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RESEARCHES AND OBSERVATIONS,

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RESEARCHES AND OBSERVATIONS

ON

SCROFULOUS DISEASE

OF THE

EXTERNAL LYMPHATIC GLANDS.

With Cases,

SHOWING

ITS CONNECTION WITH PULMONARY CONSUMPTION

AND OTHER DISEASES.

BY

THOMAS BALMAN, M.D.

M.R.C.S. AND L.S.A.

ONE OF THE MEDICAL OFFICERS OF ST. ANN'S DISPENSARY, LIVERPOOL.

Morbos ex parentibus propagari in progeniem, innumeris observationibus confirmatur. VAN SWIETEN.

Silente sæpe morbo in genitore dum ex avo derivatur in nepotem. BOERHAAVE, *Aphor. de Curandis Morbis*, 1075.

LONDON:

LONGMAN, BROWN, GREEN, AND LONGMANS.

1852.

PREFACE.

THE following pages originally formed a part of a Course of Lectures on Diseases of the Absorbent Vessels and Glands, delivered at the Dispensary in the summer of 1850, and have since appeared in the columns of the London Medical Gazette. They are now submitted to the profession in a separate form. A considerable proportion of new matter has been added; some errors in the tabular arrangement have, I trust, been corrected, and the results of the whole carefully weighed, and their accuracy tested, by my more extended experience of the subject since the first outline of these investigations was first committed to print. I may be permitted, without imputation of vanity, to hope that a candid and generous public will, as a

measure of justice, allow me the credit for entertaining a zealous and sincere wish faithfully to record such facts as have been brought under my notice, even should I have failed in some instances to interpret them aright, or have seemingly deduced conclusions not exactly in accordance with other writers whose opinions are entitled to great respect. I have assumed that phthisis is an hereditary disease: the truth of this doctrine few in the present day will be disposed to deny; indeed, I regard it, with Sir James Clark, as one of the best established points in the etiology of the disease. Admitting, then, the fact that consumption, to a certain extent, is transmitted from parent to child, and from one generation to another,—if scrofula be of the same general character, or, as many suppose, identically the same disease, and differs only in the organs it usually invades, we ought to find the two diseases intimately associated together in the different branches of the same family. How far this is the case the reader will be enabled to judge, regardless of any conjectures or reflections I have thought desirable to make.

In the Appendix will be found a reprint of two interesting cases which were originally communicated to the Members of the Liverpool Medical Society at one of their meetings, and reported in the Medical Gazette, from which they were copied into several other periodicals. This circumstance, together with the very favourable way in which they were noticed by many of my professional brethren, has encouraged me to reproduce them in this place.

I have appended, also, a sketch of an improved instrument for examining the urethra in cases of stricture, which I have found useful in my own practice; and it would be a gratification to know that, if by thus bringing it more prominently before the profession, its value in enabling the surgeon to form a more accurate diagnosis—so essential to successful treatment in this as well as every other disease—should be more generally known and appreciated.

In conclusion, I have much pleasure in acknow-

ledging the assistance I have received from Mr. George Padley, Mr. J. O. Taylor, and Mr. Cattell, my colleagues, who kindly transferred to my care many very interesting cases. I am likewise deeply indebted to Drs. Brett, Inman, and Turnbull, for much useful information.

Oxford Street, Liverpool,
Jan. 1852.

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CHAPTER I.

ERRATA.

Page 20, line 16, for "circumstances," read "influences."
„ 25, „ 19, for "angle," read "angles,"—omit "of each,"—and for "bones," read "bone."
„ 41, „ 14, for "swelling," read "cavity."
„ 156, „ 7, for "fleshy," read "flabby."

speciality, and that the cases belonging to such group occurring in the practice of the other surgeons, should, as far as might be agreeable, be transferred to the care of the surgeon who had adopted this particular speciality. In this request all my colleagues readily acquiesced: hence the

RESEARCHES,

&c. &c.

CHAPTER I.

HISTOLOGY OF SCROFULOUS AFFECTIONS OF THE EXTERNAL GLANDS.

Preliminary Observations.—Very nearly three years ago, I suggested to one of my colleagues that each of the honorary surgeons to the Dispensary should be at liberty to select some particular group or class of diseases as his speciality, and that the cases belonging to such group occurring in the practice of the other surgeons, should, as far as might be agreeable, be transferred to the care of the surgeon who had adopted this particular speciality. In this request all my colleagues readily acquiesced: hence the

origin of this inquiry. To my colleagues, therefore, I am indebted for the opportunity thus afforded me of seeing and submitting to treatment a larger number of cases, embracing almost every form and variety of the scrofulous disease, than could have fallen to the lot of many other individuals under the most favourable circumstances. The plan I set out with, and which has been steadily pursued up to this time, has been to note down the particulars of each case in the following order :—

First, everything relating to the age, sex, temperament, precise form and duration of the disease, together with every external peculiarity or complication in any way worthy of notice. Secondly, every circumstance, both prior and subsequent to the first appearance of the swelling, calculated to throw any light as to the probable origin of the disease. Thirdly, the diseases that appeared the most prevalent in the family, as regards the patients' brothers and sisters, parents, their brothers and sisters: separating the members of each family under two heads, viz., the

number living, and if healthy or otherwise; the number of deaths, and the causes thereof. Lastly, I have extended these inquiries to the history of the paternal and maternal grandparents.

From information obtained in this way, have been collected together the particulars of 141 cases of scrofulous enlargement of the external lymphatic glands, the results of which I am about to submit to the notice of the profession.

An investigation of this kind may appear at first sight a very easy task, but in reality it is not so; and is due in part to the ignorance of a large class of persons who seek relief at a public dispensary, rendering them unable, if willing, to furnish the necessary information, and likewise to the fact that in a mercantile town like Liverpool, the parents and relations of such applicants are very often scattered over almost every part of the globe; and, therefore, anything like a connecting link in their family history, as regards their state of health, it would be impossible to establish. With these and many other almost insuperable

difficulties with which such an investigation is beset at its very threshold, no alternative remained but to pass them by as useless for any special statistical inquiry; otherwise I could, with much less labour, have trebled the number of cases now recorded; added to which, it must be remembered, I have in all instances confined myself to one individual symptom (for reasons presently to be stated), by which I choose to identify the disease, viz., those affected with enlarged cervical glands of at least two months' standing, carefully excluding all those cases in which such swellings appeared in any way to have arisen from other causes than the strumous taint: such, for example, as the sympathetic glandular tumours consequent upon some irritation of the scalp, painful dentition, and all other sources calculated to throw any doubt as to the diagnosis of the case.

Tumid absorbent glands of the neck have been selected as a diagnostic symptom, because such indication has been looked upon by almost every writer, from the earliest periods, as the charac-

teristic type of the disease. Abnormal deviations of many other textures, though commonly regarded as due to scrofula, might not be considered by every one as belonging to this particular catalogue of human infirmities.* Agreeing as I do in a general way with most of the latest authors on this subject, who regard scrofula as depending upon a depraved state of the whole system, most commonly manifested by the presence in some organ or texture of a special morbid product known as tuberculous matter, I know of no organ or texture in which this product is more constantly met with than in the external glands, whilst in many other complica-

* Mr. Phillips doubts the propriety of admitting fully the definition proposed. Unless, he says, (Scrofula, its Nature and Treatment, by Benjamin Phillips, F.R.S.) "the swelling of the gland be accompanied by the deposit of a product hereafter to be described, known as scrofulous matter, the proof of a scrofulous constitution is, in my judgment, wanting." (Page 27.) Notwithstanding, in his definition of cases of scrofula for the collection of his valuable statistical tables, he proposes to limit the pathognomonic signs of the disease to enlarged cervical glands discoverable by the touch or the sight, sinuses or ulcerations resulting from them, and ordinary scrofulous bones or joints.

tions—such as enlarged joints, caries, obstinate cutaneous ulcers and sores, tubercle is anything but a constant accompaniment. M. Baudelocque cites many examples of scrofulous patients who have died without having presented any appearance of tubercle, either in the progress of the disease or after death: similar instances are reported by other writers. If, therefore, we deny the essentially scrofulous character of many of these so-called glandular enlargements, because we cannot always pronounce them to be tubercular, we must, I think, for the same reason exclude white swellings of the joints, caries, ophthalmia, and other such almost universally recognised forms of struma.*

* M. Papavoine, in his excellent memoir on tuberculous diseases, gives the following as the result of fifty careful post-mortem examinations of children, made with a view of determining the relative frequency of tubercles in different organs:— In 49 instances tubercles existed in the bronchial glands, 38 in the lungs, 26 in the cervical glands, 25 in the mesenteric glands, 20 in the spleen, 17 in the pleura, 14 in the liver, 12 in the small intestines, 9 in the peritoneum, 9 in the large intestines, 5 in the brain, 3 in the cerebellum, 3 in the membranes of the brain, 3 in the pericardium, 2 in the kidneys, 1 in the pancreas, 1 in the stomach, 1 in the

From the 141 cases of external glandular scrofula, I have endeavoured to tabulate, in the following order, all the more important features of each case, so as to present, almost at a glance, an epitome of the whole. The second table, showing the relative number of cases between the ages of two and fifteen, can hardly be considered as giving a fair average, since about one-tenth of the whole number of cases were obtained from children of both sexes attending some of the national schools of this town, where, from their regulations, few remain after the age of fifteen years.

It is perhaps hardly necessary to mention, that these numerical statements can only be regarded as a very close approximation to truth, an objection which must equally apply to every investiga-

vertebræ, radius, tibia.—*Journal de Progrès des Sciences Médicales*, t. ii. p. 93. Tubercular affections of the external glands must be considered as an exception to the general law laid down by Louis, that after the age of fifteen tubercles do not present themselves in any organ without being likewise seated in the lungs.

tion having similar objects in view; but I have every reason to believe that they will be found to be as perfect, as far as they go, as they can possibly be made. In the majority of cases the information was obtained from the parents personally. When under age, or disqualified in any way from furnishing what I considered to be a correct statement, or when there appeared to be the least reason to doubt the veracity of my informants, the case was invariably laid aside.

The subject may be conveniently arranged under the following heads: —

1. The temperament most commonly prevailing in the scrofulous constitution.
2. The ages of those affected with the disease.
3. The regions of the body most frequently affected.
4. The probable causes, exciting or otherwise, of the disease.
5. The connection between scrofula and phthisis.

6. The diseases occurring in the parents and relations, some of which have been supposed to be sometimes associated with the strumous habit.

TABLE I.

Showing the relative number of persons affected with scrofula as regards sex and temperament.

	Males	per Cent.	Females.	per Cent.	Total.	per Cent.
1. Number having light hair and complexions . .	46	32·63	23	16·31	69	48·94
2. Do. having dark hair and complexions.	29	20·57	19	13·47	48	34·04
3. Do. having red or sandy hair . . .	15	10·64	9	6·38	24	17·02
	90		51		141	
	Males	per Cent.	Females.	per Cent.	Total.	per Cent.
4. Do. presenting what is commonly known as the scrofulous countenance.	27	1 9·15	6	4·25	33	23·4

a. Sex.—In the preceding table it will be ob-

served that of the 141 cases, 90 were males and 51 females; showing a much greater liability to scrofula in the male than in the female sex. This opinion is somewhat at variance with many writers of authority on this subject, and more particularly of the French school. Thus M. Le Pelletier affirms, as the result of a comparison of the cases in the Parisian hospitals, that the proportion of strumous females to males is as five to three.*

b. Temperament.—As regards temperament, it will be seen that 48 per cent. had light hair and complexions, and 34 per cent. had dark or black hair and eyes. This is explained by the fact that the larger proportion of the population in the North of England is of the fair-haired race; for if we take some other districts of England where the Celtic or dark-haired races predominate, we shall find that scrofula prevails more frequently in persons of this temperament. Of nearly 9000 scrofulous children examined by Mr. Phillips in

* Sur la Maladie Scrofuleuse.

London, a little over 32 per cent. only had light hair and eyes. The general results, therefore, on the whole, go to prove that scrofula is for the most part common alike to all temperaments.

TABLE II.

Showing the proportions affected with scrofula at different ages.

	Males.	per Cent.	Females.	per Cent.	Total.	per Cent.
1. Number affected with scrofula from 2 to 15 years of age . .	70	49·65	34	24·11	104	73·76
2. Ditto from 15 to 30 . .	18	12·76	15	10·64	33	23·40
3. Ditto from 30 and upwards . .	2	1·42	2	1·42	4	2·84
	90		51		141	

The total number of persons of both sexes affected with scrofula under 15 years of age, according to the annexed table, will probably exceed the average, from the circumstance, already mentioned at page 7, that about one-tenth of the

whole were obtained from different charitable institutions or schools, where they seldom remain except as teachers after that age. It is right further to mention another circumstance as bearing upon the foregoing statement—that, as people advance in age, the difficulty of acquiring the necessary information as regards their family history becomes much increased; and I have, in a number of instances, been compelled from this cause alone to exclude from my list a greater number of adults than children. Allowing for these circumstances, which could not have been avoided, I believe this table will be found to illustrate very closely the different periods of life at which scrofula usually prevails in the two sexes.

It will be observed that, taking the 141 cases collectively, there occurred under 15 years of age 104 instances of scrofula, or 73·77 per cent.; whilst above 15 there were only 37 instances, a little over 26·23, being in the proportion of nearly 3 to 1. Now if we trace the precise time at which the disease first showed itself, we shall find that the comparative liability of persons to scrofula at

these respective periods to be distanced still more. Thus, in the 37 cases over 15 years of age, I find there were 20 males and 17 females. In the males the disease first appeared before the age of puberty in 11 instances; in the females in 9 instances,—leaving 17 cases of scrofula in the 141 in which the disease may be said to have first manifested itself after the age of 15 years.

This table illustrates another point of some interest. On referring to the first column, it will be seen that, under 15 years of age, the number of males, compared with females, affected with scrofula, is 2 to 1; whilst after the age of 15 almost as many females as males are affected. In the one case, therefore, the average proportion of males to females is maintained; whilst in the other case the proportion is very nearly equal. It results clearly from this statement that a difference exists in the two sexes after the age of 15, as regards their liability to struma, in favour of the male sex. This, I believe, is due in great measure to the more unfavourable influence of puberty in the female constitution; whilst in the male sex

its operation is exceedingly feeble, if at all perceptible.

TABLE III.

Showing the frequency with which other regions of the body were affected with tumid scrofulous glands simultaneously with those of the neck.

	Males.	per Cent.	Females.	per Cent.	Total.	per Cent.
1. Number of cases in which the neck only was affected	76	53·90	42	29·79	118	83·69
2. Number of cases in which the neck and axilla were affected . .	7	4·96	2	1·42	9	6·38
3. Number of cases in which the neck and inguinal regions were affected . .	4	2·84	2	1·42	6	4·26
4. Number of cases in which the neck and popliteal space were affected . .	1	·70			1	·70
5. Ditto above the bend of the elbow .	2	1·42	5	35·5	7	4·97
	90		51		141	

It is generally supposed that the neck is oftener the seat of these strumous glandular swellings, from its being more exposed than other parts—as the axillary or inguinal regions—to the vicissitudes of temperature; which, no doubt, to some extent, is true. It is also maintained that the lymphatic glands of the neck are more peculiarly susceptible of being influenced sympathetically from any irritation proceeding from contiguous parts—as during the periods of primary and secondary dentition, various eruptive diseases of the scalp and other parts of the face; and that glands becoming enlarged from this cause in persons otherwise predisposed, afterwards assume the characters of strumous disease. Thompson remarks* "That these swellings of the cervical lymphatic glands occur sometimes as original idiopathic affections—at least we are unable to trace them to any morbid affections in the contiguous and communicating parts. I am, however, disposed to believe that they are truly symptomatic; or, in other words, that they arise from irritation in

* Lectures on Inflammation, p. 157.

parts not glandular in many cases in which, without due attention to the history of the disorder, we should be disposed to regard them as original and idiopathic affections; because, in inquiring into the circumstances which preceded these swellings, we not unfrequently find that some local injury or disease had actually existed, though it might have been too slight to arrest the attention of the patient at the moment of its occurrence, or too remote in point of time from the appearance of the swellings, to lead to the belief that they were connected with it. We every day see examples of this in those who are predisposed to scrofula from slight and transitory injuries, and affections of the hairy scalp, ears, eyes, nose; and most particularly from slight and transitory affections of the teeth, gums, and other parts situated within the cavity of the mouth. The decay of the first teeth is often connected with the occurrence of glandular scrofulous swellings in the neck, but their eruption seldom or never; though this eruption not unfrequently gives rise to much local irritation, to high degrees of symptomatic fever, and in some instances to fatal convulsions. The

swellings of the cervical glands seldom appear before the end of the second year, but after this period they may be readily excited in those predisposed to them by every kind of local irritation. They often succeed immediately to febrile and eruptive diseases—such as small-pox, measles, and scarlatina. In whatever way they may be induced, these swellings are accompanied by—or perhaps I should rather say they proceed from—a certain kind and degree of inflammation in the parts in which they occur."

This explanation, however, does not seem to be entirely borne out by my own observations. If these were among the most prominent causes why the glands of the neck are more frequently affected than other parts, we ought to find these characteristic swellings more generally prevalent during those periods of growth at which these various sources of irritation usually prevail, which, I believe, will commonly be found to be before the age of 10 years. This, however, is not in accordance with my own experience: for example—on re-

ferring to Table II., at page 11, it will be seen that the total number of both sexes affected with scrofulous glandular swellings under 15 years of age was 104, or 73 per cent. Of these 104 cases I find there were 62 that occurred from 10 to 15 years of age, and only 42 under 10 years of age. From this I infer that the period at which the lymphatic glands of the neck are most liable to be affected by various irritating causes proceeding from adjacent parts (under 10) is not the time at which these strumous swellings are most frequently met with.

The prevalence of scrofula so near the approach of puberty is an interesting fact, and will be more particularly dwelt on as we proceed.

The last column refers to cases in which a lymphatic gland, always found a few inches above the inner condyle of the humerus, was enlarged, or presented other evident indications of being the result of a scrofulous taint.

TABLE IV.

Showing the probable exciting causes of scrofula.

	Males.	per Cent.	Females.	per Cent.	Total.	per Cent.
1. Measles, scarlatina, hooping cough, &c. . . .	21	14·89	12	8·51	33	23·40
2. Exposure to cold and damp	13	9·22	7	4·96	20	14·18
3. causes not evident . .	53	37·59	28	19·86	81	57·45
4. Blows and other external injuries . .	1	·71	2	1·42	3	2·12
5. Syphilis .	2	1·42	2	1·42	4	2·84
Total males 90		Total fem. 51		Total M. & F.	141	

I use the term exciting cause in this instance in contra-distinction to the word predisposing, because I believe, and shall presently endeavour to prove, that scrofula is in the majority of instances an hereditary disease, and may, therefore, be transmitted from generation to generation. A person, therefore, born under such circumstances, is said to carry about with him a predisposition to become affected with scrofula. No one, however, believes for a moment that the actual disease (as we know it to

be the case in some diseases depending upon a specific poison or virus —such as syphilis) is transmitted from parent to offspring, but rather a predisposition, tendency, or diathesis, as it is sometimes called, rendering such persons, on coming iuto the world with these innate or original peculiarities, more liable than other persons, when exposed to various external influences, to manifest certain definite signs or symptoms which have been denominated scrofulous.

A person, however, may possess this predisposition without the disease ever showing itself at any period of life; or scrofula may occasionally be developed, independent of any such original peculiarity of constitution, by a great variety of external circumstances, but chiefly of a debilitating or depressing character. These have been especially dwelt on by most modern writers, and therefore need not at present detain us further.

The words Exciting Cause, heading this table, then, though strictly applicable to the former case, may (to prevent any confusion of terms) be al-

lowed equally to apply to every description of case, whether such predisposition, either hereditary or acquired, be present or not.

