disease, senile debility or some other state of confusion contracted through no guilt of his own,[1]) to be of unsound mind, though he cannot be regarded as excusable from punishment, the provisions of § 2 shall apply to him with respect to capital punishment (that it is to be reduced to penal servitude from six to ten years), and in that case, other punishment also may be reduced according to circumstances to less than what should generally follow upon the crime.«

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[1]) In both the paragraphs of the criminal law here quoted there is the reservation that the accused must have fallen into a state of mental disorder »by no guilt of his own«. Westring writes: »This clause will have been introduced mainly in order to prevent alcoholic intoxication from being used as a plea for exemption from punishment.« The same legal authority regards the clause in its absolute wording as too severe, and adds: »That a person who has deliberately thrown himself into a state of mental confusion for the purpose of committing a crime

That a mentally diseased person who has committed a crime should be confined in an asylum instead of being punished for his act, must certainly be regarded as the most reasonable mode of treatment. Public security need not therefore, as has been feared in certain quarters, be endangered through psychiatric authority. That this authority, as exercised by the Swedish Medical Board, judges impartially, and that it is by no means, as many like to believe, particularly anxious to declare every person who is referred to its judgment morally irresponsible, is proved by the result of its activity during the decade 1911—1920. Out of 1,127 cases that came under observation, 683 were declared irresponsible, 122 of reduced accountability, and 322, or 28.5 %, accountable in the sense of the law.

The cases which are especially apt to be overlooked owing to the frequently layman-like conception of the judge are above all those belonging to the forms (and stages) of mental disease which, without visibly deteriorating the patient's intellectual life or intelligence, yet have fatally altered his emotional life and deprived him of the capacity for morally controlling his behaviour and his acts. As is well-

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in this condition, should be punished in the same way as if he had been quite normal, is perfectly just. But if this is not the case, our sense of justice seems to require that a more lenient view be taken of the crime when mental confusion has reached the degree which is here presumed. Even during the preliminary work on the criminal law now in operation (1840), the question was raised what course should be adopted if the culprit, by consuming alcohol, had thrown himself into such a state of mental confusion as would excuse him from punishment according to the law; the opinion was then expressed that in the first-mentioned case the offence was chargeable against the culprit as being intentional; but that otherwise, if by his own fault excessive consumption of alcoholic drink brought him into a state of mental confusion and if in that state he committed a crime neither planned beforehand nor even thought of, this latter ought not to count as intentional, and therefore only punishment for causing the crime, together with punishment for drunkenness, ought to be imposed. This would no doubt be the most rational procedure. But, since in many cases penalty for unintentionally causing a crime will naturally not be included in the law, the result of such a provision would be that in these cases the accused would be entirely exempt from punishment. As this does not seem advisable, the law might provide that, if the culprit had brought himself into the abnormal state with the intent of perpetrating the crime while in this state, he should be punished as if he had been in a normal condition, but that otherwise a lighter punishment should be imposed than ought under ordinary circumstances to follow upon the crime«. In accordance with this principle, *Westring* has proposed an amendment of the first of the above-mentioned paragraphs of the criminal law, now under revision. So far, the final wording has not been arrived at.

known, there are periodic forms of insanity which at times will change a normally upright man into an individual dangerous to society, who recklessly gives way to his impulses and lower instincts. Hypomanic episodes in cases of *folie circulaire* often give us the best examples of such a periodically recurring moral insanity. In other forms of insanity also a change of character may be observed, even if no signs of mental disease are evident to the patient's relations. For even when symptoms of a different nature give incontestable evidence to the expert eye of the presence of a mental disease in course of development, these signs may be overlooked by less observant relations and friends. We have seen in Chapter XIII how the regressive change of volitional life in general paralysis and senile dementia will do away with all moral restraint and allow the instincts to regain their animal freedom. To a certain degree, this is so, too, in those cases of dementia praecox the course of which is characterised by an advancing apathy. Here the most salient feature of the disease is the gradual obliteration of the emotional life, a destruction of character and personality. It is a matter of course that this destruction of a person's emotional life disposes him for crime. Thus it may happen, even under these circumstances, that a person is sentenced for an act committed during the incipient stage of insanity. And it is only in the further course of the disease, when violent symptoms set in, that the discovery of insanity is made. The prisoner is then removed to an asylum, and there the examination of his mental condition will often reveal the fact that the offence for which he was sentenced to a longer or shorter term of punishment must have been the outcome of a moral change that is to be regarded as an early symptom of the disease.

These experiences and the frequent occurrence of such cases explain why psychiatrists, as already mentioned, have pleaded for a more thorough (compulsory) examination of the mental condition of certain persons charged with crime. This plea is certainly not dictated by sentimentality or the alleged readiness to identify guilt with mental disease, but by the conception, a rational one, it would seem, that it is useless to punish a mentally disordered person who is neither able to understand the justice of the punishment nor to take warning from it for the future. In addition, these demands are dictated by solicitude for the security of society, inasmuch as it cannot be consistent with public safety to set a dangerously insane person free after he has served his term in prison. But on the other hand, it is hardly satisfactory, and certainly irreconcilable with the general sense of justice,

first to punish a person and then, when he has served his term, confine him in a mental hospital. On these grounds it is *a priori* highly desirable that the judge should in each case be fully aware of the mental condition of a person charged with crime before passing sentence on him.

If the principles applied in the treatment of *totally abnormal* (insane or imbecile) offenders in criminal law are simple and indisputable, the question as to the treatment of *the half abnormal* presents all the more difficulty. The provisions in the Swedish criminal code (Chapter 5, § 6) give exceedingly vague directions, and these would be very difficult to follow, if they were to be literally applied to criminals with reduced accountability. An amendment of this law aiming at a rational treatment of the half abnormal criminals has long been warmly recommended by Swedish psychiatrists. Such an amendment was finally brought about by two new laws: 1) »On the detention of criminals with reduced accountability«, and 2) »On the internment of habitual criminals«, passed by the Riksdag in 1927 and in operation since the beginning of 1928. For the proper appreciation of this ordinance, so important in regard to the treatment of the half abnormal criminals, it will be convenient to examine briefly the question of crime and punishment, so as to give the reader an idea of the modern attitude towards the phenomenon of crime which has now superseded the old point of view based solely on the desire for retaliation.

It was no doubt the observation made by psychiatrists as to the close connection existing between mental abnormalities and crime that prepared the way for a greater interest in the personality of the criminal than had been felt in the past, when the principle of 'equality before the law' was relentlessly enforced and compelled every judge to an inexorable interpretation of the letter of the law.

Criminal psychology, or the study of the criminal, was initiated by the Italian psychiatrist *Cesare Lombroso* (1836—1909) in his much-debated work *L'uomo delinquente in rapporto all' antropologia*, 1876.

In this work, Lombroso tries to show that a remarkable number of obvious differences from the normal type of man justify the classification of certain criminals, *the born criminals*, as a distinct type. With the greatest energy Lombroso collected his evidence. He bases his doctrine on examinations of no fewer than 4,000 living criminals and about 400 skulls of criminals. By means of anthropological measure-

[1]) Cf. *Alfred Petrén:* Betydelsen av den nya lagstiftningen om behandlingen av s. k. förminskat tillräkneliga förbrytare. Uppsala läkareförenings förhandlingar. 1927.

ments of these he finds a great many dissimilarities between the criminal and the normal man. The coarse and brutal form of the skeletal parts of the face and the skull in the criminal correspond with a mean intelligence and brutal emotions. The typical criminal lacks every resemblance to the average European, but presents many points of likeness to the higher apes, prehistoric man, and the natives of the South Seas. *L'uomo delinquente,* or criminal man, constitutes a distinct type which may be regarded as a biological regression, an atavism. Like very primitive tribes, this type lacks altruistic feelings, such as sympathy with others, tenderness and compassion. In the criminal's taste for tattooing, Lombroso thought he had found another point of similarity to savage tribes.

