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An Introduction to DERMATOLOGY

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MEDICAL OFFICER OF HEALTH
CITY OF ABERDEEN

AN INTRODUCTION

TO

DERMATOLOGY



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AN INTRODUCTION

TO

DERMATOLOGY

MEDICAL OFFICER of HEALTH
CITY OF ABERDEEN

BY

NORMAN WALKER, LL.D., M.D., F.R.C.P.

PHYSICIAN FOR DISEASES OF THE SKIN
THE ROYAL INFIRMARY
EDINBURGH

SEVENTH EDITION

WITH 84 PLATES AND 80 ILLUSTRATIONS IN THE TEXT

EDINBURGH
W. GREEN & SON
LIMITED
1922

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TO

THE MEMORY OF

SURGEON-GENERAL M. W. MURPHY, A.M.S.

(Formerly of the 80th and 91st Regts.)

SURGEON-MAJOR FRANCIS HENRY SWINTON MURPHY, A.M.S.

AND

SURGEON-CAPTAIN WILLIAM NORMAN MURPHY, A.M.S.

MY

UNCLE AND COUSINS

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PREFACE TO THE SEVENTH EDITION

I HAVE resisted a temptation to enlarge the scope of this Introduction to Dermatology, and have endeavoured to preserve the characters to which I believe it owes its success.

If I have not dealt so fully with some of the newer methods as some might wish, it is not because I am hostile to them. On the contrary, I believe we are on the verge of a great advance in Dermatology through their means. But the experts must ruminate over many of these new hypothetical suggestions before passing them on in a digestible form to the student.

Several new plates have been added: the cast of cutaneous reactions facing page 61 was obtained only when the book was in the press, hence the absence of reference to it in the text.

Dr. Cranston Low, owing to the pressure of his research work, has not been able to co-operate in the production of this edition, but he has rewritten his article on Pellagra, and has placed freely at my disposal all his work on hypersensitiveness and immunising of the skin to irritants. I am indebted to Dr. Robert Aitken, University Tutor in Dermatology, for his careful reading of the proofs, and particularly for checking the prescriptions; and to Miss Rae for much general help, for the preparation of the Index, and for the originals of all but one of the new coloured plates. The exception (facing p. 109) is the work of Dr. Leo, of the Mukden Medical College, who acted for some months as an Extra Clinical Assistant in my Department.

The Publishers have, I think, been remarkably successful in overcoming post-war difficulties.

NORMAN WALKER.

EDINBURGH, *November* 1921.

PREFACE TO THE FIRST EDITION

THIS work is practically a reproduction of the lectures which for several years I have delivered to my students, and I venture to hope that they may be found useful by a larger audience.

It is to be noted that the title of the book is "An Introduction to Dermatology," and that it does not profess to be a complete system. I have described fully all the more common diseases, and less completely those rare ones which the ordinary practitioner is likely to meet with, while I have omitted, for the sake of space, those rare conditions which are mainly of interest to the specialist.

I have to acknowledge much help received from the writings, etc., of others. In the first place, I owe a great deal to Dr. Allan Jamieson. I feel, indeed, that I have hardly done him sufficient justice in the text. Being so closely associated with him, I have unconsciously absorbed much of his teaching, and I desire here to express my gratitude for all I have learned from him. It is, however, only right to make clear that the "new-fangled" ideas in the book are my own; in particular, those on Eczema, Seborrhœa, Lichen, and Lupus erythematosus.

Another to whom, as is evident from my frequent references, I owe much, is my friend Dr. Unna. No one can write on the skin without frequently quoting his name, and we have been on such intimate terms for the last few years that I naturally do so more than most. He has been good enough to read and criticise for me the section on Seborrhœa; and his contribution to Eulenberg's "System," on the general

Therapeutics of the Skin, which he was so kind as to supply me with while it was passing through the press, has been of much value to me in the preparation of that section.

To the published works of others I am much indebted—in particular to those of Hebra, Tilbury Fox, Erasmus Wilson, Crocker, Morris, and Liveing.

The microscopical drawings, with the exception of Figs. 1, 2, and the animal parasites, are from my own preparations, and they and all the coloured plates are the work of Mr. J. Grieve, to whom I desire to express my thanks for the care and trouble he has taken with them.

Of the photographs, while most are from my own collection, some are from friends, and are acknowledged in the text.

The University of Edinburgh has at last "recognised" a course of clinical lectures on Dermatology, and I trust that this work will do its share in imparting to the students that amount of systematic knowledge which is essential to a thorough understanding of the subject.

Edinburgh, 1899.

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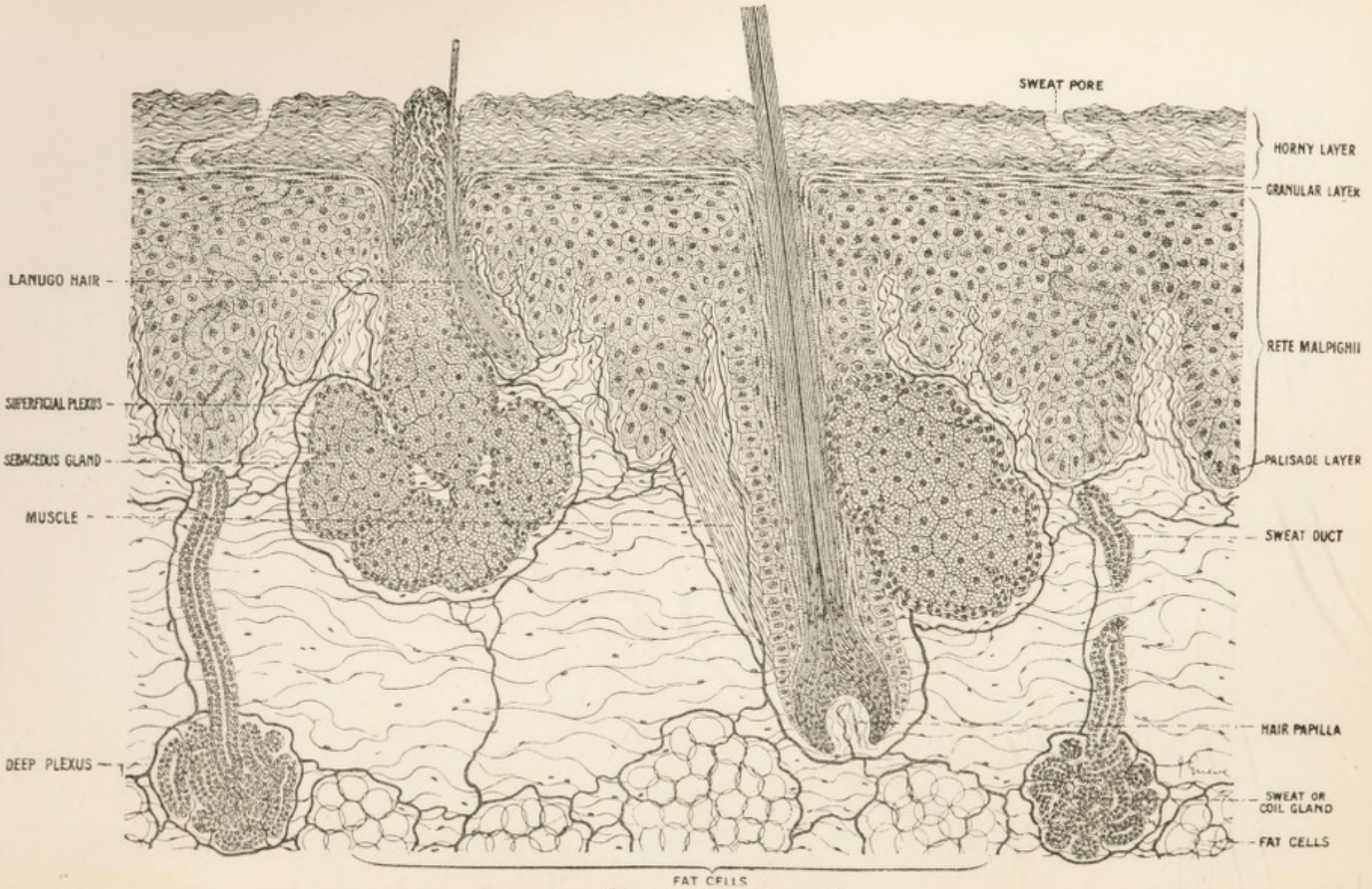


Diagram of Vertical Section of Skin.

AN INTRODUCTION TO DERMATOLOGY

SECTION I

INTRODUCTORY

LIKE other organs, the skin is made up of connective tissue, blood-vessels, lymphatics, nerves, and special cells (in this case epithelial), and it is consequently liable to exactly the same changes. These are, of course, just as in other organs, modified by the special structure of the organ, and in the case of the skin they are further modified by the circumstance that the processes are, as it were, one-sided. From its position the skin is more exposed to, and exposed to more forms of irritation than are the other organs, and consequently finer variations in pathological processes can be observed. But the essential changes are the same.

Thus we find in the skin congenital malformations, hyperæmia, anæmia, inflammation, hypertrophy, and atrophy. New growths abound, and parasites flourish. The great majority of the familiar diseases, however, come under the category of inflammation, and may be produced by an immense variety of irritants, to some of which (*e.g.* heat, cold, light, friction, etc.) the internal organs are relatively strange.

The skin is made up of the epidermis or cellular layer; along with which should be reckoned its derivatives, the hair follicles, the hairs and nails, and the sebaceous and sweat or coil glands; and the corium or true skin, with its vessels nerves, and lymphatics. In the epidermis the cells undergo a

gradual process of evolution from the columnar (basal) cells to the cornified superficial layers. Above the basal or germinal layer (Stratum germinativum) come the prickle layer (Stratum mucosum, rete Malpighii), the granular layer (Stratum granulosum), the clear layer (Stratum lucidum), and the horny layer (Stratum corneum). See Diagram.

The **Germinal Layer** consists of small and regularly arranged columnar cells, with here and there a mitotic figure. Mitotic figures are also found in the lower layers of the next stratum; growth and division extend beyond the limits of the germinal layer. These cells contain varying amounts of pigment, according to the colour of the skin.

Following this is the **Prickle Layer**, and our knowledge of its structure has been gradually evolved. The earliest idea was that these cells, which are larger than the germinal ones, and polygonal in shape, fitted into each other by a series of teeth, the prickles, which dovetailed into one another. It was then observed that the prickles did not fit into each other, but met end to end, and they were then described as intercellular bridges, through the arches of which flowed the lymph which nourished the cells. Most recent observations show that these prickles are not mere processes from the cell membrane for the purpose of keeping the cells apart, but that they are fibres of intracellular spongio-plasm, which pass from one cell, often through one or more cells, to join another at a distance. The whole of the cells of this layer are consequently in organic connection with one another, and Ranvier has compared it to one vast cell with many nuclei (Fig. 1).

In the **Granular Layer** the cells are, in section, elliptical in shape (they are really flattened vertically), and when treated with any nuclear stain certain granules in the protoplasm of the cell take the stain deeply, and produce the appearance from which the layer derives its name. These granules consist of two substances named keratohyalin and eleidin, probably stages in the transformation of the protoplasm of the cell into the waxy and fatty material with which the surface cells are loaded.

The **Stratum Lucidum** is best seen in the skin of the palms and soles, and appears in unstained sections as a clear

streak, without any evident structure. When carefully prepared, however, it also is found to consist of cells swollen and soaked with fat, into which the stain does not penetrate. This fat is known as eleidin, a homogeneous oily-looking substance in and between the cells. The Stratum Lucidum may be looked on as part of the horny layer.

The **Stratum Corneum** is made up of three distinct layers. It varies in thickness, being thinnest on the face and on the

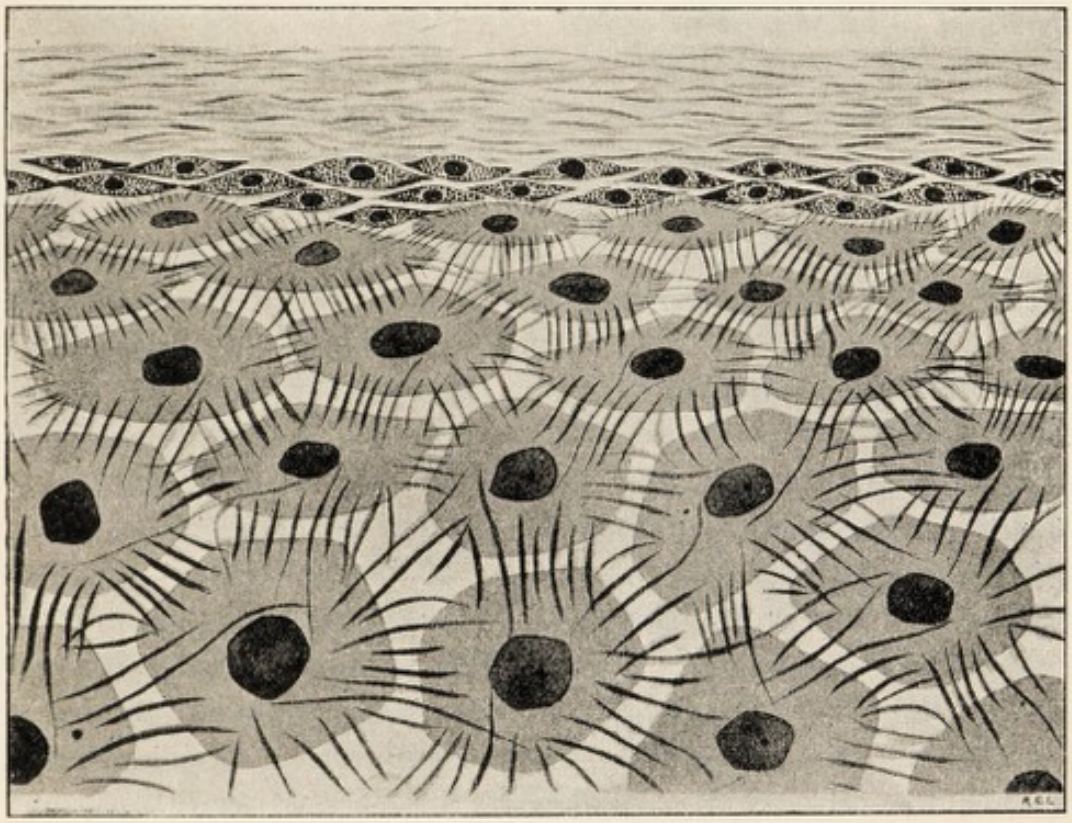


Fig. 1.—Showing the fine fibrils of the epithelial cells.

flexor aspects of the extremities, and thickest on the palms and soles. The lowest layer contains a large amount of fat and waxy substance, which make it waterproof, and the cells are closely packed. Following this comes a looser layer, which seems to consist chiefly of cell membranes, with traces of nuclei only here and there. The cells are held together by the remains of the intercellular fibres, which also undergo keratinisation. The outer layer is more dense, the cells are closely packed together and are constantly desquamating on the surface.

The appendages may be considered along with the epidermis, of which they are all simply variously modified depressions. At an early stage of fœtal life solid prolongations of the epidermis descend into the corium, and there are differentiated into the various appendages.

Thus a **Hair Follicle**, when it has grown a certain length down into the corium, is met by an up-growth, a little capillary loop, which forms the papilla of the hair. This, so to speak, turns the epidermic attack, and the cells in the centre are modified to form a hair.

The **Sebaceous Glands**, which are practically always in close relation to hair follicles, are also mere extensions of the epidermis, but their energies are differently directed, and the cells, instead of forming a hair, undergo a peculiar fatty metamorphosis which ends in their breaking down into the excretion which we know as sebum. Pembrey suggests that the cells, like those of the mammary gland, may discharge their contents and resume work again. At the border of the gland the cells are of the same type as those in the germinal layer of the skin, but as they approach the centre they enlarge, owing to the presence of fat, often to ten times their original size. The shape of the gland depends upon the blood-vessels of the corium below it. As the epidermis grows downwards it is able to advance steadily against the fibrous tissue, but when in its advance it meets a blood-vessel the blood-vessel prevails, and the epithelium divides and passes down on each side of it. Hence the lobulated character of the sebaceous gland.

The **Coil Gland** is developed in much the same way, except that the process is narrower, and descends deeper into the corium. When it reaches a certain depth its growth downwards ceases, and it increases by coiling upon itself. The duct is lined by one or two layers of cells, the coil by from one to three. While the sebaceous gland opens with a distinct mouth, either on the surface or into a hair follicle, the sweat duct terminates at the germinal layer. From this point a channel may be traced between the cells of the epidermis, where the sweat communicates freely with the inter-epithelial lymph, and the duct reappears in the well-known corkscrew form in the

horny layer. It will be noticed that the expression "coil" has been used instead of the more usual one of sweat glands. The sweat glands, while they undoubtedly do excrete on the surface a watery fluid, are not concerned with that excretion solely. Indeed, Unna attributes to them the principal share in lubricating the skin, and a properly conducted examination will never fail to discover in the lumina or cells of these glands a certain, sometimes a considerable, amount of fat. The coil is almost invariably placed in immediate relation to a lobule of fat, from which it presumably derives substance, and the fact that the palm of the hand, where, if anywhere, perfect lubrication of the skin is required, contains no other glands but coil glands, is a strong piece of clinical evidence bearing on the character of their excretion. The amount of fat which is observed in the lowest horny layer can hardly conceivably be derived from the sebaceous glands, which open upon the surface with a distinct walled opening.

The connective tissue of the **Corium** is arranged in three layers. The deepest one, in which lie the roots of the hairs and some sweat glands, is loose, and the fibres are coarse. In the middle layer the fibres are finer, and are closely arranged in horizontal bundles. The upper part of the corium is known as the *papillary body*, and immediately adjoins the epidermis. In it the fibres are much finer, and their arrangement is looser and more irregular, showing none of the horizontal stratification of the middle layer. The lymph spaces are wide, or at least have an infinite capacity for widening, and here are found most of the deeper pathological changes in the more common diseases. It is upon this layer that the epidermis depends for its nutrition, and from it processes—papillæ—project into the epidermic layer. Sections of the skin give rather a misleading idea of the true relation of the papillæ to the epidermis, which is shown in the accompanying figure (Fig. 2). Numerous elastic fibres are distributed throughout the corium.

The **Blood-vessels** of the skin are distributed, roughly speaking, in two layers. At the lower border of the corium is the deep plexus, sending branches to surround and supply the coil glands and hair papillæ. At the upper border of the corium, just where it passes into the papillary body, we find

the superficial plexus sending off processes into the papillæ, each of which contains a fine capillary loop.

The **Nerves** of the skin are fascinating subjects for study. Their terminations may be traced into the *Pacinian* and *Meissner's* corpuscles, into and between the epidermic cells. They may be found in relation to the hair follicles, and in numbers around the coil glands. Their direct bearing on the diseases of the skin is obscure, and definite changes in them have been found only by a few favoured individuals, and not regularly even by them.

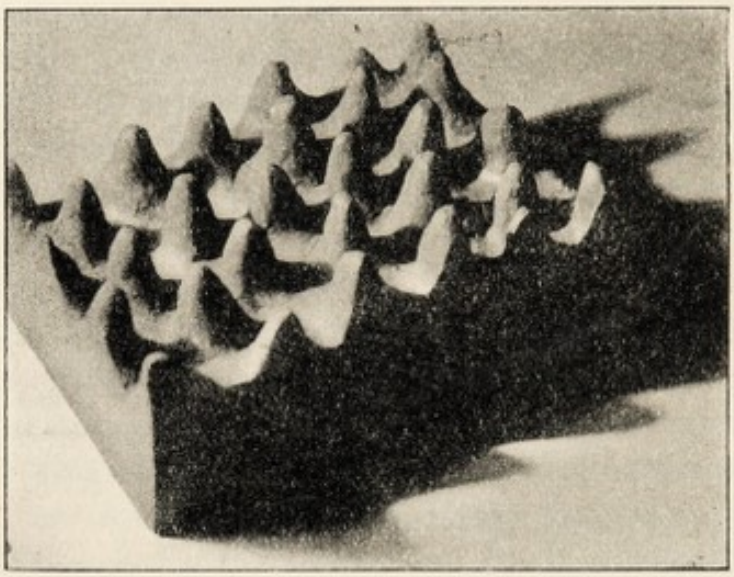


Fig. 2.—Photo of plasticine model of the papillæ of the skin.

The **Muscles** of the skin are found mainly in relation to the hair follicles and sebaceous glands, where they take their origin. They are non-striped, and terminate high up in the corium, being attached to the connective tissue fibres. One of their functions is the expression of sebaceous material from the glands. Muscular fibres are also found in certain special situations, such as the scrotum and the nipple. Not of much importance pathologically, their spasmodic contraction increases very much the sufferings of the patient when the skin in these parts is inflamed.

The structure of the *nails* is described in the section dealing with their diseases.

FUNCTIONS

The most important functions of the skin are those of protection and regulation of temperature.

The resistance of keratin to chemical irritants is very great, and the fatty and waxy material with which the horny cells are laden not only converts them into a sort of waterproof covering for the body, and so prevents excessive transudation of fluid, but materially aids in the defence against micro-organisms. It is when the skin is deprived of its natural grease that micro-organisms proliferate freely and exercise pathogenic action.

The pigment of the skin protects both it and the deeper-lying structures from the injurious effects of light. It is to protect the subject from light and not from heat that Nature has bestowed a dark skin on the inhabitants of tropical regions; the white man can stand *heat* as well as the black.

The function of the sebaceous glands is to grease the surface of the body. This prevents it from becoming sodden with moisture, as is demonstrated when one takes a prolonged hot bath. The parts which become sodden are the palms and soles, where there are no sebaceous glands. They depend for the grease necessary for their lubrication on the coil or sweat glands, and in the hot bath these are stimulated and flushed out by their watery secretion.

The action of the skin as an adjuster of temperature depends on the dilatation and contraction of the cutaneous vessels and the action of the sweat glands. In normal conditions there is a constant transudation going on through the cells of the epidermis; it is only when the surrounding temperature reaches a certain height—90° to 95° Fahr.—that the sweat glands begin to operate vigorously and beads of sweat appear on the skin.[1] In those cases—fortunately rare—where the whole surface of the skin is inflamed and the vessels persistently dilated, this function of heat regulation is in abeyance, and special care has to be taken to ward off serious complications.

Active sweating plays an important part in cleansing the

[1] That this is due to the action of the nerves is proved by the fact that skin rendered insensitive by injury to the nerves supplying it does not "sweat," it only perspires.

skin, and a person who never baths, works hard, and sweats freely may be actually cleaner than one who only takes occasional baths.

CLASSIFICATION

Classification is a sore trouble to every one who has to teach dermatology. Malcolm Morris very truly says that "while it is a good servant it is a bad master," and slaves to classification are rarely good teachers. Ever since dermatology became a science it has been the aim of its leaders to formulate a perfect classification; they are still aiming. Some have classified diseases according to what are called the primary lesions, and put them in one or another class according as the first morbid change observed is a papule, pustule, vesicle, bulla, scale, etc.

Willan, the father of British dermatology, used this form of classification, while Erasmus Wilson advised what he called a "clinical" classification, which comprised no fewer than twenty-two varieties. While such a system may prove useful to the expert, it is of little value to the beginner.

The French school classed diseases according to supposed diatheses, some of which are unknown to the general pathologist.

Hebra endeavoured to found on a pathological basis: Hyperæmia, Anæmia, Anomalies of secretion and exudation, Hæmorrhages, Hypertrophy, Atrophy, Neoplasms, Pseudoplasms, Ulcerations, Neuroses, and Parasitic diseases. While there is much in favour of some such method, it undoubtedly leads to some anomalous associations.

Some in despair have had recourse to the exceedingly practical plan of using the alphabet as their means of classification, and describing diseases under A, B, and C. Even if there were universal accord as to nomenclature, the plan is useless to those who are not familiar with skin diseases. From the student's point of view almost any system is better than none.

The system here adopted will be found in full in the Table of Contents, which the student should read carefully after he has attained a certain familiarity with the ordinary diseases of the skin. It is modelled on that in Unna's "Histopathology of the Skin."

DIAGNOSIS

The diagnosis of any given case may be very easy, or it may be, for the time, absolutely impossible.

Dermatology is not practical chemistry (qualitative analysis), where, by the addition of various solutions, the observer is enabled by a process of elimination to arrive ultimately at an absolute diagnosis.

Dermatology can neither be taught nor learned in this manner. Accuracy of diagnosis can only be acquired by a wide knowledge of the various diseases affecting the skin, and by making ample use of the experience gained in each and every department of medicine.

To the student the subject appears strange, for it seems to appeal almost exclusively to the eye, while the senses he has mainly been trained to use in medicine are those of touch and hearing.

While the eye is by no means our only aid (the sense of touch in many diseases, notably syphilis, being of very great value), a mere picture on the retina of the "pimple" on the skin does not advance matters very much. The picture on the retina must be conveyed to and analysed by the brain, while the eye must penetrate the surface of the "pimple" and divine the nature of the process present beneath.

The distribution of the various eruptions is very important, but too much importance is sometimes attached to it. "Psoriasis attacks the extensor, eczema the flexor surfaces," is one of those phrases which sinks especially deep into the student's mind, although its practical value is almost *nil*. One or two diseases have special seats of preference, but these must be learnt in connection with the different diseases, and it seems to me mere waste of time for the student even to read long lists of diseases which may occur on the back, chest, or limbs.

"*No opinion should be definitely pronounced until every portion of the eruption has been seen.*" This is another of the statements which need not be invariably literally interpreted. It applies especially and mainly to those cases where there is something peculiar about the eruption, and it does not mean that, when a patient has typical patches of psoriasis on the

legs and arms, those on the buttocks must also be inspected. But when there is anything about the eruption which strikes the observer as unusual, something which he is not familiar with, or something which causes him to suspect some definite disease, then he must insist on seeing region after region until his suspicions are either confirmed or dissipated. This is particularly the case in suspected tertiary syphilis, where the discovery of old scars, long forgotten by the patient, is of the greatest value in diagnosis.

In searching for evidence of this sort the word of the patient must not be depended on, and a statement such as "there are no spots on my back" really carries no weight at all. It has been jocularly said that in Vienna any statement made by a patient is regarded as probably untrue, and the joke contains a spice of truth which gives it point. Information obtained from the patient, if it is to be of any value, must be most carefully elicited.

There are two ways along which error lies. In one the patient intentionally or unintentionally misleads the observer by his replies, in the other the observer unintentionally misleads the patient by a series of leading questions. The poor old woman up from the country thinks it more polite to give the affirmative answer which the "Professor" so evidently expects. The mistake is so common that it may be well to illustrate it. Take a case of suspected Scabies. The proper questions to ask are: *Does the eruption itch? What time of day is the itching worst?* For contrast, the improper questions: *The eruption is very itchy, isn't it? Does it get worse when you take off your clothes at night?* The former questions will really elicit information; the latter, in the class of patient referred to, might just as well be left unasked.

The first and the most important inquiry where there is any difficulty in the diagnosis is: Has any treatment been applied, and if so, what is the treatment and how long has it been carried out? Both well-treated and ill-treated cases may be altered out of all semblance of themselves. Other important questions are whether the present is the first attack, and how long it has lasted. The questions which deal with matters of fact are the ones from which real information can

be got; the description, even by the most intelligent, of the manner of commencement of their diseases, is in very many instances valueless or even misleading. All questions should be simply put: thus, on inquiry into a suspected case of urticaria, the lesions should be referred to as "like nettle stings," and not as "white wheals."

When an eruption has a peculiar irregular look, especially if it occurs in a young woman, the possibility of its being self-produced should be considered.

The diagnosis of syphilitic eruptions is probably the greatest difficulty of the inexperienced. Syphilis may imitate almost any disease of the skin, and it is difficult to say whether the more common mistake is to diagnose it when absent, or to ignore it when present. And yet it may be said almost definitely that if an eruption is syphilitic, some other evidence of the disease will be detected on careful examination. If the disease is recent, there is ulceration of the throat and adenitis; should it be one of the later eruptions, there will be found somewhere a tell-tale scar.

A very important matter is the diagnosis of the infectious diseases from what may be called "skin diseases proper." Thus erysipelas is not infrequently confused with acute dermatitis of the face; modified smallpox with acne; and measles with the antipyrin rash. In such cases the thermometer is an almost infallible guide. Of course, coincidences may occur and the temperature be raised accidentally, but it may be taken as a practical rule that when the thermometer registers high the more serious disease is present.

TREATMENT

It is no longer necessary to discuss the question whether diseases of the skin should be treated at all. Hebra's scathing satire on those who, unable to cure the disease, took refuge behind the theory that harm might result from interference, has had its effect, and has driven this absurd doctrine from the profession. Even the laity seems wiser, and it is quite uncommon nowadays to hear the once familiar fears about an eruption being "driven in," though one still hears now and

again gratification expressed at its "coming" or being "driven out."

Urticaria, pemphigus, and purpura may attack both the skin and the mucous membranes, but we know of no means by which they can be driven from the one to the other, although instances where they appear to attack now the one and now the other occur with considerable frequency in France. According to Unna a moist dermatitis of the head of a child may so mask the early symptoms of tuberculous meningitis that the cure of the dermatitis appears to be followed by the development of the more serious disease. From this, however, we learn, not that we should leave the case untreated, but that we should be on the outlook for such occurrences. It is as absurd to act on the assumption that the skin only is diseased in any given case as it is to assume that every disease of the skin depends on some systematic disturbance.

During the incubation period of the infectious fevers any dermatitis present usually tends to disappear. This is notably the case in children who are sickening with measles, and rapid improvement in a case of dermatitis which has previously proved obstinate to treatment, especially if associated with a slight rise of temperature, should suggest this possibility.

Treatment in diseases of the skin resolves itself into internal and external, and the former may be again divided according as the action on the disease is direct or indirect.

I. Internal Treatment

The treatment of the disease of other organs on which skin affections sometimes depend will not be considered here. The treatment of dyspepsia, constipation, diabetes, or anæmia is exactly the same whether a patient has a disease of the skin or not, and if any of these are present their cure will increase the resisting power of the patient, and hasten his recovery from the skin disease.

There are, however, a number of internal remedies which are administered with the object of *directly* influencing the disease of the skin. Of these the most important is—

Arsenic.—Like mercury, arsenic has had its ups and downs.

The former, at first used with much success, was later so abused that it was largely abandoned in disgust, and even yet some eminent authorities are in the habit of treating syphilis without its aid. Used with discrimination it is now recognised as an invaluable remedy, and one can only envy the therapeutic resources of those who can afford to dispense with its assistance. It has even withstood its threatened displacement by salvarsan.

Arsenic has not reached the same haven of security. Used at first no doubt in moderation, its administration became more and more wholesale, until in the middle of last century each and every disease of the skin was supposed to be amenable to its influence. Valuable in many diseases, it is positively injurious in others, and its reckless abuse has brought about the inevitable reaction.

It cannot be too definitely laid down that arsenic is not a universal remedy for skin diseases; it should be used in those diseases where it is known to be of value, and in them only. It may be said generally that arsenic is useful in certain bullous diseases (pemphigus, hydroa) and in some dry forms of inflammation, and injurious in the vesicular catarrhs of the skin and in those associated with hyperkeratosis (acne).

Arsenic is almost invariably administered in this country by the mouth. Subcutaneous injection may be more efficacious, but it is not a method which appeals to the British public. Fowler's solution is the usual form in which it is prescribed. If an acid solution is necessary, the liq. arsenici hydrochlor. is substituted; or arsenious acid may be given in pills. The rules for its administration may be briefly stated: (1) The case must be a suitable one; (2) the patient's tongue must indicate that his gastric and intestinal functions are in good order; (3) it must always be given after or during meals (always freely diluted if in liquid form); (4) it should be given in gradually increasing doses until either (*a*) the disease shows signs of yielding, when the dose need not be further increased; or (*b*) the well-known symptoms of arsenical poisoning (coated tongue, abdominal pain, hyperæmia of the palms and soles, or conjunctival œdema) develop, when it should be discontinued.

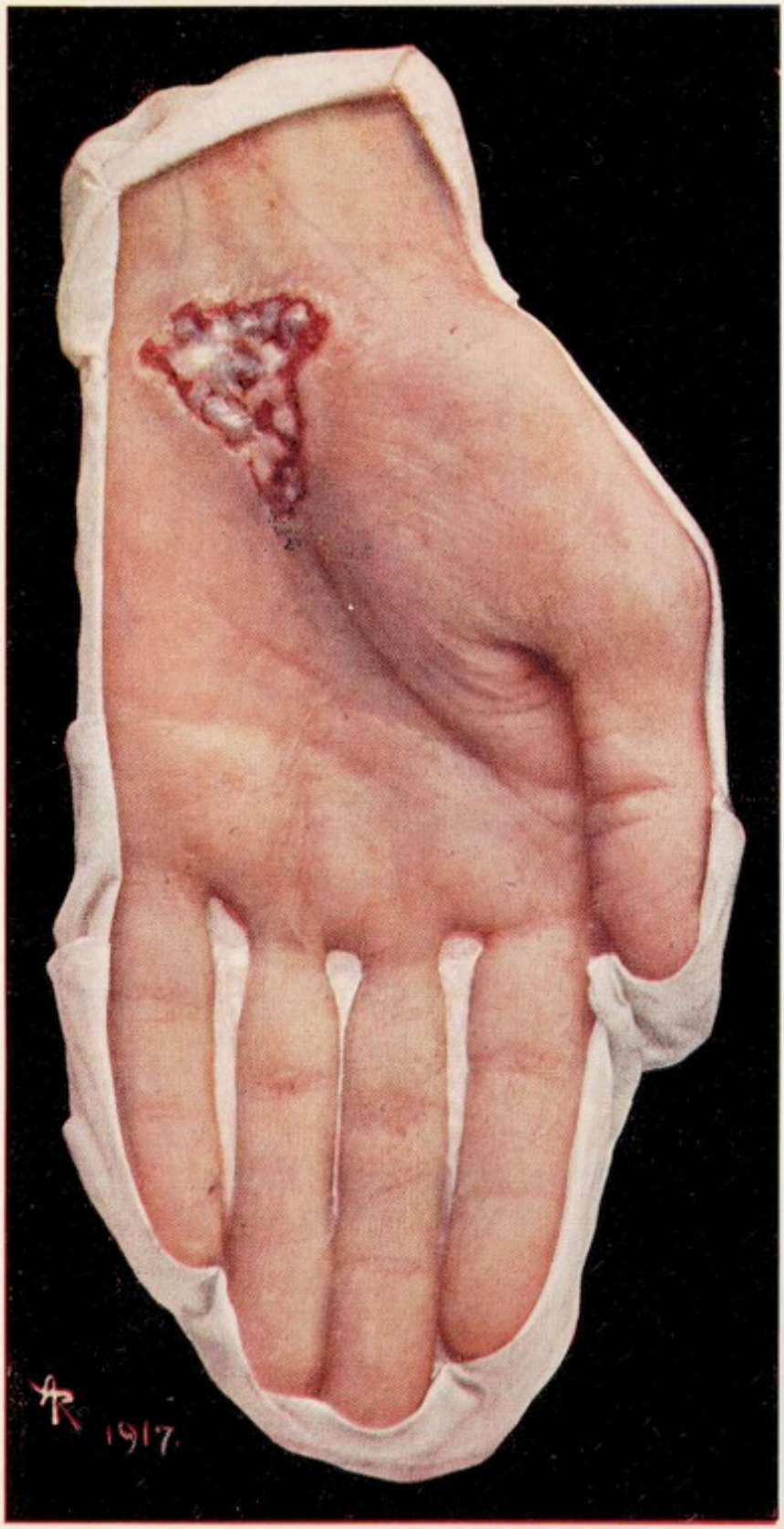
Various organic compounds of arsenic (cacodylates, arrhenal,

etc.) have recently been introduced, and it is claimed for them that they have all the good and none of the evil effects of the arsenic, of which they contain such enormous amounts. According to Fraser, the combination is so stable that there is absolutely no therapeutic effect. My own experience is that, provided sufficient amounts are administered, it is possible to produce all the effects of arsenic, particularly that which gives the garlic odour to the breath, and that the new preparations have no advantage over the old. And a recent experience where complete blindness followed the administration of one of the most popular compounds has determined me to leave them severely alone.

Sir Jonathan Hutchinson dealt a further blow to the haphazard administration of arsenic by drawing attention to the fact that its prolonged use may so stimulate epithelial growth as to lead to the development of carcinoma (see Plate opposite). While it cannot be said that his views have met with general acceptance, there are sufficient cases on record to suggest that there is more than coincidence in the sequence of events.

Antimony is recommended by some authorities in cases where there is heat and tension of the skin, provided the general condition of the patient does not negative its use. Jamieson gave the wine ℥ viij to xv two or three times a day, and Morris gives ℥ x to xij, repeated in an hour, and again if necessary two hours later. The interval is increased and the dose diminished until ℥ vj, thrice daily, are given so long as the acute symptoms last. Antimony is also found useful in some cases of lichen planus.

Mercury.—In addition to its action on specific disease, mercury often has an action, almost specific, on lichen planus. While most commonly administered in this country by the mouth, inunction and subcutaneous injections bring the patient more rapidly under the full influence of the remedy, and should be preferred where time is of importance. In localised syphilitic lesions one often applies the drug in the form of plaster to the seat of the disease. The inunction method has always been supposed to depend on the penetration of minute particles of metallic mercury into the glands of the skin, from which it was slowly absorbed into the blood, and the fact was



ARSENICAL CARCINOMA.

overlooked that the heat of the patient's body was slowly volatilising the mercury and surrounding him with a vapour which he constantly inhaled. Experiments on this line (Welander, Blaschko, and others) have shown that many of the effects of the inunction cure can be attained by the patient wearing next his person some fabric impregnated with metallic mercury, which the heat of the body gradually volatilises. The patient constantly inhales this vapour, and the effects of the mercury are very soon evident. Welander uses mercurial ointment in a bag, Blaschko a fabric impregnated with metallic mercury, in the form of a chest protector, which is described as the "Mercolint Bib." This, worn day and night, remains efficacious for four or five weeks, and I can speak highly of the success of the method, while patients are loud in their praise of its convenience. This effect must be kept in mind when one is using even very weak ointments of mercurial salts, *especially in cases where there is any elevation of temperature.* In extensive pustular eruptions ointments containing varying amounts of ammoniated mercury are often used with great advantage, provided the temperature is normal. If this is elevated, even by only one degree, poisonous symptoms are very readily produced, and death may result before the source of the poisoning is recognised.

Salvarsan.—Salvarsan and allied substances have been used not only in syphilis, but with some, though varying, success in some of those diseases of the skin in which arsenic and mercury have customarily been employed, such as lichen planus, psoriasis, and dermatitis herpetiformis. It is perhaps well to utter a word of caution regarding its haphazard use. In the only case of dermatitis herpetiformis in which I have used it the eruption was greatly aggravated.

Sulphur.—The former great reputation of this drug has grown dim, and internally administered it has only a limited use. Crocker recommended it in *hyperidrosis*, and it is occasionally useful in erythema multiforme when other methods have failed. The sulphide of calcium, gr. $\frac{1}{4}$ t.d.s., is sometimes brilliantly successful in the treatment of furuncle and indurated acne, while Duhring recommended the hyposulphite of sodium (grs. v to x t.d.s.) in urticaria and furunculosis.

Ichthyol possesses powers far beyond the sulphur which it contains. In urticaria it is probably our most dependable drug, and in any case where the vessel-nerve relations are disordered it may be hopefully given. It should be administered to adults in capsules or palatinoids. Fortunately, children do not usually object to its nauseous taste, and to them it may be given mixed with glycerin in doses of three or four drops.

Salicylic Acid in its various combinations (sodii salicylas, acetyl salicylic acid, salophen, salicin, and salol) is a drug of proven value in all the erythemata; indeed, for erythema nodosum it is virtually a specific. Many cases of erythema multiforme respond to it readily, but on others it has no effect. Following Crocker's advice, I have given it a fairly extensive trial in psoriasis, and while it has sometimes seemed of some value, I have not found it nearly so useful as he did. Acetyl salicylic acid has been especially useful in my hands, and has a more agreeable taste than some of the other preparations.

Quinin is often efficacious in those cases of erythema which do not respond to salicylates; it is useful in urticaria, especially if any malarial taint is present, and, like Duhring, I have found it do good in lichen planus, though we administer it from different motives. Payne recommended it in lupus erythematosus, and it is at least a useful tonic in many cases of widespread hyperæmic dermatitis, and as an alternative to arsenic in pemphigus.

Iodide of Potassium has undoubtedly some influence on inflamed psoriasis when administered in sufficient quantity; it is useful in actinomycosis, sporotrichosis, and in blastomycosis; but its chief value lies in its thorough action on the products of syphilis.

Ergot is used by some as a remedy in purpura, and in hyperæmic conditions such as rosacea, in the usually vain hope of contracting the dilated vessels.

Iron.—So many skin diseases occur in anæmic patients, that iron has a large share in internal treatment. The anæmic skin is especially liable to be attacked by micro-organisms, and its powers of resistance are so weakened that external remedies alone, however suitable, are often long in bringing about a cure.

It must, however, be emphasised that it is in this way, and in this way alone, that iron acts, and suitable external treatment must always accompany it. I usually administer it in the form of bi-palatinoids of ferrous carbonate.

Pilocarpin, in the form of repeated injections, sometimes proves of value in greatly infiltrated cases of chronic dermatitis which fail to respond to less heroic remedies.

Alkalis are undoubtedly useful in many conditions, but they have no direct action on the skin, and the indications for their use are found in disorders of other organs of the body.

Diuretics.—The acetate and citrate of potash or other diuretics given with large amounts of water are useful in cases of erythema, etc., where there is reason to believe in the existence of auto-intoxication. They act presumably by hastening elimination.

Purgatives, preferably saline waters, should be given when required, but the hope of purging away skin diseases is fallacious; the apparent improvement which occurs while the patient is reduced by the purging disappears when he regains his condition. This, of course, does not apply to the use of purgatives in cases of urticaria due to the ingestion of some poison, where a brisk cathartic is often the only treatment required. If such drugs are required, say in a case of dermatitis with constipation, there is probably nothing more satisfactory than the old-fashioned Epsom salts, made up in some way to suit the more fastidious taste of the present generation.

Opotherapy.—That the skin is influenced by more than one of the animal extracts is undoubted, and for a time thyroid and other extracts were very largely used and equally largely abused. The most remarkable results were achieved in the thyroid treatment of psoriasis. Having observed the remarkable desquamation following on its use in cases of myxœdema, it occurred to Dr. Byrom Bramwell that a trial might be made in psoriasis. Accordingly a patient of mine was admitted to his ward, and treated with brilliant success. It is undoubtedly the case that nearly every case of psoriasis, if put to bed and given enough thyroid substance, can, temporarily, be cured. Under suitable circumstances, there are few objections to the treatment; but most cases of psoriasis are unwilling to submit

to much restraint, and the treatment of ambulant cases with large doses of thyroid is not to be commended. I have seen cases reduced to a serious condition of debility, and in one case a fatal termination ensued. Still, after all, this is merely the history of any new and useful remedy. Reckless abuse is followed by a reaction, and the pendulum swings perhaps too far on the recoil. There are cases of psoriasis which do well on small doses of thyroid; and especially combined with arsenic, it is often a useful addition to other treatment. In lupus, small doses of thyroid help to diminish the hyperæmia and the catarrhal complications which so often aggravate that disease, and in other forms of hyperæmic dermatitis it sometimes does good. In ichthyosis it is really useful, and it has been administered with favourable results in scleroderma. I would sum up my views on thyroid by expressing the opinion that it is the advocacy of the drug as *the* means of treatment, to the detriment or derogation of all other remedies, which has to some extent prevented it from attaining the place which its merits deserve.

Suprarenal extract has been extensively used in Addison's disease, and in vitiligo or leucoderma, but without much benefit. In the latter disease I have several times given it a very thorough trial, but I cannot say that I have seen any improvement result from its use; though one patient wrote me from India that since taking it her disease had apparently ceased to spread. It has been suggested as a remedy, both internal and external, for rosacea, but in my experience other more dependable remedies are to be preferred in this disease.

Vaccine Therapy.—Since I wrote the last edition of this book great strides have been made in Vaccine Therapy. As I then ventured to prophesy, the clinicians have estimated its value and its limitations. In chronic staphylococcal affections it often renders very valuable service. In many cases stock vaccines prove efficacious; in some of those in which they fail autogenous vaccines bring about a cure. I am inclined to think that detoxicated vaccines are more useful than ordinary ones, and I have administered pus vaccines in several cases with great success. I do not make use of heroic doses, and I believe better results are achieved when the interval between the doses is not

too short. In sycosis, perhaps the condition in which one uses them most, the injections are given at intervals of ten days or a fortnight. The use of vaccines in Ringworm, from which I hoped much, has not been successful in my hands.

II. External Treatment

Since in the vast majority of skin diseases the cause is seated in or on the skin itself, the external application of some suitable drug is clearly the rational method of treatment, while even where the cause lies deeper, external applications are often of value in moderating the symptoms of the disease.

It would occupy too much space to describe in detail the therapeutic action of the many and varied drugs which are of proven efficacy, while to do the same for every drug which is occasionally used would require a volume. Tar, carbolic acid, tumenol, nicotine, cocaine, hydrocyanic acid, etc., have each some power of relieving itching, and are spoken of as anti-pruritics; as astringents we make use of many of the salts of lead, silver, zinc, and bismuth, as well as tannic acid and alum; caustics, such as caustic potash, arsenious acid, chromic acid, carbolic acid, nitric acid, tri-chlor-acetic acid, the chloride of antimony, and the acid nitrate of mercury, are in common use; to destroy animal parasites, we make use of paraffin oil, the oil of sassafras, xylol, stavesacre, styrax, the balsam of Peru, etc.; while in the endeavour to destroy vegetable parasites and bacteria, almost every known antiseptic has been employed.

Special reference requires to be made to the class of remedies variously spoken of as reducing agents, kerato-plastic, or kerato-lytic remedies. Certain drugs when applied in suitable media to the inflamed skin have the property of promoting healthier cornification, of bringing back to the normal the chemical changes which the cells pass through. The more important members of this group are tar, salicylic acid, resorcin, sulphur, ichthyol, pyrogallol, and chrysarobin.

Applied in concentrated form, they produce a destruction, a lysis of the keratin; diluted, they help to build up. Some of them, notably pyrogallol, take up oxygen in the process; and in the belief that this was the explanation of their action the name of reducing agents was applied.

Oxidised pyrogallol is, however, by no means inactive, while oxidised chrysarobin is comparatively inert, so it is probably incorrect to attribute all their good effects to their reducing properties.

The greater one's experience the more is it borne in on one that in the treatment of the diseases of the skin more depends on the method of applying the drug than on the particular drug selected, and no time is wasted which is spent on impressing on the patient the importance of the method of application. A word, too, may here be spoken in season on the importance of considering the question of expense. The treatment of a skin disease is always expensive, and in many cases unsatisfactory results are due to the too sparing use of whatever may be ordered. So that although, say, an ointment may be, in the prescriber's opinion, the best treatment for a particular case, he may get better results in the less well off or too frugal patient from the prescription of the cheaper lotion or varnish. And a word on the amount prescribed will not be out of season. In Scotland, at least, no patient assumes that he is expected to use in one day the whole of the amount which he receives from the chemist. Consequently, if too small an amount of ointment is prescribed, the treatment is sure to be unsuccessful. To take the common disease of scabies as an example, it should not be forgotten in writing the prescription that it takes at least four ounces of sulphur ointment to cover the body of an average-sized man once. If only that amount is prescribed the patient will never think of using it all at once, and consequently the treatment will not be efficient. True economy in prescribing consists in prescribing adequate and not small amounts.

There is great scope for the exercise of common sense in the practice of Dermatology.

Before commencing the treatment of any skin disease it is first of all necessary to remove from the surface any products of disease (crusts, scales, etc.) which lie on the surface and prevent any application from reaching the actual seat of the disease. There are various methods of doing this. A good deal can be done in suitable cases by a prolonged warm bath to which an ounce or two of carbonate of potash has been added. The part may be covered with strips of lint soaked in

olive oil. On the scalp, if not contra-indicated, common paraffin oil, in virtue of its searching and penetrating powers, is of great value in removing accumulated scales and excretions. Hebra's ointment (lead plaster and vaseline in equal parts), spread thickly on cloth, is very efficacious in removing crusts, and at the same time its action on areas of inflammation is favourable.

One of the best methods is the prolonged application of the **Boracic Starch Poultice**, which is made as follows:—One teaspoonful of boric acid is mixed with four tablespoonfuls of cold-water starch,[1] and enough cold water to give the mixture the consistency of cream; a pint of *boiling* water is then boldly added, the mixture being constantly stirred until the starch bursts and a translucent jelly results. There is perhaps less risk of failure if one pours the cream into the boiling water. When this is quite cold the amount required is spread on cloth in a layer about half an inch thick. This is covered with muslin and applied to the part. The poultice should be renewed about four times a day, and much trouble will be saved by making enough of the starch jelly to last for two or three days. In addition to its power of removing scales and crusts, this poultice is a valuable soothing application in inflammatory cases. I strongly advise students to expend sixpence on wheaten starch and practise making poultices. They will wish they had taken the advice when their patients who have failed to make them satisfactorily ask for a demonstration.

Baths.—These are used with various ends in view. Where the skin is greatly inflamed a *starch bath* is very soothing. From a half to two pounds of starch is crushed and made into a cream with cold water, and *warm* water from the tap should be caused to run into and overflow the vessel in which the cream has been made. The water must not be too hot, or the starch will "burst." Bran (lbs. 2 to 5) and gelatine (lbs. 1 to 3) may also be used to form a soothing bath.

Alkaline Baths.—The drying after-effect of the alkali on the skin should not be lost sight of in the temporary sense of well-

[1] Pure wheaten starch (Pulvis Amyli) makes the best poultices; even experts cannot make satisfactory poultices out of Colman's. Orlando Jones', Colman's rice starch, Robin, or Glenfield starch may serve if the pure wheaten article cannot be procured.

being that a patient with an inflamed skin feels when in these baths, and an alkaline bath should always be followed by an application of grease. They are more suitable for cases where there is great thickening of the skin, or, as in psoriasis, for the removal of the scales, and are made by the addition to an ordinary warm bath (25 to 30 gallons) of sodii carb., ℥ij to v; potass. carb., ℥ij to v; borax, ℥ij to v; or soft soap, lb. ss. to j.

Sulphur Baths are useful in scabies, and also in other conditions in which sulphur is indicated. They are usually made by adding two to four ounces of potassa sulphurata to the bath. Startin recommended sulp. præcip., ℥ij; sodii hypo-sulp., ℥j; ac. sulphuric. dil. (℥ss). Sig.: Mix in a pint of water and add to the bath. The deleterious effect of sulphur on iron baths must not be forgotten, and is a great hindrance to its use. The preparation sold as *Sulphaqua*, which develops sulphur when mixed in water, is largely free from this disadvantage.

Tar Baths.—While tar may be added to a warm bath, the usual practice is to *tar the patient* before he enters it. The bath should be prolonged, care being of course taken to maintain the temperature of the water.

Patients or their friends often ask when frequent warm baths are suggested, whether these are not weakening. They are—when they are too hot. If regular bathing is to form part of the treatment a bath thermometer must be used, and the temperature of the bath should not exceed 100°. In my wards 99° is the standing order. What some people call a nice warm bath often means 103° or 104°, or even 110°. Ladies are special sinners in this matter.

Sea Bathing.—If any skin disease is associated with much hyperæmia, and especially if moisture is present, sea bathing is likely to irritate and aggravate it. On the other hand, its general tonic effect is sometimes shown beneficially on the skin. It should be discontinued if any irritation follows. Hot sea-water baths are sometimes very useful in psoriasis.

Powders.—Simple powder when applied freely to the skin protects it from external irritation, soaks up the evaporating or excreting fluid by capillary attraction, and therefore pro-

duces a sensation of coolness; the vessels are contracted, so that a certain degree of anæmia results. Its beneficial effects on erythematous and œdematous skin are thus accounted for. Any further effects are due to the chemical character of the powder, and not to its mechanical action. The more commonly used powders are the oxide, carbonate, and oleate of zinc, chalk, starch, lycopodium, rice, talc, boric acid, carbonate of magnesia, kaolin, terra silicea. Violet powder is composed of starch to which a certain amount of powdered orris root is added.

Carbonate of magnesia has the greatest capacity for water, taking up five and a half times its own weight (Grüindler). As a simple dusting powder it is excellent, but its bulk is against its use in pastes. Kieselguhr[1] takes up three and a half, and oxide of zinc one and one-fifth times its weight of water, and being less bulky these are more commonly used in pastes.

Powders are simply dredged on to the affected area. If a more prolonged action is desired they may be quilted into muslin bags and fixed with a bandage, or they may be applied, *e.g.* on the legs, by wearing two pairs of stockings or drawers, the inner pair being of some open texture, and the space between the two liberally dredged with powder.

Lotions.—These are mainly used either as applications to subdue itching and irritation, or from motives of economy, when the wide spread of the eruption in any given case makes treatment by ointments very expensive.

Sometimes they are very simple, *e.g.* ac. carbolic, 3; glycerin, 6; water, 200. More frequently they contain varying proportions of powders, with glycerin or mucilage to aid in suspension. In many respects glycerin is not the most desirable addition: it irritates some skins, and in others its hygroscopic qualities actually produce exudation. Mucilage of tragacanth may be used when the reaction of the fluid is acid; if it is alkaline the tragacanth is precipitated. When the fluid part of a lotion evaporates, the powder is left as a protectant to the inflamed skin.

Dr. Pusey, of Chicago, to whom dermatologists are indebted for many valuable hints, gives the following formula for a greasy

[1] Terra silicea.

lotion, which will often be found valuable where watery lotions are too drying:—

℞	Powdered Tragacanth - - - - -	℥i
	Phenol and Glycerin, mixed - - -	āā ♏10
	Zinc Oxide and Calamine - - -	āā ℥i
	Olive Oil - - - - - - -	℥iv
	Water (*q.s.*) ad - - - - -	Oi
	Oil of Bergamot - - - - -	gtt 20-50

A wide-mouthed quart bottle should be used to make one pint of liniment. The phenol and glycerin and oil of bergamot are first added to the olive oil. This mixture is put into the bottle; the bottle is corked and well shaken so that its entire inner surface is coated with a film of oil. The tragacanth finely powdered is then added little by little to the oil and the mixture is thoroughly shaken. Then about four ounces of water are added and the shaking is repeated. The calamine and the zinc oxide are mixed dry and then stirred up with the remaining eight ounces of water or shaken in another bottle. This powder mixture is then added ounce by ounce to the original mixture, which is vigorously shaken after each addition. It keeps for a long time, and may be smeared on or applied on soaks. With the addition of some precipitated sulphur it is an exceedingly agreeable application in dermatitis herpetiformis.

Lotions should be well shaken,[1] and the amount to be used poured into a saucer and then dabbed on with a pledget of wool. The thicker lotions are applied with a brush. Any lotion left over should be thrown away and not poured back into the bottle.

Varnishes. — These are fluid or semi-solid preparations which, when spread on the skin, evaporate and leave a thin adherent covering. The simplest of all is Pick's *Linimentum exsiccans*, which is best composed of tragacanth, 5; glycerin, 5; and water, 100 parts. The water and glycerin must be gradually added while the tragacanth is rubbed in a mortar. They form a translucent jelly, which leaves on the skin to

[1] This is particularly important in the case of lotions of carbolic acid. The carbolic acid sinks to the bottom of the bottle, and if not regularly shaken the lotion as it grows less by use grows stronger and stronger in carbolic.

which it is applied a thin, almost invisible film, which by its contraction produces a pleasant cooling sensation on inflamed areas. To it various drugs may be added, provided they have not an alkaline reaction.

It is clean, cheap, and is often well borne by patients whose skins resent the application of any form of grease.

Many substances—tar, ichthyol, guaiacol, benzoin, etc.—may be applied dissolved in spirit, which, when it evaporates, leaves on the skin a thin coating of the medicament. Tar acetone was a favourite remedy with Allan Jamieson. A convenient formula is picis carbonis, 5; benzol, 10; and acetone, 40. Other active ingredients, such as oxidised pyrogallol, may take the place of or be combined with the tar. Common gas-works tar makes an excellent varnish, and when applied with a stiff brush in a very thin layer dries rapidly, and is really a very comfortable application. This was a favourite remedy with Hughes Bennett, the father of Edinburgh dermatology, and deserves greater popularity than it at present enjoys.

Collodion.—Both the plain and the flexile may be applied simply for their contracting power, or they may be used as vehicles for various drugs (*e.g.* salicylic acid). Collodion permits the natural evaporation to go on unchecked, and thus does not "heat" the part. Acetone may be used as the solvent of the gun-cotton, in place of ether: it is cheaper.

Traumaticin.—This is a solution of gutta-percha in chloroform (1-10). It was introduced by Auspitz, and is perhaps most used as a cleanly vehicle for the application of chrysarobin in psoriasis. Though less uncleanly and much less efficient than ointment, it does not prevent chrysarobin staining of the clothes.

Celloidin is very useful in the minor surgery of dermatology, but is not used as a vehicle for drugs. A solution in equal parts of ether and alcohol is more manageable than a pure ethereal solution.

Glyco-Gelatins — Glycerin jellies or limes. — The word "lime" (bird-lime) has almost dropped from the English language, and the term "glyco-gelatin," suggested by Duhring, seems the best substitute for the German *Leim*.

Gelatine was first introduced into dermatological practice by

Pick, but Unna's modification is now almost exclusively used. It is a most valuable application, and as its success depends on its careful preparation, I give this in detail:—

℞	Zinci Oxidi	- -	30·0	or ℞	Zinci Oxidi	āā pts. æq.
	Gelatini	- -	30·0		Gelatini	
	Glycerini	- -	50·0		Glycerini	
	Aquæ	- - -	90·0		Aquæ	

(Unna.)

The gelatine is laid in a dish and the water poured over it. It is frequently turned until every part has taken up water and become perfectly supple. It is then melted in a water bath, and the glycerin, previously mixed with the zinc oxide and any other desired medicament, is stirred in. When it has cooled it is cut in small cubes, and stored. When required for use it is melted in an improvised glue-pot, and when sufficiently cool is painted on the affected surface. It rapidly sets, and when nearly dry may be dabbed with a pledget of absorbent wool, some of the fibres of which adhere and render the film more durable. Ichthyol and sulphur are the drugs usually added to it. Most others, *e.g.* tar, are best painted on the part and then covered with the gelatine. There is probably no preparation to equal this for use in the dermatitis which accompanies varicose veins of the leg. The gelatine permits natural evaporation to go on freely, and consequently does not "heat" the part; it exercises a most useful compression, allays itching, and keeps off injurious external influences. In winter the proportion of gelatine may be diminished, and in very warm weather increased. Glyco-gelatin is an excellent means of fixing a dressing on any part of the surface where it is difficult to apply a bandage.

Watery Pastes.—These are mixtures of equal parts of powder and diluted glycerin, *e.g.* equal parts of zinc oxide, talc, glycerin, and water. They are applied in a thin layer with a flat brush, and covered with a generous sprinkling of powdered talc. The addition of ·5 per cent. of gum arabic renders them more adherent.

Ointments.—Too often local treatment consists in the mere perfunctory application of zinc ointment. Recent investigations have disclosed in the healthy skin a hitherto unsuspected amount

of fat, which is absent in certain diseases, demonstrating once more that tradition usually rests on some basis of fact, and that in applying ointment to many diseased skins we supply to them what they lack. There are, however, many diseases where the application of grease is of doubtful value, and some where it is distinctly injurious.

The simple application of grease to the skin is by no means without effect. The fat is greedily taken up by the horny cells, causing them to swell up, damming back the natural evaporation, and causing fluid to accumulate even as far back as the papillary body, and thus on sensitive skins the application of grease often produces hyperæmia and œdema.

Unna gives four indications for the use of fats: (1) Where the cutaneous fat is deficient (ichthyosis, dry eczema, etc.); (2) where the epidermis is deficient in protective power (trade dermatitis, *e.g.* in washerwomen and masons, weeping eczema); (3) as vehicles for various medicaments; (4) as directly healing agents.

The fats used are very numerous, but only those commonly employed need be considered.

Lard and tallow have been used from time immemorial. They should be mixed with a certain proportion of benzoin to prevent rancidity. Vaseline should be prescribed as such. Proprietary preparation though it be, it is much superior to any of its substitutes. Kromayer says that German yellow vaseline is "entirely unsuitable for medicinal use," and that the white vaseline, the ung. paraffini of the German Pharmacopœia, is little better. The same does not hold of lanoline; adeps lanæ hydros. is at least its equal. Anhydrous lanoline irritates many skins by abstracting water, and should only be prescribed when this is desired. Lanoline alone forms rather a tough basis, and when used as an ointment should be mixed with an equal quantity of vaseline, or almond or olive oil (1-4). Cocoa butter, which melts readily at the temperature of the skin, is a favourite ingredient in pomades, and wax and cetaceum are used mainly in the preparation of cold creams. The skin shows idiosyncrasies to greases just as it does to drugs, and it is far from uncommon to meet with a patient whose skin is irritated by vaseline.

Ointments vary in their effect according to their composition, irrespective of any active drug which may be mixed with them, and may be divided into three groups: (1) Cold creams or refrigerating ointments; (2) Pastes—stiff ointments; (3) Ointments proper.

(1) *Cold Creams*—Evaporating or refrigerant ointments.—These act, according to Unna, in virtue of the water which they contain. To put the matter briefly, they take up fluid on one side and give it off freely on the other. From this constant evaporation arises the cooling sensation with which they are associated. In order to obtain the full benefit of this they must be smeared on in a thick layer, not rubbed in like ointments. The ung. aquæ rosæ of the British Pharmacopœia is a cold cream; a common formula is ceræ, cetacei, āā ℥ss; aq. rosæ, ol. amygdalæ, āā ℥ss. Sack has drawn attention to the great capacity of adeps lanæ for water, and excellent creams may be made as follows:—Adipis lanæ anhydric., 5; vaselini vel adipis benz., 10; et aq. calcis, aq. rosæ, vel liq. plumbi subacet., 15-30.

(2) *Pastes.*—These are combinations of fat and powder, the latter being in far greater amount than in ordinary ointments, sometimes as much as 50 per cent. Hence they combine the effects of an ointment and a powder. They have not the same penetrating effect as ointments, but in virtue of the fat in them they do penetrate, and take with them any incorporated drugs, while the powder they contain enables them to soak up the excretions instead of damming them back as mere ointments tend to do. The most familiar of all is Lassar's paste: Zinci oxid., pulv. amyl., lanolini, vaselini, āā partes æqual. It is interesting to note that Erasmus Wilson, to whom the popularity of zinc ointment is due, used to vary the amount of zinc oxide in his prescription, and his stiff zinc ointment was really the pioneer of the pastes. Other commonly used powders are kaolin, magnes. carb., and chalk; while Unna strongly recommends, on account of its great absorbent powers, the powder known in Germany as "Kieselguhr," a diatomaceous sand which is prescribed as "terra silicea." This possesses such eminent capillary attractive power that 10 per cent. added to an ointment suffices to make a paste.

Pastes are rubbed on the skin so as to form a thin adherent layer—a protective covering for the skin. They may be covered with powder, waxed paper, or with cotton-wool and a bandage. The following are two of Unna's formulæ:—

℞	Terræ Siliceæ	1·0 (grs. xv)
	Zinci Oxidi	6·0 (ʒijs)
	Adipis Benz.	24·0 (ad ʒj)

℞	Terræ Siliceæ -	2 (ʒss)
	Sulph. Præcip. -	4 (ʒi)
	Zinci Oxidi - -	6 (ʒjss)
	Adipis Benz. -	28 (ʒj)

I agree with Leistikow that the presence of hair on the part is not an absolute contra-indication to the use of pastes. If they accumulate they can easily be removed by the free application of oil.

Any drug may be incorporated with pastes, the amount of powder being diminished if the added constituent is bulky and dry.

(3) *Ointments.*—In using pure ointments, *i.e.* small proportions of active drugs mixed with one or other of the fats, their method of action should be borne in mind, and they should only be prescribed when such action is desired.

Pure grease applied to the surface causes the horny cells to swell up, and consequently hinders evaporation. Combined with any drug, it takes that drug along with it as it penetrates into the horny cells; hence ointments are *the* vehicles to select when we wish our drugs to penetrate. Having conveyed the drug in, their next duty is to give it up readily, and in this all bases are not alike. Vaseline is said to owe much of its virtue to the readiness with which it parts with incorporated drugs. Lanoline is credited with powers of deeper penetration than other fats, but this quality is not so all-important as is often suggested. The penetrating power of fat is increased by the addition of water, cold cream, or of soap.

Ointments may be rubbed in, spread on strips of cloth and bound on; or, if great activity of action be desired, the part may be covered over after their application with some impervious material. If this last plan is adopted, the effect must be carefully watched. Salicylic acid in particular acts with great vigour when applied in this way.

Salve muslins are ointments composed of benzoated mutton tallow and a little wax, variously medicated. They are spread

either on one or both sides of muslin, and possess advantages on account of their cleanliness and the simplicity of their application, all that is required being to cut a piece of the required size, nick it round the edges, and apply it to the part. Although they cost more money, they are undoubtedly more efficacious than ointments of similar composition spread upon cloth, and are therefore often cheaper in the end.

The *plaster muslins* are more penetrating in their action, owing to the impermeable basis of gutta-percha on which the medicament is spread. Like the salve muslins, they can be applied to any part. They adhere well, and they far surpass in activity other methods of applying the same drugs. They may be fixed on to any part of the body by coatings of zinc glyco-gelatin.

The *salve stick* or *pencil* is composed of some firm basis in which the drug is incorporated, and is applied by simply rubbing the affected part, the heat of the skin melting some of the stick. Unna's basis is lanoline 2 parts, and wax 1 part. If this is found too stiff, another useful formula is cocoa butter 2, wax 1, lanoline ½. It is a very handy method of applying any drug to circumscribed patches of dermatitis, *e.g.* on the hands, while a chrysarobin stick is a useful means of applying that drug in ringworm and alopecia areata.

Soaps.—When soap is mixed with water, it breaks up and sets free a certain amount of alkali; at the same time it emulsifies the greasy matter on the skin, and removes it. Generally speaking, the more alkaline soaps emulsify most readily, the alkali attacking the horny cells, softening them, and, if concentrated, dissolving them.

The most active soap is *sapo mollis*, made from potash and olive oil. This contains a considerable amount of free alkali, and is chiefly useful in removing thickenings of the epidermis. It is most commonly prescribed in the form of Hebra's *Spiritus saponatus kalinus*, consisting of 2 parts of soap to 1 part of spirit of wine. Perfumes may be added as desired, or the formula may be modified:—

℞ Saponis Mollis - - - - - 100
Spt. Coloniensis } - - - - - āā 25
Spt. Vini Rect. }

The indications for its use will be referred to later. When hard soaps are required, soda or a mixture of soda and potash is used. Unna's basis soap is made from 2 parts of soda lye and 1 part of potash lye. Over-fatty soaps are made by the addition to the neutral soaps of an excess of fat, *e.g.* olive oil, 4 per cent. This fat is unsaponified, hence the term over-fatty. For ordinary use neutral soaps are best. Alkaline ones may prove too thorough in their action, and over-fatty ones require warm water if cleansing is to be at all satisfactory.

A great deal too much is made of the alkali in soap to the neglect of the other constituents. Probably a good many of the soaps which cause irritation owe that quality as much to unsuitable rancid fats used in their preparation, or to perfumes and dyes, as to the alkali which they necessarily contain. Advertisements that a soap contains no free alkali, or even that it contains "no alkali at all," are no guarantee that it may not irritate. I am satisfied that idiosyncrasy plays a large part in the irritation of soap. Soaps that irritate one person's hands have no evil effects on those of hundreds of others.

Theoretically, soaps should be more useful as vehicles for drugs than they are. Their power of softening the epidermic cells undoubtedly opens those cells more to treatment, and medicated soaps are largely used. They do not, however, in practice prove so satisfactory as they promise in theory. They do not carry the drug with them so well as ointments do, and the dosage is uncertain both in amount and concentration. Exceedingly useful in one case, they may prove just as disappointing in their effects in another; and they have their chief sphere in cases where the action of soap as soap is desired. In acne, where one desires the soap effect, they are most useful, and they are often preferred by patients who are for various reasons—a common one laziness—unable to carry out other forms of treatment.

Of the medicated soaps the best known are Eichhoff's, which are made alkaline, neutral, or over-fatty, either in cake or powder. His formulæ are made up in this country by Midgely of Manchester and other soap manufacturers. The powdered soaps are especially useful for application to the back, the powder being dusted on to a wet towel.

The softening power of soap may be taken advantage of by adding it to ointments, as is frequently done in the treatment of scabies.

Soaps may be applied in various ways: (1) Simple washing; (2) rubbing in the lather and allowing it to dry on; (3) rubbing in thoroughly until dry; (4) covering the lather with some impervious material.

Oils.—Oils may be used to soften the thicker ointment basis. Olive oil is used to soften and remove crusts, especially on the scalp, and it and Sesame oil are sometimes useful applications in psoriasis. Linseed oil, along with an equal part of lime water, forms the well-known Carron oil which, though banned by the surgeons, is greatly valued by the dermatologist. Paraffin oil and oil of sassafras are used to destroy pediculi; and cod-liver oil as an external application in lichen scrofulosorum. Almond oil is used in cold creams, and serves to diminish the toughness of lanoline; while castor oil is a usual component of hair-washes, as it is the only common fixed oil which mixes in all proportions with alcohol.

Valsol is the name given to a specially prepared fluid vaseline. It forms one of the best media for applying salicylic acid to the scalp, while iodine valsol, when rubbed into the skin, produces some of the effects of the internal administration of iodides.

X-RAYS, ACTINOTHERAPY, AND FREEZING

In the X-rays dermatology acquired a weapon of remarkable value. Like all valuable remedies, they have great power for evil, and must be cautiously used. It is not only the beginner who must be careful; in the use of X-rays familiarity should not breed contempt.

In the early days, operators wrote with great confidence as to the best means of producing the rays, and generally ruled out all apparatus different from that with which they themselves worked.

It is apparently of little moment how the rays are generated. Some use one apparatus, some another. The important thing is for the operator to advance cautiously and become

familiar with the apparatus he is in the habit of using. The tube is the most important factor. Soft tubes are more liable to set up dermatitis, and therefore the beginner should invariably work with a hard tube. When he has acquired experience he will probably develop a preference for soft ones, with which more rapid results can be produced.

Special precautions must be taken to protect adjacent parts. These may either be covered with lead foil, or a shield of metal, leaded glass, or vulcanite may be interposed between the tube and the patient, so that the rays shall only fall on the part that it is desired to attack. But it is not the patient only who requires to be protected. Many operators have suffered, and some have died, from the effects of the rays, and operators should always keep the danger in mind and expose their hands as little as possible, if at all, to an active tube. The first sign of trouble is the development of little black horny growths at the mouths of the hair follicles, which, if warning be not taken, develop into malignant warts. The effect of the rays on the reproductive function must also be kept in mind, and those who are working for long periods daily will find it necessary to protect themselves by wearing suitable armour, or, as is done in most up-to-date hospitals, by enclosing the patient in an X-ray tight cubicle and supervising the administration from outside.

Various methods have been designed for measuring the dose of rays. I place my confidence in Sabouraud's pastilles. If these are used as Sabouraud directs, I believe the chances of injuring the patient are reduced to the minimum. But there is nothing exact about the X-rays, and nothing can take the place of experience. The would-be worker must begin slowly, and be content if he does no harm while he gradually accumulates experience.

Radium.—It would be out of place to discuss in a book like this the methods of using radium. Anyone who has spent the £500 or £1000 necessary to buy a sufficient amount of radium to produce satisfactory results, can easily afford a few shillings for one of the numerous text-books dealing with its application. Far from decrying radium, I am convinced that there is no method of treating rodent ulcer so satisfactory as

its application, but I am equally convinced that these satisfactory results can only be produced by the application of adequate amounts. I have no experience of meso-thorium; a reference to uranium will be found in the section dealing with the treatment of lupus.

Actinotherapy.—Just as the X-rays can do both good and evil, so can light. We have already seen how Nature has provided pigment to protect the skin from the evil effects of light, and we shall have to consider later certain definite diseases caused by the action of its ultra-violet rays. And yet it is these rays which under proper control and direction we use therapeutically. There are various methods of producing the ultra-violet rays, but I confine myself to the description of those which have proved themselves in my own experience.

The **Finsen** method consists in concentrating the rays from a powerful electric arc lamp on a definite area of the skin rendered anæmic by steady pressure, applied by an expert nurse, with a double quartz lens through which cold water circulates. Another circulating stream of water is interposed between the light and the terminal lens. In this way all the heat rays are cut off, or the patient could not suffer the application. For a prolonged period, up to an hour, the application is continued. In a few hours a blister forms, and this is healed *sec. art.* In certain diseases, notably lupus, this prolonged caustic action of the light has a very beneficial effect. The same lamp may be used, without the pressure lens, in certain cases (alopecia areata, lupus erythematosus), where experience has shown that prolonged exposure short of blistering is useful. The modification of the original lamp known as the Finsen-Reyn lamp is the one most commonly used. Its cost is comparatively moderate, and when an intelligent and interested nurse is available, it proves very useful.

Kromayer's *mercury vapour lamp* has, however, many advantages. The cost is about the same, but carefully used—for it is very fragile—it takes less looking after than the Finsen-Reyn, and only one water circuit is required. With it one can blister or produce any required degree of erythema in ten minutes or less, and in my experience it can do all that the Finsen-Reyn lamp can and some things that it cannot.

Freezing.—A good many years ago Dethlefsen reported on the beneficial results of the application of the chloride of ethyl spray in cases of lupus. Others tried the treatment, but the results were not so remarkable as to lead to its general adoption. In 1905 Dade demonstrated to the American Dermatological Association the remarkable effects of liquid air. Its possibilities as a caustic were recognised, and it was used with considerable success in the Vanderbilt Clinic in New York, and elsewhere.

Though cheap compared with radium, liquid air is too expensive for use by individuals or by hospitals not so richly endowed as the Vanderbilt, and it did not come into extensive use. But its introduction directed attention to the merits of freezing, and in carbon dioxide snow was found a means of applying the treatment almost, if not quite, as useful as liquid air at a cost within reach of the most modest purse. The main apparatus required is a cylinder of liquid carbonic acid such as is used everywhere in the manufacture of soda water. Such cylinders cost about £3, but can be hired—the usual method—for a few shillings a year. The cost of filling—in Edinburgh—is six shillings. The rest of the necessary apparatus is a bag of chamois leather and some means of shaping the snow into the required form. An ordinary minim glass serves to make round shapes, and a little ingenuity and a few pence will supply any desired modification. The cylinder should be placed upright with the nozzle downwards. The chamois leather bag is fitted over the nozzle, the neck is drawn tight, and the gas is allowed to escape into the bag. When this is distended, the gas should be shut off, and the bag compressed with the hand; a fresh escape of gas is allowed, and the process repeated until the bag feels sufficiently filled. The snow is pure white and of a temperature 79° below zero C. The operator should now don a pair of gloves to permit of his handling the snow, which may be



FIG. 3.—CO_2 Cylinder in position ready for use.

moulded by pressure from a lead pencil, or, if greater firmness be required, by the use of a hammer, to any required shape. When applied to the skin it freezes the superficial layers solid almost immediately, and the longer the application the deeper does the freezing extend. According to Pusey, to whom the popularising of the method is due, ten seconds' application to the adult skin produces marked hyperæmia, which terminates in a dry dermatitis, twenty to thirty seconds results in the formation of a bulla which, when it heals, leaves a scarcely perceptible scar, while applications of a minute or more are followed by the formation of distinct white scars, always, however, very smooth and pliable. It is important to note that the skin of the child is much more sensitive than that of the adult—according to Pusey as three to one. He also draws attention to the increased sensitiveness of skin which has been at any time previously exposed to X-rays, and caution should be exercised in such cases.

SECTION II

ANOMALIES OF SENSATION

PRURITUS

(*Prurire—to itch*)

ITCHING is a *symptom* common to many diseases. The term Pruritus should be strictly limited to those cases in which there are no visible lesions other than chance secondary ones produced by scratching.

When a patient presents himself complaining of itching, the first matter to be determined is whether any parasites are present. In investigation the appearance and social position of the patient count for nothing. There is nothing in a title which guards one from the attacks of even such a vulgar insect as the *Pediculus corporis*.

Many cases of generalised itching are due to the existence of *Pediculosis capitis*. The irritation in the scalp seems to arouse a general tendency to itching, and scratching produces tiny lesions of the skin, almost invisible yet excessively irritable. Scabies, too, often exists unsuspected, for in the better classes the hands being frequently washed are rarely much affected, and the daily bath prevents the typical appearances of the disease from developing on other parts of the body.

Parasitic causes excluded, we turn to the investigation of the internal organs. The first subject for examination is the urine. Diabetes is very often associated with pruritus. Not only do we have those localised cases, especially frequent in females, where the irritation of the sugar produces local dermatitis and itching, but diabetes often provokes a tendency to itching all over the body, most marked of course in those typical cases where the skin is dry and harsh. Itching is a

frequent accompaniment of various forms of Bright's disease. It is sometimes associated with ovarian disease, and has been noted as an early symptom both in intra- and extra-uterine gestation. Jaundice is frequently accompanied by itching; and other hepatic troubles, such as gall-stones, sometimes reflexly arouse it. Occasionally, itching is a troublesome symptom, and sometimes one of the earliest, of cirrhosis, or even of carcinoma; the liver and its functions should always be carefully examined in unexplained cases of pruritus. If a likely cause is not found, organ after organ should be carefully investigated, and any trifling derangement corrected.

Pruritus hiemalis (wintry) is apparently dependent on external cold, and usually affects the extremities. It is most marked in the winter months, and is generally worst at night. It often disappears on the stoppage of the cold bath, and is best combated by remedies such as acetic acid, camphor, etc., which stimulate the circulation of the skin. Warm water and friction are useful aids. In old people there is often considerable itching due to the increasing dryness of the senile skin, which is relieved by the application of grease. If the itching is not relieved by, say, vaseline, one should not at once assume that the case is not suitable for this treatment. Lard, lanoline, olive oil, Carron oil, etc., should be tried. Grease discovers idiosyncrasies in the skin just as soap does.

The terms **Pruritus ani** and **vulvæ** are far too loosely employed. While symptomatic itching may be local and limited to these regions, it will generally be found, on thorough examination, that the irritation is caused by *some evident disease* (hæmorrhoids, oxyuris vermicularis, pediculosis pubis, fissure, vaginal or anal catarrh), the cure of which is soon followed by the disappearance of the dermatitis and the itching.

There is another form of pruritus usually occurring in elderly persons which is not so generally recognised, but cases have occurred in my own experience, and Crocker referred to it in his text-book. This is what may be called *mental pruritus*: the patient suffers from the delusion that his skin is swarming with insects; and his methods of attacking them are usually Germanic in their severity. This form should not be too readily diagnosed.

It is no doubt comforting, when one is unable to discover the cause of any disease, to assume that it exists only in the patient's brain; but it should only be after the most careful search that this conclusion is arrived at. The prognosis in such cases is bad.

Remedies.—During the time all these investigations are going on the patient is naturally anxious to have some relief from his symptoms, and the number of remedies which have a repute for relieving itching is great. Of these, tar and carbolic acid are the most generally useful; liq. carbonis deterg., a teaspoonful or more to a pint of water, sponged on, is often soothing. A solution of tar in spirit or in acetone, a drachm or more to the ounce, may be applied; as it evaporates it leaves a thin coating on the skin. Carbolic acid ℥j, glycerin ℥ss, water to ℥viij, form a lotion which often gives considerable relief. The following formula is recommended by Bronson:—℞ Ac. carbol., ℥j to ij; liq. potass., ℥j; ol. lini., ℥j. The tendency of carbolic acid to sink to the bottom of the bottle must be kept in mind, and the necessity of always shaking the bottle before use impressed on the patient. Heat is often efficacious. Its use is said to have been known to Napoleon, who, in defiance of his physician, used very hot baths to relieve the itching of his eczema. Menthol, tumenol, and nicotine are most easily applied in the form of soap, the patient being lathered all over before going to bed. Acetic and tartaric acids may be freely applied in watery solutions (1 to 30). Vinegar baths (1 to 250) are sometimes useful, while some authorities recommend alkaline baths. Other symptomatic remedial agents are balsam of Peru, benzoin, guaiacol.

It is also possible to moderate excessive itching by the internal administration of various drugs. A hypnotic should never be prescribed save when the symptoms are very severe, and with a full sense of the responsibility which is involved. Morphin usually aggravates itching, and should almost never be used, and the same may be said of barbitone and sulphonal. The bromides, chloral, and cannabis indica, either separately or combined as in bromidia, may be tried. Phenacetin, antipyrin, and similar preparations are occasionally useful. Pilocarpin may be tried when the skin is very dry. Brocq

gives carbolic acid, gr. j, in pill thrice daily; and salicylate of soda, gelsemium, nux vomica, ichthyol, belladonna, digitalis, and ergot have all been used, sometimes with benefit. Static electricity and high frequency currents, if available, may have a trial. If the patient is unduly thin, cod-liver oil and other fattening agents are often helpful.

Cases which resist the majority of the recommended remedies are so numerous that it is necessary to give an extended list, but it must never be forgotten that all are merely directed against the symptoms, and that the real treatment of pruritus consists in finding out and removing its cause.

ANÆSTHESIA

Anæsthesia of the skin is generally a symptom of some organic disease. In leprosy the anæsthesia of the patches distinguishes them at once from any other disease of the skin which they may chance to resemble, though of course other forms of neuritis may be associated with anæsthesia or hyperæsthesia of the skin. In anomalous cases the possibility of hysteria should be considered.

DERMATALGIA

The pain associated with zoster is neuralgic, and consequently more deeply seated than dermatalgia proper. Pain limited to the skin may be a symptom of some systemic disorder, *e.g.* anæmia, malaria, rheumatism, and gout. The most typical cases occur on the hairy parts of the body, when every movement of the hair sometimes causes excruciating pain. This is probably associated with a hyperæmia of the neck of the follicles, and according to Unna, is best treated by the internal administration of ichthyol.

SECTION III

ANOMALIES OF SECRETION

THE glands of the skin are the coil or sweat, and the sebaceous glands. Seborrhœa, which, literally translated, indicates an excessive activity of the sebaceous glands, is really an inflammatory process, and will be considered among the inflammations. Sabouraud's views on seborrhœa will be referred to under Acne. The important anomalies of secretion are those of the sweat glands. These may either be too active or inactive, or their secretion may be modified. The most important of these is excessive secretion.

HYPERIDROSIS

(*ὑπέρ-ἱδρώς—the sweat*)

Excessive sweating may be either local or general. General sweating is less important dermatologically, as it is usually dependent on some systemic disease. Of the localised form there are certain varieties. One of these is apparently nervous in origin, as the hyperidrosis is limited to the area of skin supplied by a particular nerve. This condition is most frequently met with on the face. Then there may be excessive activity of the larger glands in the scalp, and in those regions where the parts are exceptionally warm, such as the axillæ and groins. The palms and soles also are very commonly affected. Especially on the soles, the condition is frequently associated with dermatitis, probably due to the presence of organisms, which further complicate matters by stimulating the glands to still greater activity (see also p. 214, Epidermophytosis). General weakness, anæmia, alcoholism, and hysteria are common predisposing causes, and flat-foot is frequently accompanied by hyperidrosis.

The condition known as *bromidrosis* (*βρῶμος*—a stink) is simply a complication due to the growth of certain organisms in the exuded sweat.

Prognosis should be guarded. Some cases are very obstinate, and almost all require prolonged treatment.

The TREATMENT differs according to the stage at which the disease is found. If the decomposition has given rise to dermatitis, that must be subdued by mild treatment before the hyperidrosis can be attacked. Ordinary soothing ointments and emollient baths should be used. Hebra's ointment (p. 21) spread on strips of cloth is of great value. For the *hyperidrosis* itself, the first indication is to correct any defect of the general health, such as anæmia. Alcohol should be interdicted. Among the drugs which have the reputation of diminishing the secretion are belladonna, agaricin, ergot, extract of hydrast. canadensis, and, lastly, sulphur (℥j thrice daily), which was strongly advocated by Crocker. As a local application, quinin dissolved in alcohol (1 per cent.) has been recommended.

For hyperidrosis of the axillary and femoral regions, absolute cleanliness and astringent applications are usually prescribed. A decoction of *oak bark*, solutions of *tannin* (5 to 10 per cent.), lotions of *salicylic acid* (2 to 5 per cent.), and drying powders are recommended by different observers. Leistikow strongly recommends *formalin*, which should be used in the form of soap for a considerable time after recovery. If used as an ointment, *e.g.*—

℞	Liquor. Formaldehydi - - -	5·0-20·0 (℥ii-℥i)
	Adip. Lanæ - - - - -	5·0 (℥ii)
	Vaselini - - - - - -	10·0 (℥ss)

its effects must be carefully watched, for formalin often produces dermatitis.

Leistikow also advises the use of zinc sulphur paste (p. 29) to obviate recurrence. In the not uncommon cases where sweating in the axillary regions interferes with social enjoyments, it is worth knowing that the application of very hot water on a sponge will usually arrest the excessive secretion for a few hours.

In cases where the disease affects the palms and soles, the latter of which is the condition which most frequently comes under notice, Leistikow lays great stress on the importance of recognising whether the case is one of hot or cold sweating. If cold, he advises the use of hot baths, with the addition of vinegar, spirits of camphor, etc. The parts are then carefully dried and washed with formalin soap, the lather of which is allowed to dry on. The principle of this treatment is to induce a hyperæmia which will correct the anæmic condition of the skin. The same effect is attained by the application of some such ointment as—

℞	Terebinth Ichthyol - - - - - - -	āā 2·0 (ʒi)
	Camphoræ - - - - - -	1·0 (ʒss)
	Ung. Zinc Oxid. ad - - - -	20·0 (ʒj)

In cases of hot sweating the hot baths are omitted, and their place taken by washings with decoction of tan, or weak borax baths, to lessen the hyperæmia. *Sulphur*, *resorcin*, *ichthyol*, *naphthol*, and *salicylic acid* are the most suitable applications in these cases, and it should be remembered that the free secretion of sweat immediately tends to reduce their strength, so that they should not be used too weak.

Another plan of treating hyperidrosis of the feet is to envelop them in strips of salicylic soap plaster, 3 to 5 per cent. The immediate effect of this is excellent. After a week or ten days the patient seems to be perfectly well, but unfortunately there is a great tendency to recurrence. This may, however, be prevented by using dusting powders containing salicylic acid (2 per cent.). Powdered tartaric acid is said first to stimulate and then to paralyse the glands, and is worth a trial.

Other methods of treatment are the application of *Condy's fluid*, *nitrate of silver*, or the German military method of painting with a 5 per cent. solution of *chromic acid*. Formalin has been used extensively, and with excellent results, in the French army, the feet being bathed in a 1 per cent. solution. For very obstinate cases Neebe recommends a most heroic remedy. He pours enough *crude hydrochloric acid* into a large flat dish to just cover the soles of the feet; the patient stands

in this for five to ten minutes, and then washes his feet in warm water and soap. A complete cure is said to require bi-weekly applications for four to eight weeks, and one can only admire the heroism of those who undertake it. Another application is the *liquor ferri perchlor.*, followed by some soothing dressing.

Howard Pirie and others have recorded the cure of obstinate cases of localised hyperidrosis by the cautious use of X-rays.

In mild cases it is usually enough to order the patient to wash the feet at least twice daily, to change the socks every day, and, before putting these on, to dust into them some antiseptic powder, e.g. *boric acid*, or 2 per cent. *salicylic acid* in talc or starch. Loosely fitting shoes and woollen socks should invariably be worn, and any tendency to flat-foot must be corrected.

ANIDROSIS

Total suppression of the sweat probably rarely, if ever, occurs, and the term is generally applied to those cases where the secretion is diminished, as it is at certain stages in a number of systemic diseases. The secretion is also very notably diminished in ichthyosis, and in many of the dry pruriginous forms of dermatitis.

Usually the cure of the condition to which the arrest is due is followed by the restoration of the secretion. Complete cure is so unlikely in ichthyosis that one cannot anticipate much improvement, and the skin must be permanently artificially lubricated.

Stimulation of the skin by hot baths and massage is useful. Pilocarpin may be administered, but most useful of all are those general methods which increase the subcutaneous fat situated in relation to the sweat glands. Cod-liver oil or glycerin in large doses are favourite remedies, and the diet should be as fattening a one as the patient can digest.

CHROMIDROSIS

(χρῶμα—*colour*)

Most cases of chromidrosis are met with in hysterical young women, but we not uncommonly meet with red staining of the clothing in the axillary region which is due to the growth of organisms. These grow like a sheath round the hair shaft, and the sweat is stained after excretion. My experience accords with that of other observers, who have met with this most commonly in medical men and students. Probably they are more observant than others. Treatment is not very satisfactory. The parts should be shaved, kept scrupulously clean, and sponged twice daily with perchloride spirit (1 in 1000).

Blue sweat is probably due to the presence of the *Bacillus pyocyaneus*, and bloody sweat owes its colour to the *Micrococcus prodigiosus*, but they and the other varieties occasionally described are the rarest curiosities, and still more rarely have they any practical importance.

SECTION IV

INFLAMMATION

UNDER this heading are comprised the great majority of skin diseases. Our knowledge is not yet sufficiently advanced to enable us to classify them in an entirely satisfactory manner. The order in which I have placed the various diseases is that which I have found convenient in teaching students.

TOXIC ERUPTIONS

The eruptions which it is proposed to treat under this heading (drug eruptions, urticaria, erythema, dermatitis herpetiformis, and pemphigus) have an interesting and a chequered history. Striking in their manifestations, like and yet unlike, they have always been the subject of interesting speculation, and many and widely differing theories of their nature have been spun. Some of these to-day appear fantastic, as no doubt our speculations will appear a hundred years hence, but it is interesting to note in many of them an almost unconscious perception of what appears to us to-day to be the clue to their mysteries.

It will be necessary to describe separately the outstanding features of each group, and it is of course easy to distinguish a typical case of urticaria from one of pemphigus foliaceus, but it is possible to construct a continuous chain of which each link differs but little from its neighbour, and yet the extreme ends are as different as the two diseases just mentioned. I propose, in the first instance, to discuss the group of toxic eruptions as a whole, and to assume that the toxin, introduced from without, or manufactured within, is directly or indirectly the cause of an inflammation, acute and transient in some cases, chronic and severe in others, which produces on the skin

lesions familiar and unfamiliar, the former recurring so frequently as to have earned for themselves definite appellations, while the less familiar are the unnamed varieties. It is to their striking appearance that most of these "diseases" owe their names; we are woefully ignorant of their causes. But we are entitled to surmise that, as we can produce experimentally in certain persons this type of rash by the administration of certain definite poisons, it is not unlikely that all rashes of this type are the results of toxins, many as yet unrecognised.

The phenomenon which we know as **urticaria** is characterised by the appearance on the skin of the lesion we call a wheal or *pomphos*. Raised, firm, white in the centre, and margined with red, the lesion exactly resembles the result of the sting of the nettle, from which urticaria gets its name. In the case of a nettle sting there can be no doubt of the toxic nature of the lesion; cause and effect are demonstrable. The sting of the jelly-fish and contact with the hairy caterpillar produce similar lesions. The sting of the mosquito or the midge produces in most persons slightly different lesions. We still have the swelling following upon the sting, but it has not, as a rule, the waxy white colour associated with the nettle sting; it is more or less red = **erythema**. The lesion persists longer: the toxic action has been more severe.

We next note that the introduction of certain drugs into the system is followed by the development of lesions indistinguishable from those of urticaria and erythema. Many drugs have in certain individuals this unpleasant effect—for the purpose of illustration it will suffice to quote two—quinin and santonin. When the ingestion of one of these drugs is followed invariably in certain individuals by the appearance of the rash, it is idle to deny its responsibility, direct or indirect, for the result, and that it is, in the sense in which we are considering it, a poison.

Our next step is to consider the effect of the introduction into the subcutaneous tissues of diphtheria antitoxin. The poison in this case is in the horse serum, for a rash sometimes urticarial, sometimes erythematous, is evoked in certain individuals by normal horse serum, but the fact remains that

the introduction into the human system of this "poison" is in a very large number of cases followed by such a rash.

It is not so followed in all the cases, and here we are concerned with the great mystery of these rashes. Our predecessors knew of it and wondered; yesterday we knew of it and called it idiosyncrasy; to-day we have committed ourselves a little more, and we speak of anaphylaxis and hypersensitiveness. Whatever we call it, it is a fact which must be grasped by every one who wishes to begin to try to understand this group. For relatively unimportant as associated with antitoxin, it becomes enormously important when the "poison" which produces it is one of the common articles of daily diet, such as eggs or milk. It is difficult to persuade even medical men, and *a fortiori* lay men (or women), that these articles can possibly act in this way, but anyone who will carefully study his cases will soon be convinced that they can. How they act still remains a mystery. Do they act as direct irritants, or is there some obscure chemical reaction between them and some of the cells or secretions of the body? The mystery still remains a mystery; here we are only concerned with the fact.

