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From the author

LECTURES
ON DERMATOLOGY;

DELIVERED IN

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND,

IN 1871—1872—1873.

INCLUDING

ECZEMA; SCABIES; URTICARIA; HERPES; FURUNCULUS;
DERMATO-SYPHILIS; ELEPHANTIASIS; AND LEPRA.

BY

ERASMUS WILSON, F.R.S., F.R.C.S.

MEMBER OF COUNCIL; AND PROFESSOR OF DERMATOLOGY.



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TO

SIR WILLIAM FERGUSSON, BART., F.R.S., F.R.C.S.

THE PRESIDENT OF THE YEAR 1870 ;

GEORGE BUSK, F.R.S., F.R.C.S.

THE PRESIDENT OF THE YEAR 1871 ;

AND

HENRY HANCOCK, F.R.C.S.

THE PRESIDENT OF THE YEAR 1872,

This Volume

IS DEDICATED,

WITH SINCERE RESPECT AND ESTEEM,

BY

THE AUTHOR.

PREFACE.

THE Royal College of Surgeons of England has given a willing help to the cultivation of Dermatology, and has offered unusual facilities for its study and improvement. It might be said that in the country of Turner, Willan and Bateman, the Royal College has performed only a simple duty; but that the act should have been simple and natural, neither detracts from its merit nor from its dignity and grace. It may be considered a practical recognition of the unity of the animal organization, and of the fact that man would be as little complete without his cutaneous integument as Medicine and Surgery would be perfect without a knowledge of the pathology of the dermal constitution of the human structure.

The first step towards laying a proper foundation for the study of the pathology of the skin was the formation of a Dermatological Museum within the College walls. This collection has now reached in numerical extent to very nearly six hundred objects. Many of those objects are models executed in the Saint Louis Hospital at Paris, by an exact and

careful artist, M. Baretta; and, by multiplication these models have found their way to remote parts of the world, notably to the United States of America and to the Brazils; thus aiding to draw the world more closely together in the study of these diseases.

Since the world itself may be regarded as little more than one extensive family, which science is every day reducing to a more and more limited circle, we may be said to be only availing ourselves of a brotherly privilege in receiving from France the beautiful models which grace the College collection, and which we have the opportunity of using with so much benefit and advantage to ourselves. Nevertheless, I venture to entertain a hope that before the present century shall have completed its days, London will not be second to Paris and other great cities in the possession of a hospital devoted to the investigation and treatment of cutaneous diseases, an institution which shall be inferior to none in the world. A "Hospital Sunday" has already given the public a right to demand such an institution, and a claim to assist in its foundation.

The present Lectures have almost, of necessity, taken the shape of demonstrations of the Dermatological collection, and in this particular may be regarded as a humble imitation of the Hunterian Lectures. From this circumstance they possess a practical character, in some respects resembling Clinical Lectures delivered within the walls of a hospital. They are founded neither on the recollec-

tion of cases nor on theory, but appeal to the objects which constitute our collection; and in their printed form will serve as a text-book for the study of cutaneous diseases, if not by the bedside, at least in the presence of as near an approach to the actual disease as is practicable by artificial means. Another purpose is gained by this mode of proceeding; these lectures will, I hope, be subjected to the test of examination and inquiry wherever the models shall have made their way, and will thus become a useful means of international communication with respect to cutaneous diseases.

The subjects which have already been treated extend to about half the collection; the remaining half will form the material of subsequent lectures.

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LECTURES ON DERMATOLOGY.

SESSION 1871.

LECTURES ON DERMATOLOGY.



MR. PRESIDENT AND GENTLEMEN,

IN the inaugural course of Lectures on Dermatology which I had the honour to deliver in this College at the beginning of last year, I restricted myself to a synoptical survey of the subject of our research, and I endeavoured to present to the Student an outline map of the field of his inquiry and study. That course of Lectures I intended to be regarded as introductory to our future investigations; and, keeping it in view, in such relation, I shall now enter upon a department of a more practical character, namely, the *examination and demonstration of the objects composing the dermatological collection of the College Museum, and the consideration of the principles which should guide us in the therapeutical management of cutaneous diseases.*

In the nucleus of a Museum which is presented to us in the Dermatological collection, there occur five hundred and thirteen objects; and my first effort has been to arrange those objects in such an order as seemed to be, in the first place, the best suited to facilitate their examination and study; and, in the next place, to conform with the ordinary and recognised divisions of pathology and physiology. The results of my labour are before the members of the profession in the printed "catalogue of the dermatological specimens." And with this catalogue in my hand, as a guide-book, I will now

proceed to analyse the contents of the collection, and explain the *rationale* of their arrangement and their mutual relations with each other.

I commence with the subject which, as I believe, is admitted by the Medical Profession of every country, and recognised by all our books of study, to be the natural beginning of a pathological series, namely, *common inflammation*; and I pass on then to those diseases of the skin which are due to blood-poisons, and give rise to *specific inflammation*. Next to common inflammation and specific inflammation induced by the presence of toxic agents in the blood, I take the diseases dependent on aberration of *nutritive function*; then follow diseases of other important *functions* of the skin; and, afterwards, diseases of certain *special apparatuses*, such as, the epithelium and the hair; and, also, the glandular apparatus, consisting of the sebiparous glands and the sudoriparous glands.

In this manner, and in this order, I create, as it were, *six* groups of diseases of the skin; and I may illustrate these six primary groups, or we may say *CLASSES*, by reference to the following table:—

1. Common Inflammation.
2. Specific Inflammation.
3. Aberration of Nutritive Function.
4. Aberration of Sensation.
5. Aberration of Pigment Function.
6. Disorders of Special Organs.

In the next place we have to recognise that the diseases of common inflammation present certain varieties, which are so well marked that it would be difficult to confuse them together; for example, there is that very characteristic inflammation of the skin which is known by the name of *ECZEMA*; secondly, there is an equally well-known inflamma-

tion, namely, ERYTHEMA; then there is the blistered or phlyctenous inflammation termed PEMPHIGUS; fourthly, an inflammation of a gangrenous type, namely, FURUNCULUS; and fifthly, a group of inflammations which are due to local injury, and originate in causes which may be rightly termed TRAUMATIC. Hence, at the outset of my business of arrangement I found arrayed before me, five pathological groups, taking for their source common inflammation; and to these I have given the preference of rank, and have placed them at the head of a second table, thus:—

I.—DISEASES OF COMMON INFLAMMATION.

1. Eczematous Affections.
2. Erythematous Affections.
3. Phlyctenous Affections.
4. Furunculous Affections.
5. Traumatic Affections.

The cutaneous manifestations of disease dependent on blood-poisons, next come in for a share of our attention; and under this head we have to take into consideration the poisons giving rise to the exanthematous fevers as well as to typhus and typhoid fever; the poison of syphilis; and the poison of that greatest of all the leprosies, the Elephantiasis of the Greeks. These three sources supply us with a sixth, seventh, and eighth group, as follows:—

II.—DISEASES OF SPECIFIC INFLAMMATION.

6. Exanthematous Affections.
7. Syphilous Affections.
8. Elephantous Affections.

In the third of our greater groups or classes of cutaneous diseases, the predominant and connecting characteristic is derangement or aberration of the nutritive function of the skin; and to this group belong the lepra of the Greeks; struma or scrofula; carcinoma; and certain other aberrations of the

nutritive processes which may be termed dystrophic affections :—

III.—DISEASES OF ABERRATION OF NUTRITIVE FUNCTION.

9. Leprous Affections.
10. Strumous Affections.
11. Carcinomatous Affections.
12. Dystrophic Affections.

Under the head of diseases of function I assemble together a pathological group in which the important functions of innervation and pigmentation are concerned; and disorders of these functions add to our Table another two groups, namely :—

IV.—ABERRATION OF SENSATION.

13. Neuropathic Affections.

V.—ABERRATION OF PIGMENT FUNCTION.

14. Chromatopathic Affections.

In a retrospective review of the five classes of cutaneous diseases, which we have just been considering, it may be observed that inflammation, which takes the precedence of the rest, and is paramount in the first two classes, is beginning to lose its importance in the class of trophopathic affections and is ceding its ground gradually to disordered nutrition or trophonosis, until, in the succeeding class—diseases of function—we perceive that in some instances it is completely superseded by the latter condition. So, also in the fourth and fifth group—diseases of function,—we find ourselves insensibly drawn into the recognition of special constituents of the skin, as in the instance of neuropathic affections and chromatopathic affections, and we are thereby prepared for the transition which has already commenced, from a pathological to a physiological basis of arrangement. In the

sixth group, the morbid affections^{*} are those of the epithelium or cuticular covering of the skin; and that other portion of the epidermis which constitutes the nails; together with the hair and the glandular apparatus of the skin, steatogenic or sebiparous, and idrotogenic or sudoriparous, thus :—

VI.—DISORDERS OF SPECIAL ORGANS.

15. Epidermic Affections.
16. Onychopathic Affections.
17. Trichopathic Affections.
18. Steatopathic Affections.
19. Idrotopathic Affections.

This is the classification which I have adopted for the arrangement of the objects in the Dermatological collection of the Hunterian Museum; and practically, as well as theoretically, I may state that I have found it answer its intended purpose extremely well. In the nineteen groups before us every disease of the skin finds its appropriate place and every group is allied, either pathologically or physiologically, with the groups which precede it and follow it.

We will now submit this arrangement to the test of closer examination.

First in our classification and first also among affections of the skin, is the disease ECZEMA. The word is less ancient than many of our dermatological terms, and bears in its meaning the impress of the humoral doctrines of earlier times. It signifies a “boiling out,” and, as Ætius ingeniously explains, conveys the idea of an inward heat which drives off the humours of the body from its surface like the seething of a boiling fluid. And, although we no longer recognise the humoral doctrines, nor the expulsion of the humours of the body through the skin by an inward heat, we are nevertheless forcibly struck with the cogency of the expression when we see the minute vesicular bubbles which sometimes

cover the inflamed skin, the copious exudation sometimes welling forth from its surface, and hear the sharp complaint of our patients against the burning and scalding pains by which it is accompanied. Ancient observers seem to have been more impressed with the intense itching which is common to eczema, and have called it, in consequence, *psora*, from the Greek word signifying to “rub;” so that, in the mere nomenclature of the affection, we find delineated a fair picture of the disease; that is to say,—of a disorder which is hot, burning, scalding, often exuding in vesicles or by a copious oozing from the inflamed surface, and, for the most part, pruritic or itchy to a greater or less degree.

If we set ourselves the task of defining eczema briefly we should call it *an inflammation of the skin attended with a breach of its surface*; and, a knowledge of the common characters of inflammation will teach us the appearances which the inflammation and the breach of surface are capable of assuming. It is obvious that there will be redness, there will be more or less prominence or swelling, there will be displacement of the cuticle, either in the form of vesicles or desquamation, and there will be exudation and the consequences of exudation, in various degrees. One of the most eminent of our modern authorities in dermatology, Hebra, has said very truly, that if we rub a drop of croton oil upon the skin, we have immediately developed a case of eczema. And, in like manner, it may be stated, that any irritation of the skin, whether the irritation come from without or from within, is capable of exciting an eczema.

With these preliminary observations as to the nature of eczema and in answer to the question,—*What is eczema?* I will now proceed to demonstrate the illustrations of eczema which our Museum affords.

Of eczema *par excellence*, of eczema of the commonest kind, it may be said, that it always presents

a plurality of signs or lesions; thus if we turn to Nos. 1, 2, and 3 of the catalogue we find the following description:—

“No. 1. ECZEMA POLYMORPHICUM. Common eczema (eczema vulgare); eczema presenting a plurality of lesions, therefore polymorphic or multiform; the forms represented being—ichorous, crustaceous, and papulous.”

“No. 2. Water colour study of eczema polymorphicum. The eruption is seated on the forearm, and exhibits the ichorous, crustaceous, pustulous, and vesiculous lesions.”

Now, if we examine the model No. 1 representing the thigh and leg, we shall perceive evidences of inflammation dispersed in a peculiar manner over the limb; in one situation there are blotches manifesting a lesion of considerable extent, and in another the inflammation would seem to be centred in minute points. In the latter case it is evident that the seat of the inflammation is the cutaneous follicles; in the former both follicles and inter-follicular spaces are blended in one general disorder. There is redness of the affected parts, although but little; there is also swelling, but that is only slight. In the blotches, the redness is seen along the margin of the disease where it is the forerunner of subsequent changes, and the swelling is very slightly marked; in the follicles the redness appears in the semblance of puncta, and the swelling there is more conspicuous, elevating the mouth of the follicle and producing that form of pathological lesion which is denominated a “papule.” If any evidence were needed of the precise seat of the pathological changes present in eczema it might be found in this model; the papulæ are many of them perforated by the hair which issues from the aperture of its follicle, and along the circumference of the blotches, the gradual implication of follicles and inter-follicular surface is distinctly perceptible. We are also taught by this example, the process of extension of the disease, its creeping or erpetic character, for, between the two extremes

of simply prominent papulæ and the larger blotches may be found smaller blotches of intermediate size.

The next observation that may be made in reference to this model relates to the presence of a thin scab or crust on several of the blotches. The crust is the product of an exudation from the inflamed skin, and if the crust were removed we should discover beneath it a raw surface moistened by an ichorous secretion. The secretion of eczema is apt to range in appearance from simple transparency, through the various tints of white and yellow opalescence, to the deep yellow hues of pus; and, where any hæmorrhagic tendency prevails, whether arising from external injury or from the weakened condition of the tissues, there we may find super-added, the colouring principle of the blood, producing shades of different tint ranging from reddish brown to almost black. These are the conditions which influence the colour of the crust; while the degree of inspissation of the secretion and the quantity of such secretion, will determine its thickness.

In the model before us the crust is thin, evincing a moderate amount of exudation, and its colour presents a yellowish grey, suggesting the idea of a secretion very little altered from the transparent lymph-like quality of liquor sanguinis.

If we set ourselves to search for the pathological lesions visible in this model and take them in the order of their severity, we find the signs of ichorous exudation manifested by the presence of a crust; and, secondly, we perceive the papulation of the surface resulting from inflammation of the follicles. We may, therefore, declare, as our diagnosis of the case—an eczema which is ichorous, encrusted, and papulous, and fairly entitled to the designation of *eczema polymorphicum* or *eczema multiforme*.

In the drawing No. 2, the ichorous discharge is visible at numerous points; there are several excoriations occasioned by the removal of the thin

scab which formerly concealed the inflamed skin; there is a broad expanse of yellow crust broken up into polyhedral fragments, between which the red and congested surface is visible; and, moreover, there is an abundant crop of minute vesicles, many isolated or discrete and many congregated into small coherent groups. In this drawing, therefore, the eruption is more decidedly polymorphic than in No. 1, for, besides being sensibly ichorous, it presents us with excoriation, incrustation, and vesiculation. A coloured lithograph of this drawing (No. 3) forms one of the series of "Portraits of Diseases of the Skin."

In the next place we will pass on to Nos. 4, 5, and 6, which we find, in the Catalogue, described as follows:—

"No. 4. Eczema erythematosum, *variety* orbiculatum. Model of the right side of the chest and shoulder; the eruption is dimorphic, presenting a duality of lesions, namely, an aggregation of small orbicular patches, together with a state of desquamation."

"No. 5. Eczema erythematosum, *variety* circinatum. Model of the thigh; the eruption consists of small rings, aggregated and scattered, with areas of the normal colour of the integument."

"No. 6. Eczema erythematosum, *variety* exfoliativum; dermatitis exfoliativa; pityriasis rubra of Devergie. Model of the forearm and hand, front and back. The skin is intensely red, the epidermis thin and transparent, and the surface flecked with a few scattered desquamating exuviae, oblong and narrow in figure."

And here I will venture to make a remark on the application of nomenclature to cutaneous diseases. In the instances of eczema which we have heretofore examined, the peculiarity of the pathological lesions is, their number. Thus in No. 1, there is redness; there is swelling; there is the evidence of ichorous exudation, there is incrustation, and there is papulation; while in No. 2, in addition to nearly the whole of these pathological lesions, there are besides,—excoriation and vesiculation. There is no one predominant lesion to induce us to make such a lesion the subjective character of a form of the affection,

but, on the contrary, the most striking of the features of the case is, the presence of a plurality of lesions ; hence the term *eczema polymorphicum* ; and common eczema is generally polymorphic or multiform. But in the new series which we are now about to examine, namely, Nos. 4, 5, and 6, there are only two pathological lesions, and of these, one predominates largely over the other, the predominant sign being redness, or, in other words, the type of erythema. Hence this form of the affection has been denominated *eczema erythematosum*.

Instead of a polymorphic manifestation such as occurs in Nos. 1 and 2, only two pathological lesions are present in Nos. 4, 5, and 6 ; the manifestation of the affection is therefore dimorphic, namely, redness and exfoliation, or desquamation, of the cuticle ; and hence is derived our warrant for distinguishing this form of the affection by the name of *eczema erythematosum*. But, you will observe that each of these models has an additional subjective title ; for example, No. 4 is named *eczema erythematosum orbiculatum* ; No. 5, *eczema erythematosum circinatum* ; and No. 6, *eczema erythematosum exfoliativum*. The reasons for these differences of nomenclature, and the additional appendage to their names, opens up to us a fresh subject of study which I will now proceed to prosecute.

No. 4 exhibits a broad blotch of redness which is demonstrably made up of small circular or orbicular patches. The orbicular patches are denuded of epidermis, and are consequently of a bright red colour ; and each little patch, smooth and polished on the surface, is bordered at the circumference by the broken edge of the adjacent cuticle, which encircles it as with a parrow frill.

No. 5, on the contrary, contrasts curiously with the preceding. The blotch is, in a similar manner, the result of the accumulation of a great number of small circular patches ; but the patches are rings,

their area is pale instead of being red, the cuticle is unbroken instead of being exfoliated, and the margin alone is red, and is crested by a fissured line of broken cuticle, between the chaps of which the injected skin shines out with a scarlet hue.

It would be difficult to assign a reason for these curious differences in a simple inflammation of the derma; or to say why, of two eruptions, both composed of circular patches, one should be red and exfoliate over the whole surface, whilst the other is red and its cuticle cracked, in preparation for exfoliation, only at the margin. We must however accept this fact, like many others, as a lesson of Nature, which by persevering study we may in time be able to understand. But these two cases lead us onwards to another very remarkable form of inflammation of the derma, or dermatitis, accompanied with exfoliation of the cuticle, and which I have ventured to term *eczema exfoliativum* or *dermatitis exfoliativa*.

Model No. 6 represents the hand and part of the forearm of a patient afflicted with this disease; the skin is deeply red, the derma is thickened, as is shown by the depth of the wrinkles and the puffed appearance of the surface between the wrinkles; the derma is almost completely denuded of cuticle, and what remains of that covering is thin and shining; whilst evidences of desquamation are seen at several points, flecking the skin with oblong, narrow *exuviae*, in a partial state of separation.

The three models at present under examination draw our attention to an ancient division of eczema into dry and moist, *eczema siccum* and *eczema humidum*. The already described cases of *eczema polymorphicum* included, amongst their other lesions, ichorous exudation, hence they must be regarded as belonging to the group of moist *eczemata*; but the cases of *eczema erythematosum* are examples of the type of *eczema siccum* or dry eczema; there is no

ichorous exudation, but in place of ichorous exudation, there is hyperæmic redness, and exfoliation or desquamation of epidermis. And, in a very marked degree, this character is conspicuous in *eczema erythematosum exfoliativum*.

This latter disease is a rare affection; it is so remarkable that it can hardly fail to be recognised by any one who has been made aware of the existence of such a disease, although he shall see it for the first time. It has been described by Devergie, by Hebra, by Dr. Wilks, and by myself, and it presents the peculiar characters—of an inflammation of the skin of the entire body, accompanied with intense redness and by repeated exfoliations of the whole of the cuticle in shreds and flakes, and very commonly with loss of the nails and hair. The shreds and flakes when seen upon the skin resemble in some situations feathery stripes or the foamy lines of minute waves, in others they look like plate armour; they are adherent by one edge and free at the other, they are parallel in direction and equidistant apart; some are upwards of two inches in length, while the feathery edge is half or three-quarters of an inch in breadth. Nothing can be more singular than the appearance of the body marked by these white streaks of exfoliating cuticle; the features look as if they were tattooed with graceful and symmetrical undulating curves; and, on the trunk and limbs, the curves follow the direction of the normal lines of motion of the skin. A patient suffering under this curious complaint speaks of the appearance of his body as being “fluffy;” while to the eye of another, the long curved lines sweeping around the trunk and limbs, suggested the idea of “ribs,” and he spoke of his body as being “ribbed;” and the comparison was by no means exaggerated. When these long flakes or exuviæ of exfoliating epidermis are broken off, they fill the garments and bedclothes of the patient; and when, in their broken state, they are

collected together, they resemble the bracts of hops, as may be seen in preparations 7, 8, and 9. Nos. 8 and 9 are the produce of the same patient, and they illustrate a practical fact in connexion with the disease, namely, that the exuviæ are largest and most abundant at the height of the illness, and that they become smaller and less plentiful as the inflammation subsides.

The abundance of the epidermic exuviæ is so considerable, at the height of the disease, that, in the case from which the preparations 8 and 9 were taken, the weight of the scales collected from the bed amounted to more than two ounces daily, and in bulk, to upwards of a pint; and, as the period of active exfoliation was prolonged for more than two months, I calculated that during that period, the quantity of cuticular exuviæ thrown off by the skin could not be less than ten pounds in weight and more than a bushel in bulk. Devergie, however, gives sanction to a higher computation than this, for, according to him, the quantity of exfoliated cuticle amounted to between two or three litres or quarts in the day, and, consequently, to between two and three bushels a month. It was this quality of exfoliation that especially attracted the attention of Devergie, and, likening the broken exuviæ to the fine scales which are produced in pityriasis, he called the affection pityriasis rubra, and Hebra has adopted the same term.* But if we prefer to search into the intrinsic nature of the disease rather than content

* Bateman's description of the pityriasis rubra of Willan is as follows:—It "occurs most frequently in advanced life [adult, E.W.], and is the result of a slight inflammation of the portions of the skin affected, somewhat resembling in this respect the psoriasis diffusa. The cuticle is at first only red and rough, but soon becomes mealy and scurfy, and exfoliates, leaving a similar red cuticle underneath, which undergoes the like process, the scaliness becoming greater as the exfoliation is repeated. This complaint is attended with a dry and unperspiring surface, a troublesome itching, and a feeling of stiffness."—Third edition, 1814. Page 46.

ourselves with one only of its symptoms, we should be nearer the scientific truth, as it appears to me, if we were to keep the affection where I have placed it, namely, in the group of the eczematous affections.

As this affection is rare and curious, and illustrates very forcibly several of the phenomena of inflammation of the skin, I will narrate briefly the history of a case which has lately been under my care; and I make this digression the more readily as it will serve to place before my hearers the ordinary surroundings and concomitant symptoms of the disease.

A merchant, aged 42, residing in the suburbs of a large city, has suffered from *lepra vulgaris* for seventeen years, and from attacks of gout for about eight years. In other respects he has enjoyed excellent health, and leads an active and temperate life.

In the summer of 1871 he went to Nauheim, for the cure of the skin-affection, but was driven home by the outbreak of the Franco-German war, too soon to have derived any benefit from his visit.

On the 13th of October his medical attendant wrote to me, saying:—

“He is now in a pitiable state, completely covered with eruption; the legs, thighs, arms, and lower part of the trunk being covered with scales.” Since his return home he has taken baths daily with soda and potash dissolved in the water; but at present “has left off the baths, as a severe attack of sciatica, which has now become the most prominent symptom, has supervened.”

The sciatica was only of short duration; for, ten days later, the patient remarks that it had shifted from the left side to the right, and that very little remained; and he also mentions that the day before this note was made, there had been a little gout in the left knee, but that it also had completely subsided.

We have now to inquire into the nature of the affection of the skin, and we are helped in this inquiry by a careful diary kept by the patient himself, of his progress from day to day. The following is a digest of his statement:—

On the 26th of October, twelve days after the medical report already alluded to, the course of the disease seemed to be arrested; the scales were smaller, as soft as down, easily rubbed off; the skin covered by the scale looked as if it had been whitewashed, while the skin beneath the scale presented a light pink colour, and was soft to the touch. The chest is also pink, but has not desquamated. The feet were the worst, and, at the lower part of the leg, the scales were thick. On the palm of the hands are numerous red puncta, which made their appearance yesterday and during the night, and, as yet, “there is no natural skin.”

As to his general health at this time, the appetite was good, bowels relaxed, an effect of the medicine he was taking; and the urine clear and pale. He notices the existence of transverse furrows upon the nail, the probable indication of foregone periods of illness, and small hollows which have received the name of *tinea ungualis*.

On the 28th of October the medical man mentions that his patient has experienced a relapse; that the whole skin was covered by a punctated and papulous rash resembling measles. The red puncta were hard to the touch; the patient calls them “little red lumps,” and were accompanied with the sensation termed “pins and needles.” Moreover, the eruption was attended with slight rigors, and the gout and sciatica had disappeared.

It is evident from this description that both the follicles and interfollicular surface of the skin were in a state of hyperæmia. The palm of the hands and sole of the feet presented a “shell-pink” colour, and were besides punctated with minute red spots,

and the latter were appreciable to the touch and the seat of a prickling sensation. The patient speaks of these spots as being under the skin and afterwards as coming through the skin, and being then surmounted with little white scales.

The immediate consequence of this state of congestion of the skin was the loosening and exfoliation of the epidermis. The medical man remarks, that on the back the cuticle comes off on touching it, leaving a surface which is "very moist." The patient, again, states that the papulæ subsided to the level of the skin, giving out a "watery discharge." The watery exudation, however, performs a very secondary part in the history of the eruption, as is usual in this form of dermatitis.

On the 30th of October, the patient calls attention to the peeling of the epidermis from the inner side of the forearms and thighs, leaving the skin pink, but otherwise natural in appearance.

On the 31st, he speaks of the freshly attacked parts as being covered with epidermis resembling "crumpled white tissue paper;" and this epidermis admitting of being rubbed off clean so as to show the skin beneath partly white and partly pink. The cuticle of the hands and feet separated in an almost unbroken sheath. Whilst on the previously affected parts, the epidermis was wrinkled and hard, and was shed in large flakes, which he compared to "dry paste."

On the 3rd of November, the patient announces a gradual amendment in the symptoms, and from this date onwards to the 20th of the same month, his remarks on the state and appearance of the skin are as follows:—Skin harsh and goosey, cuticular covering like fine sawdust. Skin softer; to the eye resembles finely grated Parmesan cheese; to the touch, feels natural. Flakes gradually appearing. Face pale; looks like a baker's; eyelids swollen; edges a little red; has several

styes. Neck clear, chest and back paler, only a light film; arms red inside; outside small soft flakes; buttocks and upper part of thighs worst, skin dark red, large flakes; thighs and legs look as if covered with a thick coat of white paint; near the ankles the cuticle harder and harsher; feet softer and better than legs; hands, which were better last week, and were becoming softer and lighter in colour, are now streaked with small white flakes resembling dried soap lather: fingers wrinkled like a washerwoman's.