It is extremely difficult, as Mr. Phillips justly remarks (p. 100), "to estimate the unmixed influence of any single cause when it is made probable that many causes are in action; we can scarcely comprehend how it happens that able inquirers should mention with so much pertinacity, not alone the efficiency, but also the universality of one." Nevertheless, it does appear to me to be essential, if we are desirous of having a complete knowledge of the combined operation of the several so-called causes of scrofula, that we should first proceed step by step, examine each *seriatim*, and isolated, as it were, from the others. In this way we may eventually be enabled to estimate the true value of each, point to this or that as being feeble or energetic, occasional or frequent. Thus, by a careful analysis of this kind, we shall not only possess a more comprehensive knowledge of the whole, but likewise be better prepared to guard against some of the more prominent and efficient

causes, and thus happily prevent a disease which our art can do so little to cure. It is with a view of carrying out this principle that I have drawn up the foregoing table. It does not convey all the information I could wish, and is, moreover, necessarily confined to that particular kind of information which the opportunities at my disposal have enabled me more particularly to investigate.

I may observe that, in keeping a record of cases as they occurred in practice, I endeavoured to trace as closely as possible the exact period at which the disease first manifested itself, noting particularly the antecedent state of health, and diseases to which the individual had been more particularly subjected, the moral and physical condition of the parents, friends, or associates; together with every circumstance calculated to modify, or in any way influence, what I was led to believe to be the probable exciting cause of the disease.

I have purposely omitted many of the external causes which are well known to act most injuriously in persons predisposed or otherwise to

scrofula—such as bad air, deficient or unwholesome articles of food, defective ventilation, or deprivation of exercise. These have already been so ably discussed by Mr. Phillips as to preclude the possibility of my adding anything to what he has already recorded.

Of the causes mentioned in the first column, the most frequent appeared to be measles, terminating by a profuse catarrhal discharge from the mucous surfaces of the eyes, nose, or ears: indeed, it was a common remark of one of the parents, that their child had never enjoyed an hour's health since the measles, but had suffered from a succession of scrofulous complications, attacking one organ or texture after another; it may be external, when we have scald head, ophthalmia, otorrhœa, or some obstinate skin affection; or internal, when we find derangements of the whole digestive mucous surfaces attended with chronic diarrhœa, or that form of strumous dyspepsia so accurately described by the late Dr. Todd. And it appears somewhat remarkable,

that after the appearance of the glandular tumour we not unfrequently see many of these catarrhal symptoms cease altogether, or undergo a decided amelioration. Many cases of chronic diarrhœa, whether a sequence of measles or not, which had resisted every kind of treatment, I have known quickly arrested in this way. Chest symptoms, too, are often relieved, the appetite and digestion improved; and in fact such persons often express themselves to be in better health than they have been for some years previously.

Another frequent exciting cause of scrofula is cold, or cold combined with moisture, making, according to Table IV. 14·18 per cent., which is perhaps rather under than over what will really be found to be the average proportion of cases traceable to this cause. Here, again, it is difficult to separate the influence of temperature from vitiated and impure air, or insufficient ventilation, which M. Baudelocque would have us believe is almost the only cause of the disease. I shall, however, quote from my notes the heads of a few

cases, with a view of showing my reasons for classing cold and damp as a very frequent cause of scrofula.

Case I.—A joiner, æt. 20, residing in a healthy part of the country, states that he first noticed the swelling of his neck four months ago after getting wet in the rain two or three days in succession. He is since dead of consumption.

Case II.—A rope-maker, æt. 22, always well until about four years ago, when following his occupation happened to be exposed to a drenching rain; a few days after which some kernels in his neck first made their appearance, which eventually became very large, so as almost entirely to encircle his neck. Since dead of consumption.

Case III.—A maid servant, æt. 19, complains of a swelling on each side of her neck, close to the angle of each of the inferior maxillary bones. This she first noticed whilst living in a damp kitchen, otherwise airy and well ventilated.

CASE IV.—A boy, æt. 15, whose parents state that his complaint first appeared ten years ago, after sleeping in a damp room, the walls of which had been recently plastered with sea-sand, and therefore almost always damp. Always well before this period.

CASE V.—A married woman, æt. 32, enjoyed good health until the present attack, ten weeks since, which she believes was caused by exposure to a current of cold air from an open window whilst washing some clothing.

CASE VI.—A boy, æt. 14, always enjoyed the best of health until he first perceived a swelling in his neck, occasioned by sitting opposite a window of his school-room in which a pane of glass had accidentally been broken.

These persons had all enlarged glands of the neck, were in tolerably comfortable circumstances, well fed and clothed, and surrounded with plenty of air and light, and had never at any former period shown any symptoms of scrofula. The presump-

tive evidence, therefore, is very strong in my own mind that the causes alluded to had the greatest share in originating the disease.

Under the head of causes not evident, in the third column of the preceding Table, I have classed the largest proportion of cases, making 57 per cent. of the whole number; because in many instances the disease appeared to have come on spontaneously without any previously existing cause, whilst in others belonging to this group sufficient reasons could be adduced which in some measure admit of being thus explained. In all large mercantile towns it will be very generally found that people flock thither with various objects and expectations;—the rich and ambitious man to increase his riches, though in the majority of instances it will be found only to be first fleeced of all he is possessed; the working man to get employment; the bereaved mother in search of occupation for her fatherless children. It necessarily follows, without taking into account the uncertainty and fluctuating character of all trading pursuits, that competition of every kind is great,

and life often becomes with a great many one energetic struggle, not merely to find employment, but to secure for themselves and families the ordinary comforts and necessaries of life. Hence it is that no small proportion become steeped in the most pitiable poverty; compelled, perhaps, to abandon the comforts of a house for lodging either in the uppermost room of a house, or immured in a dark unwholesome cellar. Add to this the misery which people bring upon themselves by intemperance and various other imprudences, and we shall be enabled to form some idea of the moral and physical condition of the lower orders of people in large towns, and ample explanation of the general prevalence of scrofula and other diseases, the result of debility or defective nutrition. These are some of the reasons why I have been induced to place so large a proportion of cases under the head of causes not evident, though perhaps, on a more accurate analysis of such cases, more tangible reasons might be offered. Some, for example, attribute the origin of the disease in their family to their coming to reside in a town after having previously always lived in the coun-

try ; others to losses of property, and various deprivations consequent upon such losses. And, as I have already mentioned, the disease often appeared to have come on so slow and insidiously as not to have attracted attention until a period so remote as to make it extremely difficult to single out any specific cause which could have originated such a complaint. Sometimes we see these chronic glandular swellings in persons whose health never has been in any way impaired ; or, on the other hand, the person may be represented as having been feeble and delicate from birth,—displaying, in fact, in a marked manner, many of the characters so accurately described by writers as peculiar to the scrofulous constitution, when of hereditary origin, or surrounded by those external influences which we know are calculated to derange the nutritive functions of the system, and thus in a manner suspend or interfere with the natural harmony or regular symmetrical development of the body.

In illustration of some of the facts just now re-

lated, I may be permitted to append the following cases :—

CASE VII.—J. H., a boy, æt. 12, with dark hair and eyes, fine skin, is affected with chronic glandular swellings in different parts of his neck. Both arms are much disfigured by large elevated scaly patches of a cutaneous disease resembling psoriasis vulgaris, which has existed above six years. His father and mother are both living, the former in good health; but the latter has always been delicate and nervous, and more particularly so before the birth of this boy. She had two brothers and one sister who died of pulmonary consumption, all under forty years of age. The boy is reported to have been delicate from infancy; could not walk or stand before he was three years of age; was then affected with epileptic fits for five months; then followed measles, which left him for many months with a very obstinate form of ophthalmia, on the cessation of which his neck first became affected with kernels, and have remained, more or less, up to the present time.

His mother remarks that, as the skin disease begins to look better, or appears to be giving way, the boy always feels very unwell in himself.

Case VIII.—W. H. a boy, æt. 16, of a lymphatic temperament, with pale delicate skin, whose parents are both living and well. He had an aunt on his mother's side who died of consumption at the age of 26. Has been weak and feeble from birth; took the measles about the age of six, and the following year had scarlatina, which was followed by dropsy: some months after his recovery from the latter affection, first perceived the swelling of his neck. He subsequently took hooping-cough, which left his eyes sore for a long time. At ten years of age the swelling of his neck began to be sore and painful, and finally suppurated, and continued to discharge for upwards of twelve months, when the sores healed. At the same time other tumours appeared on the opposite side of his neck, which have continued in pretty much the same indolent state up to the time of his presenting himself at the Dispensary.

External injuries are well known to every practical surgeon as the occasional exciting cause of scrofula; though, for obvious reasons, such cases are more frequently met with in some one of the joints, and especially the knee and ankle, than in glandular structures. Wiseman gives a case in point:—"I shall give you a remarkable instance of a cook's servant in the Old Bailey, who, sleeping one summer night upon a form, his head slipping off, the one side of his neck pressed upon the end of it. When he awakened, his neck was full of struma on both sides, some as big as walnuts, others less; they were of different figures, and distinct one from another. He was frequently let blood and purged; all else was done that expert physicians and surgeons thought fit to relieve him; but the struma continued, and, after a few days, mattered and became virulent ulcers. He died tabid within half a year."*

I shall reserve what observations I have to make with respect to the connection between scrofula

* Surgical Works, p. 249.

Table V.

Showing the number of instances in which one or more deaths from phthisis occurred in the families of the 141 cases of scrofula.

	Father's side.			
Parents.	Uncles and aunts.	Grand-fathers.	Grand-mothers.	Total.
Fathers died of phthisis.	Number of families, parent's side (male), in which have been one or more deaths from phthisis.	Grand-fathers died of phthisis.	Grand-mothers died of phthisis.	
9	61	11	17	98

	Mother's side.			
Parents.	Uncles and aunts.	Grand-fathers.	Grand-mothers.	Total.
Mothers died of phthisis.	Number of families, parent's side (female), in which have been one or more deaths from phthisis.	Grand-fathers died of phthisis.	Grand mothers died of phthisis.	
11	38	9	20	78
20	99	20	37	176

until I come to speak of the rise and progress of external glandular tumours in another part of this work.

It will be observed from the preceding Table (V.) that the number of instances of consumption was somewhat greater on the father's side than on the mother's side, being 98 in the former and 78 in the latter. This difference will be seen to arise chiefly from the greater prevalence of consumption in the uncles and aunts on the father's side compared with the mother's, being in the proportion of 61 to 38.

Taking the relative number of deaths in reference to sex in the parents and grandparents only, of the 141 scrofulous individuals it will readily be seen that there were more consumptive females than males. Thus the father died of consumption in 9 instances, the mother in 11 instances ; the grandfather in 20 instances, the grandmother in 37. From this we must suppose that the predisposition to scrofula is more frequently inherited from parents and grandparents female, than male. The subjoined Table, however, shows the very reverse

of this law, as regards the liability to consumption of persons born of consumptive parents.

TABLE VI.

Showing the relative number of instances in which consumption, occurring in the grandparents, appears to have been transmitted to their immediate issue.

Grandfathers.		*Grandmothers.*	
Transmitted . .	13	Transmitted . . .	14
Not transmitted .	7	Not transmitted .	23
	20		37

Thus the grandfather transmits consumption to his sons and daughters in 13 instances, and not in 7; the grandmother in 14 instances, and not in 23. It has further been shown that the father more frequently transmits the disease to the sons, and the mother to the daughters. For information bearing upon this point I am indebted to the excellent medical report of the Hospital for Consumption at Brompton. The following is an exact transcript of the Table (No. XV. of the series, p. 21):—

"TABLE VII.

"Showing the proportion of consumptive sons and daughters to consumptive fathers and mothers respectively.

	Number of cases.	Father consump-tive.	per Cent.	Mother consump-tive.	per Cent.
Sons . .	106	63	59·4	43	40·6
Daughters	108	47	43·5	61	56·5

"Both father and mother were consumptive in the case of 12 males and 10 females. The brothers and sisters, in addition to father and mother, were consumptive in 4 males and 5 females.

"The results here shown are very remarkable: the father transmits consumptive disease to the sons in 59·4 per cent., to the daughters in only 43·5 per cent.; the mother to the sons in 40·6 per cent., but to the daughters in 56·5 per cent."

The following observations, though not clearly set forth in Table V., have been deduced from the collective series from which it was formed, and should therefore be noticed in connection with it:—

In 30 cases of the 141 scrofulous individuals there were no deaths from consumption in either parents or collateral relations.

In 60 instances consumption occurred in one branch of the family only.

In 40 instances consumption occurred in two branches of the family.

In 9 instances consumption occurred in three branches of the family.

In 1 instance in four branches.

In 1 instance in five branches.

The prevalence of consumption in the families of so large a proportion of scrofulous individuals must be regarded as extremely favourable to the views of those who contend for the absolute identity of the two diseases, and, as such, likely to originate under pretty much the same influences, and to be governed by the same laws. Thus it is that we find the two diseases intimately associated in the different branches of the same family: where consumption is rife, there assuredly will scrofula, in some of its protean forms, be found.

But there are these differences between them: scrofula is most common in early life, and may be oftener prevented, subdued, or kept, as it were, in abeyance, by a rigid observance of all those general hygienic means calculated to give strength and vigour to the body. Consumption is much less likely to be controlled by external agencies of this kind, but insidiously seizes upon organs of far greater importance in the economy, active in function, delicate in texture,—little fitted, therefore, to resist the inroads of this fell destroyer of the human race. Scrofula, then, must be looked upon, in general, as a curable disease. With consumption, this must be regarded rather as the exception than the rule; because the one is an external disease, having for its chosen seat the skin, absorbent glands, bones, or articulations, in which the progress of the disease must necessarily be slow, and therefore favourable to the elimination of the morbid product, whilst time is allowed for the application of remedies, and the use of such means as are calculated to restore the wonted energies of the system. The other (consumption) is an internal disease, and, betraying itself in the most

vital organs of the body, contaminates, as it were, at once the whole system, and progresses more rapidly to a fatal termination.

I shall conclude this part of my subject by a few examples illustrating the intimate connection existing between the two diseases in different branches of the same family, clearly showing that hereditary predisposition is the main cause of scrofula.

Case IX.—E. L., a boy, æt. 14, with red hair, blue eyes, freckled skin, countenance otherwise natural, except that his teeth are all decaying, and in a black wretched state. Complains of swellings, which have existed for nine years : first appeared without any evident cause. He has five brothers and sisters dead, and three living. Of the former, one brother died of consumption at the age of 19, and a sister at 3. Another sister died of marasmus, æt. 12 months : one was born prematurely. Of the latter, Thomas has a perpetual cough, and is otherwise very delicate ; Robert is ricketty, and a complete cripple. Elizabeth is deformed from

a distorted spine. His father died of consumption at the age of 40—had one brother, also, who died of consumption about the same age: two are affected with scrofulous swellings of the neck. His mother died of consumption, æt. 45; two of her brothers also died of consumption, one from a spinal complaint, æt. 30, and another of marasmus, æt. 25; one only survives, who is living in America. His maternal grandfather died of apoplexy, æt. 55. Grandmother died of consumption, æt. 40. Here we have consumption on both father and mother's side, and the children all scrofulous, and in a few years the race will probably become almost extinct.

Case X.—F. I., a girl, æt. 14, with dark hair aud complexion, white pasty skin, and tumid upper lip. Has had tumours on her neck for six years; they first appeared after sore eyes, succeeding measles. She suffered very much during her first dentition; was dry nursed. She had two brothers and sisters, both of whom are dead—one of consumption, æt. 7 months; the other survived only a day after birth. Her father is living,

and an exceedingly healthy-looking man, æt. 54, but he had a brother who died of consumption at the age of 30. Her mother, whom she resembles, is living, but delicate. She had one brother and two sisters, who died consumptive, all under 28 years of age. Her paternal grandmother died consumptive at the age of 30.

Case XI.—Wm. T., a boy, æt. 12, with light chesnut-coloured hair, pale, and rather emaciated, has been for many years affected with ophthalmia and enlarged glands, both in the neck and left groin; first perceived the swelling of the neck after an attack of measles about seven years ago. Auscultation reveals a swelling of considerable extent in the upper lobe of the right lung. He had only one sister, who died of scarlatina at the age of 17 months. Parents are both living, but the mother is delicate, from indigestion. His father had one sister, who died of consumption at the age of 20; nine others, however, are living, and enjoy good health. His mother had a brother and sister who died consumptive, one at 19, the other at 23. The former had swellings of his neck at the age of

14, which continued four years, and only left him a few months before his death. His paternal grandparents both lived to advanced ages, but his maternal grandmother died consumptive at the age of 37 years.

In this instance we have scrofula and consumption on one side, and consumption on the other; entailing, as we should naturally expect, a scrofulous and consumptive progeny.

Case XII.—J. P., a girl, æt. 9, with dark hair and complexion: looks thin and rather pale; has suffered from indurated glands and ulcers of the neck for three years. She has also a suppurating wound a little above the right internal condyle of the humerus. Her disease first showed itself after a severe attack of varicella. She had thirteen brothers and sisters, nine of whom are dead: all died under five years of age from various complaints, mostly peculiar to childhood. Of those living, one has tumours in her neck, and another sister superficial caries of the lower jaw. Her father is living, and a remarkably strong, fine-looking man,

but he had two brothers who died consumptive—one at the age of 30, the other at 32 years. Her mother is living, æt. 52, but has been delicate, principally from weak digestion, since the birth of her first child. She had one brother, who died consumptive at the age of 24. Her paternal grandfather, who lived to the age of 70, had swellings in his neck when young, which people pronounced to be the king's evil.

Case XIII.—D. A., a boy, æt 14, is affected with large glandular swellings on each side of his neck, and pustular ophthalmia affecting the cornea, from which he has very nearly lost the sight of the left eye. His disease appeared spontaneously about five years ago. He had five brothers and sisters, three of whom are dead: one of them died of marasmus, æt. 6 months; another survived only a few hours after birth. Of those living, one is at present a patient at the Dispensary, on account of ophthalmia. His father is living and well; likewise his brothers and sisters. His mother died of consumption at the age of 29, six months after her confinement. She had five brothers and sisters,

who died consumptive between the ages of 19 and 30: one of the five, James, whom this boy resembles, had swellings of his neck precisely similar until his death at the age of 20. His maternal grandmother died of consumption at the age of 45; she was likewise troubled with sore eyes.

Case XIV.—M. S., a maid-servant, æt. 33, of a lymphatic temperament, appears strong and in good health; complains of a swelling on the right side of her neck and left axilla; the former has existed five years: cannot account for its appearance. She has previously suffered from similar swellings, which have always soon got well after suppurating. Had two sisters, who died consumptive, one at the age of 21, the other 18; her father died of apoplexy, æt. 63; was an only child; her mother died consumptive at the age of 35, a few months after her confinement; was also an only child; she knows nothing of her grandparents, who have been dead many years.

Case XV.—In the following case both parents and grandparents were free from any trace of

tuberculous disease, but the taint, nevertheless, was present in the family of the latter :—S. H., a single woman, æt. 22, with red hair, blue eyes, and pale leuco-phlegmatic countenance, has been affected with indurated cervical glands for eight months: cannot account for their appearance. She had ten brothers and sisters, six of whom are dead—three were born prematurely ; one died of hydrocephalus, æt. 3 ; another died of consumption, æt. 8, had kernels in neck for two years ; those living are all well. Her father died of apoplexy, æt. 52 ; has one brother who has lost the use of the left arm from the same cause. The family on the mother's side are all healthy—her paternal grandfather died of diabetes, æt. 70 ; he had two sisters, who died consumptive, one æt. 35, the other æt. 28.

The preceding cases, taken in connexion with the fact deduced from Table V., illustrate very forcibly the frequent tubercular origin of scrofula. 1st. By the existence of consumption in the parents or progenitors of the scrofulous individual. 2nd. By the coexistence of the two

diseases in the brothers and sisters and antecedent branches of the same family stock.

I may also add, that the foregoing cases lend some countenance to the opinions urged more particularly by M. Lugol,* which have been thought in this country too highly coloured by this gentleman: I allude to the feebleness and high mortality among children born of tubercular parents. It is not an easy matter to determine with any degree of accuracy the previous existence of scrofula in the parents or relations, in a sufficient number of cases to justify one's forming any very satisfactory conclusions. A person, for example, may have had the lymphatic glands enlarged from a strumous taint in early life, and afterwards disappeared without attracting any particular attention. Again, scrofulous disease of the joints, caries, rickets, and such analogous affections, are but imperfectly understood by unprofessional people. Any inquiry of

* Researches on the Causes of Scrofulous Diseases. By J. G. Lugol. Translated by W. H. Ranking, M.D., Cantab.

this kind must, I conceive, be on this account more or less conjectural. The following are, therefore, submitted from my notes, without wishing to insist very strongly as to their value. In 41 instances scrofula appears to have manifested itself in one or more of the brothers and sisters; in 15 instances in the parents, and in 10 instances in the grandparents.