And it is a most interesting and most important fact that individuals, instead of becoming accustomed to and relatively immune to their effects, as they do, say, to opium and alcohol, become more and more sensitive to the poisons, and what was at first a trifling inconvenience becomes a serious and even a grave malady. Perhaps the notorious oyster illustrates this happening as well as any. A person who has perhaps on occasion consumed a reasonable number of oysters time and again is one night, after partaking of no more than his previous allowance, seized with violent sickness, followed by an acute outbreak of urticaria. Or the rash may occur without the sickness. In a few days or hours the rash and the discomfort subside, but now he may find to his dismay that one oyster, or even a spoonful of oyster soup, is followed sooner or later—generally sooner—by a fresh and possibly severer outbreak. He is sensitised, just as a tuberculous subject is to tuberculin. And not only this, but articles of diet generally innocuous may now act similarly as poisons, and the rash may become chronic. Why? It is easy to ask, but not

easy to answer. More attention must be given to the possible causes of those eruptions, and often, or to be cautious shall we say in some cases at least, these lie nearer to hand than is generally supposed.

As the simplest example we place first the drug eruptions where the cause is generally pretty easily discovered, and its relation to the effect easily demonstrated.

DERMATITIS MEDICAMENTOSA

The number of drugs which, taken internally, have been reported once or oftener to be the cause of an eruption on the skin, is so great that it would be impossible, in the limited space of a work such as the present, to do more than name each. Many of them, however, are merely curiosities of idiosyncrasy, and their effects, though interesting, are of little practical importance.

The production of a rash by a drug must in all cases be regarded as an idiosyncrasy on the part of the patient, otherwise such rashes would be much more frequent. Various other factors, however, come into consideration. Sometimes, for instance, the rash is due to some impurity in the drug or to the combination in which it has been administered, sometimes to the condition of the patient's stomach; perhaps more often to the condition of his kidneys. Iodide rashes, for instance, are more easily produced in patients with albuminuria, fresh toxic combinations presumably being formed.

Thus the drug rashes generally resemble those diseases which are attributable to the circulation of some toxin in the blood, and are *erythematous* or *urticarial* in their nature. But, just as in the diseases of these types, the exudation of fluid is sometimes very great, and vesicles and bullæ may accidentally be produced, as they are in herpes iris and erythema bullosum.

The rashes associated with the more commonly used drugs may be briefly described. For fuller information on the subject, Dr. Colcott Fox's admirable critical summary of Morrow's work on drug eruptions should be consulted (*New Sydenham Society*).

Antipyrin. — The antipyrin rash sometimes resembles

that of measles, and sometimes takes the form of isolated, rounded reddish areas which often become deeply pigmented. The measly eruption lasts for three or four days, and is followed by desquamation. It is said to affect the extensor rather than the flexor surfaces, and generally to spare the face and the

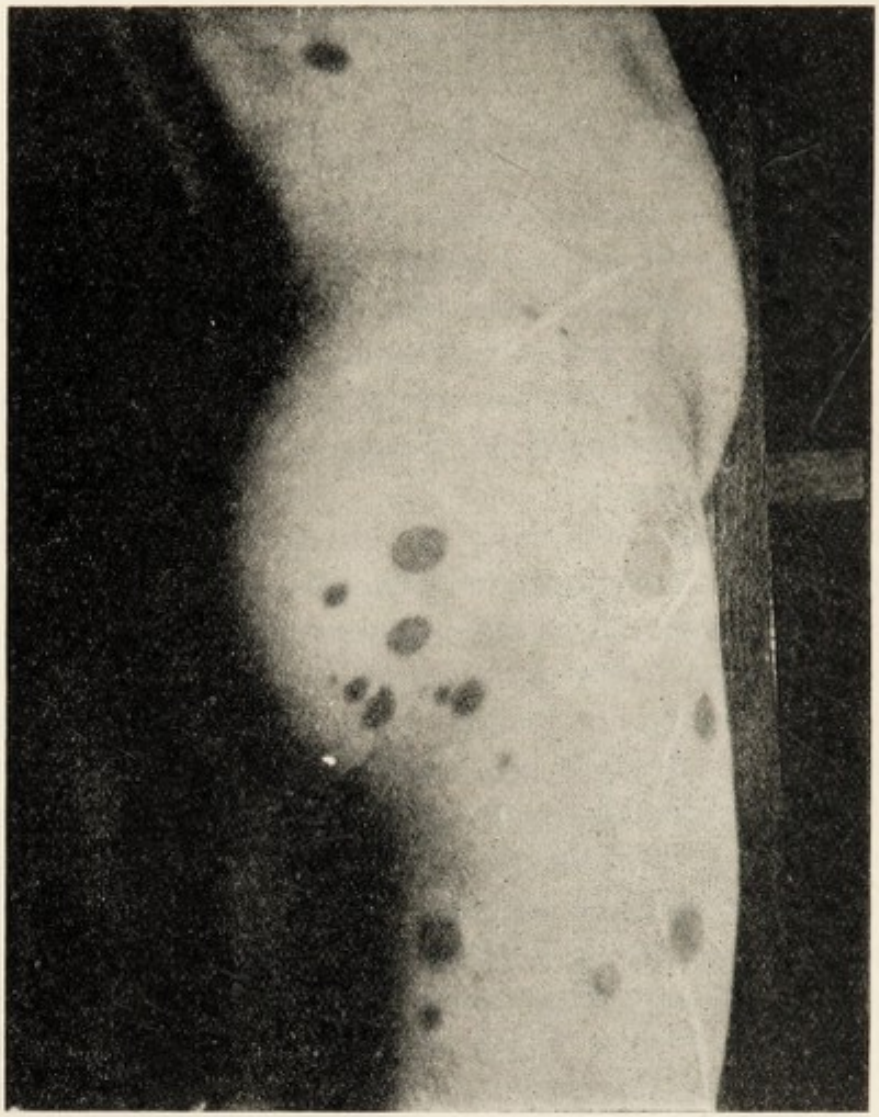


Fig. 4.—Chronic antipyrin eruption.

upper part of the neck. Sometimes one dose is sufficient to produce the eruption; usually it appears after some days' administration, and disappears in a day or two on the stoppage of the drug. The isolated areas are more chronic, and if the cause is not recognised, may persist indefinitely. The subject of the photograph had taken "headache powders" for over five years, and the eruption had been present more or less all that time.



ARSENICAL KERATOSIS.

Antitoxin.—The injection of diphtheria antitoxin often causes a widespread erythematous or urticarial eruption. The eruption is independent of the amount injected, and its appearance is often delayed for some days. A similar eruption may be produced by normal horse serum.

Arsenic.—Every now and then an epidemic such as the Manchester beer one of 1900-01 draws attention to the great variety of eruptions which may be produced by the prolonged administration of arsenic in small doses. All sorts of eruptions may be produced, but when administered in small amounts for a long period the evil effects on the skin are usually shown first upon the palms and soles. These may become slightly hyperæmic, the so-called "pink palm," or the effects may concentrate themselves in small hyperkeratotic areas which not infrequently become malignant. Later the skin of the legs becomes inflamed and a dermatitis is produced which passes as eczema until its cause is determined. Perhaps the most striking of the eruptions which is associated with the administration of arsenic is that of zoster, which, especially in its thoracic form, is exceptionally prone to occur in those who are taking this drug. Generalised scarlatiniform and zoster eruptions have been recorded after the administration of salvarsan or allied preparations.

Belladonna.—The rash of belladonna is bright red in colour, closely resembling that of scarlet fever. It is most common on the face and neck, has a very short existence, and is not followed, as a rule, by desquamation. Itching is a prominent feature.

Boric Acid.—Boric acid is sometimes followed by an erythematous rash, but the most important eruption is the one first described by Gowers in 1881 as resembling psoriasis. The resemblance is not usually very close; it is really a fine papular eruption, each papule becoming scaly on its apex. I have more than once seen it occur in patients whose bladders were being washed out with boric solutions.

Chloral.—The chloral eruption is not now seen so often as formerly; some say because of the greater purity of the drug, but probably also for the simple reason that it is not so frequently used. It specially affects the face, producing a

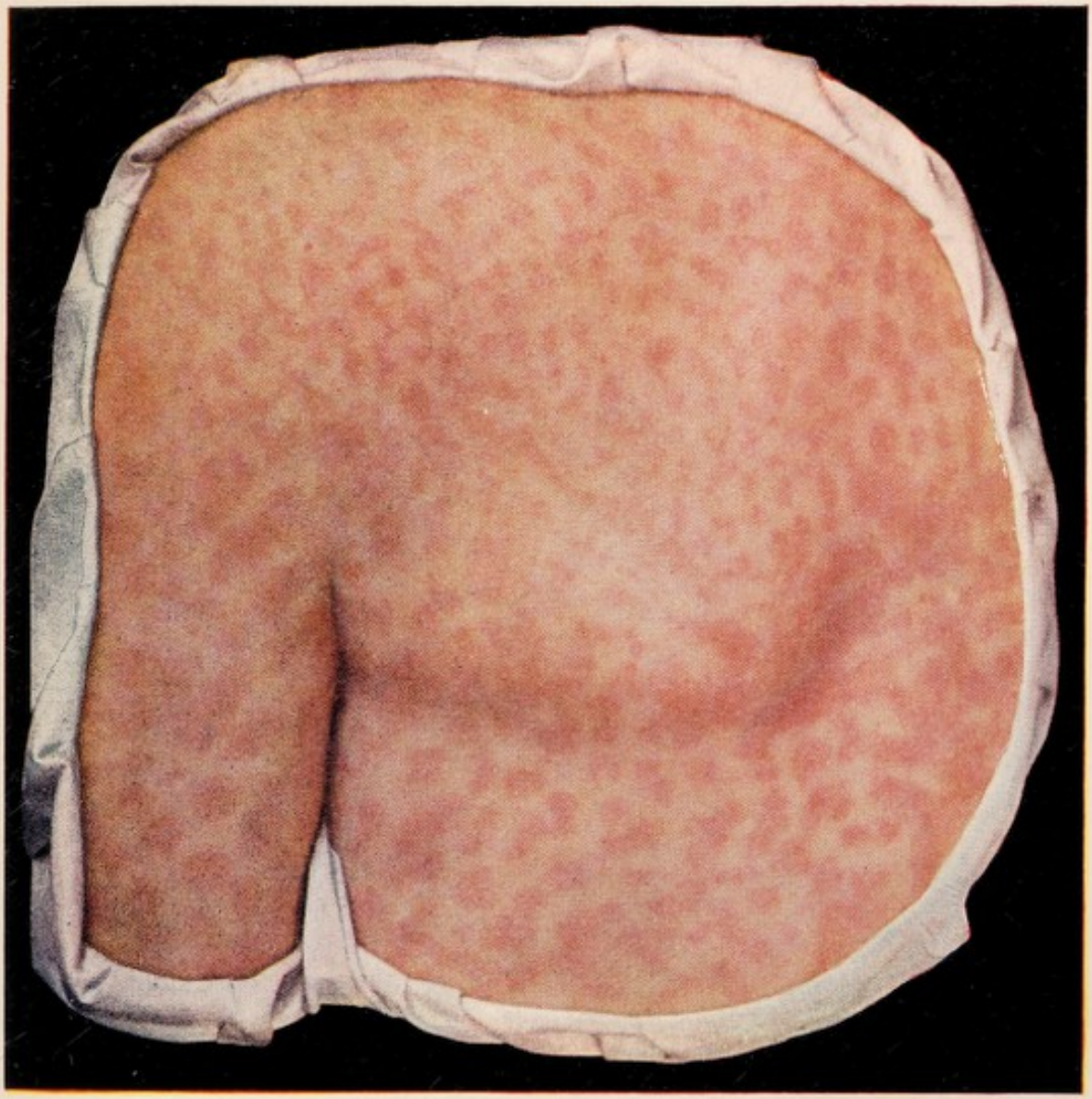
diffuse erythematous redness, which is much aggravated by the ingestion of hot drinks or food. Other forms of rash—urticarial, vesicular, and hæmorrhagic—have been noted.

The **Copaiba Rash** is a very familiar one. Sometimes it appears immediately after the taking of the drug; sometimes a few days elapse. The type of rash is a papular erythema, not unlike measles; but it is especially distributed around the joints, more particularly the hip joints, and has a faint tinge of purple (see Plate), which greatly aids its identification. It is associated with considerable itching, disappears when the medicine is stopped, and is usually followed by slight desquamation.

Mercury.—The skin rash most associated with mercury is that which follows on its external application; but erythematous rashes, sometimes resembling those of scarlet fever and sometimes multiform in character, have been noted to occur after the internal administration of the drug, usually in heroic doses.

Morphin.—Owing to the wide use of morphin, the fact that it may produce a rash is especially important. Short of a rash it may lead to the sudden development of intense itching, an additional warning that it should never be given for the relief of that symptom. The characteristic morphin rash is erythematous, resembling scarlet fever, and is followed by profuse desquamation. The rash is so like that of scarlet fever, that if there should happen to be at the same time congestion of the throat, the diagnosis is a matter of considerable difficulty. Urticarial and papular rashes are exceptionally noted.

Quinin.—The rashes associated with this drug vary greatly in character, almost every form of elementary lesion having been observed. The most common is the erythematous, which appears first on the face and neck, and may spread all over the body. As in similar drug eruptions, desquamation usually follows. The urticarial form which is sometimes assumed may be exceptionally severe, leading to closure of the eyes and a sensation of oppression of the chest, possibly owing to the development of lesions on the mucous membranes. Papular and vesicular eruptions are less frequently observed, but they certainly do



COPAIBA RASH



Characteristic Bromide Eruption.

occur. They are sometimes widely distributed, sometimes confined to a limited area. Actual gangrene has been recorded.

Sulphonal and Barbitone (veronal).—These almost always aggravate any existing skin eruption, and should therefore never be given if any is present. They occasionally cause scarlatiniform eruptions, which are followed by desquamation.

Turpentine.—The internal administration of this drug is followed by an intense erythematous rash, which may be accompanied by a number of papules.

Bromides and Iodides.—The eruptions produced by the bromides and iodides are so common and so important as to deserve more detailed description.

The rashes produced by bromide are many. Urticarial and erythematous forms are frequent; but the administration of *bromide of potassium* is especially associated with a pustular or acne-like eruption. This usually appears in patients who have been taking large doses of the drug, though cases are recorded where almost incredibly small doses have been responsible for its development. It consists in the appearance of a number of follicular pustules, varying in size just like those of acne, from which it is usually easily distinguished by its distribution and the absence of associated comedones. Acne has very special seats of predilection, and very rarely extends beyond the face, chest, and back, while the bromide eruption spreads downwards on the trunk, and also appears on the limbs. There is rarely any difficulty in getting a history of the use of the drug, though it may happen that the eruption does not appear until a few days after the administration has been stopped. In children, frequently after quite small doses—one or two teething powders—a more severe eruption is often produced.[1] Of this the annexed Plate is a typical illustration, taken from a patient under the care of the late Mr. Dale James, of Sheffield. The lesions are tuberous, dusky red in colour, and, when squeezed, pus issues from numerous openings. Although this form is most common in children, it sometimes occurs in a more chronic form in epileptic adults who have been taking bromides for

[1] This type of eruption is found most commonly in communities where the mothers resume work soon after the birth of their children, whom they leave in charge of an elderly neighbour.

years. Repeated crops of lesions appear, and scars closely resembling those of syphilis may be developed. Sometimes in adults numerous clear blebs appear on the trunk, imitating the pemphigoid rash produced by the iodides.

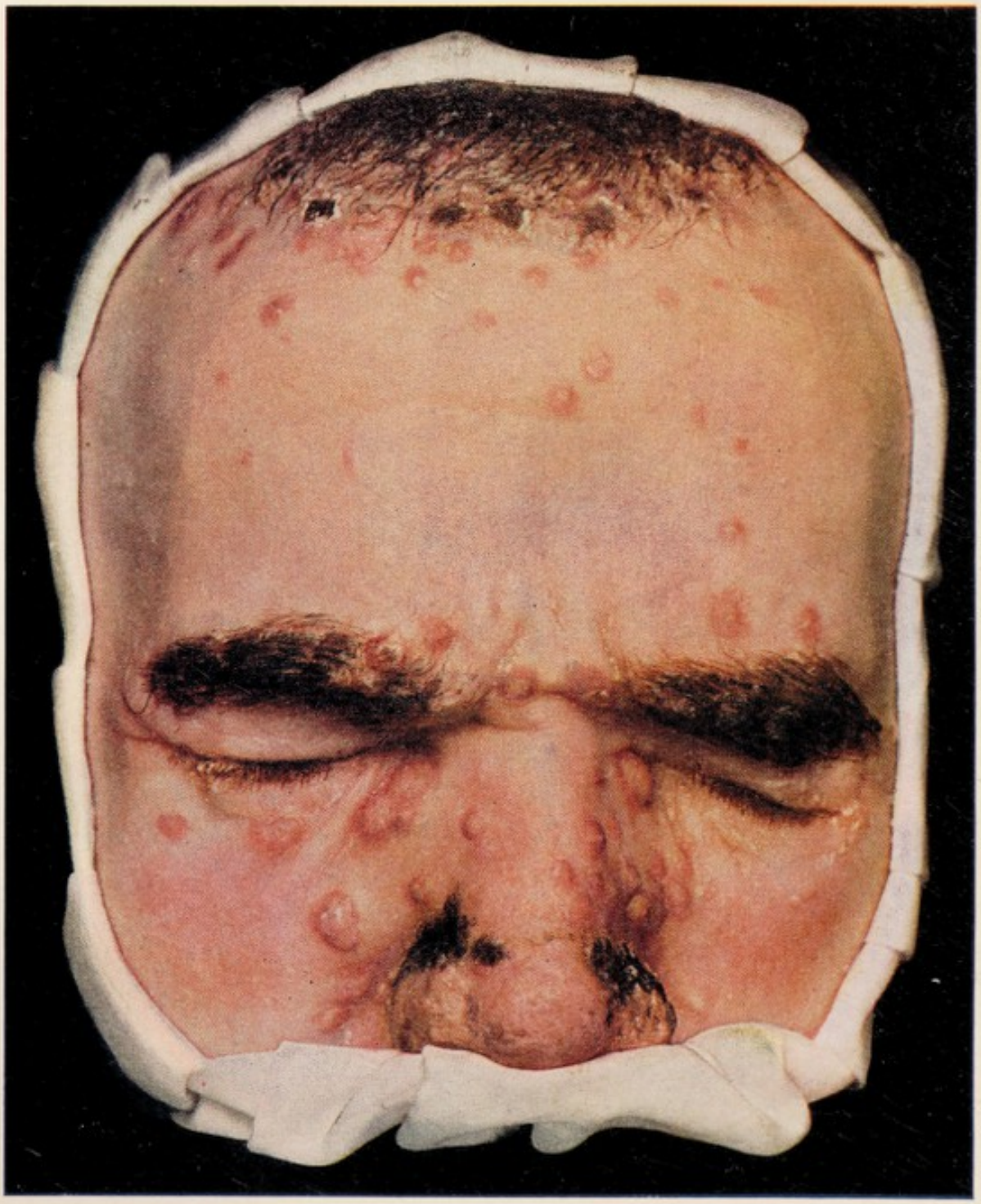
The *iodide* rash appears in several forms. The doctor may, of course, be aware that the patient is taking iodide and be on the outlook, but a great many cases follow on the taking of certain quack medicines, many of which contain iodide, usually in small amounts. It is an expensive drug. A papular erythema is sometimes seen; sometimes the eruption, like that produced by bromide, simulates acne; but the eruption which is perhaps, more than any other, associated with iodine is a bullous one, somewhat resembling pemphigus. In rare cases the lesions produced are at first solid, and later break down in a manner so similar to the gumma, that one or two patients have been dosed into their graves by the pushing of the very drug which was the original cause of their trouble. In others, large solid tumours have developed, leading to the mistaken diagnosis of malignant disease or even leprosy. Iodic purpura was described by Sir Stephen Mackenzie.

The dose requisite to produce the rash varies. While it usually results from considerable doses, cases are on record where 5-grain doses continued for a day or two have sufficed to produce serious eruptions. It is a matter of common observation that all these rashes are more likely to develop when any form of Bright's disease is present. As a rule the more familiar symptoms of iodism are not produced when the skin is affected.

Diagnosis.—As might be expected, the diagnosis of drug eruptions is by no means easy. But in spite of their simulation of other diseases, there is usually something which arouses suspicion that the diagnosis of the case is not such plain sailing as at first appears. Thus, the distribution of the erythematous and urticarial rashes is usually more widespread than that of the diseases they simulate. For instance, the copaiba rash shows a wealth of erythema on the limbs and abdomen, rarely seen naturally, while the eruption of antipyrin is more diffuse than that of measles. The acneiform rash of bromide and iodide is much more widespread than acne itself, while, on the contrary,



BROMIDE ERUPTION (CHRONIC).



IODIDE RASH

the gummatoid lesions occasionally produced by iodide are less often multiple than the true gumma. Suspicion once aroused, investigation will do the rest, and, as a rule, the rapid subsidence of the eruption on the stoppage of the drug confirms the diagnosis.

URTICARIA

(*Urtica—a nettle; uro—I burn*)

The lesions of urticaria exactly resemble those produced by the sting of the nettle, and so do the sensations of burning and



Fig. 5.—Factitiousur ticaria (dermographism).

itching which accompany them. The wheals are elevated, firm and elastic, white in the centre, with a reddish border. There are exceptionally cases of what has been called **red urticaria**, where the white centre of the wheal does not appear.

The nature of the process may best be explained as follows:—If in a healthy person a streak made on the skin with some blunt instrument be carefully watched, there will be seen to appear at once a thin red line, which almost immediately turns white, and persists in this form for some minutes. The first effect of the irritation is a momentary dilatation of the vessels, and this is followed by contraction. In some persons the

redness persists for a considerable time and then gradually fades away. This is practically identical with the phenomenon known as the *tache cérébrale*. In a certain number of individuals the redness which first appears is carried on a stage further; in addition to dilatation of the vessels, serum is poured out from them. The serum, getting into the interstices of the tissue, compresses the vessels from without, and gradually empties them, and thus we have produced a white wheal, the border where the compression is not effective remaining red. This is the condition known as dermographism (Fig. 5), which in mediæval times was attributed to demonic influence. In cases of red urticaria the tissues are presumably looser, and the vessels not so readily compressed.

Urticaria may also attack the mucous membranes, particularly the gastric and bronchial, in the latter instance leading to the development of asthmatic symptoms.

Urticaria may be looked upon as a mild and transient form of inflammation. The irritant is a toxin either introduced from without—either directly (nettle-sting) or indirectly (santonin) —or it may be elaborated in the body from something in the food, from some pathological process (hydatids, ascarides), or it may be some toxic substance which in normal conditions is harmlessly eliminated.

It may be that some slight local irritation is necessary for the development of the individual wheals, such as the friction of the clothes; it is easy to evoke them by scratching, and in some cases the application of a hot sponge and in others of a cold one will produce them.

It must be kept clearly in mind that idiosyncrasy plays a very large part indeed in the production of urticaria. There are a few people who can handle nettles with impunity, and many more in whom the sting of the midge or flea produces hardly any reaction, and the same variations are seen in connection with all the other irritants which produce urticaria.

Amongst these may be mentioned the stings and bites of various members of the animal and vegetable kingdom, *e.g.* jelly-fish, mosquitoes, midges, caterpillars, and the stinging nettle.

Among the internal irritants, drugs occupy an important



URTICARIA.

place. The commonest drug rashes are urticarial or erythematous in type; indeed, the same drug will produce in one person urticaria, and in another erythema. Then we have certain substances taken as food. Every one is liable to urticaria, but some are more liable to it than others. The particular toxin which would discover it in a particular individual may be one which he never meets, or it may be one so common as to be seriously inconvenient. Every one knows that oysters produce nettlerash, and yet what millions of oysters are eaten every year without producing any ill effect! The person who has eaten oysters by the hundred with impunity may suffer at last, and may find to his bitter regret that he is never able to eat them again without the eruption reappearing. But though oysters are perhaps the producers of urticaria *par excellence*, there are hundreds of other things which are poisonous in the same sense. Thus although out of say a thousand people, twenty or thirty might be affected by oysters, only one may be affected by one or other of the other articles which are known to produce the condition. Here, again, the patient may have all his life partaken at intervals of what has now proved to be to him a poison; it may be that the effects pass off and he can again partake of it with impunity, or it may be that he can never taste it again without suffering from the eruption. An inquiry into such possibility should come early in the investigation of every case. Over and over again I have seen patients dieted, drugged, and sent in search of health to one health resort after another, when the whole explanation was that some simple article of diet had become poison to them. It is indeed often difficult to persuade patients that such common articles of diet as eggs, milk, coffee, Finnan haddock, and the like can possibly be responsible for this troublesome eruption, but they can. There are indeed so many articles of diet which may in certain persons call out the eruption, and which are not generally suspected, that the following list, compiled from my own case records and well-known works on dermatology, is worthy of attention. It does not claim to be exclusive. Oysters, clams, mussels, whelks, lobsters, crabs, prawns, and shrimps. Salt fish, dried fish, Finnan haddock, salmon, and

flounders. Strawberries, raspberries, gooseberries, rhubarb, cherries, black currants, damsons, dates, figs, pineapple, grapes, melons, ginger, preserved fruits, almonds, mushrooms, truffles, tomatoes, cauliflowers, cucumbers, and pickles. Rice and oatmeal, malt-extract, milk, cheese, coffee, pork, sausages, goose, salt beef, mutton, hare, rabbit, and eggs.

As an instance of the importance of the detective faculty in the elucidation of such cases, one medical man told me that he had himself discovered that while forced rhubarb invariably caused urticaria, he could eat common garden rhubarb with impunity. I am convinced that rhubarb and eggs are far more often the cause of urticaria in children than is generally recognised.

In all cases the state of the gastric and intestinal functions should be investigated, since poisons resulting from katabolic changes in the alimentary tract may be absorbed, and by auto-intoxication give rise to urticaria. Unfortunately, our knowledge is not as yet sufficiently extensive to enable us always to recognise the particular toxin which is responsible, and individual idiosyncrasy plays an important part, but the result of strict dieting and the administration of intestinal antiseptics demonstrate the importance of this factor.

It was formerly the custom to speak of the urticaria which almost invariably follows the tapping of a hydatid cyst, of that associated with the presence of worms (a common cause in children), with pregnancy, and with diseases of the kidney, liver, and uterus as reflex, but in the light of to-day there seems no need to separate those from the general toxic theory.

Varieties.—If the histopathology of the affection, namely, an accumulation of serum in the interstices of the skin, be understood, it is easily seen how varieties may occur. Thus the fluid may not be confined to the corium, but may escape and raise the epidermis in a vesicle or bulla, a condition which has been distinguished by the name of **Urticaria bullosa**; or the vessels may give way and hæmorrhage take place, **Urticaria hæmorrhagica**.

A most important development of the disease is known as **Lichen urticatus,** or **Urticaria papulosa**. One is consulted regarding a child, who is said to suffer from itching. On

examination a number of papules are seen, most of them surmounted by a tiny hæmorrhagic crust, and all or nearly all of them within easy reach of the child's fingers. The appearances suggest scabies, but the favourite seats of that disease, the hands, wrists, and feet, are not specially affected. Very often as soon as the clothes are taken off, the child begins to scratch himself, when a wheal will develop and disclose the real nature of the disease. If he does not do this, the observer should do the scratching. Usually the mother, if observant, has noted the appearance of the wheals, but they are so evanescent that their importance is apt to be overshadowed by the more lasting crusted papules.

Another variety is known as **Giant urticaria,** or acute circumscribed œdema (Quincke's œdema). This is more apt to occur in adults, and is sometimes associated with alcoholic excess. According to Schlesinger it is sometimes hereditary, especially in the male line, and he notes as predisposing factors, hysteria, puberty, the climacteric, syphilis, etc. It sometimes follows on the simpler form of the disease, and occasionally gives rise to grave symptoms by making its appearance on the mucous membranes of the throat and larynx, and threatening suffocation. The process is the same, but since the vessels affected are the larger ones of the hypoderm, the swellings are much larger and deeper. There is not the same intense burning and itching so frequent in the commoner variety of the disease; indeed the patient himself is sometimes unconscious of its presence. As a rule, it appears and disappears rapidly, though on account of its great depth the process is naturally more deliberate than in ordinary urticaria, and is occasionally very prolonged.

Diagnosis.—The diagnosis of a wheal is a matter of no difficulty. The wheal is merely a symptom which is evoked with greater or less facility according as the skin is more or less tolerant of various irritants. Thus the importance of diagnosis lies not in the actual recognition of the condition but in the discovery of its cause. When the wheal is found the diagnosis is only begun. Urticaria is one of the many diseases of the skin where the cultivation of the detective instinct is of much value. There are a great many mysterious

outbreaks of nettlerash which can be traced to their source by prolonged careful investigation. One case was brought to my notice where urticaria developed invariably after eating Finnan haddock, but the connection never occurred to the patient until a regular Sherlock Holmes inquiry was made by a well-educated surgeon.

Prognosis.—The prognosis, too, depends on the cause of the malady. In the acute cases it is usually good, but sometimes an irritant which produces an acute attack seems to arouse a latent tendency to the disease, which lasts long after all traces of the irritant must have passed away. The patient has become hypersensitive, and similar though not identical toxins may now evoke the lesion. Thus, I was once consulted by a patient who, after an oyster supper at Christmas, had a severe attack of acute urticaria. When I saw him, in June, although he had eschewed oysters ever since, the urticaria was still very troublesome. The prognosis really depends on the ability of the physician to find out the cause of the disease.

Treatment.—In cases of acute urticaria, due evidently to some obvious error of diet, an emetic or a sharp purge should be ordered. If parasites, either external or internal, are present, their removal is often followed by the disappearance of the urticaria. If neither of these obvious causes exist, attention should next be directed to the condition of the internal organs, and any disturbance, however apparently trivial, should be corrected. The food must be next attended to. There are wonderfully few articles of diet which may not produce the disease in some persons. The articles which are well known to produce it have already been referred to; but if a case continues obstinate, various articles of food and drink should be intermitted in succession, until eventually the guilty one is found. Or, in obstinate cases, the patient should be restricted for a time to a plain milk diet. If the urticaria disappears, additions to the diet should be made one by one, and the results carefully noted. If it does not, the possibility that milk is the cause should be considered. Another plan is for the patient to keep an accurate record of everything he eats and drinks, and a parallel record of his urticaria.



CUTANEOUS TESTS.

Comparison of the two sometimes leads to the discovery of the cause. The cutaneous reactions which so many workers are at present investigating are full of promise for the future. We are only on the threshold of the subject, and the results are often mystifying and not infrequently seemingly contradictory; but I feel very confident that as time goes on and experience accumulates we shall learn what not to give to patients who suffer not only from urticaria but from many other forms of dermatitis. The carrying out of the tests is easy; it is the interpretation which requires experience. A series of scarifications is made on the flexor surface of the forearm, and into each is rubbed, with great care to avoid contamination, one of the substances which is possibly the cause of the eruption. Some of these—egg, rhubarb, butter, etc.—are ready to hand; the larger chemical firms are now preparing dried extracts of various foods which are convenient to handle. A little of one of these dissolved in decinormal sodium hydrate solution is rubbed on the scarified surface just as in von-Pirquet's test, and if the patient is sensitive to one of the substances applied, a red wheal will develop around the scarification in from ten to thirty minutes. It does not follow that the elimination of this article from the patient's dietary will be immediately followed by the disappearance of his disease, but it does show that the individual is sensitisable, and points the wisdom of excluding the particular article from use, and of continuing the search for other irritants.

External irritation must be guarded against; the underclothes should, in those subject to the disease, be very soft and unirritating. It may often be necessary to wear linen under the flannel garments, or to have recourse to those made of silk.

A cold bath sometimes seems to be responsible for the keeping up of the disease, and its abolition may be desirable. Further irritant substances connected with the patient's work may have a bad effect; and the possibility that the patient may be taking some drugs—antipyrin, quinin, chloral, etc.—should be borne in mind.

If absorption of toxin from the alimentary tract be suspected, intestinal antiseptics should be employed, and the diet should be simplified or even reduced to milk only.

Treatment of the disease apart from a known cause is necessarily empirical. *Ichthyol* has, in my experience, proved the most reliable drug. To adults it may be given in capsules (5 minims three times a day). Children take it quite readily, mixed with an equal amount of glycerin. Salicylate of soda, salol, acetyl salicylic acid, and quinin are all worth a trial. Chloride of calcium, strongly recommended by Wright, has, I regret to say, not proved of much value in my hands, but I have seen benefit from the syrup of the lactophosphate of lime. Unna gives ichthyol during the day and an atropin pill at bedtime. Antipyrin and phenacetin are occasionally administered with good effect.

No local treatment has any real effect on the disease, but the symptoms of burning and itching may be mitigated by the application of lotions similar to those recommended under Pruritus.

The disease known as **Epidermolysis bullosa** is, I believe, distantly related to urticaria. It is an hereditary disease, often affecting, as such diseases do, only one sex in a family. The lesions, which are most common upon the hands and feet, are produced by some form of irritation, usually friction, but the escape of serum from the vessels is so great that the epidermis is raised in a bulla, into which hæmorrhage often occurs. As a rule the nails are affected, being atrophied and deformed, and hæmorrhages from the mucous membranes (probably indicating lesions there) are not uncommon.

The disease is rare and treatment not very satisfactory, but the various drugs recommended above may be tried.

PRURIGO

(*Prurire—to itch*)

As already indicated, this disease must be very clearly distinguished from pruritus. In addition to itching, it is characterised by definite lesions in the skin. The cases may be divided into two classes, prurigo mitis and prurigo gravis, with certain features, particularly the itching, in common, but with certain distinct differences.

The first variety, which was described by **Willan**, usually commences in adults. Tiny papules appear, especially on the extensor surfaces of the limbs, more rarely on the trunk. They may be faintly reddened, but are usually of the same colour as the skin. Owing to the patient's scratching they are very frequently surmounted by a tiny scab. The spots may to a certain extent run together, but the surface always remains dry. The disease is fortunately rare, as the prognosis is unfortunately grave, the disease lasting (in spite of treatment) for years.

Prurigo gravis, or the true prurigo of Hebra, is an affection which commences in infancy, increases during adolescence, and lasts for life. In some respects it closely resembles the previous disease, and has at first the same distribution, but the papules are much more numerous, a fact which is more perceptible to the touch than to the eye. If the hand be passed over the extensor surfaces of the limbs, a sensation as of stroking a nutmeg grater is conveyed to the observer. The glands draining the affected regions are always enlarged. This is most marked in the femoral region, where the mass of enlarged glands usually stands out very prominently. In a fully developed case the patient is anæmic, the skin is dry and pigmented as it is in all chronic itching diseases, and the amount of subcutaneous fat is notably diminished. The flexures of the joints are almost invariably spared, though, if there is a great deal of scratching, there may be some superadded dermatitis in these situations.

It was long held that this disease did not occur in this country. The fact is that its relation to urticaria was so generally recognised here, that its identity with the prurigo of Continental writers was overlooked. It begins in childhood as urticaria, and the earlier stages are those of urticaria papulosa (*q.v.*). If that disease is not cured, it develops into prurigo.

When once the disease is fully established the prognosis is very bad. While great amelioration may take place, cure is almost unknown, and this fact should stimulate the efforts of the physician in his management of obstinate cases of urticaria in children.

When the lesions are examined microscopically, the connection with urticaria is evident. There is œdema of the cutis, and an increase in the cells around the vessels. There are in addition morbid changes in some of the epithelial cells, analogous to those of early vesicle formation, but the process is arrested, the vesicles dry up and form the characteristic little papules.

Treatment.—For the early urticarial cases see Urticaria. For the fully developed cases, prolonged bathing, generous diet,[1] with a predominance of carbohydrates, cod-liver oil, and rest in bed, are all-important; as local applications, soft soap, tar, salicylic acid, sulphur, or β-naphthol ointments are of some value. Regular injections of pilocarpin are often followed by considerable improvement. Epicarin was strongly recommended by Kaposi, and I have prescribed it as a 10 per cent. ointment with benefit.

Under the heading of "Summer Prurigo" or summer eruption Hutchinson describes a variety of dermatitis apparently due to the actinic rays of light. It occurs on the exposed parts of the body, the face, arms, and possibly the legs. Usually of a papular form, the lesions may become infected with organisms, and almost any form of dermatitis may develop. It is commonest in girls, and occurs each year as the sun's rays gain in strength, disappearing, or nearly so, in autumn, to reappear the following spring. The only treatment of any value is the application of some colour preparation to protect the sensitive skin. This application may either be an ointment, a paint, or a thick brown veil. Like all diseases brought about by the effects of light, it tends to disappear as adult life is entered upon.

ERYTHEMA

(*ἐρυθρός—red*)

"Erythema" strictly means redness, and in this sense, coupled with some suitable adjective, it has been applied to

[1] I have great faith in pease brose as an article of diet in these cases. As far back as the time of Daniel, pulse was recognised as favourably influencing the condition of the skin.

a number of conditions where the redness of the skin was brought about by some deep-lying disease, such as an abscess or other swelling distending the skin. Like many other of the older names, it has latterly become more restricted in its use, and for practical purposes it may be taken to mean the disease called by Hebra *Erythema exudativum multiforme.* The name is eminently descriptive of the eruption. We have *erythema* or redness, *exudation* into the deeper layers of the skin; and the *forms* which it may assume are indeed *many.* In distinction from urticaria, to which it is closely related, the vessels are not compressed, and thus the lesions have always a



FIG. 6.—Section from a case of erythema multiforme. Dilated vessels surrounded by cellular infiltration. Some thickening of the horny layer.

red colour. The accompanying drawing is from a section of a lesion on the wrist. It shows the distended vessels surrounded by leucocytes, indicative of a greater degree of inflammation than in urticaria, and a certain amount of thickening of the horny layer, evidence of the more durable character of each lesion. More frequently than in urticaria the process of exudation extends to the surface, and there is often in the centre of the lesion a considerable bulla. Such cases are often diagnosed by those unfamiliar with skin diseases as pemphigus.

Certain accompaniments of the disease place it almost beyond doubt that it is due to some poison circulating in the blood. Thus it is often ushered in by a rise of temperature

and some disorder of one or other of the mucous membranes, or by pains about the joints. In many cases the eruption is roughly symmetrical, attacking both hands or both feet, both arms or both legs. The occasional recurrence of groups of cases suggests something of an epidemic character. Like many skin diseases, it is said to be more common in spring and autumn. If the terms spring and autumn be inquired into, it will generally be found that they must be considerably expanded in order to fit in with this theory. It is most common in the young, and there is a very suggestive connection with the rheumatic poison in some of its varieties. Certain forms occur so frequently as to have acquired definite appellations. Of these the best known is—

Erythema nodosum.—This is most common in adolescence, and prefers the female sex in the proportion of two to one. It is accompanied by more or less constitutional disturbance, and often by pains in the joints, sometimes so severe as to suggest the onset of acute rheumatism. Then a series of "oval swellings with their long diameter parallel to that of the limbs" appear on the extensor aspects of the legs and arms, below the knees and elbows, frequently only on the legs, and practically never on the arms alone. Far too much importance is attached to the shape of the lesions. The above description is quoted from book to book, but a close study of one's cases and of well-known dermatological atlases—especially photographic ones—will show that the oval shape is not the rule; in my experience it is the exception. At first bright red, they soon become dusky, and a purplish tint makes its appearance. This is due to hæmorrhage, and each node before disappearing goes through the play of colours of a bruise. At first firm and tense, and very tender on pressure, they afterwards become softer, and give the sensation of containing fluid, though they never suppurate. The first eruption is rarely the last; repeated crops make their appearance, and prolong the duration of the disease to from three to six weeks. One attack does not protect from subsequent ones, but there is no great tendency to recurrence.

The connection of this form of the disease with rheumatism



ERYTHEMA NODOSUM.



ERYTHEMA IRIS.

is very suggestive. It frequently occurs in patients who are definitely rheumatic, and even more frequently in those who have suffered from some of the other associated diseases, such as chorea, endocarditis, and quinsy.[1]

Erythema nodosum must be clearly distinguished from a much rarer condition, erythema induratum, or Bazin's disease, which is described among the tuberculous affections, and which also finds its victims mainly among young women.

TREATMENT.—The treatment of this form of erythema is fortunately simpler and more satisfactory than that of most of the diseases of the skin which are due to internal poisons. By almost universal accord salicylate of soda[2] is regarded as almost a specific. It should be given in full doses. There is one other specific for erythema nodosum, and that is *rest*, which is as important, if not more so, than the administration of any drug. No local treatment has any curative effect, but the affected parts may be protected by the application of glyco-gelatin or cotton-wool.

Erythema iris (*iris*—a rainbow) is another very characteristic form of the disease. In my experience, males are more frequently attacked than females.

The spots are round and raised, and the exudation making its way to the surface raises a ring of vesicles round the border (herpes iris) or a considerable bulla in the centre. There is a general tendency to a ringed shape, and often a certain play of colours in the different rings, whence arises the name erythema iris. But if one seeks a really apt comparison, the lesions are most like the targets used by the King's Body Guard in Scotland (the Royal Archers).

The usual distribution of the eruption is on the hands and wrists, feet and ankles, but it frequently appears also on the mucous membrane of the mouth, where the lesions are rapidly converted into small ulcers and may lead an inexperienced observer to diagnose syphilis. There is not, as a rule, much

[1] Arguments have recently been advanced to suggest that E. nodosum is a form of tuberculosis ; but the effects of salicin seem to me too striking to be merely coincident.

[2] Salicin, or salol, acetyl salicylic acid, etc., are usually equally efficacious, in exceptional instances more so.

pain in connection with this form of erythema, and general constitutional disturbance is often slight or absent, but it is almost certain that the first will not be the last attack. It is not unusual for a patient to have two or three attacks a year for some years. One of the coloured illustrations shows a typical example, with well-marked formation of bullæ, the other an exceptionally severe type of the target variety.

Occasionally one meets with these target-like erythemata more widely distributed: on the limbs, trunk, and face. Although the lesions closely resemble E. iris, they are evidently not due to the same cause, for they do not show the unfortunate tendency to recurrence, and usually disappear rapidly under salicin.

Treatment.—Left to itself each attack runs its course in two or three weeks, and in slight cases very little treatment is required. Salicin is by no means a specific, but it is helpful in some cases. If it fails, quinin may be tried. In view of the tendency to recurrence, special attention should be given to the patient's general condition, especially to that of his digestive organs, and special attention should be directed to the possibility that some article of diet or a combination of such is acting as the causal poison. External treatment is usually required; not that it does anything to cure the disease, but it is useful in preventing the infection of the very frequently ulcerated spots. It consists in the application either of some mild antiseptic ointment or paste such as ammoniated mercury (1 per cent.), or of some protective application, such as Unna's gelatine (p. 26).

Peliosis rheumatica (πελιός—livid), *Purpura rheumatica.*—This is another variety which presents such constant peculiarities as to entitle it to a separate description and name, though it is much rarer than the form just described.

The disease commences with some systemic disturbance, rise of temperature (up to 102°), and *joint pain*, especially in the knees and elbows. In a day or two lesions begin to appear, usually in the neighbourhood of the painful joints. In many ways they resemble those of erythema nodosum; they are hyperæmic, and elevated from the escape of serum into the tissues; but more or less hæmorrhage is *constantly present*. Just



ERYTHEMA IRIS.

as in erythema nodosum, the appearance of fresh crops of lesions prolongs the disease, which frequently lasts several weeks. The spots go through the ordinary discoloration process of cutaneous hæmorrhage, and finally disappear, leaving no trace of their presence.

The rheumatic relationships of the disease are fairly evident, though why the lesions should be constantly hæmorrhagic is unknown. The occasional cutaneous hæmorrhages occurring in the course of acute rheumatism should not be too readily christened *peliosis*. Some of them are almost certainly due to the salicylates with which the case is being treated.

Treatment.—This is to be conducted on the same lines as that of erythema nodosum. Rest is of even more importance than in that disease. The fact that the salicylates occasionally bring about cutaneous hæmorrhages need not be seriously considered. Even if a few additional ones are produced, they are of little account when the drug is gradually overcoming the disease. Quinin may, however, be tried as a substitute.

Erythema scarlatiniforme.—This is an acute erythema, which may so closely imitate scarlet fever as to thoroughly deserve its name. It is ushered in as a rule with some general disturbance, which may vary within wide limits. The rash may appear immediately, or be delayed for a day or two. Though generally resembling scarlet fever, sometimes it rather suggests measles. Desquamation sets in early and is usually very abundant, large sheets of skin being thrown off. Recurrence is not uncommon; possibly one attack sensitises the individual to poisons to which he was previously immune; and cases are on record where patients have been admitted again and again into fever hospitals for scarlet fever. Cases have been observed to follow on various forms of poisoning, septic or other, among which the various drugs which give rise to eruptions, especially morphin, must not be forgotten.

Diagnosis is, of course, the most important consideration in this variety, and in all cases of doubt it is well to err on the safe side. Generally speaking, the constitutional disturbance is less severe than in scarlet fever, and the strawberry tongue is absent. But there may be redness of the fauces. If the

rash resembles measles the diagnosis is easier, for the other symptoms of that disease are absent.

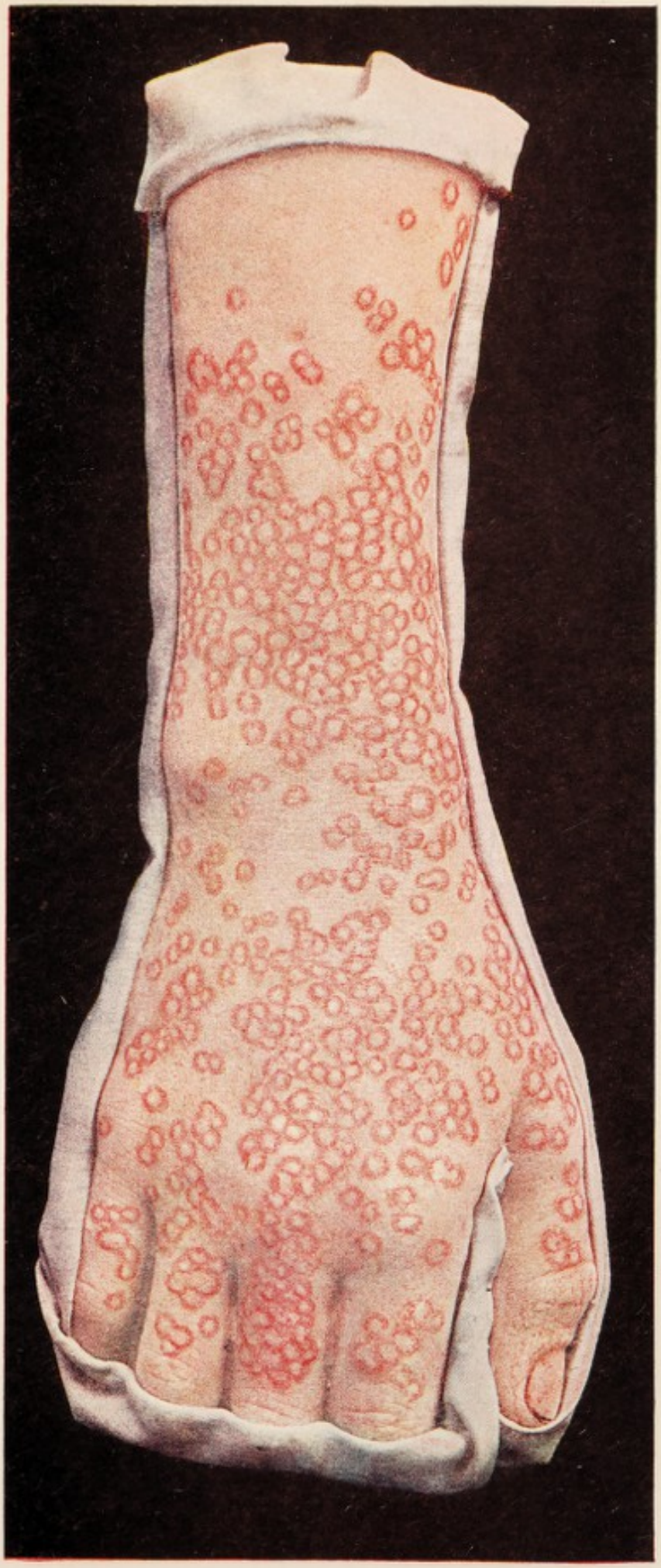
TREATMENT.—A simple dusting powder is all that is required locally, and, except in recurrent cases, no further treatment is required. In these quinin, salicylates, and tonics are often administered in the hope of diminishing the liability to attacks, and careful well-directed investigation will sometimes succeed in detecting the cause.

Erythema annulare.—The Plate opposite is from the only example of this type which has come under my notice. It is inconceivable that so striking an eruption has not some definite and particular cause, but we were unable to detect it, and the eruption gradually faded away.

Erythema multiforme.—There still remain a number of forms of erythema, so numerous that they may conveniently be grouped together as erythema multiforme. If the forms already described are excluded, the remaining varieties may be said to affect the trunk and face more than the limbs. Raised, red patches of various shapes appear on different parts of the body, and the process of exudation may extend to the production of bullæ or even hæmorrhages, often, especially where bullæ are developed leading the unwary astray to mistake the condition for pemphigus, while sometimes the line between these lesions and those of red urticaria is very difficult to draw. The lesions of erythema develop more slowly, are as a rule more lasting, less itchy, and of a darker colour than those of urticaria, and there is generally more systemic disturbance.

Erythema multiforme is by no means so obviously related to rheumatism as are some of the named varieties. The eruptions are much more chronic, persisting, it may be, for months, and rheumatic symptoms are chiefly conspicuous by their absence. In some cases, notably those due to the ingestion of drugs, or septic absorption, the dependence on a toxin is obvious, but in a great many cases this escapes detection, and even prolonged and careful search may be in vain.

In many cases faulty metabolism is the cause; in others deficient excretion, as in those erythemata associated with Bright's disease. Schalek has recently reported two cases in which hypochlorhydria was present: the eruption disappeared



ERYTHEMA ANNULARE.

when that condition was relieved by the administration of dilute hydrochloric acid.

So much at least is clear, the development on the skin of the lesions of erythema multiforme indicates some form of toxæmia, and to the detection of this the efforts of the physician must be directed. He should not forget the possibility that some article of diet may be responsible, and should have resort to the cutaneous tests.

Looking back on the drugs which have been recommended for administration, one sees how many of them have at least contributed to render the conditions in the intestines more wholesome. The salicylates, salol, calomel, sulphur, quinin, and other tonics all contribute, either directly or indirectly, to a more healthy performance of the intestinal functions, and it is on such lines that treatment of this group of erythemata must in the absence of other indications be directed. Plain diet, healthy surroundings, and suitable tonics, attention to the regular movement of the bowels and the state of the digestion, will generally lead to the disappearance of the eruption. Local treatment is directed merely to the protection of the lesions from external injuries, or, if they are ulcerated, to keeping the raw surface clean.

CHILBLAIN

(*Erythema pernio*)

This is usually considered as a variety of erythema, and we certainly have redness and exudation, though it must be admitted that in many respects it does not closely resemble the other varieties of that disease. While they are dependent on some internal poison, chilblain is very clearly dependent on the external application of cold. But cold alone does not produce chilblain, and Unna considers it to be most correctly described as an acrocyanosis (*ἄκρον*—a point), for some congestion of the circulation at the extremities (fingers, toes, ears, and nose), where it is normally least vigorous, is necessary before chilblains develop.

The symptoms are, unfortunately, only too familiar. The

irregularly round, itching, burning patches, which appear in winter on the situations above alluded to, and which, when neglected or improperly treated, go on to form small indolent ulcerations, usually require little skill for their diagnosis.

They are found frequently in patients with feeble circulation, and occur with exceptional frequency in the subjects of tuberculosis; but there is no etiological connection with that disease.

There is only one disease with which chilblain can be confounded, namely, *lupus erythematosus*. When that disease affects the fingers alone the diagnosis is often very difficult. If scars or the typical mortar-like scales of lupus erythematosus are present, the distinction is easy; but when the disease takes the erythematous form, and leaves no scars, one is sometimes driven to wait until the return of warm weather settles the matter.

The two diseases seem to be in some mysterious way related, for the subjects of lupus erythematosus[1] very often suffer from chilblains, while one sometimes meets with a sort of intermediate condition attacking the ears and leading to some destruction of tissue. See Plate facing p. 299.

TREATMENT.—This is to be directed on lines designed to improve the circulation, both general and local. Cod-liver oil and tonics, such as quinin and iron, should be administered internally. The syrup of the lactophosphate of lime, in doses of a teaspoonful thrice daily, often acts like a charm. Cold must be avoided; the water for washing must be warm; the skin must be thoroughly dried and warmly clad. Tight boots must be rigorously avoided, and vigorous exercise should be taken to promote the circulation. The local applications recommended are legion, but they all have one aim, namely, to stimulate the circulation. Iodine is one of the best; the ointment, the tincture, or tinct. iodi, 10 per cent. in collodion, may be tried. Among other stimulants recommended may be mentioned oil of turpentine, Peru balsam, and oil of camphor. Boeck, of Christiania, recommends ichthyol, tannin, resorcin, āā 1, aquæ 5, to be painted

[1] I anticipate that before long I shall join the ranks of those who regard lupus erythematosus as a side link to the chain of the toxic eruptions.

on at night. The application of high frequency currents is often beneficial, and Bier's congestion method may be tried.

When ulceration has taken place some simple ointment should be applied. Leistikow gives the following as an old and valuable prescription:—

℞	Balsam. Peruvian - - - - -	5·0 (ʒjss)
	Argent. Nitratis - - - - -	1·0 (grs. 15)
	Ung. Spermaceti - - - - -	30·0 (ʒj)

HYDROA

(*ὕδωρ—water*)

The term hydroa is an ancient one revived. Its presence in the name of a disease indicates that the eruption is bullous or vesicular.

Dermatitis herpetiformis.—The most typical member of the group is often spoken of as Duhring's disease, as an acknowledgment of the valuable work of the late Professor Duhring, of Philadelphia, in giving his generation a clearer comprehension of its curious features, and perhaps to some extent as a convenient means of avoiding committing one's self to any theories as to its nature. It is, however, only right to point out that Tilbury Fox, to whom British dermatology owes so much, described the condition in 1880. Unna calls it, according to the severity of the attack, hydroa mitis or gravis. Judging by one's experience in Edinburgh, the disease is by no means rare. No class is exempt from its attacks. Twenty-five per cent. of the cases of which I have accurate records occurred below the age of ten, and of these there were twice as many girls as boys. After this age the sex incidence is all the other way, and the disease occurs twice as often in males, mostly men in the prime of life. It is a chronic affection of the skin, characterised by regularly recurring, widespread, itching eruptions, the characters of which vary greatly. Sometimes they are erythematous, sometimes vesicular, sometimes bullous, and sometimes erythemato-bullous; and they vary at different periods in the same patient. The eruptions, whatever be their natures, come out in groups, some-

what suddenly, and they have a distinct symmetrical tendency. The skin over the scapular regions, the sacrum, and the elbows is usually specially affected. Although the lesions often look sore enough, the patient's great complaint is itching, and he will tear open bullæ and score his nails through erythematous patches, in the endeavour to get relief from this distressing symptom. It is worthy of note that scratching, which as a rule makes itching worse, in this disease often gives relief. The little vesicles are deeper than one would gather from their clinical appearance, and while it cannot be



Fig. 7.—Dermatitis herpetiformis. Cover of vesicle is practically the entire epithelial layer; in the vesicle are threads of coagulated fibrin and a few leucocytes. The vessels beneath are sheathed with exudation cells.

said that they actually leave scars, traces of their existence persist for a considerable time. When a section is examined under the microscope the reason of this is evident. The outer wall of the vesicle is practically the entire epidermis (Fig. 7), and that being destroyed, the fact that the result resembles a scar is not surprising. Most chronic itching skin diseases are accompanied by some pigmentation. In this disease it is very marked—often in the form of little rings surrounding the site of each bygone vesicle. The Plates are taken respectively from the arm of a child in whom the bullous type of the disease commonest in children is well shown, and from a very typical case in an adult male, showing the smaller vesicular lesions, some erythematous patches,



DERMATITIS HERPETIFORMIS.



DERMATITIS HERPETIFORMIS.

evidence of vigorous scratching, and two of the little pigmented rings just referred to.

Etiology.—Very little, and nothing definite, is known as to its cause. One cannot help feeling that the tradition of neurotic origin has to some extent biased the observations of some authorities. I am not concerned to deny that the disease does occur in neurotic subjects, or in persons worn out with anxiety, or those who have suffered a severe nervous shock, but its occurrence in children, and in adults who have no anxieties and no nervous system to speak of, points rather to the theory of toxæmia. The invariable occurrence of eosinophilia, sometimes up to 30 per cent., supports this view; the frequent, though not invariable, presence of indican in the urine is significant; and the sudden symmetrical appearance of crops of eruption in definite regions is a phenomenon we are familiar with in erythema nodosum and iris: diseases almost certainly of toxic origin.

Diagnosis.—It is not always easy to diagnose this disease at the first sight of a patient. It is probably most frequently confounded with pemphigus; and, indeed, some eminent observers deny that there is any real distinction between the two diseases. The following points for diagnosis may be indicated. In pemphigus the eruption always follows the bullous type, and the bullæ are usually large, and arise *on previously unaffected skin*. In dermatitis herpetiformis, though they vary in size and may sometimes be large, they are usually small and are surrounded by an erythematous halo; or a group of bullæ arise on an erythematous patch. In moderate cases of both diseases there is comparatively little affection of the general health. In severe cases of pemphigus the patient is generally seriously ill; in severe cases of dermatitis herpetiformis, astonishingly well. Itching is so prominent a feature of dermatitis herpetiformis that it has been suggested that this was the cause of Job's sufferings: in pemphigus this symptom is frequently absent. From erythema multiforme it is distinguished by the greater intensity of the itching and by the more constant occurrence of bullæ and vesicles, by its usually symmetrical tendency, and by the ringed pigmentation referred to above. Vesicles and bullæ do occur in

erythema, but more exceptionally and usually later in the career of each spot. But these remarks apply to the typical forms, and it has already been admitted that one finds cases almost insensibly graded all the way from erythema multiforme to pemphigus.

PROGNOSIS.—This is good as regards life, if the patient does not commit suicide on account of the mental disturbance brought about by the itching, but with regard to a speedy cure it is most undeniably bad. Cases last almost always for a year or two, and sometimes for a considerable number of years. But the hope of ultimate recovery may generally be extended to the patient.

TREATMENT.—The prolonged course in itself strikingly indicates the difficulty of treatment and its want of success. Experience has taught that there are three things which may generally be depended on to give temporary relief. *First*, complete rest. A patient who has suffered from the disease for perhaps three years may be quite free from his eruption after a three weeks' stay in hospital. In the better classes a visit to Harrogate or to some rustic spot, with or without special baths, will in many cases be followed by the same satisfactory result. But when the patient returns to his work the disease soon breaks out in all its former vigour. The longer the rest, however, the better is the chance of a considerable period of freedom.

The *second* remedy is *arsenic*. As one who is not in the habit of prescribing this drug very freely, my testimony to its value in this disease is the more valuable. I have seen cases which improved steadily though slowly under its use instantly relapse on a stoppage of the drug, and I think it should be used in all cases otherwise suitable. It should be given judiciously (*vide* p. 13). The routine practice of giving 5 minims of Fowler's solution three times a day, and appraising the value of the remedy from the results, is not fair either to the drug or to the patient.

It should be kept in mind that malignant growths have often been noted to develop in persons who have taken arsenic for several years, and I record here without comment the facts that one of my patients who had taken arsenic off and on for

six or seven years for this disease ultimately succumbed to cancer of the stomach, while another developed an epithelioma on the palm.

The *third* remedy is one which certainly would not suggest itself as a likely one in the disease, but *sulphur ointment*, first recommended by Professor Duhring, is nevertheless of undeniable value. It is to be applied freely, and rubbed well in; in fact, the patient is treated almost as if he had scabies. The mechanical rubbing ruptures the vesicles, and this alone wonderfully relieves the itching, a fact which patients usually find out for themselves; while the sulphur seems to have some mysteriously beneficial influence on the disease.

The toxic theory had the support of Jas. C. Johnston, of New York. He said that the subjects of this disease are often conscious of an impending outbreak, and that a brisk calomel purge followed by the daily consumption of several quarts of water will diminish the severity of, or even avert an attack.

In this connection a brief record of a case which has been under my close observation since its commencement nine years ago is of interest. Wm. R., æt. 35, consulted me four weeks after the first appearance of any lesions. These, in their appearance, distribution, and the symptoms they caused, were typical, and there was well-marked eosinophilia.

Under small doses of arsenic the symptoms moderated for a time, but later recurred, and after nine months of treatment an epithelioma developed on his palm. It was removed and did not recur. I have not given him arsenic since. Various remedies were exhibited, but the eruption got worse and worse; his nerves began to break down, and he was threatened with the loss of his employment. He was ready to submit to any treatment, and after explaining that I did not know what effect might be produced, I gave him a dose of salvarsan. The result was deplorable; the eruption and his consequent sufferings increased fourfold, and one feared for his reason. In despair, I decided to push the toxin theory, and for a fortnight nothing passed his lips but water. His sufferings were heroically borne; he lost 1 st. 6 lb. in weight, but he lost his eruption too. Since then (April 1912) he has lived on rice, pease meal, milk, and

haricot beans; he is back to his work and to his old weight, and he has remained almost free from the eruption.

I have not been successful in persuading other patients to undergo more than two or three days of starvation, but I am convinced that a very plain diet, frequent doses of calomel and salol, and the systematic imbibition of large quantities of water materially help to diminish the severity of the disease.

The injection of 20 to 30 c.c. of the patient's own serum has sometimes seemed to act beneficially. It has been maintained by some that it is the bleeding and not the injection of the serum to which the benefit is due.

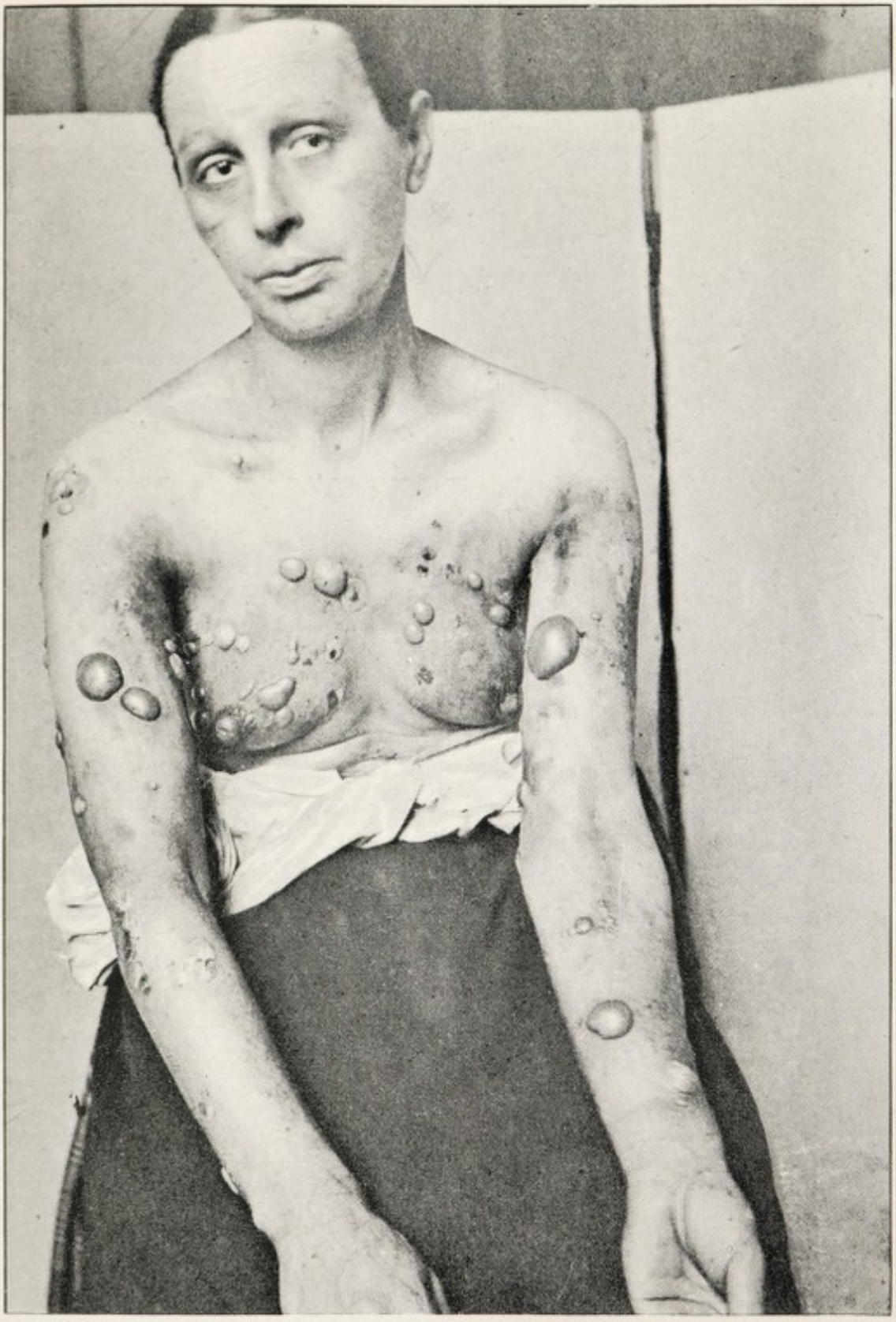
As is to be expected, in such a chronic disease very many other remedies are occasionally used. Unna gives ichthyol, Brocq atropin, and Arning salicylate of soda, while others give belladonna, nux vomica, quinin, ergot, antipyrin, phenacetin, salol, etc.

As an external application, sulphur has already been referred to (see also p. 24, Pusey's Liniment). Morris recommends carbolic oil, Unna ichthyol, while tar and other remedies for the relief of itching are also used.

Hydroa gravidarum, also known as *herpes gestationis*, is a bullous eruption occurring during pregnancy, and more or less closely resembling Duhring's disease. Indeed, Duhring regarded it as dermatitis herpetiformis, modified by pregnancy. The eruption disappears on the termination of the pregnancy, to return should the patient again become pregnant.

Crocker reports a case where, after three attacks related to pregnancy, a fourth was apparently evoked by cancer of the cervix. The Plate opposite is from a photograph kindly lent me by Dr. Arthur Hall, of Sheffield, of a case under his care, in which the resemblance to pemphigus is striking.

Hydroa vacciniforme is considered under the diseases due to light



Hydroa Gravidarum.

PEMPHIGUS

(*πέμφιξ—a blister*)

Pemphigus is pre-eminently the bullous disease. But not all bullous diseases are pemphigus, and great confusion has resulted because diseases in which bullæ are present accidentally

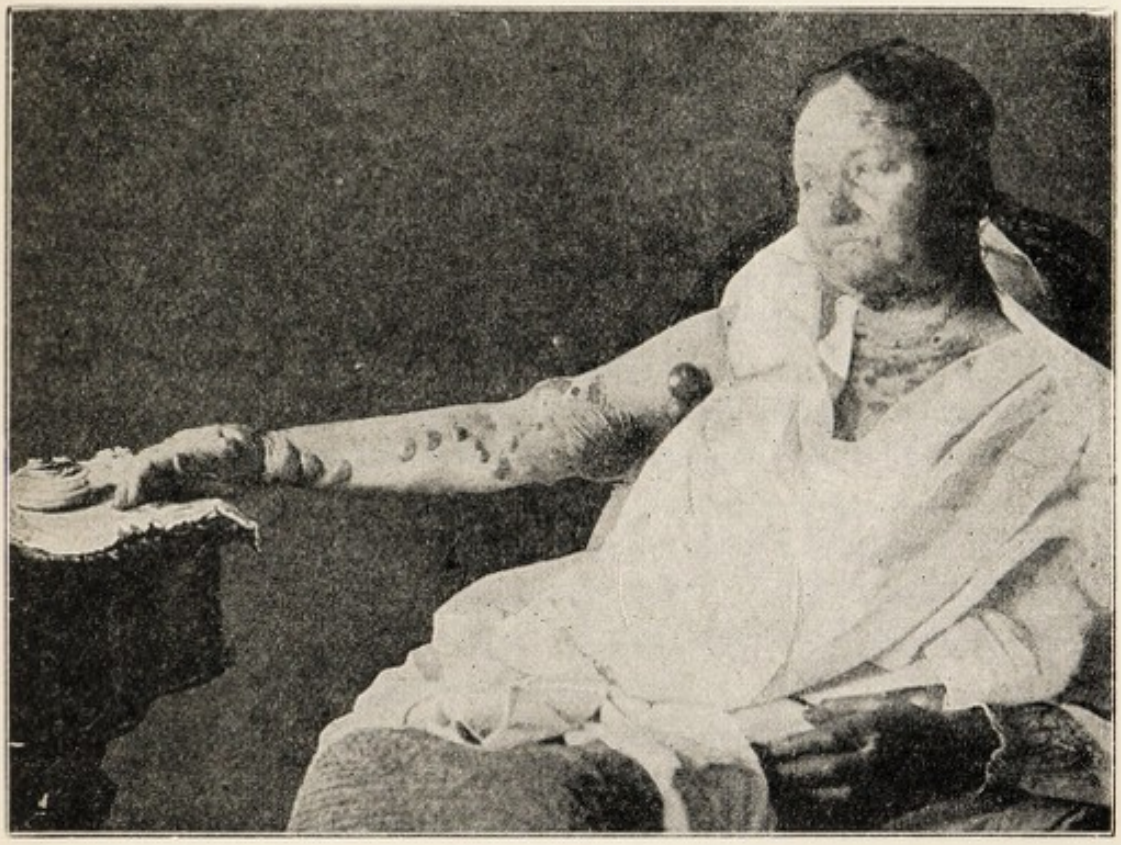


Fig. 8.—Pemphigus vulgaris chronicus.

have been so described. These will be referred to under diagnosis. The generally recognised varieties are: *pemphigus acutus*, *pemphigus vulgaris* (*chronicus*), *pemphigus foliaceus*, *pemphigus vegetans*. Of these, pemphigus vulgaris may be taken as the type of the disease, and as the variety referred to when the word is used alone. A great many of the cases described as *acute* pemphigus are cases of bullous impetigo contagiosa. In their rapid development and their satisfactory progress under simple local treatment they differ entirely from true pemphigus. A special form of pemphigus acutus has been described in

new-born infants as P. neonatorum. The name is unfortunate, as the majority of such cases are due to infection from case to case, and are examples of bullous impetigo contagiosa, while others are really congenital syphilis (see Plate facing p. 266). To pemphigus vegetans Unna altogether denies the right of the name.

When examined microscopically, the bullæ show a close resemblance to those of dermatitis herpetiformis, in that the outer wall of the bulla consists of nearly the whole epithelial layer. Cocci have been found by Demme and others, especially in the acute forms, but whatever be the cause of pemphigus, the weight of evidence is against any bacterial cause. The lesions which one finds in the internal organs of patients dying of pemphigus are those of a generalised toxæmia, the nervous system being specially liable to degenerative changes.

Pemphigus acutus is a rare disease, and its victims are so often butchers that it is sometimes referred to as butcher's pemphigus. I have, however, seen cases similar in type in children. If a clear history can be elicited, it will usually be found that some cut or other trifling wound occurred a week or ten days before the first appearance of the eruption. This may have caused little or no inconvenience, and sometimes no history of injury is forthcoming. The first crop of bullæ may appear in the neighbourhood of the wound or on any part of the body, not infrequently in the neighbourhood of the mouth. They are typical pemphigus bullæ, rounded, tense, and filled with clear fluid. The patient seeks advice at this stage because of the, to him, strange nature of the eruption, not because he feels ill, and yet within a fortnight three out of four such cases terminate fatally. Fresh crops of bullæ appear in rapid succession all over the trunk and limbs. The temperature runs high, all the symptoms point to profound toxic infection, and the patient sinks into a typhoid condition, in which he passes away, usually towards the end of the second week of the eruption. I have noted in the detailed records of some published cases corroboration of my own observation of a deceptive appearance of improvement about the end of the first week.

As the death-rate shows, treatment is usually unavailing;

the only case of mine which recovered occurred in a girl aged 9. There was no clear history of any wound, but in all the other symptoms the case corresponded to the butcher's type.

She owed her recovery largely to her nurses, and mainly, I believe, to the fact that it was possible to treat her in an almost continuous (mildly antiseptic) bath, and this I believe offers the only hope of successful treatment of these cases.

Pemphigus vulgaris chronicus is characterised by the appearance on apparently healthy or very slightly reddened skin of blebs or bullæ, varying in size from a pea to a hen's egg. They may appear on any part of the surface, are at first clear and tense, with no red halo; later they become opaque, flaccid, and surrounded by an inflammatory ring. If the dilated vessels rupture, blood is added to the contents of the bulla (pemphigus hæmorrhagicus). As a rule the bullæ rupture and their contents are discharged. In any case healing takes place rapidly without scarring, although usually some redness or discoloration remains. Fresh crops, however, continue to appear, and prolong the disease indefinitely.

Fig. 8, for which I am indebted to Sir James Galloway, is from a typical, somewhat severe case. Bullæ in all stages are seen, some recently developed, others flaccid, and other ruptured lesions are in process of scabbing.

Prognosis.—Some few cases end comparatively soon and favourably. Others go on for months or years, gradually getting worse, and eventually as gradually getting better, until at last the patient is freed from his ailment. A certain proportion of cases develop into the foliaceous type; many terminate fatally. The prognosis is better in children than in adults, but it should always be guarded, and in elderly patients it is always grave. Old people attacked by pemphigus are very likely to die. Sometimes death is due to exhaustion, but more often it is to be ascribed to the occurrence of the lesions in organs more necessary to life than the skin, such as the intestine, bronchial tubes, etc., while it is frequently the result of some intercurrent disease.

Diagnosis.—Those who have not much experience in the diseases of the skin are undoubtedly far too ready to call a

case pemphigus. The appearance of bullæ on the skin is not sufficient. Bullæ may develop accidentally in very many diseases, especially in urticaria, erythema multiforme, and dermatitis herpetiformis; and even in such common diseases as scabies and impetigo very well-marked bullæ may be seen. Drug eruptions, too, may take a bullous form, especially those due to the iodides or bromides. They are, however, always comparatively easy to distinguish; in all of them erythema or some other lesion *precedes the development of bullæ.* In cases of pemphigus vulgaris there is often marked eosinophilia.

TREATMENT.—The fact that the disease appears on apparently healthy skin should suffice to indicate that external treatment is of comparatively little value.

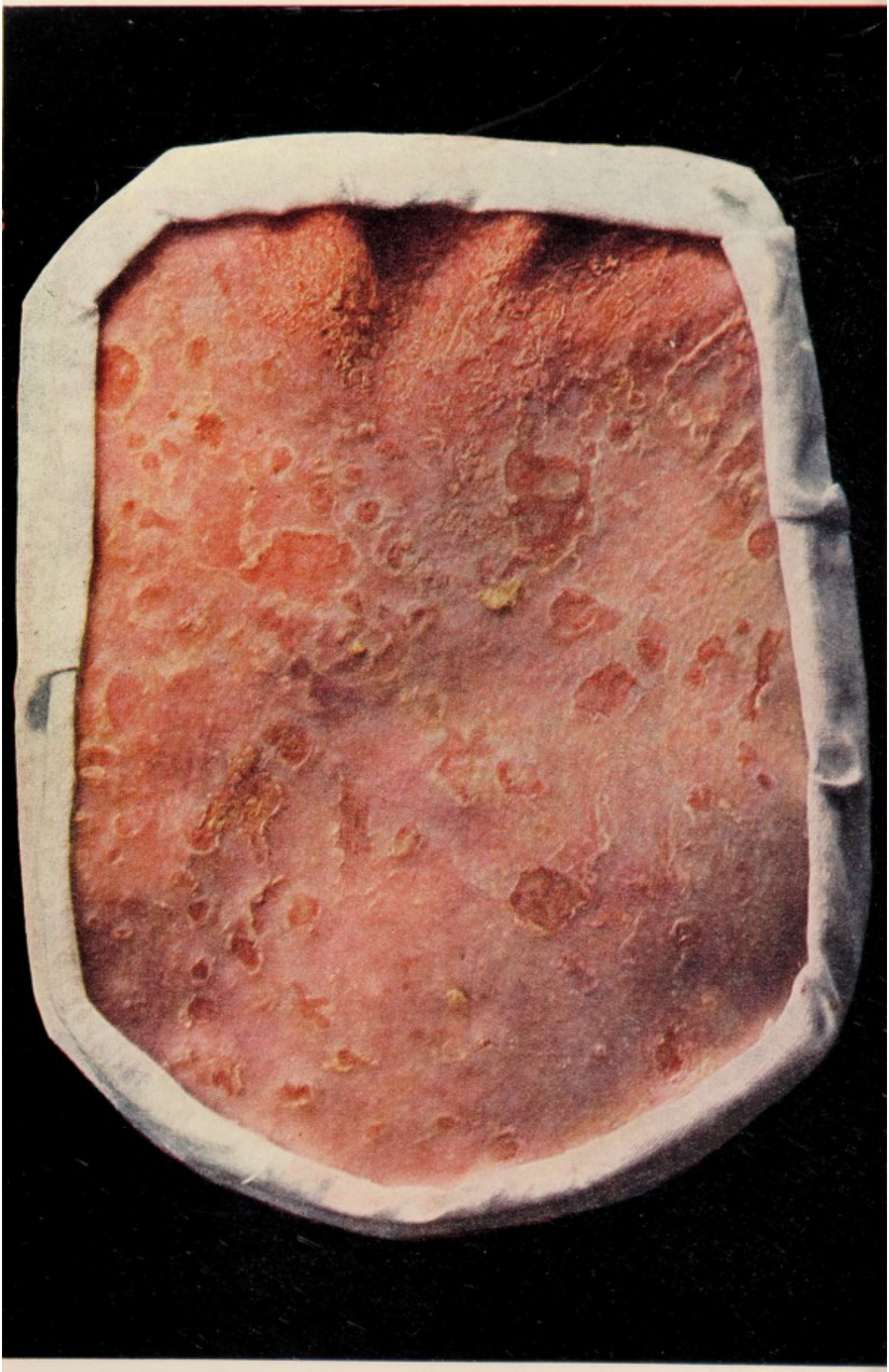
Local treatment is indeed confined to simple surgical procedure. The bullæ should be opened and some simple dressing applied to promote their rapid healing. Ointments, and dressings of that nature, are to be preferred, as they act as a protective to the denuded surfaces, and an ointment of 1 per cent. oxychloride of bismuth in vaseline is commonly used. Some cases do well under very free use of some mild antiseptic dusting powder, and prolonged, mildly antiseptic baths undoubtedly help.

General treatment is evidently indicated, but unfortunately the remedies used are distinguished more by their number than by their efficiency.

Hutchinson described arsenic as our *sheet anchor* in treatment. While probably the most trustworthy of a number of very unsatisfactory remedies, it very often fails us, and we are driven on a shore of vague generalities about keeping up the general health, strengthening the system, etc.

Probably the best thing which can be done for a well-established case of pemphigus is to advise change of air and a complete rest from work and worry, and, in the light of the toxic theory which has been discussed under dermatitis herpetiformis, a very plain simple diet and the consumption of large quantities of water.

Arsenic should be given judiciously in gradual increasing doses, until we are satisfied that the limit of tolerance has been reached, or that no benefit can be looked for. In such cases



PEMPHIGUS FOLIACEUS.

a trial may be given to other tonics; strychnin, quinin, or perchloride of mercury will be found useful in some instances, and ichthyol may also be tried. No miracle must be expected: these drugs must have the same patient, prolonged trial as arsenic, for time is, in all cases of pemphigus, the great remedy. One is loath to accept the pessimistic attitude of Joseph Frank, who, with all his experience, said in 1820, "The best treatment is to leave it alone."

Pemphigus foliaceus.—In most cases this develops from pemphigus vulgaris. I have seen it develop in a case which at one period was undoubtedly dermatitis herpetiformis, and in another which was originally diagnosed as seborrhœic dermatitis. The eruption generally affects the whole surface of the body, and the presence of large amounts of decomposing exudate gives rise to a peculiar sickly odour. The bullæ vary in size, but are never tense, and indeed it is often difficult to recognise that they are bullæ. The upper layers of the whole epidermis seem to be loosened, and one can displace the contained fluid with the finger and so make the bullæ travel from one spot to another (Nikolski's sign). The contents are soon discharged, and their outer walls form large flakes upon the skin which, stained with blood, have a certain resemblance to withered leaves, hence the name *foliaceus* (leaf-like). The annexed Plate gives an admirable reproduction of the condition. The burst bullæ with the leafy fringes at the edges are well shown. Where the bullæ have been smaller, and where the skin beneath is deep red, the appearance produced has been compared to flaky pie-crust.

Diagnosis.—At first sight the disease looks like a moist "eczema"; but eczema is practically never universal, the peculiar odour is always present, and careful inspection will result in the discovery of some of the large flaccid bullæ which are characteristic of the disease. A moderate eosinophilia is usually present; indicanuria is also frequent; and in nearly all the carefully recorded cases the presence of the *B. pyocyaneus* has been noted in the discharge. To its presence the peculiar odour is probably due.

Prognosis and Treatment.—The prognosis is undeniably bad, but the disease is by no means rapidly fatal; the sufferers

often wish it was. Though they look bad enough, they do not as a rule complain of being seriously ill, though at times, from septic absorption, the temperature runs high.

I have had under my care in recent years several cases of this rare disease. Some of them have been published by Dr. Low in the *British Journal of Dermatology*, and his paper may be referred to for fuller particulars. With one exception, and that the only private case of the disease I have encountered, all have terminated fatally. The duration of the disease varied from two to seven years. One patient committed suicide. The case which recovered was confined to bed and bath for nearly three years, then began to improve slowly, and is now, ten years since the first appearance of the eruption, quite well. I thought at the time that two of the patients benefited from the injection of vaccines prepared from their own discharges, but other patients have shown the same slight improvement without this treatment. One of the patients received, both while under my care and later in the Longmore Hospital, considerable doses of soamin. I cannot say that I could attribute any benefit to its administration, and she became totally blind. The local treatment is the same as in pemphigus chronicus. Permanent baths are of great assistance; in these Unna recommends the admixture of such reagents as will harden the skin (Müller's fluid, picric acid, etc.). Internal remedies have not proved of much avail.

Pemphigus vegetans (*Erythema bullosum vegetans*, Unna).—In this variety, which is fortunately very rare, the primary lesion is a little red spot, usually in the genital or axillary regions, or in the neighbourhood of the mouth. The spot enlarges, and blebs appear on the surface. These soon dry up into crusts, and then the fungating, condylomatous growths, from which the disease gets its name, develop.

Diagnosis.—The diagnosis from syphilis, which it somewhat resembles, is to be made by the absence of other signs of that disease, and the results of treatment.

The disease always terminates fatally, and treatment is merely symptomatic.

HERPES

(*ἕρπειν—to creep*)

Whatever may have been the original significance of this name, its use to-day suggests two things:—(1) Vesicles; (2) grouping of these. Practically the name is restricted to three diseases—herpes facialis, herpes genitalis, and herpes zoster. The terms herpes iris and herpes tonsurans are usually mentioned either to fix in students' minds the vesicular element in a disease, or else to show how undesirable is their use.

Herpes facialis (*labialis* was too restricted) must be clearly distinguished from herpes zoster, which may occur on the face, as on any other part of the body.

The first symptoms of facial herpes are a little itching and a feeling of tension, most commonly on the lips or in their immediate neighbourhood. Then there develops a slightly swollen reddish patch, which in a few hours is covered with vesicles. The patches are usually single, but there may be two or three even at first. When the vesicles have become purulent and are irritated and scratched, secondary crusted lesions may develop. If left alone, the vesicles dry up into scabs. The process is at an end in a week or ten days, and the patient is free until the next almost inevitable attack.

In those subject to it, any derangement of health, often so trivial as to pass unnoticed, is apt to be followed by an outbreak; and more serious ones are almost certain to be so followed. This is the form of herpes which appears in many cases of pneumonia, and which the older physicians regarded as of value in prognosis. Prolonged exposure to the sun is sometimes responsible for an attack. Some cases are said to recur periodically, but in my experience their number is small. Most of the so-called periodic cases occur in those exceedingly elastic seasons, spring and autumn. In cases which recur again and again on the same spot, possible sources of reflex irritation, such as carious teeth or some

disease of the nasal mucous membrane, should be carefully sought for.

Treatment.—Of this I am unfortunately able to speak from prolonged personal experience. When the vesicles have once developed, nothing can be done except to preserve them from irritation, and, if possible, from rupture. When on the red lips they are of course almost certain to rupture, but are not so apt to become purulent as are those on the skin. Those who from experience are familiar with the earliest signs of an attack, may do a good deal to restrict it to moderate limits. Bathing the part with very hot water, or the application of collodion, will often check further development; so also will the less pleasant application of caustic. In the recurrent form, when no definite source of irritation can be detected, much benefit is often derived from this latter treatment. If at the commencement of each attack the affected region is painted with arg. nit. (grs. xx), spt. æther. nitrosi (℥j), the intervals between the attacks are often increased, and a cure in time may be brought about.

Herpes genitalis (a much better name than *Herpes preputialis*) in many respects closely resembles the preceding disease. It, too, appears after some disturbance, especially after the combined worship of Bacchus and Venus, and it also tends to recur. The method of recurrence, however, is different. While herpes facialis gets quite well, and remains so for indefinite varying periods, herpes genitalis, for some weeks after an attack, breaks out again on the slightest irritation: almost invariably after connection. Attack follows on attack, but once away, it is less apt to return than the eruption on the face.

Diagnosis.—Herpes genitalis is very apt to be confused with certain venereal affections, and there must be very few who have not at least once found that time has upset their diagnosis.

It most clearly resembles the soft sore, and the points of distinction between the two which in most cases enable one to arrive at a correct diagnosis are the following:—(1) The lesions (vesicles) are multiple, and appear on a reddened, slightly swollen area of skin. Unfortunately, cases are very rarely seen at this early stage, and the moisture and heat

of the part have generally led to the conversion of the vesicles into ulcers. The soft sore is usually at first single. (2) The ulcers are usually cleaner, not so overlaid with pus as is the soft sore. (3) There is more itching and burning than in that condition. (4) The lesions are not autoinoculable. The presence of Ducrey's bacillus is of course proof of the soft sore, but failure to demonstrate it can hardly be regarded as the contrary.

The primary lesion of syphilis may also in exceptional cases closely resemble herpes, though in the majority of such cases it is probable that both diseases are present, the herpes developing before the chancre. Many of the distinctions from the soft sore hold for the more serious condition, but in all cases of herpes genitalis it is well to practise caution and await developments. If one feels quite certain, he may assure the patient that the lesion present is not syphilis: he must not assure him *that he has not got syphilis*. Were the history in such cases to be depended on, much might of course be learned from it, but the greater one's experience the less is one's faith. Audry very sensibly remarks that every herpes is to be regarded with suspicion which appears for the first time in an adult after coitus.

Treatment.—The simple application of powdered boric acid or any other unirritating powder usually suffices. A little salicylic acid (1 to 2 per cent.) in the powder is sometimes of value in obstinate cases, and all irritation of the parts must be avoided for at least six weeks after the complete disappearance of the eruption.

Herpes zoster is the name round which most of the associations of herpes linger. Zoster means a girdle, and was originally applied to the form of herpes which appears first about the middle of the back, and creeps round the chest in the form of a girdle. The popular name "shingles" is derived from the Latin *cingulum*, a girdle. These names are a little apt to obscure the fact that herpes zoster may appear on any part of the surface, and one or other limb is often affected. The first thing the patient experiences is pain, or a sensation of burning, after which there appear in succession crops of little vesicles on an erythematous base. Both the

patch and the earlier vesicles enlarge for a day or two, while new ones appear in advance of the older spots. The linear distribution is not invariable. Sometimes there is only one, or it may be two patches, and these run a typical course



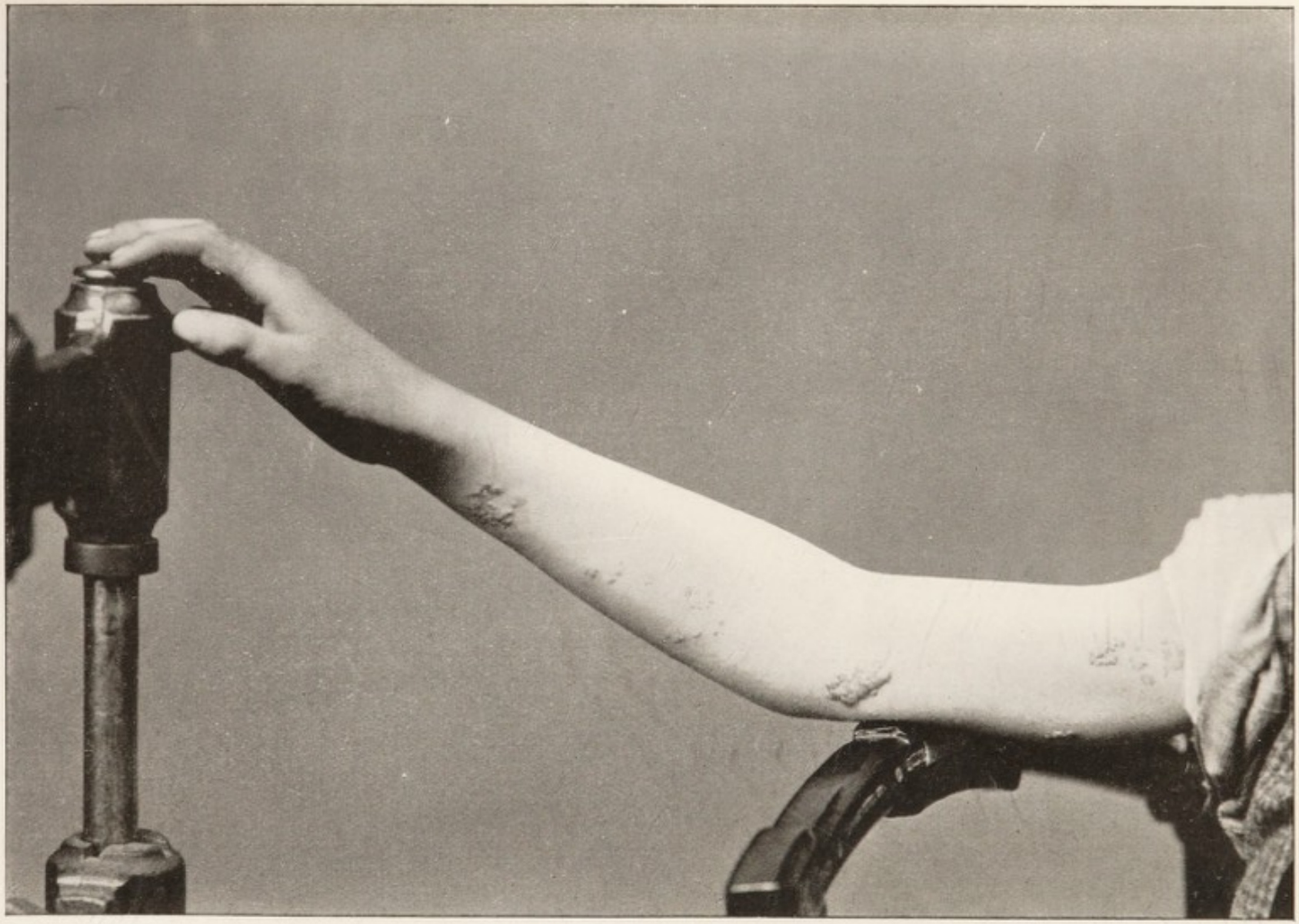
FIG. 9.—Herpes zoster supra orbitalis.
(From the Sydenham Society's *Atlas*.)

without any successors. The pain preceding such attacks is often exceptionally severe, and as no "zoster" appears, the true nature of the case is often unrecognised. In two cases under my care the single patches were seated respectively on the chest and in the external auditory meatus.

The Plate opposite, for the original of which I am indebted to my colleague Dr. Gardiner, shows a typical eruption of shingles.



Herpes Zostef.



Herpes Zoster (Brachialis).