The points most worthy of note in these quotations are the state of the skin as to colour and density; that is, pink, and more or less soft; and the form and variety of the exfoliation, which is sometimes thin and sometimes thick, sometimes broken into small fragments, and sometimes constituting an entire chirotheca or podotheca. But the comparisons suggested by intelligent and observant patients are often so striking and suggestive, that I will pursue his diary further. Resuming on the 21st of November, he observes:—"Face and hands better, arms softer; left forearm vividly red but free from scale; more flakes over the trunk of the body, but most on the buttocks; forehead and hands lighter. Large quantity of flakes exfoliated from inner side of thighs, skin pink and soft, flakes lighter. More flakes from legs, back "fluffy;" legs and thighs, previously pink, now covered with flakes. Beard becoming thin; hair off the head, falling in considerable quantity; toe-nails loose. Flakes on back abundant and thicker; arms and legs scaly in patches; face and hands paler. Scales more abundant, many of the flakes measured one inch in length by half an inch in breadth. Scales longer but narrower; more numerous on thighs. Scales fewer and thinner. Back still very fluffy. More scales on arms, none on thighs, which are pink and soft; hands paler and drier; face improved;

trunk of body paler. Hands fluffy; inner side of thighs covered with a thin film. On the breast a thin film, scarcely discernible. . . . Less scale everywhere." And such remarks as these carry us on to the 5th of January, 1871, when the patient gives the following report of his present condition:—

"Face, hands, arms as high as elbows, chest, abdomen, and two-thirds of the back are, as near as possible, well and natural in colour; the skin being soft, fair and white, of very fine texture, and more like a woman's than a man's. Lower part of back, buttocks, flanks, and hips pink, and very slightly scaly; the thighs have had no scales for some time, and are getting lighter in colour; the calves of the legs are pink and free from scale; but there is a little scaliness about the ankles and feet. The hair has all, or nearly so, come off my chest, arms, and legs; on my head there is very little hair left, and my whiskers and beard are half gone.

"If I can go on improving for another month as fast as during the last, I think I shall be all right again. I am better now than at any time during the last seven months; but these little red spots and the little lumps under the skin at the ankles and on the legs make me fear another outburst of the eruption. My appetite is good, but not so great as it was a month ago. I am thinner, as the bones of the chest show; but in weight I have increased two pounds over my maximum, my weight at the present being twelve stones, my height five feet seven."

On the 16th of January, the patient observes:—
 "At present I feel quite well, and have improved since my report of the 5th. No scales anywhere; a little rough and scaly about ankles; the little lumps under the skin about the ankles are there yet; the spots and pink patches have gone; chest, abdomen, back, and arms, all, as nearly as possible,

well; slight neutral tint on sides, buttocks, thighs, and legs.”

It will be observed, that in the history of this curious affection, which, in its pathological nature, is a general inflammation of the skin, accompanied with repeated and profuse exfoliations of the cuticle, loosening of the nails and hair, and fall of the latter, there is no reference made to any specific constitutional symptoms. The case opens with the statement that the patient, although only 42, had evinced symptoms of gout for several years; and, at my first introduction to the case—for I have not seen the patient—sciatica was the predominant symptom. But the sciatica was of short duration; and, with the exception of a few temporary gouty pains, and certain pink deposits, and a muddy condition of urine, there did not appear to be anything constitutional to deal with; the patient had a good appetite, lived as usual, taking two glasses of sherry daily, or a pint of claret, and had no complaint to make beyond weariness at being kept in the house so long, and for so long a period from his business.

As to his treatment, his medical adviser favoured me, in his first letter, with the previous therapeutical history of the patient, which had been “baths, potation of the waters, and arsenic,” whilst at Nauheim. Since his return he has continued the arsenic, with five minim doses of colchicum, taking baths daily with bicarbonate of soda and potash dissolved in the water, and had applications of bismuth with olive oil to prevent the cracking of the skin at the joints. He is now taking quinine with arsenic, and has left off the baths, as a severe attack of sciatica has supervened. Subsequently, for a few days, this gentleman gave his patient fifteen grains of bicarbonate of potash with two minims of colchicum wine to correct lithates and a pink deposit in the urine. Moreover, it would seem

that during the three months preceding his attack he had been taking eighteen minims daily of Fowler's solution.

With this history of the case before me, I prescribed, on the 15th of October, a mildly aperient tonic mixture consisting of infusion of orange peel, sulphate of magnesia, sulphate of quinine, sulphate of iron, and sulphuric acid. He commenced this treatment on the 18th, and eight days later we have his report of a gradual improvement. Two days after this the relapse took place the features of which he has so faithfully portrayed. But although I was appealed to in consequence I urged the continuance of the same medicine, which was kept up until the 24th of November, namely, upwards of a month. The medical man states that he stopped it for one day only, at a time when he was giving him bicarbonate of soda and colchicum wine to clear the urine of excess of lithates. Locally the new skin and every irritable part were sheathed with the benzoated ointment of oxide of zinc.

On the 24th of November I thought it desirable to make a change in the nature of the treatment, although not in its principle, and I accordingly prescribed five grains of iodide of potassium in two ounces of compound decoction of sarsaparilla twice in the day, with a tonic-aperient pill at bedtime; and these remedies have been continued without change up to the present time.*

* In the Dermatological Collection is a preparation, presented by Dr. Thurnam, of the Westminster Hospital, and which is labelled as follows:—"The cuticle of the hand of a man, cut off entire during life (*chirotheca*), very curious, from the effects of an inveterate form of remittent *eczema rubrum*."—*Medico-Chirurgical Review*, vol. 24. Reference to the journal in question proves the case to have been one of *eczema exfoliativum*. Mr. Thurnam entitles it "modified and inveterate *eczema*." The patient was a carpenter, aged 24. "The surface of the body in many places presents the cuticle in a state of desquamation, especially that of the thighs, the mammæ, and the plantar surface of the feet. In

Besides *form* of manifestation of the eruption, eczema also offers for our contemplation several im-

the latter situation the process is in its least advanced stage. The palmar surface of the hands and fingers have only recently parted with their cuticle, are extremely red and tender, and are studded with numerous minute drops of perspired fluid."

Within two years the patient has had five attacks of eczema. The second occurred twelve months after the first; the third, six months later; and the fourth, within six weeks of the present attack, which is the fifth. The first and second were vesicular, and terminated with a moist desquamation; the three subsequent attacks were dry. Their general character was that of a diffused deep red blush, resulting in entire desquamation of the cuticle.

On the 22nd of November the man retired to bed in his usual health. At two in the morning he awoke with great heat of surface, followed by a rigor which lasted an hour, and great pain in the head. At daylight, the entire surface of the skin was suffused with a deep brownish red blush, without tumefaction or vesicles. The next day a few flat and irregularly-shaped confluent vesicles were noticed between the shoulders. These contained a little yellowish serum. On the third day, desquamation of the cuticle had commenced, especially about the face and shoulders; while on the fourth, desquamation was extensive, large laminae were peeling off in all directions; and the epidermis of the hands appeared likely to separate in the form of complete cuticular gloves.

On the fifth day, the patient's bed was found full of pieces of exfoliated epidermis, some of which were strewed by the bedside. Desquamation was now nearly complete. "The gloves of cuticle alluded to in yesterday's report, have been removed from the hands. In order to do this, it was found necessary to slit up the cuticle covering the backs of the fingers, and to cut it around the basis of the nails."

A week later it is mentioned that the new cuticle on the palms of the hands presents numerous dry cracks and fissures, and the cuticle is again separating in very fine, almost pulverulent, pieces, without any preceding vesication or erythema.

About three weeks afterwards the man had another attack of the erythema without any vesicle, and succeeded by desquamation. At the tenth week it is reported that he had a slight exacerbation of the dermatitis every Sunday morning, but that a fresh attack had occurred more severe in its character, consisting of a general erythema of the usual coppery-red hue, without vesicles, and attended with heat, pain, and a slight febrile movement. A similar report is made eight days subsequently, when the cuticle was in a state of general exfoliation; and after the lapse of four-

portant and interesting points in relation to *seat* of development and *method* of distribution. Of the principle of distribution of eruptions an example has recently come before me which presents sufficient features of practical interest to warrant another digression. I do not, as in the instance of eczema exfoliativum, advance it on the ground of rarity, but simply for its aptness as an illustration and as falling in my way at the moment when these lectures were in course of preparation.

January 18, 1871. A gentleman, aged 43, is suffering under a sudden attack of eczema of the erythematous kind, eczema erythematosum, consisting of puncta and small patches which are distributed chiefly on the trunk of the body. There are besides a few red papulæ on the right leg, and a punctiform rash on the face accompanied with itching and stiffness. The itching is troublesome, more particularly at night, and annoys him by disturbing his rest. He states that early in the month of September (1870) he had an attack of catarrh and bronchitis, accompanied with severe pain in the upper part of the chest, on the left side, in front and behind, and pain in the left shoulder. A fortnight before Christmas the thoracic pain had increased so much as to

teen weeks we are informed that some amendment has taken place: "there has been no return of the eruption for nearly three weeks, and less heat and tingling of surface."

The treatment adopted in this case was of the heroic character. Between the 22nd of November and the 15th of February—about three months—fifty-four ounces of blood were taken from the arm; and at the latter date directions were given that the patient should lose a pint of blood weekly. Neither was hospital stuff spared. He began with diaphoretic mixture, containing antimony, three times a day, and a cathartic; and ran the gauntlet of *mistura effervescens cum spiritu ætheris nitrici, secundis horis, and colchicum*. On the 6th of December he was ordered two grains of quinine with six minims of liquor arsenicalis three times a day. On the 15th of February he was subjected to a hot bath every night; and throughout the whole ceremony his *vis vitæ* was relieved of its buoyancy by "low diet."

oblige him to keep his room, and have recourse to hot baths and stimulating liniments.

In the beginning of January the cutaneous eruption broke out suddenly, with considerable pruritus, and had continued to increase until the 18th of January, when the patient sought my advice; the neuralgic pain, however, has disappeared. The eruption presents a character as to distribution which is not uncommon in general eczema. It consists of red puncta, some of which are isolated, but the greater number have coalesced into small patches, which range in size between two or three lines and nearly an inch in greatest diameter. The eruption is most abundant upon the back; and the dorsal region of the trunk is covered with spots which are oblong in figure and generally twice as long as their breadth. They are scarcely appreciably raised, and present a bright red hue, some being uniform in tint and studded with puncta of a deeper colour than the rest of the surface, and some more vividly red near the margin than within the area, the latter in that case being somewhat faded or tawny in hue. As yet there has been no desquamation or exudation on their surface, and they are really monomorphic, although nevertheless a decided eczema.

But another character presented by this eruption is worthy of our momentary attention; the long diameter of the patches and the seeming course of distribution of the patches is directed from the spinal column with a gentle sweep downwards to the side of the trunk and thence upwards to the middle line in front. It is evident that they follow the same line as the anterior spinal nerves; as the blotches of eruption of herpes zoster; or, the spots and lines of colour of the tiger's or the leopard's skin; and it is equally evident that the whole of these phenomena obey the same neurotic law.

Ten days subsequently the eruption had reached the stage of subsidence; in the meantime it had

spread over the whole trunk, the neck, the arms as far as the wrists, and the right knee. Desquamation was in progress, and there were multitudes of round patches, a quarter and half an inch in diameter, which were identical with those of Nos. 4 and 5, some being red orbiculi, with a ragged frill around the circumference; others, red rings, the cuticle broken and separating along the crest of the ridge, but sound in the centre, where they presented a pale and tawny tint.

This gentleman reminded me that he had been under my care some years before for a troublesome eczema of the scrotum; and that in 1869 I had treated him for an eczema which was limited to the right leg below the knee, and which also conveyed its pathological lesson. His leg was bruised by a cricket-ball, and the contusion invalidated him for fifteen months; the consequence of the injury to the leg was a varicose state of the veins of the limb, probably from inflammation and obliteration of some of the deep venous trunks. Next followed a common consequence of varicose veins, namely, eczema, and the eczema took between two and three months to cure.

It is almost unnecessary to observe that the patient is not endowed with a sound constitution; he weighs more than twelve stones, although only five feet, two inches in height; he is pallid in complexion; and possesses evidently an eczematous diathesis.

On the 31st of January the eczema had disappeared, but two painful, dermic phlegmona, usually, but incorrectly, denominated boils, had appeared in one axilla.

I now proceed to another series of our preparations, extending, in the Catalogue, from No. 10 to 24. On reference to the Catalogue it will be seen that the whole of this number is represented by the common term, *eczema papulosum*. But, that some

variety will be discovered among them, may be inferred from the use of the secondary titles—*confertum*, *confluens*, *corymbosum*, and *circumscriptum*.

The first of the series is described as *eczema papulosum*,—*variety confertum*:—“Plaster cast of a portion of the back of the trunk, showing the close aggregation of the papulæ; the eruption was general; on other parts of the body there existed copious exudation.”

Nos. 11 and 12 are casts taken from the same patient and at the same time; the one being a representation of the eruption on the loins; the other, that on the flank.

The chief characteristic of this eczematopapulous affection, as shown in the casts before us, is the development of *papulæ* on the skin in such abundance as to deserve the appellation “*confertum*,” or crowded. On inspecting the cast we find nothing but minute pimples, and as we now know that a pimple represents the inflammation of a follicle of the skin, we come to the conclusion that no single follicle can have escaped. If for an instant we go back to No. 1, we see an illustration of the hyperæmia or congestion of separate follicles, which gives rise to isolated papulæ, and we also see the small circular disk that results from the confluence of several papulæ, and this early beginning prepares the way for the crowded accumulation of similar papulæ which we have before us in No. 10. The patient in the present case was a man of free habits and mature age; he had suffered several attacks of eczema, and upon the last of these occasions the eruption burst out, with the suddenness and breadth of an exanthema, over the whole body, but was more strongly manifested on the trunk than on the limbs, and on the back than elsewhere. The skin of the back was scarlet in hue, closely dotted with papulæ, which were more intense in redness than the rest of the surface; there was swelling of

the whole skin from hyperæmia and interstitial infiltration ; and there was also, in sundry parts, an exudation or sweating from the unbroken surface, of a colourless lymph.

It is no part of our business at the present time to inquire why a simple inflammation of the skin should one while content itself by the manifestation of redness and exfoliation alone ; and, another while, by fixing chiefly on the follicles, give rise to papulæ, accompanied with exfoliation of the epidermis ; although the inquiry would repay our research and develop interesting results—we have now only to take note that dermatitis does give rise to papulæ, and that the papulæ are sometimes so congregated as to warrant the designation which has been given to this case, namely, *eczema papulosum confertum*. But I have to remark further that although the papulæ are abundant and crowded on one part of the skin, they may be less numerous and less crowded on others, as in No. 11, which is a cast from the loins of the same patient ; and No. 12, also from the same patient, and a cast from the flank. And we have to note, besides, that where the papules are most crowded they are smallest in dimensions, as though they were stunted in space for their complete development ; while, on the loin and flank, where they are scattered, many of them are larger in size. And another observation receives an especial demonstration in the cast from the flank, where we perceive a tendency to a grouping in clusters, an arrangement which we shall find more fully illustrated hereafter, and which has received the distinguishing appellation of corymbose, or clustered.

Preparations Nos. 13 to 18 are termed *eczema papulosum confluens*, and illustrate a tendency on the part of eczema to become developed in blotches of considerable but limited extent. Nos. 13, 14, and 15 exhibit blotches of this kind occupying the arm ; No. 16, the shin ; and Nos. 17 and 18, the dorsum

of the hand. These blotches are composed of papulæ which have the appearance of blending with each other, or, as it were, of running or flowing together; hence their name, *confluens*. If we examine them closely, the blotches are seen to be papulated on the surface; while, around their circumference, papulæ may be observed which are sometimes isolated, sometimes congregated in clusters, and sometimes more or less blended together. If we had the opportunity of observing the process of formation of these blotches from the beginning, we should find that at first all the papulæ are isolated, and that they are subsequently united into a common blotch by the congestion and infiltration of the interpapular or interfollicular portion of the skin.

But although papulation is the uniting bond in the whole of these instances, there is the evidence before us that other pathological signs of eczema are not wanting. In No. 13, the blotch is swollen, and somewhat œdematous from infiltration. No. 14, in which the blotch, at an earlier stage, gave out an ichorous exudation, is now, from the desiccation of that exudation, coated over with a thin crust. And, No. 16, of a more chronic character than No. 14, presents us with a still thinner crust.

Nos. 17 and 18 are casts showing the appearance of the same affection when it is developed on the back of the hands, and the coloured lithograph No. 19 supplies us with the natural hues of the eruption. Careful inspection will discover the papular or follicular element in all; while condensation and thickening are evinced by the solid wrinkling of the skin and by the presence of fissures in the centre of the blotch, fissures out of which a colourless ichorous fluid is apt to exude from time to time, and by its desiccation to give rise to a dense crust of variable thickness.

It was to cases such as these, combining the papular lesion with those of infiltration and thicken-

ing, a tendency to exudation and fission, and the frequent invasion of fits of violent itching, that Willan allotted the name of lichen agrius; the objective term being intended to indicate its papular character, and the latter or subjective term, the fierceness of its pruritus. But, without reference to its association with eczema in other ways, the polymorphic lesion presented by the eruption, and especially its tendency to ichorous exudation, mark it as being in no essential respect different from that disease.*

Cast No. 20, and drawing No. 21, introduce us to another variation of eczema papulosum, namely, one in which the blotches of eruption make their appearance in smaller clusters; hence the name, *eczema papulosum corymbosum*; while the description of this affection we read of as follows:—"Wax cast of part of the forearm of a woman, aged thirty-four; the eruption consists of a number of elevated patches, each composed of an aggregation of papulæ, united by an erythematous base, and ranging in size between a quarter of an inch and two inches."

If we examine the cast attentively, the papular construction of the blotches is quite obvious; and their surface is, as it were, dusted over with minute scales, resulting from the desiccation of an ichorous secretion poured out by individual papulæ. Not unfrequently this corymbose form of the eruption is composed of small patches, which are more or less

* Bateman's description of lichen agrius is as follows:—"The papulæ occur in large patches, are of a high red colour, and have a degree of inflammation diffused round them to a considerable extent. They are accompanied by itching, heat, and a painful tingling, which are augmented to a sensation of smarting and scalding by the heat of the bed, washing with soap, drinking wine, or using violent exercise." On subsiding, "the cuticle of the parts affected becomes harsh, thickened, chappy, and exquisitely painful on being rubbed or handled. After repeated attacks, indeed, it is liable to terminate in a chronic pustular disease, the impetigo."—Third edition, 1814. Page 11.

orbicular in figure; and these have suggested another designation of somewhat similar import, namely, *eczema nummulare*, indicating their resemblance to pieces of money.

Again, the blotches of *eczema papulosum* are sometimes remarkable, not only for their circular figure, but also for their circumscribed character, *eczema papulosum circumscriptum*. And this form of the eruption is commonly met with on the back of the hand. Nos. 22 to 24 are of this kind; and the description attached to these cases reads as follows:—

“No. 22. Wax cast of the radial side of the wrist of a young man, aged 19, presenting two patches of *eczema papulosum circumscriptum*—one orbicular, the other irregular in outline.”

“No. 23. Plaster cast of the back of the left hand, its radial side. A circumscribed, prominent, orbicular patch of *eczema papulosum circumscriptum* is seen over the first metacarpal bone. The patch measures three quarters of an inch in diameter, the border is raised and lobulated, the area slightly depressed and papulated, and the epidermis unbroken, for as yet no exudation has taken place.”

“No. 24. Plaster cast of the radial side of the back of the left hand. A circular patch of *eczema papulosum circumscriptum*, measuring an inch and a quarter in diameter, occupies the first metacarpal space.”

It may, perhaps, occur to the mind of some of my hearers, that these distinctions of form of eruption have no practical object; to which the obvious answer presents itself—that we are simply observing nature, and recording what we see; and if no other purpose be gained by the inquiry, the lesson is taught us that an eruption will, under different circumstances of health, constitution, and locality, assume such a variety of appearance, that its variations of form may, unless due warning be given, be taken for different diseases. Of this fact we have already had an example in the exfoliative dermatitis, which in every respect agrees with *eczema*, but which has been termed by De-

vergie "pityriasis." And, as I have already said, the confluent and circumscribed forms of eczema are described by Willan, in consequence of their papular structure, under the name of lichen agrius.*

Among the various and varying features of eczema, there is none which is of more importance practically, or is more interesting in itself, than that upon which is founded the distinction of dry eczema and moist eczema. It is a difference which depends essentially on the constitution and temperament of the patient. In the young, in the lymphatic, in a constitution abounding in fluids, and at the height of the eruption, the eczema will be moist and accompanied with ichorous and sometimes with purulent exudation; while in the aged, in the temperaments deficient in fluids,

* Preparation, No. 534, is an illustration of eczema added to the dermatological collection subsequently to the delivery of this the second course of lectures. It is a model of the chest of a female; the eruption being a dry and papular eczema, developed in small patches; and the patches dispersed or disseminated over the surface. The patches have an average size of a little more than half an inch in diameter, they are centrifugal in growth, and in some instances circinated or ringed, the papulæ forming a complete ring. In the intervals between the patches are numerous scattered papulæ; and many of the papulæ are surmounted with a thin furfuraceous scale. On the right mamma several of the annular patches have become blended by an erythematous base; and in one or two situations the patches are *diffused* and furfuraceous as in ordinary erythematous eczema. In the epigastric region may be seen several papulæ which have the appearance of being subcutaneous, and in this situation there are also some large, red, oval-shaped papulæ, which have the character of syphilis rather than that of eczema. Altogether, the model is a very instructive one to the student of dermatology; as illustrating several of the common characters of eczema, for example; its appearance in patches, technically termed "figuratum," the scattered distribution of those patches, the papulæ developed on the patches, and the excentric and centrifugal growth of the patches tending to the production of circles; in a word, "circinated." Then we have the contrast afforded by the scattered pimples; and, furthermore, the ordinary and diffused appearance of the eruption.

and in the chronic stage of the disorder, the eruption will be dry. I have now to draw attention to a form of moist eczema which, by Willan, was regarded as the type of that eruption, namely, *eczema vesiculosum*.

In the description of Nos. 25 and 26 of the Catalogue we read:—"Eczema vesiculosum. Plaster cast of the back of the left hand of the patient from whom the drawing and lithograph Nos. 2 and 3 were taken. The puffy œdema of the integument is well shown, as also are the minute vesicles of eczema."

Now, the chief interest of this case is embodied in the fact that it illustrates excellently well the Willanean type of eczema; the minute vesicles which were so long thought to be essential to eczema, and have been sought for with unceasing diligence with the exploring lens, but which further experience has shown to be in reality an accidental condition. The patient from whom these casts were taken was a young woman of lymphatic sanguine temperament, abounding in sanguineous fluids; the appearance of the eruption on her arm, dripping with discharge, indicates a moist form of eczema. Hers was the constitution in which we should expect that inflammation would be accompanied with infiltration and swelling, and both of these pathological lesions we find manifested in the hands. And then we have another process, which may be regarded in the light of a salutary effort of nature, namely, the exudation of the accumulated and imprisoned fluids on the surface of the skin, where they lift up the cuticle into minute vesicles; and where, in sundry places, these minute vesicles, by their confluence, give rise to blisters, usually multilocular and of considerable extent. How admirably these phenomena portray the pathology of inflammation, and, in an especial degree, the pathology of inflammation of the skin, of dermatitis, of eczema—for the terms are very nearly synonymous.

It would be idle to regard these vesicles, this exudation, or the fluid which fills the vesicles, as anything specific; for the phenomenon is really nothing more than the necessary exudation which is determined from the infiltrated tissues to the surface by an inflamed condition of the skin. It may, however, be worth our while to examine the surface of these casts with a lens, if it be only to observe the difference of figure of the vesicles and their manner of distribution. It is here also that I may call attention to the fact, that with a higher degree of inflammation, the fluid contents of the vesicles, instead of being transparent, become opalescent and yellow, while, in the more inflamed parts, around the circumference of the eruption, the contents have the appearance of that of pustules, and the eruption, in consequence, receives the name of *eczema pustulosum*.

Eczema vesiculosum may be regarded as the initiative form of *eczema humidum* or moist eczema. In the same case as that which is illustrated by the casts of the hands we have noticed the presence of an abundant ichorous discharge from the eruption on the arm, namely, in No. 2. And now we may move onwards to a further and more decided manifestation of *eczema humidum* in Nos. 27, 28, 29, and 30.

In the description of No. 27 we read:—“*Eczema ichorosum*. Wax cast of the bend of the elbow of a woman, aged fifty-four, showing *eczema ichorosum* in its early stage. The morbid surface is red and glossy, the cuticle thin, and the derma marked by deep grooves and prominent wrinkles, which indicate thickening of the skin from inflammation and congestion. A small cluster of red papulæ near the upper part of the cast denotes the papulous lesion of eczema.”

And, again, in No. 29:—“Drawing of the head of a young woman, aged twenty-seven, exhibiting a

well-marked example of eczema in its exuding and encrusted form, eczema ichorosum et scabidum. The accumulation of the hair into conical bundles is a characteristic phenomenon of eczema ichorosum.”

The exudation or discharge poured out by the inflamed skin in eczema is, as indeed we have already seen, by no means limited to the formation of vesicles; it is produced in abundance from the raw surfaces that are generally present in excoriated blotches; sometimes it issues in minute beads from the apex of the follicles; sometimes it oozes from rhagades or cracks in the hard and infiltrated skin; and sometimes it appears on the surface of the unbroken skin in the guise of a secretion. To all these forms a term is applied which indicates the presence of, or proneness to, discharge; a term which is equally applicable to the whole, namely, eczema ichorosum. And when, in addition to its mere presence, it renders itself remarkable by its abundance, it is sometimes called eczema madidans; and we are bound to admit that the term madidans is not inaptly applied, when we see the discharge dripping almost in rills from the inflamed surface, and wetting through layer upon layer of cloths wrapped about the part or placed around it for protection.

In my previous observations I have endeavoured to illustrate some of the effects of inflammation of the skin; and I will take this opportunity of remarking that the skin affords peculiar facilities for examining and studying pathological operations. We have no need of the help of scientific apparatus to pursue our inquiry; the eye and the hand, alone, the especial instruments of the surgeon's art, guided by an intelligent brain, are our only requisite aids to skilful research. Neither are we, as in the rest of the frame, much the gainers by microscopical explorations. Indeed, it would seem that the skin,

being at all times under our visual observation, and always within our reach, is especially adapted to supply a field whereon the pathological phenomena of internal and concealed organs may be studied and perhaps better understood than in the organs themselves. In the instance of inflammation these remarks require little or no corroboration; but it is also my belief, that considerable light may be thrown on other and more obscure pathological processes by the observation of similar phenomena taking place in the skin.

Our survey of the pathological processes affecting the integument tends to show that the state of inflammation of the skin which is denominated eczema, may present itself to our observation in a *dry* as well as in a *moist* form. In the dry form being represented by simple hyperæmia and exfoliation or desquamation; and, in the moist form, by hyperæmia, vesiculation, exudation, and incrustation. And I may remark, further, that the eruption not unfrequently presents the double form; it may be, in general, dry, but, after rubbing or scratching, will burst forth into a state of moisture. And I may add, besides, that it is one of the pathognomonic characters of eczema of every kind, to be liable, in the presence of any aggravating cause, to pour out a more or less abundant exudation.