TABLE VIII.

Showing the number of deaths from other diseases in parents and grandparents in the 141 cases, some of which have been supposed to be sometimes associated with the scrofulous constitution.

	Parents.		Grandparents.		Total.
	Males.	Females.	Males.	Females.	
1. Deaths from Apoplexy or Paralysis and Epilepsy . .	5	1	13	8	27
2. Insanity	—	—	6	1	7
3. Cancer .	1	—	—	5	6
4. Stone .	—	—	3	—	3
5. Asiatic Cholera .	2	3	1	6	12

There are two diseases in the annexed Table extremely interesting in connection with our subject, viz., insanity and cancer: in both the mortality will probably exceed the average, though more particularly so as regards insanity. In the Registrar-General's Report for 1845, the total deaths of males from all causes in London in 52 weeks were 24,496, of which 35 are stated to have been caused by insanity—being ·14 per cent., or the small fractional part of one-seventh of 1 per cent.; whilst in the preceding Table the number of deaths from this cause in the grandparents, male, in the 141 cases, were 6; being 4·25, say four and a quarter per cent.* The difference as

* The frequent occurrence of phthisis among the insane has been particularly mentioned by M. Esquirol:—"La phthisie qui complique la folie, et plus particulièrement la lypémanie, a été observée par Mead et Lorry. J'ai vu un grand nombre de fois la phthisie précédée de plusieurs mois la lypémanie, et même la manie, ou se déclarer en même temps qu'elle. Ces phthisies échappent à l'observation la plus attentive; les malades s'affaiblissent, tombent dans le marasme et la fièvre lente; quelquefois avec toux, devoiement; ils s'éteignent; le délire, loin de cesser, augmente jusqu'à la fin. A l'ouverture des corps, on trouve les poumons tuberculeux, suppurés quelquefois avec des vomiques; la mélanose des poumons n'est pas

regards cancer is not so considerable, being only one and a quarter per cent.: for example, the total number of deaths of females in the same year, from all causes, were 23,836, of which 535 are recorded under the head of cancer, making 2·24 per cent., or very nearly two and a quarter per cent., whilst my Table gives five deaths in grandparents, female: giving, therefore, 3·5 ; or three and half per cent.

I might have added some other diseases still more closely allied to scrofula, most of which I have repeatedly seen to coexist with or supervene upon some very manifest form of strumous disease: such, for example, are some of the more inveterate forms of skin disease,—as lepra, psoriasis, lupus, and other malignant spreading ulcers, destroying one texture after another, producing the most alarming and irremediable results. These and many other such analogous dis-

rare ; presque toujours les intestins offrent des traces d'inflammation et de gangrène, ainsi que la suppuration des cryptes de la membrane muqueuse."—Des Maladies Mentales, Tome i. p. 105.

eases, will, perhaps, eventually be found to be mere gradations of one extensive family group, struma being the original parental stem from which they are successively evolved; the whole category resulting from one long continued process of morbid assimilation and secretion, whereby the blood becomes so imperfectly vitalized and deteriorated, as, first to derange, to impair, and subsequently to pervert the natural process of textural nutrition.

Dr. Prout has endeavoured to explain the relationship between these affections, by supposing struma simply as depending upon a disorder or malassimilation of the albuminous principles alone, whilst the complications alluded to involve likewise the saccharine or gelatinous, as well as the oleaginous system. Dr. Prout observes,—"In such unfortunate complications, the tendency to evil is fearfully magnified. Indeed, the greater portion of all the most painful maladies to which humanity is liable belong to these complications. Among such complications may, for instance, be

reckoned unhealthy tumours, cancer, &c., in all their varieties, the most inveterate skin diseases, the frightful class of malignant affections which, without possessing any tendency to form diseased masses, gradually corrode and eat away the living body; also fatty tumours of various kinds, and even obesity itself—diseases many of which, as already pointed out in this volume, are indicated by the condition of the urine and its deposits, the oxalate of lime, the cystic oxide, &c., and even sugar, in certain diabetic affections."*

* Stomach and Renal Diseases, 5th edit. p. 246.

CHAPTER II.

PATHOLOGY OF SCROFULOUS AFFECTIONS OF THE GLANDULAR SYSTEM.

I SHALL divide what I have to say upon this subject under two separate heads:—1. The state of the organ in which we may or may not have deposited that peculiar morbid product known as scrofulous or tuberculous matter. 2. The humoral pathology of the disease, embracing the state of the blood and urine.

Before entering upon the different morbid changes which the absorbent glands undergo in scrofulous disease, it may be well to examine shortly the normal anatomy of these bodies, to see how far the peculiar arrangement and distribution of natural structures may help to explain some of those degenerative changes in these

organs previous to, and consequent upon, the formation of a product which most modern pathologists now consider to belong to some form of tubercular matter; this product being identically the same in the absorbent glands as in the lungs, and other highly vascular textures, wheresoever it has been found.

A lymphatic gland consists of a fine network of lymphatic vessels, which, according to Mr. Goodsir, on entering the gland, lay aside all their tunics but the internal, the epithelium of which is highly developed, having a fine network of capillary blood-vessels to supply matter for its continued renovation: the external tunic of the extra-glandular lymphatic passes on the surface to form its capsule. There are also nerves, filamentous tissue, and corpuscles similar to those found in other conglomerate glands. We have here, then, a congeries of minute vessels closely packed together into a small, flattened, bean-shaped organ (for the performance of some particular function in the animal economy, the precise nature of which appears not as yet quite

understood), especially liable to favour the delay or to retard the motion of the circulating fluids: hence the reason of the congestion and tumidity of these bodies which we occasionally see to arise from slight and almost inappreciable causes. This condition of the absorbent glands is of far more frequent occurrence in early life, and is due probably to some preternatural irritability of this system of vessels during this their period of greatest activity: it is, however, generally of no long continuance in a healthy condition of the body; whilst in persons predisposed to scrofula we may have these glands, which were before simply a little more vascular than usual, now become the receptacle for a degraded or imperfectly organised material incapable of cell-growth, and consequently insufficient to be the stimulus for its own removal, but accumulates, compresses, obstructs, and gradually destroys the texture of the whole organ, inducing in its progress that more permanent condition which we know to be the characteristic feature of strumous swellings generally. Mr. Simon has very clearly explained how the peculiar structure of glands is calculated

not only to derange, but ultimately to destroy every vestige of the organ, by comparing them with the free secreting surface of a mucous membrane: in the one case, all imperfect and unnatural products are liable to be retained and react injuriously upon the organ; whilst in the other case, all such products are immediately eliminated, and thus set free from the system. His remarks, though incidentally mentioned in connection with organs destined for the performance of very different functions, are no less applicable to our present subject. I quote from Mr. Simon's paper* :—"Inflammations of simple mucous membranes mainly evince themselves in derangements of the secreting functions; and, especially if subacute, by no means necessarily imply any submucous deposit of organisable material. The modified secretion of such a surface may be eliminated with a rapidity that renders accumulation impossible; and then (as in gleet or in ophthalmia) how little beyond a

* On Subacute Inflammation of the Kidney, Med.-Chir. Transactions, vol. xxx. p. 142.

doubtful hyperæmia would remain for the morbid anatomist! All this is notoriously true in respect of mucous membranes: it is equally true, though less notorious, in respect of the true glands, which are but processes, or convolutions of the same structure. No interstitial effusion of lymph need exist in a gland to warrant us in accounting it inflamed: its inflammation may consist simply in functional derangement, and during life may be recognised only by admixing its albuminous products with those of normal secretion.

"There is, however, a momentous difference in the two cases. The simple mucous membrane sheds from its surface whatever inflammatory secretions may be formed there; it is quit of them; they cannot react on it injuriously. But the glands have not the same facilities for eliminating morbid products: in proportion to the complexity of their structure, and to the narrowness of their canals, they must be liable to embarrassment from changes in the physical qualities of their own secretion; the delay, accumulation, and obstruent action of which, would, it is

obvious, suffice to derange the whole microcosm of the organ in which it might occur; and thus an amount of irritation, which, in a simple mucous membrane would be utterly insignificant, may, if transferred to a gland, serve to originate its complete disorganisation."

The different morbid appearances presented in tubercular degeneration of the external glands have been very carefully described by many excellent pathologists in this country; and I prefer availing myself of their researches on a subject involving so much doubt and uncertainty, rather than obtrude the comparatively few and meagre observations of my own. This arises not from any disinclination for, or the want of faith in the value of such delicate anatomical investigations, but simply and for no other reason than that the materials upon which to base such an inquiry were not at my disposal.

Dr. Abercrombie, who has very carefully examined the condition of the absorbent glands in their various stages of transformation and

decay, says* :—"In their first state of simple enlargement, these glands present, when cut into, a pale flesh colour, and a uniform soft fleshy texture. As the disease advances, the texture becomes firmer, and the colour rather paler. In what may be considered as the next stage, we observe portions that have lost the flesh-colour, and have acquired a kind of semitransparency, and a texture approaching to that of soft cartilage. While these changes are going on, we generally observe in other specimens the commencement of the opake white structure, which seems to be the last step in these morbid changes, and is strictly analogous in its appearance and properties to the white tubercle of the lungs. In a mass of considerable size, we can sometimes observe all these structures often in alternate strata; some of the strata being composed of the opake white matter, others presenting the semi-pellucid appearance; while in other parts of the same mass we find portions which retain the fleshy appearance. In the most advanced stage,

* Medico-Chirurgical Transactions, Edin. vol. i.

the opake white or ash-coloured tubercular matter is the most abundant; and this afterwards appears to be gradually softened, until it degenerates into the soft cheesy matter, or ill-conditioned suppuration, so familiar to us in affections of this nature."

Mr. Dalrymple's microscopic description of one of these enlarged glands seems to prove the very frequent inflammatory origin of the disease, by pointing out the existence of exudation-corpuscles before any scrofulous matter is deposited. The following remarks are contained in Mr. Phillips's work (page 46):—"This enlarged gland, says Mr. Dalrymple, appears to consist of a general parenchyma in a state of chronic inflammation, surrounding irregular masses of yellowish white matter, more immediately the subject of examination. In direct proximity to the edges of this white material, the blood-vessels are seen to be more enlarged and congested than elsewhere; and in some parts the capillaries are occluded with coagulated blood. The parenchyma, which at first sight appears

healthy, is, on examination with high powers, found to be infiltrated with exudation-corpuscles resembling lymph-globules. The natural texture of the gland consists of its proper corpuscles, filamentous tissue, blood-vessels, lymphatics, and nerves. In this morbid specimen everywhere is the filamentous tissue infiltrated, and its fibres separated by innumerable exudation-corpuscles, and the proper corpuscles of the gland are similarly surrounded and imbedded. As the parenchyma is nearer to the white, so, proportionally, do the proper corpuscles of the gland become more indistinct; the filamentous tissue more obscure; the blood-vessels irregularly dilated, and filled with red globules, and they at last disappear insensibly. The exudation-corpuscles are more numerous, but irregular in size and shape, and interspersed with minutely granular matter."

Dr. Glover remarks* :—"We may assume,—the true explanation of the deposit of tuberculous

* Pathology and Treatment of Scrofula, p. 33.

matter in a gland, as far as the vascularity is concerned, to be this :—In the first place, the gland becomes hypertrophied and swollen—a state in which we have often found the lymphatic glands. After this the tubercular infiltration takes place, not uniformly over the whole surface of the gland, but in rings and patches, answering probably somewhat to the bundles of vessels of which the ultimate tissue of lymphatic glands consists. The deposits increase ; and, as they extend, the normal vascular structure of the gland is gradually obliterated, Nevertheless, the glands may, and frequently do, remain in the apparently complete granular yellow stage of the tuberculization, with their vessels permeable to a very considerable extent." I have occasionally met with round concrete masses of tubercle in the interior of the gland enveloped in a thin pellucid cyst, the more fluid or animal portions having been absorbed, leaving little else than a putty calcareous substance of phosphate of lime. In such cases I believe the disease may remain quiescent for years, the new organised cyst or covering appearing to remove it from the in-

fluence of the neighbouring textures, thereby preventing in some measure that irritating action which seems to be the chief reason why subacute inflammation is so commonly set up in the vicinity of the morbid product, the tendency of which must be to accelerate the destruction of the organ.

Mr. Phillips ingeniously asks,—"Is this state of the gland characterised in most cases by a considerable increase of volume, density, and vascularity, determined by the circulation within it of blood which has undergone a change, or is it independent of the blood? Does the blood fit the organ to receive the deposit, or does the organ fit itself?" It is probable that each of these causes may in turn contribute to bring about the first development of the disease: for example, we see scrofulous enlargement of the cervical glands produced by purely local causes in persons when the diathesis or predisposition to the disease exists,—as when it follows blows or other injuries, exposure to cold, currents of air, &c.,* or from

* This is probably the reason why this affection is not unfrequent among washerwomen, cooks, and other domestic

irritation proceeding from some adjacent part. The glands here swell and become painful, as in other injured structures; but in place of passing through the different stages of healthy or acute inflammation, the exuded plasma has a tendency to degenerate into a low, lifeless, withered material, which we have seen to be the condition of the organ in the more advanced progress of tubercular disease. In other cases, the enlargement may, at the onset, be in a great measure due to the delay consequent upon some abnormal condition of its own lymph. That the mesenteric glands become tumid and diseased by the contact of a depraved or vitiated state of the chyle in ill-fed children, appears very generally admitted; and it appears to me no less probable that the lymphatic glands sometimes become embarrassed by the accumulation and blocking up of the delicate tubules of the gland by stagnant lymph.

servants, who are exposed to the heat of large fires, or enveloped in steam, and thus rendered more susceptible of taking cold, particularly in parts so constantly exposed as the neck.

The effect of this functional derangement would be thickening and engorgement of the cellular structures binding these tubes together, with a greater or less amount of hindrance to the circulation of blood throughout the entire organ: in fact, we might expect to find precisely the same structural changes as in the former case. But whatever is the first link in the chain of morbid action, it appears very certain that increased vascularity of the medullary structure of the gland is very constantly met with in the earlier stages of the disease, and that most of the subsequent pathological changes are in a great measure due to the disintegration or decay of the exuded plasma resulting from this impeded movement of the blood in the capillary vessels. Dr. Abercrombie, in the paper before alluded to, believes that the morbid product found in these scrofulous tumours consists of albumen, and is deposited directly from the blood; and he adduces some chemical experiments in support of his statement, which, as they accord with some of the most recent views regarding the formation of tubercle,—I allude to

the opinions of Alison, Andral, and C. J. B. Williams,—I shall quote :—

"When a gland in the first state of enlargement, presenting the soft, fleshy appearance, is plunged into boiling water, it instantly contracts considerably in its dimensions, its texture becomes much firmer, and the colour changes from the flesh-colour to an opake white or ash-colour. By boiling for a short time, it loses a great part of its weight; but a residuum is left, which has increased much in firmness during the boiling, has lost entirely the flesh-colour, and exhibits the appearance, consistence, and properties of coagulated albumen. The part that is lost seems to consist partly of water, but chiefly of the muco-extractive matter; sometimes, but not always, there is a mixture of gelatine, and in some specimens the coagulated part gave traces of fibrine, but in small quantity. The proportions of these ingredients varied exceedingly in different specimens, and apparently in different periods of the disease. In the softest in which I had occasion to examine glands considerably enlarged, they lost by boiling

about five-sixths of their weight; the remaining part, or one-sixth, being a firm mass, with the appearance of the firm white tubercle, and the properties of coagulated albumen. Glands examined in what appeared to be a more advanced period of the disease, lost, by boiling, a smaller proportion, perhaps from two-thirds to a half. Portions in the semi-transparent cartilaginous state lost about a fourth, leaving three-fourths of their weight in the same state of firm opake albuminous coagulum. The white opake tubercular matter lost a still smaller proportion, perhaps a sixth; and when this could be procured in its dense and uniform state, and detached from any mixture of the other structures, portions could be found which scarcely lost anything in boiling, but seemed to consist almost entirely of a firm white substance, with all the properties of coagulated albumen. The specimens examined in these last experiments exhibited the usual appearance of the white or ash-coloured tubercle; and the same results were obtained from an examination of the white tubercle of the lungs, the tubercular disease of the bronchial glands, from tubercles of

the liver, certain tumours of the brain, and from similar diseased masses in other situations."

"It is not easy to ascertain the properties of the mesenteric or lymphatic glands in their healthy state, on account of the smallness of their size; but in some of the smallest that I could distinctly separate, and which appeared to be very little removed from the healthy state, I did not discover any trace of albumen. They were nearly soluble in boiling water, leaving only a small residuum of a brownish friable matter, which crumbled when rubbed between the fingers. The dissolved part consisted chiefly of gelatine."

State of the Blood.—Much attention has recently been paid by pathologists to the state of the blood in tubercular diseases; but, as yet, neither the chemical analysis nor microscopic examination of this fluid has contributed much that can be said to explain many of the remarkable phenomena attending it. All writers agree that the red corpuscles are diminished in quantity, and the serous and watery parts of the blood corre-

spondingly increased, without the fibrine undergoing any very perceptible change. The blood, therefore, seems somewhat analogous to the condition of this fluid observed in chlorosis and other anæmic diseases,—with this difference, that the red corpuscles never descend so low in any form of tuberculosis as in the former case; and, further, that the proportion of albumen is always much greater in tubercular affections.

MM. Becquerel and Rodier, and Mr. Phillips, found the saline matters of the blood increased. In 67 cases examined by the latter, the proportion of salts in almost every instance exceeded the healthy standard; in some instances it was nearly double. Glover and Nicholson, on the contrary, found the salts nearly normal,—oftener below than above the healthy state.

I have submitted to microscopic examination, in a considerable number of instances, blood taken from persons affected with indurated cervical glands,—sometimes with ulcers and cicatrices at the same time; and the only deviation from the

healthy condition which I have been able to make out, has been an unusual increase of the normal colourless corpuscles. I have very frequently counted as many as 60 and 80 in the field with a 1-4th of an inch object-glass,* whilst ordinarily only five or six are observable. They appeared very variable in size; some being less than half the size of the coloured corpuscles, whilst the majority exceeded the blood-discs in diameter. Dr. Bennett† has drawn attention to similar appearances occasionally presented by the blood, which he, however, endeavours to associate with enlargement of the spleen. This very accurate microscopic observer, moreover, believes that the appearances which he has noticed were due, not to any increase in the normal white globules, but to the admixture of pus corpuscles. I thought it indeed very probable at first that the phenomenon, in my own cases particularly,—as many of the persons examined had open suppurating sores in the neck or other parts of the body,—might likewise have been due to the same cause;

* Powell and Lealand's.

† Edinb. Monthly Journal, vol. xii. art. Leucocythemia, or White-Cell Blood.

but repeated observations have convinced me that the appearances were not, in my cases, caused by any accidental contamination of the blood with purulent matter. Thus, on placing under a microscope, side by side, between two slips of glass, a drop of blood containing a large number of these colourless corpuscles, and a drop of healthy pus, then allowing a little dilute acetic acid gradually to insinuate itself, the difference will appear sufficiently characteristic. In both, the cell-wall is dissolved, bringing into view two, more commonly three, nuclei: but in the one case the nuclei are round or globular in figure, with a well-defined border or edge, occasionally disclosing a central spot or nucleolus; in the other case the nuclei are much larger, more irregular, and somewhat oval in form, without the well-defined edge of the pus nucleus. Sometimes they appear somewhat of a crescentic form.

I have not observed any of these deviations in the form of the red corpuscles of the blood,—such as the irregular, notched, or wheel-shaped appearance, described by M. Dubois d'Amiens, unless

the blood had been previously mixed with some reagent, as a weak saline solution, which will very frequently produce this wrinkled and notched outline of the red corpuscles simply from exosmosis.