The Plate opposite is a good example of brachial zoster, and Fig. 10 one of zoster femoralis, a rather rare variety. Fig. 9

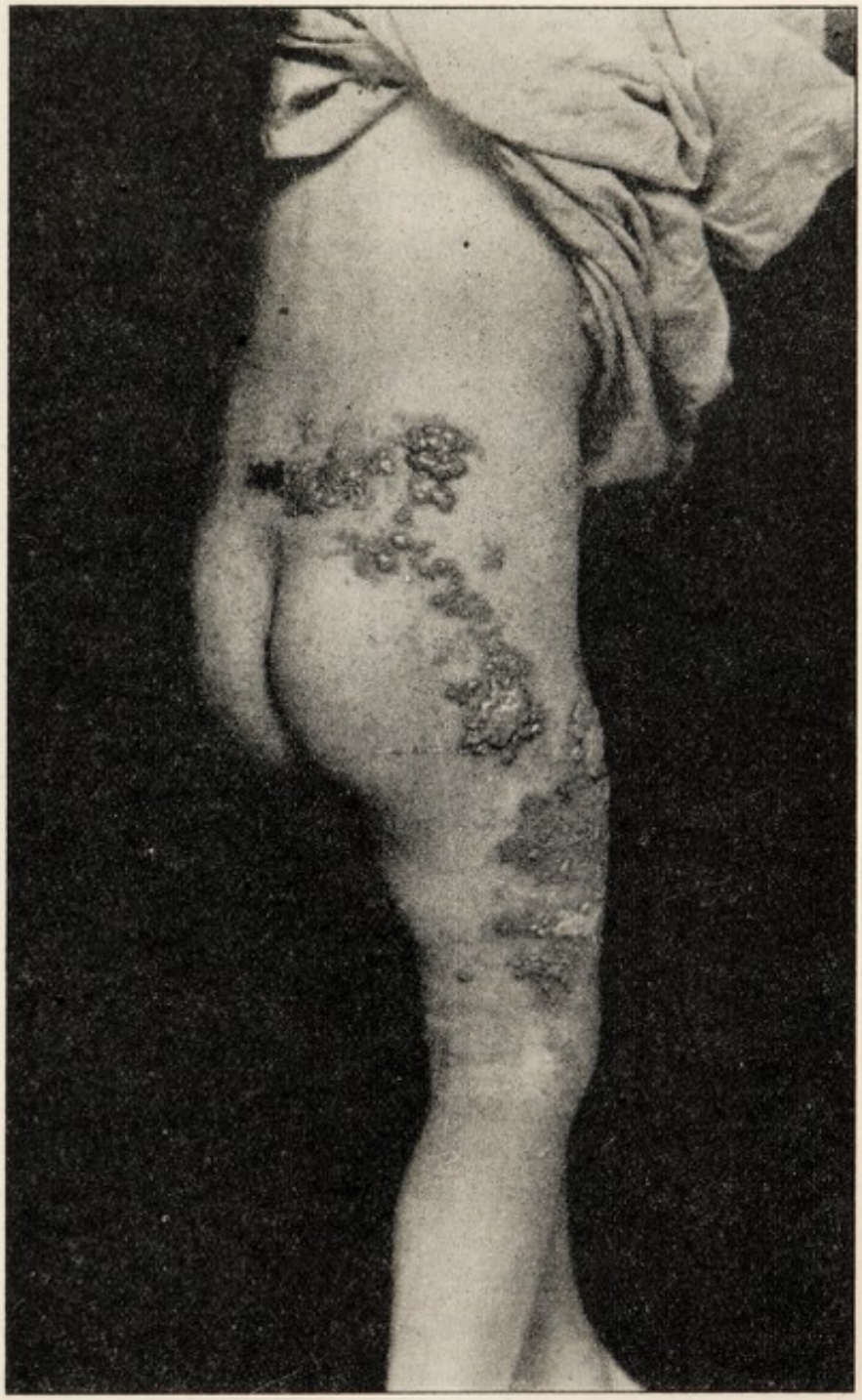


Fig. 10.—Zoster femoralis.
(Lesions in the first and second lumbar ganglia.)

is a photograph of the illustration in the Sydenham Society's *Atlas* of a typical case of zoster ophthalmicus. In this case

the primary affection is in the Gasserian ganglion, and for some unknown reason supra-orbital herpes is almost invariably followed by scars. This, though occasionally disfiguring, is not important compared with the risk to the eye, and the possibility that ophthalmic zoster may lead to destruction of the eye should always be in the mind of the attending physician. The most scrupulous cleanliness must be insisted on, and the eye should in all these cases be washed with boric lotion several times daily. The scars which so commonly occur will be less



Fig. 11.—Herpes zoster. Section of a vesicle.

obvious if, instead of allowing the vesicles to dry up and form a scab, they are dressed with a 1 per cent. ammoniated mercury paste.

Fig. 11, for which I have to thank Professor Shennan, of Aberdeen, shows the vesicles in the prickle layer, and their multilocular character. The fact that there is a considerable amount of epidermis below the vesicle explains how such cases heal without scarring. In normal cases the vesicles soon dry up; in a week or ten days the scab separates, and the patient has recovered. Such is the course in young people, in whom the affection often runs its course almost

painlessly; but in those beyond middle life, not only is the pain at the commencement usually severe, but it often persists in a still severer form after the local manifestation has passed away. Unless the vesicles have become purulent, there is, as a rule, no resultant scarring, except in supra-orbital herpes, where scarring is the rule, and where there is usually some conjunctivitis and occasionally more serious eye trouble.

Etiology.—It is well to note certain facts which are almost universally admitted. There is usually some disturbance of

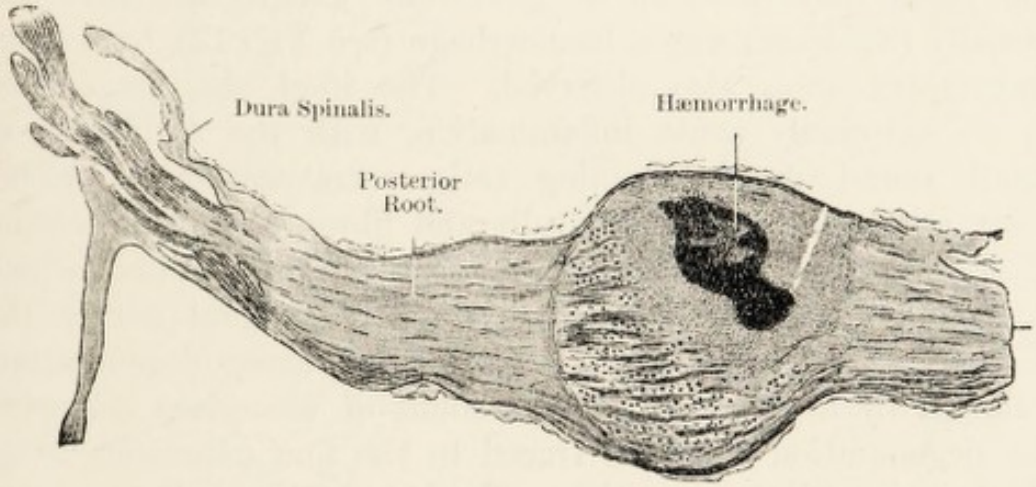


Fig. 12.—Longitudinal section of twelfth dorsal ganglion. Death one hundred and three days after appearance of eruption.

(By permission of Dr. Head.)

the general health a day or so before the eruption appears, with, it may be, a little elevation of temperature. One attack of the disease almost certainly protects from subsequent ones, and the disease occurs in small epidemics.

A good deal of attention has recently been directed to a suggested relationship between zoster and varicella. Epidemics of the latter disease are reported to have been traced to a case of the former, and conversely cases of zoster are reported as occurring from two to five weeks after a case of varicella in the same family.

So many examples of this have been recorded that a relationship between the two diseases is now pretty generally admitted; and the knowledge may be of some use in preventing epidemics of varicella.

Much light has been thrown on the nature of herpes by the admirable work of Head. He and Dr. Campbell, of Rainhill, realised that as herpes was not a fatal disease, and therefore could not be studied in connection with ordinary post-mortem examinations, the best plan would be to follow out the cases which occurred in institutions such as asylums. In every one of nineteen cases in which death occurred at periods of from three to seven hundred and ninety days after the appearance of the eruption, they found evidence of some lesion in a posterior spinal ganglion. When the eruption appears in the head, the Gasserian or geniculate ganglia are involved. Usually this lesion was a hæmorrhage (see Fig. 12), but cancer and injury were also observed. The local changes consist in an extremely acute inflammation, with the exudation of small round deeply staining cells, extravasation of blood, destruction of the ganglion cells and fibres, and inflammation of the sheath of the ganglion over the inflamed portion, which is mainly in its dorsal aspect. In the peripheral nerves the changes are, as was to be expected, an acute degeneration, followed by a greater or less amount of secondary sclerosis; the degeneration could be traced to the fine cutaneous twigs in the area of the eruption. Head and Campbell also confirmed the epidemic incidence of the disease, and they point out that the cells in the posterior ganglion are comparable to those in the anterior horn of the spinal cord, and draw what seems a perfectly fair comparison between herpes zoster and acute anterior poliomyelitis.

The distribution of the eruption depends on the distribution of the fibres passing through this ganglion, and not on that of any particular nerve. With the aid of the annexed diagram of Head's areas it is easy to locate the seat of the lesion in nearly every case of zoster.

Head's conclusions, which seem to be fully supported by his arguments, are that zoster is an acute specific disease of the nervous system, starting with a prodromal period and accompanied by a slight rise of temperature and some *malaise*. The eruption, which commonly appears on the third or fourth day, may be regarded as comparable to the rash of other fevers.

The result of the examination of fluid obtained by lumbar puncture goes to confirm Head's observations, for it invariably shows marked lymphocytosis, which may last for weeks or months after the eruption has passed away.

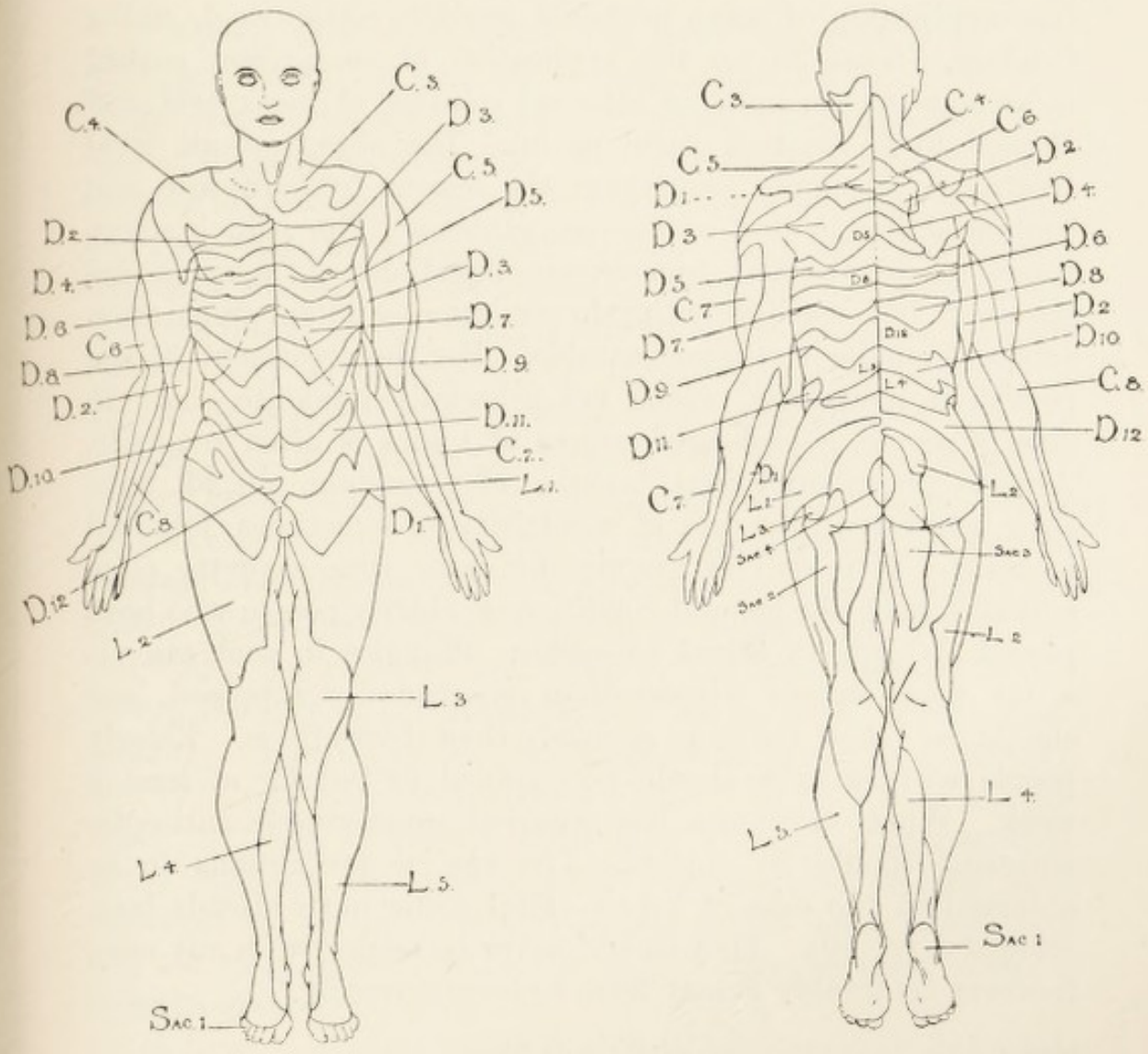


Fig. 13.—Head's areas.

It is an interesting observation that patients who have been taking arsenic for a length of time are particularly liable to zoster; indeed this was one of the clues which led to the detection of the Manchester beer poisoning epidemic. Presumably the arsenic, by producing neuritis, lowers the resistance, so that the cause, whatever it may be, finds readier access.

Treatment.—As the disease runs a definite course, and has a natural tendency to get well, little active treatment is required. Locally, I believe the best application to be Unna's zinc gelatine, which when painted over the spots sometimes seems to hinder their further development. Others recommend free application of some harmless powder, cotton-wool, and a bandage. Some advise the application of compresses soaked in an aqueous, alcoholic, or ethereal solution of picric acid, and Russell finds menthol paste useful. The object of all local treatment is simply to prevent the lesions from rupture and contamination by dirt or micro-organisms. The pain is sometimes so severe that hypodermic injections of morphin are required, but usually antipyrin or some similar preparation suffices to make it at least bearable. For the treatment of the persistent neuralgias, which are especially prone to occur in elderly people, a prolonged course of tonics is often requisite. Arsenic, phosphorus, iron, bromide of potassium, etc., all have their advocates; the use of electricity is sometimes followed by relief. It is well to exercise for some time a pretty close supervision of the general condition of elderly people who have passed through an attack of zoster. Shingles in such cases is a far more serious disease than is generally supposed, and should be taken far more seriously than it usually is. Elderly people with shingles should be confined to bed for at least a week. When ulceration has occurred some simple antiseptic ointment should be applied. The special precautions to be observed in the case of supra-orbital zoster have already been alluded to (p. 90). They should never be neglected in any case, however favourably it may seem to be progressing.

DERMATITIS

Inflammation (*Predominantly*) of the Surface Epidermis

"*Eczema is a term which has long been, and is still, too commonly applied to any wet or scaly inflammation of the skin, of the cause or nature of which the observer is ignorant.*" It is almost literally translated by the word eruption (ἐκζέω, *to boil over, or to burst out*), and it is clearly open to anyone to call any rash upon the skin "an eruption." The skin responds to irritation, just as do other organs, by hyperæmia and exudation, and, according to the irritant, one or other of these, or their results, may predominate. To those who know nothing, or next to nothing, of the diseases of the skin, all eruptions are eczema; but as knowledge increases one is able to identify in certain cases either a definite recognisable cause, or a definite sequence of events, which permit the arrangement of certain diseases under more instructive headings. This is well illustrated in the case of such common diseases as scabies and ringworm, particularly that form of the latter disease which affects the groins, and which is still often called eczema marginatum. These diseases in appearance resemble "eczema," and it is only the identification of their cause which at once leads to their separation from that chaotic conglomeration. Many chemical irritants produce inflammations of the skin, accompanied by moisture and scaling which some indeed still call eczema, though few dermatologists use the term where a definite cause is recognisable.[1]

Eczema is a name which is a cloak for ignorance, and while ever searching for a cause, we should endeavour to follow Tilbury Fox and Unna in rescuing from under its shelter groups of cases which follow definite lines. By using in its

[1] I entirely agree with the late Dr. Nevins Hyde, who wrote: "Is it not clear that the word eczema . . . has outworn its usefulness?" "The word eczema in the mouth of the expert has become a feature of the man in the street, of the advertiser, of the charlatan." "The doom of the word is probably written. It will survive where it belongs, and with no greater repute than attaches in general to the outworn and discredited."

stead the word *dermatitis* (without any adjective), we admit our ignorance and constantly remind ourselves of the necessity of searching out the cause of the inflammation.

When an irritant is applied to it the skin behaves just like any other tissue, and according to the potency of the irritant and the idiosyncrasy of the skin a greater or less degree of inflammation results. The first visible effect of the irritant is redness due to dilatation of the vessels. Then fluid is poured

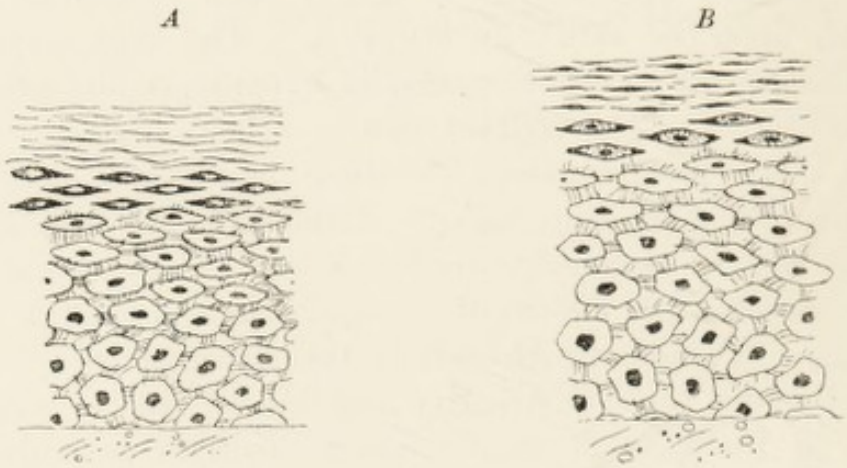


FIG. 14.—Diagram to illustrate the changes in scaly types of dermatitis. In *A* the normal appearance is shown; in *B* the vessels are shown dilated, the epithelial cells larger individually and further separated from each other (by exudation). The cells remain nucleated and adhere together to form scales.

out, some of it into the loose tissues of the *cutis vera*, some of it into and between the epidermic cells.

The effect of a small amount is shown in the disturbance of the normal changes which occur in these cells as they make their way to the surface. This disturbance is known as parakeratosis—irregular cornification—and it is essentially a parenchymatous œdema, an intracellular œdema, a condition of excessive moisture of the epidermic cells.

Instead of going through the regular process of cornification, with deposition of keratohyalin granules and conversion into dry anuclear horny cells; the prickle cells remain moist in

their interiors, and, though they undergo a sort of mechanical drying process externally, they preserve their nuclei right up to the surface. Being moister, they are naturally more coherent, and are cast off in masses as scales instead of, as normally,

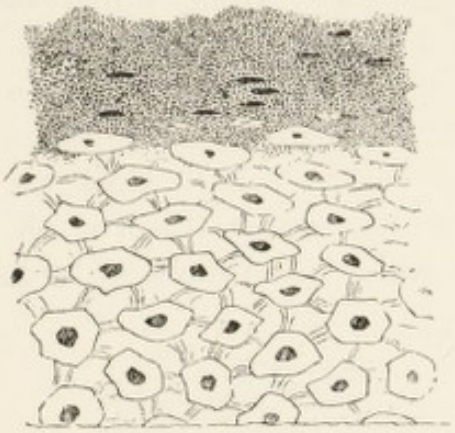


FIG. 15.—Exudation into and between the epidermic cells and on to the surface, forming a crust.

singly and insensibly. This factor predominates in the scaly forms of dermatitis. It is represented diagrammatically in the annexed figure (Fig. 14).

If the amount of exudation is greater, it separates the cells from each other, and, making its way to the surface, coagulates, and forms what we call crusts on the surface (Fig. 15).



FIG. 16.—Vesicle.



FIG. 17.—Pustule.

Scales and crusts both consist of the same elements; scales are composed of cells with a little exudation; crusts, of exudation with a few cells.

The fluid may be exuded with such rapidity that it forms little pools in the epidermis, pushing the cells aside as is represented in Fig. 16, which illustrates diagrammatically the

formation of a vesicle, to which if numerous leucocytes are present, we give the name of a pustule (Fig. 17).

The amount of fluid may be so great as to lead to washing off of the outer layers of the epidermis, when we have before us an angry red surface, from which large drops of fluid continually exude (*eczema madidans*) (Fig. 18).

The reaction to some irritants is so acute that large amounts of fluid are thrown out before any considerable changes take place in the cells. These in their more normal condition are not so easily thrown off, they persist and contain a considerable, sometimes a large amount of clear



FIG. 18.—Diagram illustrating the moist or weeping dermatitis. Vessels widely dilated, cells separated from each other by exudation which has washed off the outer layers and constantly oozes from the surface.

fluid, and thus are formed the lesions which we call blisters, blebs, or bullæ. See illustration, p. 79.

Concurrently there goes on the process known as *acanthosis* (ἄκανθα—a spur, prickle), increased proliferation of the prickle cells. Mitoses are much more numerous and more widespread than normal, and as a result the epithelial layer is increased in size. Acanthosis is most marked in the papular forms of dermatitis, though it is present to some extent in all.

There are also changes in the deeper tissues, which impress their stamp on certain varieties of dermatitis. Dilatation of the vessels is very prominent when the eruption is erythematous, exudation when it is œdematous, and actual proliferation of the connective tissue is found in certain chronic infiltrated cases.

With all these different phenomena present in varying degree, now one, now another, now a combination of two pre-



FIG. 19.—Dermatitis. The scaly spot, *P*, shows parakeratosis; at *V* a vesicle has formed in the prickle layer, whose cells show irregular cornification (parakeratosis) and proliferation (acanthosis). Deep changes are shown by the infiltration round the vessels. (× 50.)

dominating, it is abundantly evident that the clinical pictures presented are almost kaleidoscopic in their characters.

TYPES OF DERMATITIS

It may be convenient to describe briefly at this point the common types of dermatitis, though it must be clearly understood that the terms used refer to the prevailing feature of the eruption, and when one speaks of a vesicular dermatitis, it does not follow that there is no erythema nor a few pustules. And it ought to be most clearly understood that the cause of the dermatitis is of much more importance than its form.

Erythematous Dermatitis.—This form is most commonly found on the face; it may be produced by the sun or some vegetable poison, and is often mistaken for erysipelas.

From that disease it should be distinguished by: (1) its less brawny hardness; (2) its less abrupt border; (3) the absence of bullæ; and (4) the very slight, if any, rise of

temperature. In the diagnosis of a doubtful case *all* these differences must be taken into account. Thus a bulla may be accidentally present, but if the infiltration be slight, the border not abrupt, and the temperature normal, its occurrence may be ignored. This variety usually terminates in scaling. If it occurs on the scrotum, when the adjacent skin of the thigh is generally also affected, it tends to become moist. As a rule acute, it occasionally assumes a chronic course, and if not completely cured, relapses are prone to occur.

Treatment.—Greasy applications should, as a rule, be avoided. In slight cases *linimentum exsiccans* (p. 24) is a useful application. Some prefer lotions containing bland powders, *e.g.*:—

℞			
	Ac. Boric	(℥j)	4·0
	Zinci Carbonat.	(℥ij)	10·0
	Zinci Oxidi	(℥ij)	10·0
	Glycerini	(℥ij)	10·0
	Aquam ad	(℥vj)	200·0

or simple dusting powders, such as carbonate of magnesia, starch, or talc. In the chronic form more active remedies are required. They should be very cautiously applied in the first instance, as this variety is often intolerant of treatment. Very weak tar lotions are often useful.

Œdematous Dermatitis.—This variety is rarely if ever seen alone. It may complicate the erythematous variety, but the term is most applicable to a form which occurs in patches, particularly on the upper arm and trunk, where a little area of skin about the size of a sixpence is raised above the surrounding level by the exudation of serum into the corium. Here and there the fluid reaches the surface in little drops, which usually rapidly coagulate to form tiny crusts.

Such forms sometimes resemble mild cases of dermatitis herpetiformis. That disease is usually associated with very severe itching, and the appearance of repeated symmetrical crops of patches generally settles the diagnosis. The superficial changes in this form are comparatively slight: the main factor is the exudation of fluid into the deeper tissues, only a part of which makes its way to the surface.

Treatment.—The avoidance of grease is as important in

this as in the erythematous variety, and dusting powders or lotions similar to those recommended for that form are generally the best local remedies. Cases are sometimes greatly benefited by a good scrubbing with soap spirit.

Papular Dermatitis.—Two varieties must be distinguished. We have first the acute inflammatory papule, which is merely a stage in the development of the vesicle, and the chronic papule, which is due to epithelial growth (acanthosis). The acute form is found most frequently on the flexor surfaces of both arms and the back of the neck, appears suddenly, and is accompanied by much burning and itching. It does not necessarily go on to the development of vesicles; it may be arrested at the papular stage by appropriate treatment. The more chronic form is especially apt to occur on the limbs. The papules may be flattened or acuminate, their colour varies from a pale pink to a deep red, and their distribution is irregular. Often as the result of scratching, their apices are surmounted by hæmorrhagic crusts, and here and there more or less fully formed vesicles may be seen. Itching is always a prominent feature.

The disease which it most resembles is *lichen planus*. Indeed, this variety of dermatitis was long known as lichen simplex. The shape, colour, and distribution of the papules do not correspond with those of lichen (*q.v.*), and the presence here and there of vesicles usually makes the diagnosis a matter of no great difficulty. It may also be confused with prurigo, but in that disease there is a history of development in early life, and enlargement of the femoral glands.

Treatment.—The acute form is best treated by lead and tar lotion, or by a dusting powder, the use of which may avert further developments. Chronic papular dermatitis is one of the most difficult forms to treat. Although chronic, it often resents treatment, and ointments should be very cautiously used, and only to a small area in the first instance. Lassar's paste, with 2 per cent. of salicylic acid, is sometimes useful. The proportion of salicylic acid may be gradually increased. Nargol and argyrol, organic silver compounds, are valuable alternatives to salicylic acid, and so is salol. In many cases it will be found impossible to use active remedies, while the application of weak tarry lotions or of black wash will be

followed by steady though slow improvement. If the itching is very severe, zinc gelatine will often be found useful.

It is important to carefully inquire into the general health and to rectify any disorder, though one cannot hope for much from direct internal treatment. Arsenic in particular should be avoided; too often it simply converts papules into vesicles.

Vesicular Dermatitis. — Acute uncomplicated vesicular dermatitis is not common. It develops rapidly, and is usually the result of exposure to some external irritant, such as one of the poisonous plants. At first the skin is swollen and red, then the surface becomes dotted with papules, which are soon surmounted by vesicles. These rupture, and fluid continues to exude from the broken surface. In some cases the exudation soon dries up, and the process is rapidly terminated, but in others fresh crops come out, the exudation coagulates on the surface and forms fibrinous crusts, the presence of which further aggravates the condition. These crusts soon swarm with organisms, the exudation becomes purulent, and thus are formed the *purulent* and *crusted* varieties. If the discharge is very profuse, the crusts are washed off by it, and there develops the variety known as *eczema madidans* (Latin root *madeo*—wet or overflowing). In some cases, possibly owing to the nature of the irritant, the blood-vessels dilate more than usual, and the part looks intensely red, hence the term *eczema rubrum*.

Treatment.—Acute vesicular dermatitis is best treated by the application of lotions or powders. It is an advantage that the powders should be made mildly antiseptic, especially if the crusts are partly purulent, by the addition of a little boric or salicylic acid.[1] If the weeping continues, care must be taken that the discharge does not accumulate on the surface, and by its presence give rise to further irritation. As a rule it is desirable to suspend at intervals the use of lotions or powders. An occasional starch poultice (p. 21), or the application of strips of lint soaked in oil, may be required to remove the crusts. As the discharge lessens, Lassar's, or a paste composed

[1] It should be noted that in some individuals the application of boric acid causes intense pain, and it is sometimes necessary to omit it even from the starch poultice.

of equal parts of carbonate of magnesia and vaseline may be applied. As pointed out in the section on general treatment, pastes do not dam up the excretions so much as ointments do. They should, however, only be applied when the discharge has nearly ceased, to promote the healthy cornification of the surface, and to hasten the removal of inflammatory products from the corium. In that stage to which the term "eczema madidans" is applied, where drops of fluid are exuding freely all over the surface, astringent lotions are most suitable. Black wash or a weak solution of the acetate of lead should be applied on lint or muslin. The excessive moisture is accompanied by a marked porosity of the epithelium, and in this and in the "rubrum" variety the continuous application of ointments is not contra-indicated, is indeed sometimes beneficial. Hebra's ointment (equal parts of lead plaster and vaseline) may be applied, spread on strips of cloth, and changed twice daily. It will sometimes be found that the continued use of Hebra's ointment is associated with the development of crops of little pustules, not as a rule on the part to which it is applied but especially on hairy parts in its immediate neighbourhood, and it is sometimes necessary to abandon its use on this account.

Pustular Dermatitis.—It is of course understood that *impetigo contagiosa* is no longer referred to under this term. Primary pustular dermatitis is rare. It may be produced experimentally by the application of croton oil, but pustules usually indicate the presence of some organism. Some cases of pustular dermatitis are really ringworm, and recent experience has shown that fungi are oftener the cause of dermatitis than used to be supposed.

TREATMENT in this form is directed against the most important characteristic, the suppuration, by the continuous application either of weak antiseptic lotions or ointments. Weak boric lotion or hydrarg. ammon., in vaseline 1 per cent., should be kept constantly applied to the part.

Scaly Dermatitis.—This usually forms the last stage of some other variety—erythematous, papular, or vesicular. It may occur on any part of the body, but is perhaps most common on the legs. In it parakeratosis is the prominent

feature, the epithelial cells are unhealthy, and do not undergo their proper horny metamorphosis.

Treatment.—Ointments are the best applications. They should be well rubbed in, so as to soften and remove the scales, and cloths spread with them should be applied to the part. The most suitable drugs are the keratoplastic agents, especially tar and salicylic acid; the proportion should at first be small, and be gradually increased as requisite, the effect, especially of the latter drug, being carefully watched. A very successful application in dermatitis of this sort on the legs of old people is equal parts of oil of cade and cod-liver oil. As the disease gets better the proportion of tar may be increased, and by the time the cod-liver oil has disappeared from the prescription the leg is usually well. Another useful method of treatment is the application of strips of cloth spread with soap plaster, to which 2 or 3 per cent. of salicylic acid has been added. These may remain on for twenty-four hours, or even longer as the case improves. In these chronic cases there is invariably a good deal of thickening of the deeper tissues. Treatment must be continued until this has entirely disappeared, otherwise relapse is inevitable. Regular massage of the affected area is useful.

In very obstinate chronic infiltrated cases the heroic method of treatment first recommended by Hebra is often of great value. A pledget of wool is dipped in a solution of caustic potash (1 to 4), and the part is scrubbed with this. The potash dissolves the epidermic cells, in a few minutes large drops of exudation cover the surface, and severe pain is experienced. The part is then bathed with warm water for some minutes, after which strips of cloth, spread with equal parts of lead plaster and vaseline, are carefully applied. This method should be very cautiously used until experience in handling it is gained, after which it will be found a most valuable weapon in obstinate cases. In obstinate localised patches it is probably the best method of treatment. A somewhat less severe method is the scrubbing of the part with soft soap.

If there is much thickening of the corium, especially on parts much exposed to movement, fissures are prone to occur. This is most frequent on the hands, or about the knees and

elbows. The fissure is a mere accident, due to the loss of elasticity in the infiltrated skin, but such cases are sometimes described as *Eczema rimosum*. Tar and salicylic acid in ointment or plaster are usually the best applications.

It is not easy to select appropriate headings for the divisions into which I have found it convenient to group the many forms of inflammation in which the surface epidermis is primarily attacked. Experience has taught me that it is infinitely more important to direct the attention of students to the cause of a dermatitis than to the existence of papules, vesicles, and pustules, except in so far as these throw light upon the nature of the cause, and they are therefore arranged as follows:—

Dermatitis due to some chemical irritant—D. venenata.
Dermatitis due to some physical irritant—light, heat, cold.
{ Dermatitis definitely due to organisms—(using the word in a wide sense).
{ Dermatitis presumed to be due to organisms.

DERMATITIS VENENATA

The adjective venenata (*venenatus*—poisoned) is here applied not only to those eruptions due to the effects of irritants which are poisons in the ordinary sense of the word, such as croton oil, chromic acid, etc., but also to those due to substances poisonous only in this restricted sense, such as soap and sugar.

Only a few of them are so true to type as to be invariably recognisable, even by an expert, though he would usually recognise a croton rash by its pustular character, a chrome one by the presence of minute ulcerated areas on the fingers, and a baker's itch by its distribution and patchy œdematous character, even if the patient had on his Sunday clothes.

In the great majority of these cases the diagnosis must be arrived at by other means than direct observation of the rash, especially its distribution and its history. The eruption of D. venenata begins on the exposed parts, *i.e.* those parts which are exposed to the irritant, and these are not necessarily, though they usually are, the hands and the face. It must

further be borne in mind that idiosyncrasy plays as prominent a part in D. venenata as it does in urticaria, and that only one person may be affected by an irritant with which ten, fifty, or a hundred are brought into contact.

It is by recognising this fact, by careful inquiry into the history of the eruption, and by a wide knowledge of possible sources of irritation that one is enabled sometimes at once, sometimes only after prolonged search, to detect the cause and to free the patient from his troubles, for in dermatitis venenata the proverb *Causa sublata tollitur effectus* is nearly always true.

The record of a few illustrative cases will make this clearer than a lengthy argument. One sees every year two or three students with vesicular and scaly eruptions on their hands, due generally either to formalin with which they come in contact in the dissecting rooms, or to carbolic lotion used in the wards and out-patient department. Nothing demonstrates more clearly the factor of idiosyncrasy; out of hundreds of students, only units suffer.

Soap is another thing which demonstrates the idiosyncrasy of the skin. I know of no soap which may not irritate, and I do not propose to pillory those which I have proved to be the cause of D. venenata. It is not the fault of the soap, it is the misfortune of the sufferer's skin. An alderman in a midland town suffered for many months from an eruption on his hands which had been diagnosed as gouty eczema, and prescribed for as such in vain. He used regularly a very well-known variety of soap; he was advised to make the experiment of using another, and his "eczema" disappeared.

One day I was consulted by a washerwoman who had followed her vocation for twenty-five years without any unpleasant results. Tempted by the advertisement of a soap which promised great diminution in her labours, she bought some and did her washing with it one day. On the following day her arms were covered with acute dermatitis. I do not specifically blame the soap; I only assert that to her *that* soap was a poison, and at my advice she resumed her old soap and her old labours without any bad effect.

Another patient had occasional attacks of violent "eczema" of the face. They died down quickly, but incapacitated him

for work for a day or two. I considered the likely causes, and when a Chinese primrose was discovered in his house it was supposed that the solution had been reached. But the attacks continued as before. We exhausted all the ordinary lines of inquiry, and then I suggested to him the plan, which I have more than once found useful, of keeping a double-column diary; one column for events, the other for "eczema." This solved our difficulty, for the attacks were found to coincide invariably with his visits to a certain town. Following out this clue it was found that he had to catch so early a train that he had not time to shave at home, and was shaved by a barber in this town. He has since got up a quarter of an hour earlier on these mornings and has had no more trouble.

A man who gave his occupation as a telegraphist suffered from a troublesome vesicular dermatitis of the fingers and hands. It interfered with his work, and he was advised to rest for a few days. The eruption disappeared, but recurred when he resumed work. Presently his annual holiday came round. He spent it at an east coast seaside resort, and played with his children on the shore. In spite of the irritation of the sand and the salt water the eruption again vanished, but when he got back to work back came the eruption. It was evident that we had to detect something in his work which was responsible, and a close inquiry—and the inquiries must often be very close—disclosed the fact that part of his work was cleaning terminals and other brasses, and that he used turpentine in the process. Most people can use turpentine with impunity, but this man could not. Fortunately, following the suggestion made to him, he discovered in benzol something which was equally efficient in cleansing and did not irritate *his* skin.

Professional photographers are usually familiar with the fact that certain developers cause an eruption on their fingers, though they usually put the blame on the developer, and not, as they should, on their own fingers. It is true that some developers are irritating to a larger percentage of workers than others, but there are none with which no one can work, and few, if any, which will not irritate some skins. Amateurs are often quite ignorant, and are apt to resent the suggestion that

they should abandon their hobby, but they can usually be persuaded to change their developer.

Eruptions of D. venenata on the face are most frequently due to the irritation of plants, as will be discussed presently, but some are due to toilet preparations, and these, it is needless to say, must be inquired into very tactfully.

One of my earliest cases was that of a nurse, under the care of my friend Dr. Purvis, who had attacks of "eczema" of the face, which always appeared when she went to a new case. The first thing that occurred to us was that the sea air (one attack came on at North Berwick) might be responsible, but further inquiry showed that this could not be the case, for she had had severe attacks at Peebles and Bridge of Allan. I failed at the time to discover the cause, but Dr. Purvis eventually found it. Influenced by a natural desire to look her best on arrival at her patient's, she was in the habit, when she had sufficient notice to do so, of washing her hair, and applying to it a lotion which was supposed to beautify it. After this discovery there were no more attacks of eczema.

I understand that in Paris, where the colour of the hair changes with the fashions, these eruptions are more common than in Scotland, but they are not unknown even here, though my cases have nearly all been due to hair restorers and not to dyes. And the patients were not all young, and were not all females.

Various dyes in clothing worn next the skin may be the cause of irritation, and the orange anilin dyes and arsenical ones are especially suspect. Cheap black stockings often contain the latter, and it was possibly an anilin dye which was responsible for the violent irritation experienced by a lady the first night she put on a new dinner dress. She blamed, at first, not the dress, but the dinner; on the second occasion she blamed the champagne; but later she first suspected, and then proved, that it was the dress which was responsible. In a spirit of mischief she presented the dress to her sister, and was considerably disappointed to find that the joke failed. The sister suffered no inconvenience at all—another demonstration of idiosyncrasy.

But the first place among the causes of dermatitis venenata is taken by the vegetable kingdom, and in certain



DERMATITIS VENENATA.

flowers, leaves, and woods we find the cause of many acute and chronic forms. One symptom is especially prominent in acute cases. Be the irritant primula, rhus (Fig. 20), or teak, or almost any vegetable irritant, the skin around the eyes is so greatly swollen as often actually to blind the patient. An acute erythematous dermatitis of the face, with closure of the eyes, is nearly always due to an irritant of this nature.

The following are some of the plants and woods which have been proved to cause dermatitis:—

Balm of Gilead	(*Balsamodendron opobalsamum*).
Burdock	(*Arctium lappa*).
Buttercup	(*Ranunculus*).
Indian Bean	(*Catalpa bignonioides*).
Virgin's Bower, Traveller's Joy	(*Clematis vitalba*).
Cowhage	(*Malpighia urens*).
Crowfoot	(*Cypripedium angelica*).
Leopard's Bane	(*Doronicum pardalianches*).
Cow Parsnip	(*Herucleum giganteum*).
Indian Turnip	(*Psoralia esculenta*).
Larkspur	(*Delphinium*).
Daffodil	(*Narcissus*).
Stinging Nettle	(*Urtica urens*).
Oleander	(*Nerium oleander*).
Parsnip	(*Pastinaca sativa*).
Primrose	(*Primula obconica and sinensis*).
Poison Ivy	(*Rhus toxicodendron, Ampelopsis Hoggii*).
Rue	(*Ruta graveolens*).
Smartweed	(*Polygonum hydropiper*).
Skunk Cabbage	(*Simplocarpus fetidus*).
Bitter Orange	
Spurge	(*Various species of euphorbia*).
Wood Anemone / Wind Flower	(*Anemone nemorosa*).
Vanilla / Deer's Tongue	(*Trilisa*).
Chrysanthemum	
Cucumber	
Lilac	(*Syringa vulgaris*).
Tomato leaves	(*Lycopersicum esculentum*).
——	(*Humea elegans*).
Hyacinth	(*Hyacinthus orientalis*).
Runghas	(*Semecarpus anacardium*).

The following woods have been known to cause dermatitis—teak, mahogany, satinwood, green ebony, lignum vitæ.

The first place must be awarded to the poison ivy of America (*Rhus toxicodendron*). I have to thank Dr. H. W. Nott, of Little Sutton, Chester, for the photographs of a patient as he appeared before and after exposure to the irritation of this creeper, with the eye symptom above referred to well shown (*Brit. Med. Journ.*, 27th August 1910).

In the United Kingdom the rhus rarely figures under its own name, but is disguised as the *Ampelopsis Hoggii*. There are quite a number of these creepers in different parts of the country. The late Dr. Frank Nicolson, of Hull, gave me the photograph from which the annexed illustration is taken. It will be noted that the creeper is three-leaved; the common Virginia creeper of this country (*Ampelopsis Veitchii*) is five-leaved. White, of Boston, the greatest authority of his day on plant dermatitis, said: "If one would only remember that three leaflets mean possible danger, and that five mean safety, mistakes would not so often occur."

The climate of the East of Scotland is too severe for the rhus: my worst case came from another part of Scotland, and occurred in a tramp to whom an apparently generous gardener had given half a crown and his dinner to prune a creeper that adorned one side of a mansion.

The autumn tints of rhus leaves are lovely, and I have seen dermatitis caused by pressed leaves which had crossed the Atlantic and been used as table decorations.

The *R. vernix*, which grows in Japan, is said to be more irritating than any other plant; it is used in the preparation of Japanese and Chinese lacquer work, and the effects of fresh lacquer are so familiar that "varnish" poisoning is well known in these countries. In specially susceptible persons old lacquer goods may set up the irritation.

In the East, Rhengas or Rungus dermatitis is well known. Mr. Ridley, Director of the Botanic Gardens, Singapore, attributes it to certain of the Anacardiaceæ (*gluta*, *mangifera*, and *melanorhæa*), and especially to their resins. The *Gluta Wrayi* is known to the Malays as *Kerban Ialang* (the buffalo on the warpath) on account of the irritation it causes.

The symptoms are similar to those produced by rhus—acute dermatitis, with papules, vesicles, and bullæ.



FIG. 20.—Rhus toxicodendron.



FIG. 21.—Patient before and after exposure.

Some of Mr. Ridley's comments—those of a botanist—are especially interesting: "I wanted a wood specimen, sent a Malay to borrow an axe, and he cut off a billet of wood and carried it to my carriage. I carried it myself some way, handling it like any other wood, and was unaffected, but he was poisoned and swollen the next day." "Quite a dozen men and a boy were employed in cutting up a tree; only one man and the boy were affected." "Certainly a man once liable to poisoning is always so."

Dr. Hornsey, writing from British North Borneo, gives an excellent description of the dermatitis. He, too, says: "Some persons are immune, and can handle any part of the tree with impunity."

In this country the Chinese primrose is by far the commonest cause of plant dermatitis, and it is astonishing what a depth of ignorance and an obstinacy to conviction one meets with.

I have sat at a dinner-table where the Chinese primrose was the only and abundant decoration, and the hostess, next whom I sat, had never heard of their irritant powers, though they were from her own greenhouse; and I was one day consulted by a gentleman whose face showed the characteristic rash, and who was wearing a specially fine primula in his buttonhole.

One old gentleman, who admitted to working a great deal in his greenhouse, and who had a suspicious dermatitis, resented my inquiries about primulas. He told me he was quite aware of the fact that the *Primula obconica* caused irritation, and that he would not have one in his greenhouse, though he admitted ownership of the *Primula sinensis*, of which the flower is white. This, he maintained, was quite innocuous. I ventured to differ from this opinion, and we parted on less cordial terms than my patients and I usually do. I had the grim satisfaction of hearing later that on his return home, after expressing very uncomplimentary views on my opinions, he rubbed his face vigorously with the leaves and flowers of the *P. sinensis* in order to demonstrate to his family the correctness of his, and that he spent the next ten days in bed with the worst attack he had ever had.



PRIMULA OBCONICA.

The most interesting case of this which has come under my notice was that of a lady whose doctor, when telephoning me to make an appointment, mentioned that she was suffering from primula dermatitis. I suggested that if that was so was there any object in the consultation? He replied that the lady was anxious to lay before me the particulars of her case. They were as follows:—Her greenhouse was her favourite hobby, and she devoted much time to it. Many years ago she was attacked by what was called eczema of her hands. After treatment for some time at home without benefit she was sent to Harrogate, where she immediately recovered, and returned home with great faith in Harrogate. A few days after her return home the eczema reappeared, and she was sent to another health resort with equally successful results, and equally disappointing ones when she returned home. She kept this up for a time, visiting health resort after health resort, always with the same results, until at length her faith in the medical profession broke, and she determined to stay at home and "*thole*" her trouble. One day her gardener came to her with a cutting, creased and dirty, from the *Gardeners' Magazine*, and said: "I was wondering, Miss ——, if this might have anything to do with your trouble." The cutting contained an account of the then recently recognised fact that the Chinese primrose produced eczema on the hands. That afternoon every Chinese primrose in the greenhouse was committed to the flames, and for fourteen years she remained free of "eczema" and her greenhouse of Chinese primroses.

The history of her fresh attack was specially interesting. She had visited a fellow-enthusiast, with whom she had spent an hour or two in a greenhouse. That evening she felt on her face the old sensations she once knew so well, and immediately telephoned to her friend to ask if she had in the greenhouse any Chinese primroses. It was discovered that close by where she had been standing, concealed by other plants, was one of these graceful but dangerous plants. This is not the only case which I have met with where actual contact could apparently be excluded. The good lady was very proud of her discovery, and was anxious that her sufferings should be used for the benefit of others, and she gave me a

most interesting account of another case. She was paying a visit to an old school friend who was married to the head of a large public school. This worthy gentleman was commonly regarded as a martyr to gouty eczema, and he spent some weeks every year at Wiesbaden for the purpose of washing out of his system the poison of gout. My patient, full of her new knowledge, noted that in the corridor connecting his house with the school there stood a number of Chinese primroses, and that in passing to and fro he repeatedly stopped to pick from the plants their withered leaves. Everybody does this. She mentioned to him her suspicions, and they were received as one would expect such suggestions to be received by a headmaster who was a "martyr to gout." But the continuance of the attacks, and the arguments of his wife that after all there could be no harm in humouring the visitor, led to the exclusion of primroses, the disappearance of the gouty eczema, and to the headmaster spending his holidays in England.

The *Humea elegans* is, I am informed, mostly used for decorating the platform at public meetings where such decorations are considered necessary. It is a tall, graceful plant with a red spiky flower, and produces a violent dermatitis upon the exposed parts of some of those who have been in contact with it. The irritation is most common among gardeners, but no doubt some cases of acute "eczema," which have been attributed to the heat of a political meeting and an outburst of gout, are due to contact with this decorative plant.

Of the irritant woods, teak is the one which most commonly comes under notice. It is pretty well known among carpenters that some men cannot work with teak without suffering acutely. They probably never heard the word idiosyncrasy, but they know of its existence. A case of special interest came under my notice some years ago. The man had been a carpenter in a shipbuilding yard for years, and had often worked with teak with impunity. But at last his skin broke down, and he had a severe, quite typical, attack of teak dermatitis, and was in my ward for some weeks before it subsided. On my advice, he informed his employer that in future he would be unable to work with teak; this was kept in mind, and he kept free of dermatitis for two or three years. Then in an emergency,



DERMATITIS VENENATA
(MORPHIN).

supposing that all danger was passed, he agreed to participate in some teak work. Two days later he had another acute outbreak, and was re-admitted to my ward. Before he was well there occurred a great demand for carpenters, and against my advice he fell to the temptation of the high wages offered, and insisted on going out. The ordinary soft wood used during the emergency had no bad effect, and the dermatitis passed off. The emergency passed, and he resumed his ordinary work, resolved that nothing would again induce him to touch teak. But he now found that pitch pine, with which he had formerly worked with impunity, also caused a dermatitis, not nearly so severe as that caused by teak, but inconvenient enough to be troublesome. The two attacks of teak dermatitis had evidently weakened the resistance of his skin to other lesser irritants —anaphylaxis had developed.

Other "hard" woods—mahogany, satin-wood, green ebony, lignum vitæ, etc.—are occasionally found to cause dermatitis in individuals, and when fretwork and poker work again become fashionable, some of the fashionable young ladies who take them up will suffer.

Occupation Dermatitis.—Inflammation of the skin of the hands due to irritants among which the patient works, is the commonest form of dermatitis venenata. Washerwoman's eczema, bricklayer's and baker's itch,[1] etc., are old familiar names; but surgeons, pathologists, workers with morphin and other drugs, printers, silver-platers, photographers, dyers, tanners, furniture polishers, rubber-workers, coal and shale miners, builders, plasterers, carpenters, housewives, packers, and others are all liable. In many cases we are dealing with more than idiosyncrasy. In most, some lowering of the systemic tone has preceded the attack; were nothing but the irritant involved, every worker would be affected: the apprentice whose skin showed a natural idiosyncrasy to, say, French polish could not complete his apprenticeship. The form of the eruption varies with the irritant: suspicions of its nature are usually aroused by its appearance on the hands or on the hands and face; but the history of the case, and the occupation of the patient, rather

[1] I have never seen any evidence to support the theory that baker's itch is due to an acarus which lives in sugar.

than the presence of vesicles, crusts, etc., are the guides to a correct diagnosis.

In a recently published little book, entitled *Occupational Affections of the Skin*, Dr. Prosser White, of Wigan, has brought together a vast amount of useful and interesting information on this subject.

Generally speaking, these eruptions subside when the patient stops his work, but if his general health is below par, the irritant may provoke an inflammation which does not disappear immediately the irritant is removed, and is probably due to the organisms commonly present upon the skin acquiring increased virulence. If the patient is young, I am sure the best advice he can get is to change his employment. He will, of course, demur, and suggest that he has spent, it may be, some years in learning it, but if after one or two trials his skin, having become hypersensitive, is found invariably to break down on resuming work, it is much the wisest advice to give and much the wisest course to follow. It is, however, often impossible for the patient to give up or even to change his occupation all at once, and therefore some directions for the management of such cases will be of value.

The principles are to preserve to the skin the lubricant which naturally protects it from irritation, and to supply one in its place where it is deficient. The directions are Unna's, and will be found most useful.

At night the patient should wash his hands first with oil, then with soap and water. Two or three waters should be used so as to ensure the removal of all the soap. The hands are then dressed with strips of cloth spread with oil or ointment. In the morning this is removed with *dry* wool, and the parts are rubbed with the salve stick (p. 30), a mixture of wax and lanoline not easily saponified by alkalies (so often the irritant). This may be applied at intervals during the day, as necessary. After work the hands should be cleansed with oily wool, thorough washing being limited to once daily. Housewives should do all their dirty work at once, then thoroughly wash the hands, and keep the dressings closely applied for the rest of the twenty-four hours. Hebra's ointment is a very useful application, and weak resorcin ointments or solutions



DERMATITIS VENENATA
(STRYCHNIN).

help to make the epidermis more resistant. Gloves, even rubber gloves, are very inefficient protectants of the hands from chemical irritation.

A dermatitis caused by one or other of the above-mentioned or some other unknown irritant may be complicated and aggravated by the action of organisms, and this secondary dermatitis does not necessarily disappear when the original exciting cause is detected and eliminated.

The *Staphylococcus aureus* and the *S. albus*, and especially the *S. epidermidis albus*, are found almost invariably on the skin, where they normally pursue a harmless saprophytic existence.

When in the exudation from an inflamed skin they get the opportunity to increase and multiply, their virulence is exalted and they become themselves capable of producing a dermatitis. Under normal circumstances in a perfectly healthy person this soon subsides, but if for any reason the resistance of the skin is lowered, the dermatitis may persist locally, or spread and spread until large areas of the skin are affected. It is this form which is so easy to call eczema; the original exciting cause has passed, but we have to deal with a skin which has lost its normal powers of resistance.

One may state in general terms that anything which lowers the general resisting powers of the patient may find its expression in the skin. The abnormally dry skin of the ichthyotic subject resists such attacks feebly; disorders of digestion and assimilation reduce the resisting powers of the skin, and so do chronic constipation, anæmia, diabetes, alcoholism, and the disturbances of the menopause.

These and other allied conditions should be kept in mind, considered, and, if present, corrected by appropriate means.

Vaccines of the white skin coccus alone or combined with the albus, aureus, and citreus are sometimes found helpful.

Local treatment requires the application in suitable form and concentration of those remedies (the kerato-plastics, see p. 19) which experience has shown to have the power of leading back into the right way the errant epidermic cells, and, above all, it requires the abjuration of the delusion that it is possible

to cure this form of dermatitis by the application of strong antiseptics.

When the inflammation is acute, and the skin swollen and red, greasy applications rarely do good and generally do harm. Starch poultices and weak astringent and antipruritic lotions are generally the most comfortable applications. Weak lead (acetate), aluminium (acetate), zinc (sulphate), black wash, boric acid, or tar lotions are commonly resorted to, and it is interesting to note that, generally speaking, the more experienced the prescriber the weaker is the application.

Later, as the amount of œdema and exudation diminishes we turn to the pastes (p. 28), with the same precautions as to strength. Salicylic acid, resorcin, sulphur, and tar may be added in the strength of from a half to one per cent., and the application of some bland dusting powder over the paste usually adds to the comfort of the patient.

When only traces of actual exudation are visible we may use more active remedies in plain grease—ointments.

The treatment of dermatitis, when the cause is unknown, is frankly symptomatic; we endeavour to ease itching, to soak up discharge, to supply deficient fat, to diminish hyperæmia: in short, to put the skin at rest so as to allow Nature to perform the cure. Rest, as Kromayer sagely observes, does not mean doing nothing.

The question of *diet*, *alcohol*, *water*, *climate*, etc., all demand consideration.

Diet was for a time to all, and still is to many, all-important, and many old "eczema" patients can produce pages filled with the most elaborate and careful directions in regard to it.

Common rumour incorrectly attributes to the German school an utter disregard of what goes into the body. Certainly the German diet differs very remarkably from the British, and the *menu* of a dinner, even in a skin clinic in Germany, is enough to make our dermatological ancestors turn in their graves. Pork, uncooked smoked fish, raw ham, and mixtures of jam and potatoes did not appear in the *menu* they prescribed for their patients. Yet the patients do well; they recover as quickly as elsewhere; and when they go back to the world do not require special consideration in the domestic circle.

The articles of diet which do harm are those which produce *an increased flow of blood to the skin*, and a consequent increase of itching, which leads to scratching, and the initiation of a *circulus vitiosus*. What these articles are must be found out by each patient for himself, and eliminated from his dietary. "What is one man's meat is another man's poison." Still, certain articles which are harmful in the great majority of cases, such as salted fish and meat, curries, pickles, spices, and condiments generally, should be avoided.

Porridge is regarded by many as harmful. Insufficiently cooked, as it too often is out of Scotland, it is undoubtedly as bad for patients with inflamed skins as it is unpalatable to all, but if the meal be thoroughly boiled, any little harm which the irritation of the particles of husk may do is more than counterbalanced by its value as a light and nutritious food.

Though the cutaneous tests referred to under urticaria promise their greatest usefulness in the toxic eruptions, it is not unlikely that in the future we may get assistance from them in detecting articles of diet which are aggravating or prolonging a dermatitis.

It is superfluous here to present a list of diets for dyspeptics who may also be sufferers from dermatitis. It is likely enough that this is aggravated, and almost certain that complete cure is hindered by the dyspepsia; but dyspepsia must be treated as a disease of the stomach and not of the skin. The very careful search for symptoms of indigestion to account for every case of dermatitis is occasionally successful in developing the delusion of dyspepsia in a previously healthy patient. In acute inflammations of the skin, if the temperature is raised (though this very rarely happens), the diet should be suited to the febrile condition, and in any case when the eruption is acute the diet should be light.

Alcohol.—Seeing that alcohol possesses in a very eminent degree that power of stimulating the cutaneous circulation and increasing itching which has just been referred to, it is clearly desirable that alcohol should be avoided altogether. Many cases are delayed, if not prevented from healing, by even its moderate use, an observation which can readily be confirmed by cutting it off. All cases are not equally injured by it;

the papular and moist red forms are most unfavourably influenced, the dry, scaly forms least. With reference to the form of alcohol which should be taken, if its use be unavoidable, the selection depends more on the general condition than on the disease of the skin. So far as the skin is concerned, it is the alcohol which does harm, not those other varying constituents which make up beer, whisky, claret, sherry, etc., and if the patient will drink, he should confine himself to those beverages which contain least.

As regards tea, I do not agree with those who attribute such powers of evil to "the cup that cheers." Too much tea, especially badly made tea, is bad for every one, but well-made tea in moderation does no more harm to persons suffering from cutaneous diseases than it does to healthy people. If drunk in quantities, and *too hot*, it has the same bad effect in flushing the skin as alcohol and spices. Coffee, especially black coffee,[1] not infrequently increases itching, and should as a rule be avoided; while cocoa, except when too hot, is harmless.

Water.—Mineral waters which contain a small amount of some indifferent alkaline salt are probably innocent enough, but the custom of drinking large quantities of strongly alkaline water is not one to be advised. Medicated waters, such as Levico, are to be looked upon not as drinks, but as medicines.

A patient will sometimes relate with an air of pride, on exhibiting an "eczematous" leg, that it has "not had water near it" for two months. The limb usually bears all the marks of this, and the phrase is quoted, since it illustrates what is still a very common practice. The effect of water is, however, not altogether bad, and a good deal of its evil repute is owing to the fact that many waters contain ingredients which are irritating to any skin, and particularly so to the inflamed one. It is well known in one of our border towns that "eczema" of the hands, which is exceedingly common there, will disappear when rain-water is used instead of the town supply. Still, the fact remains that even rain or distilled water, if used too frequently, and if the parts are not properly dried, does aggravate inflammation. The question of water really depends

[1] The form of dermatitis in which the evil effects of black coffee are most marked is that around the anus.

on its proper use, and the little irritation caused by washing a limb is more than counterbalanced by the removal of the accumulated secretions, excretions, and organisms. After the use of water the denuded epidermis tends to dry and crack, and it is therefore essential to restore artificially some of the natural lubricant which has been removed. The fact that water enters into the composition of many of the applications for the skin (lotions, starch poultices, and cold cream) surely shows that in itself it is not so terribly injurious.

Matters are different when there is added to the water its usual accompaniment, namely, soap (see p. 30). The alkali set free on the addition of water to every soap, and the impure fats, dyes, or scents of cheap ones, irritate the inflamed skin. In the case of "eczema," soap should be used only when absolutely necessary, and the patient should find out by experiment the soap which irritates his skin least. This will usually be found among the less advertised varieties. A handful of oatmeal will aid in cleansing the hands, and will at the same time to some extent soften the water. After the use of soap the necessity of supplying to the skin its lost lubricant is, of course, greater.

Climate.—Many cases of dermatitis are aggravated by residence on the north and east coasts, where the particles of brine conveyed by the wind have a constantly irritating effect. In tuberculous subjects the benefit to the general health is often so great that the increasing strength of the patients suffices to throw off the "eczema" in spite of the evil influence of the brine. The other coasts, if their prevailing winds are from the sea, are also injurious, but the milder winds which are supposed to come from the south and west are usually less brine-laden than those from the other directions.

In tropical regions the activity of the sweat glands commonly tends to aggravate the moister forms of the disease.

Exercise.—Sufficient of this to keep the whole system in good order is, of course, most desirable. Generally speaking, however, it is best that patients should not take violent exercise which promotes profuse perspiration, for this tends to aggravate any existing eruption. Cycling should be indulged in only in moderation.

DERMATITIS AUTOPHYTICA

(*αὐτόφῠτος—self-produced*)

"*αὐτοφύτων ἑλκέων ξυνάονες*"

(Afflicted by self-produced sores)

PINDAR, *Pythian Ode*, iii. 84.

Mischievous schoolboys are aware that by moistening the finger with saliva and persistently rubbing a small area on their right hand they can produce a sore known as the "fox's pinch" or "Turkish nip," which may excuse them for a few days from writing exercises, if the master is young and green.

In my experience ordinary malingerers more commonly aggravate existing eruptions than actually produce new ones, and where compensation is concerned, one should view with some suspicion cases of dermatitis which fail to respond to what seem suitable remedies.

But the term dermatitis autophytica is especially applicable to the injuries to the skin self-produced by hysterical girls, which form the great majority of such cases. Many of them show no outward signs of disordered mentality, but every one of my cases has shown marked anæsthesia of the palate.

The annexed Plates are selected from a considerable collection in my museum, and they show the sort of lesion that should make one suspicious. All the patients had exemplary characters: one of them was described by her doctor as "one of the most industrious, sensible, and conscientious girls in this town."

Carbolic and nitric acids, tartar emetic and burning matches, have been the means generally used. Dr. R. O. Adamson described (*British Medical Journal*, 2nd July 1910) a case where a small piece of pumice-stone was the cause of a prolonged and mystifying skin disease.

In a remarkable number of my cases an accidental burn with pure carbolic acid apparently first suggested the idea to the patient.



DERMATITIS AUTOIMMUNE



DERMATITIS AUTOPHYTICA

The lesions produced are always more or less "kenspeckle."[1] The full effect of the irritant is evident right up to the margin of the lesion: there is no gradually fading away into normal skin. They are almost invariably within reach of the right hand (if the patient is right-handed), and there are very rarely any lesions on the face.

If one suspects self-infliction, the sensibility of the palate should be investigated. If this is found to be anæsthetic, one's suspicions are very nearly confirmed. But one must proceed cautiously and very tactfully. In my experience neither rank, education, intelligence, devotion to duty, nor the most exemplary character, exclude the possibility of self-infliction. One of my patients whose mother was dead cared for her younger brothers and sisters with a devotion which was the admiration of the neighbours; another was, and had been for seven years, the so-trusted nurse in a family that the parents felt that when they were away "the children were as well looked after as if they were at home," and yet she had signed an application for admission to an hospital for incurables; and I have been rebuked for suggesting such a possibility in "one of the most devoted workers in my congregation: an example to all her friends."

The subject of the Plate facing this page succeeded in deceiving her very capable doctor and his partner for six months, and she successfully concealed in her handkerchief for three weeks in my ward the supply of carbolic acid with which she produced the lesion, although we were on the hunt for it during the whole of that period.

When one suspects self-infliction there is only one thing to be done: the patient must be put in a hospital or a nursing home. It is useless to try to manage such a case at home. The parents are anxious to prove the doctor wrong, and the evasion of ordinary domestic surveillance is child's play to an hysterical girl. An ordinary nurse sent in to such a case may at first believe the doctor, but she soon becomes corrupted. She is surrounded by an atmosphere of hostility; as day after

[1] There is no English word for kenspeckle. Jamieson in his dictionary of the Scottish language translates it: "Having so singular an appearance as to be easily recognised."

day passes and she fails to discover the cause, she too begins to think the doctor is wrong, and goes over to the side of the patient.

Such patients must be stripped stark naked, they must be left with not even a handkerchief to weep into, and put in a bath where they must be watched, while their room and belongings are searched with the thoroughness of a Sherlock Holmes. Even when overwhelming and incontrovertible proof of the correctness of his diagnosis is forthcoming the doctor's difficulties are not over. He must persuade the parents that a long course of general hygienic treatment is required before the patient can be regarded as restored to health. Or he may have, as I have had, to deal with a second outbreak, the patient admitting and the mother believing that the first was self-produced, but both strenuously maintaining that the second was not.

DERMATITIS DUE TO PHYSICAL CAUSES

Friction is one of the commonest causes of a localised dermatitis, most frequent on the feet and in the "fork," but unless secondary causes come into play, it is rarely serious, and all such cases want is rest.

Light has a very definite irritating action on the skin of many, a serious action on the skin of a few. These effects are caused by the ultra-violet rays of the spectrum, and they are wholly different from the effects of the heat. Sunburn is caused by the light and not by the heat of the sun, and the severest sunburns occur high up among the cold of the glaciers. Hæmatoporphorin is frequently found in the urine of those whose skins are specially susceptible to light. All stages of inflammation, as already described, may be seen, from a transient erythema followed by a hardly perceptible desquamation (parakeratosis) to blisters and deep ulceration. Repeated and prolonged exposure to these injurious rays may cause the more chronic dermatitis found in sailors and shepherds and the like much exposed to the light, and in Europeans who are compelled to live under an equatorial sun. These forms of dermatitis are very similar; they occur in only a small minority of those

exposed to the irritant, and some of them go on to the development of malignant growths. Xeroderma pigmentosum, a malignant disease of the skin evoked by light, is not primarily an inflammation (see *post*).



Fig. 22.—Hydroa vacciniforme.

The effects of **X-rays** are not very dissimilar from those of light. In the worker who too recklessly exposes his hands a dry, scaly dermatitis is set up, on which later develop the malignant growths such as cost the lives of so many of the pioneer workers.

Burns of all degrees still occasionally occur from some error of exposure, and the ulcers which result from the severer ones take an extraordinary long time to heal.

Hydroa vacciniforme is a rare disease which appears on the face and ears of children in the situation shown in the annexed illustration. Boys are said to be more frequently attacked than girls. The disease commences about the age of three or four, in spring or early summer, and may at first take the form of a vesicular dermatitis. Its distribution should, however, arouse suspicion, and its disappearance in autumn should place one on the alert for its appearance next spring. The lesions are then often more characteristic, and very closely resemble those of vaccinia or varicella. When the scab which succeeds the vesicle falls off a thin scar is often disclosed. So the disease goes on, appearing every summer and disappearing in autumn until the age of adolescence is reached, when, as in most instances where the skin is peculiarly sensitive to light, the idiosyncrasy disappears and nothing is left but the scars.

In such severe forms as that represented in the illustration treatment is called for. The child should be kept as much as possible from unshaded sunlight, the skin should be protected from the injurious rays either by the wearing of a brown veil or by the application of a paste coloured brown with umber or some anilin dye. In slight cases, and these are more numerous than is commonly recognised, the inconvenience is so small and the trouble of efficient treatment so great that probably the wisest thing to do is to leave them alone.

Hutchinson's "Summer Prurigo," a condition closely related to hydroa vacciniforme, is referred to on p. 64.

The effects of **Heat** are altogether different from those of light. Moderate heat causes, through the vascular mechanism, redness of the skin owing to dilatation of the vessels, and this reaction is immediate and not delayed as in light burns. If exposure is prolonged and constantly repeated the effects of capillary congestion are shown in the marbled pigmentation so frequent on the legs of cooks, stokers, and firemen.

Descriptions of and directions for the treatment of burns and scalds will be found in all surgical text-books.

Cold.—The effects of cold depend on the degree and length of exposure of the skin to it.

The use of carbon dioxide snow has made us very familiar



PELLAGRA.

with this reaction (see p. 35), and we know that any degree of reaction, from slight redness and scaling to complete destruction of the tissues, can be produced.

The condition to which trench warfare directed so much attention seems to have been more of the nature of chilblain than frost-bite, for many cases occurred where the temperature had never dropped to 32°. Cold requires to be combined with interference with the circulation before the erythematous symptoms appear, and the condition may not inaptly be described as giant chilblain. Thick warm socks and roomy water-tight boots are the best preventives of trench-bite.

PELLAGRA

(Ital. *pelle—skin ; agra—rough*)

This chronic disease has been long recognised as an endemic disease in Europe, notably in Italy and the Austrian Tyrol; but within recent years it has been shown that it is by no means limited to these regions. Several cases have been reported in the British Isles, and it has spread to an alarming extent in certain parts of the United States of America. It is also seen in Africa, especially in Egypt.

I am, of course, aware that the placing of this disease among those due to light is open to criticism, but until the cause is discovered it is convenient to consider it here. The article is written by Dr. Low, who has had much wider opportunities of investigating the disease than I have.

Pellagra affects both sexes, and may occur at any age, frequently appearing in early childhood. In a typical case three groups of symptoms are present:—1. Skin manifestations; 2. Gastro-intestinal disturbances; 3. Cerebro-spinal symptoms. The disease usually begins insidiously. The first thing often to attract the patient's attention is the fact that in springtime, when exposed to the sun, the backs of the hands and forearms, the face and neck, and the feet (if uncovered) become very easily burnt. They become red and may even blister. The patient may have a sore mouth, occasional diarrhœa, alternating with constipation, slight giddiness, and a general feeling of

being "out of sorts." These symptoms soon pass off, and there is no recurrence till the following spring, when the same symptoms appear again. He may be free of symptoms in spring, and show a recurrence in autumn. This goes on for several years, the patient feeling quite well in winter, and in spring or autumn, or both, complaining of the above-mentioned symptoms. As the disease progresses the symptoms become aggravated. The repeated attacks of dermatitis on exposure to light lead to an atrophy of the skin on the exposed parts, which become dry and scaly and deeply pigmented (see illustration). If well marked this condition persists all the year round, with exacerbations of erythema and blistering each year. The patient's general condition deteriorates. He complains of pain in the abdomen, severe attacks of diarrhœa, and frequently shows marked salivation. Sudden attacks of vertigo are common. The muscular power is diminished, and the patient becomes decidedly melancholic, has delusions, is frequently suicidal, and ends his days in an asylum.

Diagnosis.—Pellagra cannot be diagnosed without the skin eruption in association with the other symptoms. Skin symptoms may predominate, or gastro-intestinal or mental symptoms may be the chief feature and the skin changes less marked. In two recent cases, from one of whom the illustration opposite p. 127 is taken, the patients were for many months under treatment for vague gastric symptoms, and it was only when the eruption appeared on the hands and arms on exposure to the sun, that the diagnosis was made. In this country, where there is not so much sunlight as in other countries where pellagra occurs, the eruption is often not the first symptom. In all cases where pellagra is suspected the patient should be tested by exposure of the hands to the sunlight. At first the skin eruption resembles an ordinary sunburn with erythema and blisters, but later, when the atrophy and pigmentation set in, the diagnosis is easy.

The other illustration is taken from a fatal case of pellagra which was admitted to the wards of the Royal Infirmary in August 1911, under Dr. Graham Brown's charge. The patient was a woman of forty, who was born and had spent her life in the village of Colinsburgh in Fifeshire. She had never been outside



PELLAGRA.

Great Britain. She had the typical gastro-intestinal symptoms —attacks of diarrhœa, alternating with constipation—accompanied with soreness of the mouth. For a considerable time she had been melancholic, and complained of general weakness and attacks of sudden giddiness. The face, hands, and forearms showed the usual appearance of the skin lesions in a chronic case of pellagra. The face was slightly scaly all over, and rough and pigmented, especially on the peripheral parts. The redness of the backs of the hands and the pigmentation of the backs of the fingers and forearms, extending further up on the extensor than the flexor aspect, is characteristic of what occurs after repeated attacks of an erythematous or bullous eruption. The sharp convex upper margin of the pigmentation should be noted. Both hands and forearms were perfectly symmetrically affected.

The cause is undecided at present. The disease was till recently attributed to the eating of damaged maize, but the disease occurs in districts where maize is not used as an article of diet. The course of the disease and the post-mortem findings point to a profound toxæmia of some kind. Chemical substances produced by the decomposition of maize, toxines generated by fungi or other organisms growing on spoiled maize, have been suggested as causes. More recently Sambon has suggested that the disease may be a protozoon infection spread by the bites of a fly (*Simulium*), whose larvæ live in running water, and which appears in swarms in spring and autumn, and attacks man and animals. There is no direct evidence to support Sambon's theory. During the war outbreaks of pellagra occurred among Turkish prisoners and Armenian refugees, and all the evidence goes to support the theory that pellagra is a deficiency disease. Underfeeding, especially with food of bad quality, seems to lead to the production of the condition; and when the hygienic conditions are improved and the food liberal and varied, the disease dies out. It has also been suggested that pellagra is anaphylactic in nature. In support of this is the periodicity of the symptoms, hypersensitiveness of the skin to light and eosinophilia in the blood; but to what substance the patient is sensitised, it is at present unknown.

Prognosis should be guarded. Complete recovery is quite

common, but relapses may occur some years after apparent recovery. Once marked mental symptoms are established the prognosis is very bad.

Treatment.—Good hygienic surroundings and liberal diet will cause rapid improvement or cure if the case is not too far advanced. Arsenic internally is the only drug known to do any good. The skin and other symptoms must be treated symptomatically.

INFECTIVE INFLAMMATIONS

The infective inflammations of the skin may be divided into those of the epidermis and those of the corium, with one or other of these as the *main* seat of the eruption. The inflammations of the epidermis may be subdivided according as they affect the surface epithelium, or that of the glands and follicles of the skin. Those affecting the surface epidermis, the superficial inflammations or cutaneous catarrhs, are sometimes further subdivided into moist or dry. These terms, while useful clinically, are only relatively distinct, for many catarrhs which are clinically dry are associated with increased moisture of the epidermic cells.

In far too many diseases we are as yet ignorant of the actual infective cause. In some the probable causal relation of a germ to the disease is widely admitted, while there are others which can only be considered infective by analogy. It is not necessary that the cause of a disease must be present at the actual place where signs of irritation are observed microscopically. Parasites of all kinds have the power of exerting their influence at a distance; and be the parasite gross, as in the case of scabies, or minute, as in the case of impetigo, the effects produced by its presence may be found in localities far removed from its actual presence. Thus, in certain pustular affections of the skin which are clearly inoculable, the cause of the disease will be found in a small colony of germs limited to the apex of a considerable pustule, though the vessels for some distance around show evident signs of disturbance.



SCABIES

SCABIES

Scabies, commonly called "The" Itch, is the most typical of the superficial inflammations. The lesions first produced are vesicular, and these may either rupture and discharge fluid, or develop into pustules or even large bullæ. If the irritation be long kept up, the skin becomes greatly thickened, and fissures are developed. In Scotland we call this severe form Norwegian scabies.

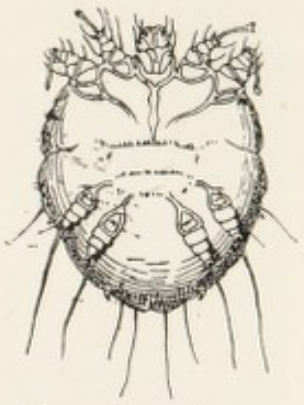


Fig. 23.—Acarus scabiei. Female. Ventral surface. (× 75.)

The advantage of placing this disease in the forefront of the infective inflammations is that the nature of the processes occurring in others may be deduced from its well-known phenomena. The *Acarus scabiei*, which is the cause of the disease, is a small insect, just visible to the naked eye, about the size of the perforation of a fine sewing-needle. I have followed the majority in giving an illustration of the acarus, by means of which the exact number of its legs may be seen. Practically it is only necessary to know that the disease is produced by the female, which, after impregnation, excavates oblique tunnels in the horny layer of the skin and lays her eggs as she advances. Schiscka says that in exceptional instances the acarus reaches the prickle layer, in which case the resultant inflammation is much greater than usual. The irritation produced gives rise to the exudation into the epidermis of a certain amount of fluid, clinically evident as the vesicle, and to the extreme itching to which the disease owes its name. In the neighbourhood of this vesicle the acarus may frequently be found. On the skin of those whose attention to cleanliness is not great the tunnel which the insect excavates is seen as a black line, often, though by no means invariably, zigzag. The favourite seats for its ravages are the thin skin on the webs of the fingers (see Plate), the wrists, the anterior borders of the axillæ, the genitals in males, and the areolæ of the nipples in females. Its general distribution is determined by the patient, for the eruption is

most marked in those parts which he can most easily scratch when half asleep. Thus it is only exceptionally found on the back, while the lesions are usually numerous on the front of the trunk and thighs. It is important to note that the face is practically never affected unless some complication, *e.g.* impetigo, be superadded. This is often a valuable assistance in diagnosis in the case of a widespread itching eruption, where burrows cannot be identified. The distribution just mentioned refers to the disease as seen in the adult



FIG. 24.—Section from a case of scabies (diagrammatic). Shows position of the itch mite, the eggs in the oblique burrow, and in other parts of the horny layer ; sections of acari and fæcal masses (the black granules). There is some cellular infiltration of the tissues beneath.

patients who attend hospitals and dispensaries. In the better classes, where the hands are more frequently washed, the anterior axillary borders are often the only sites of any evident lesion; while in children the feet are often as much affected as the hands, and, as in most diseases in children, the tendency of the vesicles to become pustular is marked.

We learned from the war that scabies is one of the chief disabling diseases of an army. The lesson had been learned before, recorded, and forgotten. The distribution of scabies in



SCABIES.

a soldier serving in the field is not that found in a civilian living peacefully at home: it is on those parts which are most exposed to scratching, and these are, in men who wear their clothes continuously for weeks, the buttocks and the genitals which are exposed in responding to the calls of Nature. The services of thousands of men were lost to the army for weeks because we diagnosed and treated them as cases of impetigo. The Americans went through a similar experience in the early days of their Civil War.

The patient's great complaint is itching, always most troublesome at night. The removal of the clothes before the patient gets into bed seems to be to the acari an intimation that the time for their nightly prowl has arrived. In cases complicated by impetigo and abscesses the symptoms of these often conceal those of the original disease.

Those whose opportunities of seeing the disease have been considerable have, as a rule, little difficulty in diagnosing scabies; but the statement that it is always possible to trace the acarus to its lair does not accord with my experience, and the diagnosis has often to be made simply from the account of the itching (most marked at night), the history of the case, and the distribution of the eruption. Scabies is most commonly contracted by sleeping in an infected bed; it is possibly sometimes contracted by shaking hands with an infected person; a very considerable proportion of cases have a venereal origin. In the majority of cases, no doubt, it is not difficult, and in some cases it is most important, to be able to convince an enraged and sceptical patient by demonstrating to him under the microscope the cause of his disease, though it is not wise to engage to do so. A typical burrow with a recent vesicle as its end is selected, and a fine needle is passed along the burrow till it penetrates the vesicle. By raising the needle the whole tunnel is opened up, and the acarus may frequently be discovered clinging to the end of the needle. It may then be mounted on a slide in glycerin (not liquor potassæ) and demonstrated under the microscope. Another method is to shave off, with a sharp razor, a thin layer of the epidermis over a vesicle and burrow and mount it in glycerin. Portions of the acarus may be recognised, ova almost always will be.

Treatment.—In this connection also scabies is an excellent introduction to the infective inflammations of the skin. We know that the disease is produced by a definite cause; our object is to destroy that cause, and, having done so, to allow the patient to recover. Were we as familiar with the causes of all infective inflammations, and had we as sure a remedy for their destruction as we have for the acarus in sulphur, the treatment of the diseases of the skin would be very much simplified. An excellent method of curing scabies which is followed in Paris and in some hospitals in this country is on the "while-you-wait" system. The patient is immersed in a bath containing 3 ounces of liver of sulphur to 30 gallons of hot water. After soaking for about half an hour in the bath, he is thoroughly scrubbed with soft soap and a strong nail brush, special attention being devoted to the more affected parts. After this he reclines for another half-hour in the bath. On coming out of it he is rough dried and rubbed all over with sulphur ointment. He then puts on the clothes which have in the meantime been disinfected, and is dismissed cured. It is perhaps going rather far to reckon all those cases which do not return for a second course of treatment as cures.

A commoner method of treatment is to order the patient to have a hot bath in which he soaks for half an hour, and with a soft nail brush scrubs the most affected parts. On coming out he should dry himself, seat himself before the fire, and rub sulphur ointment thoroughly in all over. It is most important that a sufficient supply of ointment be prescribed. For an ordinary adult 1 lb. will not be too much (see p. 20). He should then put on a pair of old flannel pyjamas and a pair of old woollen socks. This ritual should be repeated on five subsequent occasions at intervals of twelve hours. The skin is thus kept in a constant atmosphere of sulphur, and the acari, old and young, are destroyed. Twelve hours after the last application the patient should take another bath, put on fresh clothes, and if the directions have been properly carried out, he may be considered cured. A certain amount of irritation, due to the action of the sulphur, may persist for a day or two, and too often, contrary to instructions, the patient continues to use the ointment; the dermatitis is increased, this increases the itch-

ing; the patient reapplies the ointment still more vigorously, and his last state of sulphur dermatitis is worse than his first of scabies.

One further caution—scabies is spread by the hands, but treatment of these is too often neglected. True, the palms of the hands are well anointed in rubbing the other parts, but the backs and webs of the fingers very often escape treatment. It is well, therefore, to caution the patient about this, and instruct him to finish each application by "washing" his hands with the ointment, and to wear woollen gloves soaked with it. All the clothes and bedding should be disinfected. The acarus is not a very hardy creature, and quite simple measures suffice.

In the cleanly, such active measures are rarely required. A hot bath every night and the energetic use of sulphur soap, the lather being rubbed into the affected parts till dry, will generally bring about a cure in three or four days.

Sherwell, of Brooklyn, uses sulphur as follows:—The patient has the usual bath, and before he goes to bed a teaspoonful of flowers of sulphur is deposited between the sheets, by the shaking of which the sulphur is distributed all over the bed and comes in contact with the acari when they are most approachable. Sherwell strongly recommends this treatment, and says it is more useful than any other he has tried.

There are at least two classes of patients whose treatment requires special consideration. In children irritation is usually severe, and pustulation a very prominent feature. For them, sulphur ointment, if applied, must be diluted. If there are many so-called "eczematous" complications, the substitution for sulphur of Kaposi's β-naphthol ointment (5 to 10 per cent.) has the advantage that it calms these complications instead of aggravating them, as sulphur so often does. In the case of adults, where the eczematous complications are very marked, the same plan may be followed, always bearing in mind that, harmless though β-naphthol usually is, cases of poisoning have occasionally resulted from its use. Epicarin in a 10 per cent. ointment is also useful, but it is not so innocuous as it is said to be.

Another class is made up of those whom one does not wish

to inform that they are suffering from such a vulgar disease as *the itch*. If this fact must be concealed, sulphur ointment must be avoided, for it practically carries its diagnosis with it. Useful substitutes for it are stavesacre, styrax, and balsam of Peru.

Some prefer to simple sulphur ointment applications in which certain adjuvants are present, namely, prepared chalk, which aids mechanically in the opening up of the burrows, and soft soap, which helps the penetration of the sulphur along them. Useful formulæ are—

℞	Sulphur Præcip.	20·0 (℥ij)
	Cretæ Præp.	30·0 (℥iij)
	Saponis mollis et Vaselini	āā 80·0 (℥j)
℞	Sulph. Præcip. }	
	Ol. Fagi }	āā 30·0 (℥i)
	Saponis Viridis }	
	Adipis }	āā 60·0 (℥j)
	Cretæ Prep.	20·0 (℥iij)
	(Wilkinson's Ointment)	
℞	Styracis }	
	Ol. Olivæ }	āā pts. æq.
℞	Bals. Peru }	
	Sp. Vini }	āā pts. æq.
℞	Bals. Peru	1
	Glycerin	3
℞	Ungt. Staphisagriæ.	

Attention may be again directed to the danger of over-treating the disease.

Many of the lower animals also suffer from itch, but the mite which causes their disease differs from that which attacks the human subject, and although occasionally a human being is attacked by animal itch, it does not spread as our own variety does. In some animals itch is a serious, even a fatal disease.

ACARODERMATITIS URTICARIOIDES

(Grain Itch, Barley Itch, Straw Itch)

Numerous outbreaks of this disease have been noted in America, and recently it has appeared in this country.

As the name suggests, the disease is due to a minute itch mite, the *Pediculoides ventricosus*, whose connection with grain

and straw is of some economic interest, for it destroys the larvæ of the wheat straw-worm, and other parasites of grain. It is of course found in those brought into contact with these substances in their work, or who happen to sleep on infected straw mattresses.

It does not burrow in the skin as the *Acarus scabiei* does, but, along with hundreds of its fellows, directly attacks the skin of those who are brought into contact with the infected straw or grain. The eruption is usually urticarial in form, but it may resemble erythema multiforme, and in other cases

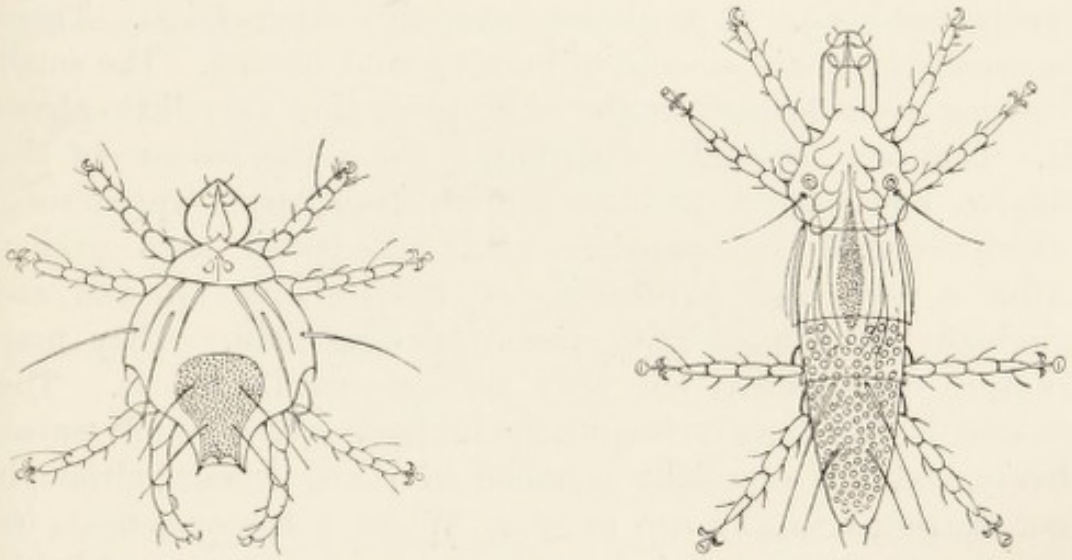


Fig. 25.—Male and unimpregnated female—Pediculoides ventricosus. (× 200.)

the development of a vesicle at the site of attack results in a varicelliform eruption. It most commonly appears on the trunk, and the hands and face are usually spared. The itching is intolerable; it becomes worse at night, and seriously interferes with sleep. The temperature may be elevated two or three degrees. As a rule the itching subsides in from twelve to thirty-six hours—the mites do not breed on the human skin—and the eruption disappears in a week or ten days.

Schamberg, from whose excellent account the above is taken, says that an ointment containing grs. 30 of β-naphthol and grs. 40 of sulphur in an ounce of zinc ointment is specially efficacious, but even if no treatment is adopted the acari soon die and the patient recovers.

CHEIROPOMPHOLYX

(Pompholyx; Dysidrosis)

(*χείρ—the hand; πομφόλυξ—a bubble; δύς—difficult; ἱδρώς—the sweat*)

This is one of the diseases which Tilbury Fox salvaged from the rubbish heap of eczema. As the name signifies, it consists of an eruption of small vesicles upon the hands (more rarely on the feet also). It is almost invariably symmetrical. There is usually a certain amount of burning and itching. The small vesicles are embedded in the skin, projecting very little above it. They are especially distributed along the borders of the fingers, and have a peculiar greyish translucent appearance, which is aptly compared to that of boiled sago grains. After a few days' existence the vesicles dry up and are gradually thrown off with the exfoliating skin. They may rupture accidentally, but they do not usually do so. The disease is found most frequently in those whose hands sweat freely, and it is especially common in young women, although not restricted to any age or sex. When it has once made its appearance, the patient is for some months (or even years) liable to recurring attacks on any slight disturbance of health. It is, indeed, related of an investigator of the disease on his own skin, that, running short of material, he spent a riotous evening with some students in a German beer garden, and was rewarded by what he desired—the appearance of a fresh eruption.

Although the above description applies to the great majority of cases, there are others in which the disease spreads to the back of the hand, and even up the arm. The vesicles are then larger, and, owing to the different structure of the epidermis in these situations, they commonly rupture and exude a little fluid. The fact that they do not rupture on the fingers is not due so much to any special peculiarity of the vesicles as to the character of the skin in this situation. When, for instance, the skin on the palm of the hand is inflamed, there are very rarely any vesicles visible at all. The fluid spreads itself through the

layers of the epidermis, and the result is the scaling of large masses. On the back of the hand, on the contrary, the vesicles very rapidly form and readily rupture; the skin at the sides of the fingers being intermediate in thickness between these two, prevents to some extent the development of the vesicles and usually also their rupture.

Etiology.—Two views are held as to the nature of cheiropompholyx: one that the disease is neurotic in origin, the other that it is of local origin, in all probability due to micro-organisms. While it is not yet possible definitely to decide between the two, it would appear that hysteria and neuroses do not exclude the possibility of infective agents,

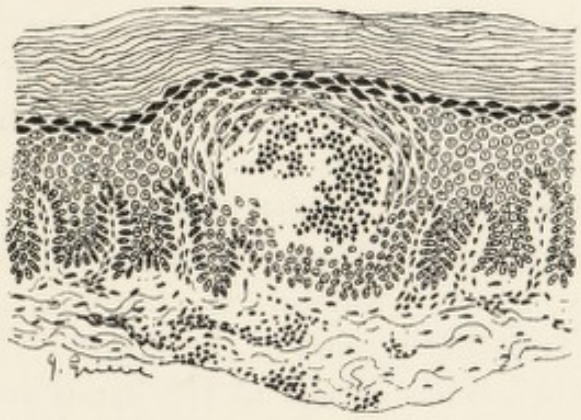


Fig. 26.—Cheiropompholyx. Vesicle in the prickle layer, the epithelial cells pushed aside, and a few leucocytes in the cavity. From a section by Winklereid Williams. (× 50.)

and in all probability the latter theory is the correct one. Unna has described a bacillus found in all the cases he has investigated. It grows in the upper border of the vesicle, just where, in carefully prepared sections, a minute, funnel-shaped opening may usually be found.

One begins to doubt whether some cases at least which one has in the past diagnosed as pompholyx were not examples of epidermophytosis (p. 213). In all cases a search should be made for fungus.

Histology.—It is now definitely accepted that the vesicle is inflammatory in origin, and that Fox was wrong in supposing that it was an accumulation of sweat caused by the blocking of

the pore. Fox's clinical instinct was, however, not at fault, for the disease is much more common in those who suffer from profuse sweating of the parts. Sections show the inflammatory character distinctly, and serial sections that the sweat channels are pressed to one side by the vesicles.

Prognosis.—As regards any individual attack the prognosis is good, but the tendency to recurrence is so great that patients should always be warned of its likelihood.

Treatment.—Since there are two theories, so there are also two lines of treatment. Those who believe in the neurotic origin of the disease largely neglect local treatment, and administer tonics to their patients. Under this treatment they recover, as do patients who receive no treatment at all. The local treatment, which has proved most satisfactory in my hands, consists in frequent immersion of the parts in sublimate solution (1 to 4000) and the application either of a salicylic ointment or a salicylic dusting powder (2 per cent.). When the attack has subsided, steps should be taken to prevent its recurrence. Hyperidrosis should be treated, and the systematic use of resorcin or formalin soap seems to strengthen the resisting powers of the skin.

When the disease has spread to the hands and arms, a more soothing treatment, such as simple dusting powder or calamine lotion, may be required, for there the disease presents very little difference from an acute vesicular dermatitis, except that there is not the same tendency for the vesicles once ruptured to continue to discharge.

MILIARIA

(*Milium—a millet seed*)

Miliaria is an affection not very distantly related to cheiropompholyx. It also is associated with excessive sweating, especially when sudden and profuse, but it has no special localisation, and is not so prone to recur. It is, however, a true inflammatory disease, with the development of vesicles in the prickle layer of the epidermis not unlike those of cheiropompholyx.

The vesicles develop on a tiny red papule, and form a white summit to a red cone. The disease is most common on the trunk, may spread over a large area, and may prepare the way for a widespread attack of dermatitis. It is naturally most common in the summer months, and is probably identical with many forms of tropical "prickly heat."



Fig. 27.—Miliaria. Section of a double vesicle evidently developed in the prickle layer and evidently inflammatory. Leucocytes and epithelial cells in the cavity. After Unna. (× 50.)

Treatment.—Under a mild antiseptic dusting powder (ac. salicyl. 3, talc 97 parts) or the free application of lead and tar lotion the eruption will soon disappear.

SUDAMINA, or CRYSTALLINA

(*Sudor—the sweat*)

This disease is so often confused with miliaria, that probably the distinction will be best explained and understood by dealing with it here. It results from obstruction of the sweat pores, and the consequent damming back of that excretion. The spots only appear when sweating is excessive, and are most commonly observed in certain fevers, pneumonia, acute rheumatism, typhoid, measles, etc., where the congestion of the skin favours the blocking of the pores, but they are not infrequently seen when the sweating is produced, especially in children, by less serious maladies. Since only a thin, transparent, horny layer covers the fluid, it looks exactly

as if it were free on the surface of the skin. The nature of this lesion is very well seen in the accompanying illustration, which is "after" Unna.

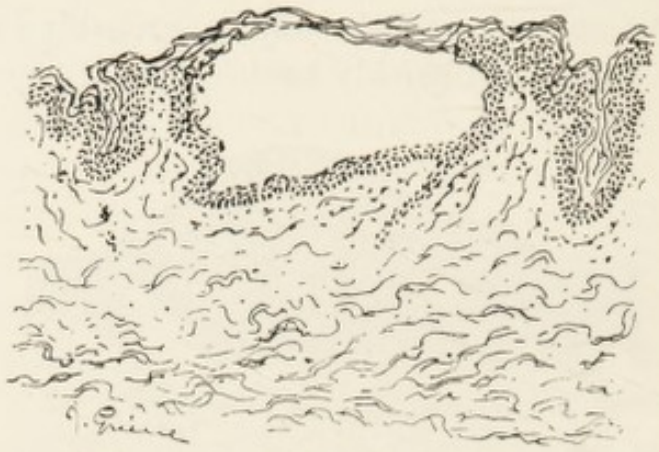


FIG. 28.—Shows the vesicle to consist merely of a distension of the horny layer. At the lower right-hand corner of the vesicle is a portion of a sweat duct. After Unna. (× 50.)