Lombroso's works attracted great attention all over the world, and in his own country, Italy, a number of lawyers and physicians rallied round him, advocating the doctrines of *»the new school«* in their more or less original writings. Among the foremost of these followers may be mentioned *Ferri* and *Garofalo.* Before long, however, this daring construction of hypotheses and hasty conclusions was sharply attacked by critics. The belief in Lombroso's reasoning soon began to dwindle, and shortly afterwards little or nothing was left of the nucleus of his theory. Close examination revealed the fact that the same divergences from the normal and the same peculiarities as were put down by Lombroso and his school as typical of the »born criminal« were very often found in persons who had never committed any criminal act. Above all it was remarkable that the bodily and mental symptoms which the Italian school ascribed to the criminal character entirely coincided with the numerous external and internal traces and marks of *degeneracy (stigmata degenerationis).* Moreover, it was asserted in a convincing manner that environment and unfavourable hygienic conditions of life were in the first place responsible for part of the deformation of the skull and other anomalies of the skeleton which Lombroso had described. Rachitis was by no means a rare disease in the classes from which the criminal most often originated.

Among those who have argued against Lombroso's criminal type with great thoroughness and conclusive reasoning, we may especially mention the Germans *von Liszt* and *Baer,* the Frenchmen *Tarde, Laurent,* and others. *Baer* concludes his great work, »Der Verbrecher in anthropologischer Beziehung« (1893), with the following words: »The criminal, the habitual offender, and the individual seemingly born to crime, exhibit many, bodily as well as mental, features of deformity, but these features have neither generally nor individually such a decided and peculiar stamp that they mark the criminal as a type or set him apart from his own time or immediate surroundings. The criminal shows traces of the degeneration which is often met with in the lower classes from which he usually comes, and these traces, acquired or inherited through social conditions, may sometimes appear more strikingly in the criminal. He who wants to prevent crime must do away with the social evils in which it germinates and finds nourishment, and when deciding upon the nature of the punishment or in carrying it into effect, he must attach greater importance to the criminal himself than to the category of crime committed.«

Before leaving Lombroso, we ought in justice to point out that it is his uncontested and lasting merit that he has awakened the interest in the personality of the criminal, in other words, as *von Liszt* has it, he has given new life to the forgotten thought that »after all, it is the man and not the ideas that we punish«.

An attempt pointing in the same direction as that of Lombroso was made some-

what later by *Moritz Benedikt,* in his »Anatomische Studien an Verbrechergehirnen« (1879). On the basis of 22 cases examined by him he advanced the theory that the criminal brain constituted a distinct type, called by him »Typus der konfluirenden Furchen«. This hypothesis, also, of characteristic differences in the outward shape of the criminal's brain, was subjected to criticism *(Meynert, Rüdinger, Binswanger, Ferrier,* and others); it proved to be precipitate and is now forgotten. Far more reasonable is the opinion expressed later by the same author, that the incorrigible professional criminal formed a distinct type, whose characteristic features were a congenital or early acquired mental, moral and aesthetic neurasthenia with dysphoria. (Cf. p. 326).

During the decades immediately preceding the Great War, the question of a rational reform of the criminal law and the principles on which it ought to be based often brought together for discussion lawyers, physicians and psychologists from all countries. A central figure at these congresses was the German professor of criminal law *Franz von Liszt,* who died a few years ago. With convincing clarity he always maintained, against the earlier, entirely legal, treatment of the question of »crime and punishment«, that these important social problems cannot be satisfactorily solved unless the question as to the personality of the criminal and the causes of the crime be made the starting point. The old conception of justice, based on theories of retaliation and the concepts »free will« and »guilt«, were now subjected to severe criticism in the light of the facts known about the causes of the crime, and the criminal's personal qualities and descent, which facts were now collected and observed in all prisons and asylums. The more scientific methods elucidated these relations, the less did theoretical reasoning convince. For gradually as greater attention was paid to the personality of the criminal, and the circumstances under which he had developed were considered, the old moral-philosophical points of view were pushed into the background.

Most frequently, the criminal is an individual heavily weighted by inheritance, in many respects degenerate and abnormal. Between crime and insanity there is a certain correlation, inasmuch as they are both results of degeneration. The circumstance that mental diseases are about ten times as frequent among prisoners as in the free population, says a great deal, and the correlation becomes even more striking when we look through the family history of our criminals. It is often seen that in the same family one member is an alcoholist, another mentally diseased, a third a prostitute, a fourth punished for theft, etc.

It was in the face of such experience that the new German school of criminal law came to see crime as a social-pathological phenomenon

(von Liszt) and had the courage to draw the extreme conclusions of the psychiatrical conception in the comparison between mental disease and crime. Other authorities, who feared that the pathological view might lead to arbitrariness, took a middle course between the new and the old conception. In Sweden this course has been chosen by *Thyrén*. A gratifying result of these discussions is that in our time the legislator has begun to consult the psychiatrist. And there is no exaggeration in saying that, in the modern reform of criminal law, there is an increasing tendency to utilise psychiatrical experience to solve the problems of criminality.

The new line of thought in criminal legislation, setting out from the psychological study of the individual, naturally turned first against the earlier view as to the motive and object of punishment. According to this view, the source of punishment is to be sought for in »the common sense of justice« which requires *that the guilt of the criminal shall be atoned for by the penalty imposed*. This conception is deeply rooted in man's nature and coincides with the primitive standard of justice among almost all human communities. It is upheld by all existing religions and in the Christian world it has been taken over from the Old Testament. Modern theorists on criminal law now maintain that the justice of the demand for retaliation stands or falls with the *question of guilt*. The theory of atonement and retaliation is based on the supposition that every man freely shapes his own fate, and that in this respect one man is no worse off than another. If now it were really so, if people were all alike, equally handsome or ugly, good or evil; if the Lord had given to one and all an equal share of the incentive of his good will — well, then the matter would be simple, and there would be no need for any other opinion than that proclaimed by the lawyers of the old school. For, if all people were the same, and all possessed a free will, and if it were still possible that crimes could be committed, then the criminal might be left out of consideration and the crime alone be studied. It would then be just to mete out the punishment in accordance with the crime, for everybody alike, with no respect for the person. It would be right to keep to a blind justice who only used her scales in order to wield her sword just as blindly afterwards; it would be just to confine all thieves for one year, all forgers for three years, all highway robbers for four years, and to hang all murderers. But indeed, the matter is not as simple as all that. Every person is an individual apart, with his own special qualities and possibilities, and unequal conditions of life often combine to make the contrast greater. One child is born of poor parents

and inherits evil dispositions, he grows up in poverty and misery and his playground is the street. Another is lucky enough to come into this world under quite the opposite circumstances. He inherits the most advantageous personal qualities which are further developed by a good education and the most favourable outward conditions. The former becomes a thief, the latter perhaps his judge.

It would indeed be highly unjust to arrange any kind of moral competition under such unequal circumstances. The inevitable result is easily foreseen. Let us figure to ourselves a driver who is driving a team of horses. The driver who holds the reins is the will of man, the horses represent his instincts and desires, for these latter are the compelling forces in all human life. The road, finally, along which he drives represents the outward circumstances. In one case the driver has a strong hand which holds the reins steadily; his horses are quiet and gentle steeds, the road is wide and even. All goes well. No accident is even conceivable. The driver simply *cannot* upset the carriage. In the other case, the hand holding the reins is weak, the horses are restive and the road bumpy and rough. Here the drive is hopeless from the start. This unfortunate driver *must* upset the cart, he does so again and again and constantly stops the rest of the traffic. He falls into the hands of justice, is sentenced and sentenced again.

It is on such weighty grounds as these that the new German school of criminal law rejects the concept of guilt and maintains that the whole object of punishment is to render the criminal harmless. The protection of society (prevention) is the only true ground for imposing any penalty; the atonement for the crime and the demand for retaliation, when there is no guilt, are inapplicable as motives for punishing. The concept »accountability« ought to vanish together with the concept of guilt, as being incompatible with a deterministic view. Among Swedish psychiatrists, this view is most consistently represented by *Kinberg*. In theory, *von Liszt* has long ago followed out the extreme consequences of this way of thinking. He recalls the time when, in the eyes of the people, the mentally diseased also were stamped with the brand of guilt. In the civilised world, these superstitions are now very nearly extinct, and v. Liszt has no doubt that criminal law will develop in the same manner as has the care of the insane. We must not weary in our struggle against crime. The battle must be fought with greater strength, in a wider field and with more deliberate purpose than before. We must try to reach down to the deepest roots of crime, to the social wrongs in which it originates. We must also turn against the criminal without

any trace of false weakness, but we must not brand his forehead with the mark of guilt, nor withdraw our sympathy from the incorrigible, even if, for the sake of public safety, we have to keep him in custody for the rest of his life and deprive him of the sight of his fellow-creatures. And even if the place of confinement for incorrigible criminals still differs in externals from the hospital for the dangerous or incurably insane, the more essential difference, according to von Liszt, is objectionable in principle. The concept »accountability«, marking the nonexisting line of demarcation between these two categories, will be obliterated by the progress of humane views.