The doctrine that I am desirous to inculcate is, that *eczema is a simple inflammation of the skin*; and that the *varied manifestations which it is apt to present are due to peculiarity of structure of the integument on the one hand and to peculiarities of constitution of the individual and duration of the disease on the other*. It is evident that a natural accompaniment of inflammation of the skin is hyperæmia; that hyperæmia may involve the whole of the vascular portion of the skin equally, or may select the follicular plexuses in preference to the papillary

plexuses; that one of the simplest of the consequences of hyperæmia will be altered nutrition of the epidermis and a resulting exfoliation of cuticle; and that another obvious consequence of hyperæmia of the skin will be infiltration of the derma to a greater or less extent; and exudation of the infiltrated fluids, either beneath the cuticle, so as to give rise to vesicles; or, as an oozing moisture on the unbroken surface; or, an abundant secretion, streaming forth from excoriation or fissure. Then, as evincing additional force of the affection, we may have purulent discharges, pus and pustules taking the place of the primary lymph exudation; and at a later period, and evincing a chronic alteration, the substitution for the fluid exudation, of an epithelial desquamation in the form of small scales and constituting a squamous eczema, sometimes termed psoriasis, and sometimes pityriasis. Occasionally we hear the terms "catarrh" and "cattarrhal" applied to eczematous inflammation; and we might with equal truth term catarrh an eczema of the mucous membrane of the air tubes, as is sometimes undoubtedly the fact.

No. 27 offers us an example of a portion of the skin of the bend of the elbow in a healing stage, that has recently been in an active state of exudation. And the evidences of congestion, of infiltration, and of tumefaction of the skin are still apparent—in the redness of surface, the polish and fine wrinkling of the newly-formed epidermis, the deep ruts of the lines of motion, and the tumid and seemingly puffed condition of the intervening skin. I may add, in connexion with this case, and by way of parenthesis, that finding it very rebellious to treatment, I painted the eruption with a tincture of croton seeds, and with the result of immediately arresting the exudative process and setting up a curative action.

ECZEMA CAPITIS is illustrated in No. 29, and de-

monstrates a very common form of that affection. There is evidence in this drawing of the presence of ichorous exudation; the pinching together of the hair in pencil-tufts is due to the flowing downwards of a fluid secretion. And the thick broken crust embedded among the roots of the hair over the entire head, which has gained for the case the epithet of *eczema scabidum*, is a consequence of the exudation and desiccation of an ichorous fluid, partly limpid and transparent, partly viscous, and partly opaque and puriform. On the forehead the incrustation becomes gradually thin, and in the fissures between these crusts may be perceived the vivid redness of the inflamed skin.

Next, in succession to *eczema vesiculosum*, *eczema ichorosum*, and *eczema pustulosum*, we come upon a series of illustrations of a more chronic condition of the eruption than the preceding, on one in which the fire of the inflammation would seem to be exhausted, wherein there is no exudation, and which is characterised especially by desquamation, constituting a form of the disease which may be termed *eczema squamosum*. Illustrations of this squamous form of *eczema* carry us onwards from No. 31 to No. 41, and their description in the Catalogue reads as follows:—

“No. 31. ECZEMA SQUAMOSUM. Model of the outer aspect of the left leg, from the knee to the ankle, presenting two large circumscribed but irregular blotches of redness surmounted by a fine furfuraceous desquamation. The blotches are dry, the skin composing them slightly prominent from induration of tissue, while a narrow margin which bounds their circumference is smooth and ruddier than the area. This form of disease is named by Bazin ‘psoriasis pityriasiforme.’”

“No. 32. Model of the leg from the middle of the thigh to the ankle. On the thigh and knee is a broad patch of dry *eczema squamosum* of a dull-red colour, fading at the circumference into the tint of the surrounding skin, and dappled over with irregular white patches of desquamating cuticle. Below the knee and on the calf of the leg are several circular blotches of recent origin, measuring one-half and three-quarters of an inch in

diameter. These circular blotches are covered with a thin stratum of cuticle in process of desquamation. The morbid skin on the thigh is coarse, thick, and wrinkled—an evidence of the chronic nature of the disease, and warranting the term ‘psoriasis’ bestowed on it by Bazin, under whose observation the patient was treated. The rest of the thigh and leg is dotted over with small conical pimples, occupying the mouth of the follicles, and each perforated by a hair—the lichen pilaris of Willan.”

“No. 33. Model of the thigh and leg ; a broad patch of eczema squamosum occupies the whole surface of the thigh above, and diminishing in breadth as it descends, terminates just above the patella. On the knee are numerous scattered rings, and below the knee an irregular blotch 4 inches in length by $2\frac{1}{2}$ inches in breadth, composed of an aggregation of circular spots, each having a diameter of about an inch. The blotch on the thigh presents the usual characters of chronicity, and bears evidence of thickening and induration ; it has a purplish hue, obviously dependent on torpor of circulation, but is brighter in redness near its border, and particularly below, where may be seen a number of circular spots resembling those of Nos. 4, 5. The whole surface is roughened by white froth-like flakes of desquamating epidermis, which have for the most part a wave-like figure, and below are circular and embrace an area of a brighter red than the rest of the surface. On the knee the eruption is dispersed in small annuli, some oval or oblong, and some circular in figure, the annulus presenting a brighter red than the denuded area, and being bounded by a narrow frill of detached cuticle. The circular patches composing the blotch below the knee are noticeable for the brightness of colour of their annulate border, as compared with the included area. The eruption in this case is remarkable for its abruptly circumscribed boundary, while in No. 32 the boundary blends with the circumference.”

Now, the study of these preparations enlightens us very considerably as to the pathology of chronic eczema ; in all three there is redness, the equivalent of hyperæmia, but there are differences in the tint of redness and difference in its manner of distribution ; in Nos. 31 and 32 the redness has the arterial hue ; in No. 33 it is venous, even at the margin of the blotches, where the crimson tint is perceptible. In No. 32 the redness fades at the circumference ; in Nos. 31 and 33 it is brighter at the margin than within the area, indicating greater activity at the periphery and a disposition to creep onwards and

into the surrounding tissue. Again, there is a uniformity of character about the redness in No. 31, which is absent in Nos. 32 and 33; and, if we look closely into the composition of the two latter, we find the same elemental forms which we had previously noted in Nos. 4 and 5; No. 32 presenting the orbicular type of eruption, and No. 33 the circinate type.

We will take as our next object of observation the *kind of desquamation*. In Nos. 32 and 33 we may trace the commencement of the process in the orbiculate patches and rings of the periphery, and see it in a more confirmed form in the longer established blotches. In one place it is simply exfoliative, while in another, in consequence of deeper changes in the corium, it has the appearance of a furfureous or farinaceous excretion. The whole of these cases are called by the French Dermatopathologists, under whose care the patients were treated, psoriasis, and one of the three, namely, No. 31, is termed by Bazin, "psoriasis pityriasiforme."

We have evidence in these instances of the proper application of the term "psoriasis," namely, to a dry and itchy psora or eczema; and at the same time, to a rough psora or psora leprodes. Psoriasis consequently is a chronic eczema, and it seems difficult to understand why the latter term should not be universally employed. In using the two words, eczema and psoriasis, a suspicion is awakened that they signify different diseases, whereas in reality they are stages of the same disease. Moreover, the word psoriasis has been applied erroneously to another affection, the lepra of the Greeks; and is also used, not uncommonly, for every affection of the skin attended with dryness and scalliness, which is otherwise unrecognised. It would be wise, therefore, under these circumstances, to call eczema, eczema; and lepra, lepra; and no substantial progress will be made in dermatopathology until this

obvious truth shall be accepted and adopted in practice.

Another observation to be made in reference to these cases relates to the important secondary change that takes place in the structure of the corium. It is infiltrated and thickened, and at a later period more or less indurated. It is to these pathological conditions of the skin that are due its prominence or apparent swelling and loss of elasticity, and to the same causes are to be referred its rigidity and wrinkling. In some situations, and in very chronic cases, moreover, there is superadded to these states of the skin a hardness and brittleness that result in the cracking or fission of the corium upon the mere act of motion or stretching.

If we review the pathological steps of the process we find them to be few, and very simple. For example:—there is hyperæmia, then infiltration, then desquamation, and lastly, fission; and, associated with them, itching to a greater or less extent, all of these symptoms being the pathognomonic characters of eczema.

But we must not part with our preparations without noting the follicular hyperæmia and infiltration evinced by No. 32 in the form of papulæ. If such papulæ occurred alone, the diagnosis of the case would be “lichen,” and looking to the fact that many of the papulæ are perforated by a hair, we should have illustrated the “lichen pilaris” of Willan. But finding the papular development in association with eczema, and remembering that the same inflammation of the skin gives rise to both forms of eruption, we are driven to the conclusion that the lichen in this instance is merely a papular eczema, an eczema lichenosum, or more correctly and properly, an eczema papulosum.

The next preparation, No. 34, is a plaster cast of the shin of a female patient, exhibiting a large patch of *eczema squamosum* abruptly bounded at the

circumference; and within the area of the patch are numerous isolated papulæ scattered over the surface.

No. 35 is a plaster cast of the lower part of the leg of an elderly man, showing an indurated and coriaceous form of *eczema squamosum*. There are two main patches of eruption which almost meet by their border, and between and around them are numerous large papulæ. The integument below the malleolus is puffed and œdematous.

Nos. 36 to 38 are illustrations of *eczema squamosum* of the back of the left hand. The skin of the thumb and wrist is thickened, rough, and fissured, and a similar state of thickening and fission is seen on the knuckles.

Then follow Nos. 39, 40, 41, *eczema squamosum palmare* in the state which has received the name of *psoriasis palmaris*. The deep cracks or rhagades, termed *eczema fissum*, are well shown, as are the polygonal plates and ragged borders of exfoliating epidermis and the circular indentations of white opaque cuticle caused by small orbicular hyperæmiæ of the derma and consequent altered cell-nutrition. Upon the wrist is seen a circular patch of the eruption, which contrasts strongly with the state of disease in the palm of the hand, where the derma is more dense and the cuticle thicker; and a similar contrast is suggested by the simple exfoliation visible on the ball of the thumb. The rhagades are confined to the lines of motion.

More recently there have been added to our Collection two models by Baretta, illustrating very forcibly the morbid phenomena of chronic eczema:—

“No. 514 is a model of the hand, front and back, showing chronic eczema with induration of the skin, fission, and hypertrophy of the epidermis. The fissures result from stretching of the indurated and brittle skin, and are chiefly met with in the lines of motion corresponding with the joints; while the

hypertrophy of the epidermis is the consequence of passive congestion of the skin. The model which is numbered 196 in the Paris Collection is named by Bazin 'eczema cornée,' and by Hardy 'eczema scarlatiniforme.'"

"No. 515 is a model of the hand, front and back, showing chronic eczema with fission, hypertrophy of the epidermis, and desquamation. Hypertrophy of the epidermis of the tips of the fingers has given rise in the left hand to displacement and thickening of the nails or onychogryphosis. Both hands exhibit, also, another lesion, namely, a number of large papules which are conical on the back of the hand and flattened in the palm. The effect of scratching these papules, as seen on the wrist of the right hand, shows them to be solid in structure and exudative after abrasion. On the back of the hand they become covered, like the rest of the inflamed surface, with a hypertrophic epidermic crust; but in the palm they are held down by the normally thick epidermis of that region, and exhibit neither exudation nor morbid cuticular growth. This model is numbered 208 in the Paris collection, and is named by Bazin, from the increment of morbid epidermis, "ichthyose"; and by Hardy, from the presence of the already-described papulæ, "lichen." Both these lesions may, however, be regarded as the consequences of eczema. The patient was a child, fourteen years old, and the disease one of four months' duration; the eruption began in the form of pruriginous papulæ, and ran on to its present condition in a fortnight. The nails of the left hand fell off, and were replaced, and the case got well without other treatment than that by water-dressing and baths."

In reviewing these cases we are struck with the exact similarity of the pathological phenomena of the disease in all—the thickened and hardened character of the inflamed skin, and the rapid production of an

epithelial layer, which is cast off in the form of broken fragments and scales as quickly as it is produced. And if this be the case in the instance of the objective phenomena, it is equally so with the subjective phenomena or symptoms; there are—the extreme stiffness of the part, the violent and intermittent pruritus, and the copious exudation of a colourless lymph whenever, for the relief of the pruritus, the part is severely rubbed. The last of the preparations, moreover,—namely, No. 41,—exhibits another consequence of infiltration and induration of the skin,—a state of brittleness which is manifested by cracks or fissures, technically called rhagades. And these rhagades give forth a colourless ichor as well as blood.

We have now run through the series of what may be termed the regular forms of eczema; its incipient and early forms, namely, erythematous, papulous, and vesiculous; and its more advanced forms, namely, ichorous, pustulous, and squamous. Or we might divide them differently and say, the *dry* forms, namely, erythematous, papulous, and squamous; and the *moist* forms, namely, vesiculous, ichorous, and pustulous.

The study of these various forms of the disease has detected here and there the presence of a tendency to hypertrophy; one while it may be a hypertrophy of the connective and vascular tissues, as in the example of the thickened and indurated corium; another while it may be a hypertrophy of the epithelium, as in the instance of eczema exfoliativum; or again, it may be an excess or hypertrophy of secretion, as in the example of eczema ichorosum and eczema pustulosum, or purulentum. There is reason to believe that the hypertrophy is not of the active and preconcerted kind, but of the passive kind; the detention of the blood in the dilated capillaries supplies an additional amount of nutrition and power of nutrition to the cells, and the cells make

profit of this superabundance by hyperplasia as well as by hypertrophy.*

It is in this way that we must seek to explain the phenomena which are manifested by the next series of preparations, ranging from No. 42 to No. 45.

In the Catalogue the description of this series is as follows :—

“No. 42. ECZEMA HYPERTROPHICUM (epidermis). Model of the palmar surface of the hand, showing *eczema* with hypertrophy of epidermis and fission of the true skin, or *eczema fissum*. The parts principally affected are the palm, with its thenar and hypothenar prominences. The cuticle is thick, rough, discoloured, and split into deep fissures at several points, namely, in the hollow of the palm, on the metacarpo-phalangeal joint of the thumb, and upon the ulnar border of the hand. The patient was a woman, aged 49, and under the care of Lailier, who terms the disease ‘*eczema lichenoide*’; it had existed for eighteen months.”

“No. 43. Model of the sole of the foot of the same patient; the epidermis of the heel is greatly thickened, and split vertically into polyhedral masses. The disease is coarser in its features on the foot than on the hand, but is otherwise identical in its nature. In the hollow of the foot are four excoriating patches produced by scratching, an indication of the pruritic character of the affection.”

“No. 44. Model of the leg, showing erythematous *eczema* above and below the knee, and squamous *eczema* with hypertrophy of the epidermis and deep fissures of the sole of the foot (*eczema hypertrophicum epidermidis et eczema fissum*). The erythematous patches above and below the knee are circular and circumscribed,

* Biesiadecki has discovered, by the microscopic examination of thin sections of the skin in acute *eczema*, that the cells of the rete mucosum are very considerably hypertrophied, and are enclosed in a network of spindle-shaped cells, which are continuous with the substance of the corium. These spindle-shaped cells are an evidence of an active state of nutritive growth, and are very probably the channels of conveyance of the fluids of the corium to the cells as well as to the surface of the rete mucosum. In chronic *eczema*, Neumann finds these spindle-shaped cells in great abundance in the corium; and it is to their accumulated increase that the thickening and condensation of the skin is, in great measure, to be attributed. Biesiadecki likewise considers that in the rete mucosum they may in some degree be the agents of conveying the fluids of the corium to the surface of the mucous layer, and thus become instrumental in the formation of vesicles.

those below the knee being bounded by a well-defined and undulated red border. The most important feature of the disease is the state of the sole of the foot; the eczematous blotch of considerable extent bounded by an inflamed border, the deep fissures exposing a raw base, the squamous condition of part of the surface, and the epidermic hypertrophy of the rest. The thickness and ruggedness of the fissured epidermis are very eharacteristic, while on the side of the foot is a small circumscribed patch of exuding eczema. The patient was under the care of Hardy, who terms the affection 'eezeme aneien.'"

We can have no doubt in examining these models that we have before us an eczema; we need but compare them with those that have gone before to be assured of the fact, but nevertheless, a strange and new feature has been added to the disease, namely, the production of epithelium, in large quantity; in cases 42 and 43, to the extent of giving rise to callosities of considerable extent and thickness; and in prodigious quantity in No. 44, thereby creating a rugged prominence split into fragments in the vertical axis of the mass. Further evidence of this very remarkable hypertrophy of the epidermis under the stimulus of eczema is shown in preparation No. 45, which exhibits "portions of epidermis removed from the heel in a similar case, showing the fibrous character of the horny mass and the vertical direction of the fibres."

The conclusion at which we are bound to arrive, as it appears to me, from the examination of the objects before us, is that, to the ordinary products and consequences of inflammation of the skin presented by eczema, we must add, *hypertrophy* of the horny portion of the epidermis. And that we may regard this phenomenon as the result of a chronic congestion of the capillaries, acting as a stimulus to the normal function of the skin.

If we move a step further, and visit, so to speak, the more highly organized tissues of the integument, we shall meet, not very rarely, with an eczematous congestion of that organ which results in hyper-

trophy of the vascular portion of the derma, and particularly its papillæ cutis. Thus, in No. 46 of the Catalogue, we read as follows:—

“No. 46. ECZEMA HYPERTROPHICUM (*papillomatosum*). Model of the foot and ankle of a man twenty-eight years of age, showing a papillomatous growth, the sequela of eczema. The hypertrophous formation extends from the heel across the external ankle and dorsum of the foot to the toes. The skin immediately bounding the granulated mass is red and thickened by infiltration, and the papillomatous growth is subdivided into polygonal and hemispheroidal lobes, the latter being made up of lobules and papillæ. Bazin terms the disease ‘*éruption papilliforme consécutive à de l’eczema*,’ and also ‘*forme d’eczema dégénérée*.’ The patient was a commissioner, and the disease had been four years in progress; it began as the consequence of an irritation excited by an operation for the relief of an ingrowing nail. The irritation gave rise to eczema, the inflamed skin threw out a papilliform growth, and the growth continued to increase until it reached its present excessive dimensions.”

And again:—

“No. 47. Model of the leg, exhibiting chronic eczema with hypertrophy of the lower part of the limb and foot and hypertrophy of the papillæ cutis around the ankle (*eczema hypertrophicum papillomatosum*). The upper portion of the eczematous skin has a purplish-red hue; lower down it is encrusted by a thick scab of a greenish-brown colour, stained by remedies employed in the treatment, while in front the scab is absent, and a dense cluster of hypertrophous papillæ cutis, resembling the efflorescence of a cauliflower, is brought into view. Hardy terms the disease, apparently in reference to the papular growth around the ankle, ‘*lichen hypertrophique*.’ The patient was a man sixty-nine years of age; at thirty-three he received an injury to the leg which was followed by ulcers; since that period he had suffered three attacks of eczema, the last when he was sixty-six, and this latter had been neglected. As a consequence of neglect, the skin became covered with a thick crust, two little enlargements were seen in the midst of the crust, and on admission into hospital, three years after the commencement of the attack, the lower third of the leg was covered with nodosities and tubercles ranging in size from that of a pea to a hazel nut. A varicose state of the veins of the leg also contributed its share to the development of the disease.”

These cases of hypertrophy of the epithelium, on

the one hand, and of the vascular tissues of the skin on the other, lead us onward to larger and more massive forms of hypertrophy, forms which are already foreshadowed by the œdematous hypertrophy of a large portion of a limb, and sometimes of the entire limb; a state to which I have ventured to assign the distinctive appellation of "spargosiforme," and cases, which in all but their mode of origin, may be fairly compared with the Arabian Elephantiasis.

Preparations 48 and 49, a cast and water-colour drawing from the same patient, are thus described in the Catalogue:—

"No. 48. ECZEMA HYPERTROPHICUM (tuberosum). Cast in plaster of the back of the shoulder of a man 46 years of age. He had suffered from eczema for ten years, and the eczema had assumed in several situations a tuberosus form. The tubera were caused by partial and circumscribed œdematous infiltration, and from time to time exuded a copious serous discharge. A few of the tubera are isolated, while the greater part are confluent and blended together into a large tuberosus mass. There were many of these clusters of tubera dispersed over different regions of the body."

"No. 49. Water-colour study of the eruption of the same patient, exhibiting the colour, figure, and bulk of the tubera; as also of two blotches, one in the progressive the other in the retrograde stage."

A similar pathological state, in which the œdema predominates, and which is referrible to impeded circulation through the deeper vessels of the limb rather than to primary eczema, is shown in drawings 50 and 51; the description of these drawings being as follows:—

"No. 50. Tuberculous hypertrophy of the skin with œdema. Water-colour drawing of the right thigh and knee of a woman aged 47, in whom, subsequent to œdema, the red tubercles and hyperæmia seen in the drawing were developed. Aggravation of the disease led to amputation of the limb. The tubercles bear a close resemblance to those of *eczema hypertrophicum tuberosum*, Nos. 48, 49. The case was published in the 'Virginia Medical Journal' for September, 1856."

“No. 51. Drawing of the left leg and foot of the same patient ; the œdematous hypertrophy and tuberculous development are well shown. The disease began in the left leg two years subsequently to the amputation of the right, and the woman died ten months later. The greenish hue of four of the tubercles and of the hollow in the centre of the chief mass is due to gangrene, the subsidence of the level of the latter being occasioned by drainage of its serous infiltration. The cause of the disease could be traced back to weak nerve-power and feeble heart. In her last illness she was under the care of Dr. Silas Durkee, of Boston, and an abstract of her case will be found in the third volume of the ‘Journal of Cutaneous Medicine,’ page 502, January, 1870.”

We must now retreat a step to take into consideration a form of hypertrophy, resulting from eczema, which affects a special portion of the epithelium, namely, the nails ; and the morbid appearances which are presented in this case are analogous to those massive hypertrophies of the epidermis which we have already contemplated in preparations 42 to 45. From attacking the walls and matrix of the nails, and manifesting its pathological metamorphosis in the horny matter of the nail, I have termed this affection *eczema onychicum*. Its description in our Catalogue reads as follows :—

“No. 52. ECZEMA ONYCHICUM (*eczema unguium*). Model of the hand, showing a thickened and rugged state of the nails due to eczema. There is some redness and roughness along the border of the wall of the nail, and the nail is thickened at the expense of its deeper stratum, that which is formed by the matrix. This portion appears as a thick wedge, which lifts up the surface-layer of the nail and forces it backwards and upwards (*onychogryphosis*). The patient was a paviour, 54 years of age, under the care of Bazin, and the disease, which was painless, had been in existence for three years.”

This is not the only example by many of the intervention of pathology for the illustration of normal structure ; and pathology in this instance may be said to have contrived a rude model by which to distinguish that portion of the nail which is the product of the matrix from that which is deposited on the surface of the latter by the papillæ of the

vallecula unguis ; it is the former of these which has undergone the morbid change, while the latter remains comparatively unaffected.

Just as eczema onychicum carries us back to hypertrophy of the epidermis in conjunction with eczema ; another preparation, which is numbered 513, recalls us to the ichorous and the purulent exudations which we have already had occasion to submit to inquiry in connection with moist eczema. The pus-globules in the purulent secretions of eczema are generally derived from the rete mucosum ; and in some instances we meet with an illustration of a portion of skin converted into a secreting surface without any abrasion of the epidermis. Such a state of the skin finds its nearest parallel in the mucous membrane, and we might by a figure of speech make the statement that the skin was converted into mucous membrane. Even the secretion bears a strong similitude with the secretion of an inflamed mucous membrane, and the form of affection may, very aptly, be denominated eczema mucosum ; and the same name may be applied to any part of the mucous membranes which is exposed to the air and manifests a similar morbid process.

No. 513 exhibits several siliquous or pod-like horny crusts removed from the lips of a patient affected with eczema mucosum. These are secretion-crusts rather than exudation-crusts, there being no abrasion of the surface on which they are produced.

The disease is a peculiar one ; the exposed part of the mucous membrane of the lips becomes inflamed, it pours out a muco-purulent secretion, the secretion dries and hardens, and, in a short space of time, one or both the lips may become encased in a sheath of dark brown or black colour, and possessing the density of horn. I have usually met with this affection in young women, and occasion-

ally in the opposite sex. One of the examples of the latter class was a young gentleman who was engaged to be married in a few weeks. In his case it occurred to me that the too free use of his lips might have been the exciting cause of the disorder, and, with his existing prospects, the disease threatened to become chronic.

In reviewing the illustrations of eczema up to this point, we find that their number is fifty-three, and these fifty-three preparations supply us with a fair history of the various manifestations of the disease. It is to be hoped that time will add to their number, and that every year our store may become richer, and richer still.

It may be remembered that, in addition to eczema, I include under the head of eczematous affections, three other allied diseases—for example, scabies, lichen, and impetigo. Scabies, or common itch, is not unfrequently mistaken for eczema, and especially for that form of the disorder which I have already described as *eczema papulosum*. Sometimes, however, it may present certain of the characters of *eczema vesiculosum* and sometimes those of *eczema pustulosum*. That it should be mistaken for eczema is by no means remarkable, when we call to mind that the pathological lesions of the disorder are identical with those of that disease, and, under these circumstances, we are obliged to fall back, for the diagnosis of the eruption, upon the discovery of the living cause of scabies—the *acarus scabiei*.

We are not rich in illustrations of scabies, nevertheless we have in the collection eight or ten specimens of the *acarus*, male and female; and a small series of casts, with a drawing and lithograph of the disease. The casts exemplify very accurately the appearance of a well-developed instance of the eruption as it is apt to occur in children; and we may detect in the casts a ragged state of the epidermis,

an abundant crop of papulæ, numerous vesicles, and, associated with the vesicles, a somewhat tumid state of the integument of the hand.

Since the delivery of this course of Lectures, two excellent models of scabies, executed by Baretta, have been added to our collection.

No. 537 is an example of scabies or common itch, in the commonest of the regions wherein it presents itself, namely, on the hand. The case is an aggravated one, and such as is rarely met with excepting among the neglected poor who make application for relief at a hospital. And the characteristic features of the disease may be said to be coarsely represented:—the moist eczematous and excoriated state of the interdigital spaces; also the similar state of the grooves of flexion of the fingers, the wrist, and even the palm; the vesico-pustules standing up in the midst of and around these excoriations; and similar vesico-pustules, together with irritable papulæ, dispersed over the back of the fingers and hands. In fact we see illustrated in this case the type of an ancient and bygone terminology, the scabies papulosa, scabies vesiculosa, and scabies pustulosa of our immediate forefathers. The artist has also illustrated, not without success, the burrows or cuniculi excavated in the epidermis by the female acarus for the deposit of her ova and the rearing of her young. Near the excoriated patches on the palm of the hand are two of such cuniculi, as also on the back of the fingers, but the special characters of the cuniculus are hardly so strongly marked as I could have desired, namely:—its moniliform or beaded shape; the ragged edges of the commencement of the cuniculus where the animalcule first penetrated the surface, and where the arch of the burrow has become worn away; the pearly lustre of the small dilatations and the small black point on the summit of each dilatation which marks the breathing-hole or stoma for the use of the young, the blackness of this point

arising from the accumulation of dirt within the aperture. Nevertheless, the model must be admitted to convey as complete an idea of the operations of the acarus as is possible by artificial means.