The condition is one which requires no treatment. As the horny layer exfoliates, the fluid is discharged; and as the fever diminishes, so does the tendency to the production of fresh lesions.

IMPETIGO CONTAGIOSA

(*Impeto—I rush on—I attack*)

The term *impetigo* was used by the older authors in a much wider sense than it now is, and the term *impetiginous eczema* still lingers, though it merely indicates the prominence of suppuration and the presence of purulent crusts. The term used alone, without any qualifying adjective, is generally understood to apply to the disease described by Tilbury Fox as *impetigo contagiosa* (see Plate). This is one of the commonest of skin diseases, one of the simplest to diagnose, and one of the easiest to cure. It occurs at all ages, in all classes, and in both sexes. Not infrequently it appears in epidemics, and it is common in boys' schools where Rugby football is played, where it goes by the name of "football itch," or "scrum pox."

Impetigo is very often associated with the presence of pediculi upon the scalp, so often that, particularly in girls, the appearance of impetigo contagiosa should always lead to an examination of the scalp, carried out with tact and discretion. The dermatitis associated with pediculosis capitis is for all practical purposes merely a variety of impetigo contagiosa. (The conditions on the scalp are different, and the appearances are therefore modified, but when the disease is spread to other parts of the body by the patient's scratching, the lesions developed are those of impetigo contagiosa.)

The first outbreak of the eruption is rarely observed, but, as it spreads, all stages may be observed on one patient, and we then see that the disease commences as a minute, reddish spot, which rapidly becomes a vesicle, and, to speak *more Hibernico*, develops into a pustule almost before one has time to observe the vesicular stage. With almost as great rapidity the pustule dries up into an amber yellow crust, which in a little over twenty-four hours is often so loosely adherent to the skin that it looks as if it had been artificially stuck on. When it is picked off at this stage the skin beneath is merely reddened, but if it is separated before it completely dries, the skin beneath is moistened with a little pus.

There are several varieties of the disease. That which has just been described is the commonest type, and Unna applies to it the term *impetigo vulgaris*. In another form the vesicular stage is more prolonged, and the vesicles reach a greater size before becoming pustular. The whole process is therefore slower, and to this variety Unna gives the name *impetigo serosa*. This is the variety which in its severer forms is frequently mistaken for pemphigus by the inexperienced, especially as the lesions present quite a remarkable resemblance to the bullæ of that disease. A third variety is known as *impetigo circinata* (Fig. 30). This spreads in rings, and somewhat resembles, and is often confused with, ringworm; but the rapidity of the spread, the pustular nature of all the lesions, the absence of the fungus, and the ease with which it is cured, distinguish it from that disease. One of the Plates illustrating ringworm (*q.v.*) shows the two diseases combined.

Bockhart's impetigo may be described as a succession of

little epidermic abscesses; it is pustular from the commencement, and is therefore easy to diagnose from the other varieties.

When the disease affects the thicker skin on the hands and fingers, the appearances are much modified, owing to the fact that the skin is thicker, and the fluid does not so readily reach the surface. Our American friends apply to it the descriptive



Fig. 29.—Impetigo vulgaris.

term of "run around," and it is often spoken of as a superficial whitlow.

Etiology.—The disease is caused by the streptococcus, and that organism may be obtained in pure culture from the early vesicles in a very large proportion of the cases. In the crusts, staphylococci are abundantly present, and streptococci are only occasionally found. Bockhart's impetigo is due to the *S. aureus.*

Prognosis.—Left to itself, or improperly treated, the

disease will go on indefinitely, inoculating and reinoculating itself on different parts of the body; while deeper infection of the skin, such as boils and phlegmonous infiltrations, frequently complicate neglected cases.

TREATMENT.—This is very simple. The method we follow in the Royal Infirmary, a method so successful that it is rarely



FIG. 30.—Impetigo circinata.

necessary to recommend any other, is the following:—The scabs are *removed* by boracic starch poulticing, and the part is dressed with an ointment consisting of 1 per cent. of ammoniated mercury in vaseline or zinc paste. On the whole, perhaps, the latter is preferable, as it does not so readily "run" as do simple ointments. (See p. 15 regarding the need of caution in the use of even weak mercurial ointments where the eruption is

extensive and the temperature elevated.) One would naturally think that more powerful antiseptic ointments would be more rapidly efficacious, but experience shows the contrary. The application of too strong an ointment is one of the mistakes often made in treatment; another common one is the application of the ointment upon the top of the crusts. Most of the failures I see are due to badly made starch poultices which do more to spread than to cure the disease. If the directions given above are implicitly followed, a week should suffice for the cure, and it should never be necessary to administer streptococcal vaccines to cure this common disease.

If a case does not progress satisfactorily one should consider the possibility that the patient's skin shows an idiosyncrasy to vaseline, and some other base should be substituted. There is no doubt that during the later years of the war impetigo contagiosa showed itself remarkably resistant to treatment. It is not now important to discuss whether this was due to impurities in the ointment bases then in use or to lowered resistance of the skin, for fortunately the previous conditions once more obtain.

Any pediculi present in the scalp must of course be destroyed.

ECTHYMA

(*ἔκθυμα—a pustule*)

Ecthyma is an aggravated form of impetigo contagiosa. It is due to the implantation and growth of the streptococcus in the skin, and its presence invariably indicates that the general health of the sufferer, usually a child, is below par. It frequently occurs in adults who are out of work and insufficiently fed, and parasites of various varieties often complicate and spread the disease.

The lesions are most common upon the legs. They are deeper than those of impetigo contagiosa, and are usually surrounded by an angry red halo. When the scabs are removed actual ulcers are disclosed.

Treatment.—Locally some mild antiseptic ointment should be applied, but no local treatment will be successful unless the



ECTHYMA.

general condition of the patient is restored by the administration of good food, abundance of vegetables, and generally some form of iron.

PEDICULOSIS CAPITIS

The lesions evoked by the presence on the scalp of the *Pediculus capitis* are to all intents and purposes those of contagious impetigo. There are, however, certain differences by which the experienced eye can divine the presence of the pediculus without seeing either it or its ova. The crusts are not so discrete as those in impetigo contagiosa; they may cover continuously considerable areas of the scalp, and there is usually more exudation, more moisture, more "eczema." Further, at least usually, the crusts have a peculiar, *dirty, greenish colour*, which is practically pathognomonic of pediculosis, while the odour from most cases is characteristic.



Fig. 31.—Pediculus capitis.

While the disease is commonest in the children of the poor, it is appallingly common among the well-to-do; very few large families and not many small ones altogether escape it; the scalp of every child with impetigo contagiosa should be rigorously examined. If all our schoolgirls had their hair plaited and all our schoolboys their hair cut with clippers like German children, there would be fewer cases of pediculosis and fewer suppurating and tuberculous glands.

Pediculosis is almost invariably limited to the *back* of the head. Very little disease will be found in front of a line drawn from ear to ear across the vertex. Usually the parasite (Fig. 31) is very much in evidence; but if not, careful examination will discover the ova adherent to the hairs. The situation on the hair serves to measure the duration of the infection. The pediculus fastens its egg close to the roots of the hair, and ova present two or three inches up the shaft testify to a duration of some months. The irritation of the scalp often leads to swelling and breaking down of the glands at the nape of the neck, and considerable abscesses may form, while lesser degrees of irritation facilitate the development of tuberculous adenitis.

TREATMENT.—*Causa sublata, tollitur effectus,* is not always true, certainly not in many diseases of the skin; but in this one at least the proverb holds. The cases where the destruction of the cause is not followed by the rapid disappearance of the disease are very few in number.

Often enough the irritation looks so great that the inexperienced hesitate to follow the somewhat heroic treatment which they would at once recommend in milder cases; but in the vast majority of cases the results will be so satisfactory as to give them confidence on future occasions.

There are many applications which are certain death to the pediculus and its ova. The one which is invariably used in the Royal Infirmary is *common paraffin oil.* The patient is directed to smear all the adjacent skin with zinc ointment or lard for the purpose of protecting it from the irritant effects of the paraffin. *The scalp must not be washed at this stage.*



FIG. 32.—Ovum of pediculus or "nit" attached to hair.

The next step is to anoint the head freely with paraffin oil, to cover it with rags soaked in the oil, and to apply over all an oiled silk bathing-cap. A second soaking follows twelve hours later, and after twelve hours more the scalp is thoroughly washed with soap and water. The irritation may at first be increased, but it soon dies down and the case is cured. Some of the less firmly adherent "nits" are removed from the hair, but for the rest other means must be used. Probably the old-fashioned toothcomb is the best of all. Lotions of acetic acid (1 to 4) are useful in loosening the binding cement which fixes the nits to the hair. If the irritation is so great that this method is really inapplicable (although, as has been already indicated, it may be used where there is considerable irritation), an ointment of ammoniated mercury (two per cent.) may be used for a day or two until it has subsided, and then the paraffin method may be employed. The oil of sassafras, and xylol, have been recommended as substitutes for paraffin. I did not find them more efficacious, and they are certainly not so ready to hand as paraffin. With regard to the glands,

incisions should only be made when *urgently* indicated. When the irritation is removed considerable swellings disappear in a surprisingly rapid manner. No doubt matters may be expedited by shaving the head, but it is only in very bad cases that this is essential.

PEDICULOSIS PUBIS

The *Pediculus pubis*, or crab louse (Fig. 33), affects the regions of the stronger hairs, and is found on the genital regions, the axillæ, the sternal region, and on the eyebrows and eyelashes.

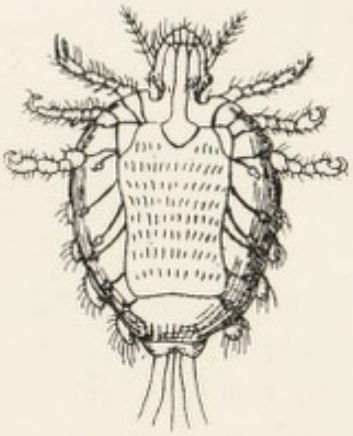


Fig. 33.—Pediculus pubis.

On the eyebrows the lesions tend to be impetiginous, but in the other situations the irritation of the parasite gives rise to a drier form of dermatitis.

Itching is the great complaint of patients thus affected, and there is often very little to be detected on examination. Patches of greyish discoloration are often seen on the skin, due to pigment produced by the insect. Reddish deposits of fæcal matter on the hairs were noted by Erasmus Wilson, and the ova may be seen attached to the hairs as on the head.

Treatment.—Some form of mercurial ointment is usually prescribed. White precipitate is excellent, red precipitate had the approval of Burns, and ordinary blue ointment is the usual chemist's prescription. As in scabies, care should be taken that the disease is not overtreated, and a dermatitis due to the application substituted for the disease.

It is as a rule at this stage that cases come under medical observation. The memory is all that remains of the pediculosis; the mercurial dermatitis only requires some simple soothing lotion.

PEDICULOSIS CORPORIS

The *Pediculus corporis sive vestimentorum* spends its leisure in the patient's clothes, and goes to his skin for its meals.



Fig. 34.—Pediculus corporis.

The result of its attack is a hæmorrhagic spot which differs from that of purpura in two respects. It has in its centre a dark point which represents the puncture of the insect's proboscis, and it is surrounded by a pink halo of reaction which is absent in the lesion of uncomplicated purpura. Hæmorrhagic crusts are frequently present, for the irritation caused by the *pediculus* leads to particularly vicious scratching, and that part of the patient's back which he can reach is usually marked by his nails. Thus on the back they reach from the neck a certain length down between the shoulders. They are frequent about the lower angle of the scapula where the hand of the opposite side can reach, while the centre of the back is usually, except in acrobats, free. The presence of these "scratch" lines is almost enough to enable one to make a diagnosis. In no other disease does the patient scratch so savagely. (See Plate.) The discovery of the *pediculus* of course makes the diagnosis absolute. It may be found by carefully everting the neck of the shirt, for the insects have a special preference for the upper part of the back. Failure to discover them is, however, no proof of their absence. It is very common for patients to pay the doctor the compliment of putting on a clean shirt in honour of the visit, and the search is often in vain. The disease is most common in the elderly, and, as in other parasitic diseases, the social position of the patient must never lead the observer astray. Complaints of severe itching, along with scratch marks about the neck and shoulders in elderly spinsters, widows, and widowers, should always suggest pediculosis.

Treatment.—Successful treatment depends of course on the destruction of the cause. It was formerly the custom to devote most attention to the clothes, but Allan Jamieson pointed out that the ova of the insect are frequently found on the



PEDICULOSIS CORPORIS.

lanugo hairs of the body, and this explains the recurrence of the disease in cases where the clothes have been thoroughly disinfected. The treatment, therefore, must be twofold. The clothes must be thoroughly disinfected by heat, moist or dry; and the whole body should be rubbed with a parasiticide ointment, such as sulphur or stavesacre.

The patient's attention must be directed to the importance of closer attention to personal cleanliness, and Jamieson said that a small bag of sulphur worn round the neck next the skin acts as a practical "charm."

ON THE DISTRIBUTION OF THE COMMONER FORMS OF DERMATITIS

Although I think it is possible to exaggerate the importance of the distribution of eruptions, I find it useful to devote one lecture in each term to the discussion of the commoner forms of dermatitis which occur in the different regions of the body, and I believe some of the readers of this book will find the discussion useful too.

Scalp.—The commonest form of dermatitis of the scalp in adults is that due to seborrhœa (*q.v.*). In children the presence of a scaly eruption should suggest ringworm, and broken hairs should be sought for and examined. The complication of ringworm known as kerion should not be forgotten, nor the fact that favus sometimes turns up in unlikely quarters. Pediculosis is a very common cause of dermatitis of the scalp. Hair dyes and restorers are not uncommon causes, and considerable tact is necessary in eliciting information in suspected cases. Lupus erythematosus and tertiary syphilides are numbered among the rarer affections of the scalp.

Ear.—The skin behind the ear is a very common seat of inflammation, almost always seborrhœic in origin. The part is red, and covered here and there with crusts. Very often, owing to accidental movements, fissures develop at the angle between the scalp and the ear. The main obstacle to treatment in this situation is the difficulty of keeping the application in contact with the diseased surface. This is overcome by the use of salve muslin (zinc ichthyol, or any

other which may be suitable). If this is not available, an ointment or paste should be spread upon strips of cloth and carefully applied to the two inflamed surfaces. Lassar's paste is frequently useful.

The meatus auditorius is often the seat of dermatitis. Sometimes this is secondary to a catarrh of the middle ear, and is directly set up by the discharge; sometimes it may be found with a sound tympanic membrane. It is most important that in such cases the ear should be thoroughly examined, in order that the presence of polypi, foreign bodies, or other diseases may not be overlooked. The parts must be kept scrupulously clean, and the meatus washed out repeatedly with weak antiseptic solutions. If the inflammation is secondary to discharge from the middle ear, treatment must be directed towards that condition. If confined to the skin, the important point is to make sure that the remedy reaches the diseased area. It is difficult to introduce ointments sufficiently deeply, and one of the best means of treating such cases is by a weak solution of resorcin or salicylic acid (1 to 4 per cent.) in equal parts of spirit and water, dropped into the ear at intervals. Strong solutions of nitrate of silver (Arg. nit. grs. x, spt. æth. nitrosi ℥ij) may be painted on, and chloride of zinc (grs. x to ℥j) is often useful.

The lobe of the ear is very often the seat of lupus erythematosus, under which heading the differential diagnosis is dealt with.

Face.—As is natural on so exposed a part of the body we meet with a great variety of eruptions in this region, and careful inquiry for possible sources of irritation should be made. The resemblance of a sun dermatitis to erysipelas has already been discussed, as have the special features associated with dermatitis due to plants. Many cases are due to irritant soaps, powders, or complexion improvers. Acne appears on the forehead and cheeks; rosacea on the forehead, cheeks, and chin; lupus erythematosus on the nose and cheeks; rodent generally on the nose and at the outer canthus. On the eyebrows and lids a seborrhœic dermatitis is common, and it must not be forgotten that the pediculus pubis is sometimes found on the stiff hairs of these regions. On the upper lip a derma-

titis immediately below the nostrils is usually due to nasal catarrh, and will not disappear till that is cured; a dermatitis at the angles of the mouth is not infrequently due to the use of a dentifrice which happens to irritate that particular person's skin. This is most frequently due to carbolic acid or salol.

Inflammation of the red lips is dignified by the special name of cheilitis (χεῖλος, the lip), and is an exceedingly troublesome affection. A small proportion of cases are due to the cause just mentioned, others to pyorrhœa; but in too many the cause escapes detection, and we are driven to treat them symptomatically.

In some cases we find on both upper and lower lips, especially the lower, small translucent vesicles not unlike the "sago grain" of cheiropompholyx. When pricked these give exit to a considerable amount of clear fluid. Sometimes a number of superficial pustules are also present. This variety is associated with a good deal of thickening, and often eversion of the lip, most disfiguring to the appearance. Mild remedies are useless; a cure can only be obtained by steady persistence in the use of active measures. I have treated several cases successfully with bi-weekly applications of pure carbolic acid, precautions being taken to prevent it running on to unaffected parts. Should this prove inefficacious, I should not hesitate to iron the surface with the thermo-cautery at a dull heat, the patient being, if necessary, anæsthetised.

In the **beard region** we meet with many forms of dermatitis. Not uncommonly this is due to the irritation of a shaving soap which does not suit the particular skin. Other cases, especially in youths, are due to the use of blunt razors. Some are due to the misuse of depilatories by ladies who are afflicted with beards. Considerable tact is required in dealing with such cases. Barium sulphide, the commonest ingredient in these applications, is comparatively unirritating, but the sulphide of calcium, which does the work more efficiently, is very irritating, and provokes a marked follicular inflammation. The diseases most commonly found in this situation are impetigo contagiosa, sycosis, and ringworm. Impetigo is an acute disease. The lesions develop very rapidly, and the superficial position and amber colour of the crusts generally enable this disease to

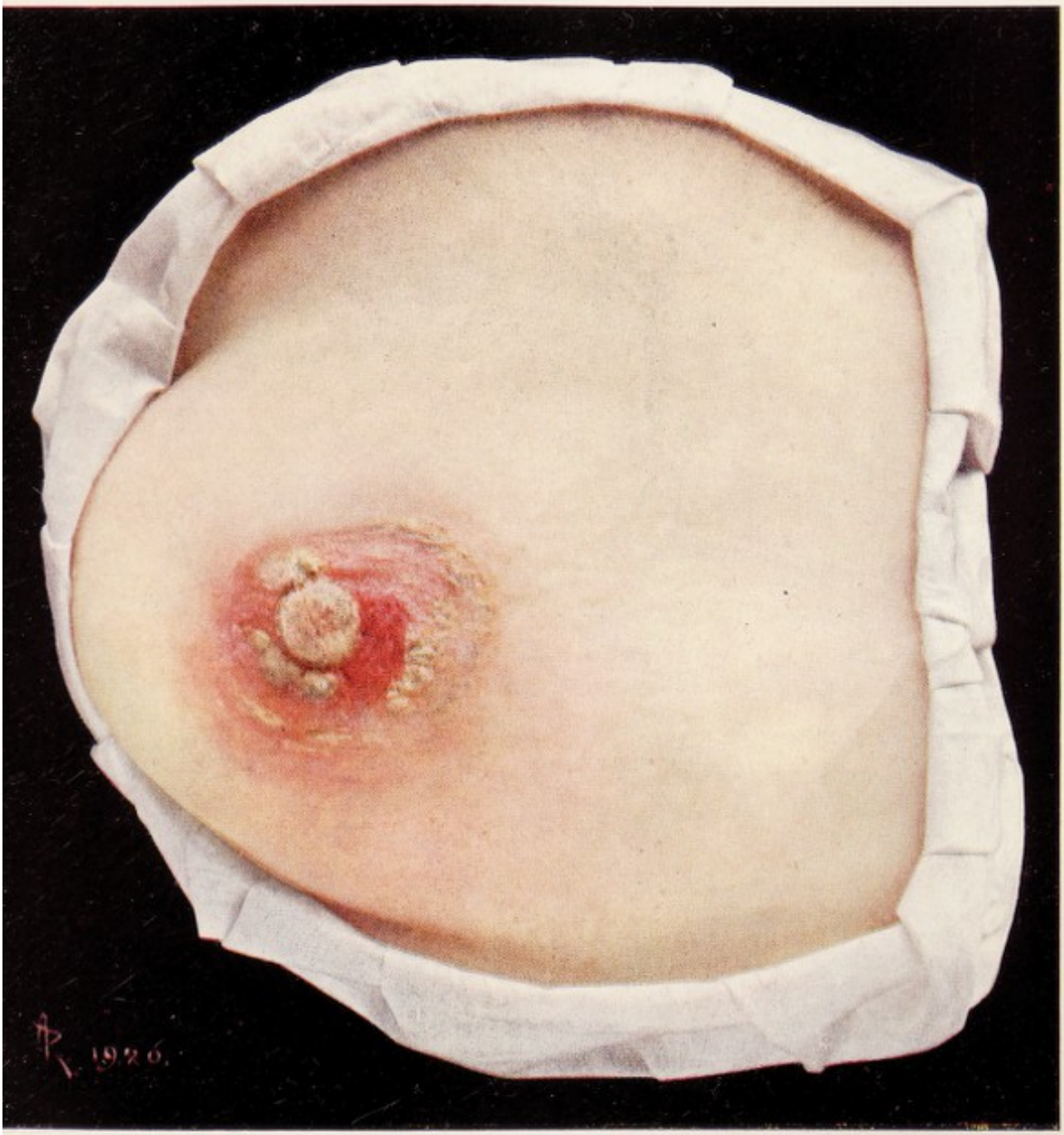
be easily recognised. Sycosis is especially located in the hair follicles, and is pre-eminently a pustular folliculitis, though the skin between the pustules is often inflamed. In ringworm of the beard the nodular character of the lesions is so pronounced that that disease is usually easily identified.

Neck.—The nape of the neck is often attacked simultaneously with the flexor surfaces of both arms by a papular form of dermatitis. The rapid development and the simultaneous appearance in such widely separated situations certainly suggest causes other than local, and disorders of other organs should be sought for. I have seen dermatitis of the neck due to the irritation of a fur boa.

In women about the menopause the nape of the neck is sometimes the seat of a chronic infiltrated circumscribed patch of dermatitis. Such cases are best treated by the application of Lassar's paste, with grs. x to xx of salicylic acid or nargol, weak tar ointments, or tar varnishes. Sometimes they prove very obstinate, and require blistering or other such heroic remedy. X-rays are sometimes useful.

Trunk.—Seborrhœa corporis, pityriasis rosea, psoriasis, and secondary syphilides are among the common eruptions which appear on the trunk. Dermatitis in this region may be due to the presence of some irritant in the garment worn next the skin. Drug rashes should not be forgotten.

The **nipple** is often the seat of dermatitis in chlorotic, and especially in nursing women. There is a good deal of infiltration, deep exudation, and fissuring. A salicylic paste is often useful, and in obstinate cases benefit often results from the application of a strong solution of nitrate of silver in spt. æth. nitrosi. Some cases do best on starch poultices. Unless the inflammation is very slight, nursing should be abandoned. Dermatitis of the nipple and areola is sometimes due to the almost imperceptible discharge from a chronic mastitis, and will not disappear till that is cured. In all cases of chronic dermatitis of the nipple the possibility of Paget's disease (*q.v.*) should be considered, and if a dermatitis occurs on one nipple of a woman over forty-five it is always advisable to have a second opinion as to its nature. The fact that scabies commonly occurs on the nipple should be kept in mind.



DERMATITIS OF NIPPLE.

Inflammation of the **umbilicus**, which is usually seborrhœic, is, on account of the infolding of the skin, apt to prove obstinate. Ointments should be well rubbed in, some should be applied on lint, and a pad of wool should be strapped over all to ensure thorough application of the drug. In obstinate cases nitrate of silver or caustic potash solution (1 to 10) may be painted on occasionally.

Axillæ.—A dermatitis may be set up by the decomposition of secretions, and presumably may arise from unknown causes, although most inflammations are due to seborrhœa (*q.v.*). Ringworm is far from uncommon in this situation, and when the margin is abrupt scales should be examined for fungus. Treatment must be suitable to the form which the eruption takes, but two circumstances must be kept in mind in treating diseases in this situation: first, that the excretion of sweat is very free, and thus applications are very soon washed away; and second, that the shape of the cavity makes it difficult to keep lint spread with ointment in contact with the diseased surface.

The free excretion renders it desirable to use stronger applications than one would otherwise employ, and points to the use of pastes and powders singly or in combination. The difficulty of application is overcome either by the use of salve muslins cut in small pieces, or by the following device—after applying strips of cloth spread with ointment to the part, a lady's dress preserver, with a pad of wool between the wings, is fixed in position with a turn of bandage.

Boils are very apt to form in this situation, and the first evidence of suppuration should be the signal for antiseptic bathing and the application of dilute hydrarg. ammoniat. or some other mild antiseptic ointment.

Genital Regions.—Reference has been made under the heading of Pediculosis pubis to the mercurial dermatitis so often associated with the too vigorous treatment of that condition, and the possible occurrence of the rare disease known as erythrasma (*q.v.*) must be kept in mind. Ringworm in the form of the so-called *eczema marginatum* has become quite a common disease, and the abrupt margin and the easily demonstrated fungus make the diagnosis easy. The scrotum and the skin of the thighs in contact with it are often the seat of a very painful

and distressing form of dermatitis. The type generally followed is the erythematous, but the anatomical peculiarities of the skin in this situation impart to it special characteristics. The skin is intensely red and swollen, and from the loose nature of the tissues beneath, the exudation extends deeper than usual, and the parts are often enormously swollen. The surface is usually moist, and the warmth of the part leads to decomposition of the excretions, which gives rise to a peculiar sickly odour. The contraction of the smooth muscles of the swollen skin causes a great deal of pain, and patients suffering from this form of eczema are usually low in health and still lower in spirits. The eruption on the adjacent skin of the thighs is usually papular.

Treatment.—Generally speaking, lotions are the best method of treatment. While soothing ones (zinc, calamine) are the safest, the lead and tar lotion is in suitable cases more rapidly successful; it should be applied very much diluted at first. As the discharge diminishes, grease may be added to the application. Carron oil (Ol. lini, aq. calcis, āā pts. æq.) may be applied on lint, and for the drier stages, salve muslin (zinc ichthyol) or Hebra's ointment (Empl. plumbi, vaselini, āā pts. æq.) spread on thin rags may be used. If the itching is intolerable, nitrate of silver (grs. xv) in spt. æth. nitrosi (℥j) may be painted on; this is very painful for the moment, but forms a pellicle over the part, and certainly diminishes irritation for a time. Tar often works wonders, but must be used with caution. Crocker recommended the application of a mustard leaf over the lumbar region. Bathing with very hot water, or the application of a hot sponge, is sometimes of value. Free purgation sometimes does good, but drugs have little if any influence on this form of the disease. Rest in bed is often necessary.

For the treatment of ringworm in this situation, see p. 217.

When dermatitis attacks the female genitals the possibility that it is due to glycosuria must be first considered, and vaginal and uterine catarrh must be sought for and treated if present. Otherwise, in its form, course, and symptoms, it closely resembles the disease on the scrotum, and the same treatment is generally applicable.

Anus.—When the skin in this region is inflamed the parts should be carefully examined for hæmorrhoids, fissures, and

parasites. When any of these are present their cure is usually followed by the disappearance of the eruption. Many of these cases are due to a catarrh of the anal canal, the constant irritation of the discharge producing and keeping up a catarrh of the skin. For this condition I know of nothing so useful as the introduction into the canal nightly, or every alternate night, of a suppository of 10 grains of zinc oxide and 3 grains of bismuth subnitrate.

Dermatitis in this situation is usually papular and infiltrated, the skin being sometimes almost leathery in texture. The heat and moisture of the part favour the growth of organisms, which find in the inflamed skin a *locus minoris resistentiæ*. There is usually intense itching, and patients have an anxious, careworn expression, often suggestive of some much more serious disease.

As already stated, some digestive disturbance is often connected with such cases, and these functions should be inquired into. I am convinced that black coffee has a specially irritating effect. The bowels should be regulated, but free purgation is to be avoided. Laxatives, not purgatives, should be prescribed. The parts must be kept scrupulously clean by the use of *plenty of soap and hot water*, special care being taken to wash away all the lather of the soap. After washing it is desirable to lubricate the part, so as to minimise the drying effects of the washing. A paste consisting of magnes. carb. lev. 3, vaseline 5, is often useful, and so is Lassar's paste, with 5 grains of salicylic acid to the ounce. The intense itching may be moderated by the application of weak tar or carbolic acid lotions. The strength of the tar may be gradually increased, and in some cases it may be painted on pure. If these comparatively mild methods fail, more active ones must be employed. Pure carbolic acid may be painted on, caustic potash solution may be applied (p. 104), or, with the patient under chloroform, the diseased surface may be ironed with the Pacquelin cautery at a dull red heat.

Applications of the high-frequency current by means of a vacuum electrode and exposure to X-rays are sometimes resorted to.

Legs.—Seborrhœic dermatitis, ringworm (the so-called

eczema marginatum), and lichen planus are found on the thighs, and a dermatitis may be caused by some irritant in the drawers. The flexures of the knees are often the seat of a papular, infiltrated, fissured dermatitis. This usually itches severely, and as hardly any part of the body is so favourably situated for scratching, it is usually very persistent. Fortunately it is surprisingly tolerant of treatment, and strong applications may be used. Salicylic acid (5 to 7 per cent.) or tar (10 per cent.) may be applied in ointments. Crude tar may be applied (p. 25). A good scrubbing with soft soap usually does good, and Hebra's caustic potash treatment may be used with advantage in obstinate cases.

A great many cases of acute dermatitis of the leg have their origin in some injury, often a quite trifling one. Sometimes owing to neglect, almost as often to excess of zeal in treatment with strong antiseptics, the inflammation spreads, until the whole leg from knee to ankle is affected, and not infrequently the other leg and other parts are involved. Rest and starch poultices are the best treatment for dermatitis of the leg following injury.

Chronic dermatitis below the knee owes most of its peculiarities to congestion of the skin. Once started, an inflammation here is delayed in healing by the stasis of the blood, which is, of course, most marked where there is varicosity of the veins. Such eruptions are usually intensely red and moist (eczema rubrum). Slight injuries, which in the healthy would be unnoticed, may be the starting-point of a varicose ulcer, with all its complications. In less severe cases the congestion only interferes with the final stage of cure, and a scaly form of the disease may persist indefinitely.

Rest is of primary importance. While retirement to bed with the feet elevated is the ideal, it is fortunately not the only method of giving rest to the skin, for to working people the advice to go to bed for some weeks is a mere "counsel of perfection." Unna's zinc gelatine is an excellent substitute. It should be made stiff by using equal parts of zinc oxide, gelatine, glycerin, and water. This contracts as it sets, and by its supporting pressure forms a wonderful rest for the skin. Hebra's ointment spread on strips of cloth, and applied after

the fashion of the many-tailed bandage, is more useful in the moist stages, while in the drier ones Pick's salicylic soap plaster is excellent. From 2 to 5 per cent. of salicylic acid is melted with the soap plaster, which is spread on butter cloth and hung up to dry. Strips of this, overlapping each other, are then applied to the limb. The first dressing should be renewed in twenty-four hours, but subsequently the intervals may be lengthened up to as much as a week. This method is both efficient and cheap. In the slighter scaly forms the application of strips of lint soaked in equal parts of cod-liver oil and oil of cade is often useful, the tar relieving the itching. Rest and support are the essentials; the simple application of ointment is almost useless.

Arms.—In all eczemas of the arm an inquiry into the patient's occupation should be the first step. Then scabies should be considered, and lastly, the fact that lichen planus specially affects this situation.

Hands and Feet.—Scabies and occupation are responsible for most forms of dermatitis of the hands. Cheiropompholyx should not be forgotten. A fungus infection (epidermophytosis) causes a dermatitis which is much more common than is generally supposed (see under Ringworm). The skin over the first metacarpal is often the seat of a patch of seborrhœic dermatitis.

Dermatitis which attacks the palms and soles owes its characters to the anatomical structure of the skin of these situations. The horny layer is especially developed and resistant, consequently the exudation does not readily make its way to the surface, but diffuses itself through the thick layers, which are afterwards separated in large thick flakes. The skin beneath is sodden, and deep fissures extending down into the true skin are of common occurrence.

A late scaly syphilide sometimes attacks the palm. Scarring is not so obvious as in most of the tertiary lesions, and the diagnosis is often difficult. As a general rule the later specific lesions are unilateral, and clear up in the centre as they advance.

Our object in treatment is to remove the horny armour which covers the surface and prevents remedies from reaching

the disease. This is best done by the application of Pick's salicylic plaster (5 per cent.). Strips of this should be closely applied, and changed daily. The parts may be bathed in alkaline solutions, and in very obstinate cases soft soap may be applied as a dressing. When the thickened skin has been removed, salicylic ointments (3 to 5 per cent.) will generally complete the cure; strong solutions of tar (see p. 25) are often more useful. These may be painted on every night, provided no irritation follows, and in my experience cases recover more rapidly under this than any other method. If, however, after the removal of the scales, vesicles tend to appear on a tender reddened skin, less active methods must be employed. Lassar's paste, with 2 per cent. of salicylic acid or resorcin, should be rubbed in two or three times daily. The salve stick (p. 30) is very suitable for such cases, as it can be carried in the pocket and used at odd moments.

SEBORRHŒA (AND SEBORRHŒIC DERMATITIS)

(*Sebum* or *sevum—suet, and ῥέω—I flow*)

There is still a good deal of difference of opinion on this subject, and it hardly seems advisable to confuse the student with long arguments for and against conflicting theories. It is a mere dialectic device to point triumphantly to the derivation of the word and claim this in support of any theory, for those who were responsible for the coining of the term were under the impression that the scales of seborrhœa were the dried secretion of the sebaceous glands, which they are not. Seborrhœa should, I believe, be looked on as a specific form of inflammation of the skin, usually commencing on the scalp and spreading from there to any other part of the surface.

Although its most familiar form is ordinary scaly dandruff, there are cases in which the amount of oily secretion is present in such excess as to anchor the scales to the scalp, so that on superficial examination there appears merely a diffuse yellow discoloration, the true nature of which is only disclosed by scratching. The scalp is not reddened; any disturbance is

limited to slight itching. In the majority of cases the disease does not extend further; usually there is gradual thinning of the hair, but as a rule none of the ordinary signs of inflammation are present. Exceptionally, however, on the scalp, and invariably when the disease spreads to other parts of the body, the more familiar signs of inflammation appear.

It seems difficult for some to absorb the fact that processes so apparently different are in reality one and the same. Yet if we take a familiar disease in which the cause is definitely known, the same phenomena are noticed. In ringworm the affection of the scalp is a *dry scaly* one, with hardly any of the cardinal features of inflammation. If the disease is inoculated on some other part of the body, then there appear the redness, swelling, and exudation, which convince every one of its inflammatory nature. Other less common diseases illustrate this tolerance of the scalp to irritation, as also does the fact that the scalp will stand more concentrated remedies than any other part of the skin. Occasionally the more familiar signs of inflammation develop, just as they do in ringworm when they lead to the production of kerion. The skin becomes red and swollen, and fluid in varying amounts exudes from its surface. This cakes the scales together, and they form a covering which to some extent arrests the discharge, which decomposing adds to the irritation. This condition is known as seborrhœic dermatitis of the scalp, the *eczema capitis* of the older authors.

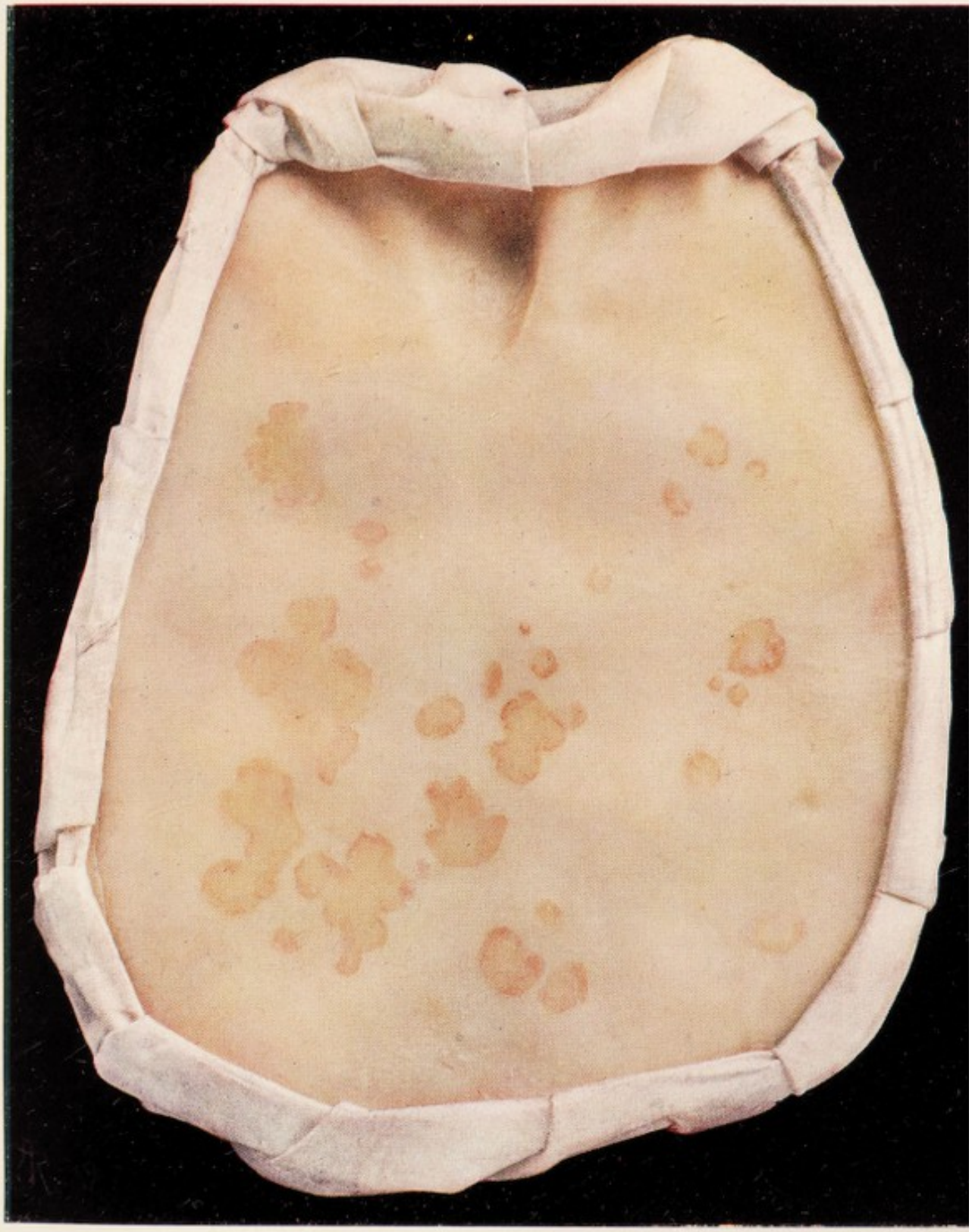
In cases of this severity, however, and in many others which do not reach such a degree, the eruption is not limited to the scalp. When the scalp is inflamed the eruption tends to spread *on the forehead* and *behind the ears*. Even in the absence of evident inflammation of the scalp these regions are not infrequently affected, and then the change in the type of the disease is at once seen. Instead of a simple dry catarrh, without any evident hyperæmia, the skin appears red and swollen, and is covered with vesicles and exudation. Perhaps more frequently in cases where the head is not inflamed, the extension is to the face (see Rosacea), the sternal region, and the interscapular region. On the chest it was long dignified with a special name, *lichen circinatus* or *marginatus*; and Duhring, of Philadelphia, was the first to point out its sebor-

rhœic nature, and to describe it as *seborrhœa corporis*. Here the signs of inflammation are evident enough. Commencing in small red spots, the disease rapidly spreads in rings or circles which have a very characteristic appearance. The border may be occupied with papules and vesicles, the centre is of a reddish yellow colour, and the surface is greasy. A few moist scales may be present. This form is well illustrated in the Plate opposite. In the interscapular region, where it is rather less frequent, it presents similar characters. Other favourite situations for the typical seborrhœic dermatitis are the flexures of the knees and elbows and the axillæ and groins, where the yellow, greasy character and the tendency to rapid gyrate spread are specially prominent.

The disease is by no means limited to these situations. It may extend to any part of the body, and to a great many parts at one and the same time. The characters vary; sometimes the spots resemble those on the sternal region, papules and vesicles being present: sometimes the eruptions are crusted, and most frequently *scaling* is the most prominent characteristic. Usually the spots have the same yellow colour as the centre of the patches over the sternum, but as the moisture in them decreases and the scale consequently dries, the less evident is the yellow colour, and the lesions become more and more like those of psoriasis. This is specially the case upon the extensor aspects of the limbs, where the skin is thicker and more resistant to irritation. Occasionally the spots are so numerous and spread so rapidly as to cover almost the whole surface of the body, and when this is the case the disease alters its character. The infiltration of the skin disappears, the disease takes on the character of general exfoliative dermatitis (*q.v.*), and is then described as *pityriasis rubra seborrhoica*.

The disease affects all ages and both sexes. In infancy, seborrhœa is appallingly common, and there is little doubt that if it were then more thoroughly treated there would be fewer cases in after life. Males are said to be more frequently affected than females.

Histology.—Microscopic examination shows much the same changes as those described under dermatitis (p. 96). Parakeratosis or irregular cornification is a prominent feature.



SEBORRHŒA CORPORIS.

Nature and Cause.—In all likelihood seborrhœa owes its origin to organisms. Organisms of so many kinds abound in the scalp that it is not easy definitely to identify the real offender, and the several candidates each have their supporters, while many observers vote against them all. The three most suspect are the white skin coccus, the yeast-like organisms known as Malassez's spores, and the bacillus of seborrhœa, which appears to be identical with the acne bacillus. Possibly they form a triple alliance, and the variations in the clinical forms of the disease may depend on which has the largest forces in the field. The matter requires, of course, much further investigation, but although we do not definitely know the cause, we know, I think, enough of the nature and course of seborrhœa to justify us in regarding it as a definite disease.

Diagnosis.—In this connection the different parts of the body must be considered separately. I find it impossible to distinguish between seborrhœa and psoriasis of the scalp. Occasionally psoriasis is found in patches on the scalp, but as a rule the eruption is diffuse, and I cannot help thinking that many of those who claim to distinguish clinically between the two conditions are unconsciously influenced by the results of their inspection of other areas.

The disease which is most likely to be confused with seborrhœa of the scalp is ringworm, and in children it should only be after a very careful search that seborrhœa is registered as the diagnosis. The effects produced by the irritant, the fungus in one case, the still undetermined organism in the other, are practically the same, namely, a mild degree of inflammation which results in scaling, and it is often only the discovery of broken hairs and the identification of the fungus which enable one definitely to separate the two.

On the face, seborrhœa sometimes simulates lupus erythematosus. The scales of seborrhœa are yellow and greasy, those of lupus erythematosus are greyish and dry. When the scale of seborrhœa is removed the mouths of the glands are often seen gaping as in lupus erythematosus, but in that disease the under surface of the scale is beset with little projections drawn from depressions in the skin. The commonest seat of seborrhœa, after the forehead, is just at the fold of the alæ nasi.

Lupus erythematosus is most common on the bridge of the nose and on the cheeks.

On the body, most stress should be laid on the greasy yellow character of the early spots. These are often described as of a salmon colour, but it is the yellow tint in the colour which is most characteristic.

Among those diseases with which seborrhœa is commonly confused are:—

(1) *Pityriasis Rosea.*—The distribution is usually different, and the spots themselves show distinctive characters. They often have a rosy-red border not elevated above the surrounding level, are usually more sharply outlined, and the yellow centre has a dry and wrinkled instead of a greasy appearance. The history, too, is quite different (see p. 183).

(2) *Syphilis.*—The important point to determine here usually is, whether both diseases are present. The syphilitic eruption which resembles seborrhœa is not the early roseola, but a later rash, which is really a combination of syphilis and seborrhœa, sometimes unfortunately termed syphilitic psoriasis.

In a very large proportion of cases the *feeling* of the spot is conclusive. If the finger be passed pretty firmly over one of the spots, the syphilitic one gives to the observer the sensation of something present *beneath* the skin, as well as *on* and *in* it. In seborrhœa the increase is in the epithelial cells, which are heaped up on the surface. When syphilis is present we have in addition a new growth in the true skin, a multiplication of the connective tissue cells. Other signs of syphilis must, of course, be sought for.

(3) *Ringworm.*—Especially in the genito-crural and axillary regions is ringworm imitated by seborrhœa. Both have a gyrate margin, both spread rapidly, and in these situations the centres of both have a yellowish tinge. Ringworm tends to have more vesicles and pustules on its borders; but the diagnosis is sometimes difficult, and a careful examination of the scales for fungus, and of the other parts of the body for further evidences of one or other disease, should invariably be made.

Prognosis.—Seborrhœa on the scalp is so difficult to cure radically, that the prognosis should be guarded. While the

lesions on the body may be cured easily, there is always the likelihood, so long as the disease remains on the scalp, that any slight disturbance of general health, any local irritation of the skin, will be followed by a fresh outbreak.

Treatment.—No treatment will be successful unless it is thoroughly recognised that the *scalp* is *the* important factor in connection with the general disease. Adequate treatment of the scalp is the Alpha and Omega of the treatment of seborrhœa and seborrhœic dermatitis. The most satisfactory way of removing the disease products from the scalp is thorough washing with soap, preferably, unless there is some reason to the contrary, Hebra's soap spirit (℞ Saponis mollis 2, spt. vini 1). The head should be thoroughly shampooed with this at intervals, varying with the extent and stage of the disease. Thus if there is very little irritation the scalp may be washed daily; if there is obvious inflammation the intervals should be longer. It is most important that all soap be thoroughly washed away with repeated fresh waters. Washing alone suffices to cure slight cases, but as a rule some further treatment is required. If the washing seems to aggravate the irritation some other soap should be substituted for the soap spirit.

The drugs which have most influence on seborrhœa are *sulphur* and *salicylic acid*. They may be applied to the scalp in a more concentrated form than to other portions of the body. Little, however, is gained by commencing with too strong an application: 3 per cent. of each in lard[1] should be tried, but the proportion may be considerably increased if necessary. During the prolonged treatment which is usually required the patient is apt to tire of greasy applications, and under any circumstances they are disliked by ladies. A salicylic lotion (℞ Ac. salicyl. 5 to 10, ol. ricini 3 to 6, spt. rosmarini 50,

[1] Veiel, in one of those many valuable practical contributions he has made to dermatological therapeutics, draws attention to the fact that vaseline is a non-saponifiable grease, and is therefore difficult to wash out of the scalp. It is true that pomades made with lard or some other base are more easily removed, and one orders them with a sort of mental regret for the other good qualities of vaseline. Equal parts of oil of theobroma and oil of almonds make an easily applied pomade, and so does the Ungt. Aquæ Ros. of the B.P.

spt. vini 150) is a more pleasant but not so efficient substitute. The amount of castor oil should be increased if the hair is dry, and *vice versâ*. Spirits of wine is now so expensive as almost to restrict its use to the new rich. If 5 per cent. of borax is added to water, 4 per cent. of salicylic acid, which is almost insoluble in plain water, is readily dissolved. Some chemical change takes place and the salicylic acid no longer remains as such, but its effects are nevertheless produced. Men can apply these lotions by shaking a bottle with a perforated cork over the scalp, and then using a pair of brushes; ladies should use a spray with a long nozzle, so as to ensure the application reaching the scalp. It must be borne in mind that salicylic acid, while acting beneficially upon the scalp, is by no means so well borne by the less resistant skin of the hand. Gloves should be worn when applying the ointment, and the hands must be washed immediately afterwards. Other drugs which may be used are tannic or benzoic acids, resorcin and pyrogallol, all in the strength of from 5 to 10 per cent. The last is sometimes exceedingly efficacious, and on the scalp it does not become so black as it does on other parts of the body. According to Unna, this is due to the more acid reaction of the excretions, which prevents the reduction process. If the disease has gone further, and the scales have become moist crusts, while the skin beneath is reddened, treatment must at first be less severe. The scales may be removed by soaking the scalp with oil or, after cutting the hair, by starch poultices. Thereafter the skin must be dressed continuously with some preparation containing sulphur and salicylic acid spread on lint. Like Leistikow, I have not found any great objection to the use of pastes on the hairy parts, and a prescription of salicylic acid and sulphur āā 1, oxide of zinc 20 to 50, vaseline to 100, is often successful. As the moisture diminishes the amount of zinc in the prescription may be diminished also, and the proportions of the other drugs, if necessary, increased.

When the disease has spread to the body the treatment must be regulated according as the skin reacts with the formation of vesicles, scales, or papules. When it spreads directly from the head to the neck and behind the ears the eruption is usually moist, and for such a condition Lassar's

paste with 1 per cent. each of sulphur and salicylic acid to the ounce is a very valuable application. Morris's prescription of 10 grains of sulphur to an ounce of zinc ointment is also often useful, as are the older remedies of plain zinc ointment and Hebra's diachylon ointment. The essential to success in the treatment of such cases is to keep the part constantly covered. Seborrhœa corporis, the old lichen marginatus, may be treated with ointments as strong as 5 to 10 per cent. of sulphur and salicylic acid. If a widespread eruption takes as it sometimes does a papulo-vesicular form, lotions (p. 23) are the best form of treatment.

As the eruption takes a more and more scaly form, for some reason unknown sulphur appears to become less suitable, and in the driest forms, where much more active remedies, such as chrysarobin, etc., do well, it seems even to irritate and aggravate the disease. The same is fortunately not true of salicylic acid, which may be used in the strength of 3 to 8 per cent., according as the eruption is widespread or limited, for strong salicylic ointments applied to large surfaces of the body are liable to be absorbed and to give rise to salicylic poisoning. The treatment of the very dry forms, which I regard as indistinguishable from psoriasis, will be found under that disease.

ROSACEA

The word acne in association with this disease is daily and deservedly losing its place. It was applied because there are very frequently found in rosacea pustules which do have a certain superficial resemblance to those of acne vulgaris. The older books devoted much space to the distinctions between the two varieties of pustules, but they are easily compressed into the statement that in acne the comedo is the starting-point of the disease, *and is the centre of every pustule*, while in rosacea the pustules are *secondary* to the disease, and have *no necessary* relation to the sebaceous glands. Without going the length of denying a neurotic element in certain cases of rosacea, it is my conviction that the vast majority of cases are due to seborrhœa, and that rosacea is really a form of seborrhœic

dermatitis. That the nervous system plays a rôle is likely enough; that stomach disturbances, alcohol, overeating, etc., aggravate the condition is also true; but the real exciting cause of nearly every case of rosacea is seborrhœa of the scalp. The disease is due to the constant irritation of the skin produced by the deposition on it of the scales and organisms (?) of seborrhœa.

Rosacea is said to be commoner in the female than in the male, and here, possibly, the neurotic factor is important in providing for the organisms a favourable soil. The disease consists in an inflammation of the skin—a dermatitis which culminates at certain points in the development of small pustules, although these are not invariably present, in some cases the dermatitis not going beyond the papular stage. It affects especially the forehead, nose, cheeks, and chin—as shown in the Plate opposite. The hyperæmia keeps the skin in a constant state of hypernutrition, leading to the development of increased fibrous tissue, evident in the milder cases as simple thickening, and in the more severe ones as those hypertrophic, pendulous masses which go by the name of rhinophyma or potato nose.

The disease is often uncharitably attributed to irregular habits in regard to alcohol; and undoubtedly alcohol, along with a good many other articles of diet, by its tendency to distend the cutaneous blood-vessels, does contribute to its development. But all must be familiar with at least slight cases of the disease in teetotal friends, and alcohol is only one of many factors. All the dyspepsias which lead to flushing increase any latent tendency to the disease, and they have therefore a very intimate relationship with its etiology, treatment, and prognosis. But underlying all is seborrhœa; and the recognition of this and its appropriate treatment results in a greatly improved recovery rate.

Local Treatment.—The seborrhœa of the scalp, which will be found more or less developed in all cases, in many in the anchored form described on p. 160, must be treated by frequent washings with soap spirit, and the application of a strong sulphur and salicylic acid ointment, or of salicylic vasogen or a pomade of tannic acid. Sulphur, in lotion, paste, or ointment, should be applied to the face. The choice of one



ROSACEA

or other of these depends on the amount of reaction and the greasiness of the skin. If there is much inflammation a lotion is to be preferred :—

℞ Sulph. Præcip. } - - - - - - āā (℥ijss) 10
Calaminæ }
Glycerini - - - - - - - - (℥j 5
Aquam ad - - - - - - - - (℥iv) 150

Sig.—Shake and paint on with a brush.

or—

℞ Potass. Sulphurat. } - - - - - - āā (℥ss-℥j) 2-5
Zinc Sulphat. }
Glycerini - - - - - - - - (℥j) 5
Aquam ad - - - - - - - - (℥iv) 150

Sig.—Shake and paint on twice daily.

Sulphur has, in addition to its antiseptic effect, a certain action in constricting the vessels, an action which its relative ichthyol is said to possess in even a greater degree.

If the amount of irritation is not very great the method of shelling the skin with resorcin, described under Acne (p. 202), may occasionally be tried with good effect, but the soap and steaming treatment used for acne is altogether unsuitable in rosacea.

The dilated vessels are sometimes so numerous and so large as to be beyond the reach of drugs, and require mechanical treatment. Electrolysis is a handy method, the needle attached to the negative pole being introduced into the capillaries, and a weak current being allowed to pass until the blood in the vessel is coagulated. Unna uses in preference the fine point of his *microbrenner* (thermo-cautery). It is used at a dull heat, and the blood in the vessels is coagulated as with the electric needle. Some slit up the vessels with a fine knife, while others occlude them by multiple scarification, and in skilled hands CO_2 snow might be useful. If the mouths of the glands are wide and gaping they may be stimulated by a touch of the needle of the *microbrenner*. In cases where there is great irritation a borocalamine lotion may be used for a few days, *e.g.* :—

Calaminæ } - - - - - - - - āā (℥ss) 15
Zinci Oxidi }
Ac. Borici - - - - - - - - (℥j) 4
Glycerini - - - - - - - - (℥ij) 8
Aquam ad - - - - - - - - (℥vj) 200

General Treatment.—The lines of general treatment in this disease are easily indicated. The patient must keep the system in the best of health, particular attention being paid to regularity of the bowels. In regard to diet, he must avoid *everything which experience has shown causes any flushing of the face*, especially all forms of alcohol, tea, coffee, spiced meats, and condiments. Probably curry is really much more harmful in rosacea than alcohol. I agree with Leredde that vegetarianism is well worth a trial in obstinate cases. Violent exercise, unless the patient is in good condition, is undesirable, and undue exposure to the sun will, by producing hyperæmia of the skin, aggravate the disease. If any patient were so foolish as to insist that he would only follow one or other line of treatment, internal *versus* external, there is no doubt that the external treatment is the one which would be followed by most improvement.

Rhinophyma.—While the milder forms of this may be treated as above described, extreme cases are only amenable to surgical treatment. This is very simple, and consists in paring the nose down to any desired shape. General anæsthesia is, of course, required. The hæmorrhage is usually considerable, and the extensive raw surface left is a little alarming to one who is seeing the operation for the first time. But it heals with surprising rapidity, and one may generally promise the patient that a fortnight will see him able to face the world once more.

ALOPECIA SEBORRHOICA

Premature baldness, that gradual thinning of the hair which is so very much more common in young males than in the opposite sex, is generally the result of seborrhœa. It is interesting to note that those who suffer from seborrhœa and yet preserve their hair always have an abundance of oily secretion on the scalp, and their hair early turns grey. The greater frequency of baldness in the male sex is probably to be explained by the more frequent visits to their barber, rather than by the wearing of hard hats, etc., for baldness is no less common now than it was when these hats were more generally worn.

It would be less so were it not for the prevalence of the tradition that washing of the scalp is injurious.

Prognosis.—If left alone the condition steadily advances until all but a fringe at the sides and back of the scalp is lost. But steady, persevering treatment can arrest it at almost any stage, and generally brings about some improvement.

Treatment.—This is practically that already described under seborrhœa. In slight cases daily washing with soap spirit is enough for cure. It is incredible how long some people (cleanly people) are willing to go without washing their scalps. The applications vary with the cases. The salicylic lotion recommended on p. 165 is very often suitable; salicylic acid 5 per cent. in benzoated lard is perhaps more useful, though less agreeable, and to either a small amount of cantharides may be added if desired. Cantharides has the power of promoting epithelial mitosis, and there are, therefore, grounds for the popular belief in its efficacy. It is, however, valueless if used alone; the seborrhœa which is at the root of the disease must be the main object of our attack. Sulphur, resorcin, tannic acid, mercurials, pyrogallol, etc., in lotions and pomades (2 to 7 per cent.) may each be found suitable in individual cases, but perseverance is the essential ingredient in all prescriptions, and whatever treatment is selected must be pursued for many months. It should be noted that the long-continued use of resorcin sometimes results in the hair taking on a not unbecoming auburn tint.

PSORIASIS

(*ψώρα—the itch, or ψωρός—rough or scaly*)

Although I regard psoriasis as merely the extremely dry form of seborrhœa, I defer to custom and give it a section to itself, though this involves some repetition. The disease requires little description; every one is familiar with the dry silvery scales on the red circular patches and rings of psoriasis, and the accompanying Plate shows it in one of its commonest forms. While the silvery scales are usually prominent, there occur cases where they are not actually visible. In such cases

they can be at once brought into view by lightly scratching the part with the back of the finger-nail. This, as a test for psoriasis, is of much more value than the one of scratching off the scales with the nail and disclosing small bleeding points, for that phenomenon mainly depends on the vigour with which the part is scratched.

The disease affects both sexes and all ages, although it is most common in young adults, and is rare under seven years of age. There is very little itching except in acute, rapidly spreading cases. It is generally described as being distributed

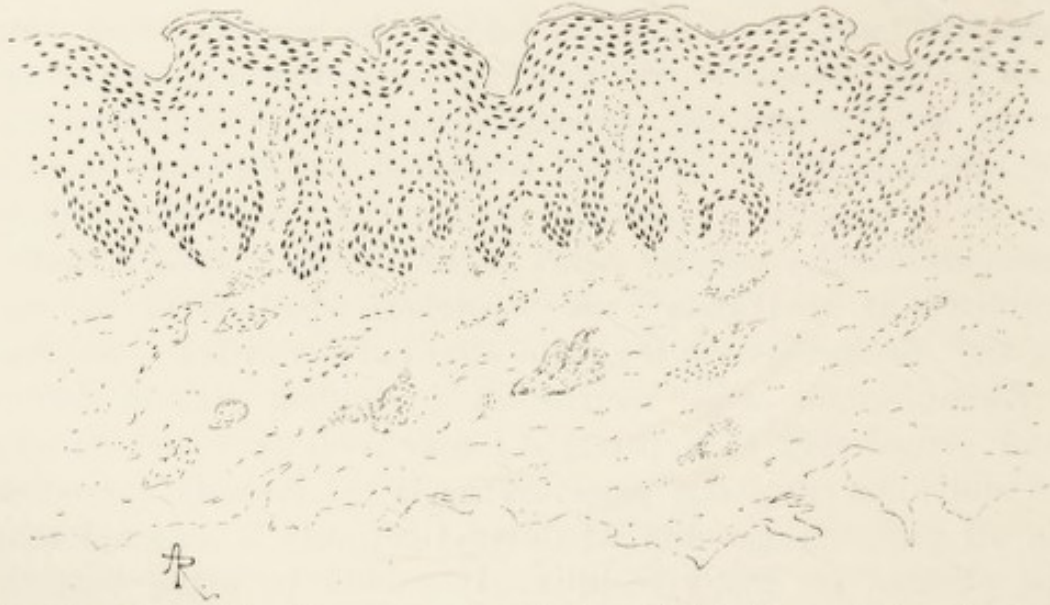


FIG. 35.—Psoriasis. Shows parakeratosis and thinning and lengthening of the papillæ. (× 75.)

on the extensor surfaces, and as being most marked upon the elbows and knees, where it is usually said to commence. It will be found, however, on careful inquiry that a great many cases commence on the scalp, which is almost always affected—another argument in favour of its relationship to seborrhœa.

When a section is examined the appearances presented are identical with those of the drier forms of that disease. There is proliferation of the epithelial cells, and the epithelial ridges are consequently thicker than normal; they compress the papillæ, which consequently become longer and thinner, and reach more nearly to the surface than they normally do. This is the explanation of the bleeding points; when the scales are removed



PSORIASIS.

by the finger-nail the papillæ are reached sooner than they are in healthy skin. The epithelial cells show very marked parakeratosis, the nuclei being preserved right up to the surface.

Diagnosis.—The difference between psoriasis and seborrhœic dermatitis is merely one of degree. In the moister forms the spots have a yellower colour, and the scales are not of the silvery colour and the dry powdery nature found in typical psoriasis. Distinctions are often drawn between psoriasis and the so-called syphilitic psoriasis, and rules for distinguishing between the two are formulated. There should be no difficulty. There are two syphilitic eruptions which do somewhat resemble psoriasis. The rash in the secondary period is occasionally somewhat scaly; but there are certain points of distinction which should make the diagnosis easy enough. Firstly, the distribution. The syphilitic rash is more common on the trunk, while typical psoriasis is generally found more extensively on the limbs. The spots in syphilis are, as a rule, smaller and more uniform in size than those of psoriasis. The colour in typical psoriasis is usually pink, while in syphilis it is a mixture of deep red and yellow. The lesions of psoriasis are uniform in character, those of syphilis vary. Chiefly and most important of all, when the spots are felt there is in the syphilitic one *a suggestion of new growth*. One is conscious of the presence of something *under* the skin as well as *in* it and *on* it. This is the most useful of all the local distinctions. In addition, one has in syphilis other evidences of the disease, such as the affections of the throat and glands. It must not be forgotten that a patient may have both diseases at the same time.

The other form of syphilis which may be confused with psoriasis is the *late scaly syphilide*. Sometimes very late in the tertiary period—it may be thirty or forty years after inoculation—the patient is attacked with a pretty widespread eruption, which does have a certain resemblance to psoriasis. The patches are scaly and spread in circles, or perhaps more often in ovals. There is, however, the very great difference that a scar is left, which is never the case in psoriasis.

A disease very frequently confused with psoriasis is *lichen planus*. For a full description the section on Lichen must be

referred to, but it may here be noted that the initial papule of lichen is not scaly; indeed, it is only in chronic cases where patches have formed that any marked scaling develops. Even then it is of a greyish-blue colour, quite different from the silvery scales of psoriasis. A treated psoriasis is much more easily mistaken for a lichen than an untreated lichen for any form of psoriasis.

Prognosis.—The prognosis of psoriasis as regards individual attacks is good, but the disease is exceedingly likely to recur. Indeed, if its presence on the scalp is ignored, as it too often is, it is absolutely certain to return; the importance of the treatment of seborrhœa and its bearing on the recurrence is one of the strongest arguments in favour of the identity of the diseases. And it is my conviction that one of the reasons for the unfavourable prognosis is that an unfavourable prognosis is so often given. It is trying human nature too high to expect a patient to persevere diligently with treatment when the prescriber is too obviously sceptical of lasting good results. It is the duty of the attending physician to impress on his patient the importance of treating each attack to a finish and not being content with mere improvement. He should expound to the parents, when his patient is a child, the seriousness of the condition, and so ensure so thorough a treatment of the first attack that it may be the last. Psoriasis may develop into pityriasis rubra, and then the prognosis becomes that of the latter disease. Sometimes it disappears spontaneously, and almost all cases, treated or untreated, have their ups and downs, a fact which should be kept in mind in estimating the value of any new treatment.

Heredity.—Whether or not the appearance of psoriasis on the skin indicates that there has been inherited from some ancestor, more or less remote, a something which makes the skin more liable to the attacks of this particular disease, it is not my intention to discuss. The practical point is that one constantly meets patients suffering from the disease who firmly believe that they have inherited it, and it is beyond question that one not infrequently comes across it in two or more members of the same family. This occurrence makes much more impression upon the observer than the many cases in

which no such event was noted. As a matter of fact, not one in ten of my cases of psoriasis have had any traceable family connection. I was interested to find during a visit to Schinznach that Dr. Amsler, whose acquaintance with psoriasis in the better classes is very extensive, had the same experience. In the general interests, therefore, I think it wiser rather to minimise than to magnify the importance of the occasional occurrence. People fold their hands and sit down to the destiny of heredity in a way which does not contribute to the efficient treatment of the disease. I am not concerned to deny that there may be some mysterious weakening of resistance in the skin which may be transmitted, but we know so little of it that I do not think it ought to be given much heed to, and when the question of marriage arises it may be ignored.

Internal Treatment.—A great many drugs have been tried in psoriasis, but not many have proved their value.

Arsenic.—In suitable cases there is no doubt that arsenic has a beneficial effect. It is its indiscriminate use which has led to its falling partly into disrepute. If the case is recent, if the spots are red and are increasing in number, arsenic is not unlikely to aggravate the attack, though as Whitfield has rightly pointed out, the results are sometimes excellent. If arsenic is given in an acute case a close watch on its effects must be kept. If, on the other hand, the disease has lasted for some time, if the spots have ceased to spread, if they are of a pale pink colour, and if none of them show any tendency to moisture, then arsenic, judiciously administered, will hasten their disappearance. The actual form of administration is not of very much importance. In this country Fowler's solution is usually prescribed; Kaposi administered it in the form of the so-called Asiatic pills, the formula for which is:—

℞ Acidi Arseniosi - - - - - 0·5
Piper. Nigr. - - - - - - 5·0
Gummi Arabici - - - - - 1·0
Aquæ q.s. ut fiant Pil. 100.

Small doses should be given at first, and these should be increased until either the disease shows signs of remitting, or unpleasant symptoms are developed. In that case the drug should either be stopped or greatly diminished in dose. If it

is continued in spite of the warning symptoms, the psoriasis will often apparently benefit, just as leprosy does under arsenic; but when the patient again regains his strength, so does the psoriasis. When the disease is improving it is enough to continue with the dose which has wrought that improvement. Arsenic too long continued occasionally produces a greyish pigmentation of the diseased areas. The use of the organic compounds of arsenic is referred to on p. 13. *Salvarsan* is reported to have been used with success in some cases. I have not myself used it.

Salicylate of Soda was largely used by Crocker, and is of undoubted value in some cases. Fortunately it is especially useful in those cases where arsenic is injurious. If the disease is spreading, if the spots are red, and if there is any tendency to moisture, it is to be preferred to arsenic. Salicin may also be used with good result in similar cases. Both should be given in full doses.

Iodide of Potash was first used in the treatment of psoriasis in Denmark. It is applicable in all varieties of the disease, but if it is to be used it must be given a fair chance. The doses requisite are enormously larger than we are in the habit of giving in this country, reaching to as much as a drachm or a drachm and a half three times a day. It is well to bear in mind that iodide of potash is a somewhat expensive drug, and while admitting that it may do good, I do not feel that it is a method greatly to be recommended.

One now and again finds that a case which has proved obstinate to other treatment will yield to the *green iodide of mercury* in doses of a quarter of a grain thrice daily. I cannot, I regret to say, give any indications for its use, but I know that other dermatologists whose experience is much greater than mine have made the same observation.

Thyroid Substance.—I admit freely that under the administration of thyroid substance psoriasis does disappear, but I believe that the disadvantages and risks attendant on its use are by no means compensated for in a result which can be attained by many other less dangerous remedies. If it is to be given, the patient must be under constant medical supervision, and if it is to have a thorough trial, must remain in

bed. I have seen enough of the dangers of thyroid to give an emphatic opinion that it should not be used as a routine treatment in psoriasis. Small doses of thyroid substance along with small doses of arsenic are, as noted by Ewald, often of much more value than either alone, and I generally prefer this combination.

External Treatment.—The treatment of the disease on the scalp is of primary importance. The head should be thoroughly scrubbed daily with soap spirit, and an ointment of salicylic acid, sulphur, tar, or resorcin (5 per cent.), pyrogallol (10 per cent.), or hydrarg. ammoniat. (5-10 per cent.), well rubbed in. For the rest of the surface, among many, three remedies stand out prominently as the most efficacious. These three are chrysarobin, tar, and salicylic acid.

Chrysarobin is undoubtedly the most rapidly efficacious remedy in psoriasis. It is most efficient, however, when it is so used that the patient has to give himself altogether up to the treatment. The following is the method used in my wards in the Royal Infirmary. The patient has a bath, if necessary an alkaline bath, and in the bath scrubs off the scales with a nail brush. On coming out he is rubbed all over from the neck downwards with a 4 per cent. ointment of chrysarobin in vaseline. More of the ointment is then spread upon lint and carefully applied all over the same area. This is renewed twice daily; it is unnecessary extravagance to use fresh lint on each occasion. It is most important that every patch be covered, so that all may march along together. The frequency of baths depends upon whether or not the scales re-form. So long as the spots remain bare, baths are not necessary. Owing to the well-known irritating effects which chrysarobin has upon the face and eyes, our patients wear during the day a linen mask, so as to prevent the accidental conveyance of the drug to the face, and at night a pad of wool over the eyes. In two or three days the improvement is manifest, and in less than a week the skin presents a marked contrast to its former appearance, the diseased patches standing out yellowish-white against the inflamed surroundings. There is sometimes at this stage considerable discomfort, and the patients' complaints sometimes lead to the arrest of the treatment. The complaints are usually

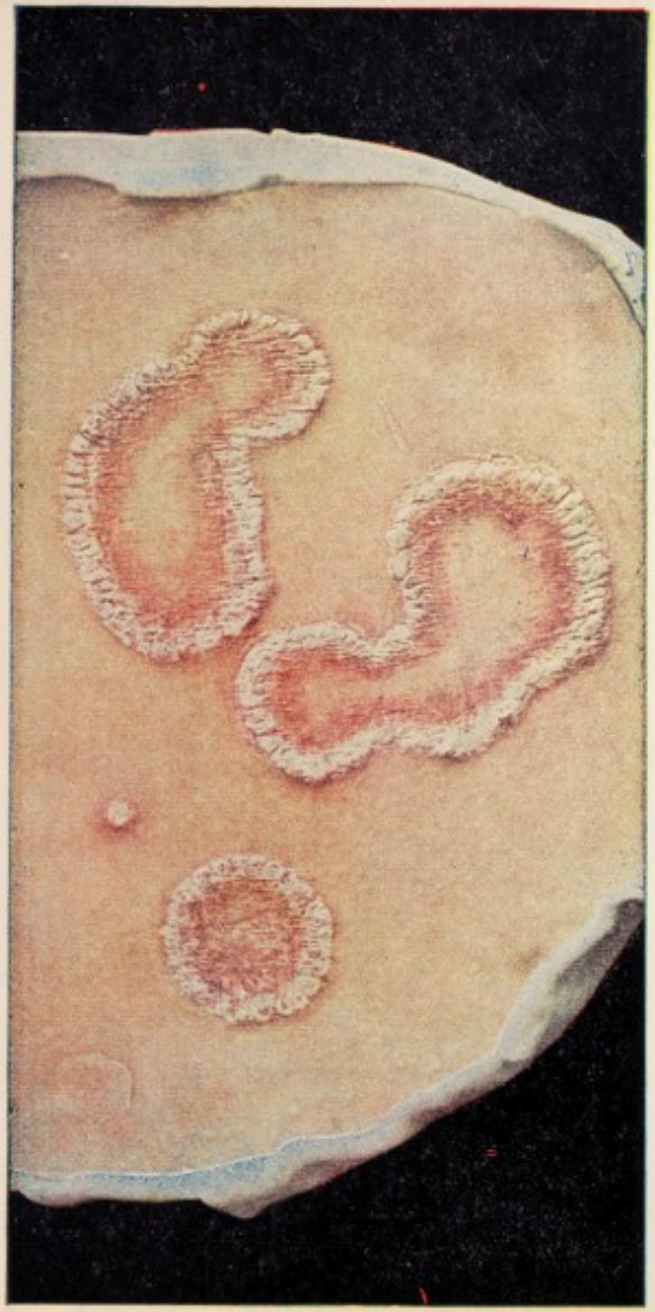
due to the considerable inflammation of the more sensitive parts, such as the flexures. Fortunately, these are less often affected by psoriasis, and may be protected by the application of a simple zinc paste, while the original ointment is continued to other parts, or a paste (chrysarobin, 4 per cent. in equal parts of zinc oxide and vaseline) may be substituted. This has the additional advantage of economy; we find that an ordinary sized patient requires a pound of ointment daily, while half that amount suffices when the paste takes its place. The chrysarobin treatment should be continued until the reddening of the diseased spots shows that the morbid thickening has been removed, but it is always well to go on a day too long rather than to stop a day too soon. The various stages are beautifully shown in the accompanying Plate, which is from casts by Dr. Low showing the same patches at different stages of the treatment. The linen surrounding number three shows the chrysarobin staining, which must never be forgotten; it certainly never is by a patient who has not been warned about it. As Brooke neatly put it, few people appreciate the conversion of their fine linen into purple raiment. All through the treatment a careful watch must be kept for any spot that has been lagging behind the others, and it must be brought up to the mark by vigorous scrubbing with soft soap or by applying to it an ointment in which 5 per cent. of salicylic acid is added to the chrysarobin. I have frequently used with good effect in such cases an ointment which was first recommended by Dreuw; it is of the grape-shot order, but I can testify to its efficiency:—

℞	Chrysarobin Ol. Rusci	āā 20 pts.
	Ac. Salicyl.	10 ,,
	Sapon. Virid. Vaseline	āā 25 ,,

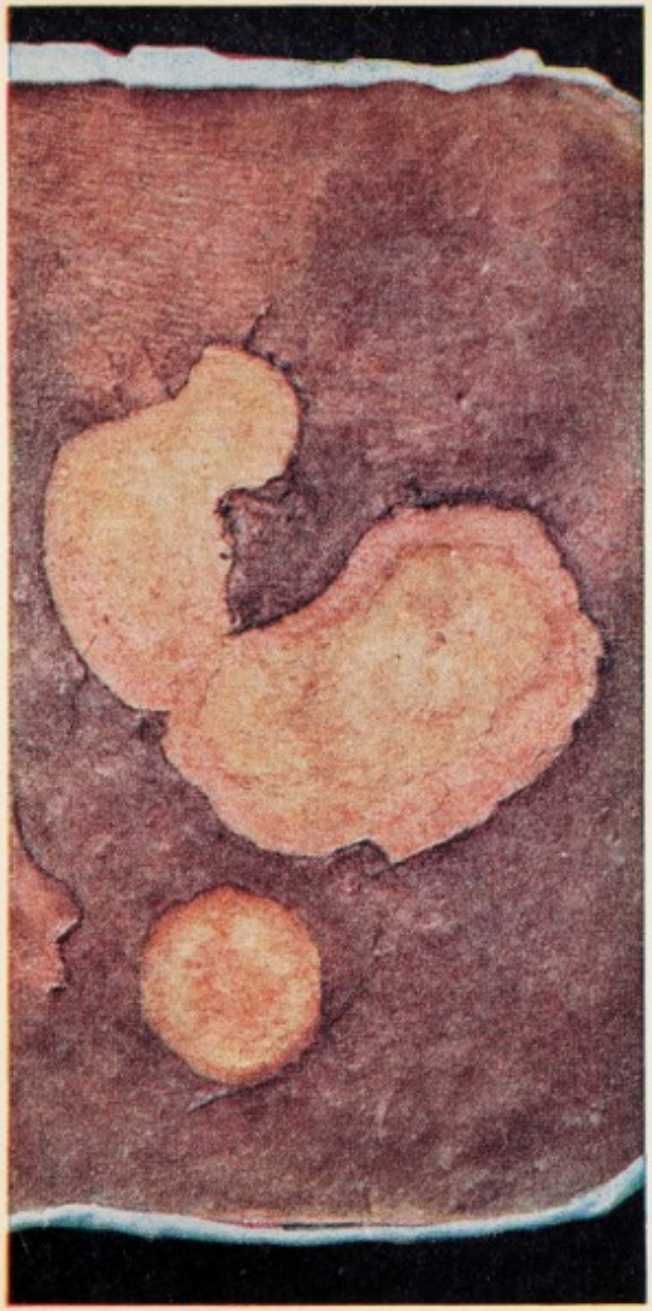
I find it still more efficacious when it is made up without the soft soap, which seems to hinder rather than to help the efficiency of the chrysarobin.

When all the spots have become inflamed I generally allow the patient to rest for one or two days in his old chrysarobin dressings; he then has a bath, and the whole surface is inspected.

CHRYSAROBIN TREATMENT OF PSORIASIS.



BEFORE TREATMENT.



AFTER ONE WEEK.



END OF CHRYSAROBIN TREATMENT.

If the method has been efficiently carried out, even very extensive cases can be cured in a little over a fortnight. If there are any suspicious patches I usually paint them with tar acetone. The common observation that the abuse of chrysarobin favours the development of pityriasis rubra should be kept in mind at this stage of the treatment. Unna's compound chrysarobin ointment (℞ Ac. salicyl. 3, ichthyol 2, chrysarobin 5, vaseline 90) is useful in some cases, but the salicylic acid which it contains is a bar to the continuous use which I believe to be the most important element in the success of this rapid treatment.

The scalp has to be treated separately. The only form in which I ever apply chrysarobin to the scalp is that recommended by Hodara :—

℞	Chrysarobin - - - - - -	℥j	2
	Glycerini } - - -	āā ℥ss	āā 10
	Chloroform. Meth. }		

This is very efficient, but must be cautiously used. Generally speaking, one falls back upon salicylic acid, white precipitate, or pyrogallol in strengths of from 5 to 10 per cent. In theory, these should be made up with lard, which, as a saponifiable fat, is more easily washed out. My very experienced Sister is convinced that vaseline is much more useful in getting rid of the scales. (See under Seborrhœa.)

Tar.—Tar is the safest of all remedies for psoriasis, and may be entrusted to patients of ordinary intelligence without their being under constant medical control. It may be applied in the form of an ointment (5 to 10 per cent.) to any part of the body, for it does not, like chrysarobin, set up facial œdema. The patient should take frequent baths, and scrub off the scales with soap and a nail brush, or he may be painted with pure tar before entering his bath; this is an efficacious method. Tar acetone (tar 1, benzol 2, acetone 8) is a cleaner application than ointment, and I have come to place great faith in common gasworks tar. It has the great merit of cheapness, and if a very thin layer is applied, it is not nearly so dirty and unpleasant an application as one would imagine. Tar may also be used in the form of soap, the patient lathering himself freely with one or other of the numerous tar soaps. Equal

parts of tar, soft soap, and spirit make a powerful remedy, and ichthyol tar soap is convenient. The lather must be well rubbed in and allowed to dry on, and the patient should sleep in flannel pyjamas. On one night a week the soap treatment should be omitted and plain vaseline applied. Tar-poisoning only exceptionally occurs, but must of course be watched for. In the foregoing remarks the tar referred to is coal tar (pix carbonis). In other countries other tars are more commonly used; Leredde says that in France ol. cadini (juniper tar) is regarded as *hors concours*, and ol. rusci (birch), ol fagi (beech), pix liquida (pine) all have their supporters. Wood tars usually have an acid and coal tar an alkaline reaction. In a chronic disease like psoriasis it is well to endeavour to discover by experiment which variety suits the individual case. Of all the tars ol. rusci is the least and ol. sphagni (peat) the most evil smelling.

Salicylic Acid is most appropriate in those cases which are not very widespread; for absorption may take place, and the well-known signs of salicylic poisoning—drowsiness, and diminution in the amount of urine—develop. For limited cases it is a valuable remedy, and is probably best applied in vaseline in the strength of from 5 to 10 per cent. Pyrogallic acid is sometimes exceedingly useful, and may be applied as a paste or ointment (5 to 10 per cent.). The risk of its absorption may be combated, according to Unna, by the simultaneous administration of ℥15 of nitro hydrochloric acid thrice daily. If pyrogallol is previously oxidised it appears to retain its usefulness while losing its toxicity.

Sulphur, which is so valuable in the moister conditions of seborrhœic dermatitis, is rarely useful in the dry forms of psoriasis. Indeed, cases which will stand without resentment such powerful remedies as chrysarobin and pure tar often seem intolerant of even small amounts of sulphur in the form of ointment, though sulphur baths are usually well tolerated and are indeed often very efficacious. A course of treatment at one of the well-known sulphur spas (Strathpeffer, Harrogate, or Ripon) is, unfortunately, economically impossible for most sufferers, but sulphur baths can readily be extemporised at home by dissolving two ounces of the liver of sulphur in thirty

gallons of warm water. The temperature of the water should not be above 99° Fahr., and the duration of the bath should be at first twenty minutes, gradually increased to an hour. The disadvantages of this home treatment are the smell, and the action of the sulphur on all metals in the bathroom. If the bath is an old-fashioned painted iron one the patient is not likely to be popular with the rest of the family. The modern enamelled bath stands sulphur quite well and so does a zinc one, and if a little extra cleaning of the taps is required the results will usually repay the extra trouble.

If hot sea water baths are available they are worth a trial, though they do not suit all cases.

Chronic psoriatics occasionally weary of orthodox methods and turn in the hope of relief to domestic and quack remedies. Not a few claim to have obtained relief from the use of a much advertised ointment which analysis shows to contain nothing but vaseline and some harmless colouring matter. Others find that a warm bath at night followed by the inunction of plain vaseline keeps them in a condition of comparative comfort. We have tested this in the wards and have satisfied ourselves that just as there are cases which recover apparently as the result of the administration of small doses of the green iodide of mercury, so there are others which benefit greatly by the application of unmedicated grease. Sesame or olive oil are still more easily applied than vaseline, and often act most beneficially. I do not think it can be claimed that these applications cure the disease, but they not infrequently reduce a widespread eruption to easily manageable dimensions.

X-rays.—I must confess that I was at one time extremely sceptical of the accounts of the cure of psoriasis by exposure to the rays. I am still of opinion that as a means of cure they are not to be recommended. But there is no denying the fact that the eruption does disappear from the parts exposed; and when the eruption is on exposed parts, which it is important to cure rapidly, the rays may render real service. Unfortunately, the disadvantages connected with the exposure of the face (loss of hair, etc.) make the treatment of little use for that situation; but the hands are very easily treated, and three or four exposures of ten minutes each

generally suffice to remove the eruption for the time. I have seen nothing to support the statement that the exposure of one part in any way influences the eruption on other parts. Nevins Hyde, of Chicago, directed attention to the beneficial effect of exposure to the sun, and suggested that if it were possible to dispense with clothes there would be less psoriasis. It is certainly remarkable how often the face and hands (and the necks of young ladies) are spared.

In very widespread cases, where large areas of skin are inflamed, infiltrated, and tending to crack, what we may call the specific treatment of psoriasis must be given up, and attention must be directed to soothing the skin by mild remedies. Hebra's ointment or zinc ointment should be spread on freely, and no more active treatment should be thought of until all these additional signs of irritation have disappeared.

Patients should be impressed with the importance of maintaining treatment to the scalp long after all signs of the disease have vanished from the body, and of attacking instantly any threatened recurrence.

The price of freedom—from psoriasis—is eternal vigilance.

Diet in Psoriasis.—There is little to add to the remarks on the subject of diet in dermatitis generally, save that alcohol is more certainly injurious in psoriasis than in any other form, and should always be avoided. I have seen patients improve greatly when they turned vegetarians, and I have seen them become much worse; most are unaffected. But there is no harm in trying it.

PITYRIASIS

(*πίτυρα—bran*)

Pityriasis means scaliness, nothing more. The name indicates no relationship between the diseases so entitled, and the use of the simple term is merely a pedantic method of concealing ignorance.

PITYRIASIS ROSEA

(Gibert's Disease)

This is not such a rare disease as is generally supposed; cases often pass unrecognised. A typical case runs a very clear and definite course. Without any previous symptoms there appears on the trunk, somewhere in the region of the waist, as the "herald" of the disease, a reddish-yellow spot which expands into a patch, circular or oval in form, very little elevated, with a rosy-red border and a dull yellow centre. The shade of yellow which forms the centre is sometimes described as fawn-coloured; frequently it very closely resembles chamois leather. Often enough this patch is entirely overlooked, and the first the patient knows of the disease is about a week later, when the whole trunk becomes covered with a profuse eruption of spots similar in character though smaller in size than the original one. All of them do not expand into ringed patches; many remain as spots, and to this variety of the disease the name pityriasis rosea *maculata* (macula, a spot) is applied. When they do expand into circles the adjective *circinata* is employed instead. The Plate gives a good idea of a well-developed eruption; the narrow white collar or fringe of loose epithelium between the red and the yellow is particularly well shown. As is not infrequently the case, there was no definitely recognisable "herald" patch.

The eruption is usually limited to the trunk. A few spots may be found about the shoulders, and a few on the thighs, but it is rare on the face and on the distal ends of the limbs. Exceptionally, the eruption is limited to the limbs. Despite of the name there is not often much scaliness. If a circular patch is scratched with the finger-nail a certain amount of fine scaling may be produced, but it is rarely otherwise evident. After a duration of from five to eight weeks the eruption gradually disappears.

Diagnosis.—The diseases with which P. rosea is most likely to be confounded are syphilis, ringworm, and seborrhœa. A confusion with the first is the most frequent error, and as P. rosea disappears spontaneously in about six weeks, this dis-

appearance is put down to the effect of mercury or salvarsan. It is needless to say that none of the other signs of the graver disease are present. There are no enlarged glands, no affection of the throat, and further, the eruption itself is flatter, and differs in colour from that of syphilis.

From ringworm, with which it was until recently confused by the Vienna school, it may be distinguished by the fact that there are no vesicles on the advancing border, by the sudden appearance of the eruption, and, negatively, by the absence of the fungus.

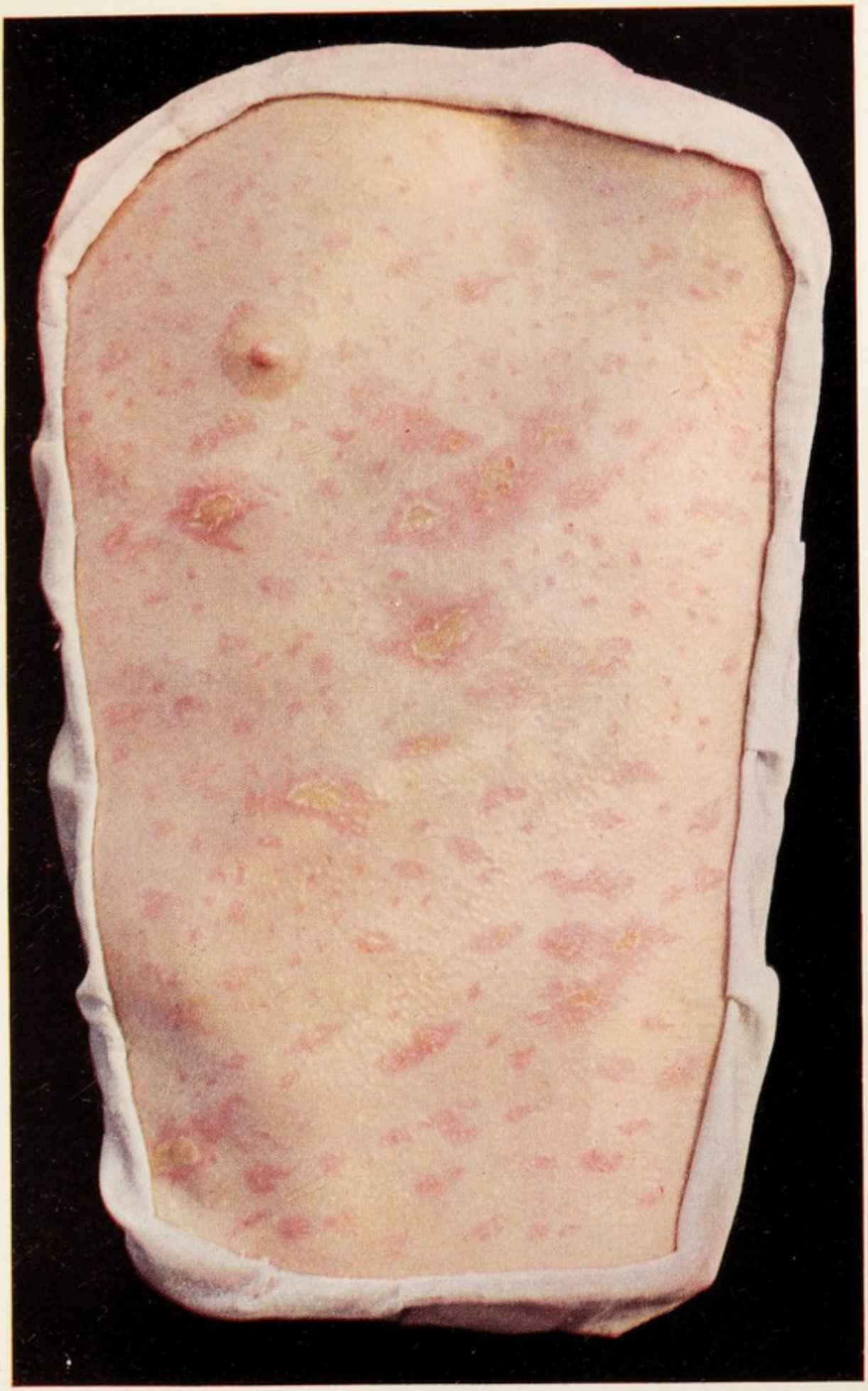
From seborrhœa corporis, which it often closely resembles, it differs, firstly, in its distribution. While that disease is



Fig. 36.—Pityriasis rosea. A little increase of the cellular layer of the epidermis, no granular layer. The increased horny layer, which was closely adherent, was detached in preparation. A few leucocytes in the corium. (× 50.)

common enough on the trunk, usually over the sternum and between the shoulders, it is also found on the scalp, face, and limbs. Further, the *border* of the lesion in seborrhœa is *more raised*, a few papules are often present, and there is a much *greater tendency to moisture and to scaling* than there is in this disease. The margin of the seborrhœal lesion is yellow-red, not rosy-red.

The cause is unknown. No organisms have been found which could be definitely associated with it—though Du Bois and Vidal claim to have detected small spores in the follicles, which the former calls "microsporon dispar"—and there is no similarity in the patients whom it attacks, such as employment, age, sex, or the like. When a section is examined, the possibilities of scaling are evident. Thus in the drawing (Fig. 36)



PITYRIASIS ROSEA.

the superficial layers of the horny layer have been partly detached in preparation, and are seen separated from the skin, although there was no visible evidence of this when the spot was removed from the patient. There are signs of slight proliferation of the epithelium, while the corium is rather more cellular than normal.

The disease gives rise to hardly any discomfort; a very mild degree of itching is complained of by some patients. This frequent absence of itching no doubt contributes to its confusion with syphilis.

Prognosis.—This is always good; even if no treatment is applied the disease soon gets well, and there is no tendency to recurrence.

Treatment.—It is a common view that treatment does little to hasten the disappearance of the eruption. That view I long shared and taught. I learned, however, from Dr. Allan Jamieson that it is erroneous, and that pityriasis rosea is more rapidly amenable to treatment than the majority of skin diseases. The patient should be soaked daily for half an hour in a bath to which two or three spoonfuls of *Condy's fluid* have been added, after which *salicylic vaseline* (3 to 5 per cent.) is freely applied to the skin. In twenty-four hours there are usually marked signs of improvement, and in a week or ten days most cases are well.

PITYRIASIS RUBRA

(*Dermatitis exfoliativa—general exfoliative dermatitis*)

"Red scaliness" is a term which is applicable to a good many conditions, and the definition of pityriasis rubra varies according to the observer. Generally speaking, it may be taken to imply that the eruption is universal, though differing in character on different parts, and that redness and scaling rather than infiltration or exudation are its outstanding features.