However, von Liszt himself is doubtful as to the practical application of this principle, at least for the present, and so, curiously enough, he adds the following remarks to his deterministic confession: »In the question of criminal responsibility the last word has not been said even with these scientific results. We have also to consider the conclusions which the legislator has to draw, and here I cannot refrain from issuing a word of warning. It is not the antisocial nature of an action which in the first place determines the judgment of the public, but the individual ethical point of view prevalent among the public. And the stronger the legislator's conviction of the priceless value of a deep and sound public sense of justice, the more carefully will he avoid violating the deeply rooted moral conception, before he is able to replace it by a new one. The opinion now prevailing among the people undoubtedly demands that a distinction shall be made between crime and insanity, prison and asylum, and the legislator must pay attention to this fact, whether he resign himself willingly or with the worst grace possible to the concept »accountability«.«

Here von Liszt himself has undeniably put his finger on the weak spot in the new school of criminal law and made an important concession. For anybody who does not entirely deny the value of pedagogic methods will find it difficult to deny the educational value of punishment. The deterministic conception, concentrating its attention on the incorrigible, somewhat rigidly abides by them. It is indeed a deplorable fact that there are incorrigible and incurable individuals, in the moral as well as in the psychiatrical sense. But this depressing experience must not make us forget that the conclusions we are here forced to draw do not apply *equally* to the whole scale of cases not determinable at the outset, and there are, among the many variations in this scale, cases where we have to count more with possibilities and hopes than with decided facts. Every means of a pedagogically sti-

mulating and inciting nature should here be employed to assist the legislator. Hence the concepts »guilt« and »accountability«, »atonement« and »repentance« are not devoid of stimulating value, as long as they mean anything at all to human emotional thinking. Therefore, as *Thyrén* writes, we must »count with the possibility or probability that punishment, in all times and under all circumstances, independently of the prevailing philosophy of life, will be regarded by the public, not as a cure for a certain disease, but first of all as a condemnation of an individual as being evil« — — and »even if cool reflection tells a man that in many a case of criminal offence he himself, were he from the outset placed in the same environment as the criminal, would surely have developed in the same way; indeed, even if in theory he denied the freedom of the will, he would hardly be able, when it came to the point, to emancipate himself from the prevailing mode of thinking, which is deeply rooted in human nature«.

Thyrén, as I have already stated, has taken the middle course between the modern, medico-biological school and the old school. While the former pushes the criminal into the foreground and the latter exclusively considered the crime, Thyrén maintains that »the only tenable principle is a reaction neither against the criminal alone nor against the crime alone, but against the danger to society, which danger may come from the criminal's person as well as from the fact of the crime«. *Prevention,* or the aim of the legislator to protect society against crime, resolves itself into two, equally just, claims, *public prevention* and *individual prevention.* The former is directed »against the peril of the influence of crime on the members of the community as a whole«, and for that reason the penalty imposed should be kept well in accord with the public sense of justice; the latter, individual prevention, is directed »against the menace of danger from the individual himself«.

Individual prevention was neglected by the old school which built on the principle of retaliation. Our old criminal law, still valid, but long under revision, did not consider the personality of the criminal and was not able to procure effective protection to society. Everybody who has had an opportunity to visit one of our central prisons and there gained even the slightest idea of the prisoners' earlier history, will surely understand how little individual prevention signified to legislation. A round with the governor of the prison usually leaves behind a lively conviction of the unpsychological nature of the old penalties of retaliation. Here, for instance, we meet with a criminal type, a *thief,* who has only a few months left of a comparatively short term of imprisonment and,

accordingly, will soon be set free. We get the depressing information that he is a criminal of the worst kind; a psychically abnormal and degenerate individual; inaccessible to all discipline; treacherous, dishonest and capable of the grossest offences. But though there is every reason to fear that he may commit the most dreadful crimes, he has, nevertheless, to be set free, because he has not been sentenced for his personal qualities or his harmfulness to society, but for the offence he has committed. It is of criminals of this type that the English jurist Sir *Robert Anderson* K. C. B., L. L. D., says: »If a man traps a fox in his »fowl-run«, he does not let it go again because, when caught, it had only killed a chicken or two. So here, the question should be, not what the prisoner did on the date specified in the indictment, but *what he is*«.[1])

As a contrast to this extremely dangerous criminal who, owing to the petty nature of the actual crime, has to be released according to the law, but in opposition to the demands of individual prevention, a prisoner of a different type is pointed out to us during our visit in the prison. *He is a murderer,* who has been sentenced to penal servitude for life, and he has to remain in prison for many years, at least ten or fifteen, before he can hope to be granted the King's pardon. The warders may give this prisoner the character of behaving excellently in every respect, declare him to be reliable, quiet and kindly and sincerely repentant, finding it right that according to human law he should atone for his crime during the rest of his life. In this case the long term of imprisonment meets the demand of public prevention on the whole, even though the long stay in gaol may seem superfluous from the point of view of individual prevention.

During our round in the prison we meet with a number of prisoners, convicted for the fourth, fifth or sixth time of stealing. In these cases the short penalties have proved of no avail, and no one would probably nowadays think of further shortening them, on account of an existing psychic abnormality. No type of criminal has brought so much confusion into human traffic as have the habitual criminals, these as a rule, inferior, not infrequently besotted wretches who are constantly coming to grief on their journey through life. Apart from the loss of property by theft and damage inflicted on the community, an expensive apparatus has continually been at work for the prosecution and punishment of these crimes. The worst thing, however, is that this apparatus has acted very unsatisfactorily. It may conveniently be compared to those patent remedies against rats and vermin through which these parasites thrive and multiply instead of disappearing. Statistics have proved that the probability of relapse increases in the same degree as the number

[1]) *Sir Robert Anderson,* Criminals and Crime. London 1907, p. 23.

of punishments imposed. Hence the penal system prevalent so far has proved wholly unable to check crime; it seems rather to increase the number of offences.

In order to render possible the protection of society in such cases where the danger incurred cannot be counteracted by the penalty alone, decisive weight has been attached to *individual prevention,* and the penal system has been combined with a system of protective measures, the latter, under certain conditions, superseding punishment. This was the motive in the new laws of »custody« and »internment« with which the Swedish criminal code has lately been supplemented.

Each case, however, requires careful individual consideration.

If the criminality originates in chronic alcoholism, sequestration in an inebriate asylum must be resorted to, and in the case of juvenile offenders, it would not be at variance with the principle of public prevention for the penalty to be replaced by reformatory measures, unless the crime were very serious.

It seems to me to be of special importance that this way of combating criminality be kept open in the case of juvenile offenders whose semi-abnormality is evident. The institutions for the custody or internment of semi-abnormal offenders intended to replace the prisons should not be made too large, and juvenile offenders should not there mix with habitual criminals of a more hardened type. With regard to the risk of conspiracies, riots, and mutinies, smaller institutions are to be preferred. With this modern penal system of protracted (though not indefinite) custody or internment, a system of probationary leave under close supervision is combined.

According to my personal experience, we ought, as I have already said, to adopt a more pliant view of the questions of »responsibility«, »guilt«, and »accountability« than that arrived at through a deterministic reasoning *a priori.* The public sense of justice can hardly dispense with the concept »accountability«, and with regard to responsibility there are practically various degrees.

All responsibility springs from emotional reasoning, and the public sense of justice is a reflection of the average personal state of moral sensibility that upholds our social order. If a person, in disposition and constitution, is so entirely without any power of social adaptability as not even to let himself be partially guided by opportune considerations and prudent calculations, he will under *all* circumstances easily come into conflict with the laws which are an expression of the public sense of justice. A number of the so-called semi-abnormal belong to this class

of irresponsible natures. They may properly be referred to the category of criminal whom *Lombroso* called »the congenital criminal« *(delinquente-nato)* and are, then, strictly speaking, not half but wholly abnormal. And if thus diagnostisised after careful observation, their rational treatment ought no doubt to be limited to the protective measures which society owes to itself.