There has always appeared to me a very marked difference in the behaviour of the red and colourless corpuscles, both out of the body, as well as whilst circulating in the vessels. Mr. Wharton Jones has particularly pointed out this fact in the capillaries of the web of the frog's foot. The red corpuscles are observed to move on in the middle of the stream with great rapidity, whilst the white globules approach more nearly the sides of the vessels, and roll slowly and sluggishly onwards, and sometimes actually become stagnant. This accumulation of the colourless corpuscles next the walls of the vessels, and slow movement, is owing to the strong tendency they have to adhere to the sides of the vessels. This phenomenon is equally conspicuous out of the vessels, as may be seen by placing a drop of fluid blood, taken from a pricked finger and placed under a microscope, then bringing a drop of water in contact with the

sides of the glasses, when instantly we see the red corpuscles carried rapidly away, whilst the colourless globules may be seen like so many glistening points adhering firmly to the sides of the glasses. Again, we do not observe those physical changes taking place in the white, which are noticed so constantly in the red corpuscles. One may, for example, frequently see the red corpuscles to become wrinkled, elongated, and assume a perfect linear form; in consequence they are enabled to thread their way through various obstacles which might otherwise be a barrier to their further progress. The white corpuscles undergo no such change of form; nor do they range themselves in files or meshes, as do the red globules, but remain either isolated in the field or collected two or three together between the meshes of the latter. These distinctive characters have always appeared to me to be opposed to the doctrine of those physiologists who suppose that the white corpuscles are but the rudimentary condition of the red or coloured globules.

Urine.—I have examined the urine in thirty-

two well-marked cases of strumous glandular enlargement of the cervical glands. The specimens brought me were generally of a pale amber colour, perfectly transparent, and deposited on standing only a very light filmy sediment. Occasionally, however, it was observed to be turbid from excess of urates. The specific gravity averaged about 1·012.* As a rule, it was acid, rather more weakly than usual: in two instances it was neutral to the blue litmus paper. It had often a strong odour of cod-liver oil in cases where this medicine had been taken for any length of time.

* M. Becquerel gives the following results from an analysis of this fluid in 72 young girls affected with scrofulous diseases, from the age of 3 to 14 years:—He found some difference between the urine of those who were much debilitated by severe complications, and the urine of those, on the contrary, who retained as nearly as possible their usual strength and appearance. The urine of the first was anæmic, of low specific gravity—about 1·010: it was generally very pale, and occasionally contained a little albumen, though there was no other indication of their labouring under Bright's disease of the kidney. The urine of the second class resembled often very much the characters of febrile urine,—diminution in quantity, higher specific gravity, deeper in colour, strongly acid, and deposited frequently a sediment of uric acid.—Séméiotique des Urines, p. 302.

In two instances the urine appeared turbid, from containing oil-globules of some kind floating on the surface of the liquid.

In considerably more than half of these cases—nineteen out of the thirty-two—I found, by microscopic examination, octohedral crystals of the oxalate of lime: in ten instances the oxalates were very abundant. In the remaining nine specimens the oxalates were fewer, the crystals smaller, and not so easily recognised, though quite distinct when carefully examined. In two instances I failed to detect them until the urine had been concentrated by heat, when they were immediately visible in tolerably large numbers. The average specific gravity of the urine containing the oxalates was about 1·020. In one case it was lower than I have found it in any other instance—viz., 1·005. It was generally of a pale amber colour, seldom turbid: on being allowed to stand in a tall glass vessel, a delicate cloud seemed to remain diffused through the liquid for a considerable time without falling to the bottom. This arises, as Dr. Golding Bird has stated, from the oxalates being

about the same specific gravity as the urine. Three of the specimens exhibited traces of albumen by the usual tests; and twice the crystals appeared masked by an excess of square and cylindrical-shaped crystals of uric acid, as, on the addition of a drop of liquor potassa, the latter immediately disappeared, bringing the oxalates very beautifully into view. In no instance did there appear to be an excess of phosphates in combination with the oxalate of lime.

In the thirteen specimens in which the oxalates were not observed after the most careful examination, I found there were four in which the phosphates were in excess, the liquid being rendered distinctly turbid by heat, which turbidity was removed by nitric acid. Two were specimens of urine obtained from persons who had very large glandular swellings, but in whom the exciting cause had clearly been syphilis. Two were cases where the cervical glands had suppurated, and were rapidly cicatrizing; leaving five cases in which the disease was present without the urine exhibiting any traces of the oxalate of lime.

These observations were made in the early part of last year (1850). Since that period, I have continued these investigations, in order to ascertain the comparative frequency of this salt in other diseases, and thereby to some extent test its value as a pathological indication of the strumous habit referred to. With this object, I have examined specimens of urine in a great variety of diseases; the majority from persons applying indiscriminately to the Dispensary; others from the wards of the Liverpool Royal Infirmary — patients of Drs. Dickenson and Turnbull, who were so obliging as to assist me in procuring specimens for examination in every possible way.

The number of cases of which I have specially recorded notes in this series amounts to 140; of these, 23 were well-marked instances of strumous glandular swellings of the neck. They are classed in the following order:—

	No. of specimens examined.	Total do. containing oxalate of lime.	Oxalate of lime unmixed with any other deposit.	Oxalate of lime and lithates.	Oxalate of lime and phosphates.	Percentage of oxalate of lime in cases examined.
Bronchitis .	5	2	—	2	—	40
Phthisis . .	21	10	5	4	1	47·61
Rheumatism	8	1	—	1	—	12·5
Organic lesions of the nervous system . . .	7	2	1	1	—	28·57
Stomach affections .	18	6	3	3	—	33·33
Bright's disease . .	3	—	—	—	—	
Affections of the skin .	12	8	4	4	—	66·66
Secondary syphilis . .	10	3	—	3	—	30
Rickets and scrofulous disease of joints . .	11	4	—	3	1	36·36
Cases not referable to any of the above . .	22	9	3	5	1	40·9
Scrofulous	117	45	16	26	3	38·46
gland cases .	23	17	10	6	1	73·91
	140	62	26	32	4	

The relative proportion of instances in which oxalate of lime was found mixed and unmixed with lithates will stand thus :—

The 117 cases taken collectively.		Scrofulous Gland cases.	
Oxalate of lime unmixed	45 give 16, equal to 35·5 per cent.	Oxalate of lime unmixed	17 give 10, equal to 58·8 per cent.
Oxalate of lime with lithates	45 give 26, equal to 57·7 per cent.	Oxalate of lime with lithates	17 give 6, equal to 35·29 per cent.

By the above it will be seen that, taking the 117 cases together, oxalate of lime is found in the urine in 45, or about 38 per cent. In the scrofulous gland cases the proportion is 17 in 23, or 74 per cent. There is one group of cases in which the oxalates appear to be very generally met with: I allude to skin affections, amounting to 66 per cent. Of these, 4 were cases of impetigo, in all of which this salt was detected in considerable quantity; 5 were cases of psoriasis, in which it also appears not uncommon. In secondary syphilis I only found it in the more inveterate forms of the disease, characterized by deep ulceration of the palate and soft parts of the throat.

In stomach affections my observations do not show any unusual frequency of the oxalates; and, indeed, I failed to detect this salt at all in a great

majority of those severe dyspeptic cases with which it has been, by other writers, so commonly associated.

In diseases of the bones and joints regarded as scrofulous, the oxalates are very frequently replaced by earthy phosphates. In four cases of rickets this was very remarkably exemplified; abundance of beautiful prismatic crystals of the ammoniaco-magnesian phosphates, hardly requiring the aid of a microscope, being found in each of the specimens.

This leads me to notice one or two interesting facts regarding the disappearance of oxalate of lime in phosphatic urine, which I do not recollect noticing elsewhere. I have already mentioned that a large proportion of the specimens in which oxalate of lime was absent from the urine were precisely those in which the alkaline or earthy phosphates were in excess. Now on referring to the preceding Table, it will readily be seen that, in the 140 specimens, the oxalate of lime was

mixed only in four instances with an excess of phosphates; once only with a distinct sediment of prismatic crystals; and three times with a probable excess, as indicated by heat, and its resolution by nitric acid. Now, on examining the first specimen the following day very carefully, I failed to detect a single crystal of the oxalate of lime. Having some other specimens of oxalic urine at hand, that had been standiug for some time, I remarked that in those which had become putrescent, and deposited phosphates, that the oxalates had likewise disappeared. To satisfy myself of the truth of this phenomenon, I procured two specimens of urine passed by different persons the preceding night, —one containing octohedral crystals of oxalate of lime in considerable quantity, unmixed with any other deposit, and strongly acid to the blue litmus paper; the other alkaline, and depositing prismatic crystals of the triple phosphates. On mixing the sediments in about equal proportions, I found that, after standing for forty-eight hours, the oxalates disappeared, and the phosphatic

crystals assumed a beautiful feathery appearance, in place of the prismatic form. I have repeated this experiment several times, and almost uniformly with the same results.

I have not observed the same thing to happen in urine holding phosphates in solution, nor so constantly when depositing the peculiar basic star-shaped crystals. In a few instances I have observed the oxalates to disappear in urine, neither alkaline nor phosphatic, in a much shorter time—six to eight hours; but the exact circumstances in which this happens I have not been able to determine. This, however, I have reason to believe, is of no frequent occurrence, as commonly this salt remains for months in the same urine when unmixed with any other deposit; the liquid still retaining the urinous smell, without the least sign of putrescency. This may not be alone peculiar to oxalic urine; but I do not recollect to have noticed the same thing in specimens not containing this salt.

We have seen that oxalate of lime is rarely

found in phosphatic urine, and my observations further go to show that the one diathesis does not succeed the other. The phosphatic may follow the oxalic diathesis. The converse does not seem to happen in a general way—that is, oxalate of lime, as a constituent, very seldom alternates directly in urine frequently abounding with earthy phosphates; and here I wish to be understood as speaking of something like a permanent condition, as I am quite satisfied that many temporary variations, depending upon a variety of circumstances, may occur at different periods of the same day; and so far my experience accords with the very elaborate researches of Dr. Bence Jones, who, I believe, was the first to point out these temporary changes in the different constituents of the urine, more particularly as regards quantity and acidity, which he believes are chiefly regulated by the amount and kind of food taken, as well as exercise before and after meals.* In scrofulous tumours of the neck, I have generally

* Lectures on Animal Chemistry, Lancet, Lect. V. vol. i. for 1850.

found the oxalate of lime, when present in any quantity, to persist in the urine for months together, until the health perhaps has become so deteriorated, and the powers of the system so reduced, that the earthy phosphates become of no unfrequent occurrence in this secretion : the oxalate of lime is then seldom met with, and rarely directly follows it. For example, one day a specimen may show a well-marked instance of the earthy phosphates ; the next or following day, by procuring the urine passed separately by the same person, at night and first thing in the morning,—the former, for instance, may be quite free from all traces of oxalates, or any other sediment, whilst the latter will show oxalate of lime and lithates associated together. Oxalate of lime, therefore, seems to succeed the phosphates only by the intervention of lithates. Dr. Prout arrived at much the same conclusions when he wrote the following :—

" The oxalate of lime diathesis is preceded and followed by the lithic acid diathesis,—a circumstance which seems peculiar to these two forms of

deposit; and, when taken in conjunction with the other circumstances already related, appears to show that they are of the same general nature; or, in other words, that the oxalic acid merely takes the place, as it were, of the lithic acid, and, by combining with the lime naturally existing in the urine, forms the concretion in question."*

That these two deposits are frequently met with together in a great variety of diseases, the foregoing table, framed with some degree of care, abundantly testifies. It also illustrates one other point to which I wish to draw attention—viz., the comparative frequency of oxalate of lime as a constituent of the urine in the respective diseases mentioned, as well as the particular deposit with which it is commonly associated. On comparing together the 117 general cases collectively with the 23 strumous gland cases, a striking difference will be observable in each of these respects. In the former, for instance, the oxalate of lime is unmixed with any other deposit in 35 per cent.

* Stomach and Urinary Diseases, 2d edit. p. 159.

of the specimens; mixed with lithates in 57 per cent.; whilst in the latter we have almost the reverse—unmixed, 59 per cent.; mixed with lithates, 35 per cent. In the one case, so far as my observations have gone, the oxalate of lime may appear and disappear with the lithates, or be of no long continuance in the urine; whilst in the other (scrofulous gland cases) it is, so to speak, permanent—that is, continuing for weeks, or more commonly months, uninfluenced by diet or medicines of any kind. This appears to me an important distinction, the truth of which I have confirmed by careful and repeated examination of the urine, from time to time, of persons labouring under this troublesome disease. They have been desired to abstain from sugar, and every other dietetic substance likely to be converted into oxalic acid during the primary assimilative process of digestion, without any marked effect. Nitro-muriatic acid, given for a considerable time, had only the effect of throwing down a sediment of lithic acid, without producing any decided change in the quantity or persistence of this salt, at whatever period of the day it was

examined. As a rule, I may state—for I invariably procured two specimens, one passed at night, the other in the morning—the oxalates were always more abundant in the former, *urina chyli*, than in the latter, *urina sanguinis*.

Most of the cases of this disease are generally so tedious and protracted that a sufficient number of cases have not yet fallen under my notice to enable me to say positively that this salt disappears from the urine *pari passu* with the subsidence or removal of the enlargement; but in those cases that I have seen where the disease had got well, and the general health improved, the urine no longer exhibited any traces of the oxalates.

CHAPTER III.

SYMPTOMS, PROGRESS, DURATION, AND VARIETIES OF SCROFULOUS TUMOURS.

Recapitulation.—Before proceeding with the subject of the present chapter, it may be desirable to recapitulate very briefly some of the results arrived at in the preceding pages. These may be summed up in a few words.

1st. That scrofula is for the most part common alike to all temperaments.

2d. That the form of scrofula to which I have more particularly directed my attention, characterised by tumidity of the cervical glands, is a disease almost peculiar to youth; the largest number of cases occurring under the age of fifteen, gradually diminishing up to thirty, after which its

appearance for the first time may be considered as comparatively rare.

3rd. That in 83 per cent. of the cases examined, the glands of the neck only were affected; next in frequency the axilla, inguinal regions, internal part of the arm, and popliteal space.

4th. That the exciting cause in rather more than half the number of cases was wanting; but that in a considerable proportion this could be traced to some of the febrile and eruptive diseases of childhood, such as small-pox, measles, or scarlatina, and to exposure to cold and damp.

5th. That the issue of phthisical parents are more susceptible of the disease than persons whose families or progenitors have presented no traces of the phthisical taint.

Lastly. That oxalate of lime, as a constituent of the urine, was found more commonly associated with these chronic glandular enlargements than with any other class of diseases in which

this fluid was examined in order to determine this point.

Having investigated the origin, seat, and relative frequency of scrofulous tumours in different parts of the body, as regards age, sex, temperament, and other peculiarities, and the diseases bearing the closest affinity to the strumous habit, I propose to examine the symptoms, progress, duration, and varieties of these tumours, concluding with a few remarks as to the general principles of treatment which should be kept in view in the management of these cases, confining myself as much as possible to those phenomena only that have more particularly come under my own immediate notice.

The lymphatic glands, in the healthy condition of the body, are of various sizes, from the one-twentieth part of an inch to an inch in diameter, and in many situations can be scarcely recognised by the touch; but when diseased, they may vary from the size of a common kidney-bean to that of a chesnut or pigeon's egg: their form is most

commonly oval and flattened, or bean-shaped: they may be superficial, or lie deeper under the integuments and muscles of the neck: in the former case they will usually be found loose and moveable under the skin at the commencement of the disease; in the latter, their existence can sometimes only be determined by a gradual bulging out of all the surrounding tissues. This is more particularly the case with some of those large unseemly swellings which we often find below the angle of the jaw, and extending downwards in the direction of the large blood-vessels of the neck. The enlarged glands are here concealed and bound down by the platysma myoides, sterno-mastoid muscles, and fascia of the neck, and therefore at a considerable depth: the outline of the tumour is consequently not well marked at any period of the disease. These glands may continue in a state of slight induration or hypertrophy, and without causing the least pain or uneasiness: hence persons are frequently unconscious of anything wrong for a considerable time —it may be months or years—sometimes disappearing from one part, soon perhaps to reappear

in another. The skin is unaffected at this period, and one may displace or compress them firmly between the fingers without causing any pain; whilst in sympathetic enlargement of these glands they are nearly always tender to the touch, and more rarely suppurate, unless from any prolonged irritation. As the disease advances, we find tumours which were before separate become clustered together, in consequence of chronic inflammation being set up in the surrounding cellular tissue: in this condition their volume may exceed that of an orange or a person's fist, and, when present on both sides, may attain such a size as to distort the features, and conceal nearly the whole anterior region of the neck: they have even been known to cause death by the pressure which they exert upon the trachea and large vessels. When advanced to a considerable size, these tumours appear sometimes to remain almost stationary for a considerable time, and cases are recorded in which this state of things has continued during the whole of life: these, however, may be regarded as exceptional cases, as it more frequently happens that, the tubercular matter gradually

accumulating within the parenchymatous structure of the gland, soon causes a state of congestion, by taking the place of vessels, and thus more or less impeding the movement of the blood in the adjacent and otherwise healthy tissues : suppurative inflammation is established, and the diseased product is eliminated. The same result may happen by the swelling and inflammation of the surrounding integuments, which, by directly compressing the already enfeebled and obstructed organ, deprives it of the few nutrient vessels it before possessed : the part perishes in the same way as if it had been filled with tubercular matter. This species of strangulation, if one might use such an expression, was first noticed by Dr. Stark. A point of some interest in a diagnostic point of view here presents itself,—are all tumours manifesting many of the foregoing characters, in the absence of any other recognised symptom, local or general (marking the strumous constitution), to be regarded always as scrofulous?

Mr. Phillips (page 27—and Lebert takes pretty

nearly the same views) remarks :—"That unless the swelling of the gland be accompanied by the deposit of a product known as scrofulous matter, the proof of a scrofulous constitution is, in my judgment, wanting. But supposing one or several cervical glands to become tumid in the absence of any obvious local irritation, this would constitute a strong ground for suspicion that the constitution was suffering under the taint of scrofula."

M. Lebert believes that the lymphatic glands may become tumid and hypertrophied without any disposition to undergo the morbid alteration known as scrofulous matter, and that the congestion, increased redness, and consistence, we often observe in the lymphatic glands belongs to another lesion—it may be to inflammation, it may be to hypertrophy—and constitutes in no way the first degree of the tubercular alteration; and he notices in illustration one form in particular which I have frequently seen, and believe to be, in the majority of cases, of a purely strumous character.

Lebert says* :—"This variety of glandular swelling is more circumscribed, and it is this especially which in no way belongs to the scrofulous or tuberculous constitution: one, two, and in this case sometimes a batch of these ganglions, become engorged, but increase very slowly in size: the surface of the skin is unaffected, and the surrounding cellular tissue very little implicated; its consistenee remains always soft and elastic. When the disease is confined to one gland only, its form is oval: it is irregular, on the contrary, when many are collected together. The volume of the whole mass varies, when the hypertrophy has lasted some time, from the size of a large nut to that of a pigeon's egg. The region of the neck in which they are most commonly found is the parotid. These glands seldom suppurate, and preserve for a long time a certain degree of mobility. They resist, for the most part, all remedies, external and internal, and

* Traité Pratique des Maladies Scrofuleuses, par H. Lebert. Paris 1849, page 145.

extirpation is the only means of getting rid of them."

I have certainly seen a few cases which corresponded very closely with this description of M. Lebert, especially as regards their obstinate persistence and unchangeable character, notwithstanding every kind of means taken to disperse them.

I have sometimes noticed, in connection with this soft, persistent, and obstinate class of tumours, a peculiar corded feel at one extremity, not unlike that presented by the epididymis after an attack of acute inflammation of the testicle. In a general way, however, I believe all such tumours will be found, if examined a little more closely, to be of strumous origin, and to belong to one or other of the varieties now to be mentioned.