No. 538 is also a model of the hand exhibiting similar appearances.

LICHEN.

The papular element of eczema, as I have before had occasion to observe, has received the name of "lichen." The word, indeed, is wrongly applied, but as it is very generally accepted, we may adopt it as an established term.* From a frequent association with eczema it is sometimes far from easy to distinguish between eczema papulosum and true lichen; and the distinction at the best must be admitted to be both arbitrary and unsatisfactory. In this difficulty I have ventured to describe as lichen an eruption of papulæ presenting a monomorphic character as contradistinguished from the dimorphic character of eczema papulosum. Our first illustration of lichen is a further example of the difficulty

* The term "lichen" has undergone considerable modification of meaning since it was first made use of by the Fathers of Medicine. By them it would seem to have been applied to a circular blotch of eruption, possibly to a lamina of altered epidermis, which gave the idea of being stuck on the skin, as we might stick a wafer to its surface by *licking* the wafer with the tongue. Thus there may have been red lichens and white lichens, the latter, no doubt, being represented by lepra, the psoriasis of certain writers subsequent to the period of Willan. And it is deserving of remembrance that the term "lichen" was borrowed by the naturalists from the physicians, and was conferred by them at second hand on the cutaneous growths which are met with so commonly on the bark of trees. By Willan, however, and at the present day, lichen is the term used to distinguish pimples, some writers including under this name every kind of papular prominence of the skin, and others, with myself, limiting its use to those that result from inflammation of the follicles.

referred to ; in Nos. 59 and 60 is the representation of the trunk of a man covered with an eruption of papulæ closely crowded together and limited to a portion of the skin which had been subjected to the influence of an irritant article of dress. The eruption is named in accordance with our present views on dermatology, "lichen ;" but there can hardly be a doubt on the mind of any student of morbid phenomena that if the stimulant had been more active or more prolonged the case would have merged into one of ordinary eczema papulosum. The account of the case, which is somewhat remarkable, is as follows :—

"No. 59. LICHEN SIMPLEX, *var.* CONFERTUS (simple lichen). Coloured lithograph of simple lichen affecting the trunk and arms of the patient, and limited to the extent of surface covered by a woollen vest. The patient was a compositor, aged 28 ; he had been suffering from an attack of epidemic catarrh, for which he took a warm bath, and the day following, no doubt excited by the warm bath, the eruption made its appearance. It must also be mentioned in connection with the limitation of the eruption, that the woollen vest was new and of a red colour ; being new it would naturally stimulate the skin more than a garment that had been long worn and repeatedly washed ; and, on the other hand, some part of its irritative quality might have been derived from the pigment. This case may be taken as the type of the papulæ of dermal pathology, and the student's attention is drawn to the size and distribution of the papulæ. They are most minute where they are most abundant, a few papulæ of larger bulk being mingled with the rest, while they are scanty and larger on the flanks, and largest on the shoulders and arms, where they have a corymbose arrangement."

Allusion is made in this description to a difference of size of the papulæ having reference to their more crowded or scattered relations, and attention is also drawn to the manner of their distribution ; thus, over the greater part of the back the papulæ are crowded and the eruption entitles itself to the denomination of lichen *confertus*, but if the distribution had been scattered instead of crowded the proper expression would have been *disseminatus*. Then on the arms

there is another form of crowding, namely, in small isolated clusters or bunches; this is the corymbous distribution, which would be named *corymbosus*. And presently I shall have occasion to refer to two other methods of distribution; one of these being in rounds or orbiculi, hence, *orbiculatus*; and the other in circles or rings, *circinatus*.

The plaster casts Nos. 61 to 64, all from the same patient, illustrate these points with respect to bulk of papulation and mode of distribution very plainly. No. 61 displays the crowded or aggregated disposition of the papulæ as well as their smallness of size. Nos. 62 and 63 exhibit their corymbous grouping and larger dimensions; and No. 64 their more disseminated arrangement and greater amount of bulk.

I have already, in the description of No. 32, called attention to the perforation of the papulæ by the hairs, constituting the variety of the papular eruption termed lichen *pilaris*; and in No. 65 we have a water-colour study of similar papulæ and also of those of simple lichen.

The diagnosis of true lichen should, properly, turn upon the question as to whether the papule be an *idiopathic affection of the follicle*, or whether it be merely a *part of a general disorder* of the vascular tissues of the skin. In the case of eczema papulosum it is already decided that the papulæ are simply a complication of a general affection. And I have stated my belief that the case of lichen simplex just submitted to examination was an eczema, which had stood still on arriving at the papular stage, in consequence of the early removal of the exciting cause. On the other hand instances occasionally come before us wherein the papular manifestation of an eruption remains permanent without any other signs of eczema being discoverable upon the rest of the skin. Of this kind is the example of circumscribed lichen illustrated by No. 66, of which the description reads as follows:—

“**LICHEN CIRCUMSCRIPTUS (orbiculatus).** Plaster cast showing a patch of eruption on the front of the chest of a little girl ten years of age. She had one other similar patch on the side of the abdomen. The eruption had existed in its present state for a fortnight.”

Next after lichen circumscriptus, distinguished by its orbicular figure, consisting of a circular patch pretty equally studded over with papulæ and evincing an equal amount of energy of development within the area to that existing at the circumference, we come to another form of eruption in which the activity of development is almost reversed, which is peripheral or centrifugal or serpiginous in its growth, and which manifests its presence by circles or rings more or less numerous distributed over the body. The preparations numbered 67 to 72 are illustrations of this form of affection, and their description in the Catalogue is as follows:—

“No. 67. **LICHEN CIRCINATUS.** Coloured lithograph of the centrifugal form of lichen as it occurs usually in the hollow of the back. The eruption is made up of circles having a yellowish area and a border more or less distinctly papulated; towards the centre of the patch the rings are blended, they have lost more or less of their circumferential ring and present a map-like configuration. The rings are more distinct around the circumference of the map-like patch, and these also are only partially bordered with papulæ, while a few isolated papulæ are scattered in the spaces between them. The patient was a young man, aged 24; he had a similar eruption in the hollow of the sternum, and the eruption had existed for three years.”

“Nos. 68 and 69. Plaster cast of the hollow of the back between the shoulders of an adult man, exhibiting serpiginous lichen in its circinate form. Many of the papulæ are isolated and of various size; others are confluent, forming small flat circular disks with sharply defined outline; others again have run into distinct rings, the papulæ of the margin being unequal in size; while in the centre of the patch several of the rings have become blended together into a blotch of map-like figure.”

“No. 70. Plaster cast of the front of the chest of a young man, showing serpiginous lichen in its circinate form; the pathological characters of the eruption are very evident, namely, scattered papulæ, circular disks sharply defined and flat, rings with a papulated border more or less complete, map-like patches formed by the blending of several rings and, here and there, broken segments of rings.”

“No. 71. Plaster cast of the hollow of the back between the shoulders of the same patient. The circular character of the eruption is less distinctly defined than on the chest, the eruption being chiefly papular and discoid.”

“No. 72. Plaster cast of the front of the neck and chest of a woman aged 45. The eruption consists of circular patches of various dimensions slightly raised at the circumference and more or less distinctly papulated. Just below the left clavicle is a single isolated circular patch, and above the same clavicle an oblong patch which occupies the supraclavicular fossa. One end of a similar oval-shaped ring is seen in the same situation on the right side. The front of the neck presents a map-like patch of rings and segments of rings confusedly blended together, and the same kind of patch is seen in the hollow of the sternum, spreading out laterally upon the mammæ and extending in a broad band under the right mamma towards the side of the trunk. On the front of the right shoulder the papulæ are scattered in small clusters, a few of the papulæ being discrete.”

I have already dwelt more than once on the forms assumed by cutaneous eruptions, with the view to make apparent that the variety of such form is of an accidental rather than of a specific nature; or, in other words, that it is a necessary consequence of the structure and organization of the skin. If the cause of the disorder be one which is capable of acting with power upon the whole of the skin, the result will be a general eruption, no part of the structure will escape, follicles and interfollicular surface will alike suffer, and the eruption may be of the conferted or crowded kind. But if the same cause be supposed to operate with a weaker degree of force, we may have as a consequence a general eruption which is corymbous or clustered; and if it be weaker still, the eruption may be disseminated or scattered. Then, in the next place, with a different influence acting upon the nervous system, the eruption may be partial instead of being general; it may be partial and extensive, or it may be partial and restricted, or, as we commonly term it, local. Again, in its manner of manifestation, also governed by the nervous system, we may find the patches to be

irregular or regular in figure; sometimes diffused, sometimes circumscribed; and of the circumscribed kind we may have circles, some of which are solid or orbiculate, and others open or circinate and annulate. I have called attention to these very conspicuous phenomena in speaking of eczema erythematosum orbiculatum and circinatum (Nos. 4 and 5, page 11); and again in describing eczema papulosum, corymbosum, and circumscriptum (Nos. 20 to 24, page 30); and I refer to it again for the purpose of showing that these apparent distinctions, though highly interesting physiologically and pathologically, have no bearing whatever on the practical consideration and practical treatment of diseases of the skin. Eczema as eczema is the only objective consideration to be kept in our mind; and although I have travelled through a series of terms, for example, eczema, psoriasis, pityriasis, scabies, and lichen, I am still dealing with eczema, and have not yet got beyond the limits of that important and ubiquitous disease.

It is very reasonably objected to Dermatology that it possesses so great an abundance and variety of names as to render its study repulsive and perplexing; but let us look at the subject from another point of view: the skin is one of the most important and most highly organized of the constituents of the body. It is interesting to us for its structure and functions, *why should it not be equally interesting to us for its diseases?* The answer is obvious: we know something of its structure and organization, but we know little of its diseases. *And yet* those diseases are constantly under our eye, constantly within our reach, and are known to comprise, in some instances, the greatest physical annoyance and vexation of life. I can fancy such an objector continuing as follows:— Yes, I wish to become acquainted with diseases of the skin; but I shrink from their investigation on account of the obscurity with which they seem to be invested. Whereas my reply would be simple:—

There is no obscurity to those who dare to make the first advance towards their study. A vast deal of the apparent obscurity has really arisen, less from the abundance of diseases or abundance of terms, than from the abundance of instructors. We have had one great teacher in Britain in Willan, with his disciple Bateman; men of whom the medical profession of this country have reason to be proud. But now I ask you to forego all human teachers, and come to this College to learn from the face of nature herself, or from as near an approach to nature as it is possible for man to invent. We will not alarm you with classification; we will only refresh your memory as to the early rudiments of medicine; we will tell you that certain of these diseases—say two—are diseases having a pathological basis; that other two are disorders of function; and that the remaining two are diseases of special apparatus of the skin. We will ask you to inspect the first eighty-five members of our collection with the aid of the catalogue, and we will say to you, behold simple inflammation of the skin, and the curious modifications engendered by structure, or by the constitution of the patient. Seventy-five out of those eighty-five preparations illustrate eczema; and the remaining ten, only, a different eruption. A word more. With the exception of those cases of eczema termed scabies, the whole of the remainder are to be treated alike. *These are the general principles which nature will teach*, and which medical men, from the very requirements of their education, are always eager to learn. I foresee clearly the day when every medical man, whatever his specialism in other respects, whether physic or surgery, will be nothing, unless he be at the same time a dermatologist.

But it may be asked, Why describe minutiae of appearance when they have no bearing on the essentials of the disease? The answer is manifold.

1. *They are there*, and we only describe what we see. 2. We note them that we may *recognize them* when we see them again. And 3. We note them that we may *estimate them at their proper value*, and exclude them from exercising an improper influence on our judgment or on our principle of management. The *immensity in number of the stars* does not prevent the astronomer from recognizing and individualizing the constellations, nor from comprehending the mutual relations of the universal whole.

To return from this long, and, perhaps, tedious digression, I may observe that, in my judgment, all the forms of lichen which we have just been considering, would be more properly located if they were transferred to the group of eczema papulosum than retained as a part of a distinct group. The variety of eruption termed lichen circinatus is not unfrequently the forerunner of eczema, and is very commonly associated with a dry eczema or pityriasis of the scalp, or with moist eczema behind the ears or in folds of the skin of other parts of the body.

But while I would transfer the superficial forms of lichen already described to eczema, it would be necessary to retain under this name at least three forms of the affection, *videlicet*, lichen marginatus, lichen planus, and lichen urticatus.

LICHEN MARGINATUS entitles itself to its special distinction by being in its essence a chronic inflammation of the follicles, and by its independence of other forms of eczema, although originating in the same way. It is a singular affection, and is evidently an exaggeration of lichen circinatus; it consists of rings, having an inflamed and prominent margin, and ranging in size between a few lines and many inches in extent, the rings being sometimes numerous and dispersed, at other times solitary. It may be developed on any part of the body or limbs, but manifests a predilection for the region of

the perineum, often originating from the point of contact of the scrotum with the thigh, and thence spreading upwards in front and behind, and giving rise to a series of remarkable curves upon the pubes, the groins, and the nates.

I present to you a rough drawing of this affection as it existed in a robust, healthy-looking man, aged 67, a tax-collector in a provincial town. He led an active out-door life, and the disease, which tormented him by its itching, particularly at night, had been in existence upwards of two years. The marginate border of the eruption exhibits the usual papulated and indented line, and may be traced from any one point throughout the whole circumference until the starting-point is reached in return. The area of the circle has a yellowish-red or dead-leaf-coloured tint, and is marked by pale-red ridges, which trace out an earlier boundary of the affection, by segments of circles of which the remainder has subsided, and by scattered papulæ.

From the long duration of the eruption in this case, it is to be inferred that the disease is always slow in its progress and difficult of cure, and it has been known to last for several years. In England it is comparatively rare, but is common in hot climates, especially in India, where it has received the name of the Indian ringworm, the Burmese ringworm, the Concanee ringworm, and so forth.

LICHEN PLANUS is a chronic affection of a follicle giving rise to a papule, peculiar in its colour, its configuration, and in its structure. The colour of the papule is a dull purplish or lilac-red, and this colour would seem to have suggested to Hebra the appellation "lichen ruber." The figure of the papule is flat, depressed on the summit, and quadrangular at the base; it is very slightly elevated; its flattened summit is smooth and glistening like horn, evidently from hypertrophy of the epidermis, and it is umbilicated at the centre, where may be seen the

aperture of a follicle filled with dry epithelial exuviae. The eruption is discrete and disseminated at its first appearance, but is apt to concrete into blotches of considerable extent by the aggregation of its papulæ and their blending by an infiltrated base. In this latter form the horny coverings of the papulæ and the cuticle of the intervening congested skin exfoliate to a trifling extent, and with the dry and greyish excreta of the follicles, give rise to an uneven desquamating surface surmounting a red and thickened base. Lichen planus is sometimes accompanied with intense and intermittent itching, and at the subsidence of the papulæ and blotches, very commonly leaves behind it deeply-pigmented stains.

Nos. 79 to 82 are examples of lichen planus : and their description reads as follows :—

“No. 79. Plaster cast of the inner side of the knee of a woman of about 48 years of age ; the eruption is seen in its discrete and in its partially aggregated form.

“No. 80. Plaster cast of the left forearm of the same patient, showing the eruption in its discrete form. The eruption is admirably illustrated by the cast, as well as one of its favourite haunts, namely, just above the wrist.

“No. 81. Water-colour study of *lichen planus* for colour and distribution of papulæ, from the same patient, right flank.

“No. 82. Water-colour study of *lichen planus*, illustrating colour and distribution of papulæ. The seat of the eruption is the left arm, and in the left-hand corner of the drawing is a memorandum of the colour of the stains left by the papulæ at their decline.”

Since this course of lectures was delivered, two models of lichen planus have been added to the dermatological collection.

No. 516 is a model of the leg, its outer side, showing one of the forms of lichen planus ; the eruption is aggregated ; a few scattered papulæ may be seen around its circumference, but it is chiefly remarkable for its purple colour and brown pigmentation. The morbid surface is corrugated and papulous,

and bears evidence of a chronic history; while an oozing spot at its upper and front margin is indicative of pruritus, being the consequence, probably, of scratching with the nails. Wherever the papulæ have subsided a deep pigmentary stain is left behind; and the purple hue of the whole eruption must be referred to prolonged congestion and chronic dilatation of the capillary vessels. This model is No. 189 in the Paris Collection, and is named by Hillairet "lichen hypertrophique."

No. 536 is a model of the side of the trunk, on which is displayed an eruption of a somewhat remarkable kind; a papular, and therefore a lichenous eruption, the papulæ being distinguished by their smooth and flattened summit, and thereby suggesting the name by which the eruption is known, namely, lichen planus; or, as we might say, table-crested lichen. There is a peculiarity also in the colour of the eruption, a dull and somewhat purplish crimson, so as to lead to its diagnosis on the continent by the name of lichen ruber. The form of the eruption here illustrated is also an unusual one; ordinarily the papulæ are disseminated, or united into blotches by a hyperæmic base, but confined to certain regions of the body, as in the model No. 516; but in the present case the eruption is general, developed like measles, in small angular clusters, and the union of the angles of the clusters gives rise to a coarse network which covers the whole surface of the integument; hence we may designate this variety as a *lichen planus retiformis*. A close inspection of the separate papulæ shows their characteristic smooth and horn-like and somewhat depressed summit, umbilicated in the centre by the aperture of a follicle which is choked with dry epithelial contents. From the small size of the papulæ in this general eruption these characters are not very easily distinguishable on the model, but are admirably shown in the casts Nos. 79 and 80; while

the drawings 81 and 82 exhibited the deep brown stains which the papulæ pretty constantly leave behind them.

Nos. 73 to 78 are a series of casts of *LICHEN URTICATUS*, an affection distinguished by an eruption of large, scattered papulæ, of a red colour, and attended with so much tingling and itching as to have suggested a comparison with urticaria; hence its name, *lichen urticatus*. It is an eruption of childhood and has no relationship whatever with eczema, although included under the general denomination of eczematous affections. Its proper place, very probably, would be by the side of urticaria, and to that group it will doubtless be, some day, transferred.

The last of the examples of eczematous affections is *IMPETIGO*, a superficial pustule, an offshoot of *eczema pustulosum*, just as lichen, a pimple, is, as we have already seen, an offshoot of *eczema papulosum*. The study of *eczema pustulosum* has prepared us for an idiopathic eruption developing itself like an eczema, with a purulent or muco-purulent secretion, and such an affection we find illustrated in the instances before us, of which the description is as follows:—

“Nos. 83, 84. *IMPETIGO CONFERTA* of the face. The patient was a delicate youth, aged 17; he was brought up in the country, and being placed in an office in London fell into bad health: having been on one occasion heated by exercise, he was exposed for some time to the cold, and while labouring under the consequences of a chill, the eruption appeared upon his face, at first as a small clustered spot (*impetigo figurata*), but the eruption gradually increased until it occupied the extent shown in the plate. At about four months from its first outbreak, in the month of November, he slipped into the water, and the eruption became much aggravated. At this time the ‘portrait’ was taken; the entire face is somewhat swollen; the eyelids are almost closed by the swelling; and the skin was so stiff that the opening of the mouth on the movement of the jaws gave rise to bleeding. This is the form of eruption to which the Greeks gave the name ‘*melitagra*,’ from the dried honey-like appearance of the crusts. The disease quickly gave way to appropriate treatment, and the patient was finally cured by a sea voyage.”

“ No. 85. Model of the face, exhibiting the crusts of impetigo. The patient was a delicate lad, aged 16, of feeble lymphatic constitution ; the eruption is of the scattered kind, *impetigo sparsa*, but in the left maxillary region is somewhat clustered, *impetigo figurata*. The phlyctenoid pustules are each covered with a thick brownish-yellow crust. The boy was under the care of Lailler in the Saint Louis Hospital, and was reported ‘cured’ within a month of his admission. The student’s attention is drawn to the clever representation of freckles or lentiginos upon the nose and neighbouring part of the checks.”

No. 535 is another of the models added to our Collection since the delivery of this course of lectures. It is a model of the forearm, upon which are scattered numerous patches of pustular eruption which may well deserve to be termed *eczema pustulosum* or *eczema impetiginosum*, but for the present are designated “impetigo.” The patches are circular or oval in figure, and range in size between a quarter of an inch and nearly two inches in diameter. They are coated over with a dense uneven crust of a dirty yellow or dried-honey colour, and about two lines in thickness ; and are surrounded by a narrow halo of redness, on which the epidermis is in a state of desquamation, while in the immediate neighbourhood of the redness may be seen several minute vesico-pustules. There may also be detected in the intervals of the patches and in several other situations, examples of vesico-pustules in progressive stages of development.

If I have dwelt at an apparently inordinate length on the eczematous affections, it is because they are the most numerous and probably the most important family of diseases of the skin, and include all the more common forms of cutaneous disorder. We have now passed them all in review, and it may act as a refresher to our memory if we give them another and a cursory glance before parting with the mfor another subject.

Thus we have seen eczema represented as a simple inflammation of the skin, manifesting its operations

by an erythematous, a papulous, a vesiculous, an ichorous, a pustulous, and a squamous lesion, each of these lesions being accompanied by one or other of the rest in a greater or less degree. Next we have seen the papular type of eczema in a separate form; and the pustulous type of eczema also in a separate form, the former of these receiving the name of lichen, the latter that of impetigo. Then I have endeavoured to explain that the chronic stage of eczema, when the principal remaining lesion is exfoliation of the cuticle in small fragments or scales, has received the names of psoriasis and pityriasis. And, moreover, that an eczema resulting from the presence of a parasitic animalcule, the *acarus*, is denominated scabies. In this manner we have had presented to us six terms of common use in relation with Dermatology, namely, eczema, psoriasis, pityriasis, scabies, lichen, and impetigo. Every one of these terms represents a well-defined form of disease, and although all the forms of disease so represented are of the nature of eczema and are members of the group of eczematous eruptions, yet each has peculiarities of its own, recognized by the Dermatologist, which render their separate consideration a matter of convenience.

It may be remembered, however, that I took occasion to except from the eczematous family two forms of lichen, namely, lichen planus and lichen urticatus, both of which are sufficiently well marked to take a position by themselves, and in some future classification to be allied with some other group; for example, lichen urticatus with urticaria; and lichen planus with a group founded on the follicular pathology of papulæ.

The distinction between follicle and non-follicle opens up a very interesting field of inquiry in relation with cutaneous disease; it may be stated in general terms that the papillary portion of the skin cannot be inflamed without participation to a certain

extent on the part of the follicles ; but the reverse of this proposition is not equally true, for folliculitis in a great variety of forms may exist without a similar participation of the interfollicular papillary layer. The evidence of this fact has been before us in polymorphic eczema, in scabies, and especially in eczema papulosum and lichen. In eczema papulosum the pathological state of the follicle is one of simple hyperæmia and consequent infiltration, and therefore comes under the denomination of *dry* eczema ; but we also find, in relation to the follicles, a state corresponding with *moist* eczema. If an excoriated surface in eczema ichorosum be closely examined, the follicles may be seen giving exit to a transparent lymph in considerable abundance, and in the purulent stage of the exudation the excretion may be opalescent and puriform. So that the same language which we have heretofore held with reference to eczema in general, may be applied separately to the follicles, which, in the eczematous family, present us with an erythematous, an ichorous, and a purulent form of folliculitis.

With the exception of eczema papulosum and lichen, the state of the follicles is most prominently brought before us in impetigo, which in its pathognomonic form is a purulent folliculitis. It is this pathological structure that gives to impetigo its limited and fixed character ; it is never so extensive as common eczema, but evinces a disposition to develop itself in small circumscribed blotches, impetigo figurata ; and is very commonly met with as an affection of single follicles, impetigo sparsa, particularly in the region of the scalp and upon the face, where the follicles are larger than elsewhere. As the term catarrhal inflammation has sometimes been applied to eczema by way of illustration, we might, with equal truth, make use of the term catarrhal folliculitis in reference to impetigo, as a similar kind of illustration.

And here it becomes necessary to say a few words

on the subject of a special characteristic of impetigo, namely, crusts. The copious exudation of impetigo dries on the surface, sometimes under the cuticle, and at other times, where the cuticle has been removed, on the excoriated surface, and it necessarily presents some variety in colour, in thickness, and in density. In colour it may be grey, or of an amber tint, or yellow in various degrees, and when the exudation is mingled with blood, it may also be reddish, or brown, or even black; while the thickness and density of the crust will be determined by the quantity and degree of inspissation of the excretion. The Greeks, no doubt, had this affection in view when they made use of the term *melitagra*, the honey affection, as though from the general resemblance of the crusts to a paste of honey dried upon the skin. A pretty fair illustration of *melitagra* is exhibited in numbers 83, 84, 85, and 535.

THERAPEUTIC TREATMENT OF ECZEMA.

Having completed a preliminary and discursive sketch of the eczematous affections, I shall next invite my audience to transfer themselves in imagination from the pathological theatre to the consulting room or to the bedside; and I shall further invite them to review and examine the patients who may appear before them, concentrating their thoughts on the disease eczema, and directing their energies to the treatment of that affection. And, first of all, let us consider the *local* or *proper surgical treatment* of the disease.

The local symptoms in all the various forms of eczematous affections are essentially the same, differing only in quantity and in degree, and the same principle of treatment is therefore applicable to the whole. The chief of the symptoms are, heat and itching; our patients will sometimes speak of burning and scalding, and sometimes of tingling, creep-

ing, and biting, as if from the agency of animalcules in the skin. These symptoms necessarily destroy comfort and repose, they are aggravated by rubbing and scratching, and before very long increase to a degree almost intolerable, and either give rise to constitutional disorder or augment any constitutional disorder which may have existed before.

Such is the case which I now bring before you:— What shall be done to alleviate or remove these symptoms? We may assume, that which is apparently self-evident, that the symptoms are due to inflammation of the skin, therefore the question narrows itself into a sphere of very limited extent. Let us fall back on a very familiar illustration; the erythema or eczema which sometimes accompanies the use of appliances for the treatment of wounds, of injuries where a limb or a portion of skin has become irritated by the application of dressings or bandages, or by the contact of discharges; or, let us set before the mind another common example of inflammation of the skin, namely, erysipelas. The inflammation is one and the same, the remedy, at least in principle, should be the same also; and one and all will be equally soothed by the use of the *dredging-box*.

It is necessary to bear in mind always that the skin in a state of inflammation is in a state of irritation; and all our acuteness should be directed to the very matter-of-fact and common-sense object of avoiding to increase that irritation by the remedies we employ. A sound and practical aphorism has been attributed to Boerhaave:—“*Abstine si methodum nescis* ;” and in the language of Hippocrates we must “do good” or at least “do no harm.” But it is clear that while we are obeying the first indication of palliation by means of the farina tritici we can certainly do no harm with our remedy, while we may be giving the greatest amount of comfort to the patient and taking the first proper step towards

a cure. Of a nature akin to the *farina tritici*, and more pharmaceutical in its character, is the *amylum tritici* or wheaten starch, which may be employed alone or in combination with oxide of zinc, and with or without the addition of camphor. Besides flour and starch there are one or two other powders which have also their merits, although they take a secondary place; for example:—Fuller's earth, oat-meal, and the seeds of the *lycopodium*.