That even the ethical side of our personality has its organic substratum is a supposition confirmed by psychiatrists and neurologists[1]) no less than by contemporary research-workers in heredity (cf. chapt. XV). With a certain degree of probability we may presume that the sense of moral responsibility has its instrument in an extremely subtle reciprocity between the cerebral cortex and the mid-brain. A congenital impairment of this reciprocity does not preclude that the substratum of the intellectual functions acts faultlessly, and is accordingly no hindrance to lucidity or even to shrewd calculation. But an individual of this kind, intellectually well-endowed, though without any sense of moral responsibility, is quite as much a pathological phenomenon as the man who is considered demented because of intellectual defects. Offenders against decency and public morals also belong to the abnormal. A normal sense of responsibility is dependent on a normal sexual instinct. This is proved by the undeniable mutuality existing between criminal tendencies and sexual perversity. This type of offender is frequently, even in respect of the intended act, to be regarded as wholly abnormal. His crime springs from an originally perverted or inverse sexual instinct. His sexual feelings, and the fancies that are intimately linked with these, are associated with objects and move within a sphere of ideas so different from the normal region that the sense of responsibility for the offence remains a dead letter to him. I shall not here discuss the question as to the justice of marking out the limits of the sexually permissible by threats of penalties — this question has, especially in Germany, given rise to lively controversy — I merely wish to point out that, as long as capricious Nature is pleased to create aberrations of the sexual instinct, there will always exist individuals who, with regard to the question of guilt and responsibility in such crimes, are more or less totally abnormal. But in that case also it will often prove necessary for society, in order to prevent the

[1]) I recall what has been said about ethical depravation with criminal tendencies which may develop into dementia praecox, Huntington's chorea and chronic encephalitis.

seduction of children and young persons, to keep such individuals in custody and render them harmless in so far as their sexual instincts make orderly social intercourse impossible. It is obvious that the final solution of these problems is still very far off. They are as complicated as they are delicate, and among the many proposals and expedients that may be discussed for the welfare of society, the legislator must choose with tact and discrimination. As an example of such expedients I mention castration and sterilisation, the latter, to which I shall return, has become of actual interest in our country. The draconic laws and preventive measures which have been practised abroad, more especially in America, for protection against the danger from an individual's perverse or abnormally intensified sexual impulse, are met by the demand to see personal liberty respected, and these considerations warn us as an impressive *noli me tangere* to proceed with caution.

Theoretically, then, we can without doubt find support for the view that, apart from the crimes committed under pressure of outward circumstances or under the influence of a more or less strong affect, there exists no »normal criminality«, and that the worst among our felons must be regarded as wholly rather than half abnormal. Nevertheless for practical purposes the legislator must look apart from this, so to say, *purely criminal abnormality* and make a sharp distinction between the mentally diseased offender and the individual who is ethically deformed and morally disabled by nature. Total abnormality due to disease and abnormality due to inherited, entirely moral, defects cannot be bracketed together by the law, *unless the defect also extends to the intellectual faculties.*

It remains to make brief mention of another type of abnormal criminals, *the semi-abnormal, in the proper sense of the word,* who do not thus qualitatively differ from the mentally diseased, the difference being one of degree only. Here the provisions of our criminal law are quite naturally applicable, and to these semi-abnormal persons, in the old established legal sense, belong all those whose responsibility is reduced either temporarily or more permanently, by illness or senile debility, etc., as well as all persons of such inferior intellectual development that they may be regarded as imbeciles. Combinations of imbecility and ill-health, of imbecility and sexual anomaly, and so on, may of course occur, and with regard to the different forms of moral inferiority I refer the reader to the special part of this work. A combination of external and internal circumstances apt to favour crime occurs when bad examples, a neglected education, and want of proper

care further stunt the development of an imbecile and early lead him into the path of crime. Cases of this kind will no doubt prove to be among such as may profitably be treated according to the law of custody; and indeed the majority of cases that come under the law relating to criminals of reduced accountability will probably belong to the category of imbeciles. On the other hand, those regarded as semi-abnormal on account of illness, senile debility, etc., are neither psychologically nor criminally qualified to be sentenced under this law. In many a case, examination will show that the diagnosis »wholly abnormal« will not only be more just, but also provide greater security.

In Sweden the above-mentioned Royal Letter of March 9, 1826, which prescribed medical examination of »any person charged with crime who is alleged to be insane or to have been insane when committing the offence, and on such grounds the question of his being excused from criminal liability has been raised«, doubtless owes its origin largely to the suspicion of *simulation*. That hardly any disease was as frequently simulated as insanity, was an old doctrine within medical jurisprudence to which *Paulus Zachias* had drawn attention as early as 1630. Medical experts of our day hold a very different opinion, still the public rather inclines to the rash belief that a person charged with crime simulates mental disease in order to escape punishment or to provide himself with better opportunities of absconding by being removed to a hospital. That cases of simulation occur, no one can deny, but it is important carefully to go into each doubtful case before passing a final verdict; for, as *Kraepelin* points out, it is a common observation of even the most experienced psychiatrists that only an extremely small number of persons of perfectly sound mind are to be found among simulators, even though the real disorder is quite different from the pretended one. *Schuldheis,* therefore, urges the prison physicians never »in case of suspected simulation to let their own actions nor those of the prison staff be determined by such a suspicion, before the absence of a simultaneous mental disorder in the prisoner has been ascertained by means of the closest observation and a careful weighing of all relevant circumstances.«

In those cases where there is a real reason for considering the possibility of simulation, it is therefore important to remember that the line between certain forms of hysterical insanity and conscious shamming

may be very difficult to draw. This question will be dealt with in greater detail in the special part of the present work, only a few remarks will be offered here.

When a person is tempted to evade a difficult situation by the aid of mental disease, we generally have to do with an affectively labile psychopath with a strongly pronounced disposition for mental disorder. Just because such people continually carry within themselves the morbid disposition as a vague perception, they, consciously or unconsciously, resort to this means of evading a threatening danger. (*Cf. Cases XVI and XVII*). There is something animal in resorting to this expedient, as mentioned by *Kraepelin,* when he says that the essence of hysteria is to be sought in an inhibited development, which gives increased scope to the biologically primitive mechanisms that have once had their definite task in the struggle for existence. Thus we come across — not least among persons charged with or convicted of crime — certain strongly disposed individuals whose liability to mental diease reveals itself in a kind of preformed, emotionally-toned mechanisms which only await a suitable opportunity to come into play. The disease sets in »of its own accord«, as it were, and even through an act of volition. This act of volition starts the whole thing, but, be it noted, does not stage it. Unlike the unambiguous and genuine simulation in the rare cases when it occurs, it does not contribute the requisite stage properties and side-scenes, it simply gives the impulse to an outbreak. Here, the will cannot create the natural mechanisms which are active during the disease, any more than it can check them, once they have been set going. It is like the pressing of a button that springs a mine or opens a floodgate. The explosion and the water pouring in are things apart, and so is the mental disease which is made to develop from a predisposition by an act of volition. The onset itself may of course demand more of the patient's own assistance than merely a wish and an assenting gesture. In one of my cases, experience had taught the patient that the disease set in every time his state of nourishment was weakened through sleeplessness or the refusal to eat. By making use of this experience he could, when needed, as it were, liberate the latent psychosis. The proceeding was quite simple. Every time he relapsed into crime, got caught and was arrested, he was naturally cross and repentant. Indignation and emotion kept him awake. The want of sleep increased his crossness and ill-will, he became more and more vicious, timorous and irascible. In the end he refused to eat, and this negative manœuvre was probably the most effective agent. He lost weight and the disease now advanced with

rapid strides. In this way he had made a weapon out of his weakness and knew how to conjure up disease as his guardian spirit, every time he was in distress, that is to say, when he had got into the hands of the police. But here as in the oriental fairy tale, it was always easier to let the genie out of the bottle than to get him inside again.

In many cases it is hardly justifiable to regard this opportune form of psychosis as a disease *»contracted by no fault of one's own«*, and in the continued treatment of these cases it is desirable that the hidden motives revealed by the disease should not be overlooked. What has been said here is also largely true of the confusional state in prisoners committed for trial, described by *Ganser*, and the situation-psychoses depicted by *Raecke (F. Stern)*. We will return to these matters in the special part of this work.