Those who have paid much attention to this subject cannot have failed to have recognized an almost infinite variety of shades and differences

which these kind of tumours sometimes present; for the most part arising from individual differences as regards sex, temperament, age, vigorous state of system or otherwise, likewise the particular stage of the disease at which the person happens to be presented to our notice: for example, in the first class of cases which I shall describe as deserving to be more especially considered, the tumid gland remains soft, compressible, and elastic for a considerable time, without pain or discomfort to the patient: the colour of the skin is unchanged, and I have sometimes failed to detect any increase of temperature over the contiguous surfaces by the most delicate thermometer. Chronic inflammatory action is seldom seen to invade the adjacent cellular membrane; in consequence, the tumour remains isolated, and its boundaries may be generally very easily traced by the fingers. One peculiarity in these tumours which I have repeatedly noticed is the almost sudden variations in size which they appear sometimes to undergo. Thus, after excitement or exercise of any kind, as running or walking fast, they sometimes become distended to twice

or thrice their usual size. The same thing, in a less degree, is observable in the morning on getting out of bed (arising probably from some temporary impediment to the return of venous blood from the head and face), which gradually subsides during the forenoon. One may sometimes notice, too, another feature of interest,—that is, the reciprocal influence between it and the healthy and regular performance of the digestive and blood-making process, on the one hand, and the partial arrest or temporary derangement of these functions on the other. Thus, suspend, vitiate, or impair by neglect of hygienic means, unwholesome or insufficient food, the process of digestion, and the disease either increases or remains stationary: remove the person from an unhealthy locality, and supply him with good and nutritious food, and the swelling will in all probability steadily diminish, and the general health correspondingly improve. I have certainly met with tumours of this kind more frequently in females of a lymphatic temperament, between the ages of sixteen and twenty, than in males; and their treatment is, on the

whole, more satisfactory than the group I am about to notice.

The next class of scrofulous tumours is less seldom met with singly, other glands in the neighbourhood being more or less affected at the same time; and it is not uncommon to see one continuous chain of knotted tumours extending from the top of the sternum to the angle of the jaw, in the direction of, and external to the sheath of the large blood-vessels of the neck. One will be often found immediately below the angle of the jaw, even when the existence of others cannot be detected. It is difficult to explain the reason of this, unless it be due to the pressure or irritation arising from the mechanical action of the inferior maxillary bone, or from some affection of the molar teeth or gums. These tumours increase more slowly in size than the former, exhibit no manifest variations in their forms or dimensions, and are for the most part tense, and much less compressible: their firmness is not the stony hardness presented hy a scirrhous mass, but rather the feel of an unripe peach. At a more

advanced period, however, their consistence may be considerable, and seems to arise from the gradual condensation and puckering of the surrounding cellular tissue and skin, so that the parts appear sometimes as if they were fused or cemented together. Indolent tumours of this kind may be noticed in almost every variety of constitution,—in the puny, squalid, half-starved nestling, inhabiting some of the closest and most unwholesome alleys of a large town, as well as in many of the vigorous, apparently healthy, and more fortunate dwellers of more congenial districts: indeed, I have often seen persons who presented every other appearance of being in good health, as to have made me sceptical for a long time as to whether these swellings were in any way due to a scrofulous habit of body, until they have subsequently come to me again at a more advanced period with fistulous sores discharging the thin white flaky matter so characteristic of the disease. In other cases we may perhaps, on inquiry, find that other members of the family are, or have been, suffering from sore eyes, some obstinate cutaneous affection, or white

swelling of the knee or some other joint; any one of which would be sufficient to remove any doubt in our minds as to what catalogue of human infirmities it in reality belonged.

I have already stated that it is not uncommon to find that persons represent themselves as having been relieved of a variety of symptoms, chiefly, however, connected with the primary assimilative processes of digestion, after the appearance of the external glandular enlargement; so that after a time it would appear that the system, after depositing the *materies morbi* in the external glands, is better enabled to accommodate itself to the disease. This will probably in some measure explain why it is that the patient feels better in his general health, and may even continue to do so during the whole subsequent progress of the complaint.

It has been already mentioned that scrofulous tumours are peculiar to no particular temperament or habit of body, but may occur alike in persons to all appearance in the enjoyment of

good health, as well as in the most sickly and enfeebled. A somewhat similar diversity exists as regards individual peculiarities in the tumours themselves: they may and do arise and attain to a considerable size without causing scarcely any perceptible pain or discomfort: when loose and moveable under the skin, you may touch, squeeze, or handle them as roughly as you please, without the patient's complaining or showing signs of pain, or they may be extremely sensitive during almost the entire period of their growth: in the former case they progress but slowly, and are therefore of longer continuance: whilst in the latter, suppuration is more readily induced, and a cure in this way is often more quickly accomplished. Those who manifest this peculiar irritability of nervous system and susceptibility to pain, I think I have generally observed have dark hair and complexions, and are of a bilious or melancholic temperament.

The question as to whether these swellings will or will not suppurate, and if so, the period at which this will probably happen, seems to be

modified by some other complications which are of sufficient importance to have a place here.

In 67 cases given by Lebert,* occurring in both sexes, affected with external glandular scrofula, without any complication, 41 suppurated—21 males, and 20 females. In 74 cases complicated with scrofula, 37 suppurated—21 males, and 16 females. In 10 cases of external glandular tubercle, complicated with pulmonary phthisis, 3 suppurated—1 male, and 2 females. I subjoin M. Lebert's table illustrative of these facts :—

	No. of cases.	Suppu-rated.	Males.	Fem.
1. External glandular tubercles without complication	67	41	21	20
2. External glandular tubercles with scrofula....	74	37	21	16
3. External glandular tubercles complicated with phthisis.....	10	3	1	2
4. External glandular tubercles with scrofula and phthisis.....	10	3	1	2

* Loc. cit. page 124.

This shows that other scrofulous complications existing simultaneously prevent in some measure the suppurative process taking place in these glands, and still more frequently when external glandular swellings are complicated with pulmonary tubercles.

I have remarked—and the same thing has been noticed by other writers—that persons who have suppurating tubercular glands of the neck are less liable to internal tuberculosis than those who retain them in a crude and comparatively quiescent state; and likewise that an insidious disappearance of these external glandular swellings may be sometimes observed when a more formidable disease is preparing itself elsewhere. A remarkable case of this alternation of scrofulous action between the neck and upper portion of the right lung is given by Dr. Stokes, of Dublin :* —"A boy, aged twelve years, after recovering from a succession of eruptive fevers, by which he

* The Diagnosis and Treatment of Diseases of the Chest, by W. Stokes, M.D., pp. 395, 396.

was greatly reduced, became suddenly affected with glandular swellings on the right side of the neck. These increased rapidly; the whole chain of lymphatic glands, from the clavicle to the mastoid process, became enlarged and indurated, causing considerable deformity. In little more than a fortnight, however, the tumours had nearly disappeared, when he was attacked with a violent cough, difficulty of breathing, and acceleration of pulse. I saw him on the third day of this new illness; all traces of the glandular swellings had subsided, the breathing was hurried, and the cough dry. Both sides of the chest sounded perfectly well; but, while the respiration was loud over the left lung and lower half of the right, it was totally absent over the whole right upper lobe. Bleeding from the arm was performed, and the axilla was freely leeched; and on the next day the respiratory murmur had returned with nearly its natural intensity. The lymphatic swellings now began to reappear, and in less than a week had attained their former magnitude, the chest being completely relieved. Iodine was now used both externally and internally. For

upwards of two weeks the tumours resisted the remedy, when they suddenly began to disappear, and in three days nothing was left but a slight induration above the clavicle. Cough, pain, acceleration of breathing, and quickness of pulse, set in, and the respiration of the upper lobe became as before, extinct, while it was intensely puerile in the other portions. Leeching and blistering were employed on the affected portion; the symptoms were again removed; and again, in the course of a week, did the cervical swellings return. These, of course, were no longer interfered with; and, by a steady perseverance in constitutional treatment, the boy gradually recovered; but a year elapsed before the lymphatic tumours had disappeared."

It is very commonly believed that external glandular tubercles are, to some extent, a preventive of internal tuberculosis; and the small proportion of those who perish of phthisis with scars, cicatrices, or other traces of having been subject to chronic enlargements of the lymphatic glands of the neck at an earlier period of life,

tends to strengthen this belief. Thus, Mr. Phillips examined, at the St. Marylebone Infirmary, 332 cases of phthisis: of these, 7 only presented scars resulting from scrofula. A somewhat larger proportion is, however, given by M. Louis, who, in 350 bodies of persons dying of phthisis, found a tuberculous condition of the cervical glands in 35 instances. Now, taking the results of M. Louis as the maximum, the proportion (considering the close affinity, if not absolute identity of the two diseases) which those who exhibit any marks of having suffered from scrofula bear to the total deaths from phthisis will be thought very small.* How is this to be explained?

* "The antagonism as to the prevalence of these diseases (or rather two forms of the same general disease) is further demonstrated by continental statistics and facts. In India consumption is rare, scrofula rife; so, too, in Russia. In the latter country, and also in Austria and Bavaria, those who bear about their necks ugly badges constituted by scrofulous ulceration are supposed to be exempt from consumption. This fact is remarkable; and Mr. Phillips is of opinion that it shows that no necessary connection is thought to exist between the two diseases: but may it not point out an intimate connection? May not, in fact, it be that the scrofulous diathesis, once passed safely through, will not readily occur again? Is it possible that one attack of scrofula may, like

My own opinion is, that scrofulous tumours existing in the neck or elsewhere,—so long as they continue to manifest signs of activity, either by the gradual increase of fresh morbid materials, and for some time after such morbid materials have been eliminated,—do act as a safety-valve to the lungs. This has often and often been impressed upon my mind, from witnessing the renovated and improved health of persons who, before

an attack of small-pox or scarlatina, afford a greater or less immunity from another? There is nothing, at least, outrageously improbable in the supposition. It is remarkable that some facts stated by Mr. Phillips on this point are in favour of this view. In opposition to the objection that the registries do not show the amount of scrofula in a district because scrofula does not commonly destroy life, Mr. Phillips observes that, if the sufferer from scrofula usually dies of phthisis, there should be the marks of the former in the bodies of those who die of the latter. Now we think this is by no means a requisite, so far at least as regards the traces of previous suppuration of the cervical glands; for we hold that (uncomplicated with any other form) to be the simplest and most harmless species of scrofulous disease. The facts, however, though collected to elucidate an opinion which we cannot well admit, are not the less valuable; and they show that a previous attack of scrofula, in so far as it is indicated by marks, does not predispose to a second attack."—British and Foreign Medical Review, vol. xxii. p. 137.

their recovery from the external disease, showed all the symptoms of incipient phthisis. This may be, doubtless, partly attributed to treatment, but not altogether; for I have repeatedly noticed precisely the same improvement in those who have continued their avocations, and allowed the disease to take its course, without having pursued any systematic plan of treatment whatsoever.

If phthisis supervenes and progresses with any rapidity upon disease of the external lymphatic glands, those of the latter that appear to have been to any extent disorganized, or have undergone the cretaceous transposition, remain quiescent and unchanged, appearing loose and moveable under the integuments, whilst others not so far advanced, and in all probability only in a state of hyperæmia or congestion, may entirely disappear, leaving the skin blanched and wrinkled.

Morgagni, Ruysch, Haller, and other celebrated anatomists, believed that the size of the lymphatic glands corresponded in some measure with the growth of the animal,—that is, grew with its

growth,—and after the middle period of life gradually diminished, and then vanished entirely. Bichât states, also, that they are remarkable in infancy, and become less numerous in the adult, and mostly disappear in old age; and Mr. Gulliver mentions likewise, in a note to his edition of Mr. Hewson's works,* that he found these glands proportionably larger in children than in adults, and in the necks of young birds than in their parents, and in old age more or less wasted and deprived of juice; but they never entirely disappear. In this respect the lymphatic and thymus glands present a striking resemblance; and if their functions be, as is now very commonly entertained by physiologists, to elaborate and prepare nutritious matter to meet the additional requirements of the system during the active period of growth, when nature is employed in building up the structures, appears in my mind to go some way in explaining the reason why these glands should be more liable to be affected with strumous disease previous to the age of puberty and man-

* Sydenham Society edition.

hood, than at any subsequent period of life. The growth of the body being now perfected, the functions of these organs would be simply limited to the maintenance and support of the animal body: and these morbid and heterogeneous products, which would otherwise be attracted to the surface in growth, have now a greater tendency to fix themselves in some internal organ, especially the lungs, causing pulmonary consumption. This view is, I conceive, strengthened by some of the remarkable phenomena before alluded to, as regards a certain amount of antagonism between the two diseases: for example, external glandular swellings, either whilst gradually increasing in size, or in a state of suppuration, seem to protect the lungs from being invaded with tubercles; and, on the other hand, the presence of tubercles in the lungs is seldom followed by the deposition of a similar product in the external glands.

I have further been led to believe, that not only do suppurating glandular tubercles of the neck sometimes prevent the deposition of a similar product taking place in the lungs, but likewise,

when the two diseases (or different forms of the same disease) co-exist together, that the continuous drain (kept up, as it very frequently is, for months together, by the slow process of maturation and decay of the different structures of the gland) may eventually remove the more formidable disease of the lung, and the patient thus be restored to health. Many cases of this kind have come under my notice. I shall, however, content myself by quoting the heads of the two following :—

Case XVI.—M. D., a labourer, æt. 20, of middle height, and tolerably well built, dark complexion, and of a pale, suffused, and sombre appearance. His family history is imperfect; but he recollects that one of his brothers once suffered from abscesses of the neck, and that one of his paternal uncles died of consumption at the age of 22 years. He always enjoyed the best of health, until the age of 19, when he contracted syphilis: for this he applied to a druggist, who gave him a large box of pills, which made his mouth very sore: the sore healed in the course of a few weeks.

Subsequently he contracted another sore, which was followed by swelling of the inguinal glands on each side. The disease again yielded to a long course of mercurial treatment. Seven weeks after the last attack, first perceived a small lump or kernel under his left ear, which increased very gradually in size, unattended with pain. Whilst this tumour was thus progressing, others appeared in different parts of his neck. Various means were tried, unsuccessfully, to remove these swellings, and he applied to the Dispensary. The following particulars, taken at this period, are recorded in my note-book :—Extensive suppurating sores on right side of neck; several large indurated glandular tumours on the left side, with several sinuses and some old cicatrices occupying the lower triangle of the neck on the same side. He coughed very frequently, and had spat blood on three occasions during the last two months. There was distinct dulness over the two upper thirds of the right lung; the breath-sounds almost inaudible;—in fact, there was every indication of the greater portion of the lung being in a state of complete consolidation. Various means, used

as circumstances seemed to indicate, were tried for his relief: first, the iodide of potassium, with sarsaparilla; afterwards, cod-liver oil, which, however, so disagreed with him, that it was obliged to be relinquished, and iodide of potassium, combined with the syrup of the iodide of iron, was substituted, though without much apparent benefit. He finally recommenced the cod-liver oil, and took it, for a period of eight months, regularly, without making him sick or causing any other inconvenience. The sores of his neck continued to discharge through all this period, and his health appeared slowly to improve, up to about three weeks ago, when they healed.—Nov. 2. He is now free from cough; his strength and appetite as good as ever they were; his neck, though much disfigured, is completely sound; chest is perfectly resonant on percussion on both sides, the only difference in the respiratory murmur of the two sides being a little roughness, and slightly louder or more blowing on the right than on the opposite side,—arising, probably, from a slight thickening of the pulmonary tissue in this part--the result of the former lesion.

It may be said, perhaps, that all this is due to the marvellous effect of cod-liver oil. To some extent this may be true. I am disposed, however, rather to believe that the removal of the pulmonary complication is to be principally attributed to the slow and continuous action kept up in the neck by the gradual elimination and decay of the glandular structures,—first staying the progress of the disease and allowing nature time to free herself of the extraneous product in the lung, which, under other less favourable circumstances, would most probably have gone on rapidly to a fatal close.

That the successful issue of this case may be in some measure owing to the beneficial operation of the cod-liver oil, which we know is so readily assimilated, and therefore eminently calculated to supply materials for the nutrition of the system, when other substances appear, for the most part, insufficient for this purpose, I do not deny; but I doubt if cod-liver oil or any other known remedy would have removed this extensive consolidation of the lung in the foregoing case, but for the counteracting influence of the external disease.

CASE XVII.—J. B., a basket-maker, æt. 22; single; with dark hair and complexion; looks pale, sickly, and emaciated; upper lip slightly hypertrophied. His father died of asthma at the age of 50: mother is living, and in good health: his paternal grandfather died consumptive at the age of 25: his grandmother died of cancer of the breast, æt. 55. The further history of this unfortunate man is the following:—Two years ago he was committed to Lancaster Gaol, sentenced to eighteen months' solitary confinement, for some offence against the laws of his country, the nature of which he is not disposed to disclose. The cell in which he was lodged was damp and wretchedly cold. He was locked into this cell for twenty-four hours together, with only three-quarters of an hour each day for exercise. His diet consisted of rice, turnips, and Indian flour, with gruel and brown bread night and morning. After having been in confinement ten or twelve months, he first perceived a small kernel in his neck, which slowly increased in size: never remembers having, at any former period, experienced similar symptoms, but had enjoyed unusually good health. The surgeon

of the gaol gave him a liniment to rub his neck with night and morning, which, however, he says caused it to inflame and afterwards suppurate. It left a very obstinate kind of sore, which did not get well until three or four weeks after having been set at liberty. He at the same time remained weak and feeble for some time, and had not completely recovered his health, when he, for the first time, contracted syphilis, followed by enlargement of the inguinal glands on both sides of his groin. For this complaint he took medicines from various parties, but not getting any better, obtained admission into the Lock Hospital, where he was put under a mild mercurial course, and discharged cured, after remaining in the house seven weeks. *Four* weeks after leaving the hospital, and *thirteen* weeks after the commencement of the venereal affection, he applied to the Dispensary, when I saw him for the first time. He had three enormous swellings, which almost completely surrounded the anterior part of the neck, lying something like a cushion under his chin. There was a fistulous sore on the left side, discharging a thin ichorous-looking fluid. The dis-

ease in the neck first showed itself before leaving the hospital, and therefore whilst undergoing the mercurial treatment. He never suffered from sore-throat or pains in his limbs. His chest, on being examined by my esteemed colleague, Mr. Padley, and myself, was found to be extensively dull on percussion over nearly the whole of the right side, attended with tubular respiration. He had cough and night perspirations: other symptoms were not particularly noticed; but his case was pronounced to be tubercular phthisis, with very faint hopes of being enabled to do much for him. He attended the Dispensary only a very few weeks, taking cod-liver oil and other remedies, but finding little improvement discontinued his visits, and I lost sight of him for a period of ten months, when one day I accidentally stumbled upon him in the street. Feeling an interest in his case, I took down his address, and called to see him the following day, when he reported himself to be as well as he ever was, that he had been since married, and now regularly followed his business. After leaving the Dispensary, it appears he applied to some herbalist famous for curing these kinds of diseases,

who poulticed his neck for many months, until the swellings were removed. He stated that his cough continued for three months after leaving the Dispensary, but got well some time before the running of his neck completely ceased. On examining his chest, I found on percussion the sounds equally clear on both sides, and the respiratory murmur quite natural, and he appeared in every respect well.*

* Seeing what Nature is enabled sometimes to accomplish when left to her own unaided resources, should, I think, not be lost sight of by the physician who is called upon to treat so unusually fatal a disease as pulmonary consumption. If, for example, the lungs do sometimes free themselves of a morbid product under the operation of a long-continued drain from a suppurating glandular tumour of the neck, or some neighbouring part, which, but for this external complication, would assuredly hurry the patient to an early grave, the inference, I think, is fair and reasonable, to suppose that the artificial production of a similar secreting surface by a seton, issue, or some other such means of exciting counter-irritation, should be occasionally, not to say frequently, followed by analogous results.

I am well aware that this mode of treatment has often been recommended, though it is not impossible that the value of such means in these hopeless cases may have been recently too much neglected. I have, however, seen a sufficient number of instances where the benefit accruing to phthisical persons was so undeniably due to this cause, that I must be assured, by

In both of the forementioned cases it will be noticed that scrofula was developed whilst the persons were suffering from venereal affections. In the former, the disease appeared for the first time, and may be said to have been caused, by syphilis, or the no less injurious action of mercury: in the latter, symptoms of scrofula had been previously manifested. Syphilis, therefore, had merely the effect of renewing a disposition to

further experience and the evidence of my own senses, before I can believe that no good can result from our sometimes "taking a leaf from Nature's instructive book." The efficacy of these external drains must be greatly enhanced now that we possess a remedy of such undoubted power of accelerating and improving all the nutritive processes of the body, and therefore calculated to sustain the general health under the somewhat depressing influences which all such discharges, when continued for any length of time, must necessarily produce.