The disease may arise either spontaneously, or may succeed one of several skin diseases. It is most common as a sequel of psoriasis or seborrhœa corporis; but it may follow lichen, dermatitis herpetiformis, or erythema multiforme, and

apparently in some mysterious way develop out of any of these. The form of psoriasis which it most frequently follows is the moister variety, the more "eczematous" one, and such cases are sometimes distinguished as *pityriasis rubra seborrhoica*. They are often directly traceable to the injudicious and too long continued use of chrysarobin. Even weak ointments of chrysarobin should never be continued for more than a month, and not so long unless under supervision. Usually the result is the transformation of the dry into a moist, weeping eruption, but in exceptional cases pityriasis rubra develops. The disease is characterised, as its name indicates, by intense redness and very abundant desquamation; but perhaps its most prominent characteristic is a negative one, namely, the absence of infiltration and thickening of the skin. Although the patient looks like a boiled lobster, although shovelfuls of scales may be removed from his bed in the morning, the skin *feels* but little affected. Commencing, when it does commence independently, as a number of small spots, the disease rapidly spreads until the whole surface of the body is affected. In connection with its development from any of the diseases mentioned, while frequently the history points to a misuse of chrysarobin or some other irritating drug, cases occur where in the course of a day or two the disease undergoes a complete transformation, and the patient who at one visit was suffering from psoriasis is at the next found to be the subject of a typical pityriasis rubra. The diagnosis should not be difficult; the presence of redness and scaling and the relative absence of infiltration should arouse suspicion which the universality of the eruption will tend to confirm. I have to thank my old friend, Dr. George Henry Fox of New York, and his publishers, Messrs. Lippincott, for permission to reproduce what is, I believe, the best illustration of this disease in existence. The scales are usually thin and papery, have a brownish tinge, and often stand up in a rather arrogant attitude, one end only remaining attached to the skin. A scaly dermatitis with exudation is rarely, if ever, universal; the moisture which is occasionally present in cases of pityriasis rubra is not exudation, but probably sweat; it does not stiffen linen.

The *cause* is unknown. Its sudden appearance in the course



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PITYRIASIS RUBRA.

of another malady has led some to place its origin in the central nervous system. But two fatal cases of Crocker's, in which the nervous system was carefully examined by Mott, showed no nerve changes. Others regard it as of parasitic origin, but though organisms may be found in the scales, it has not been found possible to relate them definitely to the disease. In a number of cases the eruption appeared after exposure to cold, and Crocker held that there was a relation between rheumatism and gout and this disease, these having been present in a number of his cases; while Jadassohn has found tuberculosis in a large proportion of his. The fact that these are not invariably present shows that they have at most only a secondary influence. Shock and a number of these other causes about which one can prove nothing have been instanced as influencing an attack, but candidly we know nothing of the real cause.

Prognosis.—I am disposed to revise the rather gloomy prognosis which figures in my earlier editions. The disease is undoubtedly a serious one, and, if not recognised or if carelessly treated, is not unlikely to terminate fatally, probably from some intercurrent disease. The general hyperæmia of the skin renders the patient very susceptible to cold, and pneumonia is frequently the cause of the fatal issue. In cases which develop out of psoriasis and seborrhœa corporis the prognosis is less grave, but the sufferer is in a much more serious condition than he is willing to believe, and a very firm attitude is required by the physician whose duty it is to guard the patient from the risks to which his ignorance exposes him.

Treatment.—The first indication for treatment is derived from the history of the development of the disease. Having seen how cases develop from over-treated psoriasis, it is very clear that only mild remedies should be used. During the acute stage the patient should remain in bed in a warm room, and every possible precaution should be taken against cold. The applications should be of the mildest. Plain vaseline, olive, sesame, or Carron oil, Hebra's ointment, weak tar lotions, or weak carbolised oil may be tried; according to Morris, mercurial applications aggravate the disease. If a case is improving, however slowly, under any remedy, it is wise to be content; efforts to stimulate progress too often lead to an exacerbation

of the disease. Internally, probably the most useful medicine is *antimony*, small doses of the wine being given at frequent intervals. Quinin and thyroidin are often useful. Arsenic should never be given until the case has become distinctly chronic, and even then only if it has begun to show some signs of improvement. In the acute stage it is almost sure to be aggravated by arsenic. The diet should be light but nutritious, and cod-liver oil is generally useful. Alcohol and any foods which may cause flushing of the skin must be absolutely forbidden. Baths should be tempered by the addition of bran or starch (p. 21). When the acute stage is past, and the patient insists on going about again, special precautions against cold must be constantly taken.

PITYRIASIS RUBRA PILARIS

This is a rare disease, and in dermatological circles there arises every now and then a discussion as to whether it is the disease which Hebra described as Lichen ruber acuminatus. Such discussions are always interesting to experts, but do not concern students. For them it is sufficient to know that pityriasis rubra pilaris (red scaliness around the hairs) is a chronic disease of the skin, presenting resemblances to lichen planus and to psoriasis, for the latter of which it is most usually mistaken. If I may adopt a phrase of Malcolm Morris's, I would say that in my experience pityriasis rubra pilaris usually commences its career disguised as psoriasis. It commences in the form of small papules of a peculiar yellowish colour, rather like those on a plucked fowl, and these enlarging, run together to form patches of various sizes and shapes, and, becoming red from hyperæmia, present considerable resemblance to patches of psoriasis. But as one watches their progress one notes the remarkably chronic character of the patches. Week after week and month after month a patch will preserve exactly the same outline, neither increasing nor diminishing, and apparently regardless of any treatment. In other regions the disease may be steadily extending, till great tracts of skin are involved. On the backs of the first metacarpal joint the disease is always remarkably developed around the hair follicles, and the little



PITYRIASIS RUBRA PILARIS



Pityriasis Rubra Pilaris.

black-topped conical lesions in this situation are of some value in diagnosis.

In the slighter cases there may not be much interference with the general health, and comparatively little inconvenience from the eruption, but as time goes on the general condition does suffer. Of three cases that have been under my care, one, a girl of eleven, developed tuberculosis; another, a middle-aged woman, went gradually downhill without any very definite symptoms, and died some four years after the disease first appeared; while the third, a boy of twelve, from whose arm the cast is taken, has made a good recovery. The coloured Plate shows the characteristic colour and the other, from a photograph given me by Dr. George Henry Fox, the "pilaris" character of the lesions.

Sections of portions of excised skin present appearances which are perhaps best described as reminiscent of Lichen, though clearly distinguishable from that disease.

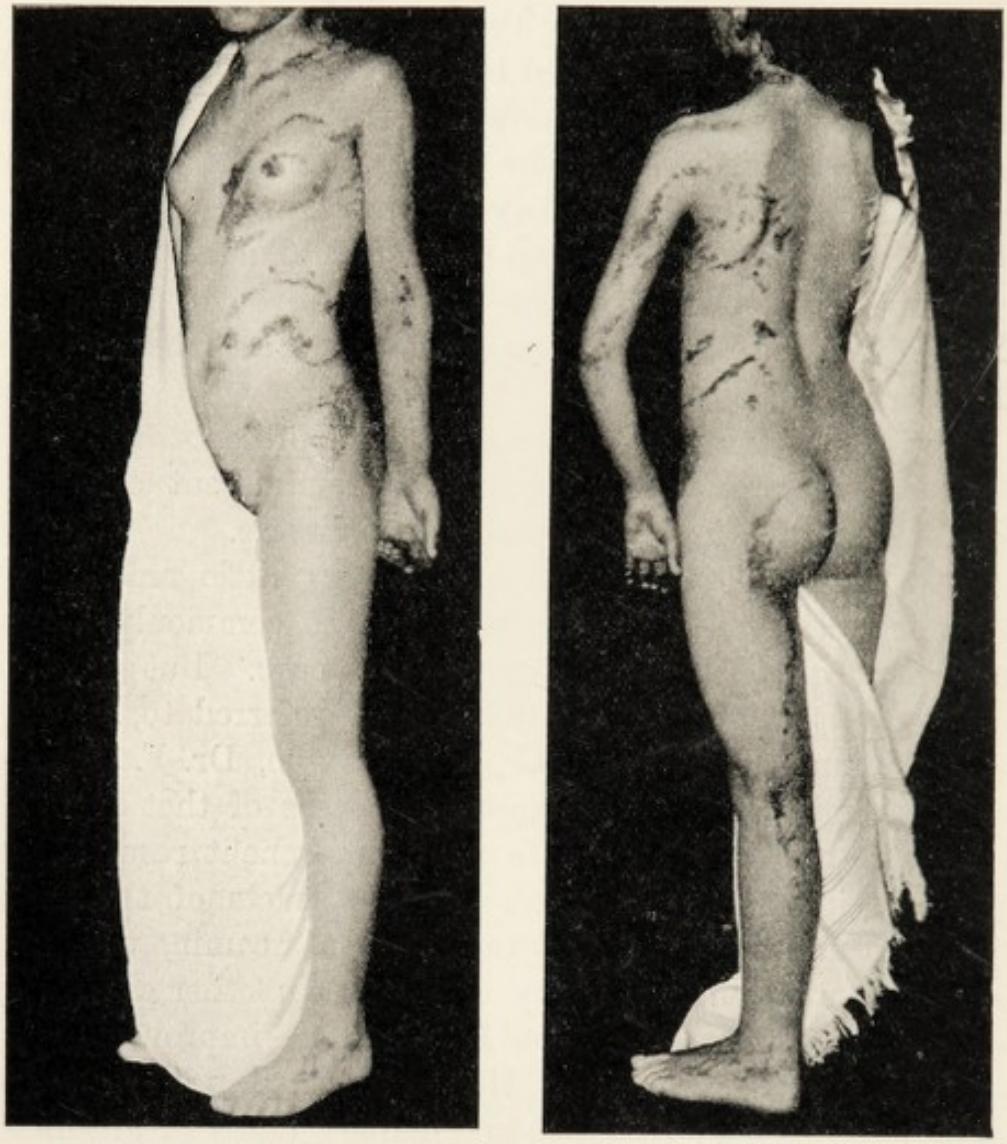
Treatment.—Cases are as a rule very little amenable to treatment: as a rule arsenic, which is so commonly administered, fails altogether to bring about a cure. But the satisfactory result in the case of the patient referred to, who was under the immediate charge of my colleague, Dr. F. Gardiner, was apparently due to quite moderate doses of that drug. In the case of the girl referred to above no benefit resulted from arsenic in its ordinary form, but large tracts of the disease cleared up under a course of injections of soamin, which was fortunately unattended by any disaster. In other cases which have been under my care there has been no improvement. It is interesting to recall that Hebra reported uniformly fatal results until he had recourse to "heroic" doses of arsenic. I have tried all sorts of local treatment in vain.

ICHTHYOSIS

(ἰχθύς—*a fish*)

Ichthyosis, or the fish-skin disease, though fortunately rarely seen in its severer forms, is in the milder ones far from uncommon. The numerous named varieties are better

considered as simply different manifestations of the one complaint. To this, however, one exception must be made, for the condition sometimes spoken of as "ichthyosis in streaks," which is found, *e.g.* on one limb, or apparently following



FIGS. 37 and 38.—Nævus linearis = false ichthyosis.

the course of a nerve round the body, is really a variety of nævus. This form is well illustrated in the accompanying photographs, given me by the late Dr. Borrowman. The different adjectives added to the name—*ichthyosis serpentina*, *sauroderma* (crocodile), *hystrix* (porcupine), etc.—are simply descriptive of an apparent resemblance to these animals.

The mildest variety goes by the name of xeroderma

(dry skin). In this form the patient is only conscious, in the colder months, of a dryness of the skin, and a slight tendency to scaliness at certain situations—the knees, elbows, and axillary borders. The secretion of sweat is greatly diminished, many patients declaring that they do not sweat at all. As the disease spreads it tends to affect the extensor surfaces, and these are occasionally the seats of a moist eruption, which it is, however, a misuse of terms to call eczema. From this mild variety there are all degrees up to the severest cases, where the patient is covered almost entirely by large horny masses, and the skin resembles rather that of a reptile than of a human being. The Plate illustrates the more commonly occurring form of the disease. On the back and the arms the partitioning of the skin into little lozenge-shaped areas, like the scales of a fish, is fairly well shown, while as we approach the axillæ the disease is more marked, and the little blackened horny masses are prominent. In the severer forms these increase in size and length, and may be as much as a quarter of an inch in diameter and three-quarters of an inch long.

In the severest cases certain regions are usually spared; the face, the palms and soles, and the flexures of the joints being usually unaffected. Curiously, in the milder forms the face is often affected, and in the palms and soles the natural lines of the skin are greatly exaggerated.

The disease is usually described as congenital, but it rarely appears before the end of the first, and often well on in the second year of life, while exceptional cases are recorded in which the disease first showed itself in adult life. Confusion has resulted from its being erroneously associated with the condition known as congenital ichthyosis, the disease figured in old obstetric text-books as the "Harlequin" fœtus. Although both diseases show excessive cornification as a prominent feature, there are certain differences so marked as to make it unlikely that they are the same. For example, in hyperkeratosis congenitalis, as it should be called, the face, palms and soles are invariably affected, while in severe ichthyosis they are, as a rule, free. Heredity is, however, very marked in ichthyosis, and the disease to some extent shares with

xeroderma pigmentosum the peculiarity that it shows itself usually only in one sex in a family. There is no evident preference for one over the other, but in one family most of the boys may be affected, and in another all the girls, the opposite sex remaining perfectly free. Exceptions to this are, however, occasionally noted. I have seen it in twins of opposite sex.

I have indicated my opinion that psoriasis should not be looked upon as a bar to marriage. I am not prepared to go the length of saying that persons who suffer from ichthyosis

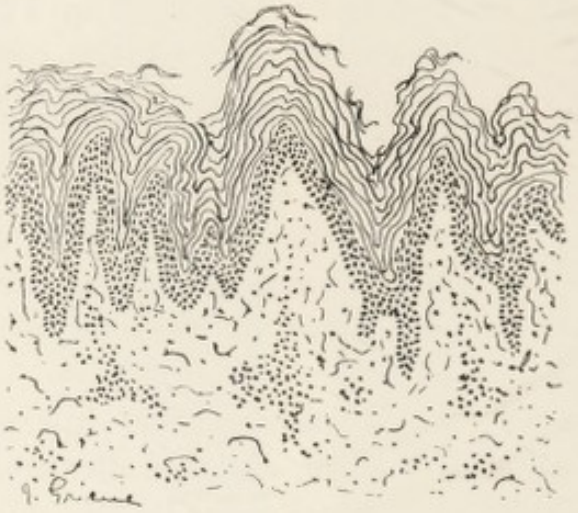
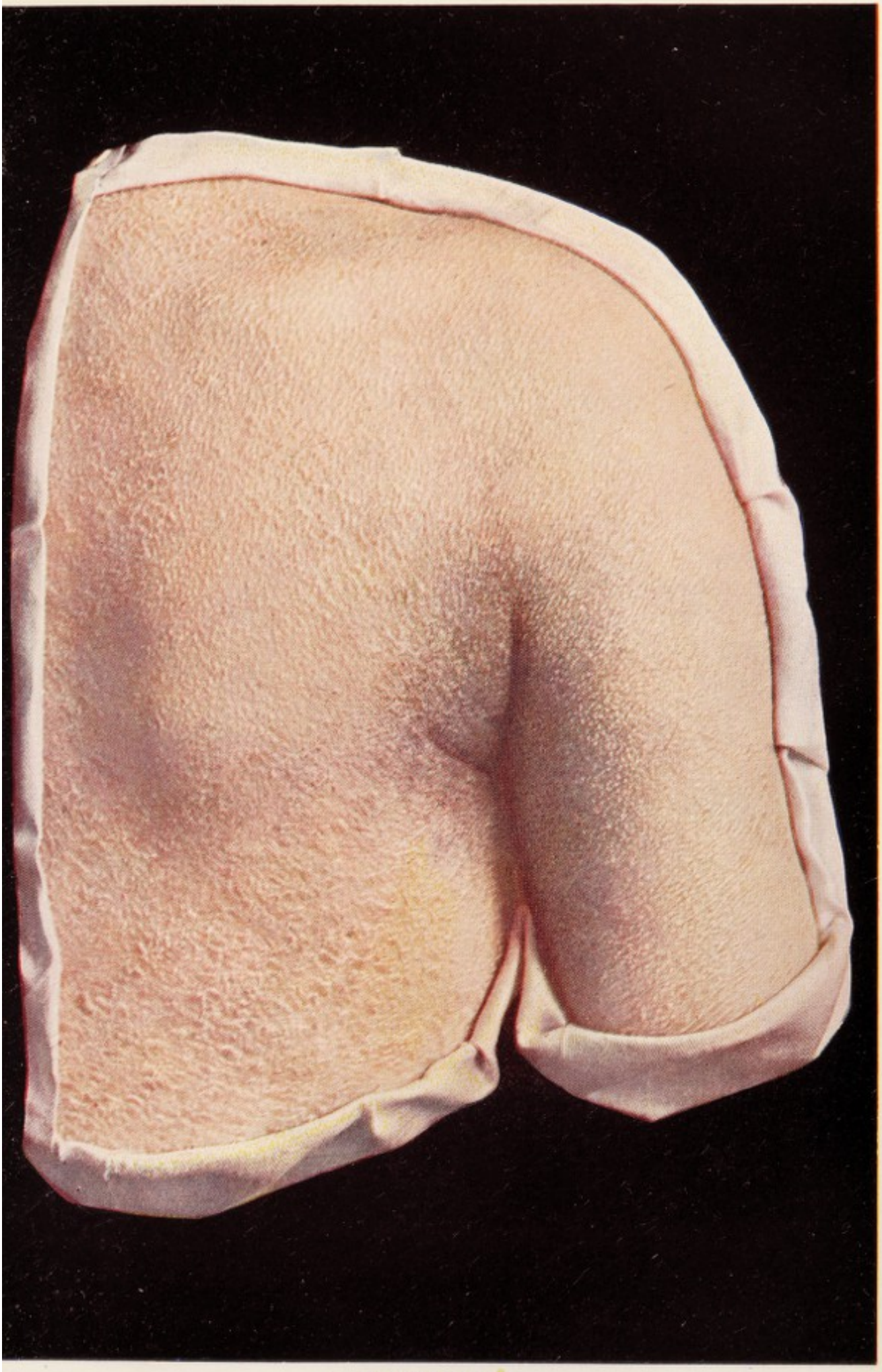


Fig. 39.—Ichthyosis. Horny layer increased, rete thin, "Alpine" papillæ, some cellularity of the corium. (× 550.)

should not marry, but I do think it should be clearly explained to them that the probability of transmission to the next generation is considerable.

The cause is unknown. Unna places it among the infective inflammations, and it is interesting to know in this connection that travellers report that in Styria it is as common as is psoriasis in this country. No organism, however, has been identified. On examining a section of the skin the changes are so striking that one has no difficulty in recognising it at a glance. The epidermis is thin, the horny layer is markedly thickened, and the papillæ have a peculiar Alpine arrangement, reminding one of those pictures of the relative heights of the mountains of the world which appear at the bottom of maps



ICHTHYOSIS.

(Fig. 39). Although the sweat and sebaceous secretions are diminished, both sets of glands are found on examination. The subcutaneous fat is notably diminished. The amount of irritation in the skin, as shown by the presence of leucocytes and proliferating connective-tissue cells, depends on the stage of the disease. If the piece examined has been removed during a quiescent period they are practically no more than normal, while if removed during an attack of "eczema" they are of course numerous.

Diagnosis.—This, in an advanced stage, is very easy. No one could possibly mistake a well-marked case. Those difficult to diagnose are the slight ones, especially where, perhaps, a moist catarrh has directed one's attention away from a disease so associated with dryness as ichthyosis. There are, however, certain peculiarities about this moist catarrh which should arouse the suspicion that one is not dealing with an ordinary dermatitis. The distribution is almost always on the extensor surfaces, and if the diagnosis is not made it will generally be found that treatment is by no means so successful as it would have been had the case been a simple dermatitis. In every patient with a moist catarrh on the extensor surfaces, especially if there is a history of recurrence winter after winter, the regions where ichthyosis is generally most developed should be examined. The knees and elbows, especially the former, are in so many people the seat of a certain amount of scaling, that most information is to be derived from the examination of the axillary borders. Either anteriorly or posteriorly there will be found here some evidence of the disease. Prurigo, which also attacks the extensor surfaces, which is occasionally moist, and which is also a disease dating far back in infancy, is a rare disease in this country. The nutmeg-grater character of the skin, the enlargement of the glands, and the greater itching, combined of course with the absence of any signs of ichthyosis, should enable one easily to recognise prurigo. From psoriasis, which also affects the elbows and knees, there should be no difficulty in diagnosis. Sometimes, it is true, the scales of psoriasis do take on a greenish colour, but they are heaped up in masses, and never all of them assume the areated, mosaic arrangement so constantly seen in ichthyosis.

PROGNOSIS.—It is difficult to lay down the prognosis of any given case. The danger to life is *nil*; the prospects of improvement are excellent; but the hope of complete recovery is not good.

TREATMENT.—The main object of treatment is to supply to the skin the *fat* in which it is so markedly deficient, and if a sufferer will take a daily bath, and grease himself regularly with lanoline, vaseline, or some other fat, he can keep himself in a condition of comparative comfort. Once again I return to the question of idiosyncrasy. The patient should find out by experiment which grease suits *his* skin best. In one it will be lard, in another suet, in a third lanoline, in a fourth olive or sesame oil. One young lady patient of mine found that she was most relieved by the application of goose grease, but she had regretfully to abandon its use as it had the same effect on all the dogs in her neighbourhood as valerian has on cats. While this inunction of fat is followed by great amelioration of the symptoms, it cannot, of course, be expected to do much to cure the disease, especially if it be regarded as an infective inflammation. Therefore various drugs of an antiseptic nature should be incorporated with the ointment base. Of these drugs the most generally used are *sulphur*, *ichthyol*, *β-naphthol*, *resorcin*, and *salicylic acid*. One or other of these may be combined in the proportion of 2 to 5 per cent. with the ointment, and one usually has, unfortunately, ample opportunity of comparing their relative value. Internally, *pilocarpin* is often of value. It may be injected subcutaneously, or the tincture or syrup of jaborandi may be given by the mouth. Small doses of nitro-glycerin have proved useful in some cases. Arsenic and cod-liver oil are also recommended, and the latter of these, by *increasing the subcutaneous fat*, almost always does some good. While thyroid substance is not a remedy to be recommended in a disease such as psoriasis, where one has numberless remedies of well-approved value, in this complaint, which is so chronic and so obstinate in its response to treatment, one is justified in using with caution remedies which do carry with them a certain amount of danger. The patient's susceptibility should be carefully tested, and the dose always kept well below that which would induce toxic symptoms. *No patient should*

ever continue to take thyroid tablets except under medical supervision. The amount to be taken depends entirely on the individual. With some, one 5-grain tablet a day is sufficient; others can take without harm five or more.

Something, too, may be done by diet. Ichthyotics are generally thin, and a good thick layer of subcutaneous fat greatly improves the skin. Leguminous foods should be a regular element in the diet. (See Daniel, chap. i. verses 12-15.)

To those to whom their place of residence is a mere matter of choice, some warm, moist climate should be recommended; for residence in a cold, exposed, windy district is certain to lead to constant attacks of moist catarrh, with its accompanying discomforts.

INFLAMMATIONS OF THE DEEP EPIDERMIS (GLANDS AND FOLLICLES)

ACNE

(ἄκνη, quasi ἀκμή—*a point, or the bloom of anything*)

This term was probably applied to the disease by reason of its association with adolescence, since acne was looked upon as the bloom of youth. The essence of the disease is hyperkeratosis culminating in the mouths of the sebaceous follicles and leading to the production there of a comedo,[1] or *blackhead.* The comedo proper is a minute oat-shaped body composed of concentric layers of horny cells arranged like the scales of an onion. The long worm-like coil of yellow material which can be expressed from the gland is retained secretion, and not part of the comedo proper. While many of the comedones remain as such, others set up irritation, and the distended gland becomes converted into a pustule, with the comedo at its apex. In some cases the suppuration is deep, and considerable abscesses are formed in the depth of the skin, often from the union of several adjacent suppurating follicles. In others again there is

[1] Latin *comedo*, I eat up. The comedo was supposed to be a species of worm.

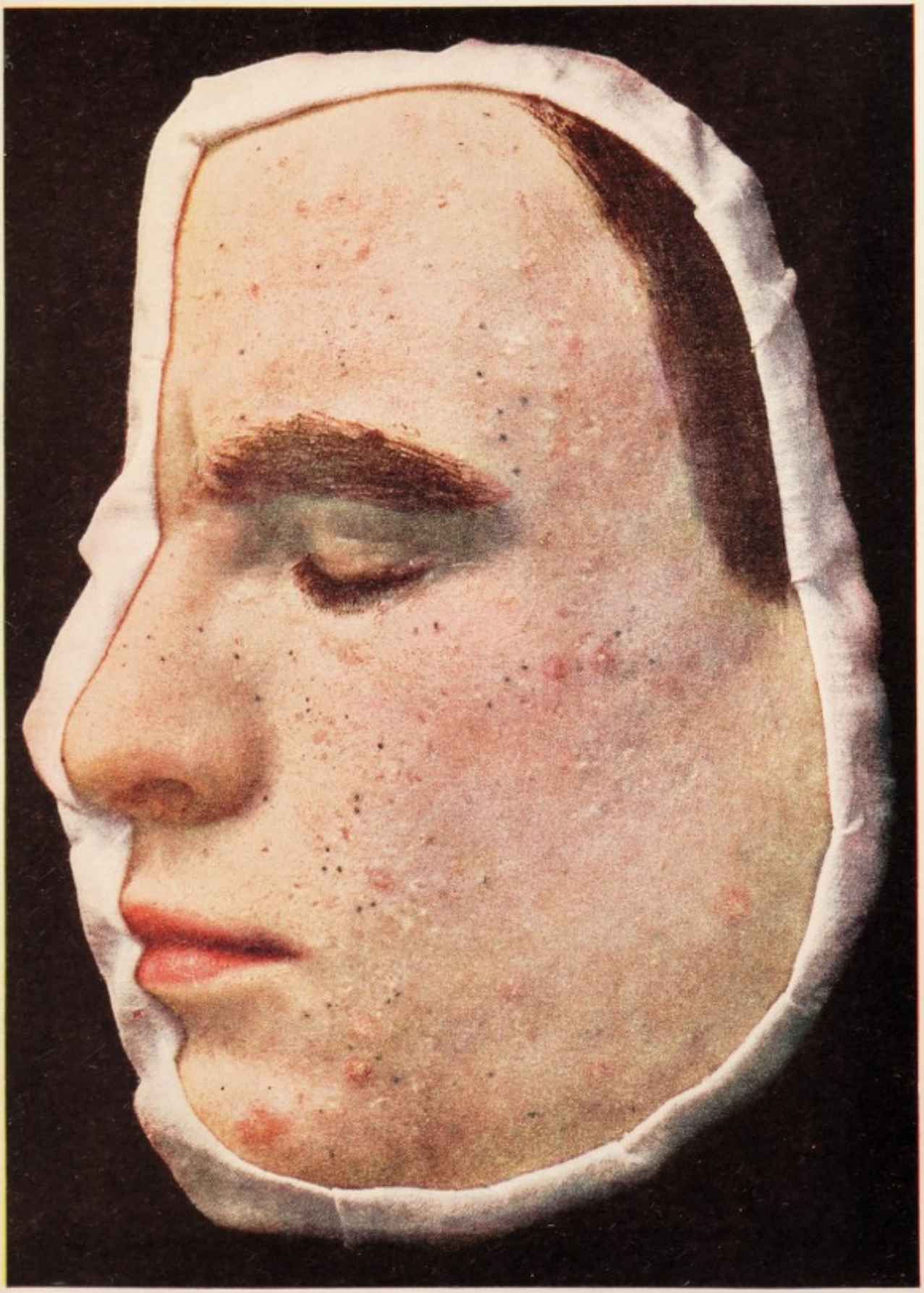
deep connective-tissue thickening, and to this form the name *acne indurata* is applied.

The disease is practically confined to the period of adolescence, being most common between the ages of sixteen and six-and-twenty. After thirty it is rare, so rare that the appearance of a disease simulating acne after that age should always lead to close inquiry as to whether the patient has been taking some drug, especially iodides or bromides, or whether in his work he is brought into contact with tar or paraffin.

It affects both sexes equally, though perhaps the severest cases are seen in the male. The parts of the body usually affected are the face, the chest, and the back. Exceptionally it spreads farther down the trunk and to the limbs. The skin is always greasy, anæmic, and flabby from want of tone in the cutaneous muscles.

Etiology.—The older authors gave several ingenious explanations of the cause of this disease, the commonest being that it was associated with the increased activity of the skin and the development of hair at puberty. Acne has in the last few years been the subject of much careful investigation, and while there are doubtless many predisposing and contributory causes, there is little doubt that the actual cause of the disease is the organism now known as the *Bacillus acnes*. This was first described by Unna, but also independently by Gilchrist and Sabouraud. The views of the last named have attained the greatest publicity, and although his conclusions are not by any means universally accepted, his observations are of extreme interest.

If any abnormally greasy skin be carefully examined with a lens, it will be found that the openings of the sebaceous glands are corked by little greyish-yellow masses. To these Sabouraud has given the name of "cocoons." When examined under the microscope they are found to consist of some epithelial cells, a large amount of grease, and millions of short, thin bacilli. This is the first stage in the development of the comedo; the further development into the little hard, shiny, oat-shaped body takes place only in a small percentage of the cocoons. According to Sabouraud, this bacillus stimulates the



ACNE VULGARIS.

secretion of the sebaceous glands, and alters it so that it becomes a fluid instead of a semi-solid fat.

Gilchrist's work was on somewhat different lines, for he examined the later stages of acne, the pustules. In them he found, among the pus, masses of bacilli, which he was with some difficulty able to cultivate. Experimental inoculation showed them to be possessed of marked pathogenic properties, but he was unable to reproduce the actual disease. As he says, contributory causes are doubtless necessary. To him the organism owes its name.

Both Unna and Gilchrist have demonstrated that the soften-



FIG. 40.—Section of an early lesion. The orifice of the gland is plugged by closely packed layers of horny matter—the comedo. All sebaceous structure is gone and the gland is lined by horny layer. Some softer material in the centre has dropped out in preparation. (× 50.)

ing and suppuration which it was the custom to ascribe to accidental inoculation with pus cocci are attributable in many instances at least to the bacillus. The bacillus grows best anaerobically, a rather curious fact when one considers the position of the comedones.

There are many clinical facts in favour of the infective nature of acne. Although in such a common disease evidence of direct infection is difficult to obtain, cases of autoinfection are not infrequently seen. Treatment by massage, for example, is exceedingly apt to spread the disease, the organisms being massaged out of one follicle into another.

When a spot is examined microscopically we find the mouth

of the sebaceous gland plugged by the comedo. This little oat-shaped mass is composed of concentrically arranged horny layers, more closely packed at the upper part, and showing there the black colour which characterises the extreme degree of cornification. The same is seen in advanced cases of ichthyosis and in cutaneous horns, and it is not due to dirt. Beneath, the gland is filled with broken-down sebaceous material, all trace of glandular epithelium is usually lost, and the cavity may be lined by a sort of horny layer resembling that of the skin.

When the disease has reached the pustular stage this layer has usually broken down, and the abscess cavity involves the surrounding tissues to a greater or less extent.

If left to itself, acne tends to progress steadily, the comedones slowly increasing in number. The amount of suppurative change depends to some extent upon the health of the individual, although persons in the most vigorous health may have their faces disfigured by a profuse eruption of pustules.

Diagnosis.—The presence of pustules on the face is not enough on which to found a diagnosis. The essential element of the disease is the comedo; and it is only when that obviously forms the starting-point of each pustule that a diagnosis of acne is justified. There are many pustular eruptions which occur on the face besides acne.

Prognosis.—Almost all cases are curable by time, and if a patient is willing to wait until he enters the thirties, there is no occasion to do anything. Unfortunately, though "*tempus varos curat*," the scars left are often almost as disfiguring as the disease, and an acne scar may form the starting-point of cheloid. In dealing with the prognosis we have to consider a number of factors. One of the most important is the general condition of the patient; if in bad hygienic condition and insufficiently fed, his acne is likely to continue. I do not agree that the presence of acne in a schoolboy warrants the suspicion that he is a masturbator. The great element in prognosis is the diligence with which the patient carries out treatment. The main factors, then, in the cure of a case are time, health, and perseverance.

Treatment.—In the treatment of acne it must be kept in mind that we have invariably hyperkeratosis, anæmia, flaccidity

of the cutaneous muscles, and an excessive amount of oily secretion, all due directly or indirectly to the bacillus. With regard to general treatment, it is evident enough that they are all conditions which can be improved by general tonics. The patient should take plenty of exercise in the open air, plain food—all greasy articles of diet being avoided—and, in short, get into as good condition as possible. In girls, constipation and anæmia are frequently present, and these must be corrected.

Not much aid can be got from drugs internally administered. When there is much induration around the individual lesions, *sulphide of calcium* given in pills, $\frac{1}{6}$ of a grain three or four times a day, seems in some cases to promote either their absorption or more rapid softening. *Yeast* is an old-established popular remedy, and *levurine*, or nucleinic acid may be tried if fresh yeast is not obtainable.

The discovery of an organism as a probable cause of the disease has, of course, stimulated belief in the efficacy of local treatment. Again bearing in mind the factors of hyperkeratosis, excessive secretion, anæmia, and flaccidity of muscles, we find that there is one treatment which has an influence on all four, namely, the vigorous application of soap, the alkali of which removes the excessive oily secretion and the thickened horny layer, while the friction with which it is applied promotes hyperæmia and stimulates the flaccid muscles. Soap alone, combined with friction, will cure a great many cases, but it is usual to associate with it some drug which will assist in its action. Long before organisms were even thought of, *sulphur* had established itself as of value in the treatment of acne, and sulphur combined with some form of soap is still the most efficacious treatment. With regard to the form of soap with which it should be combined, opinions differ very much. Some, believing that the alkali in soap is responsible for many disagreeable effects, recommend that an over-fatty soap should be employed. Others use the soap liniment of the Pharmacopœia, while others again use Hebra's soap spirit, a strongly alkaline preparation. Seeing that we have to deal with a skin rich in fat, which the alkali of the soap removes, over-fatty soap, theoretically, is of little value. But any soap, no matter how fatty, when combined with water

gives off some alkali, and the over-fatty ones are probably simply less active than others in the same direction.

It will probably conduce to clearness if the methods of treating cases of different severity are described in detail. The patient whose skin is dotted with comedones, and in whom suppuration is at a minimum (see Plate), should every night steam the face over hot water, and then bathe it. With a suitable expressor the comedones should be extracted. The common practice of squeezing them out with the nails, or the more objectionable one of using a watch-key, is in my opinion worse than useless. The watch-key method, especially, is exceedingly painful, bruises the skin to which it is applied, and, by forming a *locus minoris resistentiæ*, hastens the development of the pustule which it was intended to prevent. Every one has his favourite form of comedo-extractor, and the one illustrated has at all events certain advantages. It can be

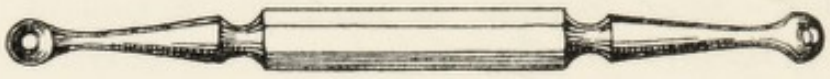


Fig. 41.—Comedo-extractor.

applied accurately over the comedo, which remains in sight, and the edges being carefully rounded there is little risk of damaging the tissues. The comedo should be expressed by a shaking movement, and not by brute force. When all the prominent comedones have been removed the face should be rubbed with some sulphur-containing soap. Either the sulphur camphor and Peru balsam soap, originally introduced by Eichhoff, or a salicylic sulphur one, may be used. With a shaving brush an abundant lather is produced, and this is rubbed for a few minutes into the skin. For the first few days it is wiped off with a damp cloth, but as the skin becomes habituated to its use it may be rubbed in over an increasingly longer time, until eventually it is rubbed in entirely and there is none to wipe off. Few skins can stand the continuous use of this soap, and it is desirable that on Saturday nights the skin should be anointed with vaseline.

If the comedones are very numerous, and the skin, as is

usual in such cases, is tolerant, other mechanical means of removing them are handier than the expressor. If a soap combined with sand is used occasionally it rubs away many of the cocoons and the upper portions of the comedones, and thus facilitates the action of the medicated soap. For well-to-do patients "marble sand" soap may be ordered, but the much-advertised article which "won't wash clothes" is equally efficacious. Once a week is often enough to use these sand soaps. On the five other days the sulphur soap should be used.

Another method of applying sulphur is Vlemmingkx's solution: 10 parts of sulphur, 20 of quicklime, and 200 of water boiled down to 120 parts in an iron vessel. At first this is diluted freely with water (1 to 5), and it is simply dabbed on at night after bathing the face. The strength is gradually increased as tolerance is established, until the pure solution is used. Whitfield recommends the application of dry sulphur at night.

Where pustules have developed these should be opened and evacuated. Some apply to the interiors strong carbolic acid, but as a general rule, if the pustules are properly opened and squeezed out, they do not tend to re-form. The presence of a considerable number of pustules does not altogether interdict the soap treatment. The general benefit is so great that patients may well endure some small extra discomfort. Where, however, the parts are very much inflamed and the pustules very numerous, sulphur may be applied in lotion along with calamine, instead of in the more active form of soap. The following is the prescription used in the Royal Infirmary:—

℞	Sulph. Præcip.	(ʒj)	5·0
	Calaminæ	(ʒij)	10·0
	Zinci Oxidi	(ʒij)	10·0
	Glycerini	(ʒj)	5·0
	Aquam Destill. ad	(ʒvi)	200·0

Sig.—Shake and paint on with a brush.

Though generally speaking one deprecates the application of grease in acne Pusey's liniment (p. 23) sometimes proves more soothing in much inflamed cases.

Under this soothing treatment the evidences of irritation diminish, and the soap treatment may then be resorted to.

If the pustules are very numerous and large, so much so as to amount to cutaneous abscesses, they must have more thorough treatment, being freely opened, and kept open until the cavities fill up. During this treatment the face should be bathed at intervals with an antiseptic lotion, containing either boracic acid or perchloride of mercury, in order to diminish the risk of infection of the raw surfaces from without.

A method of treatment which has certain advantages, but which has not attained much popularity in this country, is that of peeling the skin with resorcin. Equal parts of resorcin and Unna's zinc paste, thickly spread, are applied continuously to the skin for three or four days. At the end of this period some soothing ointment is applied, and in a day or two more the skin peels off in large flakes, bringing with it the hyperkeratotic horny layer and a large number of the comedones. The method involves confinement to the house, but it does more in a week than milder treatment will accomplish in two months.

As already indicated, the treatment must be prolonged and persevering. Even after all signs of the disease have disappeared, the patient should go through the soap treatment once a week. I am a complete convert to Sabouraud's theory that oily seborrhœa of the scalp is intimately associated with acne, and the scalp should be washed frequently and appropriately treated (see p. 165).

Vaccines.—Those who were convinced that acne was due to a specific bacillus, never accepted the statements that acne could be cured by staphylococcal injections. They never denied that pustular diseases of the face might be so cured, nor that cases of acne complicated by suppuration might be greatly benefited, but until the true acne vaccine was forthcoming, they preferred the old lines of treatment. Now that it is comparatively easy to procure real acne vaccine, it is possible to estimate its effects, and there is little doubt that many cases of acne are greatly benefited by periodic injections of acne vaccine. Perhaps the cases which respond most readily are those in which the comedones are numerous, and suppuration is not pronounced. The use of vaccines does not and should not interfere with other suitable treatment.

I have to thank Dr. Western, of the London Hospital Medical School, for the hint how to prepare acne vaccines easily. If two or three comedones are inoculated in broth and placed in the incubator, an abundant growth of staphylococci takes place. In a day or two these exhaust their vigour, and the acne bacillus thenceforth dominates the situation. In ten to fourteen days there is a profuse growth of these latter at the bottom of the tube, from which vaccines are easily prepared. The vaccine contains a certain proportion of staphylococci, but these in no way interfere with its efficiency. In cases where there is a great deal of suppuration, and of secondary suppuration, it may be well deliberately to increase the proportion of staphylococci in the vaccine. I usually give injections of from five to ten million acne bacilli about every two or three weeks.

Some cases of acne improve marvellously under the X-rays; and the same may be said in regard to high-frequency currents. But both are often disappointing in apparently suitable cases, and the depilatory effects of the rays, of course, greatly hamper their utility when the eruption is on the face.

Acne varioliformis.—This rare disease occurs most commonly on the skin of the forehead and temples, and spreads into the scalp, and it is usually pronounced on the point of the nose. It commences as a firm reddish papule, not as a comedo. This becomes surmounted by a pustule very like that of smallpox, and then a considerable necrosis takes place in the centre, which, when thrown off, leaves a resulting scar closely resembling that of variola. Sabouraud says that it begins in a cocoon, and is essentially the same disease as acne vulgaris, and a very well-marked case recently in my ward showed marked oily seborrhœa of the scalp. When this was cured, all active signs of the disease had gone; the scars, of course, remained.

Treatment.—*Iodide of potassium* is often prescribed; cod-liver oil and iron are sometimes of value. Locally, some mild antiseptic ointment should be applied. My limited experience favours Sabouraud's views, and suggests the line of treatment.

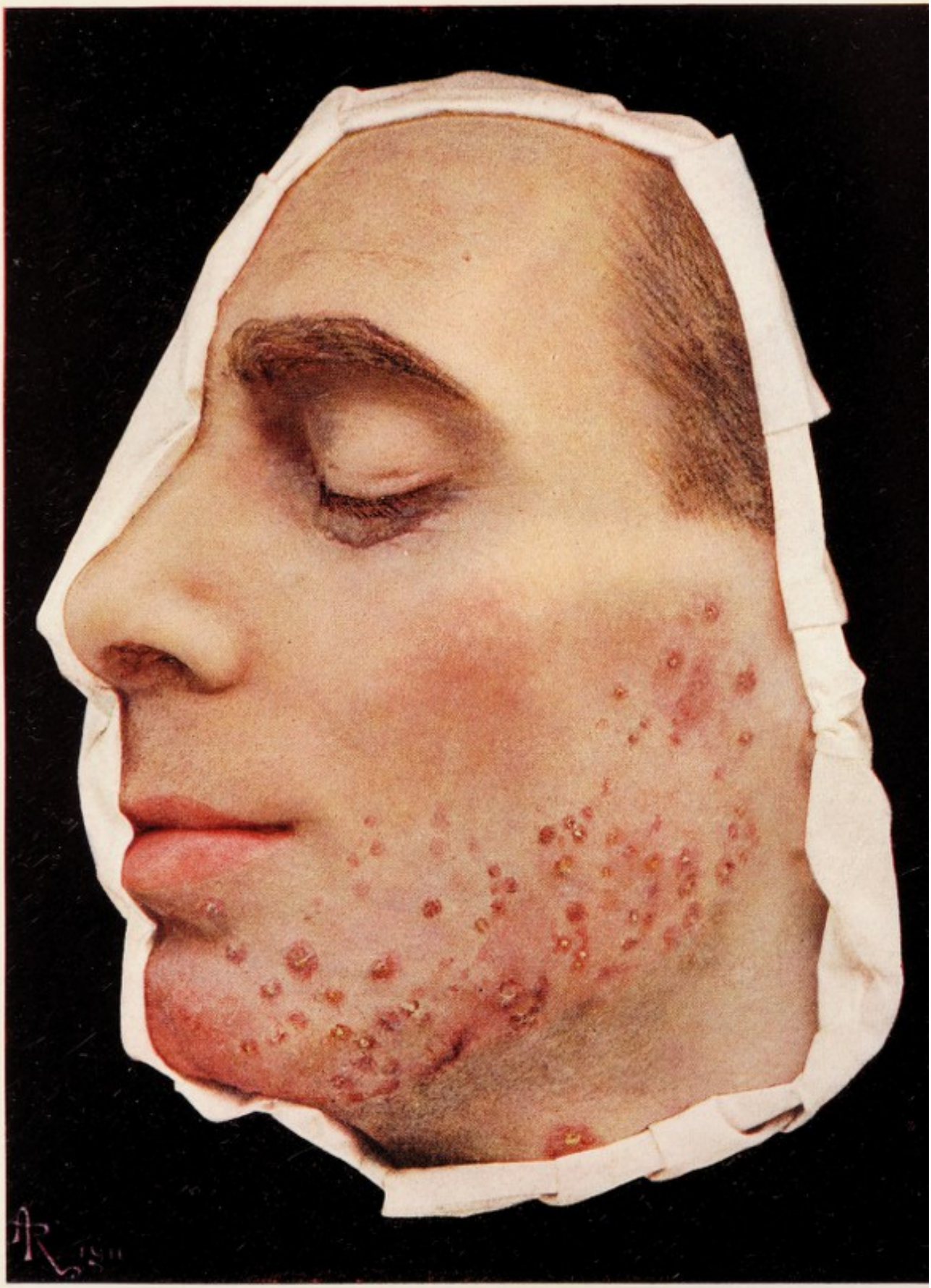
SYCOSIS

(*σῦκον—a fig*[1])

Sycosis is essentially a purulent folliculitis of the beard region due to staphylococcal infection. The skin between the infected follicles is always more or less inflamed. The term is still applied a little loosely, though we have clearly removed from its scope the old sycosis menti or ringworm of the beard.

All affections of that region are liable to lead to pustules, and in order to differentiate sycosis clearly from the others it will be useful to consider them for a moment together. The four common affections are sycosis, ringworm, dermatitis, and impetigo contagiosa. Impetigo contagiosa is most easily separated from the others; it is more rapid in its development, and the character of the crusts produced is usually very typical. When the crusts are removed the skin beneath is seen to be very little reddened; there is, however, more moisture than when the disease attacks the non-hairy skin. Impetigo contagiosa is not infrequently the starting-point of sycosis: the crusts become infected with staphylococci and these before long reach the follicles. Prompt and thorough treatment is therefore specially important when impetigo affects the beard region. In the other three diseases, pustules form around the hair follicles, and in separating them from each other one has to lay stress upon the predominant feature in each. Pustules are common in ringworm when the affection is derived from one of the lower animals, but even in such cases there is almost invariably one characteristic which enables the diagnosis to be made at once. That is *the presence of deep firm nodules* scattered here and there over the affected surface, the hair over which usually comes out much more easily than that on the surrounding skin. The real difficulty in separation lies with the two remaining ones, and more than one dermatologist of eminence refuses to recognise any distinction between them. The difference is that in sycosis the pustules

[1] There is not much resemblance traceable to the dried fig familiar in this country, but the pink centre of a fresh ripe fig with the yellowish-white seeds dotted through it is somewhat suggested by the reddened skin and the yellow pustules of a typical example of the disease.



SYCOSIS.

around the hairs are the essential lesions, while in dermatitis any pustules which are present are secondary to the general inflammation of the skin. It is true that in sycosis there is almost invariably a certain amount of dermatitis and reddening of the intervening skin, and in some cases it is indeed difficult to draw a distinction.

Of the two, sycosis is the more serious condition. The infection is deeper and consequently more difficult to cure. The disease is most common upon the cheeks, where the number of pustules, each surrounding a hair, may be very great. It is less common on the moustache region. That portion of the upper lip immediately below the nostrils is often the seat of an affection sometimes confused with sycosis. It is really, however, a dermatitis brought about and kept up by the irritating discharge of a nasal catarrh, and no amount of local treatment will do any real good until the catarrh is cured. This form comes within the sphere of the rhinologist, but many cases are easily enough cured by careful and frequent syringing of the nostrils with weak boric acid lotion.

The beard region may be affected by a seborrhœic dermatitis which sometimes resembles sycosis pretty closely, but may be distinguished from it by the fact that the eyebrows and eyelids are almost always also affected.

A rare form of eruption imitating sycosis occurs in individuals with very strong beards. A number of pustules are present, usually under the chin, and these when closely examined are seen each to surround a hair of which the free end has not escaped from the skin, but is growing downwards as it lengthens, and thus is producing irritation. With a little trouble the buried end may be disinterred, and the pustule disappears. No local application can do anything for this deformity, which if troublesome is best treated by liberating the hairs and allowing the beard to grow for a time.

Etiology.—The sheath of the extracted hair, and the pus which follows its extraction, teem with staphylococci, and proof of their causal relationship to the disease can easily enough be obtained by anyone who chooses to make the experiment.

Treatment.—The disease is always chronic, and has no

natural tendency to disappear. In treating it the first matter for consideration is the question of shaving. Some maintain that shaving tends to spread the infection and thus to aggravate the disease, and that the irritation of the razor is injurious, but the bulk of experience supports the view that the facilities for treatment provided by shaving more than counterbalance these disadvantages. A half-way house may be found, if desirable, by clipping the beard. The patient should use a very sharp razor[1] and an antiseptic soap, and he should rub the lather well into the skin. The hair in the centre of the pustules should be extracted *before* shaving. This removes a certain amount of the contagion, and facilitates the access of the antiseptic used to those organisms which remain in the empty follicle. The case may then be treated by various antiseptic ointments, oleate of mercury, ammoniated mercury, sulphur, or salicylic acid; whichever is selected should be very thoroughly rubbed into the skin, say for ten minutes twice a day. Weak preparations thoroughly applied are much more useful than stronger ones merely smeared on the surface. The X-rays are often useful in obstinate cases, unfortunately a large proportion. The reaction is often exceptionally severe, and great caution should be observed. When the hairs fall out the case looks so much better that it is sometimes difficult to persuade the patient that any further treatment is required. But if nothing further is done, the disease will return with the hair. Some antiseptic ointment (*e.g.* Ung. hydr. nit. 1; ung. zinci. ox. 10) should be vigorously rubbed in twice daily, and the new hair should be shaved when it appears. My results have been most satisfactory in the cases where there was permanent destruction of the hair.

Counter-irritation may be applied with the object of attacking the organisms indirectly. I believe, indeed, that if applied promptly at the early stages of the disease, provided that it is not too extensive, it is the best treatment. In many, the application of perchloride of mercury in spirit (1 to 500) is followed by great improvement; it often blisters the part. Other counter-irritants, such as ordinary blistering fluid, may

[1] The ordinary razor or the Durham-Duplex safety razor, which has a similar cutting action, are to be preferred to the ordinary type of safety razor in cases of sycosis.

be used. Hodara recommends nitrate of silver in solution, 1 to 4 per cent.

If I formerly damned the vaccine treatment of acne with faint praise, I early recognised its usefulness in sycosis, and increasing experience has confirmed this favourable impression. For some time I endeavoured to treat all my cases with autogenous vaccines, but the labour was enormous and the advantages certainly not commensurate with it. Most cases of sycosis are due to the *Staphylococcus aureus*, and a vaccine of that organism is therefore appropriate. But it is well, if possible, to make cultures from each case, and if other organisms are present to use a combined vaccine. I have recently had some good results from autogenous pus vaccines. In individual cases the interval between the injection may be shorter or longer—our usual interval is a fortnight.

When the disease is nearly well, patients are often desirous of re-growing their beard; this is a dangerous experiment. Often when perhaps after two years of treatment a sycosis has been subdued, an attempt to re-grow the beard results in the return of the disease with all its old intensity. The hair should not be allowed to grow until quite a year *after all trace* of the disease has disappeared.

RINGWORM

TRICHOPHYTOSIS (*θρίξ—the hair, and φυτόν—a plant*)

Ringworm is caused by the implantation and growth of a fungus. The appearances produced vary so greatly on different parts of the skin that it is desirable to describe the principal varieties in detail, rather than attempt to give any general description of the disease.

Ringworm of the Scalp, *or Tinea tonsurans*, comprises two diseases—in the one the fungus present is the small-spored (*Microsporon Audouini*), in the other the large (*Trichophyton megalosporon, endo-* or *ecto-thrix*).

It is unnecessary for the student to enter upon a study of the botanical relationships of the two fungi; both cause a disease clinically known as ringworm. The relative pro-

portions of the two have a curious relation to the parallels of latitude. In Scotland, most of our cases are caused by the microsporon; in London, its proportion is between 80 and 90 per cent. (Fox and Blaxall); in Paris, 60 to 70 per cent.; while in Italy nearly all cases are due to the trichophyton. Too much stress has been laid on the relative size of the fungus elements in the two diseases, for after all they differ comparatively little. Their arrangement is a much sharper distinction; those of the microsporon are arranged irregularly in a *mosaic*, those of the trichophyton in the form of chaplets of beads, or *rosaries*. The terms large- and small-spored have, however, provisionally established themselves, and are in general use.



Fig. 42.—Patch of small-spored ringworm.

Ringworm of the scalp is practically restricted to childhood. Most cases commence between the ages of seven and twelve, and even if left entirely alone, the disease dies out about the age of fourteen. (Ringworm of the scalp in the adult is so rare that nothing but the clearest demonstration of the fungus should ever lead a young practitioner to diagnose it.)

Small-spored or Mosaic Ringworm.—The first evidence of the disease is the appearance, or rather the discovery somewhere on the scalp, of a small rounded spot, partly denuded of hair. The size, of course, depends on the date of observation. The hairs on the spot are short, dull, often *darker* than normal, and, having completely lost their elasticity, are bent and twisted in all directions. If one could imagine a cow tethered in a rich meadow and thus compelled to feed on a circular patch, the appearance that patch would have, when the cow was finished



TINEA CIRCINATA AND IMPETIGO.

with it, is the appearance of early untouched ringworm. The stumps of the hairs, like the grass, are bent and twisted in all directions. The surface of the skin is covered with greyish-white scales, and often a reddish ring, on which the hairs are shorter than in the centre, margins the spot.

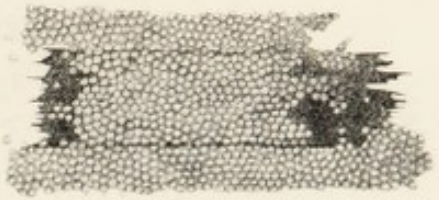


Fig. 43.—Portion of a hair attacked by the small-spored fungus. Mounted in Liq. Potassæ.

This is the most typical form of the disease, but in many cases the infection is not so localised in spots, and irregular patches of varied sizes are found, on which broken (diseased) and healthy hairs are found alongside of each other. This latter form is almost as common as the circumscribed one, and owing to its wide dissemination it is more difficult to cure.



Fig. 44.—Culture of Microsporon Audouini.

When a diseased hair is removed and examined under the microscope it is found to be *sheathed* by a mosaic of fungus, the elements of which are pressed closely together, so that their individual shape is altered. There may be seen, here and there, in the interior of the hair or in a portion of loose scale, threads of fungus. The hair substance is broken up, and the free end has a brush-like aspect. Fig. 44 shows the appearance of the fungus when grown in a test tube, but for details of growth, etc., the reader is referred to the larger works and monographs.

Large-spored or Rosary Ringworm.—Two distinct clinical types are associated with this variety. In one the hairs are broken off so short that the patch appears quite bald, and the fragments of hair appear in the follicles as black dots. Hence the name of "black dot" ringworm applied to it by Aldersmith, while the baldness led to its being christened, by Liveing, "bald" ringworm. The stumps are so short that it is difficult to procure one for examination,[1] and these cases are sometimes mistaken for

[1] They are best obtained by using a comedo-extractor.

alopecia areata. This form is said to be due to a sub-variety of the fungus which is distinguished as the "fragile" one.



Fig. 45.—Hair attacked by the large-spored ringworm fungus. Mounted in Liq. Potassæ.

In the other variety of rosary or large-spored ringworm, where the fungus is "resistant," the hairs may be even longer than those of the mosaic or small-spored variety. There is very much less scaling than in the mosaic form. Under the microscope the fungus elements are seen to be arranged in long rows (Fig. 45). They grow both inside and outside the hair, and in the majority of instances are larger than those of the other variety. Fig. 46 shows the crateriform growth typical of this variety of the fungus.



Fig. 46.—Crateriform growth of Trichophyton megalosporon.

Method of Examining the Hair.—It is essential that the hair examined should be one of the short broken ones. If no care be taken in the selection, the examination is a mere waste of time. The old plan of examining the hair in a drop of liquor potassæ is a satisfactory enough method for cases where microscopical examination is really unnecessary. If the hairs are obviously affected by ringworm, the caustic potash method confirms the diagnosis. If, however, there is any doubt as to the nature of the case, the method contains a good many fallacies which diminish its value. Those not in the habit of constantly examining specimens are too apt to diagnose as "spores" the drops of oil emulsion which the potash causes by emulsifying the greasy matter around the hair, while the outlines of epidermic cells are too frequently mistaken for mycelium. Cultures of the fungus can be stained quite well by Gram's or even simpler methods, but as a rule the hair itself takes up so much of the stain that special methods are required to dislodge it. Sir Malcolm Morris's staining method is as follows:—The hairs are first steeped in a saturated solution of gentian violet in

aniline water.[1] If a permanent preparation is required, the hairs should be previously washed in ether to remove grease. After ten to thirty minutes[2] in the stain the hair is transferred to Gram's solution of iodine (iodine 1, iodide of potash 2, water 300) for two minutes. It is then placed on a slide, firmly dried with blotting-paper, and a drop of aniline oil containing enough pure iodine to give it a light mahogany colour is applied. This removes the loose colour from the cells of the hair, while leaving it in the fungus, and in most cases the fungus is now readily seen under a low power of the microscope. If a more careful examination be required, the iodised aniline oil should be removed by pure aniline oil, a cover-glass placed on the top, and the specimen examined with the high power. If it is desired to keep the preparation permanently, the aniline must be washed off with benzol or xylol, and the hair mounted in Canada balsam.

Some prefer Sahli's method. The scale or hair is first freed from grease by passing through chloroform. It is then placed in a watch-glass containing formic acid, and is heated for two or three minutes till it boils. After washing in distilled water it is stained for one minute in Sahli's methylene blue.[3] It is then washed, dehydrated in absolute alcohol, passed through xylol, and mounted in balsam.

I do not propose to discuss the interesting cultural peculiarities of the different fungi, but cultivation is sometimes of real practical value (it is as fascinating and absorbing as the growing of orchids) especially in cases which are apparently cured. If the scalp in such cases is very carefully searched, one or two short hairs, not unlike those seen in alopecia areata, may be found. These hairs, though they look suspicious, are very often not diseased, and for such the cultivation test is much surer than the microscope.

It is not necessary to compound such elaborate media as are

[1] A solution of carbolic and gentian violet in water (5, 5-100) may be used instead of the aniline water dye, and has the advantage that it is always ready.

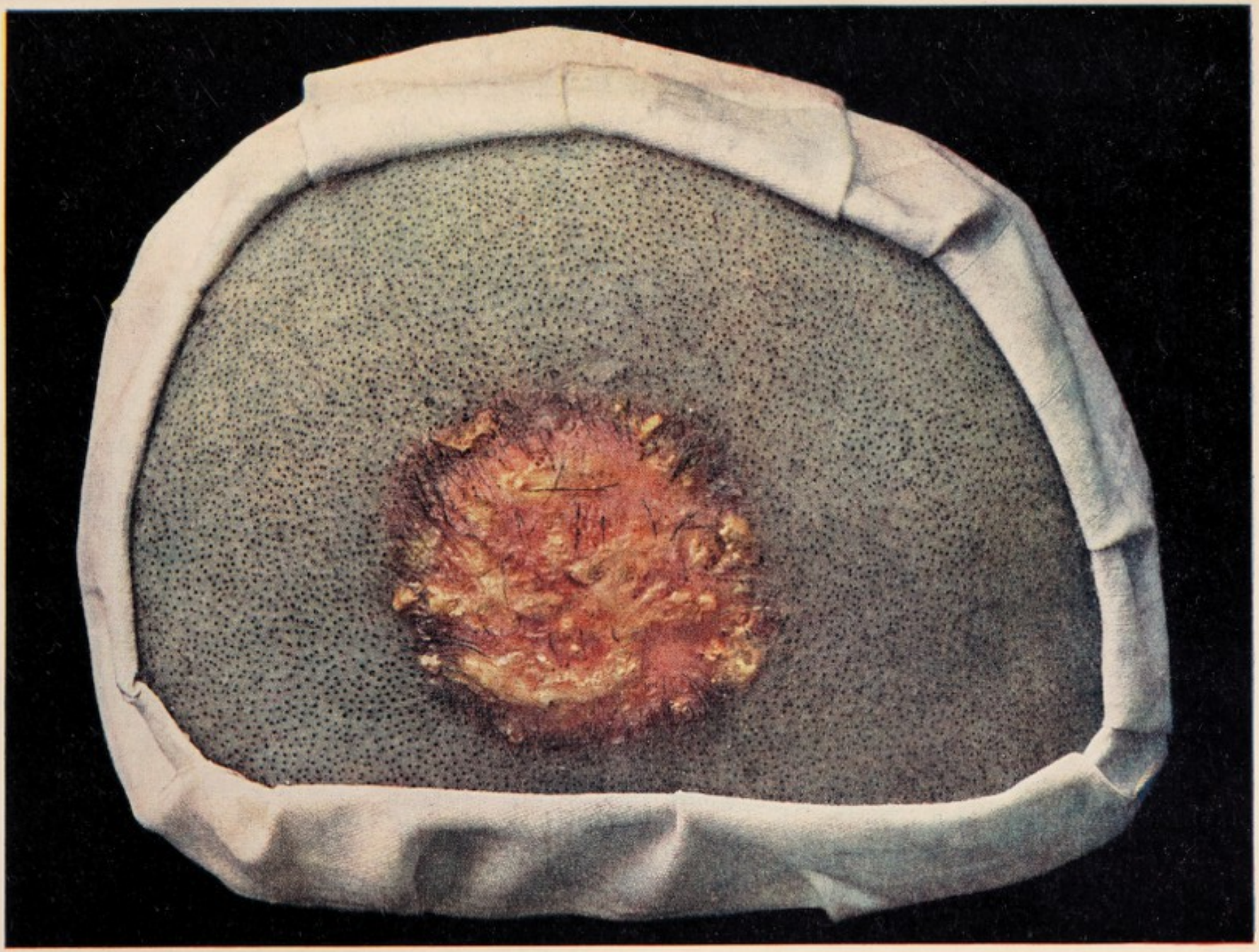
[2] The small-spored variety stains more rapidly than the large.

[3] Distilled Water - - - - - - - - - 40
Saturated Aque. Meth. Blue - - - - - - 24
Sol. of Borax - - - - - - - - - 16
Mix, leave a day, and filter.

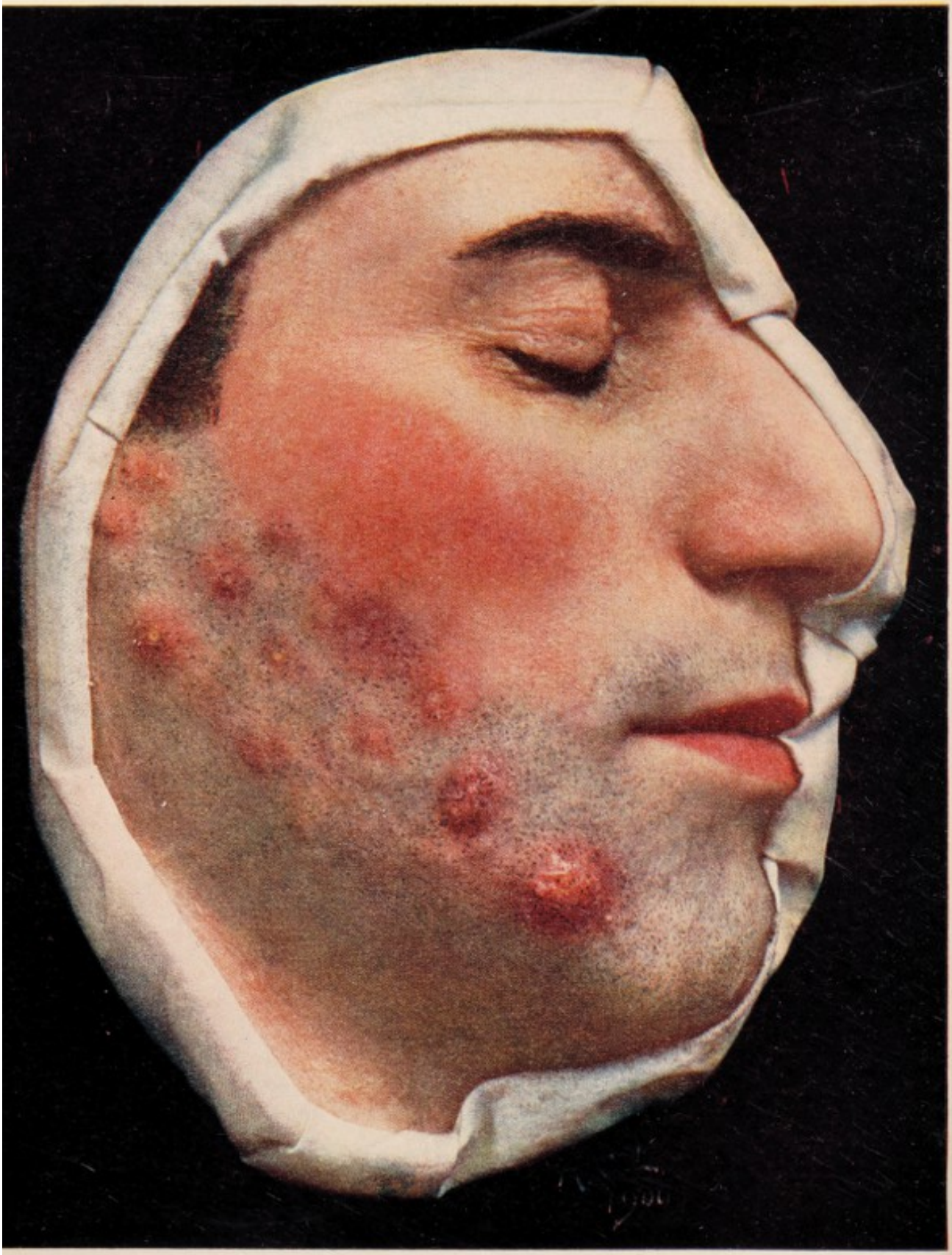
used in the laboratory. A very convenient one is made by the simple addition of from 1½ to 2 per cent. of agar to unfermented beer-wort. This is filtered, put into tubes and sterilised. Saprophytic organisms so abound in the scalp that it is usually necessary to take some means of preventing their growth. As the reaction of the wort is acid, they do not grow vigorously, but they may usually be destroyed without serious injury to any fungus present by soaking the hairs for a few minutes in absolute alcohol. Some varieties of fungus, notably the beard form, will grow after so much as half an hour's soaking in alcohol, and my usual plan is to incubate several hairs which have been soaked for periods varying from two to ten minutes. It is not necessary to have a laboratory and an incubator. The tube may be placed upside down in a tumbler on the kitchen mantelpiece, and in from three to ten days the growth will be evident.

Kerion (from *κηρίον*—a honeycomb).—I agree with all the British observers that this is a complication of ringworm that may occur whichever variety of fungus is present. It is not a very common and certainly not a very well-known condition, very often escaping diagnosis. I hope that Dr. Low's cast of a typical case will help to make it more familiar. It has been described as Nature's method of curing the disease, although in it Nature is more severe than she usually is in her cures. The whole patch swells up, the hairs fall out, the surface becomes red and glazed, and from the gaping follicles a certain amount of sero-purulent fluid can be expressed; hence the comparison to a honeycomb. The part feels boggy, and undoubtedly suggests an abscess. If an incision is made, there is, however, no pus liberated; and no benefit, indeed the reverse, is derived from incision. Very often the process affects all the spots on the patient's head; sometimes a few may be left unaffected. As the hairs are cast from the follicles it is very evident that if the process affected all the diseased follicles the cure would, though severe, be thorough. Unfortunately a few hairs at the margin too often escape, and all the annoyance and suffering are in vain.

Ringworm of the Body (*Tinea circinata*).—When ringworm spreads to the body we see, just as in seborrhœa, how



KERION.



TINEA BARBÆ.

differently the scalp and other parts of the body respond to irritants. The irritant, in this case the fungus, which merely causes faint redness and profuse scaling on the scalp, causes on the non-hairy skin considerable redness, scaling, or the development of vesicles (*Herpes circinatus*). The scaly patches are usually circular, pinkish in colour, and often show a tendency to flatten in the centre. The vesicular patches spread more rapidly, and usually show the rings to which the disease owes its name. Not infrequently, when the disease has apparently left the centre it re-appears there, and concentric rings may develop. In certain regions, such as the groin and the axilla, where heat and moisture are present, the fungus grows with great rapidity, and the signs of irritation are so increased that this form of the disease is still commonly described as *eczema marginatum*. Commencing in the region of the fork, the disease spreads down the thighs, and, less frequently, up on the abdomen. It is usually easily diagnosed by its abrupt margin, and the fungus is readily found. This variety is common in hot countries, where it goes by various names (Dhobie itch, craw-craw). The eruption is generally localised to the scrotum and the skin of the thigh in contact with it; it is of a dull red colour, and the inflammation does not as a rule go beyond the scaly stage. The fungus (*Epidermophyton inguinale*) is abundant, mostly in the form of mycelial threads. Before the war there were numerous cases, especially among the better classes, in this country (public schoolboys and University undergraduates), but the conditions of the war spread it like a pestilence. The close association of scores of thousands of young men supplied exactly the conditions favourable to its spread. It has not proved an altogether unmixed evil. Dermatologists all over the world have become familiar with the condition, and have sought for and have found the fungus in many and diverse forms of dermatitis which were formerly written down as eczema. It is always worth while examining the scales of an obstinate dermatitis for fungus.

The Plate (facing p. 208) shows the characteristic rings on the forehead; the child had ringworm on the scalp. The patch on the chin is an interesting combination of ringworm and impetigo contagiosa. Both forms of the fungus may cause body

ringworm. It is true that on the glabrous skin the fungus elements are more apt to be large and to develop into filaments than they are on the scalp, but this is explained by the increased moisture and blood supply, brought about by the inflammatory reaction. Children, the subjects of small-spored ringworm of the scalp, so frequently have patches on the neck and face that it is inconceivable that such patches are always due to the other variety of the fungus, as has been maintained by some observers.

Ringworm of the Beard (*Tinea barbæ*).—The disease in this region presents itself in more than one form. It may appear as *Tinea circinata*, ringworm of the body, of which the skin of the beard region forms a part. Here we have the rapid development of a ringed patch, which is fortunately as amenable to treatment as tinea circinata generally is. The more common variety, the old barber's itch, is a deeper infection, and the process generally bears a close resemblance to kerion. Thus the affected part is almost always swollen, nodular, and painful; the presence of nodules should always suggest ringworm. These nodules are shown in the adjoining Plates, the first of which is of a patient who contracted the disease at a barber's; the second illustrates the severer type of the inflammation when the contagion is derived from an animal source: in this case cattle. The hairs do not break off so readily as they do in ringworm of the scalp, probably because they are stronger and more resistant, but they are looser and not so painful to extract as in sycosis. On cultivation the fungus of beard ringworm shows distinct differences from the other forms. The culture (Fig. 47) resembles a splash of plaster on a wall, and the surface has a characteristic powdered-sugar appearance.



Fig. 47.—Culture of ringworm of the beard.

Ringworm of the Palms and Soles, like the disease of the nails, often escapes recognition. For the most part it causes comparatively little inconvenience; the skin is red and



TINEA BARBÆ
OF ANIMAL ORIGIN.



EPIDERMOPHYTOSIS.

slightly scaly, but every now and again it breaks out into an attack of "eczema" with vesicles and exudation, and I think there is no doubt that in the past we complacently diagnosed many of these cases as cheiropompholyx. Under the soothing treatment usually prescribed, this dies down and the condition subsides into its old chronic form in which it may persist unrecognised for years. As there are no hairs on the palm, the variety of fungus which causes the infection is distinguished as an epidermophyton. It is easily detected by examining scales soaked in liquor potassæ. The disease, because of the special structure of the skin of the palm, is not so easily cured as is tinea circinata.

The patient from whom the Plate opposite is taken had had the disease to his knowledge for seven years.

Ringworm of the Nails.—In the last few years I have seen a great many cases of ringworm of the nails, so that I can no longer speak of it as I formerly did as an astonishingly rare condition. My astonishment is now reserved for the complacency with which we diagnosed these cases as "onychia" and failed to examine them thoroughly.[1] Dr. Cranston Low reported some of these cases in a communication to the Edinburgh Medico-Chirurgical Society (*Edin. Med. Journ.*, February 1911), which should be consulted by those desirous of further information. The affected nail has a dull yellowish opaque appearance and becomes very friable. Sometimes the disease extends in a line, perhaps a quarter of an inch broad, some distance down the nail, without spreading to the lateral portions. It can only be definitely diagnosed by examining shavings well soaked in liq. potassæ under the



Fig. 48.—Ringworm of the nail. Mounted in Liq. Potassæ.

[1] A recent writer (Hodges), in the "American Archives of Dermatology," estimates that one in five hundred of the inhabitants of the Southern States suffers from this disease. It is commoner in this country than is generally supposed, but it is not so common as that.

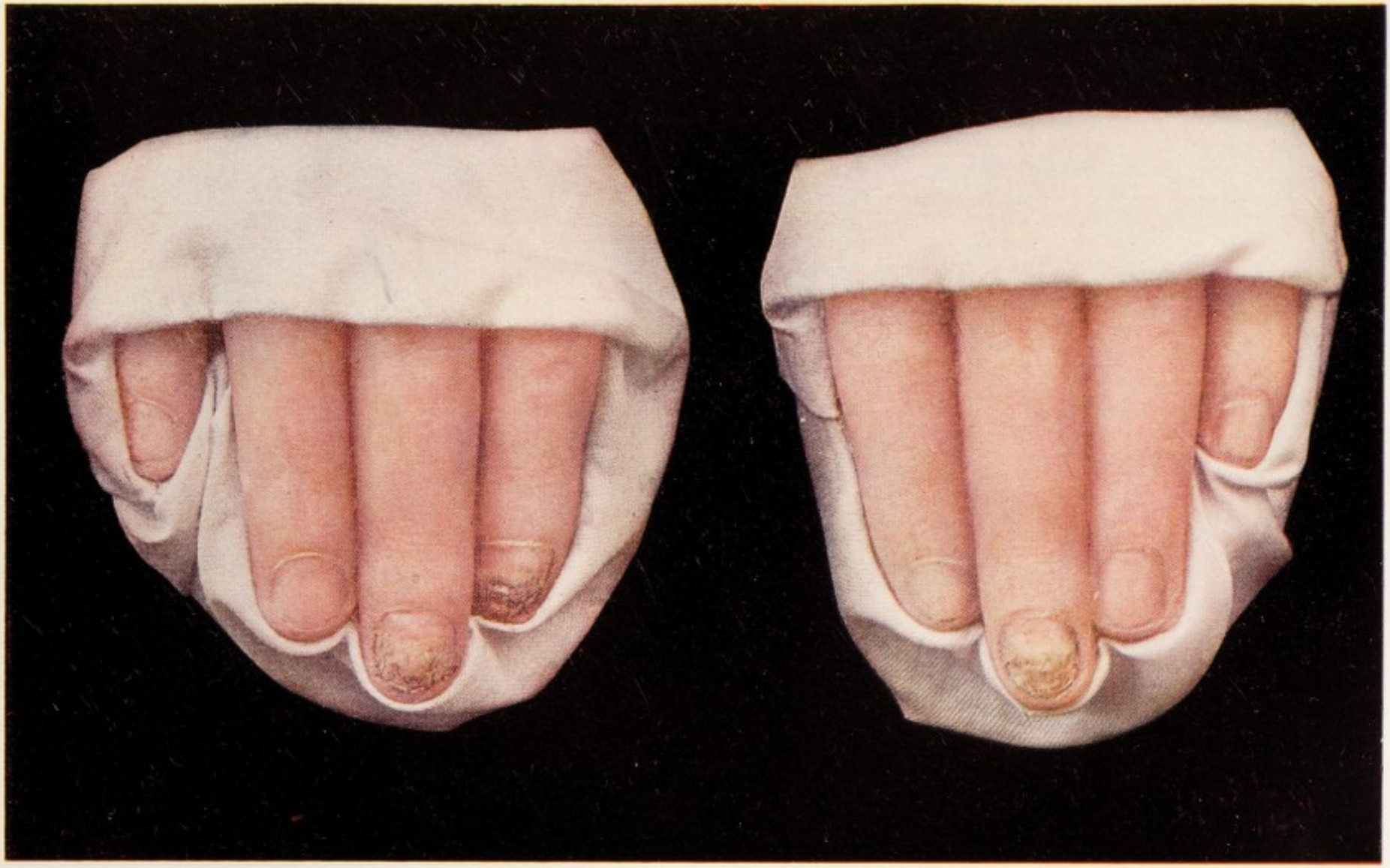
microscope. The typical appearance of ringworm of the nails is shown on the Plate, and Fig. 48 shows the microscopic appearance.

PROGNOSIS.—If a case of ringworm of the scalp is left alone, it will usually last until the child reaches the age of fourteen or fifteen, when it will disappear spontaneously. This fact must be kept in mind when considering the question of the severer methods of treatment, especially X-rays, in the case of children approaching that age. In the case of younger children, while prophecy is always rash, it is particularly foolish to speak of any period less than eight months as the likely duration of any of the older methods of treatment. The more experience one has in ringworm the longer one usually requires for its cure.

Ringworm of the nails also requires much patience. Ringworm of the beard or of the palms should be cured in from six to eight weeks; ringworm of the non-hairy skin (tinea circinata) in from six to ten days.

TREATMENT.—When the cause of a disease is so accurately known as in this instance, treatment should theoretically be easy. Unfortunately this is not so in practice, especially when the disease affects the scalp or nails. The fungus is destroyed easily enough in the laboratory, but it is different when we are dealing with patients, the difficulty being to get the destructive agent brought into contact with it. Some, indeed, go so far as to maintain that it is useless to endeavour to destroy the fungus, and that all we can hope to do is to provoke such a reaction of the skin as will *indirectly* cause its death. It may be admitted that in the majority of cases of ringworm of the scalp, means other than the *direct* destruction of the fungus are generally the more useful.

In **Ringworm of the Body** (*Tinea circinata*) the fungus is superficial and easily reached. Here the directly destructive method is eminently successful. The unguentum hydrarg. ammoniat. or any anti-parasitic ointment, continuously applied, will soon get rid of the disease. Harm is often done by excessive strength of the application. The fungus does not require for its destruction concentrated remedies, which too often replace the irritation of the fungus by an irritation of their own. The old-fashioned plan of painting such cases with



ONYCHOMYCOSIS (RINGWORM OF THE NAILS).

tincture of iodine is a combination of the direct and indirect methods of treatment, and is often useful. Aldersmith recommended acetic acid 2 parts, liniment. iod. 1 part. This should be painted on every day or every other day, and should reach a quarter of an inch beyond the visible disease.

Ringworm of the Groins and Axillæ.—It may be necessary, if there is much reaction of the skin, to treat these cases for a few days with soothing remedies, *e.g.* a one or two per cent. ammoniated mercury paste, or boric ointment, but I believe the most efficient remedy is a three or four per cent. chrysarobin paste. It was indeed for the treatment of this condition that chrysarobin first came into notice. It is not nearly so irritating as might be apprehended, and its disastrous effects on the clothing may be avoided by wearing one, or even two pairs of bathing drawers. Whitfield's ointment (ac. benzoici 5, ac. salicyl. 3, paraff. moll. 25 ol. cocois nuciferæ, ad. 100) has a deservedly high reputation in the treatment of epidermophytosis, and it is of course a much more cleanly application than chrysarobin.

Ringworm of the Scalp.—Although possibly the variety of the fungus has some bearing on the prognosis of any given case (the large-spored variety being usually more easily got rid of than the small), it has none on the treatment. The direct method is shown in its least favourable aspect in treating ringworm of the scalp. The hair follicles are deep, the fungus extends throughout their entire length, and it is impossible to induce any destructive agent to penetrate to the bottom of every individual hair follicle. Still, parasiticide remedies have great advantages. Although much of the fungus is in the follicles, much is present on the broken hairs and in the scales surrounding them, and these are eminently open to the effects of local applications, which have the further important effect of checking the spread of the disease.

In an ordinary case of ringworm of the head of a child the first thing to be done is to have the hair cut short and the diseased spots identified. The hairs around each spot should be extracted. Care must be taken with regard to the use of brushes, towels, caps, etc., and the child should sleep alone. The head should be "scrubbed" daily; washing certainly

diminishes the spread of infection, besides removing mechanically a large amount of fungus. I often tell my students that when a case of ringworm is discovered in a family, the treatment of the unaffected children is almost more important than that of the diseased one. The hair of all the unaffected girls as well as the boys should be kept short, and their heads should be washed daily. In ringworm prevention is much easier than cure.

The Direct Method.—In considering the applications to be made, it should never be forgotten that much more depends on the method of application than on any particular drug selected. The drugs which may be used are legion, and the actual selection is a matter of individual taste. Most of the mercury salts, copper salts, resorcin, formalin, iodine, salicylic acid, carbolic acid, boric acid, many of the modern synthetic antiseptics, etc., have the power of destroying the fungus.

The form in which they are applied is more important. Seeing that the fungus extends down to the base of the follicle, it seems unreasonable to expect aqueous solutions to be of much value. The two forms of application with which to reach the fungus are ointments and soaps. The mere spreading of an ointment on the surface avails very little. It must be *thoroughly massaged* into the scalp with the thumbs. The more prolonged and thorough this massage is, the more rapid will be the cure, and it should certainly occupy not less than ten minutes twice daily. Medicated soaps are theoretically more efficacious, since their power of removing grease should enable them to penetrate better. They do not, however, carry with them the medicament so well as do the ointments: still a combination of soap and ointment is often useful.

There are methods of increasing the activity of any given drug. Thus salicylic acid, with its solvent power on the epidermis, is a useful addition; carbonate of potash is another. The basis of the ointment is important, and should in some proportion at least be lanoline. It seems to be universally admitted that lanoline (adeps lanæ) has a greater penetrating power than the majority of the commonly used fats. If goose grease can be procured, it may be substituted for lanoline.

I think I have seen more rapid cures follow the use of an ointment containing half a drachm of iodine to the ounce of goose grease than any other ointment. But the real article is not easily procured. Useful ointments are the following:—

℞	Sulph. Præcip. }			℞	Hydrarg. Oleatis.	(grs. xl)	4·0
	Hydrarg. Am. }	āā	(℥ss) 3		Acid. Salicylici	(grs. x)	1·0
	Acid. Salicylici		(grs. xx) 2		Lanolini }	āā	(℥ss) 20·0
	Lanolini }	āā	(℥ss) 20		Vaselini }		
	Vaselini }						

Sig.—To be thoroughly massaged into the affected spots for at least ten minutes twice daily.

The Indirect Method aims at stimulating the skin to destroy or throw off the fungus. The popular method is the application of tincture of iodine, which, in addition to its irritant action, has also a directly destructive one. It is, however, not very efficacious in ringworm of the scalp. Blistering is more often successful. Under this are included many forms of application. The blister is not necessarily produced by blistering fluid. The application of pure carbolic acid, recommended by some on account of its antiseptic powers, owes its value chiefly to the irritation which it sets up. Strong solutions of perchloride of mercury in spirit have the same action. No doubt these drugs destroy the fungus on the surface, but they do not penetrate far into the follicles. The frequency of their application must be regulated for each individual case, and the irritation of one application should have nearly disappeared before another is made. Carbolic acid is applied pure, and the perchloride spirit, which is curiously irregular in its effect on different cases, should commence at a ½ per cent. and be increased as experience shows to be necessary. Chrysarobin, which is a favourite remedy with Unna and Morris, requires care in its application to the head, on account of its tendency to cause erythema of the face, and conjunctivitis. I look on its action as mainly indirect (p. 216). Unna applies it in his compound (5 per cent.) chrysarobin ointment, and covers the forehead with a special gelatine dressing to prevent the drug from reaching the face. Morris rubs in a chrysarobin

ointment for ten minutes, and then wipes away the excess. A useful way of applying it is in the form of the salve stick, which is a handy and economical method of treating many skin diseases. It is composed in this instance of—

℞	Chrysarobin - - - - - - -	2
	Wax - - - - - - - - -	2
	Lanoline - - - - - - - -	5

These are melted together and shaped into a rod like those with which our grandmothers used to fix their curls on their foreheads. The risk of the chrysarobin affecting the skin of the face is less than when applied in ointment. I can testify to the merits of Hodara's method of applying this drug. He advises that it be applied for three or four days and then wiped off with olive oil. He then leaves the part alone for a few days, when the cycle is recommenced. I have used his formula (Chrysarobin 1; glycerin, chloroform āā 5) daily for some weeks, without in any case setting up serious dermatitis, so that the Scottish scalp is apparently more resistant than the Turkish.

A rather heroic mode of treatment is that advocated by Aldersmith, namely, the application of *croton oil*. The object of this is to imitate Nature, and to produce what is known as *artificial kerion*. Croton oil is a dangerous remedy, and must be used with the greatest caution, for it sometimes leaves the part permanently bald. If it is to be used at all it should get a fair trial, and be used exactly as Aldersmith directed. A small part is selected in order to test its effects. The hair is cut short for some distance around the spot, and carbolic lanoline is applied, so as to limit the spread of the oil. One drop of croton oil is then brushed over the part with a small camel's-hair brush, and the part covered with a small *linseed-meal* poultice. The poultice is applied without any muslin between it and the skin, and is covered with oil-silk. Means must be taken to prevent it slipping. The painting is repeated daily or every alternate day until either the whole part swells up, as it does in kerion, or until a purulent folliculitis is produced without elevation of the skin. The croton oil may then be stopped, but the poultices should be continued until all the hairs have fallen

from the follicles. The after-treatment is that of kerion. If the diseased hairs are few in number, they may be treated by the application of the oil on a blunt needle passed into the diseased follicles.

The effect of croton oil must always be carefully watched, as it may produce sloughing of the skin. The first indication of this is, according to Aldersmith, a whitish pellicle on the surface, quite different from the redness usually produced.

The Mechanical Method.—Theoretically, epilation is a valuable addition to any other treatment. The removal of the diseased hair is clearly most desirable. Unfortunately, it is in the majority of cases impossible, because the hairs break off, and the diseased part is left in the follicle. In the early stages of the disease an expert may be able to remove entire a certain proportion of the affected hairs, but it is questionable whether the benefit repays the time required. But as the disease improves and the hairs are less affected its value becomes greater, and it is a good practice to extract the apparently healthy hairs around small diseased areas, for some of them will almost certainly be in the first stages of infection.

X-rays.—In the second edition of this book, published in 1902, I referred to the fact that I had used X-rays in the treatment of ringworm, but that owing to the risks and uncertainties of the treatment I was not prepared to recommend it for general use. Since then methods have been greatly improved, and, thanks largely to the ingenuity of Sabouraud, it must now be recognised that in the X-rays we have the most efficient means of treating ringworm. The method is, however, by no means free from risks, nor is it so invariably successful as its more enthusiastic exponents unconsciously suggest. As no one will dream of using the method simply from this description, a very brief allusion to the technique will suffice. Briefly, it consists in the exposure of the affected scalp for a definite limited period (twelve to twenty minutes) and at a definite distance to the action of the rays. Some ingenuity is required to so arrange the tube that each part gets the proper exposure—no more

and no less. If it gets more, unpleasant and sometimes serious reaction is produced; if it gets less, the hairs do not come out. We use in the Royal Infirmary Adamson's method, which brings about depilation of the entire scalp with five exposures, and Sabouraud's pastilles to measure the dose. Assuming that everything has gone right, in between two and three weeks from the exposure the hair begins to fall out, and in another week the exposed areas should be completely bald. The short diseased hairs do not come out so easily as do the long healthy ones, and their fall should be assisted by vigorous washing and scraping with a blunt instrument, such as a paper cutter. Antiseptic ointment should be applied to destroy any remaining traces of fungus. The new hair should begin to be evident six or eight weeks later, and in three or four months has completely re-grown.

Now, if every case followed this orderly rule one would have no hesitation in saying that all cases of ringworm should be treated by X-rays, for no evil results are produced when all goes well. Unfortunately, there are a good many drawbacks to the method. The first has already been alluded to. It is not uncommon for small areas to escape the full dosage, and for the hair to remain on those parts, and one is faced with the difficult problem of a second dose. Only when a rapid cure is a matter of extreme urgency should this be administered less than six weeks after the first, and then the most rigorous protection of the bald places must be enforced. The other extreme is less common, though I have seen quite a number of cases in which considerable reaction was produced, and one or two in which apparently permanent baldness has resulted. There is, however, one drawback which I think has not received the attention it merits. When the disease is confined to one patch, or to one region of the scalp, the X-rays applied to the affected part only would seem to be an ideal method of treatment. But the loosening of the hairs which they bring about very much increases the risk of infection, and in spite of the strictest injunctions it is by no means uncommon to see the disease actually spread by the treatment. Of course, this ought not to occur; the hair ought to be cut short, the head washed twice a day, and kept anointed with an antiseptic

ointment. But it does occur, and I have abandoned the X-ray treatment of single patches.

Before deciding on the use of one or other of these more drastic methods, one must take into serious consideration the fact that the disease tends to disappear about the age of fourteen, even if it is left altogether alone. There is something in the adult scalp which resists the attack of the ringworm fungus, and, while using these severe measures, we should keep in mind that our researches should be directed to the discovery of what it is to which this immunity is due. We have made some experiments with vaccines of the fungus, but our results have not been encouraging. Recently it has been stated that a sort of von Pirquet reaction can be produced in patients who have suffered from ringworm even years previously. Since ringworm is not a disease in which one attack protects from another, and since adults, though immune on the scalp, are not so on the rest of the body, it would seem that this immunity of the scalp is not the same as that with which we are partly familiar. But it is the discovery of the nature of this immunity which will solve the question of ringworm.

Kerion.—When this condition has developed, the essence of treatment is an attitude of masterly inactivity. Stimulant applications never do good, and often do harm. Either zinc ointment, or perhaps still better starch poultices, should be applied until the irritation subsides and the part flattens down to its original level, when it must be carefully examined in order to discover whether any of the fungus has survived. As a safeguard, it is well to remove all the marginal hairs for some distance beyond the inflamed patch. The part remains red for a considerable time, and if the hair be long in reappearing, some stimulant application, such as turpentine, should be used. Generally, however, no treatment but the soothing poultice is required.

Ringworm of the Beard.—As already indicated, ringworm of the beard region may appear in two forms. It may spend its force on the skin, and run the course of ordinary *tinea circinata*. According to some, this is the antecedent stage of the severer form. With that opinion I do not agree. At all events, in the many cases of nodular ringworm of the beard

which have come under my notice there is usually no history of any such commencement. This variety is further as amenable to treatment as is tinea circinata generally, disappearing in a few days under the application of unguentum hydrarg. ammoniat. or other germicide ointment.

In typical ringworm of the beard we have not the same difficulties with regard to epilation as in ringworm of the scalp. The hairs here do not so readily break, the extent of the disease is generally fairly defined, and epilation is of the very first importance. The hairs over the diseased part should be allowed to grow long enough to be easily seized by the forceps, and any part where there are nodules should be thoroughly depilated. After this has been done some antiseptic ointment should be rubbed in, and, as the diseased follicles are now all patent, the ointment has ready access to them. While any desired antiseptic may be used, I have a definite preference for a 10 per cent. oleate of copper ointment. Its colour is a drawback; the ung. hydrarg. ammon. of the B.P. is usually sufficient, if not quite so efficient. Ringworm of the beard has about it none of the despair which attaches to ringworm of the scalp, and it is rarely, if ever, necessary to have recourse to the X-rays.

Ringworm of the Palms.—This is an obstinate affection, and treatment must be persevered with for a considerable period after the disease has apparently been cured, for the fungus is not so easily got at in the thick epidermis of the palm as it is on other parts of the non-hairy skin. It seems to be generally agreed that Whitfield's ointment (p. 217) is the best remedy. For weeks after apparent recovery the patient should inunct the parts with some antiseptic ointment (*e.g.* Ungt. hydrarg. ammoniat.) and should sleep in gloves.

Ringworm of the Nails.—This is, as may naturally be expected, a very obstinate affection. It is difficult to destroy the fungus in a hair follicle, and still more so to destroy it in a hard substance like the nail. As much as possible must be cut away, and the remainder should, with a piece of broken glass, be scraped down as thin as possible, before the application is made to it. An unusually large series of cases of ringworm of the nails

has enabled me to test the efficacy of various methods. The Harrison method, for which the following two solutions are required:—

℞ No. 1.—Liquor Potass.		
Aq. Distill.	- - - - -	āā ℥ss
Potass. Iodidi	- - - - -	℈j
℞ No. 2.—Hydrarg. Perchlor.	- - - -	grs. iv
Spirit. Vini		
Aq. Distill.	- - - - -	āā ℥ss

is used as follows:—

No. 1 is applied on a piece of lint and covered with protective. After remaining on for fifteen minutes, a piece of lint soaked in No. 2 is applied for twenty-four hours. The theory is that the iodide dissolved in the liquor potassæ is enabled to make its way among the softened nail cells, and that it is followed by the mercury, which combines with it to form the red iodide in the immediate neighbourhood of the fungus. This method, which is sometimes followed by unpleasantly severe effects upon the scalp, is useful in ringworm of the nails.

It is, however, very painful, and after trying a number of methods we are satisfied that the best is to cover the skin of the end of each finger with zinc paste, leaving the nail only exposed. A piece of lint dipped in Fehling's solution is applied to the nail and the whole covered with a rubber finger-stall. In twenty-four hours the nail is often so soft that it can be entirely removed, and the pain experienced is not nearly so great as that associated with Harrison's treatment. We tried other methods—sulphate of copper without the additional ingredients of Fehling's solution—and found it valuable, though not so valuable as the combination. Perchloride of mercury and pyrogallic acid both got a thorough trial, but they, too, were more painful and not so efficient. Most of the patients were young women with several nails affected, and different methods were tried on the same hand. The patients were interested in the competition, and nearly all agreed that the Fehling nails did best.