In certain cases observed by *Dietz* genuine simulation develops from an abnormal mood with a strong affective tone, created by adverse external circumstances. The classic type of a simulator of this kind is *Hamlet*. The simulator here gives vent to his emotion, going to the end of his tether; nay, consciously exaggerating, he allows his fancy to run off beyond the borders of reason, but always in a certain direction indicated by circumstances. *Dietz* mentions a case where, after a crime occasioned by accidental circumstances, the criminal simulated mental disease. The knowledge that everybody was speaking of the crime suggested to him the simulation of hallucinations of hearing; his natural state of mind after the arrest suggested to him that he might feign an apathetic inertness, and his equally natural wish to avoid thinking of the unfortunate events in which he had become involved, gave him the idea of simulating complete amnesia of what had happened.[1])

A similar »clear simulation« which is only a kind of exaggeration (aggravation) is, according to Dietz, the most natural simulation and occurs as such in sane as well as in mentally diseased persons.

Between the »clear simulation« (Dietz) and the hysterical »flight into disease« there are surely frequent transitional cases. The following case affords an illustration hereof.

Case XXXI. A. A—n, a voluntary recruit, aged 19. Admitted to the Stockholm Mental Hospital January 26, 1915. No hereditary predisposition to mental disease. Went through the elementary school and was a good pupil. Later he helped his father on his farm for a year and a half, and after that worked as a bricklayer.

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[1]) Cf. cases IV, XVI and XVII.

He hoped to get on in life and become a business man, a shopkeeper, but as he lacked the means necessary for his training he got the idea of enlisting as a volunteer. Thinking that in this way he would be able to learn things that would be useful to him while serving his term of conscription, he enlisted on Nov. 1, 1914. He seems to have acquitted himself very well, but he soon felt disappointed as it became clear to him that he would not get the training he had hoped for in the regiment. This worried him greatly, and at the same time he was very home-sick, especially as the service, and probably also the intercourse with the other young men, became directly irksome to him.

Without previously having given the slightest cause for complaint, either from his superiors or his comrades, he committed a breach of disciple on Jan. 10 and was accordingly placed under arrest. In the lock-up he behaved strangely, seemed more and more confused, and was transferred the next day to the Military Hospital. Here he lay half stuporous during the first few days, but then became somewhat more communicative, and was removed from seclusion into a ward. Later he grew worse again, was mute and stubborn, but ate of his own accord. While in the hospital he had lost weight. The expression of his face was dull, his eyes staring. Pupillary reflexes normal. He allowed himself to be brought up for examination without demur and drooping limply, exclaimed: »How dreadfully tired I am«. Then he burst into a coarse laugh. *Either he did not answer questions at all, or else absurdly:* »When were you born?« — »Of course I was not born here.« He said his name was Frits and that he came from Dalecarlia, but added »I don't remember anything at all.« Seemed slightly confused, out of it, but also negativistic. Frequently laughed without reason. Hallucinations or delusions had not been observed in the hospital, but, it was added, they had very likely occurred. His movements were slow. He was refractory, sometimes impulsive; tendon-reflexes lively. Was transferred from the Military Hospital to the Stockholm Mental Hospital. A short while after his admission the physician on duty had a talk with him during the evening round. The patient then told him his surname, but said he was ignorant of his Christian name. Nor did he remember his age, the name of his parish or of his parents. He stated that he came from the province of Dalecarlia and did not know how he had come here. He said that other people had told him that he belonged to some regiment, but he did not remember it himself. Otherwise his mind seemed clear and his answers were adequate.

The following morning he was found sobbing in his bed. When the physician spoke to him, he asked for a private interview. Besides what he had already told, he made the following statements about himself. Owing to the disappointment that he had felt in the military service and because of his strong home-sickness he began to ponder and brood over a means to get out of it. His fellow-recruits told him that one way was to commit a breach of discipline and get sent away for punishment, another to be released owing to mental disease. On Sunday, January 10, he was ordered out as barrack sentinel and ought to have been on duty at 6 o'clock in the afternoon. At two, he went into the town without leave and stayed away on purpose till 11 o'clock. During that time he wandered aimlessly about the streets, and though generally he never took alcoholic drinks, he had half a bottle of ale in order to smell of spirits when he returned to the barracks. When he came back at night, he is said to have assaulted the sentinel without reason, and he was then placed under arrest. Here he meant to try to feign insanity, and the

following morning no intelligible word could be got from him. An army surgeon visited him. Then he was sent to the Military Hospital, and there went on pretending to be ill, though he really had a pain in his stomach and a headache and could not eat very much. He was in a room by himself for a week; he did not think that he was delirious but was sure that his consciousness was unclouded. Then he was placed in a general ward. When at last he was removed to the Mental Hospital, he did not know where he had been brought, but passing through the gate he heard somebody say that it was the hospital. The patient stated that he gave false information to the physician quite knowingly during the visit on the evening of his admission, and owned that he remembered very well the things he was asked about, but which he pretended to have forgotten. He had, however, immediately begun to feel that his position was intolerable and decided to confess everything the next morning. He was very penitent and thought he had sinned before God and man, in feigning this serious disease. He thought that imprisonment would be the proper penalty for such a crime. He told the physician that, till he was fourteen, he was troubled with enuresis nocturna, but had never had any seizures or fainting fits.

During a conversation that I had with him some days later, he amplified his previous statements with the following information. He had always been very impressible and sensitive, and a harsh word wounded him to the quick. In military service he felt very nervous and troubled, he kept worrying over his duties, being afraid lest he should not acquit himself well. Depressed and anxious about his position he at one time thought of committing suicide, but the thought of his parents deterred him. He often thought of his home. When he was at home it had always been his dream to accomplish something, and he had now found that the military service did not help him in his plans for the future. He only felt ill at ease in life and with his comrades. Though he was very depressed and agitated, he still believed that he was quite all right on January 10, and so he still believed that he had feigned illness. The ale, that cost him about twopence, had not affected him in the least. In the night between January 10 and 11, which he spent in the lock-up, he did nothing but weep, did not answer when spoken to and hid in a corner when anybody came in. Then »he hardly knew what he was doing«, but everything was in accordance with his wish to get away from the regiment. He gave his absurd answers on purpose, at least he thought so himself. In the Military Hospital he had a room to himself for a week. There he was also silent when spoken to, he only wept. He remembered incidents from the doctors' visits. In the daytime he laughed to make the other patients believe that he was insane, but at night he could do nothing but weep over it all.

A. was a weak and very sensitive young man who on the whole left a very favourable impression. His superiors in the regiment gave him the character of behaving exemplarily in very respect. *Status somaticus* Jan. 29, 1915: Height 174 cm., weight 54.8 kg. Temp. afebrile. The patient is pale and rather thin. Heart without remark. Pupils round, equally large, react normally. Patellar reflexes fairly lively. Abdominal and cremasteric reflexes normal. Plantar reflex lacking. Sense of touch and pain shows no anomalies.

One of the head nurses in the Military Hospital, a woman with nine years experience of nursing, told us that she had not felt, nor did she feel now, the slightest hesitation as to the reality of the mental disease which the patient ex-

hibited during his stay in the Military Hospital. On the first day he was quite inaccessible to every approach. Appeared greatly frightened and at the same time confused. He hid beneath the bedclothes and did not answer when spoken to. Refused to eat and passed water in bed. On the following day he accepted food, he was then somewhat quieter and more communicative, but he still showed signs of fear and repeated over and over again a terrible dream that he had had. He imagined that he had been pushed into a carriage and that his arms and legs were fettered by iron chains. In this manner he was driven into a warm room where some people tried to pierce his body with red-hot iron bars.

The physician on duty in the Military Hospital who had had A. under his special care while he was staying there, told us: On Monday, Jan. 11, when A. was admitted, he appeared frightened and put his head under the bed-clothes; when the physician came in, A. sat up, *clasped his legs and begged to be let off flogging.* The next day he said that *he had made a compact to give the devil his soul and cried out: »now he is going to take me«, pointing to a corner of the room, in the belief that Satan was going to carry him off.* On the first day he passed water in bed. He then improved, wanting at first to remain in his single room where he was put on admission, but later asking to be placed in the general ward. Appeared embarrassed, but otherwise seemed to be quite lucid. Afterwards he began to *pick at everything, laughed and found everything very amusing,* said that he had been at home, declared he did not remember in which regiment he had been and could not recall certain simple matters from one day to another.