It would be premature to mention the results of my experience of this mode of treatment, the time having been much too limited to admit of my speaking with any degree of confidence as to its effects. I may, however, add, that I have seen both the local and general symptoms often relieved in a very marked manner after the introduction of a seton below one of the clavicles; and that by a proper degree of caution in the selection of suitable cases, no fear need be entertained of any undue constitutional irritation following its application.

disease which might otherwise have remained latent in the system.

This leads me to make a few remarks as regards the influence of syphilitic diseases on the progress of scrofula. Here it will be necessary to return for a moment to the subject of our IVth Table at page 19, where it will be seen that I have recorded only four instances in which I had been enabled to trace scrofula to a syphilitic origin. This proportion, however, must not be regarded, strictly speaking, as an average one, as it unfortunately happened that in the greatest number of these cases no satisfactory account of their family history could be obtained, and they were, as in all similar instances, necessarily excluded from the list which afforded the data for the construction of that table. Such cases, though unsuited for the purposes we had then in view, may still furnish us with some useful information. M. Lugol truly remarks, at page 157, when speaking of the so-called pathological causes of scrofulous diseases:—"There is no complication more to be dreaded in a scrofulous subject than that of the

venereal infection. Diseases of this nature are, in such persons, invested with characters of unusual severity, and antecedent scrofulous affections are rendered infinitely more dangerous under their influence." My experience is so much in unison with almost every thing that is written in the article from which this sentence is taken, that the few observations which I am about to make on this subject must be considered rather as an exposition of facts and principles already inculcated by this experienced and indefatigable physician, than as conveying any new or original matter of my own.

Syphilis, in its connection with scrofula, may be considered under two different aspects,—1st. As it affects those who are predisposed to scrofulous disease, but who may or may not have shown any decided manifestations of it. 2dly. As to its power of generating scrofula *de novo* in the absence of any original predisposition. 1. A person may be predisposed to scrofula, but the disease never be actually established until the individual has been exposed to a venereal infec-

tion; or scrofula may have previously shown itself at some former period, and the influence of the syphilitic poison served only to renew the previous affection in a more aggravated form. Both these propositions are very well illustrated in the two preceding cases, as well as in those I am about to mention.

CASE XVIII.—J. D., a stone-mason, æt. 35, unmarried; a tall, muscular, fine-looking man, with light sandy hair, blue eyes, a pale and somewhat anxious countenance: states that one of his brothers died consumptive at the age of 23; another had a white swelling of the knee at the age of 20 years. His father lived to an advanced age, but one of his brothers had troublesome sores in his neck when young. His mother died of asthma at the age of 61. Knows nothing of her relations. About nine months ago he contracted syphilis, for which he applied to a druggist in P—— Square, who gave him three or four boxes of pills, which made his mouth very sore, without doing him any good. Finding himself getting no better, he procured admission into the Lock

Hospital, where he was speedily cured. Three weeks after leaving the hospital, he for the first time observed some small knotted tumours on each side of his neck; felt about the same time, also, pains in his limbs, particularly at night. The swellings gradually increased in size, and suppurated. Finding himself getting very weak, and unable to follow his employment, he applied to the Dispensary, and was admitted under my care. He was found to have several small indurated glands, extensive sinuses, with prominent bridge-like projections on each side of his neck, through which a probe might easily be passed. He had also painful nodes in front of each of the shin bones, clearly indicating the syphilitic origin of the disease.

Case XIX.—C. T., a discharged soldier, æt. 23, with light hair and complexion, fine soft skin, and a hectic flush on his cheeks. His parents, with whom he is now living, state they never recollect any of their family or relations being subject to scrofula or consumption, but that his maternal grandfather, who died of asthma at the

age of 59, had three sisters who died from consumption betwixt the ages of 18 and 30. This man is affected with enormous glandular swellings on each side of his neck: there is also a tumour immediately above the sternum, over the trachea, which, by its pressure, causes considerable impediment in his breathing, and a loud, hoarse, ringing cough. The bronchial glands are probably affected likewise. His gums are spongy and fissured, and there is a sore over the parotid gland, and a swelling of the axilla. He accounts for his illness in this way:—He always enjoyed good health (except that he had small kernels in his neck when he was ten years of age, which suppurated and disappeared in the course of twelve months) until he contracted the venereal disease four years ago. For the complaint he took a blue pill night and morning for thirty successive days, rubbing in at the same time the blue ointment. This did not salivate him in the least, but the sores healed in seventeen days. Six weeks after this period had secondary symptoms—nodes on both tibiæ, with a sore throat--and was ordered by the surgeon of the regiment a warm bath twice a week,

and the iodide of potassium internally. Whilst pursuing this treatment, from which he was very nearly getting well, it appears he one day got drunk whilst on duty, for which offence he was immediately confined in a military prison for many weeks, with a restricted diet, consisting of Indian flour, oatmeal, and gruel. He had not been long under confinement before the swellings of his neck made their appearance, which the surgeon observing, ordered the blue pills to be repeated night and morning for twenty-two more days. This injudicious treatment, as we might have anticipated, very much aggravated his complaint, and he was in consequence ordered to be discharged from the regiment. This young man died from erysipelas of the head and face soon after this information was communicated to me—a no very infrequent termination, I believe, of these cases.

It may be said that these are cases of syphilis, not scrofula, and it must be admitted that the evidence in favour of such a supposition is very strong. We have, for example, many of the most

characteristic symptoms of constitutional syphilis appearing about the usual time after the primary affection,—nocturnal pains in the limbs, nodes, sore-throat,—symptoms that cannot easily be misinterpreted. But syphilis alone, in the ordinary way, does not commit such ravages upon the glandular system of the neck and axilla, nor does it leave behind those obstinate sores and shattered health which appear to be the distinguishing characters when the two diseases sometimes unfortunately happen to be associated together. As M. Lugol correctly observes (page 160)—"The reunion of the two diseases seems to impart additional power to each; and they constitute together a mixed disposition of body, which takes firmer and more fatal hold of the system than either disease is able to effect individually. It is a condition which is neither exactly syphilis nor scrofula; but it has a peculiar aspect, which is clearly demonstrative of its double origin." The symptoms of each disease, however, are generally sufficiently apparent to enable us to perceive that they are in reality separate and distinct diseases, though sometimes

the line of separation is for a time so faint as to make the diagnosis a matter of extreme difficulty. In the cases now described the syphilitic complication is so clear, and stands out in such bold relief, when compared with the strumous manifestations, as to lead one to regard them simply as syphilis in some of its more aggravated forms. In the two succeeding cases which I shall mention, these prominent characters are reversed; the more general and distinctive indications of the latter being wanting, while those of the former are as strongly marked.

2. Scrofula may be developed in the absence of any hereditary predisposition, under the influence of a syphilitic taint.

Case XX.—J. H., a clerk in a merchant's office, æt. 19, with dark complexion, and a pale and somewhat harassed expression of countenance. His parents are both living and well, and none of their family have ever been affected with scrofula or consumption. He appeared to have had uninterrupted good health up to about

twelve months ago, when he contracted syphilis. For this complaint he applied to an unlicensed practitioner in his neighbourhood, who gave him medicine which made his teeth very loose, and to feel otherwise very unwell. He was cured, however, of this complaint in the course of four months. Soon after this period he felt, whilst getting out of bed of a morning, two or three small kernels on the right side of his neck, close to the angle of the lower jaw ; could not account for this appearance, which, however, did not give him any pain. The disease steadily progressed up to the time of his presenting himself at the Dispensary, when the tumour was as large as a good-sized orange, very firm and hard, and somewhat puckered in appearance, as if the skin and integuments were tightly drawn in around it. The swelling had existed four months, and during nearly the whole of this time he had been taking cod-liver oil by the recommendation of a very eminent surgeon of this town. He never suffered from a sore throat, or any other symptom of secondary syphilis, except a slight stiffness in his legs and thighs, more particularly when in

bed. The tumour suppurated, and he very slowly recovered.

CASE XXI.—A. P., the wife of a watch finisher, æt. 39. A thin, spare, dark-complexioned person, pale, but otherwise presenting nothing unusual in her appearance. Her family have always been healthy people, as regards their freedom from consumption and scrofula. She was rather delicate in her youth, but more particularly so since she had a bad attack of typhus fever at the age of 22 years, which left her weak and feeble for a long time. Two years ago she first perceived some small hard substances on the left side of her neck, which slowly increased in size, and eventually suppurated, when others appeared on the opposite side and underwent the same changes. The sores resulting spread very rapidly, eating away the skin and integuments covering the greater portion of the front of the neck and upper part of the sternum. She remembers suffering from slight pains in her limbs resembling rheumatism about the time her neck first commenced to be affected, which she

has occasionally experienced ever since. Thinks her disease was brought on by cold. On close inquiry, she admits that, six or seven weeks previous to the first manifestation of the swelling in her neck, her husband was taking medicine for some venereal affection, and she likewise felt some uneasiness in passing her urine. For this she was recommended by her husband to take some of his medicine. This made her mouth very sore, and prevented her almost from eating anything for a fortnight.

This case, which was one of the severest of the kind that I ever before noticed, improved very rapidly under the use of the iodide of potassium combined with sarsaparilla, and in six weeks the sores had completely cicatrized, and her health appeared completely restored.

On the 25th of October she again applied to me on account of symptoms of a white swelling of the knee. For this I again ordered her the iodide of potassium, with the most satisfactory results.

This woman presented one remarkable peculiarity which may be sometimes noticed in these mixed forms of disease. The affection of her knee, which occurred very nearly two years subsequent to her former illness, I said looked like a white swelling. The joint was enlarged, somewhat stiff, with very little or no pain. The surface was paler than natural, which contrasted strongly with the blue streaks representing the superficial veins, and it had the soft elastic feel so peculiar to these kind of affections. But the disease yielded to treatment in a much shorter time than scrofulous disease of the joints commonly does. This woman, for example, after the application of a blister and the use of the iodide of potassium, was sufficiently recovered in three weeks to be enabled to discontinue her visits at the Dispensary; whereas in a true scrofulous disorder it would probably have required many months before any such marked improvement might probably have been noticed. I have occasionally in other cases noticed extensive sloughing sores quickly take on a clean granulating surface, and heal, under the use of the iodide of potas-

sium, in such a comparatively short space of time as to have led me to look upon this medicine as a specific test of many of these venereal complications.

The progress and duration of scrofula is said to be modified by a variety of circumstances; and authors almost uniformly state that this disease may either terminate in a cure, or be developed in some internal organ about the age of puberty. Prepossessed with this theory, at the commencement of these researches I was disposed to concur in this opinion; but my experience since has led me to conclusions somewhat different. I am now of opinion that puberty has little or no influence upon the disease, at least in the male sex, and not at all so obvious as has been represented in the female. Lebert adopts pretty much the same view. M. Lebert seems to think that scrofulous disease retards the advent of puberty, and he gives the subjoined table in proof of this opinion. It shows the age at which menstruation was first accomplished in 39 scrofulous females:—

At the age of	10½	years	1	first menstruated.	
„	13	„	4	„	
„	14	„	4	„	Not yet
„	15	„	3	„	menstruated.
„	16	„	15	„	 2
„	17	„	5	„	 1
„	19	„	1	„	 1
„	20	„	1	„	
„	21	„	1	„	
			35		4

Total.... 39

I have kept notes of 16 cases: they are arranged similar to the above:—

At the age of				
13 years	3	first menstruated.		In one instance the catamenia appeared only once, four months ago.
14 „	4	„		In one instance the disease commenced at 13, and continued to the age of 16, when it gradually subsided. Menstruation was performed regularly throughout this period.
15 „	3	„		In one instance catamenia appeared once only, three months ago.

At the age of		
16 years	3 first menstruated.	In one case the catamenia appeared only once. In a second instance menstruation was performed every three weeks in very small quantity.
18 „	1 „	
19 „	2 „	
Total....	16	

The number of cases I have recorded is much too small to admit of even an attempt to deduce from them any very definite conclusions. Taking, however, 15 as the average time at which the menstrual function is first developed in this climate, it will be seen that the annexed table gives a trifling majority of cases previous to that age. This is somewhat opposed to the results arrived at by Lebert. It is perhaps necessary to bear in mind that the individuals furnishing the above information might have been totally different in the two cases. It is possible, for example, that Lebert derived his information from persons who were labouring under many

forms of scrofulous disease at the same time. Such a condition, we might naturally suppose, would, by causing an anæmic and debilitated state of system, suspend the function of menstruation; whereas in my own cases no such complications existed, and they were limited, with one exception, simply to cases of strumous glandular swellings, which, I have before had occasion to mention, may exist without deteriorating very much the general health, or inducing an anæmic state of the body unfavourable to the due performance of this function. I do not, therefore, positively assert, but my belief is, that the period of puberty is in general developed earlier in the scrofulous constitution, though exceedingly liable to be suspended or modified by very trifling contingencies affecting in any way the general health.

Mr. Whitehead, of Manchester, who appears to have paid some attention to this subject, has carefully investigated the age at which menstruation was first accomplished in 226 females who bore decided indications of the scrofulous consti-

tution, though only a part of this number were actually labouring under some manifest form of the disease at the time his observations were made; the remainder retaining only traces of its former existence. He adds* :—"The sum of the ages of the preceding 226 individuals, at the time of their first menstruations, was 3550, giving 15·7 years for each—a result very similar to the general average. The signs of puberty announce themselves, however, at an earlier period of life in the scrofulous than in those of a more vigorous frame; but the functional changes are longer in being accomplished, and their healthy continuance is sustained with more comparative difficulty afterwards."

The influence of season upon the progress of some forms of scrofulous disease is sometimes very striking; spring and the early part of summer being the period at which these glandular tumours begin very frequently to increase rapidly in size. During the month of April of

* Causes and Treatment of Abortion and Sterility, page 62.

the past year this was remarkably well exemplified in some of my cases, when many of those who had showed a steady improvement, both as regarded their general health, and by the gradual, and in some instances almost complete subsidence of the swelling, almost suddenly began to take on, as it were, a new and independent life, and bursting forth with such renewed vigour as to set at defiance all our boasted remedies. And what is remarkable, all this seems to take place without any corresponding change in the constitution or functions of the body generally; the tongue being for the most part clean; the appetite, digestion, and general strength, appearing as good as at any period prior to this change.

Though we find a strong tendency in this disease, when once manifested, to become aggravated at this time, it does not appear that this, or any other form of scrofula, is observed more frequently to show itself for the first time during this season than at any other period of the year.

CHAPTER IV.

TREATMENT.

PERHAPS there is no subject in the whole range of medical science more complicated, or beset with greater difficulties, than the treatment of these glandular tumours, and, I may add, scrofula generally. Hence it too frequently happens that, resisting for a long time the best appliances of our art, the practitioner becomes either tired or disgusted with his patient, and the unfortunate sufferer, if he be poor, has no alternative but to become the prey of a host of unprincipled charlatans, who, by either promising immediate relief, or the more subtle dodge of holding out a distant prospect of certain cure, constrain these misguided victims not only to deprive themselves of the common necessaries of life, which they stand so much in need of, but, what is still worse, pledge

articles of furniture, and even the coat that protects their feeble bodies from the "pelting of the pitiless storm," to pay for their nauseous compounds. It was the knowledge of several facts of this kind, which I collected in the discharge of the duties of a dispensary, that first more particularly drew my attention to the subject of these researches; and I accordingly, with the sanction of my colleagues, made it a specialty in my practice; and, although much is wanting before our knowledge of this disease can be said to be complete, yet I would fain hope that the time and labour I have devoted to it during the last three years may not be altogether void of interest and improvement to some at least of my readers, whose opportunities of observing cases of this kind have been comparatively more limited.

I shall first dispose of the local and surgical management of these cases; afterwards speak more particularly of the constitutional treatment, and the use of such drugs as have more immediately come under my notice. We shall suppose that all the means within our reach, both

local and general, have failed to arrest the progress of the disease, and the tumour advances slowly and steadily on through all the varied stages of inflammation, softening, and decay of the glandular parenchyma, to the final elimination of the morbid product by the usual process of suppuration. Is there in all this, it may be asked, any thing demanding more than the usual routine of treatment required in suppurating tissues affecting any other part of the external surface of the body? To this any one who has carefully watched the progress of a single case will unhesitatingly reply in the affirmative. Much time may be saved, no little disfigurement to the patient avoided, by judicious management, in almost every stage of the disease.

I have before stated the distinguishing features of scrofulous tumours to be their slow growth, the absence of pain and tenderness to the touch, and the preservation of the usual colour and appearance of the skin. This may continue for a longer or shorter period, according to the particular temperament of the individual, neglect of

hygienic or other means, which will certainly, at no distant period, change the aspect and condition of the swelling. The parts will now be found painful to the touch; the surface assumes a livid or purple colour, and eventually ulcerates, giving exit to a thin fluid, mixed with shreddy masses of tubercular matter. Sometimes the suppurative process is much slower and of a more complex character,—as when effusion takes place exterior to the body of the gland contained in and circumscribed by the adjacent cellular membrane. This effusion may become organized, and thus continue for a considerable time: more commonly, however, the effused plasma, in place of becoming organised, is rapidly transformed into pus. Now we know that it is the property of all matter to approach the surface, even when there is less opposition in other directions. The absorption, therefore, should take place most actively towards the skin; but the abscess in these cases excites so small a degree of irritation, that the rapid absorption of the intervening textures and pointing of the abscess does not quickly happen. We have, therefore, an increase of the abscess at the expense

of the surrounding textures. It may at last, to some extent, be limited by adhesive inflammation, which checks its further progress; but more commonly, when the constitution is much enfeebled, the matter creeps slowly along the cellular membrane under the skin and between the muscles, sometimes at great distances, leaving deep and extensive sinuses, always difficult to manage. In either of these cases the vitality of the skin and integuments covering the original abscess generally becomes so weakened and impaired by the slow destruction of its nutrient vessels, that, when the matter does make its way to the surface, naturally or otherwise, we find there is little or no disposition to unite with the subjacent textures or to throw up granulations; so that the destruction of the skin corresponding with the surface of the abscess becomes almost inevitable. This always retards the filling up of the wound: it has, therefore, been proposed by M. Baudelocque to open the abscess by caustic, which should include the whole diseased integument corresponding with the circumference of the abscess, with a view of hastening this process, and I am disposed to

think, from what I have seen, with the prospect of favourable results; for we generally find this to be accomplished by Nature before any thing like a healthy granulating surface is produced.*

There is another peculiarity which distinguishes a suppurating glandular tumour from a common abscess, calculated in no small degree to retard the curative process. The principal part of the swelling in these cases is made up of the engorged gland, surrounded by a thin layer of purulent matter, so that, on being opened, there escapes only a very small quantity of pus in comparison with the size of the tumour: the dimensions, therefore, of the swelling remain pretty much the same size as before. The walls of the abscess collapsing come in contact with the diseased cellular membrane and hypertrophied gland, which not only prevents the adhesive process from taking

* The caustic recommended by Baudelocque is one composed of equal parts of quicklime and potassa fusa made into a paste with spirits of wine. This is smeared over the necessary extent, and allowed to remain for the space of five minutes.—Op. cit. p. 318.

place, but, by acting precisely in the same way as a sponge tent, or any other foreign body, necessarily retards the filling up of the wound, and a thin watery fluid continues to be discharged as long as any portion of the gland remains.*

The case is rendered still more tedious and protracted when the deeper-seated glands are affected, and particularly if the matter has burrowed at some distance from the part before finding its way to the surface: and here it very often happens that the fistulous opening or channel communicating with the abscess is too small to allow of more than the fluid parts to escape, whilst the flaky mass of degenerate tissue is retained. The wound may continue discharging through this small fistulous passage for months without the swelling undergoing any very perceptible diminution in size, until, perhaps, by the continued mechanical distension, the skin and integuments become so weakened, and their vitality so impaired, that a communication is established over

* Goodlad has given a very minute account of this complaint in his Essay on Diseases of the Absorbent Glands, Sect. iv. p. 72.

the original seat of the abscess. The subsequent changes are pretty much the same as those just described.