We may sometimes find our patient beforehand with us in the use of these remedies, and we must be careful how we attempt the substitution of an application that may not prove so successful. On the other hand, we must be prepared for the occasional mortification of making the discovery that the medicaments which, with much care and thought, we have prescribed, have given rise to unbearable irritation, and the patient has only obtained relief by employing a remedy derived from the kitchen in lieu of that from the pharmacy. I cannot too strongly urge that the skin, under the influence of inflammation, is an organ, frequently, of exquisite sensitiveness and of excessive irritability, and demands our utmost anxiety and care in its management.

It may occur to us sometimes to inquire: What the properties are which we desire our remedy to possess?—a not unwholesome question. Well, at the present early period of the disease and at the palliative stage of our treatment, we may say:—We want a coating of protection to a morbidly sensitive and highly irritable surface; and the material of the coating must be perfectly unirritating. Such an application we had in the *farina tritici*, and also in the *amylum tritici*; but as we may find a difficulty in securing the adhesion of these powders to the surface, we will see what else can be done. Let us take of lime-water half a pint, and lime-water of itself is an excellent remedy, and sometimes the only application the eczematous skin will bear; but

we will thicken the lime-water by the addition of oxide of zinc and calamine powder, of each three drachms; and we may, if we think it desirable, give to the inspissated fluid a certain adhesiveness by the addition of a drachm of glycerine. Here, then, we have an excellent lotion which we may paint over the inflamed skin, with the almost certainty of its unirritating property, and with the assurance that it will deposit a coating on the eruption which will act as a defence against external friction, and particularly against the irritant properties of the atmospheric air.

I wish it were unnecessary to add as a caution, that the material of our remedies must be of the very purest kind, and that where this is not the case, we may be defeated in our object, and, with loss of reputation to ourselves, lose faith in our remedies and lose faith in our faith. On the other hand, it must be admitted that we may sometimes fail with the most excellent materials for the want of a sufficient familiarity with their use. I will venture to relieve the prosaic weariness of a lengthened detail by the narration of a couple of anecdotes, which convey a moral bearing on the subject before us. A wealthy merchant, who knew the value of material, but had little conception of the genius requisite for its manipulation, gave a commission to an artist of eminence to paint him a picture; price was no object,—the fee, to use a technical term, was enormous; but, for there was a *but*,—and to this but the merchant found some difficulty in giving utterance,—“But, sir,” he said, “may I rely upon your honour that you will employ none but superfine colours?” The other anecdote is probably quite as generally known, but, like the former, conveys an appropriate lesson. An amateur artist had been gazing with admiration for a long time at the splendid results of the brush of one of our famous painters. At length, inspired by enthusiasm, he ventured to ask a question which

was nearest to his heart, and embodied, as he believed, the secret of his own prospective success. "And may I, sir," he inquired, "humbly ask you *with what* you mix your colours?" to which, as you may be aware, the answer was thundered out, "With brains, sir; with brains." Now, in the treatment of disease of every kind, and no less in the treatment of diseases of the skin, we must endeavour, firstly, to secure for our patients "superfine materials;" and, secondly, we must employ them "with brains."

As I have before said, these powders and desiccative remedies are adapted for the early stages of eczema, whether its erythematous, its papulous, or its vesiculous forms, and are sometimes equally applicable to erythematous complications of the other forms, or are useful in drying the skin when in a languid, damp, and exuding state. But their especial value is shown while the outbreak of an eruption from internal causes is still progressive, and where the skin is too irritable or sensitive to bear other remedies, and, notably, ointments.

It is a maxim worth remembering, that where a remedy agrees with the skin it will be proper to leave well alone; and if the powder just mentioned, or the lotion, relieve the burning and itching, and the redness subside under their use, we have no need to seek further; but if, on the other hand, the disease move onwards a stage and assume a more chronic character, especially if the itching and dryness or exudation put on a more decided form, we shall be in want of another application, and in this case we shall find none so appropriate and so much to the purpose as the benzoated ointment of oxide of zinc. There are certain remedies which would seem to be so intimately associated with forms of disease that they come into the mind with the mere mention of the disorder; this is the case in the instance of scabies and sulphur, syphilis

and mercury, chronic syphilis and iodide of potassium, gout and colchicum; and such remedies, absurdly enough, have got the reputation of being specific, as though the remedy could act independently of the control of the constitutional power of the individual. But, if the word "specific" have any signification whatever in reference to the diseases just named, the benzoated ointment of oxide of zinc certainly has that claim in relation to eczema. There is scarcely a period of the career of eczema in which it is not the best remedy that can be employed, with the exception of the earliest outbreak of the affection. But even the benzoated ointment of oxide of zinc must, in its use, like the great painter's colours, be mixed "with brains, sir; with brains."

And this leads me to the inquiry which I started as a preliminary to our use of medicines, namely, What are its capabilities? What do we expect of it? Before I undertake to answer these questions let me suggest a surgical definition of eczema. Eczema is a *solution of continuity*; and a solution of continuity requires an application to defend the lesion, for the purpose of keeping its broken edges in contact, and of excluding the operation of external irritants of every kind. These, then, are the capabilities of the benzoated ointment of oxide of zinc, and we must use it in a manner to accomplish such intentions. It should in the first instance be smeared upon the eczema; the smearing with the ointment should be repeated twice, or more frequently in the day, so as to secure a permanent covering, and, wherever practicable, strips of linen rag spread with the same ointment may be placed over the eruption, and maintained in position by a roller, so as to keep the ointment and the dressing in permanent contact with the diseased skin.

Regarded in this manner, the ointment fulfils the purpose of a light unirritating plaster; it preserves

the natural moisture of the skin, and excludes the stimulant operation of the atmospheric air. It is easily replaced when accidentally removed, and in many cases will accomplish every object of treatment from the beginning to the cure of the case. Let me instance an eczema infantile, in which the body is covered with eruption from head to foot; it is hardly possible to conceive a remedy more admirably suited in such a case to meet the exigencies of treatment than the benzoated ointment of oxide of zinc.

It has long been my custom to combine with the zinc ointment a small quantity of spirit of wine, in the proportion of one drachm to the ounce; the spirit softens the ointment and facilitates its application; it produces a sensation of coolness which is agreeable to the heated surface; and it has besides a gently stimulant effect on the nerves of the skin. The application, as I have already observed, relieves the heat, the stiffness, and the itching, and the relief continues until the ointment dries up or is accidentally removed. When either of these events takes place the ointment must be repeated in the same manner as before. Our aim should be to favour the formation of a thin deposit or concretion on the surface, which should occupy the place of the broken or excoriated epidermis; such a deposit or concretion is, in fact, an artificial cuticle, a kind of natural plaster, under which the skin is preserved in a state of repose, and the inflamed and irritable tissues have time given them to recover their normal status. You will perceive that eczema brings before us a surgical lesion in which the application of a plaster or dressing of any kind is often perfectly impracticable, and therefore we are obliged to have recourse to a remedy which shall possess the intrinsic property of adhesion to the skin without the aid of other coverings. This will explain our anxiety to have the inflamed surface thoroughly

coated with the ointment, and to have the ointment repeated as often as, from any accident, it may chance to be displaced. And, of course, wherever practicable, means may be contrived, such as bandage and compress, to render the dressing permanent.

Above all, it is important to avoid washing the skin at this stage of the disease; washing would remove the ointment and open up the excoriation afresh; it would be undoing that which it had taken much labour to do; it would be unsurgical by creating disturbance where rest and position were of the utmost importance. There can be no want of cleanliness where a pure oxide of zinc ointment is properly used; and if secretions be poured out from the skin, they may always be absorbed by means of a soft napkin, and, together with crusts, may be gently wiped away. Mothers will sometimes hear with wonder the command to avoid washing their children in a case of eczema infantile, but they are generally ready to admit that the eruption is always more uneasy after the washing than it was before; and their instinct quickly assures them that their instructions to avoid washing are correct.

Eczema enjoys the peculiarity of presenting, in a general attack of the eruption, a variety of degrees or forms of manifestation on different parts of the body; thus it may be erythematous in one place, ichorous in a second, and squamous in a third. The zinc ointment is equal to the relief of every one of the forms of the eruption, but it not unfrequently happens that we may find an advantage in using a powder in one situation, the lime-water and zinc lotion in a second, and the ointment in a third. And in the adoption of these means we are to be influenced rather by the sensations of the patient than by any preconceived theory of the disease. In general terms it may be said that whatever gives

rise to pain or uneasiness is bad, and will require to be changed.

Eczema is essentially chronic as to its course, but it manifests stages in its progress which are as decidedly acute. The treatment which we have just been considering is strictly palliative, and is therefore especially adapted for the early and acute stages and acute manifestations of the disease, but is equally applicable for the relief of heat, itching, and dryness in every stage of the affection. If I were asked how I should distinguish between an acute and a chronic eczema, I would say, that the acute stage is denoted by erythematous congestion and moist excoriation, and the chronic stage by infiltration and desquamation, the infiltration giving rise to thickening and induration. I shall now suppose that the eczema has reached its dry, squamous, thickened, and indurated stage. It has assumed that condition which, in ulcers, for example, is termed indolent, inveterate, and so forth. The zinc ointment removes the scales, heals chaps and fissures, and relieves in some degree the itching, but does nothing towards the dispersion of the thickening and induration of the tissues,—that is, towards the cure of the disease. The time, in fact, has come when we must contrive to awaken the tissues from their indolence and lethargy and direct, as far as we are able, the newly-awakened life towards a normal state of action,—that is, towards a restoration of healthy function and tone.

Our purpose, therefore, is no longer palliative, it is stimulant or tonic; the palliative treatment has accomplished all it can effect; now we have to consider the nature and mode of application of the stimulant treatment. Our stimulants possess a great range of power, and, if we knew precisely the amount of resistance we should meet with, we might apportion our power with exact accuracy. But as this can never be the case in dealing with so subtle a machine as living organization, the laws of sur-

gery would prescribe to us that we should begin with the mildest of our stimulants and advance progressively, and to the best of our judgment, to the higher degrees. The philosophic surgeon will not hesitate to adopt this course as one in every way consistent with his knowledge of vital phenomena; and therefore we may proceed to inquire:—in what our stimulants consist.

The first and best of our tissue-tonics or local stimulant remedies is undoubtedly—soap. It will be remembered that I have prohibited soap in the earlier and acute stages of the eruption; therefore soap is new to the morbid skin, and capable, consequently, of producing a more powerful effect than would otherwise be the case. The chronic eczema should be thoroughly washed with soap, combining with the solvent action of the soap upon the epithelium such an amount of moderate friction and compression as may reach the vascular and infiltrated tissues. After the washing, the surface is to be dried with a soft napkin, and, as soon as dried, dressed with the zinc ointment like an eczema of an earlier period. The next day we examine very carefully our eruption, and if we find no signs of excessive irritation present, we renew the saponaceous washing, and repeat it again and again until the eczema is healed. It will soon be apparent how frequently the process may be repeated, whether once a day only or twice, or whether the reapplication must be deferred for several days. The immediate consequence of the stimulant treatment will probably be the development of an exudation on the surface, which will relieve the infiltration and turgescence within, and a few repetitions of this exudation will so far tend to empty the tissues of their excess of fluids that they will be enabled to recover their elasticity, and return by degrees to their normal state.

This, in fact, is the explanation of the *modus operandi* of the powerful stimulants which we hear

of as being from time to time so useful in the cure of chronic eczema; such as, strong alkaline soaps, strong solutions of potash, strong mercurial ointments, strong solutions of nitrate of silver, and tar. And, in illustration of the same principle, I may call your attention to a remark which I made in reference to the treatment of No. 27, namely, that after an obstinate resistance of a variety of remedies, the disease was suddenly cured by one application of the tincture of croton pencilled on the inflamed surface.

If I wished to reduce the principle of local treatment to an aphorism, I might do so by the use of the two words, *palliative* and *stimulant*. Among the palliatives there is one which is occasionally of much service for the relief of heat, tension, and pruritus, namely, water dressing, whether the moist application be made in the ordinary way with an impermeable covering or employed in the shape of a cold starch poultice. The water dressing may be used constantly for a period or during the night only; and its use may be combined with that of the lime-water lotion, zinc ointment, or saponaceous frictions and ablutions. The water dressing is very useful in accelerating the separation and removal of crusts, in promoting exudation from infiltrated and œdematous tissues, and in preparing the tender skin for the treatment by ointment or the treatment by desiccating lotion. If a water dressing had been kept applied to the leg in Case 47, for twenty-four hours, the whole of the dark crust visible in the model might have been washed away; the morbid skin would then have been prepared to receive the dressing of zinc ointment, and this, with the support and moderate pressure of a properly adjusted roller, would have effected a vast improvement in the disease in a very short period of time.

One symptom which more than any other torments both the surgeon and the patient in eczema

is *pruritus*; and very frequently we are called upon to change our plan of treatment in order to combat this annoyance. When the *pruritus* proceeds from ordinary irritation, it may be subdued by the oxide of zinc ointment, and a moderate friction with this ointment may be had recourse to as often as the itching returns. If allowed to continue, the *pruritus* will sometimes assume a neurotic and neurodync character. It will come on after any slight exertion, after the taking of food, upon changes of temperature, and especially at night, sometimes on first assuming the reclining posture, and at other times in the early morning. It is always intermittent, and presents such a variety of manifestation as to make evident, that sometimes the peripheral nervous plexuses are the seat of the painful sensation, sometimes the perforating twigs of the cutaneous nerves, and sometimes the larger branches and even the trunks of the nerves. There may be a gradual transition from a feeble itching to a *pruritus* which vibrates through the whole nervous system, or to a state of neuralgic pain, such as suggested to me the term *eczema neurosum*.

When the zinc ointment, with the addition of spirits of wine, camphor, tannic acid or carbolic acid, fails to relieve the *pruritus* we may sometimes meet with help from hot water, from a cold starch poultice, from water dressing, from lotions of soda, hydrocyanic acid, juniper tar, or a solution of nitrate of silver. But all these remedies must be regarded simply in the light of adjuvants to the principle of treatment already discussed, and where the neuralgia is decided we must seek for relief in constitutional means.

The stavesacre ointment is often very successful in the relief of the *pruritus* which sometimes follows scabies, and as this remedy, next to sulphur ointment, is one of our best means of destruction of the *acarus*, it may possibly happen that the *pruritus*

is protracted by some such overlooked and unlooked-for complication. The pruritus of lichen urticatus is best relieved by Hebra's lotion, consisting of an ounce each of soft soap, juniper tar, and alcohol, diluted with five ounces of water; and the sometimes ungovernable itching of lichen planus is with the most certainty mitigated by the application of hydrocyanic acid suspended in an emulsion of bitter almonds.

Another modification of the local treatment of eczema is the natural consequence of its seat. Neither powder, nor lime-water lotion, nor zinc ointment, would be suitable for application to the eyelids, or within the meatus auditorius, but for both these regions an excellent substitute will be found in an extremely diluted nitrate of mercury ointment or in the glycyrrion of tannic acid of the British Pharmacopœia. Again, the oxide of zinc ointment is unsuitable for the scalp in consequence of clogging the hair, and thereby giving rise to much inconvenience; but in the latter situation a far better remedy presents itself, namely, the nitric oxide of mercury ointment diluted with benzoated lard in the proportion of one part to three of the diluent. The case of eczema exfoliativum No. 6, suggestive of an extensive burn, was most efficiently relieved by the linimentum calcis and the Carron oil.

In bringing to a conclusion my remarks on the local treatment of the eczematous affections, I should fail in my intention unless I succeeded in leaving on the minds of my audience a forcible impression that the treatment of diseases of the skin is in no wise different from that of surgical diseases in general; that the same enemy is to be combated in all, and that the principle of treatment is, in the first place, alleviative, and in the second, stimulant or tonic. But just as the Abernethian doctrine of the "constitutional origin of local diseases" is universally

recognized by the physician of surgery at the present day, so in the instance of the diseases before us the constitution of the patient undoubtedly enacts an important part, and constitutional treatment possesses a corresponding value.

It is important to remember that eczema and eczematous affections prevail at every period of life from early infancy to extreme old age, and consequently, that the treatment will be very much influenced by the age and constitution of our patient. As a general expression it may be stated that these diseases take their origin in lowered vitality or debility of the system, and that the aim of our treatment should be—*to restore health*. But the conditions of debility necessarily vary at different periods of existence. In infancy and childhood the cause of debility will be *defective nutrition* or defective nutritive power; in the adult and at middle age the cause will very probably be *mal-assimilation* from derangement of the digestive functions; while in old age, and in certain adults of highly nervous temperament, the cause of eczema will be a mal-assimilation determined by *irritability and waste*.

Thus, with a patient before us suffering under eczema infantile we must inquire carefully into the diet of the child; it has probably failed to obtain its natural food, and recourse has been had to bringing it up by hand. Then we must appeal to our resources bearing upon the nutrition of infancy,—the substitutes for mothers' milk, the wheaten flour, the beef tea, the cod-liver oil; in such a case, the best nurse will prove to be the best physician. A similar principle of treatment carries us through the whole of the nutritive period of life from infancy until the full development of the body is perfected by growth. We may find many intercurrent sources of debility intruding upon the steadfast stream of our course, but our aim should

always be to perfect, as far as we are able, by diet, by hygienic measures, and by medicines, the healthy nutrition and development of the organization. We may be interrupted by the successive trials of vaccination, of teething, of infantile diseases, of scanty or deficient food, of growth,—but we must be ready to appreciate every condition predisposing to exhaustion, and apply, in good season and judiciously, the appropriate remedy.

If the powers of the constitution of our patient are equal to the proper digestion and proper assimilation of the improved diet, our purpose is accomplished, the cure is certain and rapid. But the nutritive power may be weak, in which case it will be necessary to find some means of giving it strength; such a means we possess in arsenic, combined with iron, and there is no medicine more harmless, more certain in its effect and more successful than arsenic. The dose for an infant of a month or six weeks old, may be one minim of Fowler's solution, equal to the $\frac{1}{120}$ of a grain of arsenious acid; a dose, far too minute to do harm, although capable of doing wonders in the way of good, and we may, in the course of a few days, increase the dose to a minim and a half or two minims. I have for many years prescribed arsenic in a combination which I have found so safe, so efficacious and so convenient, that I have been unwilling, either to vary the remedy or the formula; the latter is as follows:—

R. Vini Ferri	ʒiiss.
Syrupi Tolutani	ʒiij.
Liquoris Arsenicalis	ʒj.
Aquæ Anethi.....	ʒij.

Misce. One drachm of this mixture will contain two minims of liquor arsenicalis.

Let us look again at our patient and at our treatment:—Firstly, we should *cover every visible part* of the eruption, whatever its state, and avoiding

only the hairy scalp, with the benzoated ointment of oxide of zinc in combination with spirits of wine. Secondly, we should examine carefully into the *diet*; and direct such a regimen as, in our opinion, is most likely to be nutritive. And, thirdly, we should *administer* from one to two minims of Fowler's solution, in the combination already mentioned, three times in the day; with the simple condition, that the medicine should be given on a full stomach, and stopped immediately, if it chance to disagree. Two other points, but of secondary importance, follow upon this course of treatment. It will be well to see that the bowels act regularly. With an unsuitable diet it is hardly probable that digestion will be perfect, but nothing short of constipation need delay the commencement of the curative treatment.

The other point opens up a question as to the *derivative influence* of eczema; that it is derivative, in infancy, is more than improbable, and I should no more hesitate to arrest an ichorous discharge from the skin than I should a chronic diarrhoea from the intestinal canal; nevertheless, it is always wise to be on our guard, and if any apparent inconvenience arise from the sudden closure of the outlet through the skin, it might immediately be removed by the administration of one grain of calomel with one grain of sugar, dropped into the mouth of the infant or upon its tongue.

The usual issue of the treatment now mentioned is a speedy and effectual cure, and, very rarely indeed have I met with a chronic prolongation of the disease; and even more rarely still with a fatal termination of the case. Whenever the latter has occurred, it has resulted from bronchitis or convulsions. Bronchitis in eczema is very intimately associated with the cause of that eruption; in fact, such a bronchitis is nothing more nor less than an eczema of the bronchial mucous membrane, and of course has its dangers. Whereas, convulsions may

seize on the delicate organization of infancy, excited by a very trivial cause, such as a mere indigestion, or the cutting of a tooth, and cannot therefore be regarded as a direct consequence of eczema. On the contrary, it may be reasonably predicted that convulsions would be less likely to attack an eczematous child than one in apparent good health.

In eczema, as it occurs at the age of childhood and thence upwards to early manhood, the principle of constitutional management already described, namely, the restoration of power by diet, by hygienic measures and by tonic remedies, may be regarded as the universal plan of treatment, and unfailing in its results. In society we find many difficulties thrown in our way in the carrying out of our intentions, and greatest of all that which accompanies the educational period of life. The educational period is also the growing period, and it would seem to demand no great stretch of judgment to understand that, during growth, every kind of animal, whether human or brute, if it be expected to attain the full expansion of development and strength appropriate to the perfect standard of its class, must be thoroughly well fed. Childhood and youth are the season during which the structure must be raised; and the building cannot be solidly established without a sufficiency of material. Some of our education-farmers seem to think differently, and if we are to credit them, the best way to furnish the mind is to starve the body; they would seem to pin their faith to the belief that an exhausted body is an active absorbent of learning of every kind. Not unfrequently we have to contend with this folly on the part of parents, who seem to be taken by surprise by the announcement that abundant food is a necessary institution of our social fabric. The same unreasoning prejudice has created an opposition to beer, the very mother's milk of our people; and yet we have never heard of a mother, who could

digest it, who did not make beer the basis of nourishment for her infant. Vastly well has it answered the purpose in this island up to the present time, and will I believe long continue to do the same.

When we contemplate the splendid works of the great masters of the painter's art, and watch the man with his little daubs of colour ranged in proper order around his palette, the thought comes upon us over and over again, of the simplicity of the means through which such admirable results have been attained. But the same means in the hands of the uninitiated must end in disgraceful failure. May we not transfer these same thoughts from painting to medicine; our means may, indeed, be extremely simple, but how few can employ them with a perfect result, and yet I believe that a steady and conscientious determination is all that is necessary for the attainment of complete success. For the cure of trophopathic eczema, the eczema of the nutritive period of life, all that is needed is food:—food in diet; food in medicine, for arsenic and iron are both food; and food externally by means of a palliative protection to the skin.

When we have passed the nutritive period of life we are brought into contact with other predisposing causes of eczema; there is the exhaustion of child-birth and nursing; there are anxieties and afflictions of various kinds; there are great struggles in the battle of life; and there are its inevitable reverses. All these causes depress the nervous power and the physical vitality of the body, and they subject the skin to the invasion of eczema. If we gird ourselves to its treatment and cure, we find our minds traveling over similar ground to that which we have already traversed. The important questions of diet, of hygeiania, of palliatives externally and tonics of every kind within, are still the subject of our thoughts; and if we have to deal with chronic stages

of the disease, then we shall require the aid of arsenic and external stimulants.

There is no phase of eczema which is so deeply interesting as that which comes before us at the full maturity of age, when eczema presents itself as the manifestation of a disorder of the digestive functions; when it appears before the whip of our body's greatest friend and sometimes tormentor, the liver; or when it obeys, very obviously, a derivative influence. Over and over again we hear speak of nausea, of want of appetite, of torpid excretion, annoying the individual for days or for weeks, and ending in an outbreak of eczema as sudden as an exanthema. At other times the invasion of the eczema is slow in its progress and more partial in its effects, but a little retrospective search discovers some foregone dyspepsia, or neuralgia, or rheumatism, or gout, which may have wholly disappeared under the new dispensation. Such cases are especially incidental to the present period of life, and their treatment may be framed upon a plan, as routine in its character, as that which I have heretofore laid down for the previous groups.

We have no longer to search out the *most* nutritive diet that can be attained, but rather to shear it of its redundancy. We have to regulate digestion, to facilitate movement along the alimentary canal, and relieve the liver of its over-burden of duty. It is remarkable how quickly a sudden and particularly an accidental eczema will yield to this method of treatment; but those of a chronic character will require more assiduous pressure. In the former cases the blending of a mild saline purgative with a bitter infusion, and the addition of iron and quinine, will remove all the symptoms of the eruption in the course of a few days. While in the latter, a mild purgative treatment must be succeeded by a more or less prolonged course of tonics; and, in the end, it may be necessary to call in the aid of the nerve-tonic

which experience has proved to have such a powerful influence in giving vigour to the skin, namely, arsenic.

It is an old naval saw, that if there were no storms and no shipwrecks, every old woman would be going to sea; and something similar may be said with regard to medicine. If medicine were a mere routine we should have curers of disease without end where at present we have so very few. We require all our judgment, all our knowledge, all our tact to become good and successful practitioners of medicine; we must be ready to confront every irregularity in the course or in the manifestation of disease; and we must, above all, exercise a sound common-sense, which we shall always find our best ally in helping us out of difficulties which may beset our path. It has been said that medicine is no science, simply because it is greater than any existing science, and because it is the influence of a god-like will over the varying conditions of life; and we are fully aware that that will must be ever ready to our mind in our walks among the victims of disease.

I have already observed that too little or too much food, weak assimilation or perverted assimilation, may each and all be the cause of eczema. As also may loss of the natural food with incompetent substitutes in the infant, deficient and unsuitable food at the growing period of life, and excess of food, in proportion to the powers of digestion, at mature age. Assimilation again and sanguification, may be impeded or perverted by the illnesses belonging to every season of life: to the earliest period when nutrition is active, to the mature period when the nutritive changes are indolent and sluggish, and to the declining stage of life, when waste is the preponderant movement. These considerations and many more will have their weight in our mind when dealing with the treatment of the eczematous affections, and will be our guide in adapting the

details and modification of our curative measures to the varieties which the disease may present. We may hold it as an axiom, that whatever *strengthens the body* and *restores the health*, will at the same time be the best cure of eczema.

Passing away from general eczema to the eczema occasioned by the presence of the acarus, namely, to scabies, it will occur to you that as *the cause* is local, and as *the art* of curing disease is the removal of the cause, we shall have no need of internal remedies in scabies, but may confide in some of the well-known means of destroying the life of the animalcule and its ova. This is literally true, a little sulphur ointment rubbed into the burrows of the animal and into its haunts is speedily destructive of its life, and then, moderate care with reference to cleanliness and ablution completes the cure. The acarus is highly and even painfully sensitive to the lethal influence of certain substances. Among these substances, and first on the list, is sulphur, another is stavesacre, a third styrax, and so on; but no purpose would be gained by multiplying their enumeration. The acarus is an air-breather, and one of the peculiar instincts of the creature is the provision which it makes for ventilating its dwelling-place. Now fat and oils of all kinds are known to suffocate air-breathing animals by getting into their spiracles and obstructing the apertures through which they receive air; hence greasy substances alone are natural cures of itch, although their force and certainty may be increased by an admixture with sulphur or stavesacre.