When this head nurse paid a visit to the Mental Hospital, I sent for A. and asked him to tell me in the presence of the nurse how much he remembered from the Military Hospital. His account agreed with what he had already told the physicians. He stated without many details, how he had feigned insanity in order to get away from the regiment, and how much he now regretted his deceit and was prepared to pay the penalty for it. As before, he spoke with tears in his eyes and with the most convincing expression of naïve credibility. I then asked him whether this was all he remembered, and he could not recollect anything beyond that; he had lied and shammed, that was the principal thing. Then the nurse, whom he had recognised at once, supplied the above-mentioned details, and he then listened with astonishment to a great many particulars about his conduct during his first days in the Military Hospital, of which it was clear that he had not the slightest recollection. He was especially astonished to hear that he had passed water in bed and that he had repeatedly related a dream which was evidently quite unfamiliar to him now. The thorough questioning in the presence of the nurse proved that his recollection of the first days in the Military Hospital was extremely faint, nevertheless it was clear to him that he had feigned madness when he kept on laughing in the general ward, and it was difficult for him to believe that he had not acted the whole time.

During the rest of his stay in the Mental Hospital, the patient was perfectly lucid and behaved extremely well in every respect. He was dismissed from the regiment as being unfit for military service owing to mental disease, but even when he left Stockholm on March 31, 1915, he still blamed himself for having arrived at this result by deceit.

A form of intentional shamming quite the reverse of simulation

is *dissimulation*. Here we have to do with mentally diseased persons who, quite conscious of the risk they are running if, on being examined, they reveal certain ideas considered as morbid symptoms by the examiners, carefully avoid betraying their delusions. These patients are as a rule delusionally deranged (paranoiacs, paraphrenics) but, as they seem well-balanced in their conduct and speak with clearness and order, they are easily taken for sane persons by the inexperienced and may procure a certificate of sanity from a physician not very familiar with psychiatric cases.

A person admitted to the Mental Hospital in Lund for observation was found in possession of no less than three such certificates of sanity on his arrival. They had been given to him by three different physicians on the same day. In our conversations with him he tried at first to dissimulate, answering evasively when our questions touched on delicate points. But by and by he was drawn to hint at a certain mission and the persecution he had to suffer, and finally he declared downright that he was Jesus Christ and therefore had to suffer persecution and vexation from men.

II. CIVIL CAPACITY.

There are many civil cases in which the physician may be called in as an expert. In all civilised states the law contains provisions for protecting the next generation as well as for safeguarding justice, reason and social welfare against the disturbances which may be caused in many different ways by the mentally diseased. Thus, for the sake of the offspring, the Swedish law prevents the insane, imbeciles or epileptics from marrying, just as it makes certain conditions for divorce and the nullity of marriage when one of the parties is suffering or has suffered from mental disease or epilepsy or is given to drink. Persons who have acted under the influence of a disordered mind may be deprived by law of their free agency. Their civil capacity being disturbed, they can be placed under the care of trustees, their financial dispositions, business contracts and testaments legally annulled and revoked.

The possibilities of the law for protecting the unborn generations against the inflictions of heritage are of course extremely restricted. An effective curtailment of personal freedom is not feasible, though it would of course have been desirable that a pathogenetic disposition as such could have been taken into account, and not only mental

disease as an actual fact. Yet apart from all other reasons against a more radical fulfilment of our race-biological duties, our knowledge of the laws of heredity is still not complete enough to be made the basis of very far-reaching legal measures.

With regard to the latter point of view, it cannot be denied that the Swedish Marriage Law, for no sufficient reason, deals more severely with *epilepsy* than with the endogenous forms of mental disease. Moreover up to the present the experience gained from its application in cases of epilepsy is undoubtedly of a nature to make us question the value of a statute which cannot under any circumstances prevent persons with a predisposition to disease from forming loose ties and begetting children. These latter will then also be denied the advantage of the ordered conditions which the marriage of their parents and a secure home would have offered them. So far we can only trust to the general preventive effect of the statute and its disciplinary influence on the human sense of justice; but this protection will always have a merely Platonic value, and will probably, in the majority of cases, be defeated by the human instincts.

Through the Swedish Marriage Law of 1915, the old provisions in a Royal Letter of November 25, 1757, »in case a person known to be epileptic should want to contract a marriage«, have been codified in a revised and more stringent form. This ancient and shrewd understanding of the danger likely to accrue to coming generations from the marriage of an epileptic, certainly does credit to our Swedish legislators. Yet this does not preclude that an extended experience of the risk involved in this prohibition has made clear the fact that the good intention, as will often happen, has overshot the mark.

We have also to remember that, with the exception of Finland which for natural (historical) reasons accords with Sweden in this respect, there is no other European country in which epilepsy is an impediment to marriage.

The term »epilepsy« in Swedish law is restricted to »such epilepsy as is of mainly endogenous nature«. What is the essence of this endogenous or idiopathic epilepsy, we know but imperfectly; and we have previously pointed out that, according to the scientific experience of our time, it is hardly possible to draw sharp lines of demarcation between epilepsy and certain forms of endogenous mental disease. The distinction made by the law with regard to the impediment to marriage between genuine and symptomatic epilepsy may sometimes lead to strange consequences, of which the following is a drastic example. A

person suffering from epileptoid seizures wished to marry and had applied for a license. He was admitted for observation to the nerve clinic of the Caroline Institute, and here he was found to be suffering from brain syphilis, the epileptoid seizures being symptoms of this disease. This discovery at once swept away all obstacles to marriage.

The earlier investigations concerning epilepsy on which the current conception of its hereditary significance rests, do not, as I have endeavoured to show in the foregoing, satisfy the claims of more exact research, so when up to now, epilepsy has been placed first among all fatal hereditary factors, this is due to a postulate which is not borne out by the facts.

Since the earlier suppositions as to the impending danger of the direct transmission of epilepsy to the offspring must be considered very much exaggerated, and it is on such suppositions that the provisions of the Swedish Marriage Law are based, a revision of the law in this respect seems to me highly desirable.

With due respect for the eugenic considerations which have found expression in the Swedish Marriage Law, we may reasonably ask whether security for the offspring could not be gained in any other way than by the prohibition of marriage. One way out would be *sterilisation,* and it is certainly not too early that the subject is at least brought up for discussion.

It would take me too far afield to give a detailed account of the development undergone by the question of sterilisation in the interests of eugenics and social order, since it was first broached towards the end of the last century by American physicians, among whom the well-known Dr. *H. C. Sharp* should especially be noted. Still, it should be mentioned that a law of compulsory sterilisation of such habitual criminals, idiots, imbeciles and ravishers, as were confined in asylums and were physically and mentally incorrigible and unfit for propagation, was passed as early as 1907 in the state of Indiana, in the United States. Similar laws were passed in other North American states, but they were later repealed as being unconstitutional and incompatible with the principle of 'equality before the law'. Public opinion probably resented *compulsory* sterilisation, and gradually only *voluntary* sterilisation came to be performed even in America. In Europe, the question has been discussed with lively interest in different places, but these negotiations have not yet led to any legislation. Commissions for the investigation of the matter have been appointed and reports have been made, but generally the commissioners seem to have been in doubt as to how far the encroachment should be considered legitimate, in the event of other indications than purely medical ones. It is generally acknowledged that the legally permissible sterilisation in the form of vasectomy and tubarectomy must never be undertaken without the deliberate desire and absolutely voluntary assent of the person concerned, when it is a person of

unimpaired power of judgment. Thus, the Norwegian Criminal Commission of 1922 specially considered the advisability of an operative incision on sex-criminals, but definitely dismissed the idea of recommending such measures, either as a punishment or as an interference for the protection of society. In Denmark, a commission of inquiry, on the initiative of Professor *Ch. Keller,* manager of the home for imbeciles in Brejning, has taken the same course with regard to offences against decency and morals as that recommended in Norway for preventing such crimes. Here the negotiations have resulted (1929) in a provisory law for 5 years relating to voluntary sterilisation (including castration), in the first place with the object of protecting society against sex offenders but also to prevent conception in cases of mental debility.