Ringworm is sometimes spoken of as the *opprobrium dermatologicum*, and we dermatologists must accept the accusation. But the opprobrium does not lie only on the dermatologists.

The prevalence of ringworm is a disgrace to all concerned, and it is high time it was taken in hand by all Public Health Authorities. It is only those who have had the disease in their own families who fully appreciate its importance, and have brought home to them the interruption not only to school but to education in its broadest sense. It is not good for a child of eight or ten years of age to be isolated from its fellows and treated as a social leper. In Paris the matter has been seriously taken up, and in the ringworm schools so much has been done that Sabouraud—perhaps unduly sanguine—hopes to stamp the disease out of Paris in a few years. The Metropolitan Asylums Board has done a good deal in a similar way in London, but too many cities still virtually ignore the disease. In 1912 the School Board of Edinburgh established a special school for the education and treatment of children affected with ringworm and favus, and in co-operation with the Skin Department of the Royal Infirmary the problem has been taken seriously in hand, with results on which I think all concerned may legitimately congratulate themselves.

The majority of the School Medical Officers in Scotland have kindly furnished me with lists of the children who were absent from school on 15th June 1921 on account of ringworm or favus. Allowing for those districts from which I have received no returns I estimate the figures at 700 ringworm and 30 favus, a rather formidable figure for preventible diseases.

The blame for this does not all lie on one set of shoulders. As a profession we have not taken a serious enough view of it, and too many of the older generation speak far too lightly of the disease to their patients. Hardly a month passes without my seeing a child who is attending a public school, the parents being often perfectly aware of the fact that the disease is still present. It is often, too, my painful duty to report on children who have been certified as cured and sent back to school with the disease rampant. I am perfectly well aware of the reason. The public, encouraged by the older generation, look upon ringworm as a trivial disease which any doctor ought to be able to cure in a few weeks, and they convey to the doctor the impression that if he is not able to do this some chemist or

veterinary surgeon is. It must be realised all round that ringworm is not a trivial disease, that it is exceedingly difficult to cure, and that until it is absolutely cured strict precautions must be taken. It is the nearly cured cases, in which these precautions are relaxed, which are the dangerous ones.

No patient should ever be certified as free from ringworm unless, on a careful examination, *after three weeks without any treatment*, no scaling and no broken hairs are to be found. As long as these persist there is certainly disease present, and before giving a certificate the head should be examined, not casually, as is often done, but carefully with the aid of a lens. Personally, I never give a certificate that a child is free from ringworm. I simply state that, having carefully examined the patient, I can detect no trace of the disease.

FAVUS (Honeycomb Ringworm)

(*Favus—a honeycomb*)

Favus is another disease of the hair, hair follicles, and surface epidermis, due to the growth of a fungus. It is curiously capricious in its geographical distribution. It is common in France, rare in Germany, common in Scotland, and it was almost unknown in the South of England until the action of the Russian Government, twenty-five years ago, sent Jews and Favus together to London. Like ringworm, it may affect any part of the skin, and even the mucous membranes, but, like it, it is most common upon the scalp. Its most striking feature is the production on the surface of rounded, cup-shaped crusts, or *scutula* (see Plate), but it may also give rise to a moist dermatitis with vesicles, not unlike tinea circinata.

The fungus which causes the disease was described in 1849, and was named by its discoverer the *Achorion Schönleinii*. It differs from that of the more familiar ringworm both in its method of growth and in its method of attacking the hairs. The hairs affected by favus are not broken off as are those of ringworm, but they differ from the normal hairs around in their stiff, lustreless, faded appearance. When such a hair is

examined under the microscope[1] it differs entirely from those affected by any of the varieties of ringworm. The fungus elements are longer; they fill the interior of the hair, and obliterate altogether its normal structure; there is no sign of the medullary canal (Fig. 49). If a portion of a scutulum adheres to the hair, the difference from the ringworm fungus is not so striking, for here the elements are shorter and more closely resemble the spores of ringworm, though it is true they generally tend to be oval in shape. The scutulum is a sulphur-yellow mass of varying size, showing in the centre a depression which becomes more marked as the scutulum enlarges. This is not due, as used to be taught, to the anchoring down of the centre by a hair, but to the fact that the fungus elements of which the scutulum is almost entirely composed are more luxuriant and moist at the margin, while at the centre they are dry and closely packed together (Fig. 50). A scutulum develops when the fungus is grown on nutrient agar in a test tube (Fig. 51). When a scutulum is forcibly removed it is seen to occupy a depression in the skin, the surface of which is moist and red. The baldness so often caused by favus is due to the pressure of the hair roots between the scutulum and the skull. The disease itself does not destroy the papillæ — their destruction is merely mechanical—and if the scalp is kept free from scutula by daily washing, there is little interference with the growth of hair. If left alone, favus steadily advances until the entire scalp is involved; and if the case is neglected and scutula are allowed to form, the disease may ultimately cure itself by



FIG. 49.—Favus hair — shows fungus in the interior, and portion of a scutulum through which it grew.

[1] The staining method described under ringworm is of little use in favus, except in expert hands. The fungus in the hair sheath is easily stained, that inside the hair only with great difficulty. As a rule there is so much fungus that it is easily detected by the potash method.



FAVUS CAPITIS.

destroying all the follicles, and thus producing complete and permanent baldness.

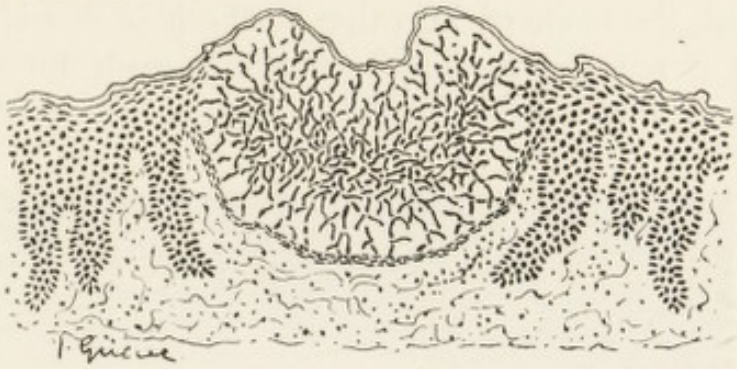


FIG. 50.—Section of a scutulum *in situ*: very thin layer of epidermis beneath, thin horny layer above. The fungus in the centre is more closely packed, hence the depression. (× 100.)

Two domestic (?) animals, the cat and the mouse, are attacked by this disease, and are in many cases responsible for spreading it. In the mouse the disease is much more serious than in the human subject, for the pressure effects of the scutula are so great that the bones of the skull are eroded and the animal dies. The cat acquires the disease from its victim, and one could regard with equanimity this illustration of retributive justice, were it not that the cat often carries the disease on to the children of the household. In a very large number of cases, both of favus and ringworm, domestic pets are the source of the disease. Persian kittens seem to be more frequently affected with ringworm than common ones. In many cases favus is transmitted from one child to another, but it is remarkable how often one finds one member of a family alone affected, while, unless extraordinary pains be taken, such an experience is quite exceptional in ringworm.



FIG. 51.—Culture of Favus.

DIAGNOSIS. — When scutula are present there can be no difficulty in diagnosis. In no other disease are such structures produced. The mousey or damp straw odour, which some lay much stress upon, is due to

the decomposition of dead fungus, and a somewhat similar odour is often noted on the heads of neglected children. If scutula are not present, the mode of infection of the hair should suffice for diagnosis; if not, the case may be left to itself for a few days, when typical scutula will develop. On the non-hairy skin the

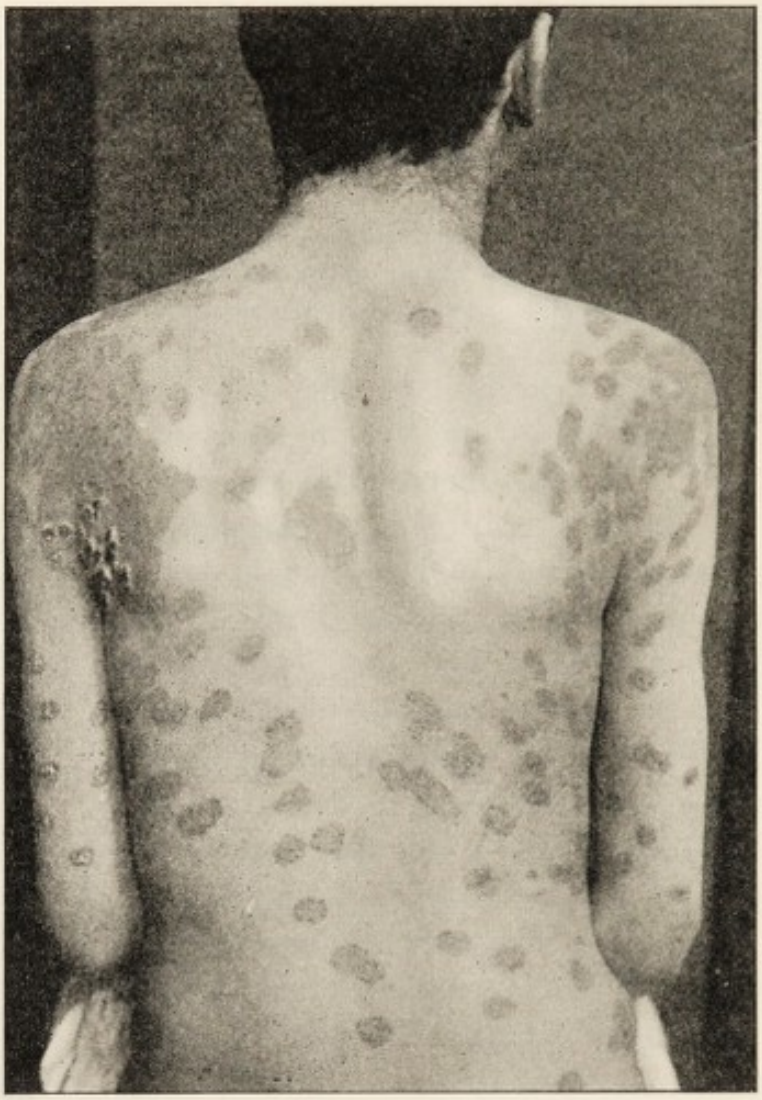


Fig. 52.—Favus corporis.

scutula, when they do develop, are usually more perfect than on the scalp, but quite frequently their place is taken by a dermatitis, sometimes moist, sometimes dry and scaly, and sometimes spreading in rings like tinea circinata (Fig. 52). In the scales, of course, one might be fortunate enough to find the fungus elements, but as a rule the disease is present elsewhere in more typical form, and thus the diagnosis is simplified.

The disease sometimes attacks the nails. It may affect the nail proper, or may limit itself to the nail bed, where a scutulum develops and raises up the nail plate. Treatment on the same lines as in ringworm of the nails (*q.v.*) is indicated.

Prognosis.—Left to itself the disease goes on for ever. A patient who was intermittently under my care some years ago had had the disease since 1845, and had communicated it to all her children. Hughes Bennett gave a clinical lecture on her case, and demonstrated the then recently discovered fungus to his class, and Warburton Begbie and Grainger Stewart had her under their care.

Treatment.—If a case is discovered while the area affected is small, it can readily be cured by epilation and the thorough application of some antiseptic ointment.

In extensive cases only one method presents any reasonable hope of cure, namely, the application of the X-rays. I am aware that some of my colleagues in other places recommend other methods of treatment, but if there is one disease which an Edinburgh dermatologist is justified in dogmatising on it is favus. At one time there were over fifty cases under treatment in the Royal Infirmary. Owing to the action of the School Board, there is now a good prospect of stamping out the disease. The cases are kept under close supervision for months.[1]

In referring to the use of the rays in ringworm I have expressed myself with our national caution; in favus the prognosis under other treatment is so hopeless that any risk, even that of permanent baldness, is justified. Children affected with favus get no education, and when they grow up no employment; the boys drift into the criminal classes and the girls to the streets. I do not content myself with advising the X-ray treatment; I insist upon it.

The method is practically the same as that mentioned under ringworm, save that we do not allow undue precaution to conflict with efficiency. After the hair has fallen out an ointment of cupri sulph. 1, adipis 10, is diligently rubbed in.

[1] In 1912 we had 39 new cases; in 1913, 9; 1914, 29; 1915, 22; 1916, 13; 1917, 8; 1918, 15; 1919, 15; 1920, 15. The proportion of town cases has steadily decreased; the figures for the last five years are town, 39; country, 20, while for the first five they were 93 and 19.

PITYRIASIS VERSICOLOR

This disease is due to the growth in the superficial layers of the epidermis of the fungus known as the *Microsporon furfur*. It occurs most commonly upon the trunk, and only rarely on the limbs and face. It consists in the development of yellowish-brown areas, of various sizes, shapes, and shades. The larger patches are formed by the aggregation or enlargement of smaller

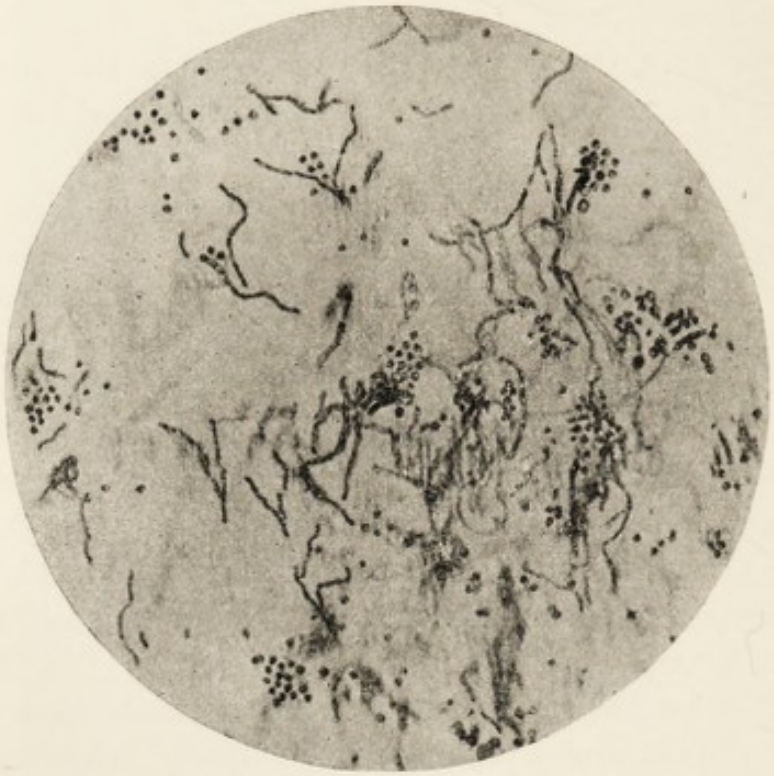


FIG. 53.—Microsporon furfur, showing mycelium and bunches of spores.

ones, and the shade of colour varies from a pale yellow to a rich brown. The disease is most common in those who perspire freely and do not change their garments sufficiently often, and it was certainly very common in consumptive persons when avoidance of cold at all hazards was considered essential in the treatment of that disease. Whether owing to the different views which now prevail or not, cases certainly occur with much less frequency in Edinburgh than formerly, and students have far fewer opportunities of becoming familiar with the disease

than their predecessors of thirty years ago. There is very little of the scaling which the name implies, though scales may be scraped off readily enough with a sharp spoon, and the only disturbance which the patient suffers from is slight itching.

When the scales are examined in a drop of liquor potassæ under the microscope the bunch of grape-like spores and the long filaments of the fungus are readily seen. If, however, the surface layer of the skin is removed *en masse* by the application, for a day or two, of salicylic plaster, the natural arrangement of the fungus may be studied. If a portion of the removed horny layer is stained by Morris's method (see Ringworm), it is found to contain an enormous amount of fungus, an amount so enormous that it is hardly possible to see through its dense felting, and the spores are now by no means easy to detect. It would almost seem as if the potash disintegrated some of the fungus where the joints were very short and spore-like, and that these ran together by capillary attraction, as corks do in water.

Diagnosis.—The disease with which those unfamiliar with it are most apt to confuse pityriasis versicolor is syphilis. The mistake should never occur. The history of long persistence, the distribution of the eruption, the slight itching, should all arouse suspicions of its nature, and microscopic examination will at once settle the point. In the scales of ringworm it is not always possible to detect the fungus; in the scales of pityriasis versicolor it is almost impossible to overlook it.

Treatment.—Treatment of the disease consists in the destruction of the fungus. It is often said that the disease is very apt to recur. If it is not removed, it will undoubtedly "recur"; it is insufficient and inefficient treatment which is responsible for the recurrence. The part should be thoroughly scrubbed with soap spirit, so as to take away as much of the fungus as possible, and then the affected region should be painted with some antiseptic solution. Lotions of perchloride of mercury or hyposulphite of soda, sulphur ointment, resorcin, or salicylic ointment—any of these will destroy the fungus. Perhaps as good a method as any is for the patient to take a

warm bath nightly, to wash the parts vigorously, and to paint on a solution of tar in spirit, ½ to 1 drachm to the ounce. The possibility that spores of the fungus adhere to the underclothing should be borne in mind, and that should be changed frequently.

Whatever method is chosen must be carried out for two or three weeks; and always for at least a week after all evidence of the disease has disappeared. Eichhoff recommends the use of quinin soap for some time thereafter.

ERYTHRASMA

(*ἐρυθρός—red*)

Erythrasma is a disease which we rarely see in this country, but it is by no means uncommon in Central Europe. It has many resemblances to pityriasis versicolor, but is invariably limited to the genital and axillary regions. The eruption is of a dark reddish-brown colour, and has usually a bright red abrupt edge. When the horny layer is removed in the manner referred to in connection with pityriasis versicolor, it also is found to contain a dense felt-work of fungus. The threads are very much finer than those of the *Microsporon furfur*, and if the scale is broken up and made into a cover-glass preparation the fungus breaks up into bacillary-looking joints. A few spores are found among the felt-work. The fungus is known as the *Microsporon minutissimum*.

Diagnosis.—The disease with which it is most apt to be confounded is ringworm, which often occurs in the same regions. The eruption of ringworm causes very much more irritation, the border is more raised, and frequently has vesicles upon it, and long threads of fungus much thicker than those of the *M. minutissimum* are readily seen. Erythrasma is often only discovered accidentally, so slight are the symptoms.

The treatment is the same as that of pityriasis versicolor.

ALOPECIA AREATA

(*ἀλώπηξ—a fox; foxes often have bald patches on their coats*)

Alopecia areata is characterised by the development of small round spots more or less completely denuded of hair. These may increase in size and number, until in severe cases every hair upon the body disappears. The commonest seat of the disease is the scalp, and there the appearances are exceedingly characteristic. The patches are rounded, the skin is smooth and somewhat depressed below the surrounding level, not because it has undergone any atrophy, but because the hair roots, which make up so large a proportion of the scalp, have disappeared. The surface is not always absolutely free of hair. As a rule at the margin, and here and there over the surface, are found those short broken hairs, having the shape of a "point of exclamation," which are so characteristic of the disease. But there is another type of the disease where, at irregular intervals over the surface of the patch, the point of a hair may be seen protruding from a follicle mouth. This may be lifted out by the forceps without any effort, and it will be found that about four-fifths of the hair lies beneath the surface. Very often it is surrounded at the level of the follicle neck by a collar of sebaceous material.

In some cases the scalp is notably greasy; in others there are abundant scales of seborrhœa, but in most cases the scalp between the diseased patches seems quite normal.

I think we are apt too generally to ignore the presence of this disease on other parts of the surface than the scalp and face. It is quite commonly present on the arms and legs, and though its presence there does not distress the patient, I believe these ignored patches are not infrequently the sources of a fresh infection of the scalp.

Etiology.—For a long time clinical evidence has been accumulating in favour of the communicability of the disease. Bowen reported an epidemic in a girls' home where, after the introduction of one case, sixty-three out of sixty-nine girls were affected. On the re-admission of the same patient six years later a second epidemic occurred, in which forty-five out

of forty-nine children were attacked. Less striking instances of infection come under the observation of anyone who has much experience of the disease. I had at one time ten cases in an institution in Edinburgh, and my private case



Fig. 54.—Alopecia areata.

records show numerous instances of two or three cases in one family.

Sir Jonathan Hutchinson's theory that alopecia areata is a sequel of ringworm is one with which I do not agree, and yet I must admit that one sees now and then cases seeming to support it. It is not uncommon in the last stages of ringworm to find hairs closely imitating the exclamation ones of alopecia areata, while in some cases of ringworm the hairs fall out all over the patches without any antecedent inflammation, and

were one not familiar with the history one might diagnose such cases as alopecia areata. I have seen the new hair growing in ringworm in light-coloured patches exactly as it does in alopecia areata, and in one such case not only had a diagnosis of ringworm been made, but I had actually cultivated the fungus from the patient and his brother. These, however, are but isolated instances in a comparatively large experience of both diseases, and ought, I believe, to be looked upon as mere coincidences. Sir Jonathan, with his enormous experience, no doubt met with many more of these coincidences, and attributed to them, I suggest, more importance than they deserve.

It has been suggested that alopecia areata is really unrecognised ringworm. The fact that I made cultivations from something like fifty consecutive cases of alopecia areata without once growing a semblance of fungus is, I think, sufficient to bury that theory. I have examined many cases in the light of Jacquet's theory that the disease is produced reflexly by the irritation of carious teeth. Needless to say, I found these often present, but the theory appears to me to ignore the fallacy of the undistributed middle.

There are cases of patchy baldness which are, I believe, correctly attributed to nerve influence. They are generally associated with a history of injury, and are irregular, often angled in shape. Exclamation hairs are conspicuous by their absence.

When hairs from a case of alopecia areata are stained by Morris's method, as described under ringworm, organisms are almost invariably found. In some cases they are few in number, in others they are as abundant as the fungus elements in small-spored ringworm, forming a continuous sheath around the hair. This is specially the case in the second variety of exclamation hairs, where a large part of the hair lies below the surface. The existence of these organisms has long been known. They were originally described by Dr. George Thin who gave them the name of *Bacterium decalvans*. The organism is small, rather longer than broad, although it is not easy to make this distinction in all specimens.

Sabouraud, who has in the last few years published many

papers on the subject, says that if the hairs are inoculated on a specially prepared acid medium a whitish growth first of all appears, but as time goes on a brick-red colony develops in the centre, which consists of myriads of a very fine bacillus,—which he suggested were the cause of the disease.[1] (See Acne and Seborrhœa.) From cultures of this organism he prepared a toxin, the injection of which into guinea-pigs produced patchy baldness. My own observations do not confirm those of Sabouraud, and I am inclined to think that the white culture which grows in every case is in all probability the *Staphylococcus epidermidis albus*, which has somehow acquired a virulence usually foreign to it.

Pavloff, of Petrograd, reports that the inoculation of this latter organism, cultivated from cases of alopecia areata, on the skin of rabbits, produced desquamative dermatitis and "alopécie en aires."

Diagnosis.—The diseases which may be confounded with alopecia areata are ringworm and lupus erythematosus. The "bald" variety of ringworm often closely imitates alopecia areata, but when the surface of the patch is carefully examined with a lens it will be noticed that small portions of the hairs are still present in the follicles. It is sometimes impossible to extract these with the forceps, but they are easily removed by a comedo-extractor, and then examination under the microscope clears up all doubt.

Lupus erythematosus of the scalp is confused with alopecia areata only because it is a comparatively rare disease. The affected area is irregular in shape, the border is elevated, hyperæmic, and scaling, and the centre is harder than in alopecia, being indeed composed of scar tissue.

Impetigo of the scalp, when thick crusts have long remained adherent, may produce temporary (or permanent) bald patches. These are as a rule small, and the history should prevent any confusion.

"Point of exclamation" hairs are not absolutely characteristic of alopecia areata; they occur also in late stages of ring-

[1] It is only fair to note that Sabouraud has recanted these views, and at present supports the nerve theory of causation.

worm, and sometimes in seborrhœa, though in much smaller numbers.

Prognosis.—The prognosis is good. If a patient is under forty, the physician may confidently predict complete recovery. No doubt exceptions occur, but they are so few that one may cheerfully take the risk of them. Recovery may be, and often is, slow, and the disease very often gets worse before it gets better. After forty, every year added to the patient's age makes the prognosis less good, and one's prognosis should be more guarded, though the majority do eventually recover. If the prognosis is too guarded, it is apt to affect the zeal of the patient in carrying out the prescribed treatment. Even in those cases where every hair on the body has disappeared dogged perseverance in treatment is usually rewarded.

Treatment.—Many cases recover spontaneously, but there is no doubt that treatment hastens recovery. I do not propose to discuss internal treatment. If the patient is anæmic, or suffers from any other disease, that should be appropriately treated. Though I do not accept Jacquet's theory of a direct relationship between carious teeth and alopecia areata I do not discourage my patients from visiting the dentist. Local treatment follows very much the same lines whether the physician is a believer in the infective nature or not. The stimulant remedies, such as acetic acid, cantharides, ammonia, etc., set up irritation, and thus indirectly destroy organisms; and, on the other hand, the antiseptics employed to destroy organisms have all some stimulant properties. It is usually difficult to satisfy oneself to which application the improvement is really due. The last used remedy gets the credit, and those whose experience is small are apt to attach too great importance to mere coincidence. It often happens that two or three cases in succession rapidly recover, while the next twenty may be utterly irresponsive to the same treatment. I believe the best remedy to be *lactic acid*, which I order in a spirituous lotion.

℞	Acidi Lactici	1–5
	Ol. Ricini	2–5
	Spt. Vini	ad 100

This should be applied daily, at first cautiously, but more and more vigorously as the scalp gets used to it.

Sulphur, in the form of *sulphur ointment*, first recommended by Thin, and later by Lassar and Sabouraud, is often useful. *Chrysarobin*, either dissolved in glycerin and chloroform or in the form of the chrysarobin stick (p. 30), is, in the opinion of some, the best remedy. *Perchloride of mercury* in spirit, from ½ to 2 per cent., is not only useful as an antiseptic, but is a direct stimulant of hair-growth. Other remedies used are ammonia (a favourite with Allan Jamieson):—

℞	Liq. Ammoniæ fort. Chloroformi Olei Sesami	āā (℥ss)	10
	Olei Limonis	(℥ss)	2
	Spt. Rosmarini	ad (℥iv)	100

Sig.—To be used cautiously, until tolerance is acquired.

turpentine, paraffin oil, etc., etc. The application of stronger caustics is sometimes very successful. Pure carbolic acid, followed immediately by the application of alcohol as recommended by Pollitzer, has often proved useful in my hands, and tri-kresol, or tri-chlor-acetic acid may be resorted to in obstinate cases. It is well, when any treatment is apparently unsuccessful, to humour the patient by making a change. If this is not done, the patient will probably change not only his medicine, but also his physician; and as the last medicine gets all the credit, so does the last physician.

Alopecia areata could hardly hope to escape the epidemic of electric treatment. Finsen light, high-frequency currents, and X-rays have all been recommended. I have tried them all, and I can only say that they do not appear to me to have any advantages over the simpler methods. I have seen cases recover under exposure to the electric arc lamp, the patient being exposed for an hour once or twice a week, at a distance of about a foot from the lens, to the rays from the London Hospital lamp. The effects of the uviol or mercury vapour lamp are very highly spoken of by Kromayer, and I have used it successfully in some cases.

Since I believe that there are grounds for regarding alopecia areata as contagious, I am bound to face the question of school attendance. So far as regards day schools, I believe the risk of infection to be so slight that it may be ignored. Certain ordinary precautions should be taken. The affected child should certainly not use the same towel or hair-brush as the others, and the most exemplary punishment should be visited on it if it is ever detected exchanging hats. Boys should not be allowed to play Rugby football.

The case of boarding schools is altogether different. The children are brought into much more intimate contact, and the risks are therefore greater.

If I were the medical officer of a boarding school, I would not allow a case of alopecia areata to remain; but it seems to me most unjust that in cases of ringworm, about which all are agreed, as well as in this disease, the parent of the child should bear all the expense. The child is sent away, in the case of ringworm at least, not in his own interest but in that of the rest of the pupils, and the boarding fee should be returned to the parent from the date of the removal. In the case of alopecia areata, while it would be mainly in the interests of the other pupils that I would insist on removal, it is also in the child's own interest. He is necessarily something of an outcast because of the precautions which ought to be taken. If the disease is widespread, he is an object of ridicule to some at least of his fellow-pupils, and even in the best regulated boarding schools it is impossible to have the necessary treatment carried out so efficiently as at home. I am quite aware that these views will be regarded by many as extreme and by some as ridiculous, but I am consoled by the knowledge that I am not the only—I think I may say—experienced dermatologist who holds them.

Folliculitis decalvans.—This disease, a rare one, seems to be related distantly to alopecia areata. In that disease signs of inflammation require the microscope for their detection; in this the inflammation is very evident, and is specially severe around the hair follicles. Commencing in one or two follicles, it spreads centrifugally, and leaves a scar-like centre. The hairs, when extracted, show swollen, glassy-looking sheaths

suggestive of those seen in sycosis. Although the disease is rare, I have been fortunate enough to see four or five examples of it, in two of which it was associated with typical alopecia areata in other members of the family. In one, which I saw after the lapse of many years, the hair had entirely regrown.

The treatment should be mildly antiseptic and stimulant.

THE NAILS

Structure.—The accompanying diagrams, which are after Unna and Van Brun, show the structure of the nail in longitudinal and transverse sections. The nail is developed in a very similar method to the hair, from a depression of epidermis, the central cells of which are modified to form the nail cells. The difference consists in the fact that the nail does not grow free like the hair, but one side of it is laid flat against the skin, to which it is partly fixed by a system of ridges. The white crescent, the lunula, seen in most persons on the thumb at least and in many on all the nails, marks the anterior lower limit of the nail matrix, but the nail also grows from the under surface of the nail fold. The nail bed, that part covered by the nail which lies in front of the lunula, has no concern in the growth of the structure; the nail is simply pushed along it by the addition to its substance behind. If growth be more active in the nail fold, the nail is usually thick and broad; if the cells in the lunula be more active, then the nail is thinner and finer and the lunula is more in evidence. Fine nails, with a well-marked lunula, are believed to be associated with blue blood; they are undoubtedly hereditary.

The white spots made much of by fortune-tellers are due to the presence of air between the nail cells, and the transverse grooves which often mark the date of some severe illness are the result of a temporary arrest of growth at that period. Longitudinal grooving is the mark of irregular cornification of the nail substance, and unless associated with obvious local disease is usually the expression of some systematic disturbance (gout, etc.)

The diseases of the nails are not easy either to describe, to understand, or to treat.

Onychia (*ὄνυξ*—the nail) is a purulent inflammation of the matrix, bed, or wall, and the term is applied whatever be the cause. It occurs in syphilis, and is not infrequently associated

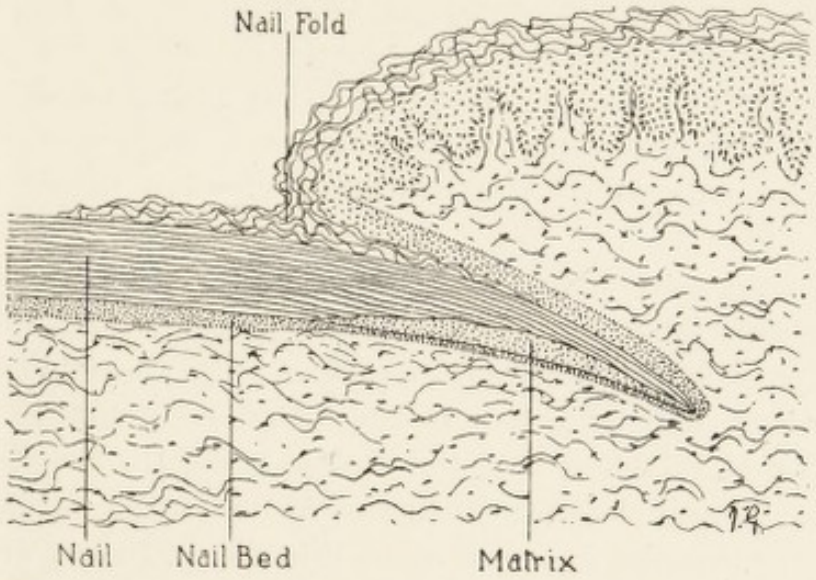


FIG. 55.—Longitudinal section of nail (diagrammatic).

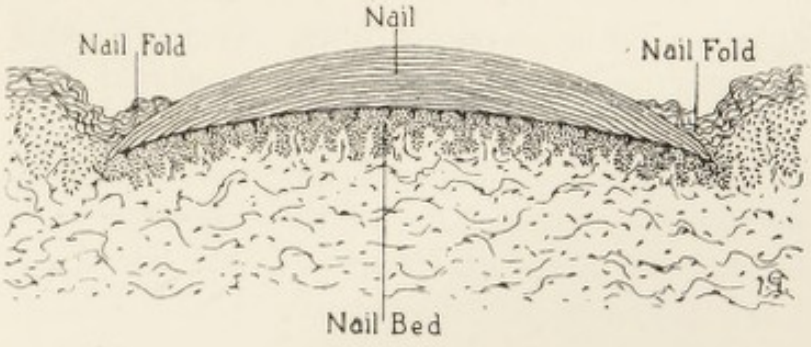


FIG. 56.—Transverse section of nail (diagrammatic).

with tuberculosis, but some injury is almost invariably the exciting cause. Syphilis is said specially to attack the toes of adults; tuberculosis the fingers of children. The annexed illustration was from a case which was probably tuberculous in origin. Ringworm of the nails is called onychia until the fungus is discovered. Onychia must be treated on general surgical principles with reference to its cause, and it is usually necessary

to remove the nail and to use antiseptic treatment. I have recently had excellent results in a number of cases of chronic onychia from the use of mixed staphylococcal vaccines. **Onychauxis** (*ὄνυξ—αὔξω*—I grow) is the term descriptive of increased growth of the nail, whether it be in length or in thickness, and the term **Onychogryphosis** (*γρυπός*—curved) is used when this increase is twisted like a ram's horn. These two conditions are usually found in bed-ridden patients. **Koilonychia** (*κοῖλον*—a cavity), or spoon nail, is usually associated with anæmia, sometimes, it is said, with gastric ulcer, and is the reverse of the condition of club finger seen in phthisis, etc.

The nails are affected in many of the commoner skin diseases, especially in psoriasis. The disease may affect the *nail bed* only, when the result on it is purely mechanical; the nail is raised from its proper resting-place, its structure remaining unaltered. If, however, the disease affect the matrix or the nail fold, the nail is deformed in various ways, the surface being irregular or grooved in one or other direction. In any prolonged dermatitis of the fingers the nail is often much narrowed and grows rapidly. In psoriasis, little rounded black depressions are the most characteristic lesions. The nails are also involved in lichen planus and in pityriasis rubra. Their affection in ringworm and favus (onychomycosis) has been referred to under the heading of these diseases.

Diagnosis.—The diagnosis of these affections is usually made from the presence of signs of the disease elsewhere. As Crocker said, when the nail affection is the sole manifestation diagnosis is little more than guesswork.

Treatment.—Just as in ringworm it is exceedingly difficult to reach the bottom of the hair follicle, so in diseases of the nail it is difficult to reach the seat of the disease. In those cases where the nail bed is affected the difficulties are not so great, and suitable applications may be made to penetrate beneath the nail. When the disease affects the nail matrix or nail fold, patient and prolonged treatment is required. The best local applications are *tar*, *salicylic acid*, and *resorcin*. They must be applied continuously, and their penetration favoured as much as possible by the wearing, at night at least, of rubber



ONYCHIA (TUBERCULOUS).

finger-stalls. Tar ointment may be applied at night, and a solution of resorcin (2 to 10 per cent.), either in water or spirit, during the day. Arsenic given internally has an undoubted influence in promoting recovery, and should have a fair trial in every case, and the use of vaccines has already been alluded to.

LICHEN PLANUS

Lichen planus forms a sort of connecting link between the inflammations of the epidermis and those of the corium, for in it both are affected, and there is some room for difference of opinion as to which is the primary seat of the disease. It will probably before long find its resting-place alongside of the infective granulomata, and investigators would do well to search for an organism analogous to the spirochæte of syphilis.

The word lichen is derived from the Greek λειχήν, meaning the fungus which we also call by that name. The chronic form of the disease does somewhat suggest the comparison, but the acute form is not in the least like a lichen. The older dermatologists used the word much more widely than their successors, applying it to all diseases in which papules were a prominent lesion, even irrespective of the fact that the papule might only be a stage in the process. Thus the papular variety of eczema was known as lichen simplex, and when a vesicle developed on the summit of the papule the adjective *agrius* (ἄγριος—angry) was substituted. The term was also applied to other papular diseases, such as that now recognised as seborrhœa corporis, which was called lichen marginatus.

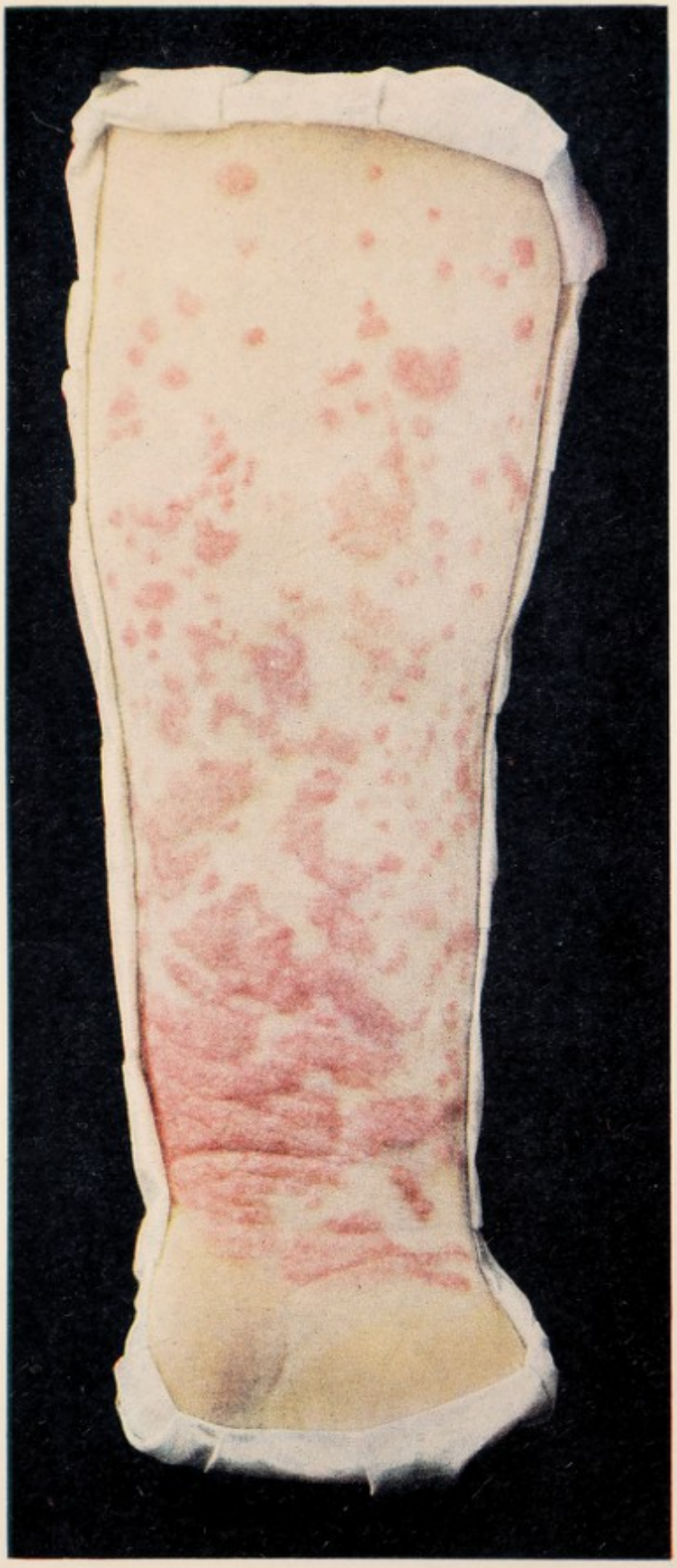
There are three diseases in which the term is pretty commonly used, though some restrict it to one only. That one is the lichen planus of Erasmus Wilson, and the others are the lichen ruber acuminatus of Hebra, and lichen scrofulosorum. Lichen acuminatus is regarded by many as identical with pityriasis rubra pilaris (*q.v.*); lichen scrofulosorum is a form of tuberculosis.

Lichen planus is characterised by the development of a series of papules, which commence and usually remain as

such. They have peculiarities clearly marking them out from all other varieties of papule. The first of these is their *shape*. Instead of being round, as are most skin lesions, they have usually an *angular* outline, their outlines being determined by the natural fine lines on the skin. Exceptionally, they are round or oval, and have in their centre a minute depression, probably corresponding to a sweat pore. The *colour* of the papules is also peculiar. While it is not prominent in every case, or rather not always evident, there is usually at some period, and usually throughout the case, a *livid lilac* tinge, which is so characteristic that when it has once been pointed out it should always be easily recognised. The papules have yet another peculiarity—their surfaces appear as if *burnished*. When the light strikes them in certain directions their flat surfaces are distinctly shiny, and on close examination there will be noted a network of milky-white streaks, rather suggestive of the appearance of very fine watered silk. In some cases vesicles develop on the top of the papules and lead to confusion in the diagnosis. Although this rare complication is often due to the arsenic with which the patient is being treated, it is not always so. Lastly, as the spots disappear they leave behind them more or less pigmentation.

While the distribution may be almost universal, there are certain regions which are almost always affected in slight cases, and usually most affected in severe ones. These are the flexor surfaces of the forearms just above the wrists, the inner aspects of the thighs just above the knees, and the back of the neck. When the disease is widespread, papules are found most numerously wherever any compression is exercised, as by the garter or the corset. The papules are not confined to the skin, but sometimes appear as bluish-white areas on the mucous membrane of the mouth.

Symptoms.—In some cases the patient is pretty smartly ill, and until the eruption is recognised the nature of the illness remains a mystery. It is rare for the temperature to be elevated, and the patient's principal suffering is from itching, which is sometimes so severe as positively to threaten the reason. In many cases the complaint seems altogether out of proportion to the extent of the eruption, and the



LICHEN PLANUS



LICHEN PLANUS.

patient is unjustly supposed to be making too much of the trouble.

When the disease assumes the more chronic form the spots run together to form patches, the nature of which is sometimes not at once evident, owing to the greyish scales which cover them. Almost always, however, there are at the margins of the patch one or two papules in which the distinguishing features of the disease may be recognised. These patches are most common on the legs, and have a certain superficial resemblance to psoriasis (see Plate). There is occasionally a tendency for the papules to form chains along the lines of the veins. The patches on the leg are associated with a good deal of secondary thickening, and are sometimes considerably elevated, but true warty development (lichen verrucosus) is exceptional.

The papules have a varied duration, some of them disappearing rapidly, and others persisting for months. According to their duration, their site is marked by less or more pigmentation, generally of a rather rich brown colour. This is always most pronounced on the legs, and persists for many months after all other traces of the disease have passed away.

Histology.—When a papule is removed and sections are examined under the microscope the appearances are so regular and consistent that, without knowing anything of the case, one has no difficulty in recognising the disease.

The horny layer is thickened and dense. The cells of the rete are to some extent increased in number, and more notably in size, but an alteration in their shape is the most marked change. They are laterally lengthened, *stretched* over the growth beneath.

It is in the corium that the most typical changes occur. Occupying a little lozenge-shaped area, close under the epithelium, and sharply marked off from the rest of the corium beneath, is a collection of cells (Fig. 57). These cells are of the connective-tissue type, and are similar to those found in the granulomata. When papules from later stages are examined, and more especially in the long-standing, thickened, elevated patches which occur on the leg, further

changes are seen, the horny layer being thickened, and projections running downwards from it into the rete. In the corium, lines of new vessels may be found running in among the collection of cells; indeed, a process of organisation is going on. This is to some extent confirmed by clinical observation, for although no ulceration occurs, in chronic cases a condition closely resembling a scar is left when the disease passes away. It is thus apparent that further investigation confirms the view that the cells are of the granulomatous type. There are, further, clinical facts in support of the disease being more than a catarrhal inflammation of the skin. The disease may persist for years in the original situation, and

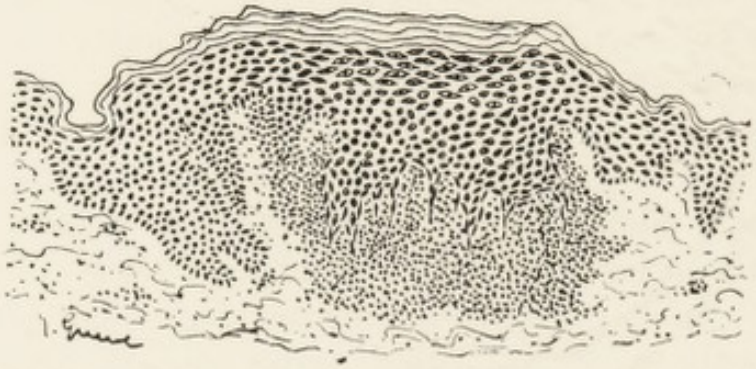


FIG. 57.—Section of a lichen planus papule: horny layer thickened, epidermis thickened and its cells enlarged and lengthened laterally. Dense growth of connective-tissue cells in the corium sharply margined beneath. (× 75.)

in acute widespread cases there is often considerable general disturbance of the health, such as is not found in the ordinary cutaneous catarrhs. In some cases the disease may be limited for years to a small chronic patch on one leg, and then suddenly an acute attack will spread the eruption all over the body. When this subsides the original patch may persist and form the starting-point of a second outbreak. I have seen this happen three times in one patient, pointing the importance of the cure of such chronic patches.

The anatomy explains the peculiarities of the spots. The burnish on the surface is due to the stretching of the epidermis from beneath, and is a purely physical phenomenon, not confined to lichen, for to the same physical characters are due the mother-of-pearl edge of early rodent ulcer, and the shining

surface in molluscum contagiosum. The characteristic colour is due to the thick cellular layer "which lies like a dense opaque medium over the dilated capillaries" (Unna).

Etiology.—The etiology of the disease is obscure. It is usually placed in Hebra's class of exudations or inflammations, but many consider it to be dependent on nerve influences, and Morris puts it among the "diseases due to nerve disorder." Cases occurring in such persons as railway signalmen or range markers are always quoted as supporting the nervous theory, but one of the worst cases which has been under my care was that of a professional golfer. Brooke says that in almost every case his patients have previously been in sound health, and that he has never seen any marked nervous depression. The anatomical appearances support the view that it is an infective inflammation, and I believe that an organism will yet be found.

Diagnosis.—The diseases with which lichen is most likely to be confused are psoriasis, tubercle, and syphilis. The typical papules have no real resemblances to those of typical psoriasis, for these latter are scaly upon the surface, while those of lichen are shiny; but when the individual lesions have run together to form patches, the resemblance to psoriasis is often close, and mistakes may and do occur. The scaling is of a greyer tinge than in psoriasis, and careful search will almost invariably detect, somewhere, the characteristic papules. The examination of the mucous membrane of the mouth should not be forgotten. The lesions of psoriasis from which the scales have been removed by washing have a superficial resemblance to lichen papules, but they lack the characteristic lilac colour.

With tubercle, only the extremely chronic limited patches of the disease can be confused. In them there is almost always a recognisable suggestion of the lilac tinge already referred to, and generally some outlying characteristic papules. The scaling on the surface of a tuberculous lesion is coarser than that of lichen, and careful examination should disclose some of the typical "apple-jelly" nodules, although it must be admitted that it is just in those chronic limited patches of tubercle that these are most difficult to recognise (see p. 276).

Two of the eruptions of syphilis somewhat resemble lichen. In one of them, an early secondary eruption, the resemblance is so marked that the term *Lichen syphiliticus* is still frequently applied to it. As a rule, however, the colour is a deeper red and the outline of the papules is not angular as it is in lichen. Perhaps one of the most useful distinctions is the well-known fact that syphilitic eruptions rarely itch. The itching of an acute attack of lichen planus is maddening. In the late tertiary period, patches analogous to the tuberculous ones just described may appear. As a rule, in such cases there is some ulceration of the specific patch; lichen never ulcerates. The pigmentation of lichen may be described as a rich, that of syphilis as a dirty brown.

Prognosis.—While some cases get rapidly well, as a rule the disease is prolonged and obstinate. The widespread cases often take fully six months to recover, while localised patches on the leg may remain for years. The longer they persist the deeper is the resulting pigmentation.

Treatment (*Internal*).—The favourite remedy is *arsenic*, and many cases do well under it. It must be given in increasing doses until improvement commences, when further increase should be stopped; for arsenic has a tendency to increase the pigmentation which naturally occurs in the disease. If any signs of its poisonous effects appear, it should be stopped. It is possible, as in some other diseases, to so lower the condition of the patient that there is an apparent improvement, but the disease reappears when the patient regains his strength. The bullæ which occasionally appear in this disease are by some attributed to the arsenic so commonly administered, but there are well-authenticated cases where no arsenic had been given. Pringle considers arsenic "the most deleterious drug we have for acute lichen planus." Allan Jamieson and Morris prefer *antimony* to arsenic.

The internal remedy which has proved most efficacious in my hands is that originally recommended by Liveing, and forgotten for years, namely, *perchloride of mercury*. In some cases the disease disappears under this treatment ($\frac{1}{12}$ of a grain three times a day) with a rapidity which is unapproached by either of the other remedies. So successful was it in the first

case in which I used it, that I have to congratulate myself on the fact that I was able to confirm the diagnosis by the examination of a papule which I had removed, or else I should have suspected that the case was, after all, syphilis. The recent observation that lichen, like syphilis, yields to "606" is extremely interesting, and surely supports the suggestion that the organisms of the two diseases are similar. But I am not prepared to accept the theory of a direct relationship between the diseases. None of my cases has given a positive Wassermann reaction.

(*External*).—External treatment is often of some value. Unna has used carbolic acid and perchloride of mercury with such success that his colleague Leistikow has christened it "lichen ointment." The prescription is:—

℞	Unguent. Zinci Benz. - - - - -	100 (℥j)
	Carbolic Acid - - - - -	4 (grs. xx)
	Hydrarg. Perchlor. - - - -	0·2-1·0 (grs. j-v)

It may also be applied in collodion:—

℞	Carbolic Acid - - - - - -	2 (grs. x)
	Hydrarg. Perchlor. - - - -	0·2-1·0 (grs. j-v)
	Creosote - - - - - - -	gtt. 2 (♏ij)
	Collodion - - - - - -	100 (℥j)

There are many other applications. In general it may be said that the preparations which are useful in psoriasis are useful, diluted, for lichen. Tar has seemed to me to be the best local remedy. The liquor picis carbonis of the Pharmacopœia may be painted on the spots. The fact that the continued application of tar causes folliculitis (the so-called tar acne) should be kept in mind, and its effects watched. For the obstinate patches on the leg salicylic acid may be used, either in the form of plaster or ointment. In the chronic localised patches on the legs, such as those shown in the Plate, exposure to the X-rays is the most generally successful remedy. Cases which have resisted other treatment for years will sometimes yield to the steady application of the rays. One must, of course, be careful not to overdo the treatment.

PARAKERATOSIS VARIEGATA

This is the name originally applied to a rare disease which is considered by many to be not very distantly related to lichen. It occurs in young adults, and commences with an eruption of papules, suggestive both of lichen and psoriasis, which may spread over the entire surface of the body. The papules advance to meet each other in a peculiar reticular fashion, which gives a very characteristic appearance to the skin. Small whitish atropic or healthy areas are separated by a raised, red, scaly meshwork, and this gives a peculiar variegated or marbled appearance; hence the name. Crocker suggested as an alternative the term lichen variegatus, and Erasmus Wilson called it lichen planus retiformis. The retiform marking is so characteristic that it seems desirable it should appear in the name.

The disease is extremely obstinate to treatment; indeed none of the cases described seem to have materially benefited by any of the numerous remedies which have been prescribed. It is customary to apply those commonly used in lichen and psoriasis.

LOCAL INFECTIVE INFLAMMATIONS OF THE CORIUM

Unna divides these into four groups: (1) sero-fibrinous inflammations; (2) purulent inflammations; (3) inflammations in which there is a tendency to necrosis; (4) inflammations in which the tendency is to growth (the granulomata). Many of them are rather of surgical or general interest, and only their dermatological aspects are briefly dealt with here.

SERO-FIBRINOUS INFLAMMATION

ERYSIPELAS

(*ἐρυθρός—red; πέλλα—the skin*)

This disease is fully described in all the text-books of medicine and surgery. Dermatologically, it is mainly important in connection with diagnosis, for certain other forms of dermatitis pretty closely simulate it. The disease most

commonly confused with it is an erythematous dermatitis of the face resulting from exposure to the sun or to some vegetable irritant (see Plate facing p. 109). The important points distinguishing erysipelas from these rashes are as follows. There is almost invariably a rise of temperature and a quickening of the pulse. The patient usually feels ill. On inspection the part has an angrier red colour than is commonly present in dermatitis, the margin is usually abrupt, and irregularly-shaped bullæ appear on the surface. When the hand is applied to the part it feels hot, and there is a brawny, firm feeling, different from the less dense swelling usually accompanying dermatitis. Sometimes the red colour is not present. Whether this is due, as in urticaria, to the amount of exudation compressing the vessels is, so far as I know, undecided, but "white erysipelas," as it has been called, certainly does occur.

TREATMENT.—*Ichthyol* is by far the best treatment for erysipelas. It may be applied in an aqueous solution of 20 per cent., or in 10 per cent. ointment. Either of these should be applied continuously, and usually the good effects are apparent in a few hours.

PURULENT INFLAMMATION

FURUNCULOSIS

(*Furuncle—a boil, from "fur," a thief*)

"Boils" are but too familiar, and in the older works are honoured with long descriptions of themselves and their varieties. The boil is caused by staphylococci, which, gaining an entrance to a hair follicle, multiply there, and, eventually breaking their way through the wall, lead to a deep thickening. In the centre of this is the necrotic "core," in which millions of cocci are present. While most often found in those who are run down, boils are frequently found in persons in full vigour, and are still often looked upon as a matter for congratulation, as evidence of robust health. When occurring in the healthy, some local cause is usually to be found. Boils at the back of the neck are due in some instances to the contamination of the

collar of some particularly comfortable old smoking-jacket, while those about the axillæ and anus are often due to want of absolute cleanliness, or to similar contamination from the clothes. Their occurrence in the course of diabetes or Bright's disease must be borne in mind; but whatever the general predisposing condition, local infection is a *sine qua non*.

TREATMENT.—This must be twofold; local and general. The indications for the former lie on the surface. Probably no other local method is so satisfactory as the application of Unna's *mercury and carbolic plaster*. Boils which appear as if they must inevitably burst slowly melt away under its continuous application, while less advanced ones disappear as if by magic. Cupping with Clapp's cup is sometimes very successful. When rupture is inevitable they should be opened and dressed with boracic lint and protective. The poulticing so dear to the lay heart should be absolutely interdicted; there are few better methods of spreading boils than linseed poulticing. If there are any pustules in the neighbourhood, perhaps in any case, the whole region should be smeared with dilute ammoniated mercury paste.

General treatment consists in the administration of tonics, such as iron and phosphorus. *Yeast*, a very old-established domestic remedy, has the approval of more than one experienced dermatologist, and is probably worth a trial where it is easily procured, the patient drinking every morning a tumblerful of fresh yeast from the surface of the fermenting tun. *Levurine*, or nucleinic acid, may be used if yeast is not available. In a small proportion of cases the results following the administration of *sulphide of calcium* are most satisfactory, the boils disappearing very rapidly. It is usually prescribed in pill form, $\frac{1}{6}$ of a grain three or four times a day. According to Ringer, it is much more efficacious when freshly dissolved in water and taken in small doses every hour.

Vaccine therapy is seen almost at its best in the treatment of furunculosis. We have here a disease definitely due to the *Staphylococcus aureus*, which yields in the most gratifying way to vaccines made from that organism. Opinions vary as to the frequency of dosage. My general practice is to give injections of 100 to 200,000,000 at intervals of ten days.



MALIGNANT PUSTULE.

ANTHRAX

(*ἄνθραξ—a coal*)

The malignant pustule is the form of this disease with which the dermatologist has to deal. It is usually acquired in butchering a diseased animal, or in sorting diseased wool and hides. The occupation, therefore, of the patient is an important aid in diagnosis. Cases occasionally crop up in country districts where a farmer, suspecting the nature of the disease of one of his cattle, acts as his own butcher, from a natural though illegal desire to avoid confirmation of his suspicions, and infects himself in his amateur efforts. Recently several cases have been proved to be due to the use of Japanese shaving brushes.

The pustule commences with an itching red spot not unlike the bite of an insect. A vesicle rapidly develops, and very rapidly dries up into a *dark, reddish-black slough*. The tissues immediately around this become indurated, and a wreath of secondary, smaller vesicles may form around the central slough. These are, however, not always formed, and the term "pustule" is a little apt to distract attention from the hæmorrhagic slough, which is so much more characteristic, and is usually present when the case comes under observation. It is well shown in the cast. There is at this stage comparatively little constitutional disturbance; the contest between the organisms and the tissues is a purely local one, and it is only when it has terminated in favour of the bacilli that these obtain access to the blood and give rise to *splenic fever*. The disease has another local method of attack, probably due to a deeper inoculation. In this form the black eschar is absent, and the local change consists in an œdema of the tissues. This is known as anthrax œdema and anthrax erysipelas, to the latter of which it has some resemblance. It is a much more serious form of the disease than malignant pustule.

Diagnosis.—Theoretically, one should be able to find the anthrax bacilli in the discharge, but as a matter of fact they are not always easily found, and indeed even when the excised lesion is examined microscopically they are sometimes difficult to detect, though they are readily enough cultivated. The

diagnosis must be made in most instances from the history of the case and the appearance of the characteristic black central slough.

Prognosis.—In some cases the patient's tissues (leucocytes ?) are strong enough to destroy the bacilli, and malignant pustule may terminate favourably without any treatment.[1] If the line of defence breaks down and splenic fever develops, the prognosis is very grave.

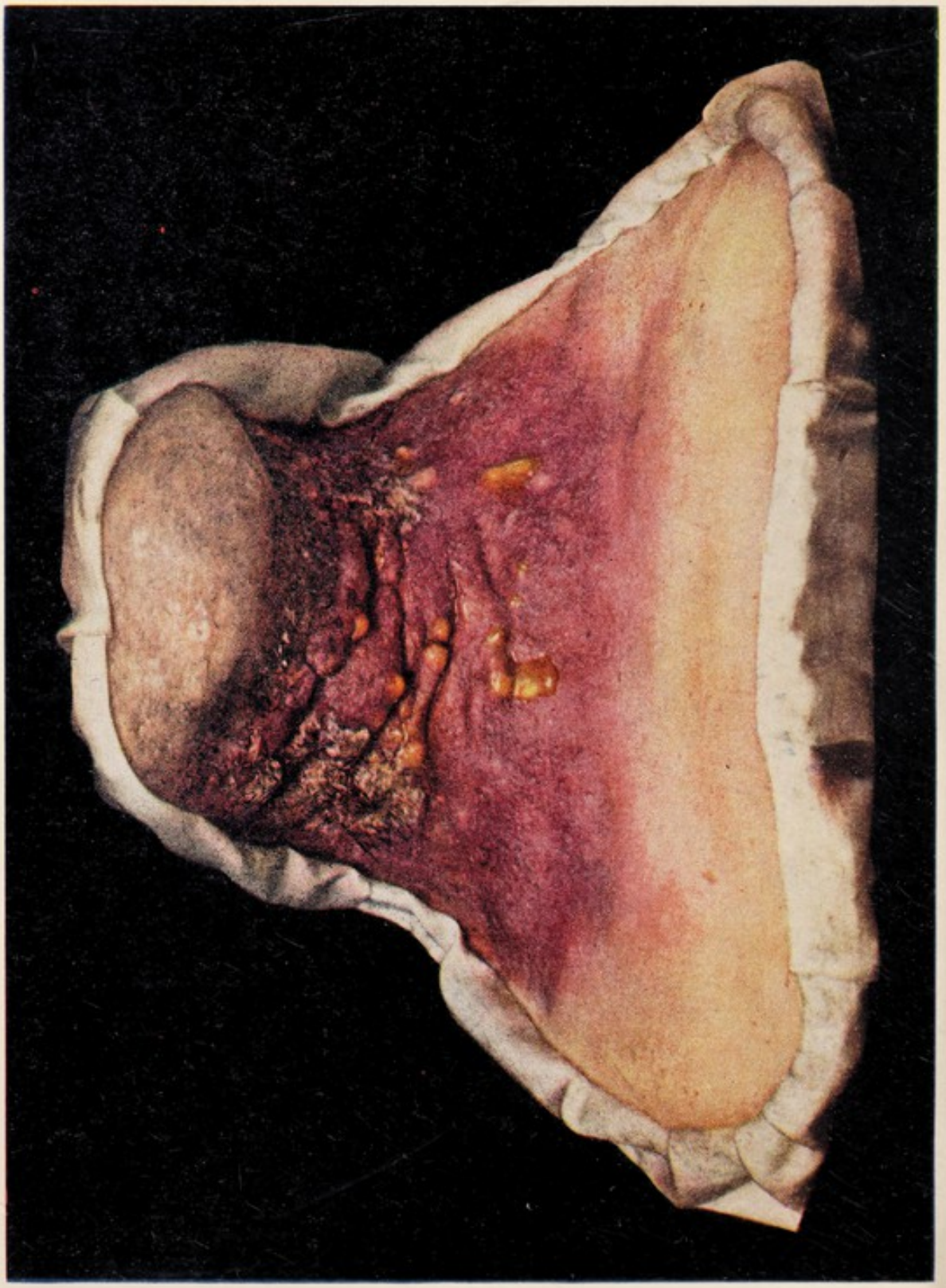
Treatment.—Excision used to be regarded as the only justifiable treatment of the malignant pustule. There are, however, many who not only consider excision useless, but believe the patient has a better chance of recovery without it, and these recommend the application of carbolic poultices or of mercurial ointment. Some inject carbolic acid into the tissues around the lesion. While my personal experience of the disease has not been large, I have when examining excised pustules more than once been struck by the small number of organisms present, and their limitation to the superficial regions. The part excised has always been apparently unnecessarily large, and there is a good deal in favour of the expectant method of treatment. Sclavo's anti-anthrax serum has been used successfully. Everything must be done to support the patient, and to increase his power of destroying the organisms.

GLANDERS

(*Glans—an acorn*)

This, too, is a disease which presents itself in two forms, either local or generalised. Like the preceding one, it is connected with employment, and is found almost exclusively in those who have the handling of horses. Still, both may occur accidentally in others, and in neither must too much stress be laid on the occupation.

[1] Figures kindly supplied by my friend Dr. John C. Bridge, of the Home Office, show that there occurred in the United Kingdom in 1920 45 cases of malignant pustule with 8 deaths ; 3 cases of internal anthrax, all fatal ; and in England and Wales 5 shaving-brush cases with 2 deaths.



The commonest form of the disease which comes under the notice of the dermatologist is the single ulcer, which appears usually on the face or hands, and presents a very difficult diagnostic problem. Somewhat resembling a syphilitic ulcer, it develops more rapidly than that, and it is of course unresponsive to anti-syphilitic treatment. Sometimes the disease attacks the skin in a sub-acute form, and is evidenced by a number of pustules and purulent swellings closely resembling those produced by the internal administration of iodide of potassium. The obviously serious condition of the patient, the rise of temperature, and the history of his occupation, are all of value in arriving at a correct diagnosis. Here cultivation is of more value in diagnosis, for the disease is not so rapidly fatal as anthrax, and by passing some of the discharge from the ulcer through a guinea-pig cultivations of the *Bacillus mallei* may be procured.

The only local treatment of any use in the first class of case is the radical destruction of the ulcer by the *actual cautery*, no attention being paid to anything save the destruction of the diseased tissues. Mallein may sometimes be used with advantage.

ACTINOMYCOSIS

(*ἀκτίς—a ray ; μύκης—a fungus*)

Pearl or wooden tongue has been long known as a disease of animals, and although a case of the affection in the human subject was recorded so far back as 1845, it is only comparatively recently that its prevalence in the human subject has been generally recognised. I have seen eight cases in the last twenty years. The parasite usually enters by one of the mucous surfaces, and the disease is found in those who are connected in any way with farming, or with the handling of hay and straw. The lesions on the skin, which are usually secondary to deeper disease, and are most common on the face and neck, are quite characteristic. The only word to describe the appearance is the vulgar one of "blob." The granulations are like little sticky drops, reddish in colour, emerging from a reddened, thickened,

fistulous opening, from which also issues a fluid containing little sulphur-yellow granules. The disease varies in its extent; it may attack downwards, reaching the bones or vital organs, and ultimately terminating fatally, or it may remain local for a considerable period.

DIAGNOSIS.—The little yellowish granules which are present in the discharge consist of masses of the ray fungus. They consist in the centre of a felted mass of filaments, which may be modified at the periphery into the characteristic club-shaped structures. The microscope is of more immediate value in this disease than in the two preceding ones, for usually, though not always, some fragments of the fungus may be detected in the discharge.

TREATMENT.—Surgical methods, scraping out the sinuses and the application of carbolic acid or some similar application, are indicated. Most, however, is to be hoped from the internal administration of large doses of *iodide of potassium*. Whether, as in syphilis, the iodide rather removes the products than destroys the cause of the disease is possibly open to discussion, but it certainly promotes the absorption of the swellings and the healing of the sinuses, and it may be that the patient's juices destroy the fungus. Soaks of iodine in the form of Gram's or Lugol's solution should be applied to the part.

The accompanying illustration, which is from a cast of the chin and neck of a case under my care in 1907, is a typical example of the form in which one meets the disease upon the skin. The patient was a farm servant who was in the constant habit of chewing straws. I suspected the nature of the disease when I first saw him, and we found in the discharge threads of fungus which strengthened our suspicions. The patient was immediately put upon large doses of iodide of potassium, ultimately increased to forty grains three times a day (under which, I am glad to say, he made a complete recovery). But the fungus seems to be peculiarly susceptible to this treatment, and could not be found on later investigation; and in a second case we had a precisely similar experience. The patient came to hospital during my holiday, and was seen by my colleague Dr. Gardiner, who demonstrated the fungus without any difficulty to the attending students. The patient

was put upon iodide of potassium for a few days, and, in spite of the assistance of the expert bacteriologists whom we have available in Edinburgh, we were never able to find the fungus again. One may perhaps emphasise the precaution that thorough bacteriological examination should be made before treatment is begun. In this case we supplemented the iodide by injections of vaccine with good effect. Sir John Collie reports the apparent cure of a very extensive case by this method.

RHINOSCLEROMA

(*ῥίς—the nose; σκληρός—hard*)

This is a very rare disease, and consists in a peculiar hardening of the tissues of the nostrils and upper lip. Commencing unobserved on the nasal mucous membrane, it goes gradually on until the parts have acquired a cartilaginous hardness, and the nostrils are obliterated by the enlargement of their walls. It is due to a specific bacillus somewhat resembling the pneumobacillus, which can be easily cultivated.

Formerly treatment was directed entirely to palliating the condition, and keeping the nostrils open by tangle tents, etc. More recently attempts have been made to produce an antitoxin, which has been used in some cases with benefit. Lang injects a 2 per cent. solution of sod. salicyl., and administers the same drug internally. Considerable improvement has been noted under X-rays. No case has as yet been observed in Great Britain.

YAWS, OR FRAMBŒSIA

(Fr. *framboise—a raspberry*)

This is a disease of the skin found in certain tropical countries, *e.g.* Ceylon, the West Indies, South America, and Madagascar. It runs a course somewhat like that of syphilis, but it is quite distinct from that disease, though it also is caused by a spirochæte (*Treponema pertenue*).

There is a prodromal stage, most marked in children, in

whom the disease is commonest, with symptoms somewhat resembling those of rheumatic fever. Then appears a local sore (usually extra-genital) and a secondary rash, in which a number of yellowish-red lumps (yaws) appear. These enlarge and become crusted. When the crust falls off there is disclosed a papillomatous growth, resembling a raspberry or a cauliflower, from which issues a malodorous, sticky discharge. Papules sometimes appear on the mucous membranes. Tertiary symptoms only rarely occur, and Kynsey, who had extensive experience of the disease in Ceylon, says these should be looked on as mere accidental sequelæ.

Diagnosis.—The only disease with which it can be confounded is syphilis, and the following differences are noteworthy; framboesia occurs most commonly in childhood, and is rare after thirty-five. The eruption is *always the same* and is *always itchy*; it leaves no scar, and never affects anything but the skin and mucous membranes; iritis never occurs, and the disease is never congenital. Syphilis does not protect from yaws, nor yaws from syphilis.

Treatment.—Yaws responds even more readily than does syphilis to "606" or one of its substitutes.

MYCOSIS FUNGOIDES

(*μύκης—a fungus*)

"In presence of a chronic ambiguous pruritic dermatosis, rebellious to ordinary treatment, which assumes the form of a vague erythrodermia, of a psoriasis, of an eczema, of a rebellious urticaria, of a lichenoid prurigo, etc., it is necessary to bear in mind the question of a possible mycosis fungoides" (Besnier).

The term was introduced by Alibert, and remains in use, although the word "mycosis" must not be understood to indicate that any "fungus" is present. It is fortunately a comparatively rare disease.

It commences with an eruption which may be urticarial, erythematous, vesicular, or scaly, and it may remain in this form for many months, or even years, before the later

and more serious development of tumours commences. These vary in size and shape, and are usually of a deep red colour until the surface takes on a catarrhal action, when yellow



Fig. 58.—Mycosis fungoides (early stage).

crusts appear; then the surface softens, parts of it break down, and fungating ulcers develop. The accompanying illustrations of a case under the care of my friend the late Mr. Dale James show these two stages of the malady. Seven months elapsed

between the taking of the first and the second photograph, the latter being taken a week or two before death.

Sometimes the tumours become pedunculated and drop off. Sometimes they disappear spontaneously. According to Unna, the commonest form of the disease tends to begin above, and spread downwards in the same way as seborrhœa does; and

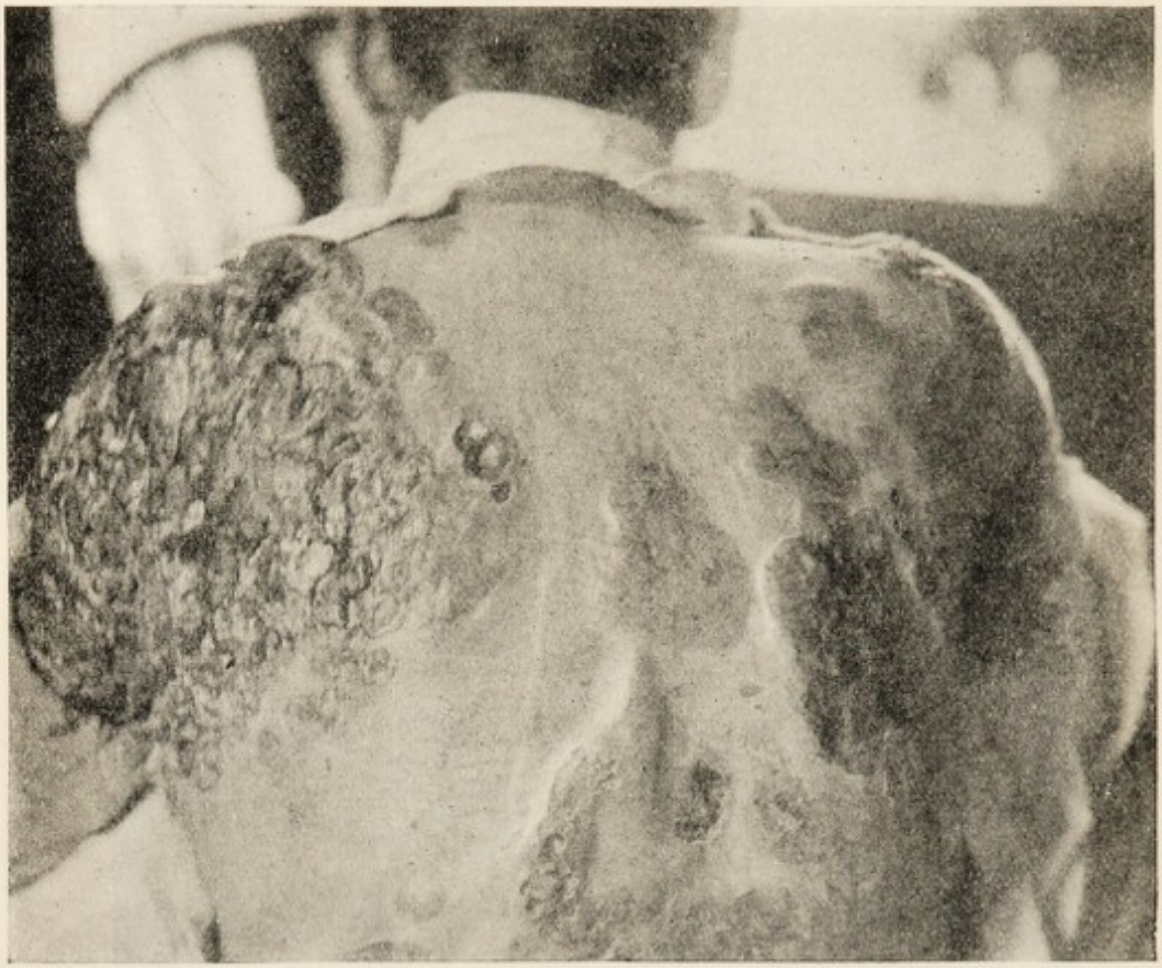


Fig. 59.—Mycosis fungoides (fungating stage).

he appears to regard the moisture which develops on the surface as indicative of a complication with seborrhœa. In one case under my care this view seemed to be borne out, for the true mycotic tumours had here and there among them typical seborrhœic warts. The duration of the disease varies; cases have been known to last as long as fifteen years, but as a rule death results in from three to five.

The nature of the disease is quite obscure. It has many resemblances to sarcoma, but the internal organs are never

affected. The tumours are composed of small cells of the connective-tissue type, and most observers regard the disease as in all probability a granuloma. Organisms have been found by several investigators, but not invariably, and there is no sufficient proof of their connection with the disease. In

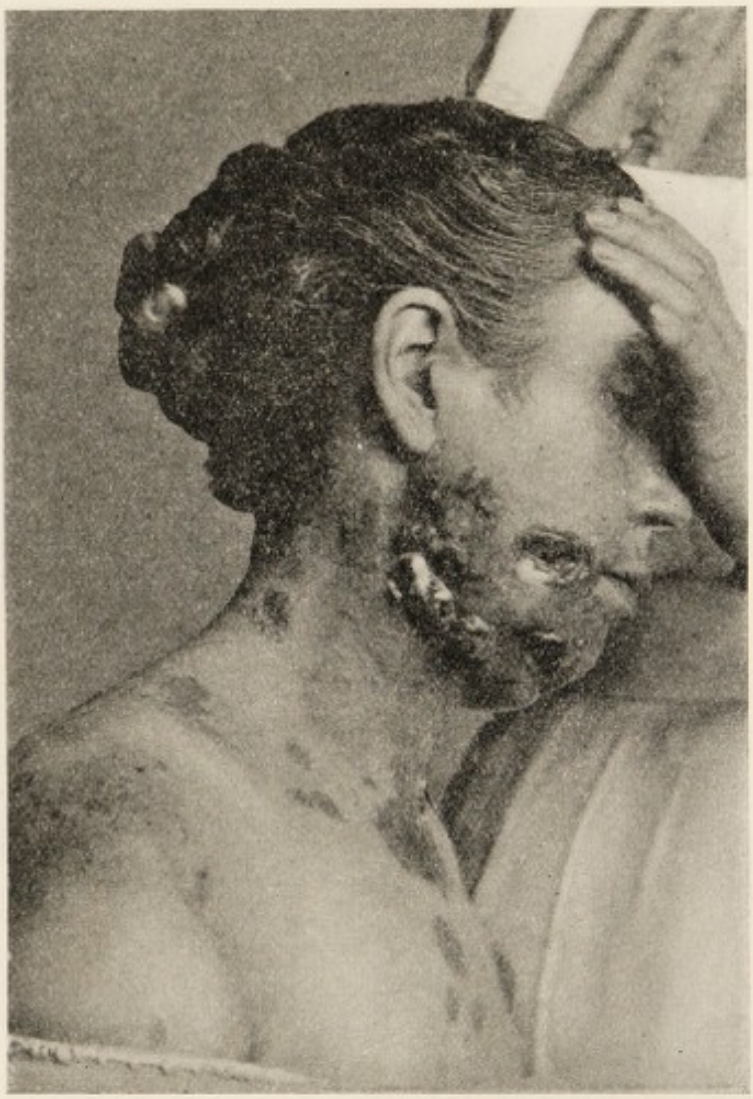


FIG. 60.—Mycosis fungoides (before treatment).

none of the cases which I have examined could I satisfy myself that certain micrococci present had any relationship to the disease.

Death usually results from exhaustion, brought about by the softening of, and suppuration around the growths.

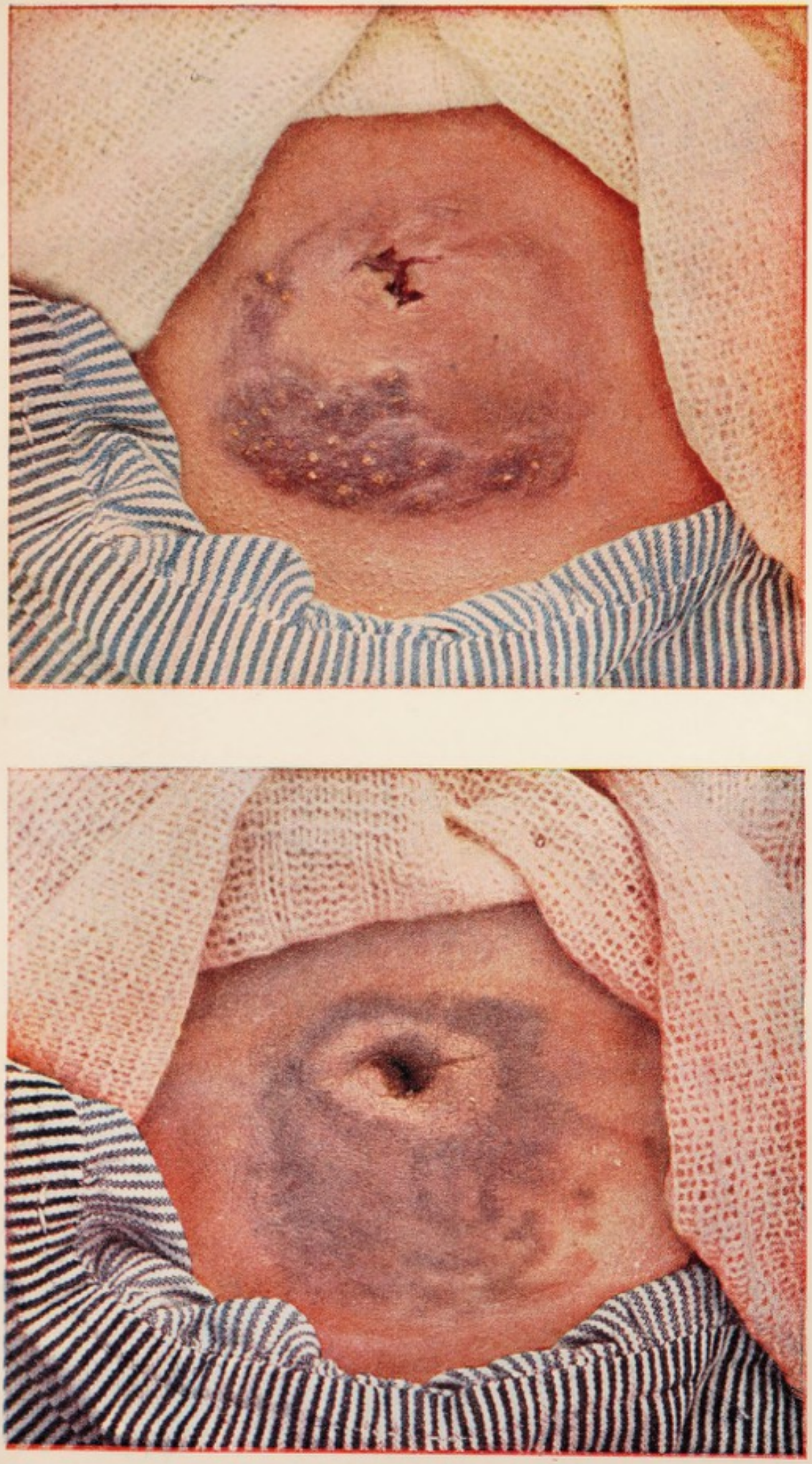
TREATMENT.—Formerly all that could be done was to keep the parts clean, and so protect the patient from the additional

suffering of septic absorption. In the X-rays we have, however, a remedy of almost miraculous virtue. They were first used by Allan Jamieson in 1902, in a very well marked case in which one would have looked for a speedy fatal termination. I reproduce, for their historic interest, photographs of this case.



Fig. 61.—Mycosis fungoides (after treatment by X-rays).

Dr. J. B. Simpson, of Golspie, under whose care the patient was, subsequently gave me some very interesting particulars. For a long time she remained in comparatively good health. Occasionally a fresh lesion would develop, but disappeared under the rays applied by himself. Ultimately, however, the disease prevailed, and the patient died in 1907. But without doubt the treatment added three years to her life.



MYCOSIS FUNGOIDES.

BEFORE AND AFTER X RAY TREATMENT.

The comparison between the cases, before and since the introduction of the X-ray treatment, is eloquent testimony to its value.

It is said that the tumours sometimes disappear under the application of chrysarobin, and injections of arsenic are credited with the production of some improvement.

Certain forms of leukæmia of the skin in which tumour formation occurs are sometimes confused with this disease. They are much more rapid in their development, changes in the blood are easily observed, and a fatal termination comes about quickly.

SYPHILIS

For a description of the primary lesion and the disease as a whole, special monographs or text-books on surgery must be consulted; here we are simply concerned with its manifestations on the skin, and these are so numerous that they can only be treated with comparative brevity. It is not very easy to lay down definite rules as to the periods in which the different skin eruptions appear, and to say this is a secondary eruption, that a tertiary one. So far as possible, however, they will be dealt with according as they appear early or late in the course of the disease.

The earliest rash is the roseola, which appears on the trunk six to ten weeks after infection. As a rule this is a mere erythematous blush, often only discoverable with difficulty, and most evident immediately after the patient has removed his clothes, or after a bath. Exceptionally, this rash is more developed, and exudation accompanies the erythema, leading to a pretty close imitation of erythema multiforme. Very exceptionally, small bullæ may be developed on the erythematous patches.

The next rash to appear in point of time is the scaly one, which is so often described as syphilitic psoriasis. Syphilis and psoriasis are two distinct diseases, and if the old meaning of the latter term is to be retained the term is utterly incorrect. If, on the other hand, the views put forward to the effect that seborrhœa and psoriasis are practically one and

indivisible be accepted, then there may be some excuse for the term, though that of psoriasiform syphilide is preferable. This scaly rash is a combination of the early tuberous syphilide and seborrhœa, the two diseases mutually favouring each other's development. The seborrhœic catarrh on the surface induces a hyperæmia, which favours the growth of the syphilitic virus, while that in its turn provides a *locus minoris resistentiæ* for the growth of the seborrhœic organisms. This rash follows the distribution and spread of seborrhœa. Commencing on the head, it spreads on to the forehead, where it forms a "Corona Veneris," and then to the trunk and limbs. In many respects the spots closely resemble those of seborrhœa corporis, but there are one or two important differences which make the differential diagnosis easy. The colour is a much *deeper red* than that of seborrhœa, and when the hyperæmia is dispelled by pressure a brownish-yellow tinge remains. A still more marked difference is felt on palpating the spots. The lesions of seborrhœa are slightly raised above the surface, but this increase is perceptibly mainly due to thickening *of* the epidermis; in the syphilitic lesion the increased resistance is much more marked, and though partly *in* the skin, it is mainly *beneath* the surface—a feeling of new growth is conveyed to the finger.

All the varieties seen in seborrhœa may be present, the spots may be very dry and covered with silvery-white scales, or they may be moist and be surmounted by yellow, greasy, scaly crusts; it is exceptional for them to weep. At the contact surfaces, particularly between the buttocks, growth may be very active, and warty, condylomatous growths appear.

Less frequently at this stage the eruption may be pustular or bullous. The Plate shows the bullous eruption of congenital syphilis, which is often unfortunately spoken of as "Syphilitic pemphigus." There are very few diseases of the skin which may not be imitated by syphilis. It must therefore never be forgotten that **the skin eruption is not the only lesion**, and a definite diagnosis of syphilis should never be made from the skin eruption alone. Specific adenitis, ulceration of the throat, and mucous patches in the mouth should be carefully sought for. The eruptions of this stage of the disease pass away without leaving scars.



BULLOUS CONGENITAL SYPHILIDE.



TERTIARY SYPHILIS
WITH CHARACTERISTIC SCARS.

The next rash in point of time to appear is rupia, of which Hutchinson very truly said that "although of all others the most easy skin disease to represent in a portrait, you scarcely ever see it in practice." The limpet-shaped scabs are very characteristic, and the rounded nummular scars which they leave almost equally so.

The tertiary period is associated in the student's mind with the gumma, and he sometimes forgets that there are several other forms in which the disease may appear. Gummata may be cutaneous or subcutaneous, the latter perhaps are the more common. A swelling, varying in size, appears on the skin, which is generally slightly discoloured. Usually suspicions of its nature are aroused by a peculiar rounded softening in the centre, which gives to the finger the sensation of feeling the empty mouth of a medicine bottle through a piece of thick velvet. The swelling breaks down, and we then have the typical gummatous sore. Cutaneous gummata are naturally more superficial, sloughing is more rapid, and the excavations are not so deep. They are most common on the legs, especially about the knee, though they may occur at any part of the surface. Cutaneous gummata are frequently multiple, appearing in groups, and in healing there is a degree and form of pigmentation which it is of the greatest value to be familiar with, not only in the diagnosis of other forms of skin eruption, but of any obscure ailment from which the patient may suffer. The pigmentation is considerable in amount; in colour it is a mixture of grey and brown, and the scar, which stands out white against the surrounding pigmentation, has a peculiar "scalloped" outline. (See Plates.)

The late scaly syphilide is most frequently seen on the palm or sole. Usually it is unilateral, and this is a great help in the diagnosis, for the eruption has often little to distinguish it from "eczema," which almost invariably attacks both hands, unless the patient's work is such that only one hand is irritated.

Sometimes a late scaly eruption somewhat resembling psoriasis is observed. The scales may be quite silvery, and the outlines of the patches just like those of psoriasis. But the fact that the centre is scarred makes the distinction easy.

There is an admirable Plate of this condition in the *Sydenham Society's Atlas.*

Another form of tertiary lesion is the ulcerating crusted syphilide, often a very widespread eruption, in which the surface is covered with evil-smelling crusts, beneath which an ulcer is concealed. These ulcers spread serpiginously, and often give rise to very great destruction. It is in this form that the "horse-shoe" or kidney shape is most typically developed. It is most apt to occur in patients who have neglected treatment in the early stages of the disease.

Yet another form is that which, for lack of a better term, we may call the lupoid syphilide. (See Plate.) All that is meant by the use of the term "lupoid" is that the lesions somewhat resemble the apple-jelly nodules of lupus. As a rule they are redder in tinge; syphilitic lesions are more vascular than those of tubercle. In my experience this is one of the latest manifestations of the disease, and its true nature is often overlooked. I have seen it appear as late as twenty-five years after the original attack, the patient having had no eruptions in the interval.

Diagnosis.—In no disease of the skin is accuracy of diagnosis of such importance as in syphilis, and many a doctor has had bitter cause to regret having diagnosed it when the patient was suffering from some other disease over the contracting of which he had no control. In the lock departments of hospitals it is the local lesions which mainly come under the student's notice, while in practice it is usually from the eruption that the inquiries have to start. History is of little value. Not only is the word of those who have contracted the disease in the usual way generally unreliable, but the disease is by no means infrequently accidentally acquired by the innocent, and in doubtful cases the most intimate knowledge of the high character of a patient must never influence the observer to exclude syphilis. Some err in the other direction, and are too ready to label as syphilis any skin disease with which they are not familiar (see Pityriasis rosea), and thus much family trouble and sometimes considerable pecuniary loss to the doctor results. I tell my students that in the diagnosis of obscure skin cases they should always have



LUPOID SYPHILIDE.



TERTIARY SYPHILIS WITH CHARACTERISTIC SCARS.

syphilis present in their minds, but never get it on the brain. Syphilis should never be diagnosed from the skin eruption only. At the secondary period, hardening of the glands, especially those behind the sterno-mastoid, and the epitrochlear, should be sought for, and the throat and mouth should be examined for ulceration and mucous patches. Redness of the fauces goes for nothing; in syphilis there is distinct ulceration—the snail track—on the tonsil or soft palate. Only when these are discovered is it wise to put definite questions as to the contracting of the disease. The characters of the eruption have already been referred to, but it is well to bear in mind that multiformity of the lesions is a very usual feature, and that papules in one place, vesicles in another, and crusts in a third, are more frequent in syphilis than in any other disease. In the later stages of the disease (gummata, ulcerating tuberous syphilides, etc.) evidence of past disease in the shape of scars may nearly always be found. While scars may of course be found in any situation, they are very commonly found just below the knee. The "tip" of an old clinician that "scars in the neighbourhood of the knee are always syphilitic" is not far off the truth.

The Wassermann reaction, provided the test is carried out by an expert, is of very great value, but it is not infallible, and it is essential to bear in mind that the reaction is generally negative in the primary stage. In the secondary stage the reaction is positive in over 90 per cent., while in the tertiary it is so in about 75 per cent. In these latter cases it is possible to produce a positive reaction by a "provocative" ($\frac{1}{2}$ dose) injection of salvarsan.

The cutaneous reactions induced by the injection into the skin of "luetin" (prepared from cultures of the spirochæte) or "pallidin" are said to be more reliable than Wassermann in tertiary and in congenital cases, giving a positive reaction in over 90 per cent.

Treatment.—If a patient is seen in the primary stage of the disease and there are no contra-indications, the immediate administration of salvarsan (or one of its substitutes) is called for. It is only at this stage that the early hopes of arrest of the disease are fulfilled. Two or three doses (of ·5 of a gramme)

given at intervals of ten days may sometimes be all the treatment that is required. If secondary symptoms have developed, the results are far from being so satisfactory and the assistance of the old stand-by mercury is called for. This may be administered by the mouth, by subcutaneous injection, by inunction, or by the inhalation method referred to on p. 15. The first is the one which is most favoured in this country, and in most cases it is quite satisfactory. Half a grain of grey powder made into a pill and given three times a day is a convenient form. So is calomel in suitable doses, and perhaps the most popular salt in Edinburgh is the perchloride, $\frac{1}{12}$ of a grain given three times a day in solution. The red iodide has its followers, and indeed any of the salts may be given. Subcutaneous injection is largely used on the Continent. It has the merit of accurate dosage, and the patients are more under control. Many use the perchloride, and inject from $\frac{1}{8}$ to $\frac{1}{4}$ of a grain into the buttocks once in every five, six, or seven days. The pain is not severe, and soon passes away, and, as may well be expected from the nature of the drug introduced, abscesses from organisms are rare. Other forms are sometimes used; grey oil (a mixture of metallic mercury and oil), calomel, and an albuminate of mercury. All have their advantages, and all have their disadvantages. The insoluble preparations are a little uncertain, their conversion into soluble ones and their consequent activity appearing to be beyond control.

Inunction is the most efficient, though the most unpleasant method. In any case where the symptoms are serious, and it is desirable to get the patient rapidly under the influence of mercury, inunction is the method to be followed. About a drachm of the ointment is rubbed into a different part of the body every night. The usual course is the front of the chest, sides of the chest, the groins, the upper arms, the thighs, and the legs. On the seventh day the patient is allowed to rest, and bathe. The course usually lasts from three to six weeks. A somewhat more cleanly method of inunction is the use of mercury soap. It is very easily used, attracts no attention, and is particularly suitable for commercial travellers and those who are unable to get the ordinary inunction treatment thoroughly carried out. I have more than once succeeded in

dispelling late manifestations by simply directing the patient to wash his hands and feet alternately with mercury soap. The lather is of course to be rubbed in till dry. The Mercolint Bib is the simplest of all methods of treatment, and entails least trouble on the patient. Blaschko, who introduced it, says that it is of less value in recent cases, but such has not been my experience. In some military hospitals cases are treated as follows:—First a dose (0·6) of salvarsan, followed by five weekly doses of mercurial cream (one grain of mercury), then another dose of salvarsan, five more weekly doses of mercury, and a final dose of salvarsan.