The modern treatment of scabies, such as I practise it myself, is extremely simple:—I require my patient to wash the whole body night and morning with sulphur soap; to use sulphur soap to the hands for ordinary ablution in lieu of common soap; to rub a little sulphur ointment thoroughly into the hands, the wrists, and between the fingers at bedtime; and,

at the same time, to smear a little of the ointment on any part of the body where there may be itching. There is no occasion to suspend the ordinary associations and avocations of the patient; there is no need of isolating him; the first inunction will destroy in a few hours every existing acarus; if any escape, the repetition of the same plan for a few nights is sufficient; and, by these repetitions the ova are equally effectually deprived of life.

The consumption of sulphur ointment for the cure of scabies is marvellously small, and its odour may be covered by a few drops of the essential oil of chamomile, which is also an acarocide. The vapour of sulphur exhaled from the skin disinfects the clothes, and the patient himself becomes for awhile a disinfectant towards those with whom he associates. It is of course important that ablution should be rigorous in respect of all articles of clothing admitting of washing; and woollen garments must either be laid aside for awhile and sprinkled with sulphur, or submitted to the action of a high temperature.

Sulphur demands a little caution in its use, in consequence of its tendency to irritate the skin; this however can only occur when the substance is roughly employed; and in such a case it may be necessary to suspend its application and adopt some milder remedy. In the instance of infants the sulphur soap used twice in the day, with the gentle inunction of lard scented with the oil of chamomile is often quite sufficient for effecting a cure. And, in adults with a sensitive skin, the unguentum staphisagriæ will generally prove effectual without any other sulphur than that contained in the soap.

In public institutions it will be necessary to see the sulphur treatment properly performed; and where there is evidence of an abundant colony of acari, the ointment may be somewhat more extensively employed. There is a process enforced in the Belgian army which is little worthy of imitation, but

is so far an improvement on the old method that it is capable of restoring a soldier to his duty the instant it is completed. It is called the speedy method, or the two hours' cure; and is performed as follows:—The patient is thoroughly rubbed down with soft soap for half an hour; he is then soaked and washed with warm water for another half-hour, so as to get rid of the soap and no little of the epidermis; in the next place he is scrubbed with the solutio sulphuris cum calce for a third half-hour; and within the remaining half-hour his dress is replaced, and he is delivered back to his military quarters.

It may be as well to bear in mind, in connection with the sulphur treatment, that scabies is an eczema, and that eczema is a simple inflammation of the skin susceptible of being excited by every kind of irritant. In very sensitive constitutions the sulphur treatment might prove to be sufficient of an irritant to excite an ordinary eczema, and in this way in addition to a vexatious aggravation, the diagnosis would be seriously complicated. And, besides, there is another possibility that may be assumed; the patient may possess an eczematous diathesis, perhaps an inherited diathesis; in which case a troublesome eczema may follow upon the incautious employment of remedies intended for the cure of scabies. Not unfrequently this very result is experienced, and sometimes an intractable lichen follows the treatment of scabies, and together with eczema is classed as a sequela of that disease.

In bidding a present farewell to eczema, and casting back our thoughts upon that important and multiform, and at the same time interesting affection, we may call to mind its varied characters, its erythematous and its papulous forms; its vesiculous, its ichorous, its pustulous, and encrusted forms; and its squamous and indurated form. Then we may recall to our remembrance its diffused, its

orbiculate, and its circinate varieties; the papulæ which lead us away from the principal group to the subgroup of lichen; and the suppurative tendencies which in a similar manner carry us into the subgroup impetigo. Next we have the curious manifestations of the eruption under the irritation of the *acarus scabiei*, and the more striking and remarkable characters of the disease resulting from the operation of hypertrophy.

ERYTHEMATOUS AFFECTIONS.

Our second dermatopathological group is distinguished from the previous one by the presence of one lesion in place of many; it is monomorphic in lieu of polymorphic; its characteristic lesion is redness, and the hyperæmia giving occasion to this redness is often so transient as to cause no disturbance of nutrition of the epidermis, and consequently no desquamation. Nevertheless there are forms of the affection, and notably erysipelas, in which there exists not only desquamation leading us back to eczema, but also serous effusion beneath the epidermis giving rise to blisters or bullæ, the phlyctæ of the Greeks, and carrying us onward to the third of the groups next in order of rotation, namely, the phlyctenous affections.

The especial characteristic of the erythematous affections is redness, without exfoliation or desquamation or other secondary change. While another characteristic is its dependence upon some internal operation of the organism which it is necessary to appreciate before treatment can be successfully applied. Frequently there are indications of infiltration within the tissues when no evidence of the presence of fluid is apparent on the exterior. And there is a close relationship between the manifestation of these affections and the nervous system. The mention of the three diseases which constitute

the group, namely, erythema, erysipelas, and urticaria, will illustrate these remarks without further addition. In erythema the principal symptom is hyperæmia or redness; in erysipelas, infiltration and vesication; and in urticaria, pruritus.

The examples of the erythematous affections in our collection are twenty-six in number; few, in comparison with the eczematous group; and they are divided between erythema and urticaria, twenty-one of this number being specimens of erythema and five of urticaria. Of the examples of erythema, twelve belong to its commonest form, the erythema polymorphicum of Hebra, including—erythema papulosum, tuberosum, and nodosum. One is a circinate erythema with congested and prominent follicles, erythema lichenosum. Two illustrate a form of the eruption remarkable for its roseate hue, erythema roseolosum. Then we find illustrated erythema iris, erythema copaibicum and erythema pellagrosomum. And lastly, urticaria.

The forms of erythema which are distinguished as papulosum, tuberosum, and nodosum, vary chiefly in the size of their blotches, and also in their seat. Erythema papulosum is most frequently met with around the joints, particularly that of the elbow, and on the back of the hands and the fingers. Erythema tuberosum is an eruption of the lower limbs, and especially of the shins, and erythema nodosum is also met with principally in the lower limbs. Referring to the catalogue, we find the description of these specimens to be as follows :—

“No. 86. ERYTHEMA PAPULOSUM. Water-colour study of erythema papulosum; the papule aggregated in clusters around the convexity of the elbow.”

“No. 87. Water-colour study of the same affection in a similar position, together with a clustered patch of eruption on the forearm.”

“No. 88. Plaster cast of the left hand of the same patient, its dorsal surface. The papule are congregated on the radial border of the hand, the thumb, and forefinger. They range in size between

one and two lines ; a small coherent patch of the papulæ measuring half an inch."

"No. 89. Wax cast of the back of the hand of the same patient, showing erythema papulosum in the stage of decline."

"No. 90. Plaster cast of the back of the right hand, sprinkled over with papulæ of erythema papulosum ; a few of the papulæ are upwards of a quarter of an inch in diameter, and some are clustered into small blotches."

"No. 91. Plaster cast of the radial border of the left hand, showing a considerable cluster of papulæ on the metacarpal region of the thumb, and one large patch on the first phalanx of the index finger. Some of the larger papulæ manifest a tendency to peripheral growth, and are more prominent at the border than in the centre of the area."

"No. 92. Plaster cast of a portion of the forearm of the same patient ; a few of the papulæ are a little more than a line in breadth, while one has enlarged to the extent of three-quarters of an inch by the centrifugal growth of its border ; the area being somewhat depressed."

"No. 93. Model of the left knee, showing a diffused blotch of erythema, *erythema papulosum diffusum*, of a bright scarlet colour, very slightly prominent, bounded by a well-defined border, and fringed by a few scattered papulæ of erythema papulosum of a brighter tint than the blotch, some of the fading papulæ having a purplish hue. The eruption appeared suddenly, and was accompanied with a tingling pruritus. In twenty-four hours the redness disappeared, leaving a pale orange-yellow stain, like that of a bruise, and the stain or ecchymosis dispersed after a few days. The patient was a woman, aged 24 ; she had suffered a painful confinement with retention of the placenta ; to this succeeded a tumour in the pelvis, accompanied with pain in the abdomen, loins, and left groin, and some uterine hæmorrhage, dyspepsia, loss of appetite, and constipation. For these symptoms she kept her bed in hospital, and at the end of nearly three months, and when in course of recovery, constipation returned with headache and feverishness, and, succeeding these symptoms, the erythema seen in the model appeared upon her knees, ankles, forearms, and anterior aspect of the upper arms."

The first thing that strikes us in looking at these specimens is the prominence of the inflamed spots, and it is this feature which has gained for the eruption the distinctive appellation of papulosum. The prominence is undoubtedly very slight ; it may, however, be seen as well as felt ; while in other forms, as in erythema tuberosum, and especially in erythema

nodosum, it is generally more considerable. But there is one form of erythema which is more remarkable for its swelling, for its tumescent character, than for anything else; the affected skin, in the course of a few hours, will rise in height and bulk to that of the hemisphere of an orange or of a melon, and gradually subside again without leaving any trace of its presence. I have seen it on various parts of the body, and amongst others around the eye, where it had the effect of closing up the eyelids; and again, I have seen it in the tongue and beneath the tongue, and in these cases it was attended with danger from asphyxia.

In this symptom of sudden prominence and rapid subsidence we are reminded of the phenomena of another eruption belonging to the same group, namely, urticaria, which, as is well known, may be almost seen to rise and to subside. If we inquire what the agent of tumescence in these cases can be, we arrive at the conclusion that it must proceed from a sudden absorption of the fluid portion of the blood from its vessels by the cells of the areolar tissue, and the detention of that fluid within the cells for a limited period.

The next feature of the case that claims our interest is the size of the papulæ. In No. 88 it is stated that they measure between one and two lines in diameter. In No. 90 there were some that were upwards of a quarter of an inch in breadth. Then we find it noted that here and there were to be found little clusters of papulæ which had become blended into small blotches, and these small blotches lead us onwards to No. 93, where a blotch of similar formation covers a surface of several inches in extent, and would scarcely be recognized as a blending of papulæ, were it not for the existence of isolated papulæ which hover around the circumference.

The next thing that attracts our attention is a tendency to the growth of the papule. In No. 91 it

is stated that "some of the larger papulæ manifest a tendency to peripheral growth, and are more prominent at the border than in the centre of the area." And again, in No. 91, we find that a papule "has enlarged to the extent of three-quarters of an inch by the centrifugal growth of its border, the area being somewhat depressed."

In every eruption there is a period which may be regarded as its height, and beyond this we have the period of decline. The height of erythema papulosum is evinced by its prominence and brightness of hue, while its decline, in like manner, is shown by the subsidence of the prominence; thus in Nos. 90 and 91 the blotch, at the border, is in possession of full activity and power of growth, and at the centre is becoming depressed, is, in fact, returning to the normal state of the skin. The like observation may be made in reference to colour; at its acme the colour of the eruption may be scarlet or crimson; but after some duration it is more or less purple; and, at last, when the eruption subsides altogether, there is a mark left in the skin resembling the black and saffron tints of a bruise. The fact is that the phenomena taking place in the skin in these forms of erythema are identical with those that happen in the instance of a bruise, not only is the colourless part of the blood absorbed from its vessels by the exhaustive power of the tissue-cells, but blood itself is sucked out in greater or less quantity, and a state of the cutaneous tissues is produced which serves as a link of transition to that cachectic form of erythema which is termed purpura.

Unhappily we possess, as yet, no specimen of *purpura*, or, as it may be termed, erythema porphyricum or purpureum. But nearly all the examples of erythema which we have heretofore examined may be regarded as leading up to that affection. *Purpura* is an erythema associated with the escape of blood from the capillary vessels so as to produce a purple

spot in the skin. The spot may be a mere speck, or *stigma*; it may have the appearance of a flea-bite, or *petechia*, that is, a central point surrounded by a halo of a brighter tint; it may occur in stripes or wheals, which are termed *vibices*; or it may present itself as a diffused blotch or *ecchymosis*. The colour of purpura will vary with its age, ranging from bright crimson to purple-black, and its figure and extent with the degree of vital resistance of the tissues. The crimson and purple hues of the roseate erythema, Nos. 98 and 99, and also of the example of erythema copaibicum, may be taken as showing a leaning towards purpura; a similar inclination is evinced by the bruise-like stains left in the skin at the decline of several of the erythemata; while, on the other hand, the relationship of purpura to urticaria is manifested by the variety of the former affection, which is termed *purpura urticans*.

In No. 93 our attention is drawn to a peculiarity of symptoms attending erythema, which is different from those of eczema; instead of the burning pruritus of eczema we now find described a tingling itching, as if the pathological process were quite superficial; and we become aware of the dependence of the local symptoms on a morbid state of constitution, for after a long period of clinical confinement the eruption made a sudden outburst, being immediately preceded by constipation, headache, and feverishness. And then, again, another symptom, so totally unlike eczema, namely, the evanescence of the hyperæmic congestion in the short space of twenty-four hours, and its complete subsidence without desquamation or any additional lesion, and without probability of relapse.

The specimens No. 94 to No. 97 form a little series in which greater extent of the primary blotches, greater thickening, generally greater prominence, and, very commonly, greater tenderness associated with neuralgic pains, are conspicuous. In Nos. 94

and 95, the blotches are very slightly prominent; they are as large as a shilling piece, they evidently penetrate deeply into the skin and subcutaneous tissue, and they were extremely tender to the touch. From being larger in size than erythema papulosum they are termed erythema tuberosum, and for a similar reason the blotch of erythema in No. 96, being larger than the preceding and oblong in its figure, is termed erythema nodosum. The description of these preparations reads as follows:—

“No. 94. ERYTHEMA TUBEROSUM. Cast of the lower part of the leg of a young woman, aged 22, a maid-servant. The prominence of the tubercles was so slight that they are difficult to define on the cast, although they were very apparent to the touch, and also distinguishable by their redness, their average breadth being about an inch. The follicles situated on the tubercular spots were enlarged and prominent, and these are seen on the cast.”

“No. 95. Wax cast of the same case; the size of the spots ranges between one line and one inch, the more common size being one-third of an inch. They were more remarkable for depth of implantation in the skin than for prominence.”

“No. 96. ERYTHEMA NODOSUM. Wax cast of the lower part of the leg of a woman, 45 years of age, showing a patch of *erythema nodosum* which encircles the leg like a bracelet. The eruption, as is usual, was accompanied with much pain.”

“No. 97. Plaster cast of the same case; the follicles covering the tubercle are remarkable for their prominence.”

The blotches of erythema nodosum usually make their appearance on the lower extremities, their long diameter lying parallel with the limb; and it is not unlikely that their occurrence on the shin may have suggested the idea of an inflamed node, which they very much resemble. But in No. 96 it will be noticed that the cutaneous node lies transversely to the axis of the limb, and, like a clasp, embraces the leg just above the ankle.

No. 546, one of our most recent acquisitions, is a model of the abdomen on which are scattered between thirty and forty red blotches of a circular figure, and having an average size of half or three-quarters of an inch in diameter. The larger blotches exhibit the

operations of a centrifugal movement of growth, the centre is recovering the characteristic appearance of the normal skin and presents a circular area surrounded by a hyperæmic belt, while in some of still greater size the belt is reduced in dimensions to a simple ring; and here and there some of the rings have met and coalesced by the circumference giving rise to gyrated figures. Pathologically the eruption is a superficially hyperæmiated blotch with congested and prominent follicles, the redness suggesting the idea of common erythema, and the papulæ, of lichen; hence the term *erythema lichenosum* seems to be an appropriate designation, and in the absence of any history of the case, is the one which I have adopted. Vidal terms it "herpes circinatus," using the term "herpes" in its ancient and probably more correct sense, as indicating the centrifugal and spreading habit of the affection. But in order to distinguish it from *tinea circinata*, or ringworm, he further names it "herpès circiné non parasitaire."

The next specimens, Nos. 98 and 99, are a drawing and lithograph, representing a form of erythema remarkable for the vividness of its colour, for the crimson or rose-tinted hue of the redness, and for a spreading or herpetic character, a tendency to peripheral or serpiginous growth. The description of the objects affords a short history of the case, and is as follows:—

"No. 98. ERYTHEMA ROSEOLOSUM. Coloured lithograph representing the leg of a boy 12 years of age; he enjoyed average health, but was subject, 'spring and fall,' to an eruption similar to the one delineated in the drawing. The present eruption occurred in the spring of the year, and showed itself immediately after a long walk and a holiday in the country. It began with soreness and tingling and smarting, which were compared to the stinging of nettles. The spots appeared concurrently with these sensations; they were of a bright rose-red colour, somewhat pale in the centre, but after a hot bath became deeply purple. They then spread by the circumference and formed rings, the area of the ring having a reddish-yellow tint, and the border being slightly prominent. The eruption was at its height on the fourth

day, but the drawing was not made until the fifth, when retrogression had commenced ; and at its decline the seat of the rings was indicated by bruise-like stains."

From this description we learn that the eruption was in some respects diathetic ; the lad had been the subject of similar attacks in the spring and autumn season of the year. On the present occasion he had undergone unwonted exertion, and had been exposed to chill, causes which evidently excited a little feverish reaction. Then the symptoms are described as "soreness, tingling, and smarting ;" the rose-red colour was converted into purple under the relaxing influence of a hot bath, showing a susceptibility to hæmostasis which again reminds us of purpura, and we are not less reminded of the phenomena of the same affection by the bruise-like stains which succeeded the disappearance of the eruption.

The mode of increase or growth of these erythematous blotches has been made matter of comment under Nos. 91 and 92, and again in No. 98 ; but our attention is especially drawn to this matter by the preparations numbered 100 to 102, and named erythema iris. Thus,—

"No. 100, is a plaster cast of part of the right hand, showing the peculiar figure of *erythema iris* in which the original papula remains, retaining the character of a central boss, and is surrounded by a prominent peripheral ring. A well-marked ring is seen on the knuckle of the ring-finger ; it is half an inch in diameter, with a central boss measuring two lines. A smaller ring and boss, the former measuring a quarter of an inch, is visible on the index-finger, together with some scattered papular prominences."

"No. 101. Plaster cast of the thumb of the right hand, showing a well-marked iris on the metacarpo-phalangeal joint ; the ring measures half an inch in diameter, the boss measuring two lines, and the border being equal in breadth to the boss. Near this spot is another a quarter of an inch in breadth, in which the differentiation of boss and ring has not yet appeared."

"No. 102. Plaster cast of the palmar surface of the fingers of

the right hand, showing clusters of prominences forming tender swellings, but without differentiation into boss and ring as on the thinner skin of the dorsum of the fingers and hand."

In the previous examples of pathological change, peripheral growth was associated with subsidence of the primary congestion; the central area of the blotch became depressed, returning, in fact, to a state of health, while the border retained its full height, and spread out upon fresh ground. But in erythema iris we have the curious phenomenon of a peripheral outgrowth of the blotch without any depression of the central papule, so that the latter becomes separated from the annular prominence which surrounds it, by a distinct groove. This peculiar conformation suggested to the mind of dermatological observers the figure of the iris of the eyeball, and gave origin to the term erythema iris.

But however remarkable this mode of growth may seem, and however striking when observed for the first time, it is by no means singular in cutaneous pathology; we shall meet with it again in the *third* of our groups, namely, that of the phlyctenous affections, and we may possibly be led to regard erythema iris as a link of transition between the second and the third group. Moreover, we shall meet with it for the third time in certain of the forms of eruption which are developed under the impression of the syphilitic poison. And not only shall we find in one of these instances a papulous centre surrounded by an annular circle, but we shall meet with a succession of similar circles disposed one around the other so as to give rise to a concentric figure of peculiar and characteristic appearance.

Next after erythema iris I have placed two forms of erythematous inflammation, which are distinguished from the rest by the nature of their cause rather than by the possession of any specific signs; these are erythema copaibicum and erythema pellagrosum. I have previously announced as one of the character-

istic features of erythema its dependence on constitutional disturbance, more obvious possibly in the acute than in the chronic forms of the affection. In all the cases of erythema that have preceded there was gastric disturbance with more or less of a febrile state of the system, and gastric disturbance comes in for especial notice now, as an important "fons et origo" of certain eruptive complaints. Amongst our therapeutical remedies the balsam of copaiba is known to create considerable nausea and disorder of the stomach, and occasionally to produce an eruption in the skin, of which we have a curious and interesting example in the model before us. I am not sufficiently experienced in the cutaneous manifestations of copaiba to be able to say whether its eruption always presents the same appearance. If that were the case, we might be led to acknowledge on the part of the remedy a specific effect; but although I have seen several times an exanthema thrown out upon the skin as a consequence of copaiba, I have never before seen the particular form of eruption shown in this model; and I am inclined to look upon copaiba as a mere gastric irritant like those kinds of food which are known to give origin to urticaria, for example, urticaria ab ingestis, than as capable of producing a specific eruption. The question has an interest with dermatologists in consequence of an observation recently made by Hardy which led him to prescribe copaiba in cases of lepra Græcorum. It so happened that one of his patients was suffering under lepra, or as he names it psoriasis, at the time that he was under treatment for gonorrhœa; copaiba was administered for the latter complaint, and during its use the lepra got well. Hardy recognized in this result the concatenation of cause and effect, and in consequence has employed copaiba in lepra somewhat extensively, and as I hear with some degree of success. From these premises we are led to infer that copaiba, like arsenic, being capable of setting up an inflammatory

action in the skin, may be found a useful remedy in some of its chronic complaints, than which none is more chronic than *lepra Græcorum*.

We perceive in this little episode a reason why *erythema copaibicum* may be more common in Paris than in London; and we may expect it to increase further if the *copaiba* treatment be actively and extensively pursued. The remedy to the majority of patients is so disgusting, that I have ventured only twice on a trial of its powers, and I must confess with no satisfactory consequence; indeed, I have met with a better result in other cases where I ignored the cutaneous affection entirely, except as to local attention, and treated my patient exclusively on a constitutional plan. But as our present business is not the treatment of *lepra*, but the observation of an eruption which resulted from the use of the balsam of *copaiba* taken for a gonorrhœa, we will turn to the description of the model as furnished by the Catalogue:—

“No. 105. *ERYTHEMA COPAIBICUM*. Model of the fore-arm and hand, showing papulæ and maculæ of a bright crimson colour. The erythema evidently takes its origin in the follicles, is papular on the hand, and macular on the arm. The papulæ on the hand and fingers range in size between three-quarters of a line and two lines, and give warrant to the term adopted by Guibout, namely, ‘*érythème papuleux copahique*.’ There are also, mingled with the papulæ, a few prominent maculæ measuring four lines in diameter. On the arms the spots have the character of maculæ with a prominent centre, rather than papulæ; some have a deep crimson centre with an areola of less vivid redness, and reach a diameter of half an inch; others are composed of three or four flattened papulæ united by an erythematous base; and others, again, have an annular figure encircling a centre possessing the natural hue of the skin. Across the root of the fingers and just above the wrist are two bands of diffused erythema, referrible possibly to some pre-existing lesion of the skin.”

Another very remarkable affection, and one rarely seen in this climate, is a form of erythema attended with anæsthesia and partial atrophy, and termed *erythema pellagrosum*. The description which we

find attached to this affection, as illustrated by a model and photograph, is as follows :—

“No. 103. ERYTHEMA PELLAGROSUM. Model of the back of the left hand. The erythema is a circumscribed circular blotch extending from the middle of the first phalanx of the index-finger, middle finger, and thumb to above the wrist in one direction, and from near the ulnar border of the hand to the radial border in the opposite direction. The redness is pretty uniform over the whole area, and the latter is bounded by a red margin, which is blotchy from point to point, indicating the presence of new centres of hyperæmiation. The patient was a man 36 years of age, under the care of Lailler.”

“No. 104. Coloured photograph of the back of the right hand, showing a circular blotch of *erythema pellagrosum* with well-defined margin. The patient had spent many years of his life in India; he was debilitated and dyspeptic, his complexion yellow, and countenance dejected. His engagements in India demanded an excessive use of the hand in writing, to which he added the occupation of an amateur artist, and in consequence of the loss of power which resulted, he was thought to be the subject of ‘scriveners’ palsy. The erythema on the dorsum of the hand had been four years in existence; it began as a small circular patch, and increased gradually to its present extent. It was preceded by excessive sensibility of the skin with neuralgia, and upon this followed insensibility with loss of power of motion of the hand, and especially of the thumb. The disease is evidently a neurosis.”

Pellagra is a disease of southern countries, and combines with the local affection a serious state of disturbance of the whole nervous system, including the brain. This combination of symptoms and the fatal tendencies of the disease have gained for it the names of—the leprosy of the Asturias; the elephantiasis of the Asturias; and its general appearance and cause the further designations of the red disease, the sun disease, and the maize disease. Insufficiency of food, improper food, especially mouldy maize, and exposure to the sun, are common causes of the affection. It has been regarded by some as a *coup-de-soleil* of the skin, that is to say, such a state of irritation caused by the sun’s rays as at first to disturb and then to paralyze the innervation of the

part; and next, as a secondary consequence, the morbid state of innervation of the skin is propagated to the spinal cord and brain. The primary effect of the sun's heat is to induce hyperæmia with hyperæsthesia, and sometimes neuralgia; then the redness and excessive sensibility cease, leaving the skin pale or discoloured with pigment, more or less insensible, and attenuated from atrophy, often seeming more like a cicatrix than the normal skin. This appearance is very well illustrated by the photograph, as also is the hyperæmiated margin, where the morbid process still retains some degree of activity. For four years this apparently trivial disorder had maintained its hold on the skin in opposition to all treatment, and it was at the same time complicated with great prostration and exhaustion of the nervous system. The photograph was coloured by the patient, who, as the description states, is an amateur artist.

Having as yet no specimens of erysipelas in the dermatological collection, I shall pass by that affection somewhat cursorily. Erysipelas is an erythema aggravated in the intensity of all its symptoms; there is more local heat and uneasiness; the integument is more swollen and more deeply infiltrated; the migratory habit is more conspicuous; often the infiltrated fluids exude beneath the epidermis, giving rise to blebs; and the constitutional symptoms are generally severe, and often serious. We scarcely know a disease more frightful in its aspect than an erysipelas of the head—the part attacked hugely swollen, the eyes closed, the features deformed and seemingly obliterated, and the mind obscured by a low muttering delirium. Yet all these symptoms have been seen to melt away by a treatment which is justly regarded as specific in erysipelas, namely, twenty-minim doses of the tincture of the perchloride of iron, administered every two hours. Of course this treatment must be preceded by a clearance of

the *primæ viæ*, and the regulation of the functions of digestion and assimilation.

Erysipelas is always a grave disease, and there can be no doubt that many cases of inflammation of the skin, accompanied with redness and swelling, are presumed to be erysipelas, which, in reality, are nothing of the kind. Very commonly we hear of an erysipelas of the head which turns out to be a herpes frontalis, and still more frequently our patients make complaint of an erysipelas of the eyelids or ears, recurring spring and fall, or even every few months, which is obviously nothing more than erythematous eczema, attended with heat and considerable swelling; the latter symptom to the extent of puffing up the eyelids and closing the eyes.

URTICARIA.