Much that I have now stated is applicable to other cases of inflammation affecting the absorbent glands, as well as those of a purely strumous character: for instance, sympathetic abscesses of the axilla and groin, from wounds and other injuries of the extremities, are sometimes equally difficult to manage, and sometimes pursue pretty much the same tedious course. It is not common, however, to find inflammation set up in these regions from such causes to suppurate, unless the irritation be of long continuance. I have seen tedious abscesses of this kind to occur more frequently from injuries of the forearm, in which small fragments of glass or other irritating substances had apparently been retained in the wound for some time after the accident.

It is not in every scrofulous affection of the glands that the adjacent tissues become so much involved: the severity of this complication will,

of course, depend very much upon the state of the constitution, the rapidity with which the tubercular degeneration of the gland takes place, and likewise the degree of organization possessed by the morbid material so deposited.

The chief indications to be attended to in the treatment of scrofulous abscesses is clearly to save as much of the skin and integument covering the gland as possible, as a means both of cutting short the duration of the disease and avoiding those scars and unseemly marks which tend so much to disfigure and annoy the unfortunate victims of this complaint. With this object, as soon as a distinct feeling of fluctuation is perceived by the fingers, whether the skin be discoloured or not, an opening should be made with a narrow-pointed bistoury midway between the base of the tumour and the part where the fluctuation is felt: of course, in the most dependent position, to allow the matter freely to escape; for the longer it remains, the greater will be the loss of skin, and the larger the cicatrix which follows the healing of the wound. Moreover, by opening the abscess

early, immediate union of the skin with the subjacent textures may occasionally follow, and the sore speedily get well. This may sometimes be promoted by stimulating and astringent washes, which should be injected into the cavity of the abscess soon after the opening is made. Union by the first intention may also be assisted by a compress of lint and a bandage nicely adapted to the peculiar seat of injury, though much pressure is likely to irritate and do harm. Should the matter, in place of being circumscribed, have insinuated itself under the skin at a distance from the original seat of the disease, and the external opening not be sufficiently large to allow of the free exit of the matter, this opening should be enlarged, and the sinuses injected in a similar way. For this purpose I have preferred a weak solution of the nitrate of silver or sulphate of zinc, which I believe to be more efficacious than a solution of iodine. Should these means fail, the sinuses must be laid open through their whole extent, the callous edges dissected away, and, by the application of unguents or washes, healthy granulations may

be established, and the healing process accomplished with no very great disfigurement.

If, as it very commonly happens, from the mechanical distension of the engorged gland, the vitality of the skin has become so much enfeebled that sloughing ensues, the case is rendered long and tedious; the wound gradually enlarges as far as the limits of the diseased gland, and continues in this state as long as the least remnant of this body remains. This impediment to the healing process being removed, the wound fills up by granulations, as in ulcers situated in other parts of the body.

The best application for almost every kind of scrofulous sore is certainly the iodide of lead ointment: the ung. hyd. nit. oxid. is more stimulating for some very indolent and flabby sores; but the former has generally succeeded with me so well, that I now seldom use any other.

The disposition to scab seems very remarkable

in almost all these kind of sores; and, however desirable this process may be in other wounds, it very nearly always seems to impede, rather than otherwise, the healing of strumous ulcers, not only by preventing granulations from forming, but, by allowing the ill-conditioned materials to accumulate and fester under it, appears to cause greater mischief than might otherwise happen to the subjacent tissues. I have generally, therefore, directed a poultice to be applied until the sore becomes clean, and then endeavour to prevent its reproduction by some of the stimulating applications above mentioned. I have sometimes used a cataplasm composed of bran, linseed, and common soap, with very good effect in these cases.

Seeing the tedious and protracted nature of these sores, and the deformity that almost always attends the healing of the wound under the most favourable circumstances, points out to us the desirability of endeavouring to prevent an abscess from forming, and to use all the means within our reach, both local and general, as are calculated to disperse the swelling prior to its arriving at that

stage when the elimination of the morbid product by suppuration becomes inevitable. This leads me to notice some of the means by which this object may sometimes be accomplished.

We have observed, when speaking more particularly of the histology of this disease, that these glandular swellings are met with under a great variety of circumstances. The patient may, for example, present the fine, delicate, white, soft skin, the tumid lip, the crimson hue of cheek, and the languid, listless, and enfeebled gait, so familiar to us in persons possessing the well-marked lymphatic temperament; or all these external signs of the strumous constitution may be, for the most part, if not entirely, wanting, and we have then the characters of a sound and healthy constitution; or there may be evidence of a previously acquired syphilitic taint, sufficient to justify our pronouncing this to be the main source of the disease. A disease, therefore, occurring under so many and varied aspects, must of necessity require different modes of treatment. If, for instance, the swelling appeared for the first time after an attack

of primary syphilis, even though the constitutional symptoms of the disorder are not manifest, I have no hesitation in asserting that the iodide of potassium and sarsaparilla will be found the only remedy; all other medicines, as far as my experience goes, being perfectly useless.

I have made trial of most of the reputed anti-scrofulous remedies, and must confess with very indifferent results. The following, however, deserve some notice:—Mercury, barium, iodine, alkalies, cod-liver oil, phosphoric acid, &c.

Mercury.—Of the different preparations of this metal, I have commonly preferred the hyd. c. cretâ, and the bichloride. The former may be given, in combination with rhubarb and magnesia, as an alterative aperient, every other night, or oftener, according to circumstances. The benefit accruing from some simple combination of this kind, by improving the secretions and giving tone to the digestive mucous surfaces, is often, particularly when such means have been previously

neglected, very striking; and, indeed, it is not uncommon to see some of the milder descriptions of these cases get well by a short continuance of these medicines alone. It should, I think, generally precede every other kind of treatment. The bichloride I have given in small doses, from the 1-16th to 1-20th of a grain, dissolved in distilled water, or in the form of a pill, with the extract of sarsaparilla, twice or thrice a day. I have seen this medicine of use in cases of glandular swellings complicated with some of the more obstinate forms of scaly cutaneous disease, and more particularly psoriasis. Under these circumstances, and provided the general health be good, this preparation may be given with advantage. It sometimes rapidly causes the absorption of the intervening callous cellular membrane, by which several isolated tumours are often aggregated into one firm, resisting mass: and here its beneficial operation seems to stop, the enlarged glands themselves being seldom completely dispersed by this remedy, however long continued. In irritable subjects it sometimes rapidly brings on suppura-

tive inflammation, and in this way may be said to bring the case to a close earlier than otherwise might have happened.

Barium.—I have made trial of this remedy, so much extolled by some of the older writers, and am disposed to entertain a very favourable opinion of its efficacy, particularly in chlorotic, cachectic, and other cases attended with a languid circulation and much general debility. It seems, therefore, from its stimulating properties, to be well adapted for females of a lymphatic temperament, more particularly when attended with any irregularity of the menstrual function. I have generally used it in combination with the muriated tincture of iron, as in the following formula:—℞ Barytæ Chlorid. gr. x.; Tinct. Ferri Mur. ʒij. to ʒiij; Syr. Aurantii vel Aq. Distill. ℥x.; Mix. Of this, half an ounce to an ounce may be given two or three times a day. I have not unfrequently used this medicine at the same time as the cod-liver oil, with much apparent benefit. I then order the chloride of barium to be taken early in the morning before breakfast, and the oil during

the day. In this way I have considered that the former acts better as a tonic, whilst it at the same time renders the oil less likely to disagree with the stomach. Phillips and Glover both speak favourably of this medicine. The former remarks; —"I do not mean to say that my experience of its power over scrofula is such as to bear out the opinions of its efficacy so confidently expressed by Dr. Adair Crawford; but sure I am, that its power as a discutient over scrofulous glandular tumours, and over the scrofulous constitution, are little, if at all, inferior to those of iodine; because we have the advantage of a choice of many different combinations of that medicine. Barium yields only one preparation which has been much employed as a medicine; the meconate and nitrate are very rarely used. Barium, however, seems to be a more certain stimulant than iodine, or rather, we might say, irritant; and, in my judgment, its use is clearly contra-indicated when there is much free inflammatory excitability of the system; but in those cases where the tallow-like complexion, the pale tongue, and the languid circulation, accompanied by irritability of the

mucous surfaces, are present, the virtues of the barium are often very remarkably demonstrated. I usually give it in solution, a grain to an ounce of distilled water, with ten drops of compound tincture of gentian. Of this solution, I commence with half an ounce twice a day, and on no occasion have I exceeded three grains in the day, and up to this moment I have not experienced any check in the administration of the medicine."*

Cod-liver oil has appeared to me to exercise little or no influence upon the great majority of external glandular tumours. It must, however, be admitted that it is a potent and most valuable remedy in some forms and complications of this disease. When associated with caries of the bones or phthisis, for instance, I almost invariably order the oil, as exercising a most beneficial influence in both these cases. In affections of the joints, and in some of those soft elastic swellings sometimes invading the shafts of the

* Loc. cit. p. 282.

long bones as well as the joints, its effects have appeared to me, when steadily continued, most marvellous. Again, in many of those boggy and unhealthy sores which are sometimes observed to remain unchanged for a great length of time, and are usually covered with a thin dry crust, which, on being removed, exposes a pale, soft, fleshy ulcer, exuding a thin, grumous, unhealthy-looking matter, I have often noticed these kind of sores to cicatrize by a lengthened persistence in the use of the oil, having previously resisted most other remedies. Whatever may be the rationale of its operation, there can be no doubt but that it supplies to the blood, and thence to the different tissues of the body, very important nutritive materials which were previously wanting. When, for example, we see a sore exuding a thin colourless fluid as transparent as water, alkaline, and coagulating on the application of an acid—consisting, then, of nothing more than the serous and watery portions of the blood, which we have seen to be so abundant in this fluid in scrofula—incapable, therefore, of cell-growth and the formation of new textures,—if, under these circum-

stances, cod-liver oil, or any other agent, causes such a sore to throw up healthy granulations and get well, it must be by supplying the blood with a more highly vitalized pabulum, which, by increasing the red corpuscles, substitutes for the serous and watery blood-liquor a plasma more in accordance with what we know to be the healthy or standard condition of this fluid.*

Alkalies have for a long time been reputed as valuable anti-strumous remedies, and have been recommended very recently by some very high authorities. This has doubtless arisen in some

* Dr. Hughes Bennett many years ago pointed out the efficacy of cod-liver oil in many forms of scrofulous disease; and I think much praise is due to that physician for having brought this medicine more prominently before the profession in this country than any of his predecessors had done.—See a Treatise on the Oleum Jecoris Aselli, Edinb. 1848.

I may also direct attention to a very excellent little work lately published by my friend Dr. James Turnbull, who has adduced some remarkable cases showing how tubercular cavities of the lung may cicatrize, and the disease be sometimes arrested, if not eventually cured under its influence.—An Inquiry how far Consumption is Curable, &c. By James Turnbull, M.D. 2d edit. London: J. Churchill, 1850.

measure from some partiality for, or the belief in, the antiquated doctrine which assumes that there is some specific acid principle pervading the animal fluids which determines the development of the disease. It is hardly necessary to state that all this is a mere hypothesis; and I have, by some attention to this point, satisfied myself that there are no grounds whatever for believing that an excess of acid of any kind is generated either in the chylopoietic viscera, or eliminated from the system with the various excreting products. It is quite true that the irregular appetite, bad digestion, and vitiated alvine discharges, do frequently in childhood precede the early manifestations of scrofula, and seem to point out the probability of there being an excess of acid sometimes generated in the primæ viæ; but it by no means follows that this should be one of the most important features of the disease. Not only on these grounds, but from practical experience, I have come to the conclusion that little benefit will result from any lengthened persistence in this class of remedies. On the contrary, I am disposed to believe that they are sometimes

absolutely hurtful, by deteriorating still more the already too much impoverished blood. In proof of this I may mention that, during the trial I made with the various alkaline preparations reputed to cure scrofula, I observed in many instances one of the commonest complications of this disease to appear: I allude to ophthalmia, which as speedily yielded to a directly opposite system of treatment.

Iodine, either alone or in combination with potass, has succeeded but indifferently in my hands; and I believe it will be found that the value of this substance has been much over-estimated.

The iodide of iron is one of the best preparations, and may be given either alone or in combination with cod-liver oil.

Phosphoric acid.—I have seen this medicine to exercise a very beneficial effect in a considerable number of cases. Its effects are sometimes very marked in some of those obstinate forms of

strumous conjunctivitis which we know will sometimes resist for a long time every kind of treatment, and at others will quickly disappear under the influence of quinine, or some simple local application, but perhaps as speedily return under the slightest exciting cause. In these (if I might be allowed the expression) intermittent forms of ophthalmia arising in a scrofulous constitution, I have found this medicine of especial service, not only in completely removing the disease, but also in preventing its recurrence. I am in the habit of giving it in the infusion of columbo, commencing with five minims of the dilute acid of the Pharmacopœia, gradually increasing it to twenty or more. This combination seems to agree very well with the stomach, and, unlike most mineral acids, may be continued for almost any length of time without producing any unpleasant effects. Whether its beneficial action is confined to its tonic influence, or exercises some more specific influence upon the blood and system generally, I do not know.

As regards the early treatment of scrofulous

swellings, I believe that much harm is sometimes done by the indiscriminate use of frictions with the iodine ointment, and other compounds in general use, by inducing a low form of inflammatory action in the skin and integuments, and the chance, therefore, of bringing on the suppurative process, which it is desirable in many cases, for reasons already stated, to prevent. On this account, and also from the fact that the action of all such applications is very feeble in dispersing the tumour under any circumstances, I seldom now have recourse to these or other kinds of embrocations so frequently resorted to.

In the absence of all signs of inflammatory action after a trial of some of the foregoing internal medicines, the choice of which must depend very much upon the individual peculiarities which the case may happen to present at the time, I prefer, as a counter-irritant, pencilling the part lightly with the solid nitrate of silver a few times, at intervals of a week or ten days. This is a milder and safer proceeding than the use of

blisters, the action of which is more diffusive and irritating.

It is hardly necessary to insist upon the utmost attention being paid to a variety of circumstances regarding the general management of scrofula; such as good and wholesome food, pure air, sea bathing, exercise, and various other hygienic means, which are known to exercise the happiest effects in almost every form and variety of this disease; and, if trusted to alone, would, I am persuaded, in many instances, give the patient as good, if not a better chance of shaking off this most intractable disease.

APPENDIX.

CASE OF CYSTORRHŒA.—DISCHARGE OF PHOSPHATIC CALCULI TREATED BY INJECTION.*

Mr. P., a Peruvian gentleman, 58 years of age, generally of temperate habits, though habitually indulging in a most pernicious practice of charging his stomach with a glass of spirits before dinner, consulted me under the following circumstances:—He states that he has always enjoyed good health until about four years ago, when he contracted a chancre, for which he took mercury: the sore speedily healed, and he felt no further inconvenience until some two or three months after, when he experienced symptoms of secondary syphilis, which also yielded at once to sarsaparilla and the usual remedies. With the exception of a

* Published in the Medical Gazette, vols. vii. and x. pp. 938, 689.

slight attack of jaundice whilst in Peru, does not remember anything that in the least disturbed him in the exercise of his pursuits, either of pleasure or business, until the evening of the 2nd July, when, after dining as usual in company with a friend, he was suddenly seized with retention of urine. A surgeon in the neighbourhood was sent for, but states the bladder was not relieved until the following morning, when a catheter was passed, and the water drawn off without any difficulty. It was found necessary afterwards to continue the use of the instrument for about a week, when it was laid aside, the bladder having sufficiently regained its tone. He continued subsequently to suffer from all the symptoms of chronic inflammation of the bladder, up to the 24th of August, when I saw him for the first time. He then complained of a frequent desire to void his urine, which was always attended with the most excruciating pain, referred chiefly to the glans penis; the passage of mucus, mingled with calculous matter, greatly increased his agony by sometimes blocking up the passage so completely as to prevent entirely the escape of any urine. He was effectually relieved of this impediment by syringing warm water into the urethra.

His countenance presented that pale, anxious, and sombre hue, so peculiar to these affections, and the tongue was coated with a brown fur. The urine brought me ap-

peared to consist of but little else than a thick glutinous mass of jelly, deeply tinged with blood, of a fœtid, ammoniacal smell, alkaline, changing turmeric paper immediately brown. The quantity of grey calculous matter passed in the form of crystalline gravel, and in a semifluid state, was very considerable: the specimen brought me, having been carefully collected together a few days previously, was sufficient to fill a large pill box. This deposit was found by Dr. Brett, on analysis, to consist of the triple phosphates, with a small proportion of the phosphate of lime, cemented together with mucus. He was ordered a grain of opium night and morning, and an enema of poppy heads, with thirty drops of laudanum (the latter, however, causing constipation, was soon discontinued), lemonade as a drink, and rest in the horizontal position, &c. The more urgent symptoms having been relieved, he was directed to take the decoction of pareira, with dilute nitric acid, three times a day, continuing the opium at night.

Sept. 5th.—Water still alkaline, increased in quantity, of a pale, whey-like aspect; specific gravity, 1·013; at other times, when passed in less quantity, as high as 1·030. Large fragments of calculous matter continued to be voided, chiefly in the evening. The nitric acid increasing the irritability of the bladder, he took instead the acetic,

and subsequently the dilute phosphoric acid, in the same decoction.

14th.—Bore the phosphoric acid very well; quantity of mucus, or rather muco-purulent matter, diminished. I have said muco-purulent, because the deposit every now and then presented that appearance; and, moreover, the supernatant liquid, when distinctly free of any blood, sometimes coagulated both on the application of heat and nitric acid. From this time the bladder was washed out with warm water daily, with great benefit.

26th.—The bladder was injected with the following:—Acid. Hydrochlor. ♏x.; Tr. Opii, ʒss.; Aq. Distil. ℥iv. This produced little or no pain, but brought on a second attack of retention of urine, arising evidently from the coagulation of the albuminous portion of the diseased mucus by the acid, which, finding its way into the urethra, prevented the escape of any urine. Large masses of this shreddy substance were afterwards discharged, and in a few days the catheter, which had been required to relieve this temporary difficulty, was discontinued. The injection was again used, but much reduced in strength, without any of these unfavourable consequences occurring. From this period a great improvement took place; no sand or

calculous matter had been voided since the first injection of the acid solution; irritability of bladder much lessened; strength and appetite improved; and the tongue, which had before never varied in appearance, but always retained the characteristic brown coat, became almost suddenly clean, and the urine exhibited faintly its normal acid reaction. He took a decoction of matico, in place of tea, morning and evening, and a few drops of the Tinct. Ferri Mur. twice a day, with some apparent benefit, until the 30th of October, when he was sufficiently well to go into the country, and has since returned convalescent.

Remarks.—The foregoing case, the particulars of which have been hastily strung together from memory, although presenting no very novel or peculiar features, has been one of instruction to me, and I am not without hope but that it may be of interest to some at least of my readers. Catarrh of the bladder occurring at an advanced period of life,—whether arising from stone, stricture, enlarged prostate, or simply, as in the present case, from the deposition and subsequent incrustation of the mucous lining of the organ by some of the constituents of the urine,—must always be viewed in the light of a very formidable disease, unless we can ascertain and speedily remove the cause. Now the "*fons et origo mali*" here clearly depended upon a morbid condition of the mucous lining of the bladder,

which, by chemically acting upon the urine secreted by the kidneys, caused the deposition of the insoluble earthy phosphates; to correct which, I administered the mineral acids. Both the nitric and muriatic were tried, but without any decided effect; weak doses being ineffectual, and increasing their strength only tended to make things worse by augmenting the irritability of the bladder. The acetic acid seemed to agree with the patient, but did not appear to do any good. The phosphoric acid, however, he continued to take for some time, and it appeared to be of great use, both in giving tone to the stomach and diminishing the quantity of mucus. After giving each of these remedies a fair trial, and assuring myself that no stone existed in the bladder, I determined upon attacking the disease by injections, and, as stated, with complete success: the secretion of earthy matter was immediately arrested, the irritability of the organ gradually subsided, and the dark fur, which seemed to be permanently fastened upon the tongue, began to disappear, and the urine, which before the injections had been constantly alkaline when passed, became neutral, and quickly assumed its normal acid reaction,—a convincing proof, I think, that the studding of the bladder with phosphatic concretions was the cause of the alkaline condition of the urine, and not, as is sometimes the case, from disorder of the assimilative functions, in which case the urine would be secreted in an

alkaline state by the kidneys. There seems to be one very important point to be attended to as regards the strength of the acid injection necessary to accomplish the solution and removal of the calculous matter deposited by the diseased lining of the bladder. At first, I believe, I used the acid of too great strength; the consequence was, that dense masses of concrete lymph filled the urethra so completely as to prevent the escape of a drop of urine until a catheter had been passed. A large quantity of albuminous matter must therefore be secreted in these diseased conditions of the organ, which the acid will, of course, coagulate, causing much increase of suffering, if not more mischievous and fatal consequences. I should not again, therefore, venture on an injection of greater strength than two minims of the concentrated acid to four ounces of water, as recommended by Sir B. Brodie; always taking care to wash out the bladder, so as to free it of as much mucus as possible, with warm water, some days before, and immediately prior to the operation.