In the later stages the iodides have their place, though I fully share Whitla's view that "iodide relieves but mercury cures," and almost invariably prescribe them together. Every now and then one meets with patients who cannot take iodides, or who *say* they cannot take iodides. There are no doubt a few individuals who present such an idiosyncrasy to the drug that they are really unable to take it, but in many instances all the patient means is that at one time he has suffered from iodism. That is no reason why he should suffer again, and it is well to impress upon the complainant this aspect of the case. Various additions, such as carbonate of ammonium, pepsencia, belladonna, arsenic, and potassium bitartrate, may overcome or prevent the unpleasant symptoms, and there are many modern combinations of iodine, one or other of which will probably be found to suit most patients. In many cases large doses are necessary before improvement sets in. Because a doubtful case does not improve on ten grains of iodide three times a day it by no means follows that it is not syphilis. In gummata and in the ulcerative forms of the disease the local application of mercury is useful. Unna's mercurial plaster, or simple ungt. hydrarg., kept continuously applied to the part hastens the cure.

The effects of salvarsan in tertiary cases are curiously capricious. Sometimes the lesions clear up immediately; in other cases the drug seems to fail altogether.

TUBERCULOSIS

Lupus vulgaris is the most common form of tuberculosis of the skin. It presents many clinical varieties, which differ according to various complicating and secondary changes.

The simplest and the most typical form of lupus vulgaris is that where there are found in the skin those lesions which are described as the "*apple-jelly*" or "*barley-sugar*" nodules of Hutchinson. These are yellowish-brown areas about the size

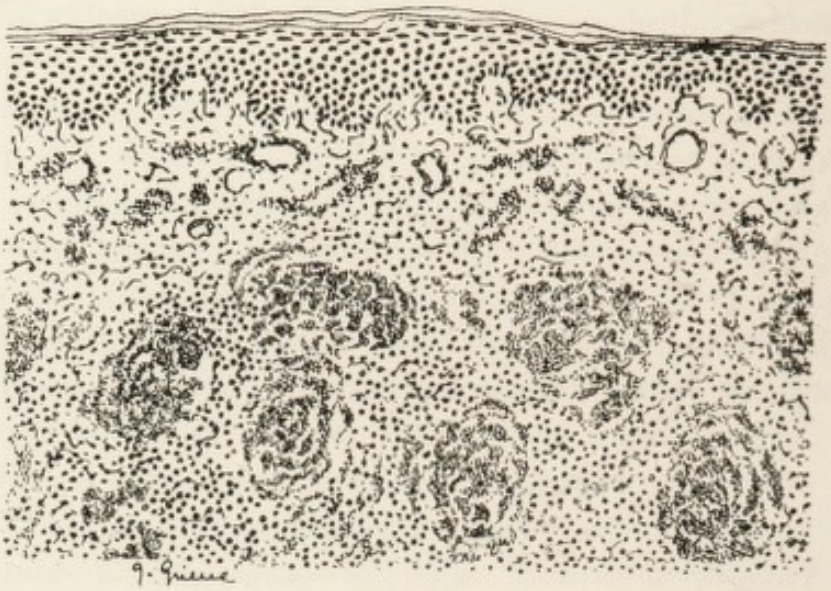


FIG. 62.—Lupus vulgaris simplex. The corium is studded with little collections of tuberculous follicles which make up the apple-jelly nodules. The vessels are dilated, and the tissues between the nodules contain many leucocytes. The epithelium is slightly swollen and the horny layer shows parakeratosis. (× 75.)

of a hemp seed; they may be found discrete, or may run together to form irregular areas. They are evidently *in* the skin, and the epidermis runs unbroken over them. They are too small for the finger to appreciate the fact, but pressure with a blunt probe demonstrates that they are softer than the tissues round them. Their true colour is best displayed by pressing on them a piece of glass (a microscope slide, or a watch-glass), for the pressure dispels any complicating hyperæmia, and no amount of pressure will cause the typical nodule to disappear.

When examined microscopically, these nodules are found to consist of epithelioid and small round cells aggregated into



LUPUS VULGARIS.

little round areas, ten or a dozen of which go to make up a clinically visible *apple-jelly* nodule (Fig. 62). Occasionally a giant cell may be observed among them, and very occasionally a tubercle bacillus.

At this stage, which may conveniently be styled lupus vulgaris simplex, the disease may remain in cleanly, healthy persons for an indefinite period, giving rise to no inconvenience



FIG. 63.—Catarrhal lupus. Leucocytes are present in such amount as to conceal the tuberculousstructure. Traces of epithelium covered the whole surface, and the overlying crust teemed with micrococci. (× 50.)

except from its appearance, and spreading very, very slowly (see Plate facing p. 272).

The disease, however, only exceptionally follows this simple type. The most common complication, so common as to be to most the typical form of lupus, is that of catarrh. Just as in catarrhal tuberculosis of the lung the catarrh is due to the addition of other organisms to the original disease, so, in the skin, micrococci are responsible for the change which converts what to the patient is a mere disfigurement into a disagreeable discharging eruption. The brownish-yellow nodules become concealed by dirty, yellowish-black crusts, and pus constantly exudes from the apparently raw surface. This stage of the disease used to be known as *lupus exulcerans*, but there is no

ulceration in the true sense of the word. However ulcer-like the case may appear, careful histological examination will disclose the fact that the surface is still covered, imperfectly, it is true, with epithelium. The epithelium is swollen, distorted almost beyond recognition, but it is still there. The process is essentially one of catarrh (Fig. 63). In sections appropriately stained there are found on the surface myriads of cocci, and to these the purulent discharge and crusting are due. The true skin is so packed with leucocytes as to make it difficult to recognise the tuberculous nature of the disease. But a few

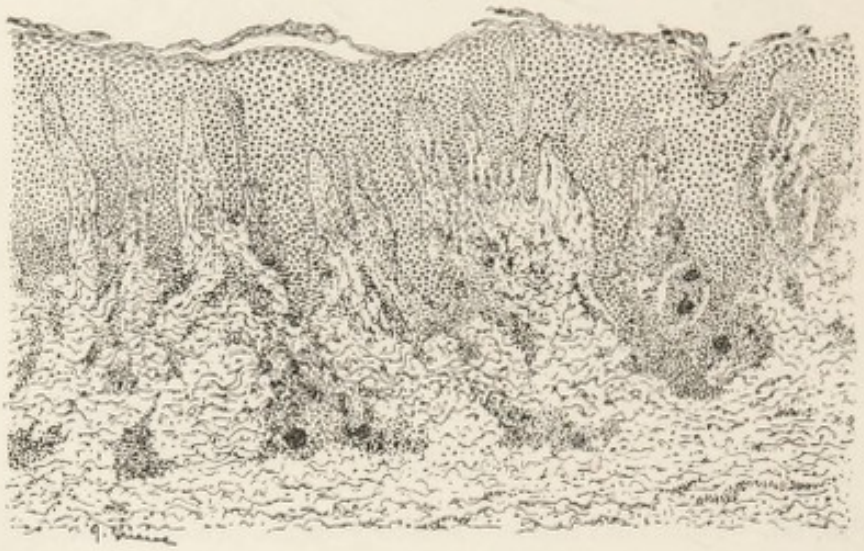


FIG. 64.—Fibroid lupus. Dense connective tissue. Numerous giant cells. Proliferation of epithelium. (× 75.)

weeks' appropriate treatment and the apparent discrepancy is cleared up—destroy the pyococci and the catarrh disappears, leaving the simple variety of the disease.

Another common variety of lupus, which also has its analogue in the lung, is **fibroid** lupus, often improperly called lupus verrucosus. Fibroid lupus is most frequently seen on the limbs and buttocks. It is very rare on the face. In it there is an excessive production of fibrous tissue, and the tuberculous nodules are few in number. They also show evidence of their chronicity in the presence of (for lupus) a considerable number of giant cells. There is also some evidence of increased activity of the epithelium, but, as shown in Fig. 64, there is no true warty formation.



LUPUS VULGARIS

True warty lupus, **Lupus verrucosus**, is probably due to the addition to the lupus of the cause, whatever it may be, which produces warts. It occurs especially on the hands, feet, and on the buttocks. The same growth of epithelium is seen as in warts, with long processes of connective tissue forming cores for the epidermic cylinders. As a rule the warty growth and the lupus are co-extensive and co-terminous, but sometimes the warts last longer than the tuberculosis.

Verruca necrogenica, or the **Post-mortem wart**, is that form of tuberculosis of the skin which appears on the hands of butchers and pathologists, and sometimes of those engaged in nursing cases of tuberculosis. It is the most benign form of tuberculosis, and indicates the vigorous reaction of healthy tissues to repeated inoculation with the bacilli. A great part of the growth is epithelial, as the name suggests, but there is also a good deal of fibrous thickening. It is commonly situated at the side of the nails, or on the knuckles, and may persist for years, undergoing very little alteration. As a rule it is amenable to treatment, and occasionally it disappears spontaneously.

Lupus is most common on the face, especially in the neighbourhood of the nose, and it generally begins on the mucous membrane of the nose or the lachrymal canal, and lurks there unsuspected perhaps for months before it affects the skin. It is common on the neck, where it is secondary to tuberculous adenitis, not necessarily cases where the glands have broken down and discharged through the skin. It is quite common to see lupus nodules in the scars following operations for extirpation, and cases which have been operated should be kept under supervision and inspected at regular intervals over at least nine months, so that the disease, should it develop, may be treated promptly. This supervision is necessary, because the early lupus nodule causes no discomfort, and neither the patient nor the parents realise its significance. Probably the next commonest site is the buttocks, and then come the hands, feet, and limbs. No part of the body is, however, exempt. On the scalp primary lupus is exceedingly rare, though the disease may spread to it from neighbouring affected areas. It is suggested that in some instances flies are respon-

sible for the inoculation of the disease, and one sees quite frequently cases where ten or more isolated areas of lupus widely separated from each other appear after an attack of measles; some concealed form of tubercle has broken down and its softened contents have been disseminated in the blood stream.

Diagnosis.—This is usually easy. Almost always at some part of the affected area "apple-jelly" nodules can be detected, and the diagnosis is never absolutely certain until these have been recognised. Not infrequently, however, they are obscured by some of the complicating processes. The catarrhal process very rarely conceals them entirely, but in the warty and in the fibroid forms of the disease they are often exceedingly difficult to recognise. In all cases the use of the watch-glass is to be strongly recommended. It should be remembered that freckles do not disappear under pressure.

In addition to direct observation, a good deal of useful information can be got from the history. It is not likely that a patch of "eczema," or, indeed, of any other inflammation of the skin than a tuberculous one, would last for eight or nine years in one area, as these cases frequently do; and suspicions of a tuberculous nature being aroused, careful examination will usually lead to their confirmation. The greatest difficulty in connection with diagnosis is when a chronic ulcer occurs on the face of a patient of middle age. The two diseases which may be confused with tuberculosis under such circumstances are syphilis and rodent ulcer. There are certain differences between each, but these differences must be estimated as a whole and together; too much stress must not be laid on individual ones. Tuberculosis is most apt to commence in youth, tertiary syphilis and rodent ulcer toward middle age. The rate of progress is slow in tuberculosis, rapid in syphilis, and slow again in rodent. There is nothing definitely characteristic in the syphilitic ulcer, but the apple-jelly nodule of lupus and the pearly edge of rodent ulcer are each almost pathognomonic. Rodent ulcer is nearly always single, tubercle in this situation very often so; if carefully sought for, some other sign of syphilis will almost always be found. It is worth noting that patients usually complain of

some itching in connection with rodent ulcer; syphilitic lesions very rarely itch. The local tuberculin test referred to on p. 287 is of great value in such cases.

There is one routine examination which should never be omitted. No case of lupus of the face should ever be allowed to go with the mucous membrane of the nose and the gums unexamined. The proportion of cases in which the gum is affected is enormous, and the proportion of cases in which its occurrence is overlooked lamentable. No fewer than 75 per cent. of the patients in the Finsen Institute in Copenhagen are found to have some mucous membrane affected. Lupus of the mucous membrane naturally looks different from the disease in the skin, first, on account of the redness of the surrounding tissue; and second, because of the moist condition in which it is constantly kept. The nodules are usually a little elevated above the surface, and the whole area has an embossed appearance like shagreen leather. Lupus of the gums gives rise to little inconvenience, and patients are frequently unaware of its existence.

Prognosis.—This is by no means easy. Cases which are left to Nature usually occur in the lower classes, where the added disadvantages of insufficient care, food, etc., must be taken into account. If a case of simple lupus were left to itself, and the parts kept clean, and if the patient happened to be in good circumstances, the natural course would be for the disease to extend very slowly though steadily. The patient represented on the Plate facing p. 272 had had the disease for fourteen years and had never had any treatment. Any disturbance of health always involves the risk of catarrhal complication, with disfigurement and more rapid extension of the disease. Even severe cases are sometimes immensely improved by a simple change of residence to a more healthy locality, where the patient has the opportunity of being much in the fresh air. Indeed, it is unnecessary to waste words on this question. The general prognosis of lupus is exactly the same as that of tuberculosis generally. When it is catarrhal the progress of the disease will be rapid; when it is fibroid advance is slow.

When we take treatment into account in the prognosis, we must, in the first place, make it crystal clear to the patient

that if he desires to get completely rid of his disease, which it is quite possible for him to do, he must be prepared to submit to a prolonged course of treatment The old surgical treatment of lupus, which consisted in giving a case a "good scrape" and then not seeing it again for six months, did very little real good. Finsen's chief service to medicine was not the introduction of the light treatment, but the lesson of perseverance which he so perseveringly taught. The fibroid variety of the disease has the best prognosis (cases on the limbs often recovering without any treatment), while the catarrhal form has the worst. It must not be forgotten that in a certain number of cases of lupus, carcinoma ultimately develops. The proportion is stated by some authors to be as high as 2 per cent.

Although lupus is now a notifiable disease, this fact is not sufficiently appreciated by the medical profession. In consequence the main object of notification is not being attained, and the Public Health Authorities are not fully informed of the extent of its ravages. Prompt notification of the disease in its early stages is the first step towards such an organisation as will prevent the development of its graver forms.

Treatment.—Although in public hospitals some phototherapeutic or other method requiring an expensive apparatus is generally provided, it must not be forgotten that circumstances prevent many from attending such an institution; and further, that cases recognised early can be cured by much less elaborate methods. I propose, therefore, first to discuss those methods which may be applied by anyone, and to refer less fully to the methods of radio- and actino-therapy, for those who use them have at their disposal special monographs on the subject. In dwelling so definitely on the varieties of the disease, and pointing out the essential differences of one from the other, my object was to make it clear that the treatment of all is not alike. Obviously the same treatment is not applicable to a case scabbed and discharging as to a hard fibroid patch. The first object of treatment is to reduce the complicated to the simple form, and then to treat the disease directly. This involves separate consideration of the different varieties. After these have been dealt with, the treatment of lupus as a whole will be considered.

Catarrhal Lupus.—This, as the commonest form of the disease, may be taken first. As already pointed out, this catarrh is due to the presence of micro-organisms and their products, and these must be got rid of. Though there are many methods, the simplest and most efficacious is the sharp spoon. It removes diseased tissues and organisms *en masse*, and will do in five minutes what less drastic measures will take weeks to accomplish. It is not necessary to use much force: the catarrhal tissues are exceedingly soft and friable, and can be removed with the greatest of ease. At the edge of the patch the spoon may be used a little more vigorously, but one cannot really hope to eradicate the disease by any amount of scraping.

If for any reason the patient objects to the operative treatment, a similar result may be achieved, though much more slowly, by the application of antiseptics. Brooke's ointment

R	Zinci Oxidi Pulv. Amyli	āā ʒij
	Vaselini Albi	ʒss
	Ung. Hydrarg. Oleat. (5 per cent.)	ʒj
	Ac. Salicyl	grs. xx
	Ichthyol	♏xx
	Ol. Lavandulæ	q.s.

enjoys a wide reputation in this connection, but any antiseptic constantly applied will produce almost as good results, as will also the internal administration of thyroid (grs. 5 to 10 daily).

Fibroid Lupus.—Here the complication is the excessive growth of fibrous tissue, which must be got rid of before it is possible to attack the lupus directly. Scraping is useless. No surgeon, however athletic, can scrape away tough fibrous tissue. The best method by which it can be dissipated is repeated counter-irritation. Probably blistering fluid is as suitable an application as any other, but carbolic acid, the acid nitrate of mercury, the chloride of antimony, and other caustics, may also be used. The reaction often does more than dissipate the fibrous thickening; a large amount of the disease proper is also removed by the reaction, and what is left is open to direct treatment.

Warty Lupus.—In this, as already indicated, the warts are to be looked upon rather as an addition than as a complication.

They are best removed by various applications, such as acetic or salicylic acid. If they are present over a large surface, the best plan is to level the part with a razor. Or one may take advantage of the fact that warts often disappear on exposure to X-rays.

Lupus vulgaris simplex.—In dealing with the simple form of the disease (whether it has always been simple or has been reduced to this from another form) our aim is the elimination of the tubercle bacillus. The first method of treatment which may be considered is that of excision. Theoretically, excision is the best method; unfortunately, practical application does not coincide with theory. I have repeatedly seen cases aggravated by excision, the disease returning in the scars or grafts, often apparently with redoubled activity. The only form of the disease in which excision seems to me justifiable is the fibroid form, and in that the prognosis is so generally good that, unless in special circumstances, it is rarely necessary. If excision is to be done, it *must be thorough*. The line must extend well beyond the external evidence of the disease, and the entire thickness of skin must be removed. If the patch is on the face, the fact that the hair follicles often extend very deeply must be borne in mind.

The next method of treatment may be described as the directly destructive method. In this we apply to the skin drugs which have what is called a selective action, because they act very much more vigorously on the weakened, diseased lupus tissue than on the healthy surroundings. This action is best demonstrated by the use of *arsenious acid*. This is made into a paste:—

℞	Acidi Arseniosi - - - - - - -	1 (grs. x)
	Hydrarg. Bisulph. Rubr. - - - - -	3 (℥ss)
	Ung. Aq. Rosæ - - - - - - -	24 (℥ss)

and applied night and morning for three days. It causes very severe pain, and it is often necessary to administer morphin. The whole region swells up, often to an alarming extent, and at the end of the third day the lupus nodules are seen as little black sloughs dotted here and there in an intensely hyperæmic, swollen skin. The sloughs are soon thrown off, and under soothing remedies the swelling subsides. Nicholson recom-

mends a paste of equal parts of arsenious acid, powdered acacia, and orthoform, the last ingredient to annul the pain. The disadvantages of this method are the pain and swelling which it causes, and the unsightly scars which often result, unless very great care is bestowed on the management of the resulting granulating surface.

Salicylic acid has a similar action. In no form is it so efficacious as in Unna's salicylic creosote plaster. Ointments with a similar composition are not nearly so satisfactory, and the plasters should always be preferred. They are made in different strengths, and the strongest which the patient can stand should be selected. The 30-40 formula is a fair average one, and the plaster should be changed night and morning. In a few days the lupus nodules stand out in the form of whitish sloughs, which can be wiped away with cotton-wool. Now comes up the question of what is to be the further treatment. Many at this stage apply soothing ointments, as in the arsenical method, but if the patient has the fortitude to persevere in the use of the plaster until healing takes place under it, the results are much more thorough, lasting, and satisfactory. Often, however, the pain is so great that he refuses to continue, even with a weaker plaster, and some other application must be used. Nothing is gained by promoting too rapid healing, indeed, the longer the part is kept open and discharging, the more satisfactory is the result. Dry iodoform or a pretty strong iodoform ointment may be rubbed into the part; probably the iodoform destroys some of the bacilli which still persist. Powdered uranium nitrate is perhaps more useful. By several courses of this plaster the nodules may be so reduced in number as to be open to individual treatment.

The nodules may similarly be reduced in number by another less painful method, namely, the very thorough application of *oleate of mercury*. The formula recommended by Allan Jamieson is:—

℞	Ung. Hydrarg. Oleat. (5 per cent.) - - -	℥j
	Ichthyol - - - - - - - -	♏xx
	Acidi Salicyl - - - - - - -	grs. xx

This must be thoroughly rubbed into the part for at least twenty minutes every night, and ten minutes every morning.

When by one or other of these means the nodules have been reduced to a manageable number, methods such as the thermo-cautery are applicable. The ordinary Pacquelin point is too broad. The point must be so fine as to enable one to pierce the individual nodules, and a better instrument for this purpose is Unna's *microbrenner* in which a copper point is fused on to the end of the platinum. With this any visible nodule is pierced and immediately destroyed. The galvano-cautery is more useful, mainly, I believe, because the burn is followed by a greater amount of reaction than that produced by the thermo-cautery.

Another method consists in boring out the nodules with a dentist's burr dipped in pure carbolic or in tri-chlor-acetic acid,[1] and a commonly used one is the puncture of each nodule by a wooden match sharpened and dipped in some caustic, such as the solution of acid nitrate of mercury. The simplicity of the method is a strong recommendation. The operation must be repeated and repeated until every single nodule has disappeared, and only then should the patient be released from observation, with orders to report himself at the first sign of recurrence. The fact that liq. hydrarg. nitratis acid. loses its strength when kept must be borne in mind, and the fresh preparation should be used with great caution, for it often produces an unexpected amount of destruction.

The disease may also be attacked indirectly. Probably the two methods, the direct and indirect, are always more or less combined, though usually one predominates over the other. The indirect method aims at setting up such a reactionary hyperæmia in the skin that the tuberculous material is destroyed indirectly.

When the disease affects the limbs the congestive method of Bier may be tried. This consists in applying a ligature so as to produce prolonged congestion of the part, and it is sometimes as useful in lupus as it is in tuberculosis of the joints.

More commonly the reaction is produced by the application of some irritant. I look upon the action of *carbolic acid* when

[1] While I believe that tri-chlor-acetic acid is probably the best of all the local applications, it must be noted that small cheloidal growths occasionally follow its use.

painted on the surface as almost entirely indirect. The slough produced by its destructive action is so superficial that it notoriously leaves hardly any scar, and therefore its chance of penetrating down to the deeper nodules is very small indeed. It sets up, however, a considerable reaction, and under its application the nodules grow less in number and size. The *acid nitrate of mercury* may be used in the same way. Kaposi used a solid stick of nitrate of silver, ploughing furrows in every direction through the disease; but this method is only available in the catarrhal form, in which other means of treatment are preferable.

Liquor antimonii chloridi does not produce such severe immediate results, but after it has been painted on daily for a few days the part generally becomes so tender that it must be intermitted for a time. On the other hand, some patients can stand prolonged (one, two, three hours) applications of a piece of lint soaked in the liquor. I do not know any better application to entrust to the hands of a lupus patient of only ordinary common sense than the liquor antimonii chloridi, and it has the further advantage that it may be applied to the fibroid form, and thus remove both the complication and the disease at once.

Pyrogallol is another useful remedy. It is best used in the form of a 10 per cent. ointment, which should be continuously applied. It sets up a considerable reaction, but as the effects of that are beneficial it should not be stopped too soon.

Dreuw freezes the part with chloride of ethyl, and then scrubs it vigorously with *crude hydrochloric acid*. In spite of the apparent brutality of the method, the results are good, and the scar is often very satisfactory.

In the selection of any of these methods one must be guided by a variety of considerations. The cosmetic effect is one of the most important. If the disease is on the face of a girl, one is bound to be more considerate of the resulting appearances than in the case of a male. In a working man the sharp spoon may be used pretty freely. True, it is often followed by somewhat unsightly hypertrophic scars, but the rapid removal of the disease is in such cases of most importance. In the case of a girl the spoon should only be used lightly,

and one should not aim at more than the removal of the diseased products. Arsenious acid, too, though thorough, is often responsible for unsightly scars, and should not be used when appearances have to be considered. The applications which give the best cosmetic results are salicylic acid, liquor antimonii chloridi, and pyrogallol, probably in the order named. If the disease is very extensive, of course, the possibility of the absorption of any drug must be considered, as must the painful effects which they each produce. In such a case probably antimony is as good as any other treatment, different parts being painted in succession. In children the element of pain must be taken into account. It is obviously absurd to expect a child to endure the constant boring pain of salicylic acid and of some of the other suggested remedies, and I believe, speaking generally, that in children the best applications are carbolic and tri-chlor-acetic acids. The pain is severe for the moment, but rapidly vanishes, and even though it may not be the most suitable application to the form of the disease, the fact that a patient is behind that must, as Morris sagely remarks, never be forgotten.

Lupus of the mucous membranes is best treated by the application of strong *lactic acid*, the part being painted daily or less frequently if the pain experienced is very severe. Improvement is usually obvious and rapid.

Photo- and Radio-therapy.—In the treatment of extensive cases of lupus there is no doubt that these methods have proved their merits.

I am most willing to admit all the merits of Finsen's method—the beauty of the scars, the practical absence of any risk in the treatment, indeed everything that may be claimed for it. I believe it is the duty of every large hospital to install it in some form for the treatment of special cases. It is unnecessary to devote much space to its description. It has been described *ad nauseam* in the popular magazines, and those who have the opportunity of working with it have other sources of information. The essence of it is the concentration of the light-rays on a small area of skin. The exposure usually required is about one hour. Next day a small blister appears on the part, and this is dressed with some healing ointment.

The treatment occupies a very long time, and is exceedingly expensive. Further, it is inapplicable to the mucous membranes, which are affected in more than half the cases. But that the results achieved in suitable cases are admirable no one can possibly deny, and persons affected with lupus of the skin only, to whom time and money are no object, will get better results from the Finsen than from any other method. I have used Kromayer's mercury vapour lamp in several cases. Comparatively short (ten minutes) exposure is followed by a blister, but more prolonged application is necessary if any real good is to be achieved. I have tried, laid it aside, and taken it up again on several occasions.

On p. 32 I have referred to the methods of applying X-rays. Where the patch of lupus is small and defined I believe it is quite a good practice to aim at the production of a smart burn. The lupus tissue is more easily destroyed than the healthy surroundings. A double pastille dose is sometimes all the treatment that is required. The resulting ulcer may take long to heal, but it requires nothing but simple applications, and does not interfere with the patient's work.

I confess I am beginning to have doubt as to the wisdom or even justifiability of treating lupus by prolonged courses of X-rays. Not that there is any doubt that the majority of cases derive great benefit from the treatment, but one cannot get away from the fact that the number of cases which later develop carcinoma is startling. It is true that carcinoma develops in some cases which have never been submitted to X-ray treatment, but the proportion is very much less than in those which have. We began to use the X-ray treatment systematically in 1901. In 1902 62 patients were treated, and of these to our knowledge 15 have developed carcinoma. I think the risk is greatest in extensive catarrhal cases in young adults. I am not prepared to go the length of absolutely condemning the use of X-rays in such cases, but they should not be light-heartedly prescribed, and full weight should be given to this danger when deciding whether they are to be preferred to other safer methods of treatment. I have abandoned the method of frequent small doses in favour of larger doses every three or four weeks.

Radium.—In the treatment of small patches on the skin, and more particularly of lupus of the palate, I can speak very highly of this agent.

Carbon Dioxide Snow.—Opinions differ a good deal as to the merits of this agent in the treatment of lupus vulgaris. Some write enthusiastically of its effects, while others find it useless. Personally I feel inclined to agree with both parties. There are some cases where it is very useful, and others where it does not seem to be of much value, but in all the method of application is probably the determining factor. In using CO_2 in more superficial conditions the applications are purposely short, so as to avoid leaving anything in the way of a scar, or if scar there must be, in taking pains to make it as little obtrusive as possible. Now in lupus scars are inevitable; the disease is deep, and if this method is to be of any use the freezing must go deep, and the application must therefore be prolonged. The pencil should be hard, should be pointed, the application not less than one minute, and the pressure should be considerable. Although a scar is left it is at least as good a one as would be left by almost any other method.

Internal Treatment.—There is no specific for lupus, any more than for tuberculosis in general. The only medicine which it is usually advisable to prescribe is cod-liver oil, which by improving the general condition of the patient enables him more successfully to combat the ravages of the bacillus. Thyroid has already been alluded to. It certainly dissipates the catarrhal products, but has little further influence. Creosote, arsenic, chloride of calcium, and other drugs which have been recommended at one time or another have, so far as I can judge, not the slightest influence on the disease. I have, I think, seen as much benefit from the administration of *urea* (grs. x thrice daily) as from any other internal remedy, but it does not suit all cases.

Tuberculin.—It was my fortune to be working in the wards of the late Professor Pick, of Prag, in the year 1890 when the tuberculin treatment of lupus was new. That experience did not encourage me to practise the method, and it is only of recent years that I have come to recognise that tuberculin occupies a very useful place in the treatment of lupus. What

one has got to recognise is that no miracles are to be expected, and that patience and perseverance are as much needed in this as in Finsen's method.

After trying many tuberculins and many methods we have settled down, for the present, to the following, which is being carried out regularly on between seventy and eighty patients. The tuberculin we use is prepared in the laboratory of the Royal College of Physicians directly from tuberculous glands (human and bovine). The first injection is 0·1 c.c. and we increase the dose each time (at intervals of one, two, or three weeks) by 0·1 c.c. until 1·0 c.c. is reached, at which we generally rest.

No sensational improvement is to be expected, but steady persistence in the treatment over many months is usually followed by demonstratable improvement. We do not, of course, trust solely to the tuberculin treatment. Suitable local applications are made, and I do my utmost to induce the patients to take up work which will keep them in the open. Our best results have been in those patients whom we have persuaded to take up gardening and agricultural work. A register is kept, and if a patient does not turn up on his appointed day he is at once written to. This is not often necessary; the regular attendance at our weekly lupus afternoon is perhaps the best testimony to the patients' appreciation of the benefits of the treatment. One of the routine procedures we carry out is the Wassermann test, which has convinced us that some of the worst and most obstinate cases are combinations of syphilis and lupus. It is not a common combination. Of 63 consecutive cases only 5 gave a positive reaction.

There is another use of tuberculin well worthy of attention. Some years ago Dr. Cranston Low, at my request, tested a large series of patients in my wards by the von Pirquet method. The results were published in the *Edinburgh Medical Journal*, August 1909, and were confirmatory of the general experience of the test. But during its progress I asked him to inoculate some cases, not on healthy skin, but directly on to the surface of the lupus. From this beginning we extended the experiments and devised other methods of application. We found that a 5 per cent. ointment of old tuberculin in vaseline well rubbed

into patches of lupus, produced remarkable results. The patch swelled up, just as it would do if tuberculin had been injected, but the reaction was confined to the patch to which the application was made. There was no rise of temperature, and no reaction of any other patches which might be present on the patient. After three days of application the patient began to complain of pain, and the diseased surface looked as if it had been very efficiently treated by salicylic creosote plaster; the nodules were punched out and the skin around violently inflamed. Under suitable treatment this settled down and a considerable, in some cases a very remarkable, improvement was found to have taken place. The method is particularly useful in lupus in the neighbourhood of joints, where contraction of the fibrous tissue is restricting movement. In such cases the amount of freedom given is very gratifying to the patient. I had been making use of this as a therapeutic measure for some months before it occurred to me that it had another aspect, namely, that it might be of great service in the diagnosis of doubtful cases. Every one is familiar with cases where the history is vague and it is not easy to decide between lupus and syphilis. In such cases local application of tuberculin goes far, much further than a Pirquet reaction, to clear up the difficulty, for this reaction, so far as my experience goes, is only observed in tuberculous cases. The accompanying Plate shows the various stages of this reaction.

Lupus Carcinoma.—Fig. 65 illustrates this occasional and most serious complication of lupus. It is no new discovery, though it must be admitted that it now occurs much more frequently than it formerly did, and that to some extent the X-ray treatment must be held responsible. Hebra, from his vast experience, recorded four cases; I can already confess to many times that number. The carcinoma which develops in lupus is not, generally speaking, a typical X-ray cancer; indeed, the appearances of lupus carcinoma are practically identical in all cases. The explanation is, possibly, that the X-ray treatment compresses into a few months the series of events which would otherwise occupy years, and so the likelihood of carcinoma is increased. The complication is a very grave one, and until I adopted the method of treatment which I now



1



2



3



4



5

LUPUS

1. Small Patch of Lupus on Thigh.
2. Do. after application of 5% Old Tuberculin Ointment for 6 days.
3. Do. ,, ,, ,, ,, 12 days.
4. Do. ,, ,, ,, ,, 2 months.
5. Do. ,, ,, ,, ,, 2 years.

follow all my cases died. These tragedies led me to reconsider my methods, and since I have treated all cases by erasion and the application of caustics, the results have been much more satisfactory.

Lupus carcinoma is superficial; it is marked off from the deeper structures by a dense layer of fibrous tissue, and it does

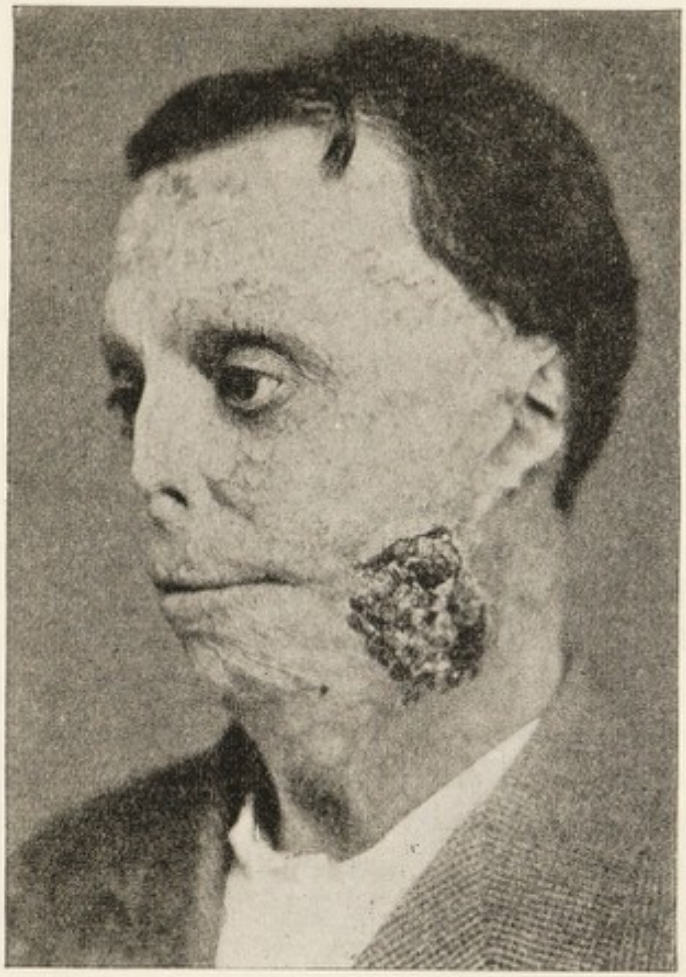


Fig. 65.—Lupus carcinoma.

not tend to metastatise. The patient should be anæsthetised and the growth vigorously scraped away with a sharp spoon. The hæmorrhage should be *stopped*, not simply checked—I often use adrenalin—and the raw surface should be thoroughly scrubbed with fused chromic acid. Sometimes one operation is enough; often the disease crops up again at an edge. This, recognised at once, may be treated by freezing with ethyl chloride and scraping as before, and by close observation and persistent treatment this dread complication can be successfully dealt

with in many cases. In some cases chromic acid fails. In these we make use of arsenious acid in a form slightly different to that described under lupus. To a powder containing equal parts of arsenious acid, charcoal, and cinnabar, we add enough spt. vini to make a paste. This can be applied more closely than the ointment recommended by Hebra.

There are one or two forms of tuberculosis of the skin not included under "Lupus."

Scrofuloderma[1] is the term used to describe those cases of tuberculosis of the skin where the infection proceeds from a tuberculous focus beneath. Thus it is most common over broken-down tuberculous glands, and in the neighbourhood of fistulæ from tuberculous bones. The appearances are familiar enough. The reddened skin, often with a bluish tinge, the thin ragged edges, the comparatively scanty discharge, and the tendency to fibroid thickening in the neighbourhood, coupled with the chronic course of the disease, make up a picture which is easily recognised. The infection of the skin is, however, usually of secondary importance. The underlying disease is the essential element, and on its cure depends the progress of the skin malady. Sometimes the infection develops into true lupus, which may persist after the underlying disease has disappeared, but as a rule the cure of the one is associated with the cure of the other.

Treatment.—This really belongs to the surgeon. The case should be taken in hand by him long before there is any infection of the skin, and with the improved modern methods of dealing with tuberculous glands, disfiguring scrofuloderma ta of the neck are gradually becoming less and less frequent. When the focus beneath is comparatively small a thorough scraping, followed by packing with powdered uranium nitrate, will in many cases successfully eradicate the disease. Scraping in scrofuloderma is followed by a success unknown in the treatment of lupus. But it is well to recall once more what has already been said, that these cases are in the province of the surgeon, and if the medical attendant is not prepared to

[1] From *scrofa*—a sow; and δέρμα—the skin. Scrofulous glands on the neck were supposed to make the neck thick, like a pig's.

take them *thoroughly* in hand and treat them radically he ought to hand them over to some one who is.

Erythema induratum scrofulosorum, or **Bazin's disease,** is an affection which occurs most frequently in girls and young women whose occupation involves a great deal of standing. It attacks the legs only, usually the lower part of the calf, posteriorly. One or more nodules develop below the skin, which takes on a livid bluish colour. Each nodule increases in size, and in some of them the centre breaks down; a slough separates, and the clinical resemblance to a syphilitic gumma becomes very close. An erroneous diagnosis is made. The patient is put to bed. Iodide of potassium is administered, and the patient has the advantage of rest and hospital diet. When recovery takes place the credit is attributed to the accuracy of the diagnosis, and the suitability of the treatment prescribed; nevertheless the patients do equally well if the iodide of potassium is omitted.

Etiology.—Tubercle bacilli have more than once been found and inoculation experiments have several times been successful, but I agree with Whitfield that two conditions are confused under this name—one a tuberculosis, and the other a condition of vascular origin. This latter form occurs more frequently in persons past their first youth and is associated with phlebitis and some endothelial proliferation. It does not react to the local application of tuberculin (see p. 287). This second group of cases is much more amenable to treatment, and a few weeks' rest is often sufficient to clear up all the lesions.

The illustration (Fig. 66) gives a good idea of the appearance of the lesions in the first type. It is from the case of a little girl of eleven. The discipline of her school entailed long standing, which no doubt determined the outbreak of the disease. The coloured plate represents the second type.

Diagnosis.—The seat of the disease, the sex of the patient, the history of prolonged standing, and the peculiar livid blue colour of the early lesions make the diagnosis comparatively easy. The only condition with which it can be confused is the syphilitic gumma, and tertiary symptoms in young girls are at least very exceptional. Erythema nodosum, which is also common in young girls, develops much more rapidly; the

lesions are both painful and tender, they are generally more numerous, they never break down, and are situated on the front,



Fig. 66.—Bazin's disease.

whereas those of erythema induratum almost always occur on the back and sides of the leg.



ERYTHEMA INDURATUM

PROGNOSIS.—This is favourable; rest, etc., as described under treatment, almost always resulting in comparatively rapid recovery, though relapses are common unless the general condition of the patient is improved.

TREATMENT consists in rest in bed, elevation of the limb, generous diet, and the administration of cod-liver oil. The healing of the ulcers is often promoted by strapping of the part. I have treated several cases with excellent results by the X-rays. In one instance the patient continued her work as a message girl.

Lichen scrofulosorum.—This is an eruption which appears on the trunk of children who show or will show evidence of some form of tuberculosis. Most commonly it occurs in those who have either bone or lung disease. In using the expression "will show" one, of course, must bear in mind that the recognition of the skin disease directs attention to the possibility, and leads to the sometimes successful treatment of a tuberculosis which may not be otherwise recognisable. In this respect a knowledge of the disease is important, as it may be the first warning of the presence of tuberculosis.

The eruption is usually on the trunk, although in exceptional cases it may be spread to the limbs and face. The forms it assumes vary. Some of the papules very closely resemble those of lichen in their shape, and have the burnished surfaces associated with that disease. But, as explained under lichen, this is merely due to mechanical causes, and the papules have not the lilac colour of that disease. Others of them are pustular, while still others are covered with a tiny crust. Their distribution is irregular, but they show a tendency to group themselves in circles and segments of circles. This is merely due to the accidental situation of a number of pustules in the hair follicles, whose natural arrangement they naturally follow. The lesions are, however, by no means restricted to the follicles, and for this reason the term of *Folliculitis scrofulosorum*, suggested by Unna, is probably no great improvement on the one which at present is in use. There is reason to believe that the tuberculin treatment of lupus favours the development of this eruption.

DIAGNOSIS.—The occurrence in children, the unusual nature

of the rash, in which papules and pustules are arranged in circles and segments of these, and the existence as a rule of some other evidence of tuberculosis, usually makes this easy.

TREATMENT.—No treatment is so successful as that originally introduced by Hebra, which consists in the internal administration and the external application of cod-liver oil.

BLASTOMYCOSIS

(*βλαστός—a sprout; μύκης—a fungus*)

In the first edition of this book I referred to what I then regarded as a rare form of tuberculosis, a papillomatous variety, of which two or three instances had come under my notice. In the last few years similar cases have been observed, especially in America, and investigation has resulted in the establishment of blastomycosis as a well-recognised disease.

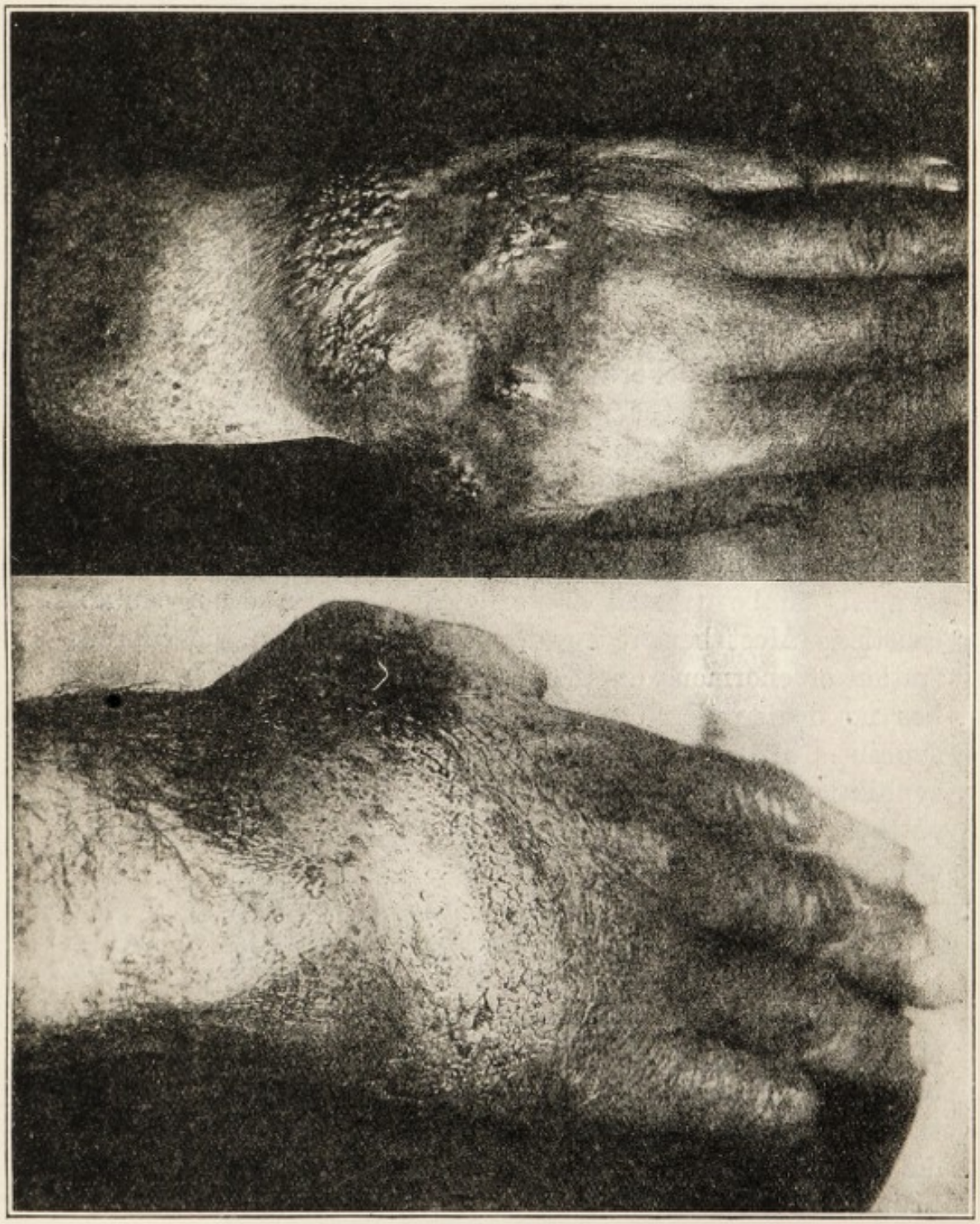
The disease is a chronic inflammation presenting certain resemblances to tuberculosis and syphilis, with which it had hitherto been confused. The affected part is covered with a number of little papillomatous, knob-like elevations, from between which exudes a certain amount of pus. For the original of the photograph, from which the Plate is taken, I am indebted to my friend Dr. W. H. Mook, of St. Louis, Missouri, where the disease is frequently observed. This area is surrounded by an inflammatory halo which gradually fades away into the healthy skin, and was described by Hyde as a bluish-red, sloping border, or more graphically as a glacis. If this is closely examined with a lens, numerous pin-point abscesses may be noticed, dotted here and there over the surface. Quite a number of cases have now been recorded, and from the accounts of these we learn that the lesions were usually multiple, and that a remarkable proportion of the patients have been concerned with the handling of straw or grain. In only three of the cases was there any history of tuberculosis, and in none of them was there any history of syphilis.

The nature of the disease has been investigated, especially by Gilchrist, Hektoen, Ricketts, and others, who have successfully cultivated in considerably over half the cases a yeast



Blastomycosis.

fungus, which when inoculated into animals showed pronounced pathogenic effects. As a rule the exposed parts



FIGS. 67 and 68.—Two cases of blastomycosis.

are affected, the face being involved in nearly half the cases, a striking contrast to the warty form of tuberculosis.

Prognosis.—This is not altogether favourable. In some instances death has occurred, and in others amputation has been necessary, while in the majority of the rest only improvement is recorded.

Diagnosis.—From syphilitic ulceration the diagnosis is not very difficult. The character of the lesions, the absence of any other evidence of the disease, and the more deliberate progress serve to separate it from that malady.

From tuberculosis, which it somewhat resembles, it is best distinguished by the presence of the sloping border already alluded to. In tuberculosis the disease is usually most active at the margin. In blastomycosis the greatest pathological changes are in the centre, and it is much more frequently multiple than is the chronic variety of tuberculosis. The local application of tuberculin ointment would clear up the diagnosis of any doubtful case.

Treatment.—In most cases surgical interference similar to that used in tuberculosis is indicated. The parts may be scraped, or be treated by salicylic acid or other suitable caustics. Most benefit, however, is derived from the administration of enormous doses of *iodide of potassium*, a fact which has no doubt added to the confusion of certain cases with syphilis. There is, however, this distinction, that while the syphilitic lesions clear up entirely under that remedy, those of this malady, though they greatly improve, rarely disappear completely.

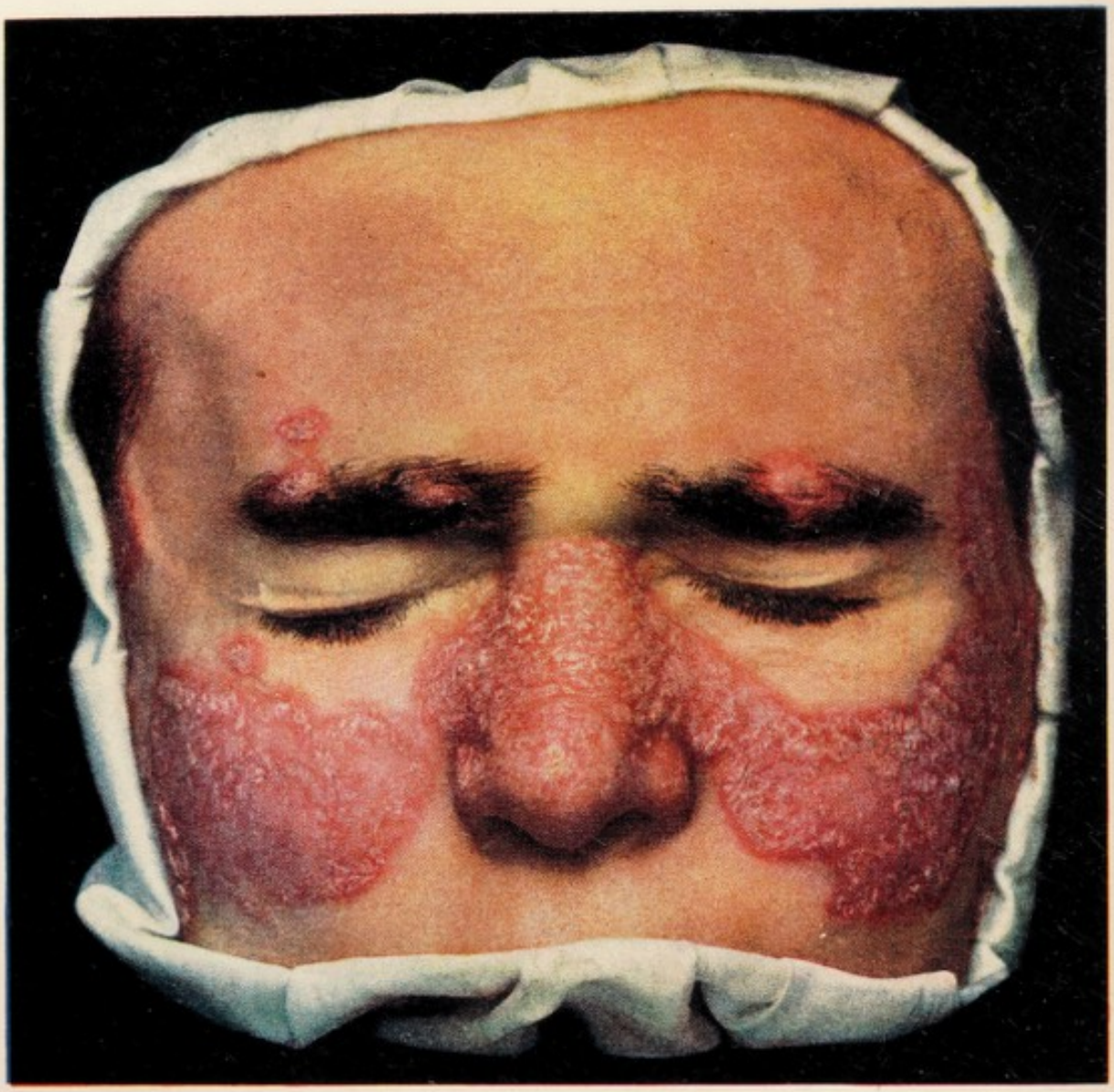
SPOROTRICHOSIS

This is another of the chronic infective inflammations of the skin whose origin has been traced to a fungus. Clinically it has resemblances both to tubercle and syphilis, and as one of these diseases cases have in the past no doubt often been diagnosed. But just as in the case of blastomycosis the resemblance was not complete, and one regretfully diagnosed them as the one because he was sure they were not the other.

The disease was first described by Schenk in 1898, and numerous cases have since been recorded in America, France, and elsewhere. The accompanying Plate is from the only case



SPOROTRICHOSIS.



LUPUS ERYTHEMATOSUS

I have recognised, and it is, I believe, the first recorded in this country.[1]

The disease usually develops on some trifling injury—in my case from a bruise with a piece of limestone—and this becomes infected with a fungus, the *Sporotrichium Schenkii*, which pursues a saprophytic existence in caterpillars, flies, and vegetables. Animals, especially the rat, are easily inoculated. The infected wound refuses to heal under simple dressings, and presently subcutaneous swellings develop along the lymphatic lines. These soon break down, after the manner of a gumma, and so the process goes on until its true nature is recognised. The fungus is not easy to demonstrate in smears from the discharge, but is easily cultivated, at room temperature, on potato or almost any of the usual media, where it forms colonies, whitish at first but later becoming brown. In broth cultures it forms a white scum like cotton-wool on the surface, and preparations show long filaments with here and there bunches of spores.

Like actino- and blastomycosis the disease usually yields to adequate doses of iodide. Dressings containing iodine should be applied locally.

LUPUS ERYTHEMATOSUS

(*Erythema centrifugum, Ulerythema centrifugum, Seborrhœa congestiva, "Batswing" or "Butterfly" lupus*)

Of all the many names of this disease none is really quite appropriate. Probably the best is the one suggested by Unna, Ulerythema centrifugum, from οὐλή, a scar, since erythema, scarring, and centrifugal spread are prominent characteristics of the disease. The use of the word *lupus* unfortunately leads to confusion with tuberculosis, but the name is so firmly established that it is unlikely it will now be changed. In the great majority of cases the disease affects a definite area—the nose, cheeks, and ears—when the resemblance to a butterfly, the disease on the nose forming the body, and that on the cheeks

[1] The case is discussed fully by Professor James Ritchie and myself. —*Brit. Med. Journ.*, 1st July 1911.

and ears the wings of the insect, is very marked. But it may affect only part of this butterfly area, and is by no means always bilateral. The other situations on which it is commonly found are the hands and scalp. It is quite exceptional on the trunk and limbs.

The disease appears in several forms, some of them so rare that they need only be briefly alluded to here. The rarest form is the generalised one, in which the whole surface of the body may be affected, and which not infrequently terminates fatally. Another rare variety is telangiectatic, in which there is comparatively little surface disturbance, but the skin is at first intensely reddened from the dilatation of the capillaries, and later a distinct white scar is left.

There are no marked subjective symptoms; some patients complain of slight itching and burning.

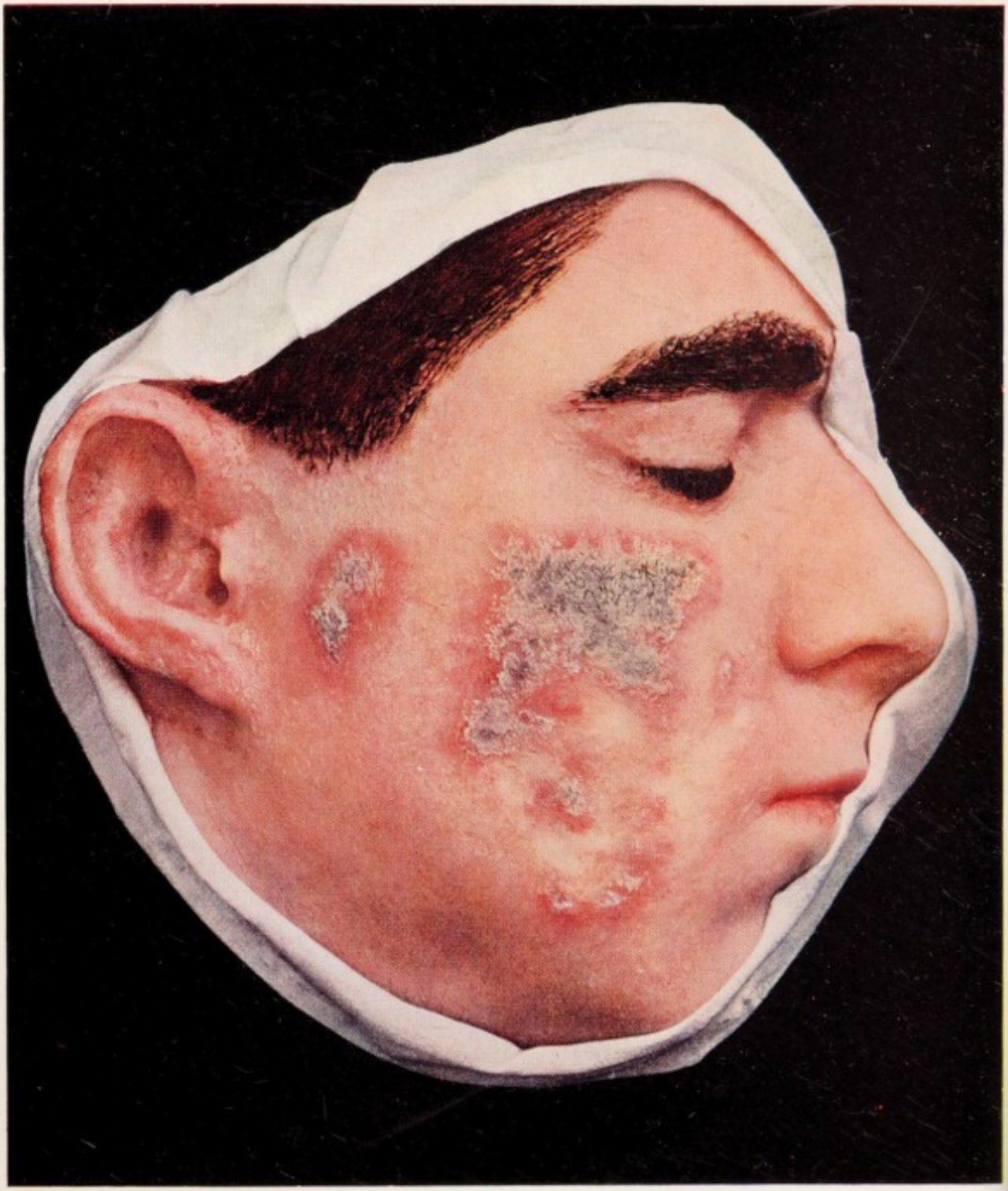
The two forms in which the disease commonly occurs may be conveniently described as the erythematous and the scaly varieties. A case may be entirely or mainly of one variety, or it may be mixed. The erythematous type is characterised by the development of one or more rounded, raised, reddened patches, which enlarge, flatten in the centre, and sometimes closely resemble ringworm. On the raised border of the rings may often be noted a curious "stippled" appearance. They usually disappear in the course of three or four months, leaving a scar rarely very marked and sometimes scarcely perceptible.

On the fingers the disease is nearly always of the erythematous type. The lesions closely resemble those of chilblain, and are often distinguishable from these only by their persistence and the fact that they leave behind them a certain amount of scarring.

The scaly form of the disease appears on the face, ears, and scalp. The first evidence of it is a slight redness and an abnormal prominence of the mouths of the sebaceous glands; hence it was described by Hebra under the name of *seborrhœa congestiva*. This stage is well shown in the Plate opposite, from a case of two months' duration. Very soon a little scale forms upon the surface, and if this is removed there may be seen dependent from its under surface little stalactite-like processes, which have been dragged, some of them from depressions in the



LUPUS ERYTHEMATOSUS.



LUPUS ERYTHEMATOSUS.

horny layer and some of them from the mouths of the sebaceous glands. The scales are of a peculiar greyish, mortar-like character quite different from the yellow greasy ones of seborrhœa. The disease spreads centrifugally, the centre undergoes atrophy, and more or less scarring results. The Plate opposite shows a very typical example of this form. It will be noted that, as is not infrequently the case, the lobe of the ear has been largely destroyed by the disease.

On the scalp the areas affected are irregular in shape, the centre is scarred and feels firm, while the border is somewhat raised, carries scales on its surface, and often shows, here and there, the "stippled" appearance already referred to. The part is nearly, but not quite completely bald.

Lupus erythematosus disseminatus, extreme examples of which are fortunately very rare in this country, may be looked on as an acute eruption of the erythematous type. Numbers of spots appear on any part of the surface: some quickly disappear; others last for months, remaining, however, of their original form; the increase is usually in number and not in the size of the spots. The outbreak sometimes occurs without marked symptoms, but is sometimes accompanied by high fever and pains, or even effusion in the joints, swelling of the glands, headache, etc. In some cases there is an erysipeloid swelling of the face; a typhoid condition develops, there is high temperature and coma, and half of the cases observed have terminated fatally.

Less marked outbreaks of this kind are not infrequent in the course of other varieties of the disease. Thus a patient who has been under observation for some time with one typical patch of the sebaceous form of the disease will one day present herself with a fresh crop of erythematous spots, which were it not for the history of the case it would be difficult to recognise as lupus erythematosus. The majority of the spots are evanescent and leave no trace of their existence; but one or two usually remain, and gradually assume an appearance more characteristic of the disease.

Prognosis.—The course of the disease is curiously capricious, and it is never wise to prophesy about lupus erythematosus. Some cases recover rapidly under the simplest of treatment

or without any treatment at all; others defy all treatment, resent some, and persist for years. In the cases which become generalised the prognosis is very grave.

Etiology.—Lupus erythematosus is one of the mysteries of the skin, and one can only speculate on its cause. For long the disease was confused with lupus vulgaris, and there are still some who find it simpler not to recognise any important distinction between the two diseases. These, however, are only few in number, but the point is still warmly debated whether lupus erythematosus, though not a tuberculosis of the skin, is not nevertheless an affection brought about indirectly by tuberculosis.

The arguments used are that certain patients are markedly tuberculous, that others have afterwards become so; and the thick-and-thin supporters of this theory assume in every instance the presence of some hidden tuberculous focus, where the toxins which, circulating in the blood, produce the disease are manufactured. For some considerable time we have subjected all our cases to von Pirquet's test, and though several have given a positive reaction, a very respectable minority have proved negative, a result similar to that obtained where any number of chance patients are similarly tested. Since patients rarely die of lupus erythematosus, it is not possible always to decide the question on the post-mortem table, but the Vienna experience of several cases which had died from other diseases, and where on a careful search no tuberculosis could be found, is sufficient proof that not all cases of lupus erythematosus are due to tuberculosis, if we are to assume that we are dealing with one disease.

This raises a question which may help to explain some of the divergent views. As indicated in the section dealing with the erythemata, I find myself gradually coming to share Galloway's view that lupus erythematosus is a toxic eruption, and it may well be that it is not always the same toxin which is responsible for its development, and that a tuberculous toxin sometimes is. Focal injection, from the septic root of a tooth or a streptococcal abscess in the tonsil, is suggested by some very shrewd observers as the probable origin of the toxin. The very capriciousness of the disease, the fact that some

cases recover rapidly under the blandest treatment while others exhaust all the resources of the clinician, and the variety and the diversity of the remedies recommended by the most experienced dermatologists, all favour the suggestion that the cause is not always the same.

There are numerous facts which may be noted by anyone observing a large number of cases. The disease occurs especially on exposed parts; it is commonest in the colder countries, especially in those where there are rapid and extreme

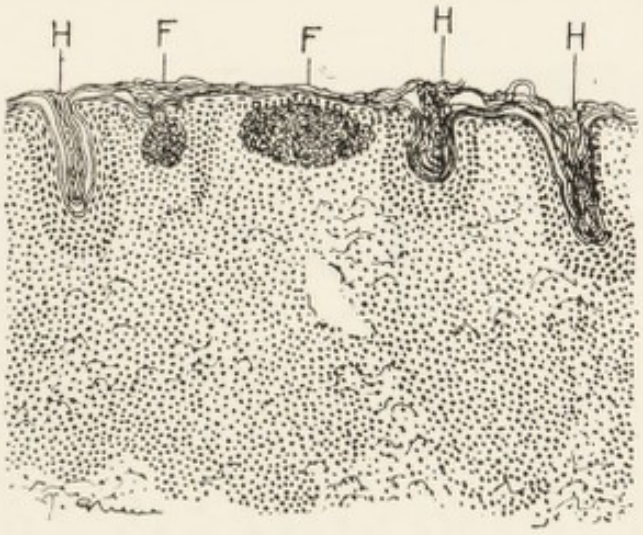


FIG. 69.—Lupus erythematosus. The corium is dropsical and packed with cells; masses of coagulated fibrin are shown at F, and at H are seen the horny plugs which are evident clinically on the under surface of the scales; stained with acid orcein and hæmatoxylin. (× 50.)

changes of temperature, and it generally improves during the warmer months. It is much more prevalent in the female than in the male sex, my hospital statistics showing 222 females to 78 males. Of these 300 cases 227 occurred between the ages of 20 and 50. The youngest of the 300 cases was 8 and the oldest 70. In an enormous proportion of cases there is a history of chilblains; indeed, as already said, on the fingers the two conditions are often indistinguishable.

HISTOLOGY.—The examination of sections does not give much help with regard to the etiology. The appearances are shown in the two annexed figures. In Fig. 69, a low-power drawing of a section from a patch on the cheek, the epidermis

is seen to be extraordinarily thin, the corium beneath is œdematous and packed with cells, and, if appropriately stained, bundles of coagulated fibrin are found here and there through it. According to Holder, the substance taking the stain is not fibrin, neither is it elastin, as Unna suggests, but a peculiar degeneration of the connective tissue, which he compares to coagulative necrosis. The horny layer is somewhat thickened and the plugs which are evident on the under surface of removed scales are seen dipping downwards. In the high-power drawing (Fig. 70) some of these changes—the extraordinary

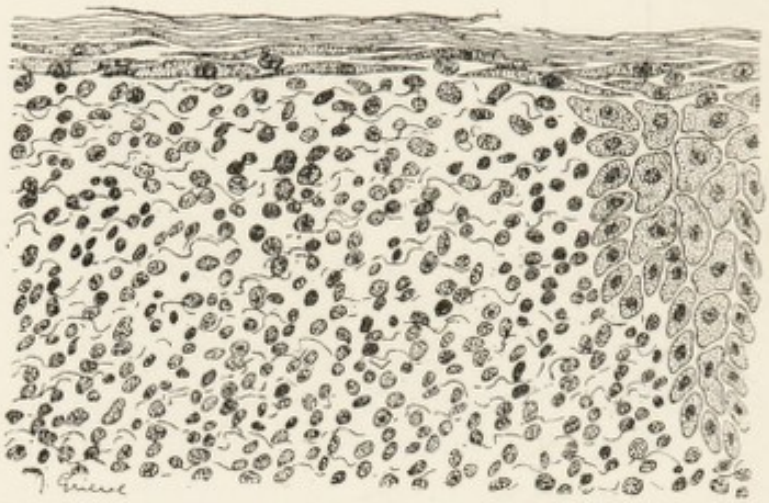


Fig. 70.—Lupus erythematosus. Shows the exceedingly thin epidermis and the dropsical corium, packed with leucocytes and young connective-tissue cells. (× 350.)

thinness of the epidermic layer and the cells in the corium, which are of two kinds, leucocytes and proliferating connective-tissue cells—are more easily seen. This section illustrates very well the comparison made by Unna to a morass, the surface apparently firm, the deeper parts treacherous. Thrombosis has sometimes been noted in the capillaries. It will be observed that nothing in the histology suggests tuberculosis, and no organisms are detectable.

Diagnosis.—On the face, practically the only conditions with which it can be confused are tuberculosis and syphilis, both of which also leave scars behind them. From tuberculosis it is distinguished by its greater dryness and the grey adherent scale, as well as by the absence of the "apply-jelly" nodules which



LUPUS ERYTHEMATOSUS.

can always be detected in that disease. The period of its appearance, too, aids in diagnosis, for lupus erythematosus rarely commences before early adult life, whereas lupus vulgaris is most common in children. Lupus erythematosus is also more frequently symmetrical, and the simultaneous affection of the ears, hands, or the scalp simplifies the diagnosis, for lupus vulgaris hardly ever attacks the scalp, and not often both ears.

From the late crusted syphilide it is distinguished by its history, its symmetry, and the difference in its response to antisyphilitic treatment. The scars of lupus erythematosus very rarely show the pigmentation so usual in syphilis. It may be well here to introduce a word of caution about too readily regarding any particular eruption as syphilitic because the blood gives a positive Wassermann reaction, or concluding that such manifestations as we are here discussing are not so when the reaction is negative.

Lupus erythematosus of the scalp will hardly be confused with any other disease by one familiar with it. Cases are sometimes diagnosed as ringworm or alopecia areata, but the appearances, the course, and with regard to ringworm, the absence of any fungus, are distinctive. On the fingers, as has already been said, the resemblance to chilblain is so great that it is sometimes only either the development of scars, or the persistence of the lesions during the warm months, that enables one to distinguish the disease.

Treatment.—A large variety of drugs are recommended by one or other observer for internal use. I cannot say that I have observed very marked benefit from any of them, but some of my patients have thought that they improved under quinin, calcium lactate, or phosphorus. M'Call Anderson prescribed iodide of starch; Bulkley, phosphorus; Payne, quinin; Crocker, salicin; while ichthyol, ergot, carbonate of ammonia, iodide of potash, and arsenic, each have their advocates.

Since we are ignorant of the cause of the disease, our treatment is in the main symptomatic, and working on the toxic hypothesis a careful investigation should be conducted for the detection of any source of poison. All the organs of the body should be investigated and in particular the condition of the teeth and tonsils.

It is all-important not to use at the outset any local treatment which may do the patient harm. The course of the disease is slow, and it is essential that the physician should have the full confidence of his patient. Therefore it is of prime importance to avoid the application of grease, which almost always does harm to the erythematous form of the disease, and rarely does any good to the scaly one.

In the erythematous type our object is to soothe irritation, diminish hyperæmia, and dispel the exudation in the skin. One of the best applications with which to begin treatment is calamine lotion (p. 169). This is painted on twice or thrice daily. Another consists of zinc sulphate and potass. sulphurat. of each a half to two drachms to four ounces of water. Simple dry powders, such as talc, oxide of zinc, calamine, calomel, carbonate of magnesia, etc., may be applied. The swelling of the parts may also be treated by compression, which is most easily exercised by the application of collodion. This must be cautiously used, as it does not suit every case. Another method of treatment suitable in the erythematous form is multiple scarification. Hundreds of shallow incisions are made in all directions across the patch, bleeding is encouraged for a time, and then some simple dusting powder is applied. Some recommend following up this treatment by the application of firm, continued pressure, which it is claimed greatly aids its effects.

The scaly form of the disease is most successfully attacked on different lines. It is perhaps not a bad plan to begin here also with a calamine lotion, if only to avoid the risk of doing any harm. Generally speaking, however, these cases will stand much more active treatment than their appearance would suggest; a case in which the application of simple zinc ointment produces hyperæmia and exudation will benefit from a thorough scrubbing with soft soap. This method of treatment was originally recommended by Hebra, who advised that a piece of flannel be dipped in soap spirit and the part firmly scrubbed until all the scales are removed. The occurrence of some hæmorrhage is no reason for stopping this treatment, which should be carried out once every twenty-four hours. I usually apply calamine lotion when the bleeding has ceased.

I have also seen much benefit result from the application of a mixture of soft soap and metallic mercury, three parts of soap being rubbed up with one part of mercury. This is rubbed in and allowed to remain on the part. Cases may also be treated by the application of liquor potassæ. A pledget of wool is dipped in this and the part is scrubbed for about five minutes. It is then bathed with warm water, and calamine lotion is applied.

Having indicated the main lines of treatment in these two varieties, I may next refer to applications which are recommended for both. Resorcin is sometimes useful; so is salicylic acid, and even chrysarobin; but the drug which has proved most useful in my hands is *oxidised pyrogallic acid*. This is prepared by exposing ordinary pyrogallic acid to the vapour of ammonia. Its chief disadvantage is its black colour. I order it in 1 or 2 per cent. solution in acetone collodion. This is weaker than it is generally used, but it seems to me to be more efficacious than stronger solutions. Though applicable to both varieties of the disease, it is followed by more striking results in the erythematous type, possibly owing to the compression exercised by the collodion.

Other methods of treatment are recommended. Schutz's method consists in the application of Fowler's solution diluted with eight times its bulk of water. This is painted on twice daily, until a reaction sets in. When this has subsided painting is recommenced, and according to Schutz the disease is usually cured in ten or eleven weeks. I can only say that I gave the treatment a thorough trial in half a dozen cases, and that they were not nearly well in that period. H. Hebra recommended the frequent application of absolute alcohol in which a little menthol has been dissolved. Stronger caustics are recommended by some, but should never be used by the inexperienced and only very cautiously by anyone. They should be applied only to a small area at first and their effects carefully watched. Hebra speaks favourably of the application of carbolic, acetic, hydrochloric, and nitric acids when all the milder remedies have failed. Small's mixture of carbolic and lactic acid has occasionally proved useful in removing small persistent patches, and Darier recommends equal parts of

phenol, tinct. iodi, and chloral. Scraping is only resorted to by those whose knowledge does not enable them to distinguish between this disease and lupus vulgaris. It never does any good.

In writing of the treatment of this disease in earlier editions, while protesting against the very pessimistic view of some observers, I have not felt able to assume an entirely optimistic attitude, but the introduction of CO_2 snow treatment has considerably altered my views on prognosis. I do not recommend its application in acute cases, which often yield to milder remedies, and are, in any case, often too extensive for its use, but in the typical patchy form of the disease the results are usually very satisfactory. The effects are limited to the part to which the snow is directly applied, and some ingenuity is therefore required in making the application so as to cover accurately the whole extent of the disease. The blocks of snow should be moulded so as to just cover the margin of the disease, and one should endeavour to produce the results with as short exposures as possible, for the shorter the application the less noticeable is the white mark (for one can hardly call it a scar) left by the treatment. Recently we have used for application to rounded surfaces such as the bridge of the nose a "slush" made by mixing the snow with acetone. Thirty seconds is the longest period which should be occupied by the early applications, and it will often be found well to cut the first one down to ten. If the disease proves obstinate, it is easy to increase the length of subsequent applications; it is not easy to undo the results of an unnecessarily long one. The treatment may require to be carried out for months, the applications being made at intervals of about a fortnight.

This new weapon has rendered it unnecessary to refer to treatment by X-rays, light, and high-frequency currents, to which we formerly often resorted in obstinate cases, but I see no reason to withdraw my advice that those not experienced in the treatment of the disease should be content with the mildest measures.

In the disseminate cases calamine lotion is the only local treatment which should be applied: the real need is to support the general strength of the patient over the crisis of the toxæmia.

SCLERODERMA

(*σκληρός—hard, and δέρμα—the skin*)

As the name indicates, this disease is characterised by a hardening of the skin. It appears in two forms, the diffuse and the circumscribed, the latter of which is also known as morphœa (from *μορφή*—a shape or form).

Diffuse Scleroderma may be universal, affecting the whole of the skin; more frequently it is confined to a region, such as a whole arm, one side of the neck and head, etc. Sometimes the process is divided into two stages—a stage of infiltration or œdema, and one of atrophy. The former varies in its duration, being sometimes brief, sometimes prolonged.

On inspection there is often not much to be made out, though when the disease affects the face the corpse-like immobility of the part is very striking. When the hand is applied the part feels cold and rigid. The comparison is often made, and very appropriately, to a bladder tightly packed with lard. As the disease advances it seems to affect the deeper structures, and it becomes impossible to move the skin over them. In the later, atrophic, stage contraction takes place, voluntary motion is interfered with, and the skin may be so tightly stretched over the bones as to ulcerate. On the chest the respiratory movements are restricted, and if the face is affected it may be almost impossible for the patient to masticate his food. Sometimes the mucous membranes are involved. The disease affects by preference the upper parts of the body, and is more common in women than in men.

Prognosis. — Sometimes the disease terminates fatally through interference with the necessary functions of the body, but many cases sooner or later clear up, the induration slowly disappearing. In the cases, however, where there has been much contraction, the effects of that contraction, in the shape of atrophy and fixation of joints, often persist. Progress is apt to be interrupted, the patient is very subject to chills, and acute rheumatism is a not infrequent complication.

Circumscribed Scleroderma, or **Morphœa**, is regarded by many, and with considerable show of reason, as being a

different disease from the diffuse, but cases are on record where the one developed out of the other. As the name indicates, it appears in a more limited fashion than the diffuse variety, the commonest form being a round or oval patch on the chest, aptly compared to a piece of hard leather let into the skin. It is of a white or old ivory colour, and is usually surrounded by a lilac-tinted zone of dilated capillaries.

This is, however, not the only form which it assumes. On the limbs, particularly in children, it tends to appear in band form, the bands being sometimes of considerable length. The old ivory tint is more pronounced in the band type, but the lilac border is not quite so prominent. Unna separates a form of morphœa, which he describes as "card-like" scleroderma. In it the spots are multiple, much smaller than those of typical morphœa, and somewhat depressed, and they have a bluish-white colour, looking, as he says, as if a small portion of a visiting-card had been let into the skin. In a case at one time under Allan Jamieson in the Royal Infirmary, the tiny bluish-white patches could be numbered by the score.

After lasting for a longer or shorter period, the infiltration clears up and the skin returns to the normal.

Etiology.—The cause of the disease is not known. In the diffuse form, rheumatism and erysipelas are frequent incidents in the history, and changes in the thyroid gland have been noted by several observers. In the circumscribed form some slight irritation is often apparently the starting-point. Sheppard notes that the irritation of a collar-stud produced it in one case; its frequent occurrence on the breast of females is attributed to irritation from the corset; and Limont, of Newcastle, observed a case where it occurred simultaneously on both garter regions.

When sections are examined there is found an increased growth of the connective tissue, the elements of which are closely packed together, sclerosed. The blood-vessels are very much narrowed, and this is usually attributed to endarteritis. Unna, however, holds that the narrowing is due simply to the growth and pressure of the connective tissues outside the vessels. Ayres has recently suggested



SCLERODERMA (MORPHŒA).

(*Archives of Dermatology and Syphilology*, December 1920) that scleroderma is due to chronic arsenical poisoning.

Diagnosis.—The only disease with which diffuse scleroderma could be confused is *Sclerema neonatorum*, but as that disease is either evident at birth or appears immediately thereafter, and as scleroderma does not attack very young children, the question can hardly arise. Circumscribed scleroderma is most easily confused with *Leucoderma*, but the resemblance is only superficial; in leucoderma there is no hardening of the skin; the only change is in the colour. Morphœa, which used to be called the "cheloid of Addison," can hardly be confounded with true keloid, the "cheloid of Alibert."

Treatment.—Time is the great remedy in both forms of the disease, but measures for the promotion of the general health are very important. Medicines are of little value, but it has appeared to me that *thyroid substance* has favourably influenced more than one case. Salicylate of soda is recommended by some, and pilocarpin by others. I have more faith in systematic massage than in any other remedy. Hot-air baths, electricity in the form of electric baths, electrolysis, and static electricity have all been tried. I have not seen much benefit from the application of ointments, whatever drug they contained, but Unna recommends the thorough application of an ointment of perchloride of mercury. Some of our cases in the Royal Infirmary have improved very markedly under X-rays.

Hebra claims to have produced improvement in three cases by the injection of *thiosinamin*, 10 ℥ of a 15 per cent. alcoholic solution being injected deeply into the interscapular region every second day. Lindemann has used arsenious acid hypodermically with benefit.

Cases sometimes disappear spontaneously. The patient from whom the cast for the illustration was taken got very rapidly well, and is still under the impression that he owes his recovery to the taking of the cast.

SCLEREMA NEONATORUM

This is a rare disease, which is found in new-born infants, and is often confused with an almost equally rare condition, *Œdema neonatorum*. Both diseases are present at birth or develop very shortly afterwards. Sclerema is always most marked on the back; œdema commences on the feet and spreads upwards. The skin in sclerema is intensely hard, and cannot be pinched up, and the body becomes so stiff and rigid that it can be lifted by one hand. The temperature is subnormal. In œdema the parts are cold, livid, and pit on pressure. Some have suggested that both diseases are due to solidification of the subcutaneous fat, but the evidence of this seems insufficient. In both the prognosis is very grave. Sclerema is very rarely recovered from, œdema occasionally.

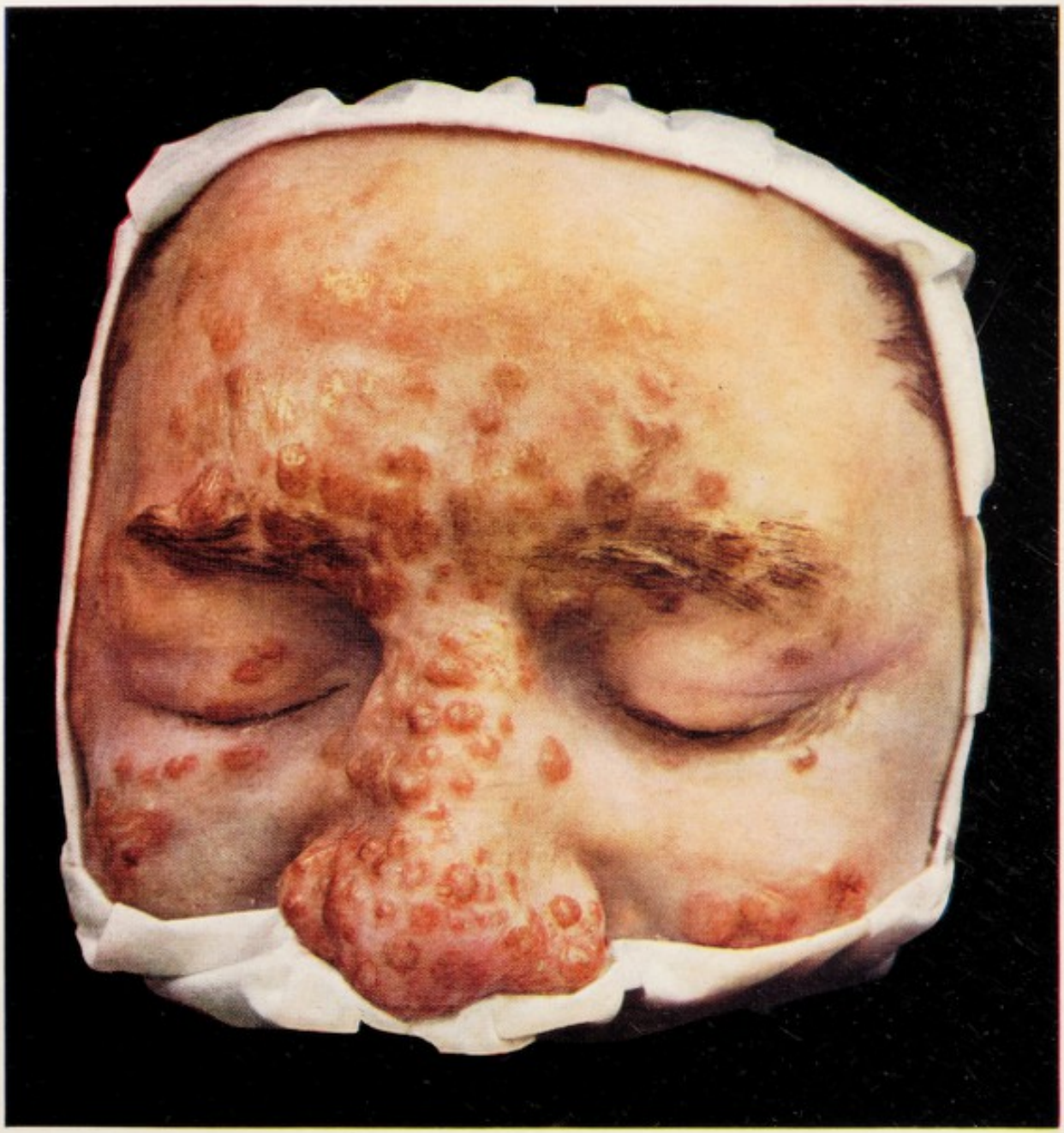
The treatment consists in raising the body temperature, and in administering small doses of thyroid and such nourishment as can be absorbed.

LEPROSY

(*λέπρα—leprosy, from λεπρός—scaly*)

Leprosy is a chronic disease caused by the lepra bacillus. It appears in two forms, which are best distinguished as the *nodular* (tuberous) and the *maculo-anæsthetic*. The division into nodular and anæsthetic, suggested by Danielssen and Boeck, is hardly strictly correct, because the nerves are affected in both forms, while macules are invariably present in the anæsthetic form. Mixed leprosy, too, is an unnecessary term. All cases of leprosy are mixed, and the one may pass into the other; indeed, the nodular almost invariably passes into the anæsthetic if the patient lives long enough.

Leprosy is found in many parts of the world, under such different circumstances that it is evident that climate can have little to do with its development. It may be said, speaking generally, that the more civilised a country, the higher the standard of living of its inhabitants, the less likelihood is there of leprosy. Experiment has shown that the louse and the flea do not take up the bacillus, but the bug does.



LEPRA TUBEROSA.

The bacilli, which were discovered by Hansen in 1884, are straight rods very closely resembling tubercle bacilli in appearance. They have the same irregular staining, clear spaces being left, and the same reaction to staining reagents, with the difference that the leprosy bacillus stains more readily in the cold than does the tubercle bacillus.

Nodular Leprosy.—In this form the lesions appear first upon the skin. As the name indicates, they take the form of nodes, varying in size. They are firm, usually semi-spherical in shape, are seated in the cutis, and the epidermis, being stretched over them, has a shiny surface. At first they have the colour of the skin, then they become reddish, and later, yellow or brown. Their favourite sites are the face, back of the hands, and the extensor surfaces of the wrists. I have to thank Dr. Lie, of Bergen, for the opportunity of procuring casts of typical cases, from one of which the Plate opposite is taken. In countries where the inhabitants go barefoot, the dorsum of the feet and the lower part of the calves are often first attacked. The eyebrows are almost always markedly affected, and to this is due the leonine expression so associated with the disease. The nodules are sometimes isolated, with deep clefts between them; sometimes the infiltration is diffuse, and the eyebrows are thickened as a whole. The hairs usually drop out. The eyelids are frequently diseased, and the lobes of the ears are often swollen with leprous infiltration. The mucous membranes of the mouth, nose, larynx, and pharynx are also involved; all the soft parts of the nose may be destroyed, but the bones are not affected. The infiltration in the larynx is often so great as to threaten suffocation and to require tracheotomy. The lymphatic glands draining the leprous region are always infected, but they never suppurate. The nerves are affected later, the facial, radial, ulnar, median, and peroneal being always attacked, most markedly where they run superficially over the bones, and the increase in their size, due to the increase of connective tissue, enables them to be readily felt. The disease is also found in the testicle, the liver, and the spleen.

The course of the disease varies in different patients. Fresh outbreaks occur at intervals, due apparently to a shower of bacilli reaching the blood-stream. In some the eruptions are

few and far between; in others they recur frequently. The more frequent they are, the more vigorous is the growth of the

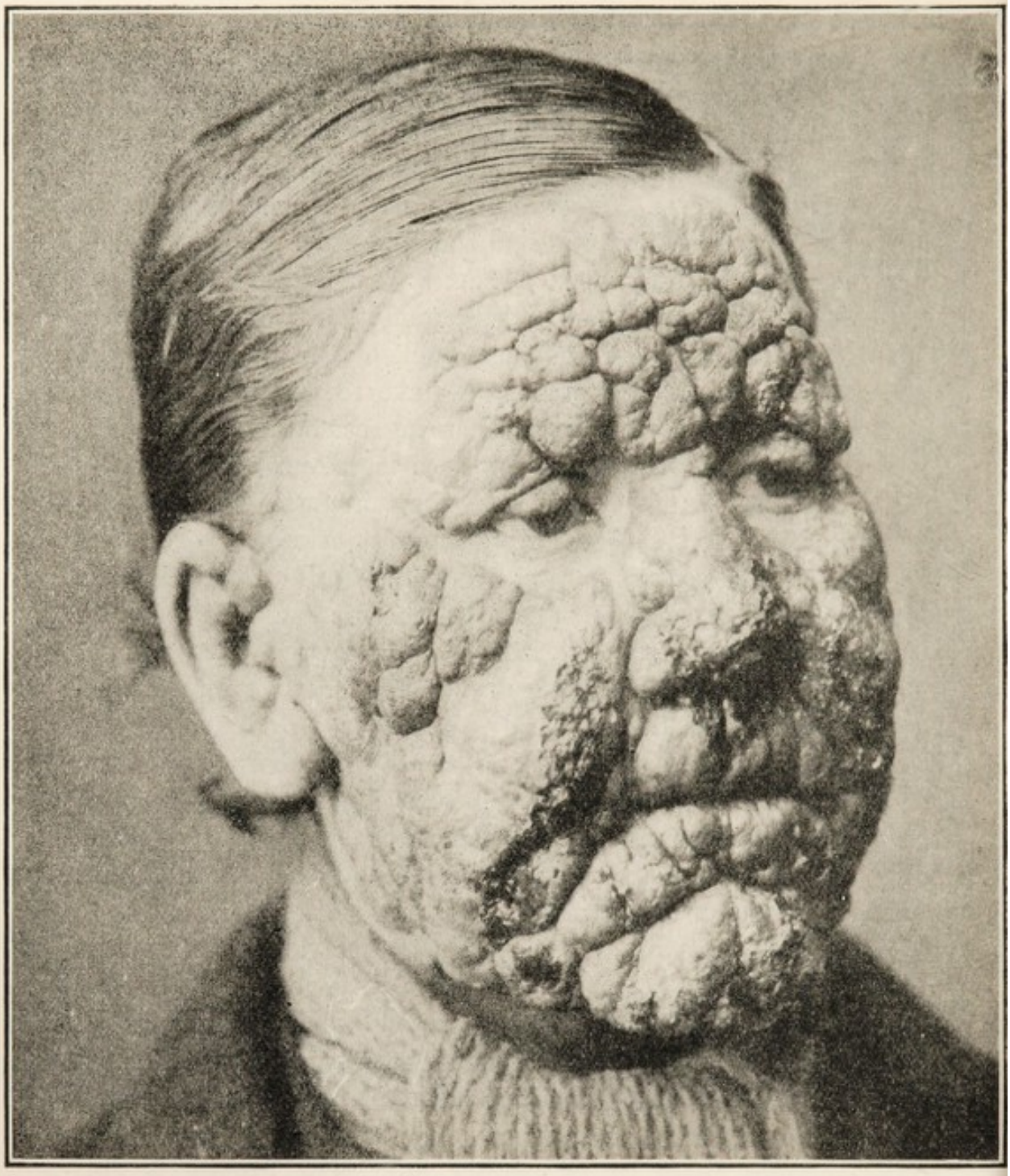
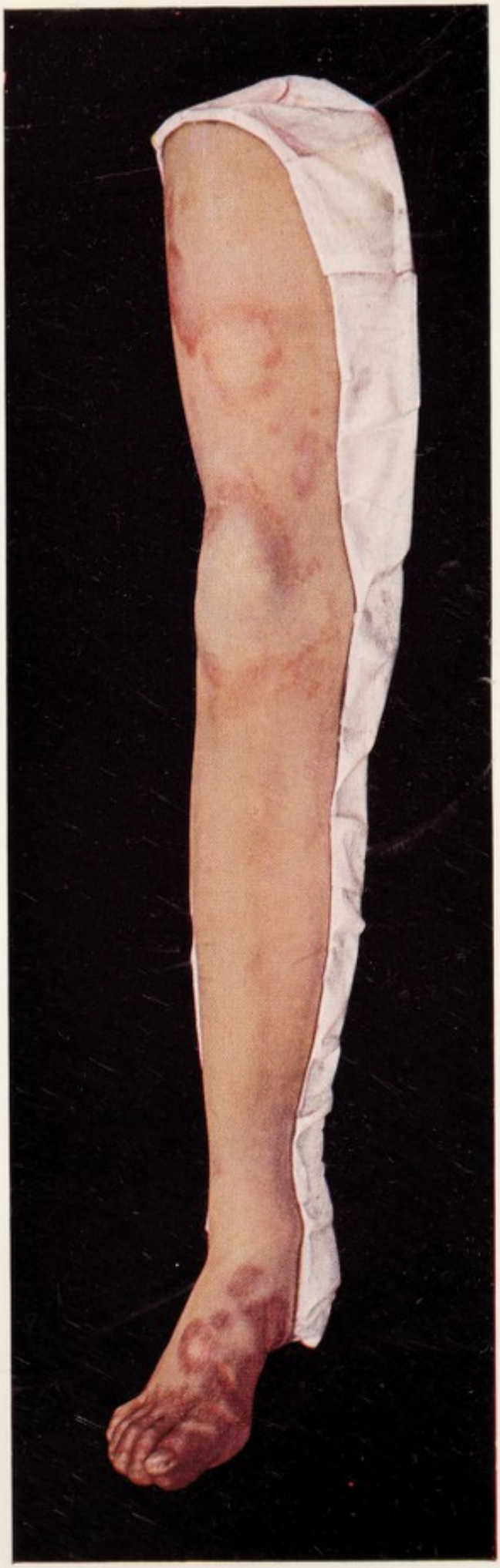


Fig. 71.—Nodular leprosy. From a photograph given me by Dr. Hansen.

individual nodules. Amyloid degeneration of the internal organs is often the cause of death, and in leper hospitals many



LEPRA MACULO-ANÆSTHETICA.

die of tuberculosis. The individual nodules are rarely absorbed; usually they burst and ulcerate, and if no fresh eruptions appear the patient may recover. The average duration of life is eight to nine years after the outbreak of the disease.

When a section of leproma (as the nodule is sometimes called) is properly stained and examined under the microscope the bacilli are found in millions. The generally adopted view is that these bacilli are intracellular, the cells they occupy being usually connective-tissue derivatives. Hansen showed me a section where they were inside a white blood corpuscle. Unna, on the other hand, maintains that the structures in which the bacilli lie have only the appearance of cells, and are really masses of mucoid material secreted by the bacilli lying free in the lymph spaces. All are agreed, however, with regard to the relationship of the bacilli to each other. They are closely packed together, often in parallel rows like little bundles of cigarettes. In scrapings from an incised nodule the bacilli may be found in great numbers. Most authorities regard the apparent movements as molecular.