As the nerves enter for a large share into the structure of the skin, while they especially govern its circulation and sensation, it would be difficult to select any cutaneous disorder in which they do not take a certain, if not a very conspicuous place. Occasionally morbid phenomena are presented to our notice, in which the nerves alone seem to be the seat of disorder. Such are the instances of deranged sensation named prurigo and pruritus, and these, by common consent, have been denominated *neuropathic affections*. But these affections implicate one only of the functions of the nerves, namely, sensation; while their motor function is not likewise included. A blush is the result of a neuro-motor influence, in which neuro-sensation can hardly claim a share, and a chronic erythema may persist, without any sensation whatever, for an indefinite space of time. It becomes necessary to take these physiological considerations into our council when entering upon the investigation of so remarkable an affection

as urticaria. Its name is founded on its neuro-sensitive qualities, while its neuro-motor nature is evinced by the hyperæmia with which it is always accompanied, and which, from its analogies, has detained it in the family of the erythemata. By some dermatologists urticaria has been claimed as belonging to the group of neurotic or neuropathic affections; but the most that can be said in favour of that claim is, that it is only semi-neurotic, and indeed scarcely, if at all, more neurotic than other members of the erythematous family; while it differs from prurigo even more widely than it does from simple erythema.

Urticaria is a singular compound of itching, tingling, and burning, with redness, prominence in the form of small bosses and wheals, and evanescence. For several hours the state of the patient may be one of excessive torture from itching, tingling, and burning, with hyperæmic blotches and white protuberances; the seat of torment varying its place from time to time, and occupying more or less extensively the surface of the body; and yet, when a short time later the skin is inspected, not a vestige of the local appearances can be discovered.

Like other physical phenomena, of whatever kind, the special symptoms now indicated may present a variety in degree: the itching, tingling, and burning may be trifling or intense, the redness may be the same, the prominence more or less conspicuous, and the evanescence more or less complete. In the urticaria from irritant food—*urticaria ab ingestis*—hyperæmia and burning heat are present in the most aggravated form. In a case of neuropathic urticaria, which followed parturition, the tingling and shooting pains, with large, solid prominences of the skin, and very little hyperæmia, were almost unendurable, but ceased instantly on the sudden appearance of menstruation. Sometimes the urticaria is persistent, *urticaria perstans*, as contra-distin-

guished from evanescent, *urticaria evanida*; sometimes the pressure of creases of the bedclothes or that produced by wrinkling of the skin will give rise to wheals and pruritus in a sensitive, but otherwise healthy skin; and sometimes the light strokes of a pencil, as in writing upon the skin, are instantly followed by an uprising of wheals taking the form of the written characters. Some authors are of opinion that the bosses and wheals of the skin in urticaria are due to absorption of liquor sanguinis by the cells of the tissues; but my own impression is that they are likewise produced by muscular spasm; and this view seems to be favoured by the sudden appearance and disappearance of the wheals.

Nos. 106 and 107 are drawings of chronic urticaria — the *urticaria perstans* of dermatological writers. The patient was a man, forty years of age, who had two consecutive attacks of the eruption, the first lasting nine and the latter six months. His illness originated with dyspepsia and rheumatism; for this ailment he kept his bed during a fortnight, and as soon as he left his room was seized with urticaria. The eruption appeared first on his knees, then on other joints, and subsequently on the trunk of the body. The itching was always most severe at night, and abated in the morning. After obtaining some relief from the urticaria, he was seized with erysipelas of the forehead, beginning at the root of the nose, and spreading rapidly to the face and head; the erysipelas was attended with violent delirium, and he died at the end of four days.

No. 108 is a water-colour study of a blotch of urticaria with a view to record its configuration and colour. In each of these examples it will be seen that the white boss rises out of the centre of an erythematous patch; when the latter increases in size the centre of the prominence subsides, forming a yellowish area, encircled by a pale annular wheal;

the next change that takes place is the disappearance of a part of the wheal and the serpiginous growth of the rest of the circle, constituting an arc of greater or less magnitude. At this latter stage, the hyperæmic redness is seen only along the convex border of the wheal, which it thus attracts, as it were, into the surrounding skin. Finally, both redness and prominence subside, and all trace of the eruption vanishes, rarely leaving behind it any vestige of its previous existence. Sometime a pale-coloured stain has been noted on the affected spot, and sometimes a slight pigmentary stain.

Among the more recent acquisitions made by our collection are two beautiful models by Baretta. No. 517 is a model of the forearm, showing a form of urticaria remarkable for the large size of its prominent blotches. The largest of these blotches measures nearly an inch in diameter; they are all somewhat more protuberant at the border than in the centre, and each blotch is surrounded by a narrow band of redness. In several situations, three or four of the blotches are blended by their circumference.

The model No. 539 exhibits a well-marked example of nettle-rash. The prominences or wheals contrast with the normal colour of the skin by their paleness of hue, and wax-like or ivory-like appearance; and this contrast is increased by the erythematous blush which encircles them; some of the wheals are isolated and some confluent, ranging in size between one line and six, and having an elevation of nearly a line. The confluent wheals are congregated into a blotch about six inches in longest diameter; and around this blotch may be seen numerous isolated, stud-like wheals, resembling tubercles; while in the neighbourhood of the outer hamstring is a small cluster of these isolated wheals.

Lailier, our colleague of the Saint-Louis hospital

in Paris, informs us that the eruption was excited by a meal of fish, of conger-eel; this was taken at breakfast, and at six o'clock in the evening of the same day the urticaria made its appearance, without constitutional disturbance of any kind, therefore without nausea or vomiting, but with intense local burning, itching, and pricking. It was confined to the upper and lower extremities; was much aggravated by exposure to air; was repeated morning and evening for seven days, and then ceased. Its periodicity suggested the administration of quinine, which was the only treatment the patient underwent. Lailier notices that when a line was lightly drawn upon the neighbouring unaffected skin the integument corresponding with that line immediately reddened, and the redness became bordered by a marked paleness. In the line of the redness the capillary blood-vessels were suddenly dilated, while in the circumjacent tissue they were thrown into a state of contraction or spasm, inducing temporary anæmia or bloodlessness. After a short time the circumjacent integument recovered its normal tint of colour, the capillary circulation having resumed its accustomed course, while the linear redness became deeper and broader, and rapidly rose up to the elevation of a wheal. Here Lailier's observation ceases, but it is also well known that subsequently to the formation of a wheal the disorder of circulation is reversed—the wheal becomes anæmic, and the adjacent skin reddened by an erythematous blush; while, on more than one occasion, I have seen the redness floating, as it were, over a prominent wheal like a wave, and seeming to obey a kind of pulsation, not however synchronous with the pulsations of the heart.

In the instance before us we have a good illustration of an excito-motory impulse conveyed to the vaso-motor nerves of the skin, the cause of the excito-motory impulse, in other words the incident

cause of excitation, being the juices derived from a meal of conger-eel.

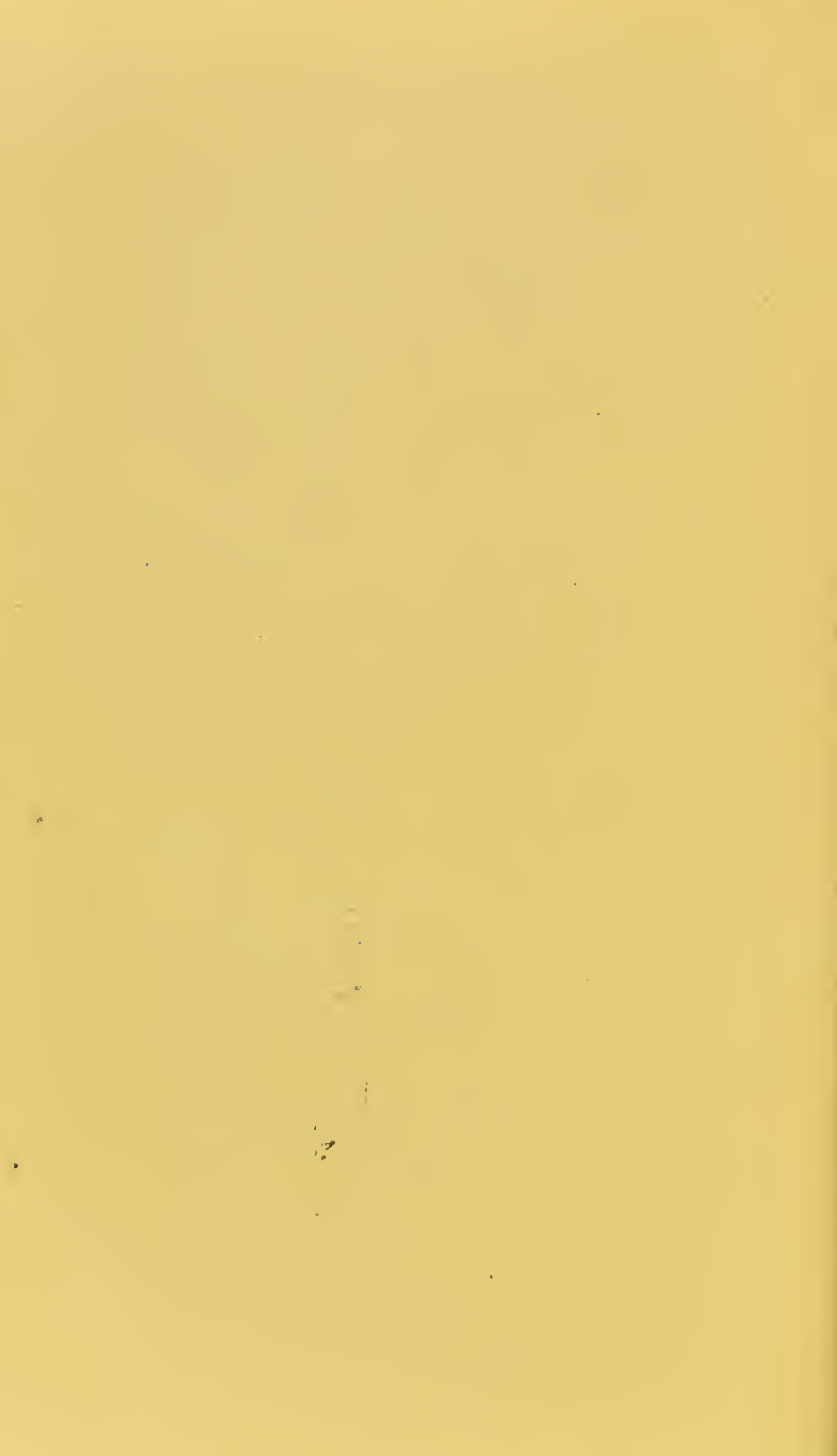
In introducing the family of the erythematous affections, I began by pointing out their constitutional origin; and now, in discussing their treatment, it is important to bear these considerations in mind. Constitutional disorder will always be discovered in these cases if it be sought for properly, and the kind of constitutional disturbance will, to a certain extent, modify the plan of treatment which we may think right to adopt. One rule is too obvious to require comment, namely, the necessity of regulating the functions of digestion, assimilation, and elimination,—of alleviating special sources of suffering, and contributing as much as possible to the improvement of the tone and health of the system. Not unfrequently these cases are complicated with rheumatism and neuralgia, sometimes with similar congestion of parts of the mucous tract, and occasionally with febrile symptoms.

The local treatment is simply palliative—warm fomentations and bathing; inunction with lard with the addition of a covering of cotton wool; the lotion of oxide of zinc and lime-water; and where the pruritus is severe, antipruriginous applications, such as the hydrocyanic acid lotion,—in accordance with the seat and severity of the attack.

As may be inferred, these affections are very commonly associated with more or less irritability of the nervous system, hence we often derive important help from nerve sedatives, such as the bromide of potassium and hydrate of chloral.

As a general remedy there is none of more value than a mixture composed of the compound infusion of gentian and sulphate of magnesia with the addition of quinine, iron, and sulphuric acid, and, subsequently, a more decided course of tonic remedies. In chronic urticaria, where the digestive and assimilative organs are deranged, nitro-muriatic acid with

a bitter tincture is a valuable medicine. Where the uterine system is disordered, chalybeates combined with tonics are of service; and in case of chronic irritability of the nervous system we may have recourse to arsenic. It is well known that in urticaria *ab ingestis* a favourite surgical dogma, namely, the removal of the cause, is most efficient; and an emetic either of mustard or sulphate of zinc is followed by an immediate alleviation of the symptoms, which are frequently violent and dangerous.



LECTURES ON DERMATOLOGY.

SESSION 1872.

LECTURES ON DERMATOLOGY.



MR. PRESIDENT AND GENTLEMEN,

IN approaching a subject of study of whatever kind, it is important that we should make ourselves acquainted with its bearings and landmarks. And, applying this principle of reasoning to the study of the cutaneous investment of mankind, we shall find that the principal points of that organ to be considered are:—

The Cutis vera, Epidermis, Follicles, Hair, and Glands.

To which may be added two principal functions of the organ, namely:—

Nutrition and Secretion.

In the diagnosis of the state of the skin, it is necessary, therefore, to investigate these separate parts and functions, and if any abnormal condition present itself in either, the discovery of such aberration will constitute the basis of the pathology of the case, and we may thereupon be led to conclude that the disorder is one of the skin proper, or cutis vera; of the epidermis, that is, the epithelium of the skin; the follicles; the hair; the sebiparous, or sudoriparous glands; or of the function of nutrition or sensation.

In a compound organ like the skin, made up of mutually co-operative and mutually dependent parts, it is a rule, almost without exception, that several

of the component structures will be involved in any abnormal process that may be in action. For example, in common inflammation of the skin, the epidermis and follicles will suffer as well as the cutis vera, but it is evident in that case that the affection of the epidermis and of the follicles will be subservient or secondary to the inflammation of the cutis vera, and may, therefore, be lightly regarded in forming our diagnosis. Diagnosis, in fact, should determine, not only the essential and primary aberration from the normal standard, but must distinguish also that which is secondary and of comparatively little importance.

If we turn from the anatomical and physiological consideration of the skin to its abnormal or pathological condition we shall find that it is liable to—

- Common Inflammation.
- Specific Inflammation.
- Aberration of Nutrition.
- Aberration of Sensation.

These *four* heads are the basis of arrangement of subject, or classification, which I have adopted for the present lectures, and for the disposition of the objects constituting the dermatological collection in the College museum; whilst, as a matter of convenience, I have appended to these primary groups the special function of pigmentation and disorders of the epidermis, nails, hair, and glands, thus:—

- Aberrations of Pigment.
- Diseases of Epidermis and Nails.
- Diseases of Hair.
- Diseases of Glands.

The diseases of *common inflammation* of the skin are typified by—eczema and scabies, affections of the cutis vera; lichen and impetigo, affections of the follicles; erythema; pemphigus; furunculus; and traumatic affections.

The diseases of *specific inflammation* are—the eruptions accompanying the exanthematous fevers, namely, rubeola, scarlatina, and variola; the cutaneous manifestations of syphilis, and the cutaneous manifestations of elephantiasis.

The diseases of *aberration of nutrition* constitute a large and important group, beginning with lepra, lupus, and epithelioma, and embracing trophic changes of the skin and its different constituents; for example, the epidermis, rete mucosum, papillæ cutis, vessels, fibrous tissues, and cell-tissues.

The diseases of *aberration of sensation* are hyperæsthesia, anæsthesia, pruritus, and prurigo.

Finally, although all the remaining diseases might have been treated of under the four general heads already stated, a certain practical advantage is obtained by considering them in separate groups; for example:—

Aberrations of pigment; diseases of epidermis and nails; diseases of hair; and diseases of the glands of the skin, sebiparous and sudoriparous.

My *first* and inaugural course of lectures in 1870 was devoted to a brief definition of the different diseases of the skin, and the construction of a framework or arrangement which should accommodate and find place for every member of the family, however insignificant; in a word, a synopsis of affections of the skin.

In my *second* course (1871) I commenced the more exact description of these affections, beginning with “Diseases of common inflammation,” and directing my attention especially to eczema and its allies, namely, scabies, lichen, and impetigo.

The summary of my treatment of this subject was to the effect:—

1. That eczema is an example of common inflammation of the skin.

2. That the inflammation of eczema differs in no respect from inflammation of other organs of the body.

3. That if any apparent differences be presented to the observation, such apparent differences will be found to arise out of the configuration and situation of the organ.

4. That the variety of appearance of eczema is due to the composite structure of the skin, and to modification of the organ by age, vital power, and idiosyncrasy.

5. That as a corollary to these data, eczema requires the therapeutical treatment that is applicable to every other surgical affection attended with inflammation.

In determining the *diagnosis* of a cutaneous disease, we recognize a general or distant appearance, and a particular or closer aspect; the essential characteristic of the eczematous family is a complication of appearances, a mingling together of several of those states of the morbid skin, which are termed "lesions." For example, there is redness, there is sometimes papulation, there are minute vesicles, sometimes pustules, then there is exudation in its moist and running or encrusted stage, and desquamation. Again, there is swelling to a slight degree, and more or less induration of the skin; and in very chronic cases there is hypertrophy of the tissues of the skin, extending more or less deeply. The *plus* or the *minus* of these lesions we endeavour to distinguish by the terms — erythematous, papulous, vesiculous, pustulous, ichorous, squamous, and so forth; by which terms we have no intention of implying a different kind, but simply a difference of manifestation of eczema. Sometimes the cases are so markedly papulous that we employ the term lichen; and sometimes the eruption is specially distinguished by purulent vesicles, and then we use the term impetigo. Nor must the student of Dermatology be surprised when, after a

further insight into the phenomena of this protean affection, he discovers such terms as lichenous eczema, and impetiginous eczema or eczema impetiginodes.

A correct appreciation of eczema helps us very much to the diagnosis of other cutaneous affections, and particularly so does the absence of the multiple manifestation which is so specially characteristic of that disease. It is thus that at a glance we are enabled to differentiate erythema, pemphigus, and furunculus, the three forms of disease which next claimed our attention.

The essential characteristic of erythema is—hyperæmic redness; it is typified by a blush, and may be termed a pathological blush. It not only very commonly appears like a blush, but it as commonly passes away like a blush, leaving behind it no trace of injury to the skin, and no vestige of its existence. The local pathology of an erythema is identically the same in all its varieties, a vascular congestion of the tissues of the skin determined by paresis of the vaso-motor nerves; but the cause of the affection may be various—it may be internal or constitutional, or it may be local. Nevertheless, the surgical aphorism of treatment, “remove the cause,” remains precisely the same. Comparing erythema with eczema, we might venture to say that eczema is a state of hyperæmia of the skin, with a breach of its continuity, whereas erythema is hyperæmia without breach of continuity. Nevertheless, erythema is sometimes accompanied or followed by desquamation, and sometimes as in erysipelas, which is an aggravated erythema, by vesication, as well as by desquamation.

The members of the erythematous group, the erythematous affections, are three in number, namely:—

Erythema, Erysipelas, Urticaria.

These affections are characterized by the posses-

sion of certain features in common; for example,—a bright tint of redness, more or less swelling, more or less itching, and more or less mobility or change of position. If the redness be general in its distribution, and apparently superficial, or if it be partial and at the same time superficial and with only slight swelling, we may be sure that the case is one of *erythema*. If, on the other hand, the redness being the same, there is a manifest swelling with infiltration and œdema, a sense of depth of penetration of the skin, and if, furthermore, the skin relieve itself of its inward tension by effusion and vesication on the surface, the case is one of *erysipelas*. But if the most striking symptoms of the case be itching and evanescence, the case is named after a similar affection produced by the irritation of the poison of the nettle on the skin, namely, *urticaria*. In the fewest possible words I may define erythema to be—redness without swelling; erysipelas as—redness with infiltration and vesication; and urticaria as—redness with slight elevations of a white colour produced, to all appearance, by a state of muscular spasm of limited districts of the skin.

The erythematous family brings to our notice very strongly certain pathological phenomena of the skin which are deserving of more than passing attention; for example, there is the *fugitive* character evinced by suddenness of appearance and disappearance; secondly, there is the *migratory* character, as shown by the wandering propensities of the affection; and thirdly, there is the *tumescant* character, which is equally remarkable. These phenomena are all of a neurotic nature, a state of temporary relaxation of nerve-force gives rise to distension of the capillaries as represented by hyperæmia; while nervous tension, by inducing contraction of the capillaries, restores the equilibrium of the circulation, or in a greater degree,

produces pallor of the skin. The blush and emotional paleness of the surface are physiological illustrations of these phenomena, which are repeated with greater force and severity, pathologically, in that example of erythema termed "erythema fugax," in the occasional recession or retrocession of erysipelas, and very manifestly in urticaria. Erythema fugax is a form of the affection excited by emotion, and very commonly, as a reflex phenomenon, by the stimulation of the gastric plexus of the pneumogastric nerve, and is developed on the face, neck, or chest; it may last for a few hours or for a few days, and it may recur at uncertain periods, very often, daily. This form of erythema contrasts forcibly with the redness produced by contact and attrition of contiguous surfaces of the skin, with the erythema excited by irritants, and especially with the erythema of heat or cold; the latter being exemplified by common chilblain.

The *migration* of the erythematous affection is due to a propagation of the nervous impulse or shock and consequent hyperæmia, to the neighbouring part of the skin, sometimes by continuous and sometimes by centrifugal progression. Continuous migration is illustrated by the wandering propensities of erysipelas; and centrifugal migration by the annulate forms of the affection termed erythema annulatum, circinatum, gyratum, marginatum and iris, forms in which the spot first attacked is rapidly forsaken, and the hyperæmia moves like a wave to a distance, still preserving its annulate figure; and the same phenomenon is also seen not unfrequently in urticaria.

The *tumescence* of the erythematous affections is a consequence of exudation from the capillaries into the cell tissues, giving rise to prominence in a greater or less degree, and appearing often with remarkable suddenness. It is in this manner that we explain the smaller prominences termed ery-

thema papulosum, tuberosum, and nodosum, which are varieties differing only in degree, and the sudden and occasionally massive swellings of erythema tumescens, as also the dense and sometimes brawn-like thickening of erysipelas. The wheals of urticaria have likewise been attributed to exudation, but their rapidity of formation in certain instances seems to point to muscular spasm for their production, as, for example, when they spring up in the course of pressure with a pencil, tracing figures on the skin.

The exudation from the capillaries in the erythematous affections, after being detained in the tissues for awhile, is usually absorbed, leaving scarcely a vestige of its existence behind; but in one of the forms of erysipelas the exudation finds its way to the surface, lifting up the horny epidermis into vesicles or blebs. The precise character of the exudation also presents certain varieties, being more plastic in some instances than in others, and more or less impregnated with the colouring elements of the blood. Very commonly the prominences of erythema leave behind them yellow and purplish stains in the skin, and in one form of erythema, namely, in *purpura* there is an absolute escape into the tissues through the capillary vessels, of the red colouring matter of the blood.

Another phenomenon which accompanies the erythemata and is most conspicuous in urticaria, is *pruritus*. In fact, it is from this symptom, as much as from the development of white studs and wheals, that urticaria derives its name. The pruritus is present in different degrees, which are termed tickling, burning, and tingling, the pruritus of urticaria being of the latter kind. In some of the erythemata there may be no sensation beyond heat; in others there is heat with itching; and in others again a shooting pain that seems to appertain to vertical fibrillæ of nerves.

PHLYCTENOUS AFFECTIONS.

The *third* group of cutaneous diseases, the phlyctenous affections, is represented in our collection by two examples of vesiculous lesion, namely, pemphigus and herpes. The examples of pemphigus are numbered 109 to 119, with a recent addition No. 518, and those of herpes 120 to 127. The lesions in the vesiculous form of cutaneous affections are three in number, namely,—hyperæmia, vesicle or bulla, and crust,—and its pathological state is consequently trimorphic. If we analyze the pathological characters of the affection, we shall discover it to be an erythema attended with serous effusion beneath the epidermis, the effused fluid raising the horny layer of the cuticle into a blister or bleb. It would be interesting to discuss why, in some cases, erythema should subside without leaving behind it any mark of its presence; why, in other instances the erythema should be followed by dry exfoliation of the cuticle; and, why, in a third series, as in the one before us, it should be accompanied with vesication, and in herpes, with suppuration and sometimes with ulceration in addition to vesication. An explanation ready to our hand, and conforming with the existing theory of disease, is, that the question is one of vital dynamics, and that the changes referred to represent degrees of vital or nervous force. In ordinary erythema, the standard of nerve power or vital power is lowered to a certain degree, while in phlyctenous erythema it is lowered still more,—passively in the case of pemphigus, actively in the instance of herpes. After death, as we well know, a state of loosening and separation of the cuticle takes place, which is referrible to cadaveric transudation, and in some forms of cachexia, as well as in some of gangrene, for

example in chilblain and carbuncle, the development of bullæ may be likened to a similar process.

The first specimen of pemphigus that we have to examine is *pemphigus iris*, a form of the disorder which supplies us with a curious example of the transition of erythema into the vesicular affection. Nos. 100 and 101 (page 99), are instances of erythema iris, of a migratory form of erythema, in which the progression is centrifugal, and as it were saltatory, and the resulting consequence a singular eccentric arrangement of rings. But the eruption subsides without structural change and without disturbance of the epidermis. Not so, however, in pemphigus iris; the development of the central blotch, and the successive formation of eccentric rings are exactly the same, but another pathological feature is superadded, the central blotch vesicates, and becomes covered with a bulla or bleb. Sometimes the rings surrounding the central blotch also vesicate, and the curious phenomenon results of a central vesicle or bulla encircled by one and sometimes by several vesicated rings. The case ceases to be one of erythema iris, for the vesicle transforms it into one of pemphigus iris, and, as may be supposed, where a considerable number of eruptive spots are thrown out on the skin, some will retain the erythematous character, some will be bullæ with vesicated rings, and between these extremes, others will be found to represent every variety of intermediate stage.

An example of *pemphigus iris* is shown in the drawing No. 109, displaying the inner side of the thigh and leg of an adult man. In this case the eruption was general, but most abundant on the lower extremities; more frequently it is local and limited to the hands and feet. The outbreak is always associated with constitutional debility and irritability, and sometimes with cachexia, and in general there is more or less enteric disturbance, and a participa-

tion in the disease, of the mucous membrane as indicated by aphthæ, sometimes by uræmia, and sometimes by slight hæmorrhage from the alimentary canal.

The drawing illustrates very fairly the progressive stages of the eruption; its erythematous origin, the subsequent vesicle, the eccentric erythematous rings, the conversion of the more central rings into annular vesicles, the varied tints of the more distant rings; then the retrogressive stages, the opacity of the vesicle, its collapse, sometimes its rupture, the desiccation of the vesicle and its contents, and their consequent conversion into a thin brown scab. Occasionally the rings are each the production of a separate day, so that when the process has lasted for some time, it would be possible by counting the rings, to determine the day of appearance of the first spot and the number of days the patch had existed. In the large patch seen in the drawing, there are seven white rings, representing seven days, and seven circles of fading red between them, the outermost white ring being bounded by a narrow areola of pale crimson. While, in another patch, measuring only half an inch in diameter, there were nine different tints of colour, which, from the centre to the circumference, were—red brown, white, deep red, lighter red, deep red, pale red, deep red, yellowish white, and crimson blush.