The sequel to this case, I regret to add, is anything but satisfactory. It appears that about two months from the date of his last illness he voided with his urine, every now and then, some small particles of sand; this gradually increased in quantity, accompanied with pain, frequent desire to empty the bladder, and all the symptoms of his

old complaint. The first specimen of his urine brought me immediately after the reappearance of the disease was distinctly acid on being tested with litmus paper, and deposited only a very fine flocculent-looking sediment. His complaint, however, soon took on a new feature, characterized by more severe and frequent attacks of hæmaturia, occurring sometimes every four or five days: the blood voided was generally in clots, and in many instances had a nucleus of crystallized sand. He always suffered much increase of pain and uneasiness prior to the discharge of these coagula, which he referred chiefly to the neck of the bladder: he complained much, too, of a dragging pain in the anterior and upper part of this viscus, immediately behind the pubis, as if something were giving way: he also occasionally passed a good deal of blood by the rectum. His urine about this time presented a dark brown and excessively turbid aspect, ammoniacal, and deposited on standing a very copious sediment, which, under the microscope, was found to consist of beautiful prismatic crystals of the ammoniaco-magnesian phosphates, blood and pus corpuscles, and epithelium scales. From the large quantity of blood passed, especially during the latter period of his illness, I was inclined sometimes to think that there might be some malignant disease; but a very careful examination of his urine, both by Dr. Inman and myself, failed to detect any of the characteristic cells, the presence

of which, in connection with the loss of so much blood, would have confirmed my suspicions. The same remedies were used that had before been so successful in relieving this patient, but without any corresponding results: weak mineral acid injections he could no longer bear. I used, also, at the suggestion of Dr. Hoskins, of Guernsey, a solution of the acetate of lead slightly acidulated with acetic acid: this he could retain with but little inconvenience; but the case was evidently too far advanced to derive benefit from any such means. I now lost sight of him until the 17th of February, when I was again requested to see him. He was now suffering from pneumonia, involving nearly the whole of the right lung. His disease quickly assumed a typhoid form, and he sank in the course of ten days. At this time Dr. O'Donnell saw him in consultation.

The body was examined thirty-six hours after death. The right lung was found one entire mass of disease: on cutting into it, there oozed out a brown liquid, mixed with purulent matter, marking the third stage of pneumonia. The left lung was healthy. On laying open the bladder and urethra, the former was found to contain about three ounces of dark fœtid urine, mixed with sand; its walls were very much thickened, and the muscular fasciculi were collected into very prominent bands or rugæ. These projecting folds were arranged in a trans-

verse manner at the base and inferior half: at the fundus and superior part of the bladder these folds had the usual reticulated appearance. The left lobe of the prostate was larger, and more rounded and prominent than the right; its base or vesical extremity, about the circumference of a half-crown piece, was flattened, and projected slightly into the bladder; the middle or third lobe was of a pyramidal form, with its base projecting more into the bladder than the left lobe, to which it was attached by a continuous circular rim or edge; its texture was much softer than the other lobes. The right division of the gland was much smaller than the left, and did not project into the bladder; between it and the third lobe was the normal vesical opening of the urethra, deviating a little to the right side, but amply large to allow of the free escape of urine. The whole internal surface of the bladder, represented by the folds before alluded to, was completely studded with calcareous matter, presenting very much the appearance as if a handful of sea-sand had been lightly sprinkled upon it; the projecting extremities of the left, and more particularly the middle lobe, exhibited precisely the same appearance, caused evidently by the pressure of the walls of the bladder directly upon these parts of the gland during each act of micturition.

A section of the prostate presented nothing unusual in its structure, nor was there any appearance of ulceration;

a small abscess was seen in the upper and anterior part of the inner surface of the bladder, freely communicating with its cavity; it was extremely vascular, and had something of a gangrenous look before being washed.

The kidneys were large and flabby; the cortical substance was congested, but was in all other respects healthy.

These pathological specimens were exhibited to the members of the Liverpool Medical Society, and are now deposited in the museum of the Medical Institution.

The chief peculiarities disclosed by dissection in this case were the very irregular enlargement of the prostate, and the extension of the third lobe, more especially, into the bladder. Without having the effect of much impeding the passage of urine, its operation must have been, however, not the less injurious, since pressing, as it must do, upon the most sensitive part of the organ when empty, it would act almost as a continuous irritant; and was therefore, in all probability, the chief reason why all our remedial means and appliances at last proved abortive. The blood passed a little before death came doubtless from the vicinity of the abscess, and that passed previously, from the rupture of small blood-vessels of the lining membrane,

by the friction of such a mass of concrete matter floating in and otherwise incrusting the mucous surface of the bladder. The absence of any traces of ulceration in any of the most depending parts of this viscus, and the appearances above mentioned, tend to justify the safety of the practice of introducing solvents for calculi into the living bladder, and the very slender probability of their removal being accomplished, when considerable, by medicines acting through the medium of the stomach.*

* Some very interesting observations relating to the decomposition of phosphatic vesical calculi are recorded by Dr. Hoskins in the Philosophical Transactions for 1843.

CASE OF HYSTERICAL PARALYSIS TREATED BY ELECTRICITY.*

THE subject of the present case is a young lady, æt. 16, whose mother died of phthisis at the age of 36: the father I have occasionally attended for a nervous affection. She appears to have enjoyed good health up to about 10 years of age, when she was observed to stoop a little, from weakness of the back; at eleven, experienced frequent pains in her chest, between the shoulders, and particularly under the left breast; at twelve, one shoulder was noticed to project more than the other; at thirteen years of age, went to Ireland to visit some friends, where she was recommended to consult a medical man, who pronounced the spine to be curved, and advised her going to Dublin to consult Mr. E., which she did on the 18th of October, 1846, who recommended her coming into his Orthopœdic Institution. To this her friends consented. Here she was ordered to sleep on a peculiar kind of couch, to have the back rubbed every morning with a hair glove, and to exercise two hours each day in a gymnasium After

* Published in the Medical Gazette, vol. x. p. 157.

exercising in the gymnasium, a nurse was directed to lace her stays, which were made with steels in Mr. E.'s own peculiar way. She was also directed to lie on a reclined board three or four hours each day. After remaining under this treatment for about six months, her general health was somewhat improved, and the pains of the chest and between the shoulders considerably relieved. Much about this time, however, she began to feel a constant pain in her back, corresponding, as we shall afterwards see, with angular curvature of the two last dorsal vertebræ. The pain in this region was never relieved by lying down, as in other parts of the spine; on the contrary, rather increased. Soon after this she was sent to a boarding-school in Cheshire, where she gradually got worse, and, by the advice of a medical man, was again recommended gymnastic exercises, and attention to her general health.

March 1848, did not feel so well, from cramps all over, and loss of sleep; had suffered from cramps occasionally since twelve years of age. She now left school and returned home, feeling very unwell; much exhaustion, and a feeling of faintness coming on very frequently after walking out only a very short distance. At Christmas, 1848, had very troublesome boils on the chest, back, and other parts of the body: this weakened her very much, and caused so much pain and discomfort, with cramps at

night, that she was obliged to get out of bed in the night and stand on a cold hearth-stone for a considerable time as a means of relief. In June 1849, Mr. E. again saw her, and recommended change of air and sea bathing. Bathed a few times in salt water without any benefit; felt getting weaker, until one morning late in the month of June she was unexpectedly taken faint, with cramps all over her body; remained in this state about four hours. Next day felt very weak and faint; in the evening took some sal volatile, and soon after had the first confirmed fit of hysteria, which she believes was owing to the sal volatile.

I was now requested to see her; and, on entering her room, I found her sitting on a sofa, looking pale, but otherwise presenting no very marked indication of ill health: her attendant said she had been unable to stand, walk, or speak, since the fit of the previous day. On examination, I found the spine very crooked, with an angular curvature of the two last dorsal vertebræ. On passing my fingers down the median line, there appeared to be distinct tenderness both between the scapulæ and over and around the projecting spine, extending down to the sacrum; the feet were cold, livid, and completely insensible to the prick of a needle, almost as far as each knee; the hands were in a similar condition, but the loss

of sensation did not extend beyond the wrists. Although unable to stand, or support the body for a moment without assistance, I soon afterwards learnt she was enabled to turn the feet about in almost any direction when lying down in bed; her nights were restless and without sleep, and the eye presented that peculiar glistening aspect so characteristic of hysteria. She complained of headache, and cramps over the whole body, which were rendered very distressing by cold, and pressure of any kind; even a very powerful stimulating liniment seemed but to renew the cramps, and even take away all sense of feeling, on being gently rubbed over any part of the body. I very soon had an opportunity of seeing her in one of the paroxysms, which now generally recurred once in every twenty-four hours: these, as in similar cases of this mysterious disease, were truly frightful to witness,—the legs extended, and rigid as marble; hands clenched and immoveable; the head and neck thrown back; whilst the whole body appeared to be convulsed, and writhing under the most violent tetanic spasms. Sometimes the symptoms for a time assumed a different character, and she would lie motionless in one position for hours together, in a state more resembling catalepsy than anything else.

The catamenia did not appear more than once from May 1847 to May 1848: from this date she continued to

menstruate regularly every three weeks, always more profusely than usual. Leucorrhœa, which so frequently precedes and accompanies these cases, set in about Christmas 1848, and continued gradually to increase up to the time of the first paroxysm of hysteria: this appeared a no very unimportant symptom, as tending to throw some light as to the probable exciting cause of the disease. It is, at all events, evident that the severity of this complication corresponded very closely with the gradual deterioration in her health about this time; and, on inquiring more particularly, I found that she suffered so much inconvenience from this as to oblige her, for some time before the first attack, to discontinue her usual morning exercise; and latterly, even a few turns in the garden caused so much exhaustion, that she very frequently fainted after coming in.

I commenced the treatment with the usual routine of antispasmodic and tonic medicines, such as ammonia, iron, fœtid gums, &c., without much apparent benefit: opium was administered at night to soothe the irritability of the nervous system and induce sleep, but without success: three grains of solid opium given at bed-time only made her still more restless, without any narcotic effect being produced whatever.

Sept. 6th.—After one month's trial of these, and a

variety of other remedies, finding matters but little improved, the pain in the back being constant,—the severity of which, I was inclined to think, contributed in a great measure to renew the fits, whilst the paralysis, if it may be so called, remained stationary,—I began to think that there must be some irritation of the spinal cord or its membranes. I now, therefore, applied seven or eight cupping-glasses along the whole extent of the spine every alternate day; prescribed small doses of the hyd. c. creta, with carbonate of soda, every night, and a turpentine enema every third morning: on one occasion I even ventured to apply the scarificator, and took away about three ounces of blood, with apparent relief. Under this mode of treatment she began steadily to improve; headache much relieved, and the pain and tenderness of the back not so urgent; she also soon passed better nights, sleeping three or four hours together soundly. The attacks returned on three or four occasions afterwards—always, however, just before each menstrual period. The lower extremities, however, continued useless, and without any return of sensibility, and she had, as usual, to be carried by her attendant from room to room. I now commenced to apply galvanism, with a view of restoring the use of her limbs. At first the shock of a very powerful battery was not felt on placing one pole over the lower part of the back, and the opposite one to any part of the leg below the knee; but after a few trials I found one isolated

spot, about the circumference of a shilling, over the outer part of the tibia, a few inches below the knee, sensitive to its stimulus. By continuing its use every day, however, the feeling seemed to radiate day by day downwards, over the whole of the external part of the leg to the ankle; the inner part of the leg and foot remaining, as before, completely unaffected by the electric current. The sensibility, however, soon returned here likewise, and extended gradually to the extremity of the second toe. Immediately after the next *séance* I learnt with satisfaction, that, soon after my leaving the room, my patient got up very coolly and walked across the room, and over the house, unattended or supported by any one. This happened on the 12th of October, since which she has continued to take regular walks out of doors for considerable distances, and is progressing satisfactorily in all other respects.

Remarks.—My first impression on seeing this case was that it was nothing more than hysteria, and the loss of power over the lower limbs was simply one of those protean forms which this disease sometimes assumes. This opinion was in some measure strengthened by the fact that she had, a little time prior to my first seeing her, suddenly lost all voluntary power over both of her limbs, and as suddenly regained their use. That the paralysis

was not due to caries of the vertebræ, or any serious organic lesion of the cord, appeared evident, from the entire absence of any constitutional symptoms to indicate such a state of things; for the body was plump and well-nourished; the limbs, although useless, were firm and resisting, and she was enabled to turn them about almost in any direction when lying down: moreover, there was a perverted or morbid state of sensibility of the cutaneous surface of the entire body (which, I should suppose, would not be the result of any local injury of the cord); so much so, that pressure and friction of any kind appeared to extinguish at once all sense of feeling; and, as I have remarked, even a strong embrocation had precisely the same effect.

Not succeeding with the usual remedies in producing much improvement in my patient's health, but in some respects losing ground, the numbness and loss of sensibility of the limbs increasing, whilst the pain in the back was no way diminished, I was led to believe that there must be some functional derangement of the spinal cord or its appendages, arising from some cause or other; and that the symptoms resembled, in many material points, the somewhat obseure, but not the less interesting class of cases described by the Messrs. Griffin, Teale, Burns, and others, uuder the head of spinal irritation. My con-

clusions were drawn, as they sometimes must be, in studying the diversified and often complex phenomena exhibited in this particular class of diseases, from watching the effects of the remedial means and appliances employed. Our treatment of many of these cases must, therefore, to some extent, be empirical, until morbid anatomy is found to reconcile more closely the relation of many of the anomalous symptoms presented in this disease with some more precise pathological lesion after death.

As regards the actual seat of the disease in this instance, it in all probability was connected with some congested state of the spinal veins; and indeed, it does not seem very difficult to imagine why this state of things should occur, if we carefully examine the anatomical arrangement and structure of the venous system of the spinal cord. Thus, according to the researches of Breschet, there is everything here calculated to favour stagnation of blood:—1. The veins are deprived of valves, thinner, and much more delicate than in other parts of the body; 2. They are relatively very numerous, subdivided, and tortuous; so that each spinal nerve may be said to be literally encircled and bathed in venous blood, as they penetrate the intervertebral foramina. The consequence of this arrangement, notwithstanding the fre-

quent communications by which this impediment is in some degree obviated, must be that the blood will move more slowly and with greater difficulty. That congestion does sometimes happen from this peculiar disposition of the veins of the spinal axis, must therefore be extremely probable. Ollivier mentions that he had often found in his dissections fibrinous clots blocking up and distending the veins of the spinal cord, and even those which accompany its nerves; and many other similar instances are related in the works of Morgagni.

The influence of galvanism in restoring the power of locomotion was certainly more remarkable than anything I have before witnessed. That this was in reality the result of the galvanic stimulus, and not, as we know is sometimes the case, owing to some sudden moral impression unloosing the magic web which seems for a time to hold captive the power of volition, I think there cannot be the least doubt. The effect of this agent was perceptible on each application; and it was not until the remedy had been persevered with for some time that the results detailed were so strikingly manifested. To show how powerful is the operation of electricity in stimulating directly the voluntary muscles, I may add, that she felt, as she often expressed, a strong inclination to walk after each *séance;* so much so, that she many times made the attempt, but

always without success, falling thump upon the floor, until the period mentioned; and even when she had regained the power of standing in the erect attitude, it required much determination to keep it; and, but for the exercise of a series of Terpsichorean movements, she feels convinced that she would not have been able to have retained her position.

I may mention that I made trial of this remedy at a much earlier period in this case without observing any benefit; on the contrary, many of the symptoms appeared to be aggravated after its use. It was, therefore, at a particular stage of the disease, when counter-irritant and alterative medicines had removed the more active symptoms of the complaint, that galvanism appeared to do good. This remedy, therefore, like any other, is applicable only under certain conditions, and the success of it will depend not only upon the tact and acumen of the practitioner in the selection of his cases, but also the particular phase of the disease at which its use is apparently indicated.

AN IMPROVED MODEL BOUGIE FOR EXAMINING THE URETHRA IN STRICTURES.*

VARIOUS instruments have been recommended from time to time to aid the surgeon in forming an accurate diagnosis of stricture of the urethra.

The "*sonde exploratrice*," devised by Ducamp for taking a correct model of the diseased part, is likely to lead us into error, and to put the patient to much inconvenience, owing to the extreme softness of the materials of which it is composed. If, for example, a tight stricture is situated immediately anterior to the bulb, and this instrument is passed down to take its impression, the probability is, that the point, in place of entering the stricture, will become twisted and bent, or, what is still more likely, leave some of the composition behind; either of which circumstances must lead to some difficulty in withdrawing it without forcibly stretching the canal: for similar reasons, this instrument is altogether unsuitable for resisting

* Published in the Lancet, Vol. i. for 1846, p. 130.

any temporary spasmodic contraction of the muscles surrounding the canal; so that an impression left on the bougie from this cause might lead the operator to suppose that there is a stricture when none exists, or convey an erroneous idea of its character, when the urethra is in reality the seat of some morbid contraction. Sir C. Bell long ago recommended the use of silver ball-probes, in order to ascertain the extent of a stricture; and more recently, MM. Amussat and Segalas have introduced more complicated instruments, but similar in principle, and possessing no advantages over the ball-probe, to show the existence of a stricture in its commencing or rudimentary state, when it is likely to escape detection by ordinary methods. Neither of these instruments, I believe, are at present used, owing to the exquisite pain which they invariably produce, and their liability to induce spasm or become entangled in the mucous lining and follicles of the urethra. The same objections are applicable to the simple canula suggested by Mr. Arnott and Ducamp for facilitating the passage of a bougie or any other instrument in bad cases of stricture.

To avoid the necessity of having recourse to any of these instruments, and the still more mischievous practices of those who endeavour to compete with this disease *vi et armis*, in direct opposition to the solemn injunctions of

Hunter and most distinguished surgeons since his time, I have to submit to the notice of the profession a modification of the common wax bougie, as represented in the accompanying diagram. On passing this instrument down

to the seat of stricture, the square body at its extra-vesical extremity, serving as a handle for its introduction, may likewise be supposed to correspond with four imaginary lines in the urethra (say at the seat of the disease). In withdrawing it carefully, I note the relations of the bougie with the urethra by the figures 1, 2, 3, 4, printed on the index; and supposing, for example, the centre of the bougie is found moulded equally at the point by the strictured orifice, it is obvious that the aperture is situated in the centre of the diseased part, and that the point of an instrument ought to be carried in a corresponding direction on its approaching the stricture; but supposing the impression be on one side only, by keeping in mind the relations which the impression bears to one of the surfaces or figures represented by the index, we shall know precisely the side of the canal at which the aperture is situated, and thus be enabled to give the instrument or bougie to be afterwards introduced the requisite curve, that its point may be so directed as to correspond exactly with the opening in the stricture.

In recommending this instrument, which is intended to simplify and improve our diagnosis of a disease which often baffles the ingenuity of our best surgeons, I trust that it may in some degree tend to remove some of the difficulties which beset the operator in his endeavour to pass instruments into the bladder, and still more assist those who, utterly regardless as to the form and situation of the disease, burrow and tunnel the walls of the urethra, to the discredit of themselves, and to the irreparable injury of the patient.

This instrument is made by Mr. Coxeter, of Grafton Street East, London.

THE END.

WILSON AND OGILVY, 57, SKINNER STREET, SNOWHILL, LONDON.

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