Maculo-anæsthetic Leprosy.—This is a much more benign form of the disease than the other, and the prodromal stage, with debility, rheumatoid and neuralgic pains, sometimes lasts for years. The spots sometimes develop gradually and unnoticed, or they may appear suddenly with marked fever. They vary in shape, size, and depth of reddish-brown colour, but have a general tendency to be rounded or ringed. They are most commonly situated on the back and limbs. The Plate opposite is from a case of my own, a child who contracted the disease in South America. The cast was taken in 1911. I saw the patient, now aged 20, the other day, and she appears to be perfectly recovered of her leprosy. The supposed symmetry disappears on cross-examination, and the discovery of bacilli in them has finally disproved the theory that the eruption is vaso-motor. The adjacent lymphatic glands are always swollen, and have been shown to contain bacilli. The nerve affection which is so prominent in this variety of the disease is a leprous neuritis. At first it is accompanied by neuralgia and general hyperæsthesia, but as time goes on the acute symptoms settle down, fibrous tissue develops, and anæsthesia appears. As in the

other form, the affection of the nerves is not equal; they are most markedly thickened over the bones. Trophic disturbances, such as the formation of bullæ, ulcers, etc., supervene. The nails share in the trophic changes, the secretion of sweat is diminished, and the hairs fall out. The muscles are not directly affected; their weakness is due to secondary atrophy. This is most marked on the hands, forearms, feet and legs, and on the face. The interosseous muscles atrophy, and the "*main en griffe*" is developed. The orbicularis oris and the orbicularis palpebrarum are paralysed, and the mouth and the eye suffer from their disuse. The muscular sense is preserved, and patients can do fine needlework so long as any muscle remains. Many of the so-called trophic affections are indirectly due to the anæsthesia, and are the result of injuries which are not perceived by the patient, who may, for example, sit in front of the fire perfectly comfortable, while his trousers are burned through by the heat, or may lift a boiling kettle, unconscious of the fact that the handle is blistering his hand. Hansen never succeeded in finding bacilli in these pemphigoid bullæ. The phalanges atrophy, and necrosis often occurs. It is interesting to note with what impunity operations for necrosis may be carried out without anæsthetics, and with complete success.

Cases of maculo-anæsthetic leprosy last for ten, twenty, or even thirty years, the neuritic symptoms becoming more and more prominent in unfavourable cases. Many cases in time suffer from nothing but anæsthesia; the leprosy has gone.

What determines the variety in any given case is quite unknown. The proportions between the two vary remarkably, but according to Hansen, anæsthetic cases are more numerous where the climate is dry, an observation which would seem borne out by experience in the dry countries of the East.

Diagnosis.—The diagnosis of advanced cases of nodular leprosy is very easy, and it is generally when the disease is fairly advanced that the patient seeks advice. In suspected cases, where the disease is still in an early stage, the first signs are to be sought in the infiltration of the eyebrows and the ears. If doubt still lingers it can be set at rest by the



Lepra Maculo-Anæsthetica.

demonstration of the bacilli. The most satisfactory method is to excise a small portion of a nodule and cut sections of it, but bacilli may sometimes be found in the fluid of a blister artificially induced. They are often found abundantly in the nasal secretion.

The maculo-anæsthetic form is by no means so easy to diagnose, and cases are often overlooked when they turn up in countries where leprosy is not familiar. Many of the cases present a superficial resemblance to psoriasis, although the scarring and the anæsthesia should prevent any mistake in diagnosis. The sensation of growth which is present in this disease, as in syphilis, is one means of distinguishing the two; the development of anæsthesia in the centre of the patch, the enlargement of the lymphatic glands draining the affected surfaces, the thickening of the ulnar and peroneal nerves, and the resistance to treatment, all help to establish the diagnosis. If there is still doubt, excision may be practised. In estimating the amount of loss of sensation the test used must be a delicate one, for the anæsthesia is in the skin and the sensation of deeper pressure is not lost.

Prognosis.—Both forms *may* recover, all the leprous products disappearing. In nodular cases this is very exceptional, but in the maculo-anæsthetic it is quite common. In reference to Hansen's statement that "recovery is the almost invariable result in the maculo-anæsthetic form," it must be borne in mind that "recovery" refers to the leprosy, and that what is left is usually what Hansen describes as "only a miserable remnant of a human being."

Treatment.—The treatment of leprosy leaves much to be desired. The number of remedies recommended is large enough, but those which are really valuable are few. *Salicylate of soda* is the drug which Danielssen believed to be of most value. He commenced with doses of 15 grains four times a day, and gradually increased it. *Chaulmoogra oil* has a considerable reputation. It is given internally (in doses of from ℥j three times a day), and applied externally, and many observers have noted improvement under its use. Leonard Rogers recommends the intravenous injection of gynocardate of soda (a derivative of Chaulmoogra). Arsenic is stated by Hansen to do more

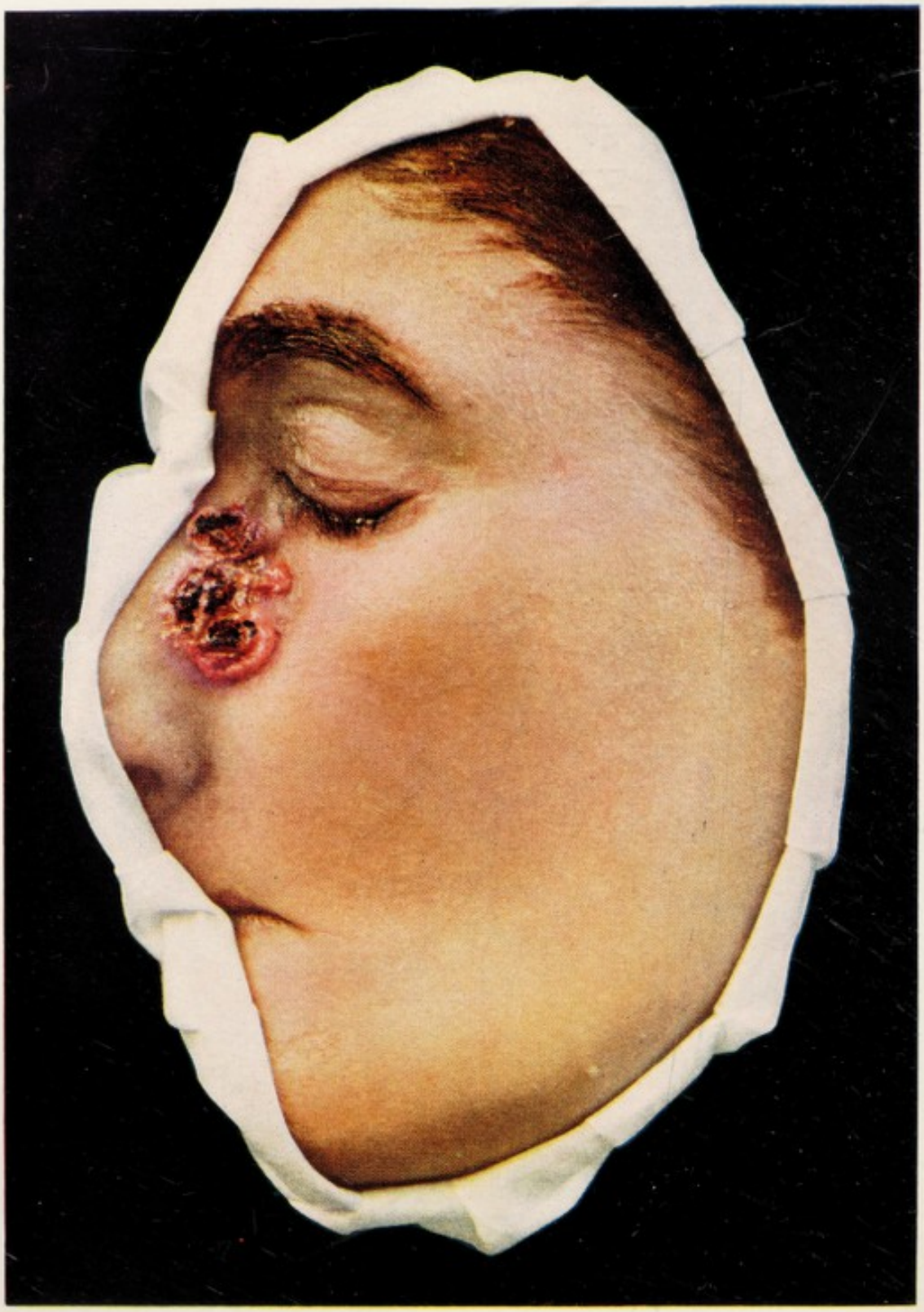
harm than good. If pushed, it may cause some diminution in size of the nodules, but this is merely a part of the general emaciation which its too free administration causes, and when the patient recovers his condition after the stoppage of the arsenic, so do the nodules. The results of the administration of salvarsan have been disappointing. *Ichthyol* is used both internally and externally by Unna, and is sometimes beneficial, and Crocker had some remarkable results from the injection of *perchloride of mercury*, gr. $\frac{1}{6}$ daily. Iodide of potassium appears to be always injurious; and, indeed, Danielssen used it as a test in cases which were apparently cured, for if any disease remained the iodide of potassium seemed to make it evident.

Surgical methods are often required. Nerve stretching has apparently sometimes been successful in relieving the symptoms. When nodules occur in the sclerotic, and are advancing towards the pupil, the cornea should be divided in front of them; the wall of infiltration seems to prevent farther advance.

Blood serum from other leprous patients has been injected —sometimes it is said with benefit—but until some susceptible animal has been found a leprosy antitoxin is only a dream.

Vaccines prèpared from excised nodules are at present on trial, and seem to hold out some promise of success. Injections of *nastin*, a crystallisable neutral fat extracted by Deycke and Reschad from an acid-fast streptothrix obtained from cases of leprosy (the relation of this organism to the bacillus of leprosy is still doubtful), have given rather disappointing results.

According to Hansen, the most important thing both for the patient and the community is to put the patient in as good circumstances as possible, and to use all measures of personal cleanliness; and the remarkable diminution in the number of lepers in Norway under his able and vigorous régime is the very best proof of the value of these means.



RODENT ULCER.

SECTION V

NEW GROWTHS

These may be divided according as they are *malignant* or *benignant*, and subdivided according as they are *epithelial* or *connective tissue* in origin.

MALIGNANT EPITHELIAL GROWTHS

CARCINOMA

Cancer of the skin appears in a variety of forms. It may be secondary to cancer of some other organ, when it may take the form either of multiple nodules or of "Cancer en cuirasse," a diffuse carcinomatous infiltration of the skin, which is in rare instances primary. Under most circumstances the cutaneous manifestations are of only secondary importance.

The common primary cancers of the skin are epithelioma or squamous-celled carcinoma, and rodent ulcer.

Squamous-celled Carcinoma.—This is fully dealt with in all text-books of surgery, and need only be very briefly referred to here. Commencing as an abrasion or a small ulcer, near the junction with some mucous membrane, or, if elsewhere, usually due to the action of some definite irritant, *e.g.* paraffin, pitch, or soot, it rapidly increases in size, attacks the deeper structures, infects the glands, and if not radically dealt with leads to the death of the patient. The epithelial cells go through their ordinary metamorphosis, and characteristic horny perles—cell nests—are developed here and there in the tumour.

Rodent Ulcer.—In many text-books of surgery this form of cancer is not adequately discussed; in particular, the early appearances of the disease are not described in sufficient detail

to enable those unfamiliar with the condition to recognise it at this all-important stage.

The name is in many respects unfortunate. The disease has always lasted some time before it is either "rodent" or an "ulcer." It commences as a small nodule in the skin, the epidermis over which, being stretched, acquires, as it always does under such conditions (Lichen planus, Molluscum contagiosum), a shiny, burnished, mother-of-pearl appearance.

While the general statement that in the great majority of instances it appears on the face above the level of the mouth, and Jacob's, that it appears in the neighbourhood of the eye, are quite correct, probably still greater precision may be attained. In a now considerable experience of this disease I have found that nearly 70 per cent. of the cases are on one of two situations, the relative proportions being about 2 to 1. These are, the border of the nose just where it rises from the cheek, about the juncture of the upper and middle third (see Plate), and the outer canthus of the eye. Of the remaining 30 per cent. of cases, probably 25 occur on other parts of the face, and 5 on the other parts of the body. I have seen it on the scalp, on the forearm (twice), on the back, the hand, the pubis, and on the vulva, in each of these cases the diagnosis being confirmed by histological examination.

The nodule has a glistening, translucent appearance, comparable to that of the horn of a light-coloured cow. At this stage it may remain for years. When it commences to grow, as it extends at the periphery, the centre flattens down, and we have a little hollow surrounded by an elevated ridge, which may be compared to a lake surrounded on all sides by hills. The edges slowly advance, the centre is farther depressed, and this may go on until an area as much as half an inch in diameter is involved. Usually before this size is reached the surface gives way, either wholly or in part, and an ulcer is at last developed. Fig. 72 shows very distinctly this partial ulceration, and the rounded, elevated, advancing border of the growth. When the whole of the surface sloughs, and the ulcer is continuous right up to the border, we have the typical rodent ulcer and the typical "rolled" edge. The appearance on section resembles that of the figure 5 laid on its side with the tail

removed ↄ, the stroke representing the ulcer and the loop the "rolled" edge. The ulcer has a finely granular surface,

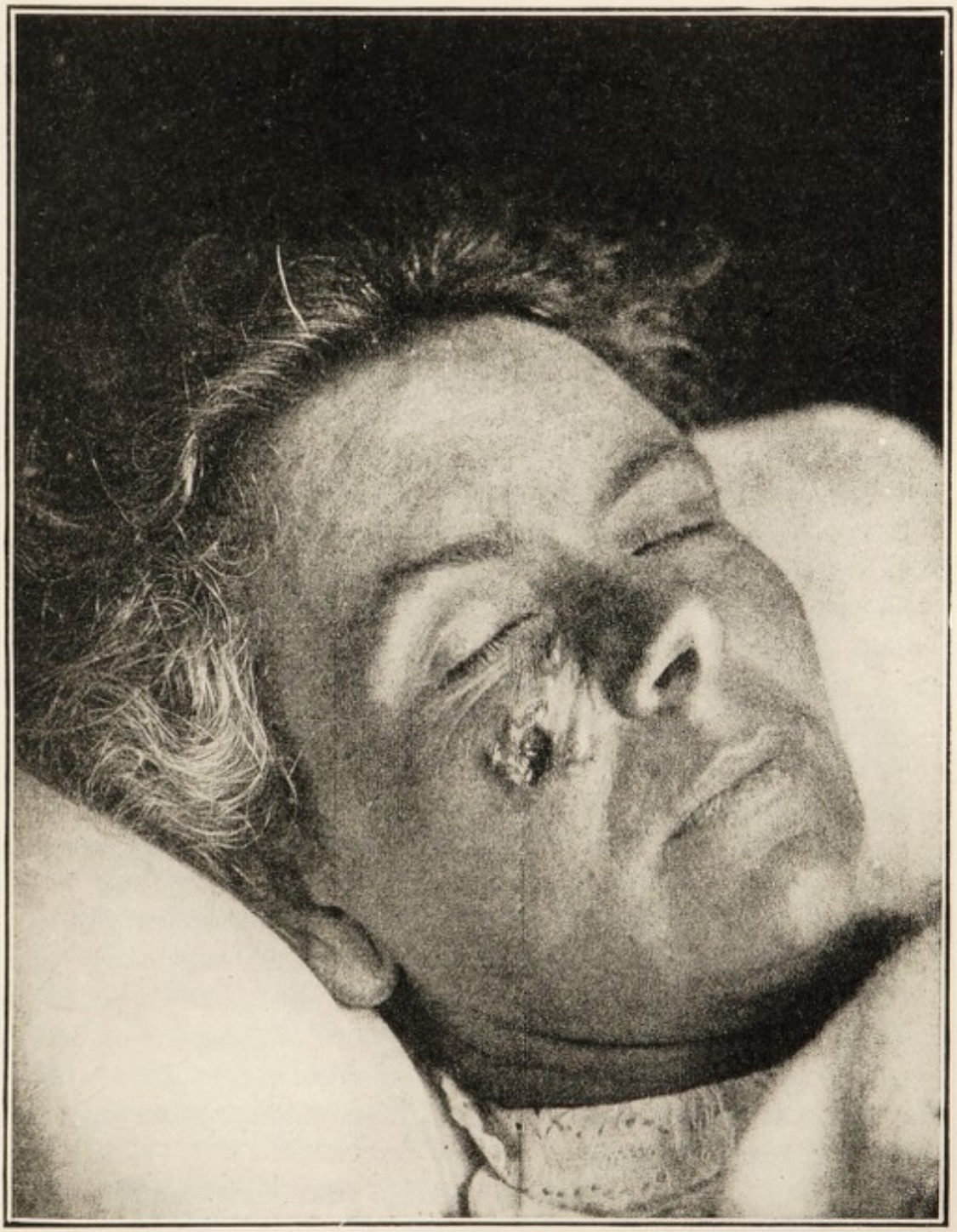


Fig. 72.—Rodent ulcer. Shows the "rolled" edge, the depressed centre, and partial ulceration.

the discharge is comparatively slight, and if carefully dressed it may temporarily skin over.

If left alone, the disease steadily progresses, attacks and destroys every structure which comes in its way, and ultimately leads to death from exhaustion, hæmorrhage, or meningitis. Metastasis is very rare, but it is not unknown, and more than one sufferer has to my knowledge died from cancer of some internal organ.

When sections are examined the difference in structure between rodent and epithelioma is at once evident. Whereas in epithelioma the new growth is evidently continuous with the surface epithelium, in rodent the *evident* connection is very slight. When it does develop from the surface epithelium (and I admit that in some cases it may), it soon takes on an independent course, and has a prolonged duration *below* the epidermis, before it once more comes to the surface as an ulcer. This is not the place to discuss the various conflicting views as to the origin of the growth. Possibly all are partly right, and the disease may take its origin in the rete, the hair follicles, the sebaceous or coil glands. I believe, however, that Sir Benjamin Brodie was correct when he drew attention to its frequent origin from moles. The structure of many of these growths closely resembles that of certain rodent ulcers, and although moles are commonly described as consisting entirely of connective-tissue elements, they are, in fact, almost all of epithelial origin (see p. 334).

The specific cells of rodent ulcer are small, closely packed together, and are arranged either in alveoli or in long thin processes. While one or other of these architectural plans is mainly followed in any given case, both arrangements are often found. When in alveoli, they very often have a peculiar "whorled" arrangement, and although in the centre of large masses they may show degeneration (probably colloid), they do not, except in exceptional instances,[1] undergo any cornification and form cell nests.

Diagnosis.—If a case is seen in the early stage before any central depression has formed, it is difficult to distinguish from an unpigmented mole. If, however, the growth is

[1] Taking together my own and other specimens which I have examined, I must have seen over 400, and I have only twice seen cell nests.

increasing in size—and the patient is hardly likely to seek advice unless it is—it is well to remove it on chance. When the central flattening has occurred I do not know of any other condition with which it can be confounded. The reason it is not more often diagnosed at this stage is that the term "ulcer" is so unfortunately associated with the disease.

When ulceration has occurred rodent may be confounded with syphilis and tuberculosis. From the former it should be easily separated. A syphilitic ulcer will reach in weeks a size which it will take a rodent years to attain. Itching, which is usually



FIG. 73.—Section of a rodent ulcer (low power). Note that there is no ulceration.

conspicuously absent in all syphilitic manifestations, is generally the only complaint made by a patient with rodent ulcer. Pain is remarkable by its absence even in advanced cases. While both ulcers may skin over under simple dressings, the syphilitic one will remain scarred, while the disease spreads at the margin; the rodent scar invariably breaks down again. Too much stress should not be laid on the effects of treatment. The late ulcerating syphilides are by no means too ready in their response to it, and the fact that a doubtful ulcer does not at once commence to improve under iodides does not prove its non-specific character.

From tuberculosis the diagnosis is much more difficult, and I have to confess to having on two occasions removed tuber-

culous ulcers under the belief that they were rodent. A great deal too much has been made of the age at which the diseases respectively attack the skin, and the statements that lupus is a disease of youth and rodent one of age, are neither of them to be taken as absolutely definite. The two cases above referred to were aged, one twenty-five and the other fifty-five, and in both the lesion had a duration of less than two years. Rodent usually commences about the age of forty.[1] The statistics which show a greater age usually deal with the age of the patient at the time of the operation, and ignore the fact that the disease may have lasted ten, fifteen, or more years. Lupus, too, is by no means so exclusively a disease of youth as is so dogmatically laid down by the Vienna school.

The points of differentiation on which stress is to be laid are: (1) The history. If the word of the patient can be depended on, this is of considerable value, for the translucent prominent nodule of the early rodent differs very much from the reddish-brown flat lesion of lupus. (2) Direct observation. It may be that the lupus has taken on the fibroid type (see Lupus, p. 279), and is elevated above the level of the skin; it may feel hard, but it always lacks the abrupt, rounded, elevated border which is so characteristic of rodent, and it is almost always possible to demonstrate some of the brownish-yellow nodules which are essential to the absolute diagnosis of lupus. The result of the local application of tuberculin (p. 287) will remove all doubt.

Prognosis.—Untreated cases go on steadily from bad to worse, and invariably prove fatal if the patient does not in the meantime die from some other disease. If diagnosed early and properly treated the prognosis is excellent, and it is in order to emphasise the importance of early diagnosis and thorough treatment that I have given to this disease an amount of space which may to some less familiar with it appear disproportionate to its frequency.

Treatment.—At its early stage, if the growth is so situated that it can be completely removed and the edges brought together with little disfigurement, the knife may be

[1] I saw the other day a typical rodent which was first noted when the patient was only fifteen.

employed. Formerly I was a strong advocate of this method, but increased experience has led me to prefer the sharp spoon. The usual seat of the disease, the face, tempts the operator to remove as little as he possibly can, and if any portion is left the disease, of course, "recurs." With the spoon one is spared this temptation, for with that instrument one removes all one can. Thereafter, when the bleeding has ceased, I apply fused chromic acid freely. The scab which results often remains adherent for nearly a fortnight, and when it falls the part is generally soundly healed. The scar is smooth, and generally less disfiguring than that left by the cutting operation. Further, and this is an important point, the lesion looks so trivial that it is often difficult to get a patient to consent to the use of the knife, while the spoon carries less dread to the laity.

I have treated several cases by freezing with CO_2. It is, of course, specially valuable where the lesion is small, and the scar which it leaves is hardly noticeable. Even where the extent reaches to perhaps half an inch in diameter, provided ulceration has not occurred, I believe it to be one of the best methods of treatment. The application must, of course, extend beyond the limits of the disease, and should be made with considerable pressure and for fully one minute. The common situation of the disease near the eye is in this connection something of a drawback to this treatment, for the reaction following freezing is specially severe in this neighbourhood. Still, provided one foresees this and takes suitable precautions, the risk of doing any serious harm is not great.

When the disease has reached the further stage of ulceration, and is therefore of greater size, patients are more ready to submit to the knife, and its use should be considered, for in some situations it remains the best remedy.

Treatment by the application of caustics has fallen into some disrepute, chiefly because of the inexperience of many who used them. There is no doubt that if they are applied under experienced direction many cases of considerable extent may be treated as satisfactorily with regard to cure, and more satisfactorily with regard to appearance, by caustics than by the knife.

In the first place, suitable caustics must be used. Nitrate of silver and other playthings of that nature always do harm, merely stimulating the growth to increased activity. The caustics which may be used safely are *salicylic acid*, *pyrogallol*, and *resorcin*, and, probably most satisfactory of all, *arsenious acid*. All these drugs have what has already been referred to under lupus as a *selective action*, *i.e.* they act more destructively upon the diseased cells (in this case the cancerous ones) than on the healthy tissue around. The formula which I use is

℞ Acid. Arsen. }
Acaciæ pulv. } - - - - - - āā 2
Orthoform - - - - - - - 4

This is made into a paste with spirits of wine or water, and if the surface be ulcerated it is applied directly to it. If the surface is not ulcerated it should be rawed either by the curette or by the application of a strong solution of caustic potash, and in any case it is a good custom to treat the edges, which rarely are ulcerated, in this way. In twenty-four hours the part has swollen up, and the pain experienced is very severe—so severe that it is often necessary to give the patient morphin. If enough destruction has been caused at the end of that period, a poultice may be applied to hasten the separation of the slough. But if one has reason to suppose that the carcinoma extends for any distance beyond the actual ulcerated surface, then a fresh application of the paste should be made. I cannot say that I have ever seen any harm result from a too prolonged use of the paste, but I have repeatedly seen it from its too brief use. Under poulticing the slough separates and comes away in a week or ten days, leaving behind it a healthy granulating surface, which has to be watched for any trace of disease. In many cases one course of this treatment is successful; it is want of courage in the application which is responsible for the disrepute into which this caustic method has fallen.

Czerny uses an alcoholic solution of arsenious acid, painting it on daily and watching the results.

Radium.—I have placed the older methods first, because they are always at hand, but there is no room for doubt that, certainly in the earlier stages, exposure to radium is the most

satisfactory method of treating rodent ulcer. The duration of the exposure required depends, of course, on the amount and activity of the particular specimen of radium used. In about a fortnight after exposure there is a violent reaction, and a peculiarly adherent scab forms. When this falls off (in two or three weeks) the part is usually soundly healed.

Next to radium come the X-rays. They are applicable to all forms of the disease, but are especially of value in widespread ulcerated cases beyond the reach of the surgeon's knife. Exposure to the rays results, first in a drying up of the discharge, and an increased feeling of comfort. In the course of a week or ten days it is quite apparent that epithelium is growing from the edge over the surface of the ulcer. Not only this, but the excavated cavity seems to fill up from the bottom, and if the treatment is persevered with the ultimate result is a smooth flat scar, which no one unfamiliar with the method would have believed to be possible. Unfortunately, cases in which the bone or cartilage are affected do not yield to the X-rays. They may improve a little, but if the part is removable it should be taken away, and the rays then applied to the raw surface. As a rule, when the bone is affected no treatment has much chance of effecting a permanent cure.

XERODERMA PIGMENTOSUM (Kaposi's Disease)

(*Atrophoderma pigmentosum, Melanosis lenticularis progressiva*)

(*Ξηρός—dry*)

This is one of the rarer diseases of the skin, and none of its numerous names is altogether satisfactory. It is one of the family diseases,[1] and usually affects all the members of one sex. The first evidence of it is a dry roughness of the skin of the face and hands, at the period when the child first begins to be

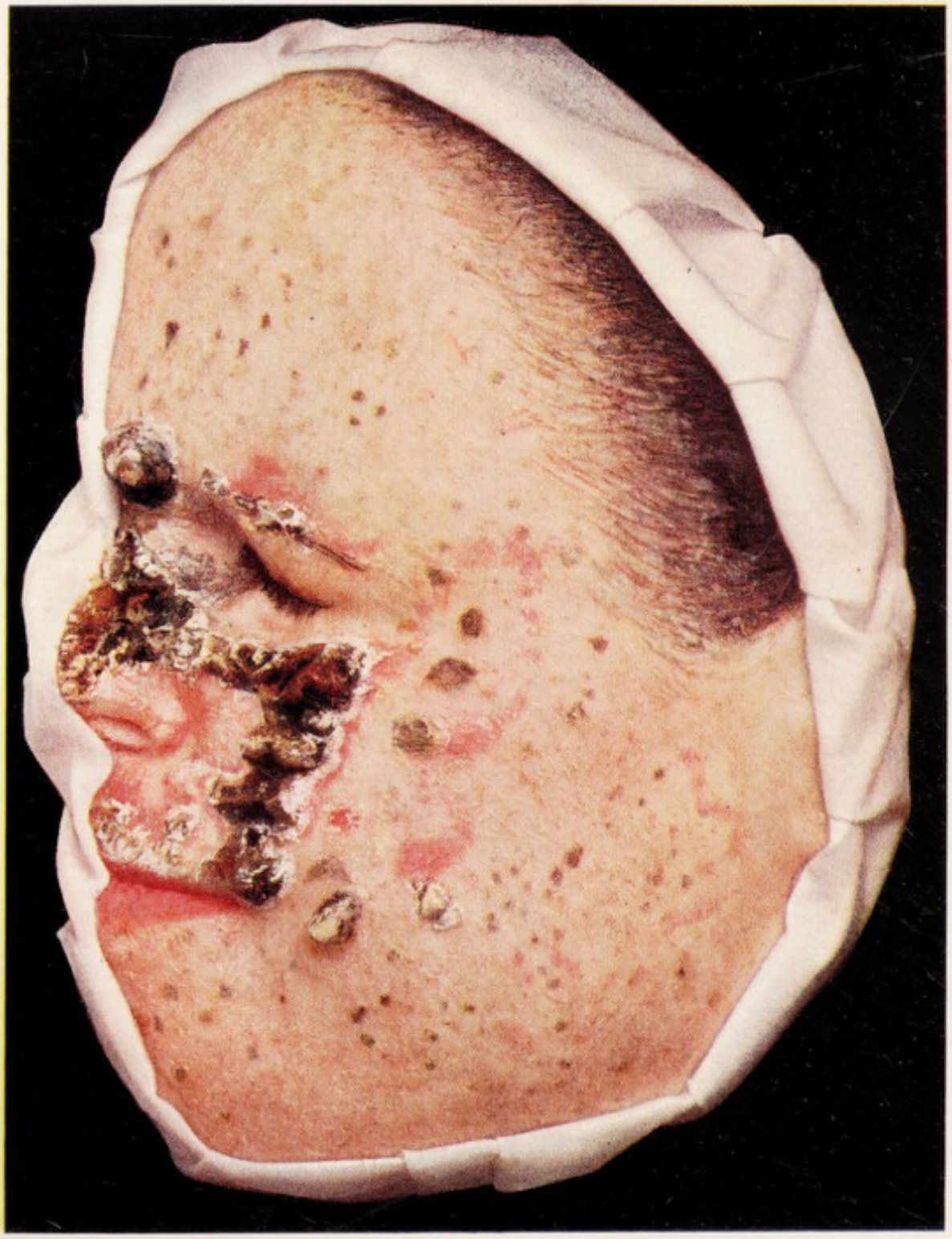
[1] There is a very interesting family history in connection with one of my groups of cases. The father and mother each had a daughter by previous unions. These children were unaffected, but the three daughters of their marriage are all affected.

running about in the open air. About the age of three or four a series of little pigmented spots, usually rather darker than freckles, appear on the exposed parts (face, neck, and hands). This freckling, though it does not disappear in winter, is always worse during summer. Then the skin begins to shrink, little



Fig. 74.—Xeroderma pigmentosum (early stage). From a case of Dr. J. J. Pringle's.

areas become white and atrophic, and for this reason Crocker preferred the name *Atrophoderma pigmentosum*. The shrinking of the skin draws down the eyelids, giving the child a peculiar woebegone expression (Fig. 74). There next develop teleangiectases, or dilatations of the capillary vessels, which add their share to the variegated appearance of the patient's face. The next symptom consists in the development of little mole-like or warty growths, not unlike those seen on the



XERODERMA PIGMENTOSUM
(STAGE OF MALIGNANCY).

hands of X-ray workers, which, if left alone, rapidly take on a malignant action, ulcerate, destroy all the tissues in the neighbourhood, and lead to a fatal result. This result is due to the exhaustion produced by local destruction; the tumours do not metastatise.

The true nature of the disease is unknown. Exposure to the sun has very evidently an important bearing on its development, but beyond that we know nothing. The tumours are, according to Unna, merely the development of hitherto unnoticed or unnoticeable moles (*q.v.*), and if each of these is removed as soon as it is observed, the progress of the case may be very much delayed. It would seem as if the efforts of the skin to protect the deeper tissues from the sunlight were ill-directed, and instead of the ordinary bronzing of the face occurring, the pigmentation was concentrated in small areas.

Prognosis and Treatment.—The prognosis is very grave, and the duration of the disease depends entirely on the care which is taken of the patient. If he is protected from the sun by wearing a brown veil and gloves, and if the little tumours are removed as soon as they are observed, he may live for many years, but the disease usually terminates fatally.

Herxheimer and Hildebrand have recently published an account of four cases of this disease, with an inquiry into the after-history of several of the hundred cases now on record. Their observations suggest that if the period of adolescence can be tided over, the progress of the disease may be stayed, and in this connection it is interesting to recall the fact that hydroa vacciniforme, another disease dependent on the sun's rays, usually disappears at that period. The patient from whom the annexed illustration is taken (then under Dr. Allan Jamieson's care) for a time benefited markedly from exposure to X-rays. The warts disappeared, the pigmentation diminished, and so long as the treatment was continued the disease certainly made less progress than before. (It is only right, however, to mention that some cases have apparently been aggravated by exposure to the rays.) During many years I treated this patient by various methods, including X-rays, erasion, and CO_2. By keeping her under constant observation and very frequent operation we kept the disease at bay for years; but

she grew careless, ceased to attend, and I observed the notice of her death in the *Scotsman* nine years after the cast was taken.

PAGET'S DISEASE OF THE NIPPLE

This is a carcinoma[1] which begins on the nipple and spreads to the areola and breast in middle-aged women. The illustration opposite is from the earliest case of the disease which has come under my notice: though the patient had been conscious that something was wrong for over six months. The surface is dark red, granular, and moist. Sometimes crusts develop, and conceal the red granular surface. Some slight itching is often felt, generally alternating with pain, which latter is often very severe. The disease may last in this form for many months, but ultimately the carcinomatous process spreads to the breast itself.

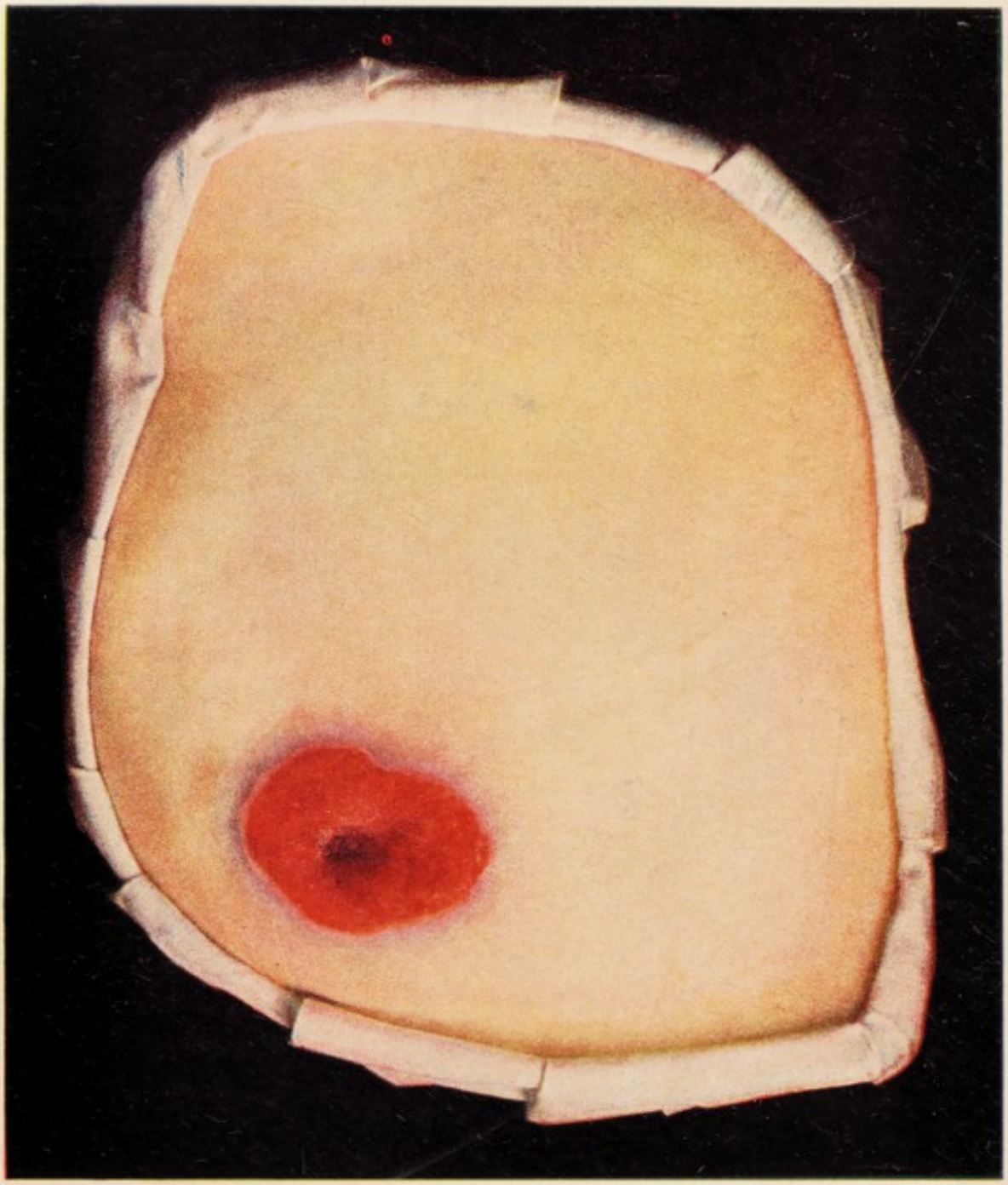
DIAGNOSIS.—This is, of course, of the utmost importance, for on early diagnosis depends the patient's life. Dermatitis of the nipple generally affects both nipples (see p. 154), is practically confined to women at the nursing period of life, and does not extend *continuously* but in small detached patches beyond the areola. The apparent enlargement of this is therefore a suspicious sign. Though there is often some degree of infiltration of the skin in dermatitis, there is in this disease that peculiar hardness which is common to all malignant epithelial growths of the skin. M'Call Anderson compared it to the feeling of a penny felt through a piece of cloth. Dermatitis is associated with more itching than is Paget's disease, and probably fissures are more common in the former. At the same time, it must be admitted that the diagnosis is often very difficult, and in a doubtful case occurring in a woman over fifty, another opinion should always be taken. If this is not available, it is probably safest to assume that the more serious disease is present.

Cases have been recorded where a similar affection appeared on other parts of the body.

[1] Unna regards Paget's disease as an inflammation, not in itself cancerous, which, however, prepares the ground for cancer so successfully that in most cases it develops.



PAGET'S DISEASE.



PAGET'S DISEASE

TREATMENT.—Treatment consists in the removal of the entire breast. Partial operations are rarely satisfactory.

The patient from whom the illustration opposite is taken was treated as all cases ought to be treated. I saw her one afternoon and sent her immediately to Mr. Alexis Thomson, who removed the whole breast two days later. Examination showed that the cancer spread right down into the breast. The result of the operation has been entirely satisfactory.

MELANOTIC CARCINOMA

Most melanotic growths are carcinomatous. Their structure is difficult to investigate, on account of the deep pigmentation, but when this is removed by appropriate means their carcinomatous structure can generally easily be recognised. Melanotic cancer[1] begins in a mole which has previously existed in a quiescent state. Some unknown irritant excites rapid growth, and the disease spreads to other parts of the skin, to the glands, and to the internal organs. A hitherto unnoticed pigmented mole may be discovered between the toes, but in some instances it is impossible to discover the primary cause of a profuse eruption of melanotic nodules. For the dermatologist the interest lies in the early stage, when the mole first shows signs of irritation, for it is then that the question of treatment comes up for consideration. It cannot be too definitely laid down that there is only one treatment for an irritated pigmented mole, namely, immediate free excision. If the patient objects to this, the mole is far better left alone than treated with any irritating caustic. Too often even the promptest interference is too late. It is, indeed, impossible to over-estimate the gravity of the prognosis of melanotic cancer. When a number of melanotic nodules have developed it is as well to leave the case alone. Operative interference of a partial kind generally aggravates and spreads the disease.

When pigmented moles occur on regions commonly exposed to irritation they should be removed at the earliest convenient moment. Prevention is better than cure.

[1] I do not here refer to the melanotic growths of the eyeball, though I believe that they too correspond more with the carcinomata than with the sarcomata.

MALIGNANT CONNECTIVE-TISSUE GROWTHS

SARCOMA

Both the spindle- and round-celled sarcomata may occur in the skin, where they may either be primary or secondary. As already stated, most melanotic growths are carcinomatous, though one is not prepared to deny that a sarcoma may accidentally be pigmented.

Unless promptly treated the prognosis is, of course, extremely bad. The sarcoma should be excised whenever the nature of the tumour is recognised. When it has become very widespread, and is beyond the reach of surgical treatment, the subcutaneous injection of arsenic is sometimes useful. The injections need not be made directly into the tumours. The drug may also be given by the mouth, though it seems to act less beneficially than when injected. X-rays and radium have been used with marked benefit in some cases.

BENIGNANT EPITHELIAL GROWTHS

VERRUCA

(*Verruca—a wart*)

Warts are little tumours composed mainly of epithelium, each division of which contains a connective-tissue core. They appear on any part of the surface, and are, in all likelihood, due to some contagion, the nature of which has, however, yet to be discovered. The appearance of the ordinary wart is so familiar that it is unnecessary to describe it. The plane or flat wart is not quite so familiar. It is not uncommon on the hands, and consists simply of a thickening of the epithelium, which does not divide into processes, and consequently does not project in a cauliflower manner over the surface.

The simplest way of getting rid of warts is to snip them off with scissors. If this plan be adopted all the lesions should be treated at a sitting, and if the part be frozen the

pain is comparatively trifling. Freezing with CO_2 is often remarkably successful. Salicylic collodion (a drachm to the ounce) may be applied daily. This gradually destroys the redundant epithelium. Carbolic acid, acetic acid, and even more powerful caustics are sometimes used. They distribute the pain over a greater period of time, and are not any more satisfactory than the scissors method. In those warts which occur in the genital region the application of a simple drying powder, with perhaps 5 per cent. of salicylic acid in it, often suffices. Warts there owe their size to the heat and the moisture of the parts, and when these are dispelled they shrivel up. The effect of the X-rays on warts is most remarkable. I have seen crops of two or three hundred flat warts totally disappear after a series of exposures to the rays amounting altogether to about an hour. Though it is generally successful, I have seen the treatment fail entirely. But the ways of warts are mysterious, and they sometimes disappear in a few days under methods of treatment at which in the days of one's youth one was inclined to scoff. Crops of warts will sometimes vanish under the apparent influence of minute doses of arsenic ($\frac{1}{8}$ of a minim of liq. arsenicalis), Epsom salts (grs. 5), or green iodide of mercury (gr. $\frac{1}{6}$), given thrice a day.

MOLLUSCUM CONTAGIOSUM

This is by no means so rare a disease as is often supposed; a good many cases pass unrecognised, as ordinary warts. The usual history of a case is that a small "pimple" appears on the skin. Of this little notice is taken. By and by it swells, and gets red and irritable. Some soothing application is made, under which the signs of irritation disappear. Several weeks afterwards a group of little tumours appear in the neighbourhood. These vary greatly in size. They may be no larger than a small pin's head; they may grow as large as a hazel nut. At first they are of a yellowish-pink colour, their surface is shining owing to the stretching of the epithelium, and they contain in their centre a dimple, or a projection, which gives

to them a very characteristic appearance. All this is illustrated in the Plate. The original lesion which suppurated, and the secondary crop which appeared later, are all well shown. The case was that of a shop-girl who regularly attended the public swimming baths. Analysis of our rather numerous cases has shown how remarkable a part public baths play in the dissemination of this disease, for more than three-quarters of the sufferers were regular attenders at one or other swimming bath. From statistics recently given by Dr. Graham Little it would seem that the disease is exceptionally prevalent in Edinburgh.



Fig. 75.—Molluscum contagiosum (low power).

When one of the little growths is examined under the microscope the condition shown in Fig. 75 is seen. The appearance of a central section recalls that of a sebaceous gland; that is to say, the epithelium is arranged in lobules, in the centre of which, as in the sebaceous gland, a change has taken place. The change, however, is different, and instead of the fatty débris found in the sebaceous glands, we have here a number of hard oval structures which are known as "molluscum bodies." These are the result of hyalin degeneration of the epithelial cells, and are not, as was at one time supposed, parasites. The explanation of the lobulated character of the growths is purely physical, and is referred to on p. 4. The actual cause of the disease is still unknown. The growths are



MOLLUSCUM CONTAGIOSUM.

undoubtedly contagious, though no one has as yet been able to identify the organism. The contagion is one that takes a long time to show its results. Pick found that six or more weeks elapsed before any trace appeared at the seat of inoculation. A similar disease occurs in the lower animals, and Shattuck has drawn attention to its occurrence in sparrows, pheasants, domestic fowls, and pigeons. If left alone it will continue to spread; indeed there is no reason why it should not go on for ever.

Treatment.—This depends on the number of the lesions. If there are only three or four lesions they may be snipped off with scissors, which is the most certain method. If more numerous each lesion may be seized between the blades of a broad-pointed forceps and forcibly eviscerated; it is not enough to express the contents: in infants an anæsthetic is required. One or two of the lesions so treated will probably recur, and an outlook should be kept for the very earliest sign of fresh lesions. These if touched with pure carbolic acid will disappear. Ormsby says that if the contents are stirred with the point of a needle the lesions will disappear. Most of those who use this method dip the needle in pure carbolic acid. Like so many other epithelial growths, molluscum contagiosum disappears when exposed to the X-rays. Obviously these are only applicable when the lesions are grouped as in the coloured Plate. This patient was treated successfully by their means.

If the case comes under treatment when the original lesion is in the suppurative stage it should be treated by carefully applied antiseptic dressings, so as to prevent dissemination of the infection.

The long period of incubation must be kept in mind.

MOLES (Nævi)

Moles are epithelial growths of congenital origin. They may not be visible at the time of birth, but in all probability their foundations are laid, though they may never be used for building on. Moles are the best example of Cohnheim's aberrant cells.

They are distinguished from warts by the absence of any

papillary marking on their surface. The surface may be creased and grooved, the natural lines of the skin exaggerated, but it has not the broken up surface of a wart. The explanation of this is found on examining a section, when the new growth is found to lie *beneath* the surface epithelium. This new growth consists of cells which, being small in size and indeterminate in character, have usually been regarded as of connective-tissue origin. In the moles of adults it is exceedingly difficult to determine their character, but if moles from young children are examined it is generally easy to make out their origin from the surface epithelium. Rounded or pyriform areas of cells may be seen, still in connection with the rete, dropping down into the corium, where little rounded collections obviously derived from the same source may be seen. The fact that, when these little growths take on a malignant action and spread, they follow the course of carcinomata, is a strong clinical argument in favour of their epithelial origin. Probably all moles are to some extent pigmented. In most of them the pigment is limited to superficial layers, and it is exceptional to find the pigment throughout the entire new growth of cells.

The deeply pigmented moles may give rise to melanotic cancers, while the non-pigmented ones, as Brodie long ago pointed out, are not infrequently the starting-point of rodent cancer of the skin. If moles are seated where they are exposed to irritation, or in a locality (such as the side of the nose) where they are liable to take on malignant action, they should be removed, even although they show no signs of activity. Perhaps the knife is the best remedy, but in CO_2 we have one nearly as good, and one to which patients are very much more ready to submit. The snow should be shaped into a very hard, pointed pencil just larger than the growth, and the length of application and the degree of pressure should depend upon the depth of colour and the amount of tissue in the mole. It is true that short applications leave behind them less marked whitening, but too short applications sometimes seem to disseminate the pigment without removing it.

The very disfiguring hairy moles which so often occur on the face have not hitherto proved very amenable to treatment,

and it is therefore with some satisfaction that I record the very remarkable improvement in several of my patients who have been carefully treated by Dr. Low with CO_2 snow. Not only has the pigment been greatly lessened, but the thick strong hairs have either entirely disappeared or been replaced by a downy almost unnoticeable growth. A long series of applications has usually been required, but the results have amply repaid the inconvenience of the reaction.

BENIGNANT CONNECTIVE-TISSUE GROWTHS

FIBROMA

This may be single, when it presents no special peculiarities. When multiple, the condition is more correctly described as Neuro-fibromatosis, and is usually known as *Molluscum fibrosum*. The sufferers present a very remarkable appearance. Fig. 76 is from a photograph taken by my friend Dr. Rorie, of Cults, of a Hindu who was supposed to owe the disease to a change of his religious opinions. It is an admirable example of a well-marked case.

When first noted, each tumour is evident as a little hard nodule, feeling, beneath the loose skin, like a pea or a bean covered with thick velvet. The lump increases in size, and gradually projects above the surface, while the skin stretches over it. Sometimes the tumours undergo a species of atrophy, and a little empty bag of skin is left. Cases so severe as that shown in the figure are fortunately rare, but instances where there are a dozen or two tumours are not infrequent. They give rise to no symptoms, except those of inconvenience on account of their size and position.

When the tumours are examined under the microscope they are found to consist of fibrous tissue, dense or loose, according to the consistence of the tumour. "They are of the nature of soft fibromata related to the terminal filaments of the cutaneous nerves, and they resemble very closely the structure of the plexiform neuro-fibroma" (*v.* Recklinghausen). Alexis Thomson, whose masterly monograph should be consulted for further

information, says the tumour tissue is either a succulent, spongy, feebly fibrillated tissue, rich in cells and blood-vessels, or a

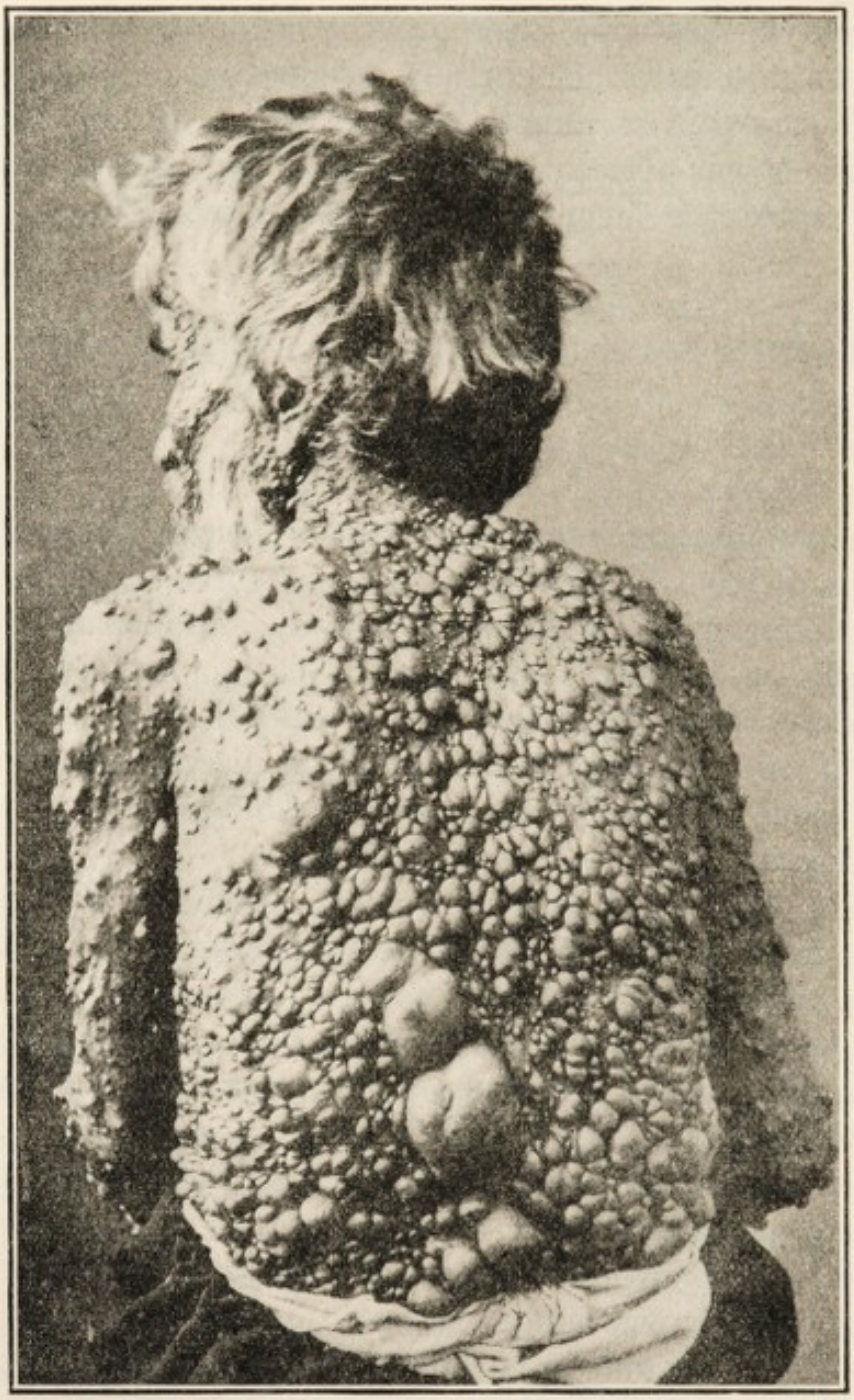


Fig. 76.—Molluscum fibrosum.

tougher, more fibrous, tissue, with the fibres arranged in bundles. There is neither any new formation nor any degeneration of the nerve fibres concerned.

Diagnosis.—This presents no difficulty. There is practi-

cally no disease with which it can be confused; mycosis fungoides, which has a very distant resemblance to it, could only be mistaken for fibroma by one who was unaware of its existence.

TREATMENT.—The general opinion is that nothing is of any avail but removal of the growths; and precautions with regard to hæmorrhage, which is sometimes considerable, should be taken. Of course, in cases of the severity shown in the figure, only those growths which are seriously inconvenient are removed. Dr. Muir, of the Calcutta School of Tropical Medicine, writes me that a case under his care, treated by intravenous injections of ethyl ester margosate, underwent great improvement.

CHELOID

(χηλή—*a claw*)

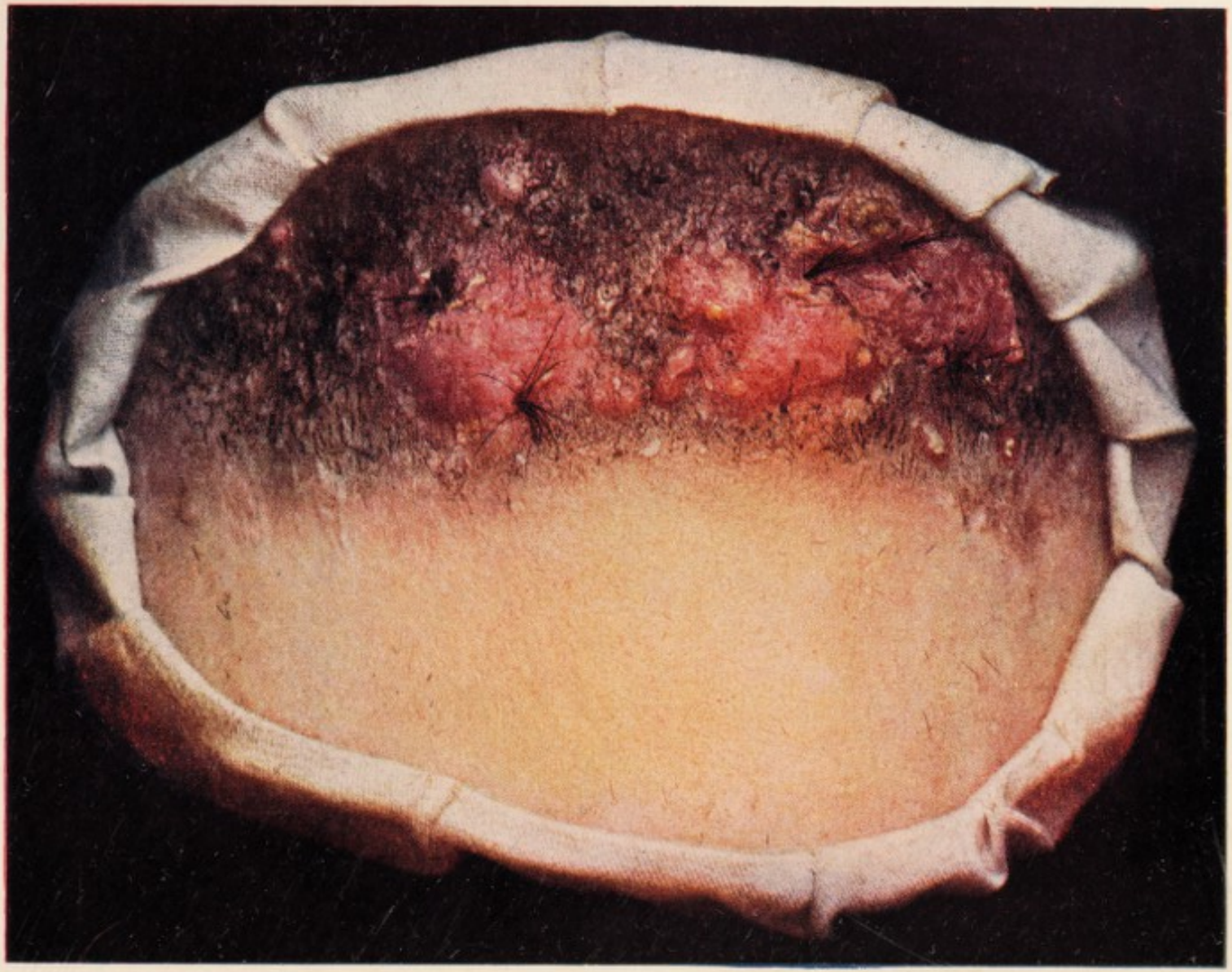
While there is no great difference in their anatomy, there are sufficient clinical differences to justify a distinction between cheloid proper and the hypertrophic scar. True cheloid is a very characteristic growth, and is admirably represented in Fig. 77, for which I am indebted to the late Dr. Limont, of Newcastle. Probably all cheloids arise in scars, though these may be of such a minute nature as to have altogether escaped the patient's attention. In this case, as in many others, the cheloid commenced in a scar produced by the application of a mustard poultice. On the chest and back, the commonest situations of cheloid, it probably takes its origin in the scars of some bygone acne. The name is well fitted to the appearance. The tumour is longer in one direction than in the other, and usually sends out at its long ends *claw-like* processes. At the sides the margins are usually more abrupt, and the number of processes less than shown in the illustration. The colour is a bright pink, and the surface is shiny, through stretching of the epidermis, beneath which a few dilated vessels may be seen. Once developed, cheloid tends, with occasional intervals of rest, to increase steadily. In this it differs very markedly from the hypertrophic scar, which, though it hypertrophies, does not usually spread beyond its original limits. The hypertrophic

scar is frequently seen in connection with operation wounds in tuberculous cases, and is quite commonly the result of



Fig. 77.—Cheloid.

scraping lupus. Cheloid is most often single, but two or three are not infrequent, and cases are on record where the tumours have been numbered by hundreds. Such cases usually follow eruptions of boils, smallpox, etc.



ACNE KELOID

When a section of cheloid is examined under the microscope it is found to consist of very dense fibrous tissue; all the epidermic appendages have vanished, and the rete runs in a thin layer over the surface. The fibrous tissue is sometimes fairly cellular if the growth be active, and cheloid may be regarded as a step on the ladder between the simple fibroma and the recurrent fibroid of Paget.

In favourable cases the part may flatten down and the tumour disappear, but as a rule the duration is prolonged, cases having been recorded where the growths had persisted for forty or fifty years. The hypertrophic scar shows much more tendency to disappear spontaneously than does the true cheloid.

The Plate opposite is from a case of a rare condition which goes by the name of acne-cheloid. The nape of the neck is a common seat of chronic pustular (acnoid) eruptions, and in the scars of these cheloid occasionally develops. A striking feature is the little brush-like collection of hairs all issuing from one follicular opening. I have only seen three cases of this disease, and all recovered under the application of X-rays.

Treatment.—Excision, which would appear to be urgently called for, is worse than useless. It seems to be a matter of indifference how wide the incision goes, the tumour always returns in an aggravated form in the scar. The same is true in a modified degree of the hypertrophic scar. Other means have consequently been sought for, and electrolysis, multiple scarification, and pressure have all been used, sometimes with a certain amount of success. *Thiosinamin*, which was introduced by Hans Hebra as a remedy for lupus, has on several occasions been used with benefit in cheloid. It may be injected into the growth, or applied over it in the form of a plaster, as prepared by Beiersdorf and recommended by Unna. In my own experience there are only three useful remedies for cheloid—radium, X-rays, and CO_2. Radium gives the best results, though in small cheloids the effects of CO_2 snow are nearly as good. X-rays are more useful in large cheloids, but one must be very careful to avoid over-exposures and the development of telengiectases.

ANGIOMA

(*ἀγγεῖον—a blood-vessel*)

There are several forms of angioma which occur in the skin. Nævus araneus, or "spider" nævus, is common on the face, and consists in a dilatation of the small vessels, which assume a form somewhat resembling a spider's web, a large vessel in the centre taking the place of the spider. It may increase to a considerable size. Then there are the small, angry-red angiomata, commonest upon the chest and back, but occurring in other situations also.

Nævus flammeus is the familiar port-wine stain most frequently observed on the face. According to Unna, it is due to the intermittent pressure exercised on the fœtus during intra-uterine life by the bones of the maternal pelvis.

TREATMENT.—Spider nævus is very easily dealt with. Electrolysis of the central point usually cures it permanently in one or two sittings. The small rounded nævi are pretty easily disposed of by the same means, and if that method is not convenient, either of them may be treated by the application, on a very fine point, of some caustic such as nitric acid, the acid nitrate of mercury, carbolic acid, or the ethylate of sodium.

Port-wine stains are not very often improved by treatment. It is, no doubt, possible to produce improvement by electrolysis, but the process is wearisome, and the results are too uncertain to make it a method strongly to be recommended. Jutassy reports the complete disappearance of a port-wine mark after a series of exposures to the X-rays; and Levack, of Aberdeen, has published three cases where extensive port-wine stains were thus successfully dealt with. He intentionally produced a considerable reaction, which took several weeks to heal. My experience of the X-ray treatment has not been happy: cases seen after many years show an amount of X-ray atrophy more disfiguring than the original nævus.

Radium and CO_2 snow offer most prospect of success. It must be remembered that in treating port-wine marks one is asking a great deal of any treatment. The dilated vessels are *in* the skin, and in seeking to destroy them without injuring

the skin, one clearly sets one's self a hard task, and only the patients who are really in earnest should be submitted to the treatment. But persevering use will at least remarkably pale the lesion—I have not had cases under my notice for sufficiently long periods to speak of cure. Pusey's remark that skins which have been exposed to X-rays react more readily to the freezing method may be noted in this connection, and a series of X-ray exposures considerably short of reaction may be made before the freezing treatment is commenced.

The larger nævi common on the scalp in infants may also be treated successfully by CO_2. It is astonishing how placidly infants submit to the treatment, and how little trouble the reaction causes.

LYMPHANGIOMA

This is a tumour of the lymphatic vessels, which may appear on any part of the skin. It is unnecessary here to discuss the question whether lymphangioma or lymphangiectasis is the more suitable term for individual cases. When once present it is of little practical importance whether the lymphatics are new formed or merely existing ones dilated. The little growths appear in irregular groups, and look like vesicles; in fact, cases are frequently mistaken for zoster, from which, of course, they are easily distinguished by their history. The vesicles are deep and have thick walls, and when pricked discharge, and continue to discharge, a colourless fluid. Often there is only one patch, whose appearance suggests that of a white raspberry opened out and inserted in the skin. Once fully developed they show no great tendency to spread, or if they do, spread very, very slowly.

Treatment.—The vesicles may either be dried up by electrolysis, which requires repetition several times, or the whole patch may be removed by the knife. Incision must go pretty wide of the disease, otherwise it tends to recur.

A case under my care benefited markedly from repeated freezing with CO_2.

ADENOMA SEBACEUM

Many cases of the disease to which this term is generally applied have certainly been lymphangiomata. In one case which has been many years under my care I have, more than once, excised lesions, and have always found them of this structure, though in other cases tumour formation in connection with the sebaceous glands has been noted. The disease occurs most frequently on the faces of children whose mental development is below par.[1] It is found along with the condition known as *nodose sclerosis* of the brain, and associated with imbecility. In such children tumours of internal organs are common, and are usually misplaced tissues, *e.g.* rhabdomyoma of heart, suprarenal rests in kidney, etc. Very often there is a history of fits in infancy, and the development of the disease has been attributed by some to the large doses of bromide of potassium then administered. The little tumours are whitish or reddish-yellow in colour, cover the whole face, though they are most numerous on the nose, cheeks, and chin, and have between them small teleangiectases, which give the face a mottled appearance. Now and then one enlarges to an inconvenient size, but as a rule the disease is troublesome only on account of the disfigurement. The Plate shows the disease in its most characteristic form, and one or two of the fibromata which are often present. As the child gets older the disease tends to moderate if not to disappear, but this takes long, and a great deal can be done by treatment. Electrolysis was not very successful in the case mentioned above, and I had much better results from destroying the larger lesions with the fine point of Unna's microbrenner, while, where the lesions were smaller, I ironed the surface with an ordinary Pacquelin cautery at a dull heat. At the first opportunity I shall give the freezing method a trial.

CLAVUS

(*Clavus—a nail*)

Corns are placed by Unna among the tumours, and there seems to be no particular reason why the horny cells should

[1] The disease is fairly common in imbecile institutions.



ADENOMA SEBACEUM.

not have as much right to form tumours as any others. The corn is a dense thickening of the horny layer, usually conical in shape, which may form at any part exposed to intermittent pressure. Constant pressure causes atrophy, intermittent pressure encourages growth. Corns are too familiar to require any description, and only very brief remarks with regard to treatment are necessary. The best application is salicylic acid, which may be applied dissolved in collodion, to which it is customary to add some cannabis indica to diminish the pain.

℞	Salicylic Acid - - - - - - -	(ʒss)	3·0
	Tinct. Cannabis Indicæ - - - -	(ɱ xx)	2·0
	Collodion - - - - - - - -	(ʒss)	30·0

This is painted on every night, and in about a week the dead epidermis separates. The application should be renewed again and again until the surface is quite level. I am convinced this method would be more popular if it were not for the common opinion that one course of the treatment is enough.

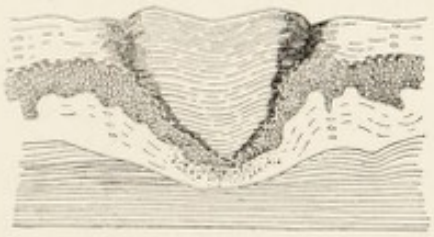


Fig. 78.—Diagram of a common corn.

It should be repeated at least four times, or until the surface is quite smooth and flat. Sometimes salicylic creosote plaster is more convenient, and it is more rapidly efficacious than the collodion. Treatment is, however, of little avail if the original cause is still in existence. The patient must wear loose-fitting foot-gear, and, preferably, woollen stockings.

ANGIOKERATOMA

(ἀγγεῖον—a vessel ; κέρας—a horn)

This is a mixed form of tumour which may be roughly said to be a combination of an angioma and a corn. It occurs in groups, particularly on the hands, feet, and ears, more rarely

on the limbs, of those who are subject to chilblains or to "dead fingers." The appearance varies according as the angioma or the keratoma predominates. In the early stages the former is more apt to prevail, and there are a number of little, hard, red, lenticular spots; as the disease advances the horny layer thickens, and sometimes greyish, horny-looking patches obscure the reddish colour beneath. They bleed very freely when injured.

TREATMENT.—The best immediate treatment of the lesions is electrolysis, but the real treatment consists in taking such steps as will improve the circulation and prevent the recurrence of fresh lesions in the following winter (see Chilblains). Bier's congestion method is sometimes useful.

XANTHOMA (XANTHELASMA)

(*ξανθός—yellow*)

As the name indicates, this growth is characterised by its yellow colour. The cases may be divided either into the plain and tuberous forms, or into *Xanthoma palpebrarum* and *Xanthoma multiplex*.

Xanthoma of the Eyelids is an affection which commences in middle life, as a minute yellow spot. This extends into a patch varying in size, which sometimes spreads so as to form a complete ring round the eye. It is slightly raised above the level of the skin, and has a wrinkled appearance. The usual comparison to a piece of chamois leather let into the skin is a very appropriate one. Growth is very slow, but there is no tendency to absorption. The yellow colour is due to the presence of fat, and xanthoma is usually looked upon as a connective-tissue growth in which the cells have undergone fatty degeneration. According to Unna, this is incorrect. He maintains that the fat in xanthoma palpebrarum is situated in the lymph spaces, and is in reality a sort of fatty infiltration of the orbicularis muscle, comparable to the fatty deposits in some senile hearts. The giant cells which are found in the growth are, he says, sections of dilated lymphatics, and the ring of nuclei is composed of those in the walls of the vessels.

There is no pain, and as a rule little inconvenience is caused by the growth. Excision is recommended by some; X-rays or

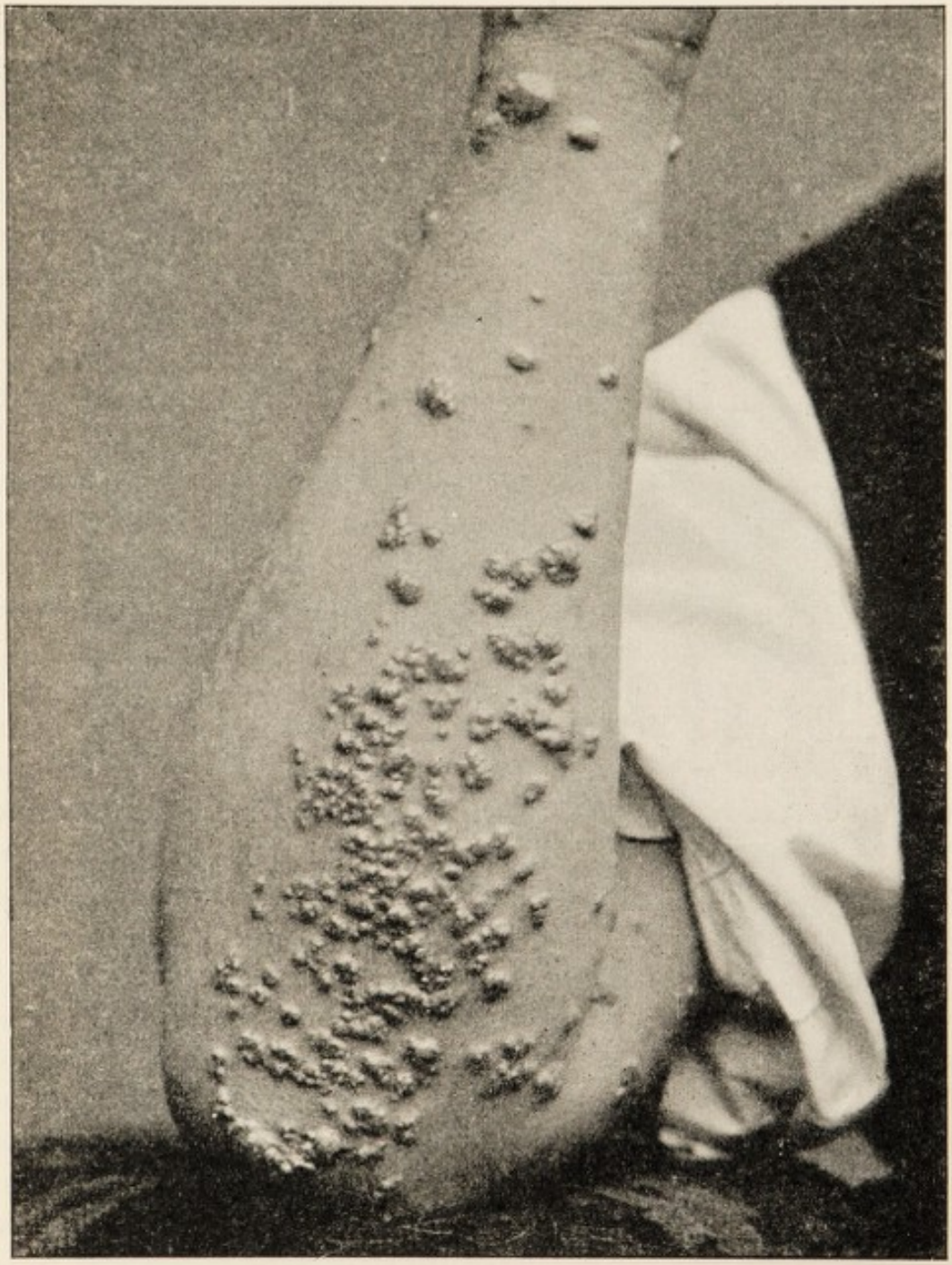


FIG. 79.—Xanthoma diabeticorum.

CO_2 snow by others: in my experience repeated applications of trichloracetic acid, as suggested by M'Guire, have been very successful.

Xanthoma multiplex or tuberosum.—This is apparently quite

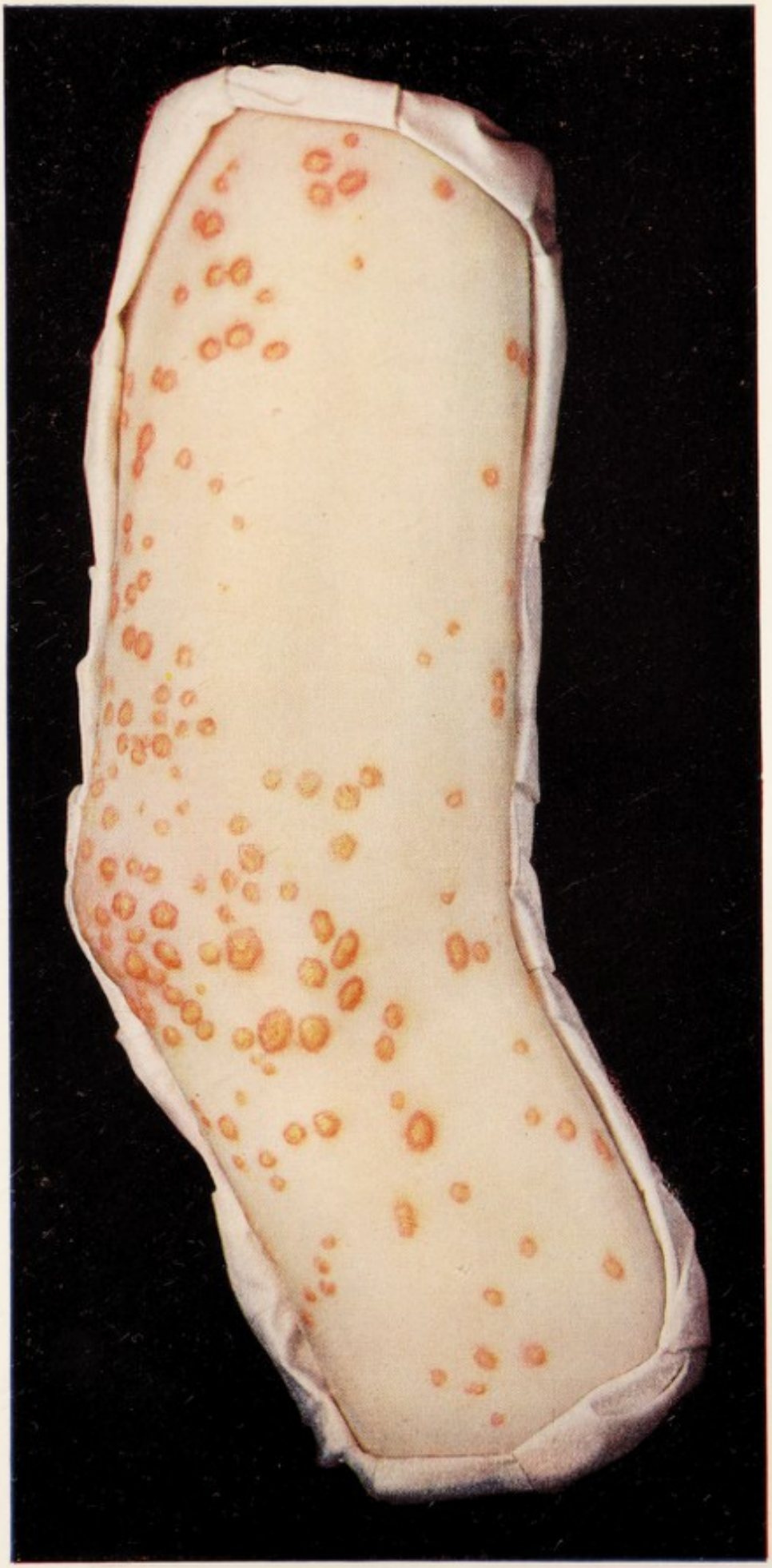
a different form of growth. It usually develops during the early years of life, and while it may appear on the eyelids, it is more commonly seated on the limbs, the palms and soles, or the trunk. When it develops in adults it is very often associated with jaundice, and this connection is occasionally seen in children. Like the eyelid form, it owes its yellow colour to fat, but apparently in this form of the disease the fat more certainly develops in the generally supposed way; that is to say, a growth of connective-tissue cells which undergo fatty degeneration is much more readily observed, and giant cells are not found. Cases have been known to involute, but as a rule they grow to a certain size, about that of a shilling, and remain stationary, so that if their removal is desired excision is the best treatment.

Xanthoma diabeticorum.—This is a variety of the disease associated with glycosuria, all the cases in which it has occurred either having glycosuria or developing it subsequently. It is not very distantly related to the generalised variety, but is more rapid in its course.

A case recently under my care seemed to indicate that the deposit of fat was Nature's effort to dispose of a too abundant supply. The capacity for the consumption of an enormous amount of fat is a common experience of diabetics, and my patient had been consuming, in addition to other fats, no less than a pound and a half of butter weekly. The xanthoma rapidly disappeared when the diet was more strictly regulated.

The growths commence as little hard swellings, of a reddish-yellow colour, and rapidly get yellower. The sections show the structure of connective-tissue tumours, some of the cells show fatty degeneration, and a considerable amount of fat is found in the tissue spaces. This form of xanthoma has its special seats of election on the elbows and knees, and then on the loins and buttocks. Fig. 79, which is from a case of Unna's, shows the condition well, and for the opportunity of taking the cast from which the coloured Plate is taken I am indebted to my friend Dr. Gulland.

The prognosis depends on the glycosuria. If that can be controlled the skin eruption disappears. No local treatment is of any avail.



XANTHOMA DIABETICORUM.

XANTHELASMOIDEA

(*Xanthelasma and* εἶδος—*form*)

Clumsy though this name may be, it appears to me eminently



Fig. 80.—Xanthelasmoidea (Urticaria pigmentosa).

more applicable than the more generally used one of *Urticaria pigmentosa*. The disease is rare. It appears very early in life and the first signs observed are usually those of urticaria.

Typical wheals are undoubtedly present in most cases, but there is a further lesion which gives the disease its characteristics. Numbers of flat elevated areas, varying in size, appear all over the skin, and do not, like the wheals, disappear. They vary from pale to deep yellow or yellow-brown in colour, and the resemblance to xanthoma is often remarkable. In particular, the skin over them is not tense, as it is in the urticarial wheal. After a period of slow increase they gradually disappear, and as a rule vanish entirely in the years between puberty and adolescence. Cases are, however, on record where the lesions have been persistent. Under the microscope the tumours are found to be composed almost entirely of mast cells, and their persistence seems to be an argument in favour of the connective-tissue origin of these peculiar cells.

Time is the only remedy. No treatment has any effect upon the condition.

SECTION VI

MALFORMATIONS

THERE are many conditions which, in any complete system, would require to be described under the malformations of the skin; particularly certain tumours developed in connection with the glands, and certain forms of moles. Dermoids and atheromata are clearly malformations, but for their description larger works must be consulted. The two of practical importance are Hyperkeratosis congenitalis and Hypertrichosis.

HYPERKERATOSIS CONGENITALIS

(*ὑπέρ—beyond, excessive ; κέρας—horn*)

This is the condition which is usually described as congenital ichthyosis, the "harlequin fœtus." In it there is an excessive cornification of the surface cells, and the child is born clad in a sort of horny armour. As it grows and moves its limbs this tends to crack in various directions, dependent on its movements. The disease is practically universal, all the skin being affected, and in this as in other points it differs from ichthyosis. As a rule the subjects of it do not survive, but where the disease is present in its less severe forms they sometimes do. It is distinguished from ichthyosis by the fact that it is present at birth, whereas ichthyosis appears towards the end of the first year of life, and by its distribution, which is universal; whereas ichthyosis is rarely very widespread at first, and hardly ever affects the palms and soles, which this disease always does. The treatment consists in liberal nourishment, cod-liver oil, abundance of milk, etc., the cautious use of thyroidin, and the local application of weak salicylic ointments which tend to promote more normal cornification.

HYPERTRICHOSIS

Hypertrichosis, or the growth of hair in abnormal situations, is a condition the treatment of which some consider beneath the dignity of a physician. It is, however, a very real affliction to the unfortunate females who are its victims, and the depression which it induces often has a serious effect on their mental condition.

It is a mistake to suppose that the growth of hair on the face is indicative of masculinity of character, though the possibility of mistaken sex should be remembered. While no doubt the development of a moustache strengthens the appearance of a strong-minded woman, hypertrichosis is frequently present in the most feminine of the sex. In most cases it is not possible to discover any apparent cause for the growth, but I am satisfied that repeated greasy applications, such as vaseline or cold cream, strengthen the growth of downy hair, as does the possession of a morbidly greasy skin.

If the hairs are few in number, and especially if they are growing from a mole, electrolysis is the most satisfactory means of treatment. It is a method which requires a good deal of skill, and every one must look back upon much time wasted in his early cases.

The patient should be comfortably seated in a chair, and hold in one hand a handle connected with the positive pole of the battery, or dip one or more fingers in a basin of water connected with it. The operation is done with a needle connected with the negative pole. This is introduced into the follicle as accurately as possible in the line of growth of the hair. A current of from three to five m.a. is passed for a few seconds, during which a white froth appears at the mouth of the follicle, and if the operation has been successful the hair can then be lifted out easily with forceps. One practised in the method can remove a great many hairs in an hour, but the beginner should confine his attention to a few, and do them thoroughly. In towns with the constant electric current the electricity may be derived from the main, passed through a suitable resistance, but when this is not available a battery of Lechlanché cells is quite satisfactory.

If the hairs are numerous, it should be made clear to the patient or her parents that the treatment will be prolonged, and that for a few months the results will seem disappointing. Quite a number of hairs reappear and the operation has to be repeated again and again. Still, if the case is a suitable one, and the patient perseveres, considerable success may be achieved, and I am satisfied that several young women have been saved from a mental breakdown by the knowledge that something was being done. I suggest that one should not, at the first visit at least, crush these patients with the intimation that nothing can be done.

Twenty years' experience has brought me to the position that the application of X-rays is not sufficiently under control to justify their use in this condition, and I have not used them for years. Brilliantly successful at first, there follows (three, four, or five) years later a progressing atrophy of the skin with numerous teleangiectases, producing so disfiguring an appearance that most persons bitterly regret that they ever underwent the treatment. It may be that new methods will be found, but it must not be forgotten that the rays are set a very difficult task, viz., to produce a permanent atrophy of one of the elements of the skin—the hair papillæ—and to do no harm to the rest of the skin.

Mechanical removal remains. Women have an invincible objection even to the safety razor, and invariably prefer some other form of removing the hair. Some even use a piece of soaped pumice stone to scrub away the hair. Carefully applied, depilatory remedies are not so terribly injurious, and they need not be by any means so expensive as they usually are when sold as secret remedies. The sulphides of barium and calcium are those commonly used. The former, mixed with equal parts of oxide of zinc and starch, is made into a thick cream with water and spread on the part. When dry, in about ten minutes, it is washed off, and the dissolved hair comes with it. The part should then be powdered to diminish the slight irritation of the application. The sulphide of calcium is more active, and destroys the hair rather farther down the follicle, but it produces a good deal more inflammation than the barium salt. It is necessary to make it clear to the patient that the effect is only temporary.

SECTION VII

ANOMALIES OF PIGMENTATION

THE great "pigment" question, with its vexed points as to the nature and source of the pigment and the method by which it reaches the epidermis from the blood, is too large for discussion here.

Increased pigmentation is associated with any long continued inflammation of the skin, especially if the part be congested, or if itching has been a prominent symptom, but it is further very specially associated with certain specific diseases. The dirty brown pigmentation around a syphilitic scar is quite characteristic, while the rich brown stain left on the disappearance of a patch of lichen planus often helps one in the diagnosis of a doubtful case. Neglected cases of pediculosis are often associated with extensive pigmentation.

True pigmentation is found in Addison's disease. It often results from the too long continued use of arsenic, under which circumstances it often affects all the areas of the disease for which that drug has been prescribed, and an apparent pigmentation due to the reduction of silver in the tissues occasionally follows on the ingestion of nitrate of silver (Argyria).

Pigmentation is an important feature in the early stage of the disease known as Xeroderma pigmentosum (*q.v.*), and an equally important feature in the mole, especially should it become malignant.

In all these cases other local disease is present; here we are concerned with those diseases where increase or decrease of the pigment is the only evident alteration.

EPHELIS OR LENTIGO

(ἐπί and ἥλιος—the sun; lens—a lentil)

Freckles are minute, lenticular accumulations of pigment, and, as the name suggests, occur mainly on those parts of the

surface which are exposed to the sun. They are most common on the face and arms, and during the summer months. They are found mostly in fair young people, and may be looked upon as an effort of Nature to protect the deeper parts from the irritant action of the actinic rays. For the tissues beneath them they play the part of the photographer's red glass. Professor Alexis Thomson has called my attention to the occurrence of pigmentation, sometimes taking the form of freckles on any part of the surface in patients who are affected with plexiform neuromata. The freckles which sometimes appear on all parts of the body in elderly people are possibly of the same nature as these, and some apply to them the term lentigo, and restrict ephelis to the ordinary freckle.

The development of freckles in those subject to them can be prevented by avoidance of exposure to the sun, the hands being protected by gloves, and the face by a veil, brown, red, or yellow in colour.

They can be removed by various applications, which, however, do not prevent the appearance of fresh spots. All the various remedies used produce an exfoliation of the epidermis. The most popular is sublimate. It must be cautiously applied. A half per cent. solution in spirit, painted on at night, is quite strong enough to commence with. Stronger solutions do indeed remove the pigmentation, but at the expense of a more or less severe blistering, which necessitates confinement to the house. If the patient is ready for such confinement the method of shelling the skin with resorcin, described on p. 202, is much more thorough and successful. CO_2 snow has a wonderful effect in removing pigmentation. The various bismuth salts have a certain depigmentary action, and may be used in ointments, as may boric acid and the peroxide of hydrogen. Unna recommends:—

℞	Adipis Lanæ Anhyd. - - -	(℥j)	5·0
	Vaselini - - - - - -	(℥ij)	10·0
	Liq. H_2O_2 - - - - - -	(℥ss)	20·0
	$HgCl_2$ - - - - - -	(gr. j)	0·05-0·1
	Bismuth Chlorid. - - - -	(grs. v to xxx)	0·5-3·0

Sig.—Apply at night.

CHLOASMA

(*χλοάζω—to be pale green*)

Chloasma is a diffuse or circumscribed pigmentation of the skin of the face, which is induced, not by external, but reflexly by some internal irritation.

It may occur in connection with hepatic, uterine or ovarian, or any abdominal disease (*e.g.* appendicitis), but the great majority of cases are associated with pregnancy. The spots vary in extent; sometimes they are round or oval in shape, sometimes on the face they extend so as to resemble a dark mask. The tint varies from a light yellowish-brown up to a deep, almost black shade. The discoloration usually disappears with the termination of the pregnancy or the cure of the disease, but is sometimes persistent.

The pigmentation may be temporarily removed by the methods recommended for the removal of freckles, but it will return unless the cause is removed.

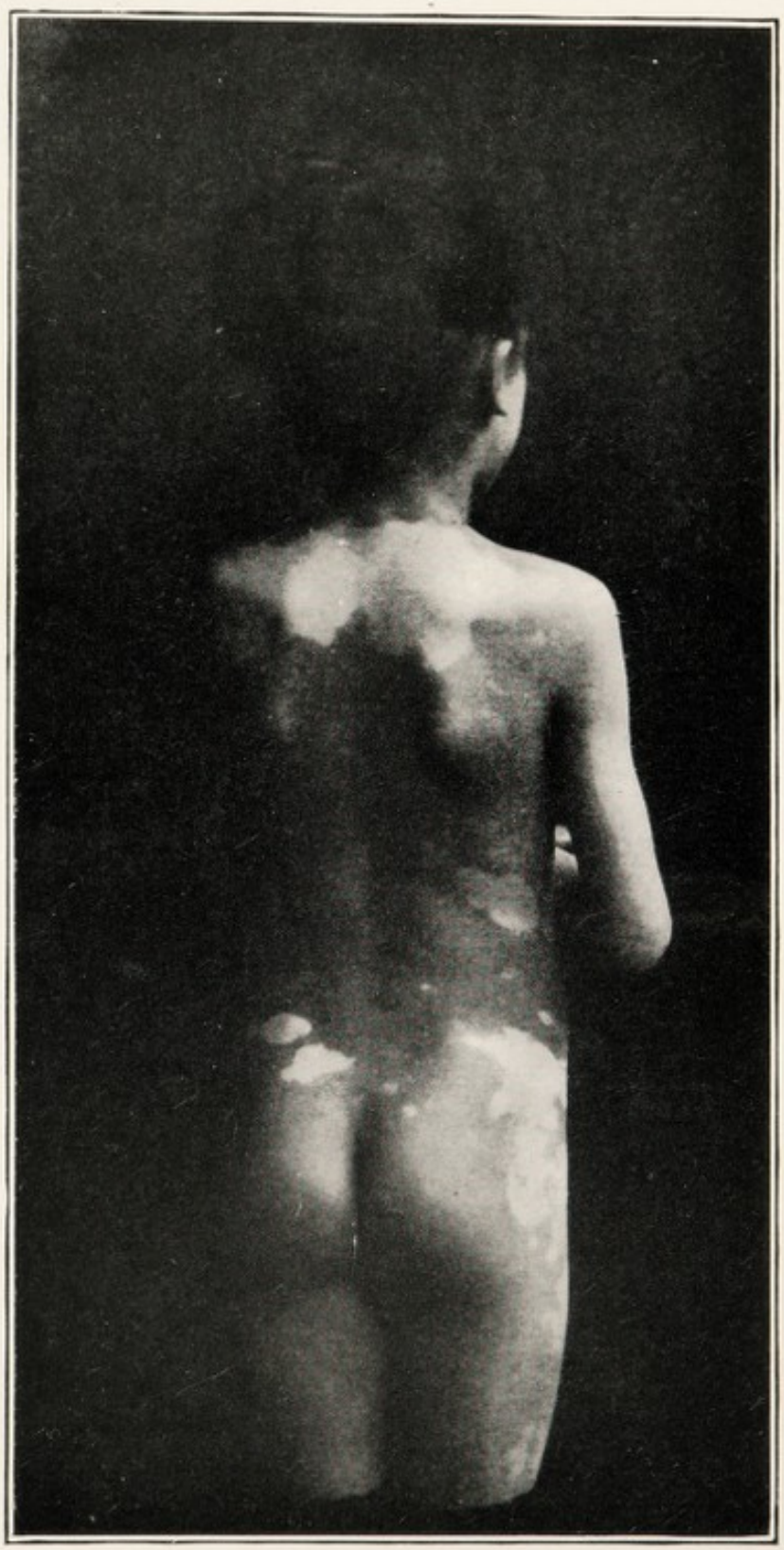
VITILIGO OR LEUCODERMA

(*Vitulus—a calf* [*spotted ?*], *or vitium—a defect*; *λευκὸς white, and δέρμα—the skin*)

In this disease the disappearance of pigment from the skin and the hair on it is the *only* anomaly present.

The disease commences as a small round or oval area, which increases in size, while fresh spots develop, until very large areas of the surface are entirely blanched, as shown in the Plate opposite.

Very often the skin immediately margining the patch seems more deeply pigmented than the surrounding parts, suggesting the idea that the pigment has been driven from a centre by some centrifugal force. The skin of the rest of the surface, too, often appears somewhat darker than normal, but it is doubtful whether this is not merely the effect of



Vitiligo.

contrast. Where hairy parts are affected the hair becomes white.

While the disease is much more common, as it is much more striking, in the darker races, it is far from uncommon in this country; but it often escapes notice, so slight is the contrast presented on the white skin of the Anglo-Saxon.

The disease gives rise to no symptoms, and is of purely cosmetic importance, except that it is sometimes confused by those not familiar with the diseases of the skin with the much more important scleroderma. There should be no difficulty in distinguishing the two, for while in this disease the change is *only evident to the eye*, the skin feeling perfectly normal, in scleroderma there is often hardly any change visible on inspection, and it is only when an attempt is made to pinch up the skin that the hardness is noted. Biblical allusions lead some to fear that they are suffering from leprosy, but the absence of anæsthesia is distinctive.

TREATMENT is not very satisfactory. If the patch appears on an exposed part, attempts may be made to induce a certain amount of pigmentation in the white spot by mild counter-irritation. Painting with diluted Fowler's solution has sometimes been successful in my hands. The chances of success are, however, not great, and the best prospect for the patient is that the disease will become so extensive that the whole region is affected. The connection of the suprarenal bodies with pigmentation has suggested the administration of their active principle. The little girl from whom the Plate is taken took several bottles of suprarenal tablets without any benefit. And such is my usual experience, though one lady for whom I prescribed them subsequently wrote me from India to report quite distinct improvement.

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