In Sweden, the question was brought up for discussion in the Riksdag in 1922 by Professor *Alfred Petrén,* who moved that a committee be appointed to inquire into the question as to under what circumstances sterilisation of mentally diseased, imbeciles and epileptics, possibly also of offenders against decency and morals, might be performed, and that a bill be brought in before the Riksdag in accordance with the report of this committee. We find that Petrén in his motion places eugenic considerations first, whereas the object of protecting society against sex offenders comes second. In the committee appointed to deal with the question this latter part of the motion was temporarily disregarded, and the report was limited to such mentally abnormal individuals as were prevented from marrying under the provisions of the law. Of the two ways in which sterilisation can be performed, castration which may be injurious to health, need not therefore be made use of in our country, but only sterilisation through vasectomy or tubarectomy. The latter cannot be regarded as effective for ridding a person of abnormal sex impulses, but it is quite sufficient for preventing propagation. The Swedish Riksdag consented to the proposal of Professor Petrén.

After long preparation and after divers opinions of authorities had been taken the report was completed and published under the title of »Report with proposal for a law relating to sterilisation«, dated April 30, 1929. Up to now (end of 1932) the question of the proposed law is still open; the Swedish Riksdag has not yet taken the Report under consideration.

In what has been stated above we must especially draw attention to the unanimously made requirement of a *full consent* being indispensable in every case of sterilisation. Not even in sex offenders is this operation deemed permissible without a personal application. The proposed Swedish sterilisation bill is also based on this requirement, though it only refers to the mentally diseased, imbeciles and epileptics. This condition of full consent, should, indeed, be insisted upon, especially in the case of epileptics who are neither mentally diseased nor imbeciles. But on this point the law of sterilisation will in principle become incompatible with the marriage law, as long as marriage is prohibited to epileptics. For this prohibition has reduced the epileptic to such straits as must necessarily create compulsion and render impossible the

voluntary consent which ought to be the rule here. It might reasonably be asked whether we have the right to force this choice on anybody, according to the rule that »of two evils one should choose the lesser«. A *force majeure* here excludes the free assent that true humaneness cannot fail to make indispensable in the case of a sacrifice of the kind that the still very unpopular sterilisation involves. Either to desist from marrying or to allow oneself to be sterilised, — this is a situation in which there is at most that minimum of voluntariness that is present when a person jumps out of the window to avoid being burnt to death. If a marriage law that is too rigorous as it is, is supplemented by a statute of sterilisation, this is, to my mind, the best way of making it seem even more draconic in the eyes of the public. Add to this the reasons, quoted above, for a change of opinion about the significance of heredity for the genesis of epilepsy, and it seems to me advisable to consider whether there are not valid grounds for repealing the clause in the Swedish Marriage Law which prohibits an epileptic from marrying.[1])

With regard to mental disease as a ground for divorce, the new law contains the important addition to earlier provisions that the right of divorce is assigned to one party, if the insanity of the other party, having lasted for three years during the marriage, does not afford reasonable hope of *lasting* recovery. Thus a person married to a *periodically insane* individual obtains the possibility of divorce. Undoubtedly, in many cases this is a much needed resource, when married life, through the continual threat of a relapse and under an unremitting strain, fear, or maybe deadly peril, at last becomes unbearable. *Periodical manias* especially, will often ruin the possibilities of a fairly happy married life, so much so that divorce will be necessary.

Doubtful mental conditions in civil cases.

A considerable number of the opinions which a physician is required to give in civil cases are intended to support the claims of one of the parties in actions relating to testaments, gifts, business transactions, etc.

The mental conditions which are doubtful in the eyes of civil law

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[1]) Cf. *Bror Gadelius:* Är ett »antingen — eller«, äktenskapsförbud eller sterilisering, beträffande epileptikern ett berättigat samhällskrav? Hygiea 1929.

and thence have to be analysed, are of course not cases in which mental disease grossly and palpably troubles consciousness, or entirely annihilates a person's capacity for giving intelligible expression to his thoughts. Such conditions are only doubtful in the eyes of a very naïve onlooker.

No small portion of the civil interest in doubtfuld mental states is concerned with the testamentary capacity of such persons as have reached an advanced age or whose mental faculties are impaired by arteriosclerosis (apoplectic strokes) etc. In those cases it is far from uncommon that friends and relations bring their influence to bear and profit by the testator's weakness in their own selfish interests. Wills of a very doubtful nature can come into existence in this manner, and though the »free will« of the testator is expressly attested by the witnesses, this free will may often be of little account; the subtle tactics and egoistic vigilance of those around him lurk behind it.

It is by no means rare for wills to be annulled by a new will being made, and there are old people who will again and again alter or add to documents already drawn up. In such cases there is sometimes an alien influence behind, but sometimes it may be an abnormal anxiety in the testator, connected with arteriosclerosis or advancing age.

This anxiety may also find expression in divers half crazy suspicions, strange antipathies against the nearest relations, etc., all of which results in altered testamentary dispositions. And experience shows that uncritical witnesses can always be found. Certificates have even been obtained from physicians who have no less uncritically let themselves be deceived by a seeming outward lucidity, by no means precluding advanced dotage.

To judge rightly the doubtful mental states met with in civil cases, is certainly one of the most difficult tasks of the medical expert; but for that very reason it cannot be sufficiently emphasised that the physician is more likely to come near the truth than the layman whose ignorance of the difficulties is often revealed in the testimonials given with the best of intentions, but unadvisedly, and which can only contribute to confuse the judge's mind in the settlement of legal disputes.

In the examination of old persons, the non-professional may easily underrate the difficulties of the medico-legal problems. Overlooking the essential thing, he is satisfied with a hasty conclusion arrived at on the ground of certain external qualities and character traits. Senile symptoms are as a rule of such a decidedly negative nature as to evade the attention of the layman, which is inevitably attracted by more possitive traits, such as formal clearness and a well-ordered conduct. To these

negative qualities belong in the first place senile forgetfulness and thoughtlessness. Unable to reflect upon the consequences of their acts, or, indeed to take in the more immediate issues of the situation, however threatening, the old may deprive themselves and their nearest relatives of certain material advantages under the pressure of those around them. In one case a physician who was not a psychiatrist based his testimony on the circumstance that »Mr. X., when they met, conversed perfectly clearly« or that »Miss Y. had been able to do her own shopping in the market-place and had had a fair knowledge of current prices«. The specialist is of a different opinion. He will point out the importance of distinguishing between *formal clearness* which is often a very superficial mental quality, and *understanding in a deeper sense;* between, on the one hand, the habits and general activity, which have assumed a half automatic character *(cf. Case XXVII)* and, on the other, the power of intellectual combination and association, in other words, of judgment, circumspectness and prudent forethought. A senile dissociative process dissolves and annihilates the power of judgment, without, on that account, depriving Mr. X. of the capacity to show politeness, to speak clearly, play a game of patience and go on with other quite mechanical expressions of often life-long habits — or without depriving Miss Y. of the capacity to buy her meat in the market at current prices.

When the psychiatrical expert has to give his opinion in cases concerning disputed wills, his examination often has to be based on the records of the proceedings, and without the evidence only reached by a personal knowledge of the deceased. Such an examination will always, even when it is carried out by an experienced psychiatrist, be more or less unsatisfactory, and there are many occasions for making mistakes. A common error is the rigid emphasising of pathological traits and eccentricities, which do not necessarily preclude civil capacity and power of action. In bygone days the deference for the will of a dead man was perhaps carried too far, and even eccentricities which might reasonably be looked upon as symptoms of insanity were disregarded. This was in accordance with the so-called doctrine of monomania (cf. p. 321) which laid down the partial nature of mental derangement. Yet it cannot be denied that the consequences of this doctrine agree better with what is desirable in civil cases than in criminal cases. In Swedish jurisprudence the difference in this respect between evidence given in civil and in criminal cases is often accentuated. This has been formulated as follows by Professor *Stjernberg:* »As regards liability to punishment, according

to the general rules of evidence, it is in a criminal case incumbent on the prosecutor to prove the grounds for the existence of such liability. Hence uncertainty as to a connection between an act and mental disorder should be in favour of the defendant and exempt him from punishment, whereas, with regard to the invalidity of a civil act, it must be required that such a connection should be proved to be at least probable by the person who wishes to assert such invalidity.« In the Swedish Law Commissioners' »Proposal for a Law relating to *the effect of contracts* made under the influence of a disordered mind«, we read: »The theory of the unity of mental life, in consequence of which every disturbance of the mental activity would involve total absence of judicial power of action, has sometimes been carried too far, and cannot be accepted. The said theory must, it is true, in principle be applied in regard to criminal cases, since liability to punishment should be excluded as soon as there can be any doubt as to responsibility. But in regard to civil capacity a rigid insistence on the same theory would be incompatible with the interests both of the persons in question and of public intercourse. It is proposed that mentally abnormal persons should obtain special protection by the law, in the degree required by their mental condition. If only a so-called partial mental defect is present, there is no reason to provide special legal protection in the case of a contract which lies entirely outside the domain of the defect and therefore cannot be supposed to have been affected by it. The same thing holds good, where otherwise no real connection can be supposed to exist between the disturbance of the mental activity, on the one hand, and the performance of the judicial act on the other. The demand that such a connection should be present, however, does not imply that the abnormal mental condition should have been alone decisive in the act, but only that it should be supposed to have cooperated in it. It is sufficient, for establishing the causation, that *the judicial act cannot be supposed to have been realised, unless a 'disturbance of mental activity' had been present*«.[1]) In its Proposal for a Law of Testament, the Swedish Law Commission applied the same principle as in the case of the Law of Contract, and the new Law of Testament which came into operation in Sweden on January 1st, 1931 has the following passage: »A will shall not be valid if made under the influence of insanity, mental debility, or any other disturbance of the mental activity.«

In the probate of a will conclusive importance should be assigned

[1]) The italics are ours.

to the circumstance that its subject-matter is, so to speak, homogeneous with the testator's personality and with wishes often expressed by him in his lifetime. Of course, we take for granted that the will does not bear the impress of or is connected with any abnormal motives or insane delusions. This having been cautiously brought to light and excluded, the dead man's will claims the more to be pronounced valid, the more it agrees with the testator's personality, tastes and aspirations. The importance of homogeneity between the personality of the testator and the contents of his will may be illustrated by the following example:

Case XXXII. Many years ago I was asked by one of my colleagues to examine in his company a lady of eighty who, being a spinster, wished to donate her fortune for a special object. Our first impression of the aged lady was truly one to make us hesitate. In spite of her good economic position she was living in actual indigence. Her whole house was one rubbish-box, and her own appearance was no less neglected than her surroundings. Her cleanliness was more than doubtful, all her finger-tips were covered with dirty pieces of plaster. She received us in the room of her old servant, probably the only one in the house which strangers could be asked to enter. But even this looked more like a stable-boy's room on a farm. Moreover, the old woman was stone-deaf, and this did not seem likely to simplify the examination. The old woman's frugal way of living, to put it mildly, was further illustrated by the information given by the old servant. This poor infirm woman bought food for her mistress for eighteen pence a day, she herself had to live on threepence. It did not seem part of her duties to do the rooms, more probably she had orders to leave the dust to accumulate.

However, in the company of the old lady our doubts soon vanished. With unusual liveliness for her age she entered upon our questions and answered them with sane judgment. In early life she had been a well-known authoress, though now half forgotten, and her love of art and literature found ardent expression in the course of our conversation. She told us of a favourite idea which she had entertained for many years, that the art she had loved all her life should have the benefit of her fortune. She developed her scheme to us, and the detailed interest she gave to it showed that it came from her very soul. Several years ago she had made the first draft for a will, afterwards she had been continually thinking of it, and now it was finished. She was very anxious to know her favourite idea safeguarded, and it was quite in accordance with her own wishes that we had come to see her. She readily submitted to examination, for she was afraid her relations would dispute the will after her death, and then it would be important that no precaution had been neglected. Her memory, even for recent events, was very good. Her ability of understanding the movements of our time was remarkable, and she spoke with interest of certain modern authors. Her deafness had cut her off from those who shared her interests. She did not see much of her relations, but she was not ill-disposed towards any one.

The impressions of the old lady's personality which we had gained during our visits were confirmed by one of her relations who asserted that the will which she

had been preparing for such a long time was a favourite idea of hers, intimately bound up with her life-long interest and a decided taste for literature and the fine arts. She had never taken any particular interest in her relatives, though she had always been kind when they met. In every respect the will was a homogeneous expression of the old lady's personality, tastes and inclinations.

Her step of having her mental condition examined by experts while she was alive, in order to arm herself against future eventualities, is very remarkable. Indeed, it is a lead that ought to be followed in many similar cases, and there is reason to ask, whether every one who makes his will after attaining a certain age should not have his mental status examined by experts. It is true that, in the present case, the homogeneity between the contents of the will and the well-known interests of the old lady would under all circumstances have been a weighty reason for the validity of the will, but on the other hand, it was not unlikely that the old lady's eccentric habits and mode of life would raise doubts against such a view. The issue proved the expectation of the testatrix to be right. After Miss X's death the will was disputed, but the matter was adjusted by an agreement between the plaintiff and the defendant.

In connection with this case I should like to state my opinion that undoubtedly there are cases of delusional derangement, in which testamentary capacity of a fairly sound and generally human trend is conceivable, so that there is sufficient reason for granting probate of the will. If mental disease always eliminates criminal responsibility, it does not, on the other hand, necessarily eliminate civil capacity.

Of course it is not altogether inconceivable, even from the point of view of criminal law, that the paranoiac may commit a crime under such circumstances that on analysing the motives one may feel less convinced of pathological causes. But, in view of the above-mentioned difference between criminal and civil evidence, it will presumably, in a criminal case, chiefly be the insane criminal's *unsusceptibility to punishment* which under *all* circumstances must cause his acquittal on the ground of mental disease. This reason does not exist in civil cases, and therefore the question of the civil capacity of the insane is less suited for categorical decisions. Thus the concept »partial accountability«, bound up with the doctrine of monomania (cf. p. 321) and obliterated from criminal law, still has its counterpart within civil law. The wording »under the influence of«, used by the Law Commission, expresses this thought by its conditional character.

With regard to the reasons for placing an insane person under guardianship, it is important in every case to secure examination by an expert and to avoid conclusions of too general a nature.

LITERATURE.

Lombroso, Cesare: L'homme criminel. 1887. *Baer, A.:* Der Verbrecher in anthropologischer Beziehung. 1893. *Tarde, G.:* La philosophie pénale. 1892. *Laurent, Emile:* Lánthropologie criminelle. 1893. *Liszt, Franz von:* Strafrechtliche Aufsätze und Vorträge. B. I—II. 1875—1904. *Thyrén, Johan:* Principerna för en strafflagsreform I—III. 1910—1914. *Same author:* Förberedande utkast till strafflag. 1916. *Same author:* Den moderna straffrättens grundåskådningar. 1920. *Westring, Hjalmar:* Om det s. k. tillräknelighetsproblemets behandling i en blivende svensk strafflag. Nord. Tidskr. for Strafferet. 1919. *Schuldheis, Georg:* Om sinnesjuka fångar i Sverige 1865—1894. Uppsala 1898. *Kinberg, Olof:* Det rättsliga förfaringssättet i Sverige rörande för brott tilltalade personer av tvivelaktiga sinnesbeskaffenhet etc. 1908. *Same author:* Om den s. k. tillräkneligheten. Sv. Läkarsällsk. Handl. 1914. *Same author:* Om de sinnessjukas och psykiskt abnormas straffrättliga behandling. Allm. Svenska Läkartidn. 1916. No. 42. *Same author:* Rättspsykiatriska utlåtanden. 1907—1916. Sthlm. 1917. *Foerster, Fr.:* Brottet och dess försonande 1913. *Petrén, Alfr.:* Hura böra vi ordna vården om imbecilla med antisociala tendenser. Allm. Svenska Läkartidn. 1916. Lagutredningens förslag till lag om äktenskaps ingående och upplösning. Motiv. 1913. *Gadelius, Bror:* Om brott och straff. Allm. Svenska Läkartidn. 1906. *Same author:* Simulation och sinnessjukdom. Allm. Svenska Läkartidn. 1915. *Same author:* Senila dissociationsfenomen och deras rättsmedicinska betydelse. Tidskr. for nord. Retsmed. og Psyk. 1910. *Florin, J. A.:* Om tvivelaktiga sinnestillstånd i förhållande till civillag. 1870. *Gadelius, Bror:* Om tvivelaktiga sinnestillstånd ur civilrättslig synspunkt. Allm. Svenska Läkartidn. 1910.

See also the footnotes of this chapter.

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CORRECTION

P. 138, line 7 from above, for **"imperative ideas"** read: **"obsessive ideas"** For the explanation of the author's terminology on this point the reader is referred to p. 315.