Another very interesting illustration of pemphigus iris is shown in the model No. 518. The eruption in this case is seen in every stage of development, from slightly prominent red spots, little more than a line in breadth, to circular blotches nearly three-quarters of an inch wide. In the smallest spots there is redness merely, then follows a white vesicular centre with red margin; after that the central cuticular dome subsides, while around it an annular vesicle is produced, and this again is encircled by a red margin. Sometimes the central

vesicle collapses incompletely, leaving a disk of white cuticle partly separated from the rete mucosum, in which case three rings may be distinguished encircling a central white disk, the colour of the rings being, firstly, a brown red, then one which is white, prominent, and vesicular, and thirdly a red halo. Upwards of fifty pocks in various stages are scattered over the surface of the hand, and in four places the vesicles have become abraded, and a brown exudation crust has been produced.

From the small size of the central vesicle, this form of eruption is sometimes but incorrectly denominated "herpes" iris, and the present model, on account of its vesicular centre, has received the name of "hydroa" in the Paris collection.

Pemphigus iris has been first selected in our description of pemphigus, because it occupies an intermediate place between erythema and phlyctena, and thereby forms a link between the typical erythema and the typical pemphigus. I may remind you that we have seen examples of eruption that seem to be the merest modification of erythema papulosum, but which assume the peculiar figure to which the term "iris" has been applied, and which, consequently, we have distinguished as erythema iris; nevertheless, another simple lesion, namely, exudation, added to that already existing, is sufficient to convert erythema iris into pemphigus iris. Were it not for this transitional character, we might have treated pemphigus iris as the modification of an eruption, which is represented in a typical form by pemphigus vulgaris.

Pemphigus vulgaris is illustrated very fully in our collection by the series of drawings, casts, and models, numbered 110 to 119, which not only mark the physical appearance of the affection, namely, its hyperæmic origin, its vesication and retrograde progress, but also the constitutionally cachectic tendencies of the disease.

The patient, from whom the drawings 110 and 111 were made, was a strumous boy, seven years of age; when three years old he received a blow on the knee, the injury produced swelling, and four years later the limb was condemned to amputation. With occasional intermissions, his life, up to the period of this report, was spent in hospital; and three years after, being invalided for his knee, the pemphigus made its appearance. The eruption was recurrent, lasting the first time for nine weeks, and subsequently for five weeks, with intervals ranging between ten days and two or three months. In all, he had six attacks, the eruption being chiefly developed on the limbs, and was much debilitated in constitution.

The plaster casts, Nos. 112 and 113, of the forearm of a child, display very strikingly the figure and bulk of the vesicles or rather blebs of pemphigus. Some of the bullæ are isolated, others confluent; near the wrist is a compound bleb of large size, formed by the blending of four bullæ, which were originally separate; whilst, in various places, others may be seen undergoing progressive retrogression.

The casts in wax and plaster, numbered 114, 115, and 116, representing part of the lumbar region and thigh of a young woman, aged 20, bear upon their face an evidence of the fatal cachexia, which constituted a part of her history. The skin is discoloured, almost swarthy, from the abundance of pigmentary deposit, the bullæ are small and imperfectly developed, some are in the state of collapse; dark brown stains indicate where others have subsided and amid the rest, there are superficial ulcerations in various stages of healing, and deeply indented cicatrices. On the thigh, and within a small extent of surface, there are about eighty spots presenting every stage of progressive development and retrogression.

As we usually meet with it, pemphigus is local in its development, limited to a part of the body, as the limbs; sometimes attacking the upper limbs, but more frequently the lower limbs. Occasionally, however, the eruption is general, as in the case of cachectic pemphigus already described, and in that from which the models Nos. 117 and 118 were derived. The patient in the latter instance was a female servant, aged 46, and the disease proved fatal in nine days, the affection being named by Guibout, *acute general pemphigus*. Although general, the bullæ were most abundant on the extremities, a few only being scattered over the face, upper part of the neck, and trunk; their average size was that of an almond, but some were much larger. Guibout notes that one day the bulla on the hand was a large, flat, uniformly elevated erythematous blotch, bordered by a rose-coloured areola, and on the next became distended to its present dimensions. The young woman had a general appearance of health; she had been troubled for four months with nocturnal pruritus, beginning in the legs and thence extending to the whole body; for these symptoms she took baths and applied ointments, and the pemphigus followed immediately upon the use of an ointment containing turpentine. On admission into hospital she was suffering under enteric derangement, with a pulse of 112; three days later the tongue was coated, and the pulse 104; the next day the tongue was white; the day following the pulse was 100; there was much prostration, with delirium and a hot skin; the day afterwards she became comatose, the delirium continuing, and she died in the night without reaction. After death the chief internal morbid appearance was congestion of the mucous membrane of the small intestine.

The model No. 119 is another example of pemphigus, developed in this instance on the lower half

of the right leg. Lailier terms it "acute pemphigus." Over a limited extent of surface are scattered nine bullæ, ranging in size between that of the hemisphere of a large pea and that of a large hazel nut; and about the same number of circular excoriations, caused by the rupture of other bullæ. The contents of the bullæ are semi-purulent and opaque, the distended bullæ are without areolæ, but the excoriations are surrounded by an erythematous desquamating border, within which is seen an edge of collapsed cuticle, and within the latter a thin brown scab. On one or two the scab is thicker, almost amounting to a crust; from others an ichorous sanguinolent discharge is seen to be issuing, and in two places there are clusters of three or four excoriations in which the erythematous borders and excoriated bases have become blended so as to form inflammatory blotches.

If, now, from our new point of view, we contemplate the groups of cutaneous disease which the present inquiry has brought under our notice—eczema, as representing common inflammation of the skin, revelling in almost every form of lesion of which the integument is capable, and erythema presenting the most elementary form of disorder, namely, simple hyperæmia, with or without disturbance of cell function,—and advance towards phlyctenous affections in the instance of pemphigus with the curiosity and interest which attach to the question,—What will cutaneous inflammation do next? What it will do and can do is now before us in the illustration of pemphigus; the hyperæmia or erythema of the skin will be rapidly succeeded by the effusion of an aqueous lymph over the whole surface, as if the latter had been subjected to the irritation of a blister; the erythematous base is circular in its figure, and the blister or bulla is equally round; if the erythematous base be small the blister will be correspondingly small, and if, as

is very commonly the case, the erythematous blotch increase by its circumference, the blister will likewise increase until it arrive at the very edge of the erythematous base, and attain a magnitude of very considerable extent. And this is one of the peculiarities of pemphigus, that the blister appears to arise from the unaffected skin, often without a trace of areola or without any margin of hyperæmia around its circumference. In the models before us, we have blisters of very considerable size, but we occasionally hear of their reaching the bulk of an egg, of an orange, and even a greater magnitude.

We may realize the idea of pemphigus by a word, such for example as *idiopathic blister* or a spontaneous blister; and just as we know the effect of a blister of cantharides, or of a jet of boiling fluid, or of a flame of fire, to be at first redness, and then a blister, so in pemphigus we see the blister rising spontaneously without either epispastic or scald or burn. We may, however, very reasonably infer that, although there has been no irritant applied, yet that a corresponding change has taken place in the skin; and, as we know that the effect of these irritants is to lower the vital dynamics of the skin, so must we, in the absence of any external agent, arrive at the conclusion that some cause capable of reducing the vital force of the skin is present in the organism; and, furthermore, that such cause being the agent of a lowering of the vitality of a part of the body, approaching to a partial death of the skin, will be a matter of serious portent to the life of the individual. The conclusion is inevitable: pemphigus is a grave and serious affection, an associate of cachexia, always a symptom of a depressed vitality of the organism, and not infrequently the sign of a fatal state of disorder of the economy. The whole of the cases that we have examined are suggestive of a grave, and frequently fatal derange-

ment of the organization, and those which follow corroborate this anticipation.

In pemphigus we have the opportunity of noting certain phenomena resulting from the nature of the exudation, which, however simple in themselves, are nevertheless worthy of our observation. The exuded fluid, which, in its qualities, corresponds with the serum of the blood, is at first perfectly transparent, but gradually becomes opalescent, and at a later period is more or less distinctly yellow from the development of pus globules. In its transparent state it displays like an optical lens the congested base upon which it has arisen, and enables us to observe that the base is one while crimson, and another while purplish in its hues; but as opalescence sets in, this feature of the eruption is lost. A similar observation becomes a mark of diagnosis in the instance of the minutest of the phlyctenæ, that which, from its millet-seed size, is termed miliaria. The cuticle in miliaria is remarkable for its tenuity; its little rounded vesicles resemble beads of sweat upon the skin,—hence, its cognomen, sudamina; and the one while transparency that transmits the red colour of its base, and another while opalescence that recalls the appearance of drops of milk, have gained for it the distinctive appellations of miliaria rubra and miliaria alba. These appearances are well illustrated by the models on the table, and I beg to call particular attention to the model No. 117, with respect to which it is especially noted by Guibout that the large bulla on the back of the hand, measuring about three inches square, was one day a large, flat, uniformly, but very slightly elevated blotch, bordered by a rose-coloured areola, in fact, an erythema, and the next day the enormous vesication that we now see before us.

The transparency, the bright colour, and the benignant purulency of the bullæ of pemphigus, are always grateful to our eye as being of good augury,

and teeming with hopeful expectation. But the purplish, and purple, and leaden-coloured tints, are less satisfactory. Sometimes the fluid of the blisters is reddened or empurpled by admixture with blood, which may be the result either of accidental pressure or friction, or the consequence of hæmolysis, which betokens a state of cachexia in a more or less advanced degree. We are all familiar with the ugly, flat, leaden-coloured bleb of a devitalized chilblain; or the sanguineous bleb of a carbuncle, or the equally ill-conditioned bleb of cachectic rupia; these are so many examples which find a comparative illustration in pemphigus, when it occurs in a cachectic constitution.

Another point of interest that attaches to the history of pemphigus is the mode of retrogression of the bleb. The more natural course of the retrograde change would be the gradual collapse of the vesicle; it becomes wrinkled, it contracts, it subsides, it falls down upon the surface from which it arose; it dries up into a thin scab which covers the base for awhile, being kept in its situation by the agglutination of its inspissated contents, and finally it drops off in the shape of a thin flat scale, when the base upon which it rested has healed and has become reinvested with normal epidermis. I am describing the most favourable course of retrogression of a pemphigus, one which presents the least possible departure from the standard of health, in fact, the history of the healing process of a common blister; but you will perceive at once how a variety of small accidents may alter the harmonious working of the curative operation. The bleb may be accidentally bruised or broken or displaced, and then the covering of the inflamed skin will be a crust resulting from the exudation of inflammatory products. Or an exudation of inflammatory products may accompany the ordinary mode of healing by evaporation, and the scab may attain

considerable thickness. Sometimes, also, in a state of low vitality of the cutaneous tissues, there may occur superficial gangrene and sloughing, succeeded by ulceration.

The French dermatologists have described a form of pemphigus which they denominate *pemphigus foliaceus*; the disease itself is of the low and cachectic type; the eruption is serpiginous in its character, creeping outwards upon the neighbouring skin; the contents of the bullæ are aqueous and non-plastic; and the cuticular dome of the bulla falling into wrinkles as it descends upon the inflamed base, and drying into a thin greyish and tawny scab, has suggested the idea of a dried leaf and the corresponding designation of the form of the eruption with which it is identified, that of "*pemphigus foliaceus*."

I may also mention in this place and as a note for future comment, that I have seen pemphigus in association with scabies, and also with prurigo. In these instances the blisters were the consequence of a neurosis, and this explanation will help us to understand the nature of some cases of local pemphigus which are rare, but which have been described under the name of pompholyx.

Another *phlyctena* of smaller dimensions than the *phlyctis* of pemphigus, but one of an interesting and important character has been termed herpes, and herpes is illustrated in our collection by a series of specimens beginning with No. 120 and extending to 127.

It is no part of my intention or wish to disturb the signification of a term which was settled by Willan, and has been accepted by all dermatologists since the days of our distinguished countryman; but it is a habit with me, and one beyond my control, to endeavour to search out the meaning of the words which I am required to employ, believing most faithfully that where those terms have

descended from philosophers of such acknowledged greatness as our ancient masters, Æsculapius and Hippocrates, they must embody some intelligible signification. Passing in review the various terms that I have had occasion to use hitherto in the course of these lectures, namely, eczema, psoriasis, pityriasis, scabies, lichen, impetigo, erythema, urticaria, pemphigus, and herpes, I find two instances in which I would put in a firm protest against the nomenclature adopted, one of these being lichen, and the other herpes. The term lichen has been settled by Willan to signify an eruption of pimples, but the real meaning of the term is made manifest when we trace back its derivation to the word *λειχαιν*, *lingere*, to lick, as though it were intended to refer to a something which adhered to the surface as the tongue in licking adheres to a plate of glass. The illustration is perfect in the instance of the growth of a vegetable lichen on the bark of a tree, while nothing can be conceived more opposite to the genius of the word than a mere crop of pimples, the “*papulæ*” of Celsus.

My other exception is taken with regard to herpes. Herpes, as settled by Willan, is made to signify an eruption of vesicles. But herpes is derived from *ερπειν*, *serpere*, to creep, from which we obtain the adjective *serpiginous*, or *creeping*. Now herpes, as we at present understand the use of the term, is no more a creeping or *serpiginous* form of eruption than is erythema or eczema, both of which present themselves occasionally in the act of obeying a pathological law of the skin, namely, that of creeping onwards by the circumference into the neighbouring skin, whether at the same time they heal within the area or not. The true herpes was denominated “*serpigo*” by the Latins, and the synonymous terms *herpes esthiomenos* and *herpes exedens*, both occasionally crop up as the accustomed designation of *lupus*, *epithelioma* and *dermatosyphilis*.

Observations of this kind will not, I hope, be considered out of place when addressed to a body of scientific men whose daily bread is the harvest of learning, and who are always foremost among the bands of those who seek to improve and elevate the intellectual nature of man. As a teacher, I should hardly be doing my duty were I not to endeavour to explain, as I went on, the technicalities which have been imported into a subject so closely identified with medicine and surgery as dermatology. While in the class-room it is an obvious necessity to be prepared to satisfy the eager questions of those who have a claim to all the information we can bestow, and with whom the demands of *wherefore* and *why* are very reasonably of constant occurrence.

I fear, Sir, that you, and the rest of my audience, have fair ground for accusing me of repeating, with reference to this or that disease, that it is *one of a deeply interesting nature, and highly important to be known*; but if I have said this before in regard to bygone subjects, I must echo it again in connection with herpes, and the more so because, although not so common as eczema, it comes before you more frequently in daily practice. And I take this opportunity of making a remark bearing upon the question of numerical statistics. The dermatologist in the midst of a community, from the reputation attaching to the nature of his practice, is in the position of having every example of chronic cutaneous disease, such as eczema, brought under his notice in the course of time. But with such an eruption as herpes, which is regular and brief in its course, and often very trivial in its manifestation, the numbers which reach him will be comparatively few. Hence it is not in his note-book, however carefully kept, that we must look for the exact truth in reference to the frequency of this disease; and, therefore, I say, that herpes, although undoubtedly less common than eczema, will probably come under

your notice more frequently than the latter disease.

In a few words it may be said that herpes is a cluster of vesicles, ranging in size between a pin's head and a pea, developed on an erythematous base; for the most part unilateral in distribution, and limited in extent to the district supplied by a single nerve or by two or three contiguous nerves. This definition is illustrated in the drawing, No. 120, and in the model 121, representing herpes zoster, or more correctly herpes intercostalis. In the former of these the eruption is seen in its characteristic progressive stages, namely:—as nascent vesicles clustered on an erythematous base, as fully developed vesicles, discrete and confluent, transparent and opaque, colourless, yellowish in different degrees, or purplish, and finally as incipient scabs.

In the model 121, the eruption covers a greater extent of surface than in the former case, occupying about the fourth, fifth, and sixth intercostal spaces, and extending from the region of the posterior border of the scapula to the ensiform cartilage. The blotches are continuous throughout the whole extent of the eruption, but a few isolated blotches of small size and a few scattered vesicles may be seen along the upper and lower boundary of the patch. The nipple is completely surrounded, and the illustration may be regarded as a severe example of the disease. The patient was a man, 60 years of age; he remained in hospital for ten days, and left much improved. He was under the care of Lailier, and was treated by the application of an alcoholic solution of perchloride of iron, one part in five.

Herpes zoster may be very fairly taken as the typical form of herpes; its subjective designation being derived from its frequent occurrence around the waist of the patient, hence its name zoster, a belt, and zona, a girdle, and its Latin synonym cingula, with the popular corruption of cingula, namely,

shingles. If we were in search of an illustration of the identity of disease in modern times with that of an ancient period, we should find it in zoster. Zoster has evidently always retained the same signification, and awakened the same prejudices. The duality of the nervous system explains the well-known fact that zoster is limited to one-half of the body; and the extreme improbability of the development of the circle complete, no doubt suggested the aphorism attributed to Pliny, "Zoster appellatur, et enecat, si cinxerit." This aphorism of Pliny has become a popular belief amongst ourselves, and the dread of the disease is greatly relieved when it is found to confine itself to its accustomed limit, namely, one-half the circle of the waist.

Next to its obedience of the neurotic law of occupying only one-half of the waist without completing the girdle, the point most worthy of our attention is its development in little blotches, which, in fact, correspond with small branches and twigs of the cutaneous nerves; and if we call to mind the distribution of the intercostal nerve with its cutaneous branches, we have a key to the explanation of the exact seat of manifestation of the hyperæmic blotches on which the vesicles are developed and undergo their succeeding changes. Thus, a painful sensation of heat may be experienced somewhere near the linea alba: the anatomist will tell us that it is there that the intercostal nerve gives off its anterior cutaneous twigs, and it is in the small district of skin supplied by those nerves that our patient becomes aware of a burning and tingling which first of all direct his attention to the spot, and announce the beginning of the eruption of shingles. In a very short time, however, he feels a similar sensation in the neighbourhood of the spine; now, the posterior cutaneous nerves are communicating their sense of grievance to the skin; and, at about the same time or immediately after, the integument supplied by the middle

cutaneous nerves becomes similarly affected. The original blotches are consequently isolated, and the space between them is shortly after filled up by other patches and scattered vesicles, all evincing the same phenomena objectively and subjectively. In the lithographic drawing the isolated position of the blotches is maintained; but in the model a considerable number of blotches have become confluent, and the inflammation of the skin is consequently diffused, more so, in fact, than we usually find to be the case. Again, if we take into consideration the breadth of the eruption in both these cases we arrive at the conclusion that more than one intercostal nerve must be involved in disorder; in the drawing there may probably be two, and in the case represented by the model, perhaps three or even four.

The local history of herpes is pretty much the same in every instance of its occurrence, and may be stated as being either slighter or more severe. If you have ever, and who has not, had one of those little burning and throbbing inflammations of the lip which are the common sequel of a feverish cold, you have experienced, on a very small scale and in a very mild degree, the operation of herpes. First, there is heat, burning, and throbbing; then there is swelling; next, two or three small vesicles appear on the surface, and in spite of every effort you may make to check its progress, the annoyance is prolonged for a week or ten days.

So, of the much larger blotches on the skin of the trunk of the body appertaining to herpes zoster, a number of red puncta may be seen in the skin; these in a very short time become glittering vesicles, filled with a transparent and colourless lymph, they grow and enlarge to the size of small peas; then the lymph becomes lactescent and opaque, subsequently yellow from the development of pus, and sometimes purple from the presence of blood; next they begin their retrograde stage—they collapse, they shrivel, they shrink, and finally they dry up into small, hard,

amber-coloured scabs, deeply embedded in the skin, and retaining their hold for some time before they fall off, leaving pitted marks of variable depth and size, generally so complete that they remain as permanent white cicatrices for the rest of life.

This pathological process is not very dissimilar to that which we have already studied in relation to pemphigus, and the variations pointed out in respect of the latter eruption are equally applicable to herpes. A difference, however, is palpable—herpes is the consequence of a nervous shock, and not the consequence of a constitutional disorder or cachexia; moreover, it obeys an orderly course which may be estimated by days, ten to twenty in number, and pursues a regular succession of lesions, namely, hyperæmic congestion, exudation of lymph, vesiculation, pustulation, encrustation, and cicatrization, and then finally ceases without a prospect of relapse, and without derangement of the constitutional health.

Some of the specimens before us, and especially the plaster casts numbered 123 to 127, illustrate admirably the distribution of the eruption in isolated blotches, the number and figure of the vesicles developed on each blotch, the distension of the vesicles, their occasional coherence and confluence, and the dense and embedded scabs which mark the completion of the retrograde process.

The wax-cast No. 122 exhibits a scattered eruption of herpes affecting the arm, *herpes brachialis*.

The plaster casts Nos. 123 to 126 mark the course of an example of *herpes cruralis*. The eruption occupies the thigh, and the casts show the daily progress of the blotches and vesicles. The history of the case also is characteristic:—"A boy, 15 years of age, was chilled by sitting on the grass on Good Friday, April 10, 1846; the next day he had severe pain over the whole of the front part of the thigh, which was attributed to rheumatism. On the evening

of Saturday a blush of redness in patches was apparent on the skin; on Sunday, minute vesicles in clusters were perceived here and there upon the red patches. The vesicles soon became distended with a transparent and colourless fluid and reached their full size, looking towards evening like so many pearls. On Monday, some of the vesicles were already becoming shrivelled and had a purplish hue, while others, fully distended, possessed a rich grape-yellow tint. On Tuesday, all the vesicles were on the decline, with the exception of a few tardy clusters, which were now attaining maturity. On Wednesday, the fourth day of the eruption, the greater part of the vesicles had dried up into reddish-yellow wrinkled scabs. On succeeding days the scabs became gradually darker and harder, and were closely embedded in the skin; by Saturday a few only of these scabs remained; and on Sunday, the day of completion of the week, traces only of the eruption remained.

No. 127 is a very striking plaster cast of herpes cruralis situated at the upper part of thigh in the inguinal region. The blotch of eruption is solitary; it is oblong in figure, and displays the erythematous base as well as the cluster of vesicles, the hyperæmic base being slightly elevated.

These specimens inform us as to the fact, that no part of the integument is free from the invasion of herpes; that it may occur upon the face, upon the neck, on the shoulder and arm, around the waist, and upon the flank and lower extremity, and its relations to the nerves of those regions are so obvious, that it has received names conformable with the chief trunks which supply the different parts of the skin. Sometimes it makes its appearance and disappearance without other pain than the mere local suffering in the skin; sometimes it is ushered in with neuralgia, and is mistaken for that painful affection until the eruption is developed, and, at

other times, it ends with neuralgia, and the neuralgia is prolonged for many months and even years. The neurotic relations of herpes are among the most interesting and important of its characteristics; in the examples of neuralgic herpes, it is evident that the trunk of the nerve is involved; in other examples, as in herpes labialis, there is good reason to believe that only the peripheral fasciculi and cutaneous plexuses are concerned; and in other instances, again, we have proof of the morbid state of the spinal nerve being transmitted to the nerve of the organic system, or *vice versâ*, and notably in the case of the upper intercostal nerves, to the cardiac nerves.

Experience would lead to the belief that, in comparison with other regions of the body, herpes zoster, or more exactly, herpes intercostalis, occurs with greater frequency than herpes attacking the regions supplied by the rest of the nerves, and although herpes zoster may be developed on either side of the body, yet it would seem to be more common on the left than on the right. Now, supposing this fact to be established, it would be worthy of consideration how much of this predisposition might be due to communication between the affected nerves and the organic plexus of nerves which is distributed to the stomach and digestive organs, and the morbid influence resulting from such inter-communication. The exciting cause of herpes is generally cold, and cold would operate more injuriously upon nerves subjected to the frequent irritation of organs in a state of derangement, than it would upon nerves in a perfectly healthy condition. I make these remarks with a view to further investigation, but the fact is established, that predisposition, however occasioned, enters for a considerable part into the causation of the disease.

Amongst others of the *notabilia* of herpes, is the very great infrequency of its repetition. In general terms it may be said to occur very seldom more

than once in a life-time. That is to say, the form of herpes which is due to an affection of the trunks and larger branches of nerves; but, on the other hand, where the smaller branches of nerves are chiefly concerned and the nervous plexuses of the skin, a periodical occurrence of the eruption is one of the commonest pathological phenomena, as in the instance of herpes præputialis, or a recurrence in every instance of a common cold, as in herpes labialis. So, again, with regard to other general phenomena of herpes, although the eruption may never have been known to encircle completely the trunk of the body at one particular zone; cases are on record, wherein it has been seen on both sides of the body at the same time, but in different regions. Moreover, although it is usually observed in a single region only and affecting a single nerve, or two or three contiguous nerves, I have met with a case, published in the *Journal of Cutaneous Medicine* (vol. iv. p. 158), in which it presented five separate tracks around the hemicycle of the trunk, between the collar-bone and the groin. The case was that of a gentleman farmer, æt. 53, who had been the subject of attacks of eczema for twenty years. In the month of March, after some exposure to cold, he was seized with pain on the right side of the trunk with a burning, smarting, and tingling sensation in the skin. This was followed by the eruption of shingles, which encircled the side of the trunk in a series of tracks, ranging between one and three inches in breadth: of these tracks as seen on the dorsum of the trunk, one took the course of the supra-scapular muscle to the top of the shoulder; a second that of the infra-scapular muscle also to the top of the shoulder; the third passed below the scapula to the axilla; the fourth followed the line of the last ribs and the lower border of the costal cartilages; and the fifth the curve of the crest of the ilium. In front of the trunk the two scapular tracks

crossed the upper part of the pectoral muscle towards the sternum. The axillary track divided into two branches, one of which passed above, and the other below the nipple. The hypochondriac track continued forwards to the epigastrium; and the iliac track also divided into two branches, one of which crossed the flank below the level of the umbilicus, and the other followed the line of Poupart's ligament in the inguinal region; the five tracks of the dorsum of the trunk being represented by seven on its anterior face.

If we turn to the phlyctenous affections before us in a therapeutical point of view, we shall discover our previous observations, with regard to the pathology of pemphigus and herpes, to be fully confirmed: with pemphigus we find ourselves in face of a disease essentially constitutional in its origin and maintenance, and demanding as a first consideration constitutional treatment; while in herpes, constitutional remedies are mere *adjuvantia*, and entirely secondary to local management.

Our constitutional review of the nature of pemphigus discovered that everything was unsound in the functions of assimilation, sanguification, and nutrition, and to the restoration of these great and important functions our treatment must be addressed. We shall require good and nutritious food, wholesome air, proper attention to ablution, and tonic remedies. Bark, quinine, sulphuric acid, iron, and ammonia, will enter for a large share into our prescriptions. The digestive organs must be regulated by mild aperients, and only in cases where there is a special loss of nerve-tone and nutritive power in the skin shall we need the crowning aid of arsenic.

In cases of herpes, where any functional derangement is present, and especially where functional disorder may be regarded in the light of a predisposing cause of the eruption, such disorder must be at-

tacked, and if possible removed. I have remarked that herpes is sometimes associated, or, to use an old-fashioned phrase, sympathetic with visceral disturbance; as, for example, with bronchial and congestive disorder of the lungs, in which case, although bearing only indirectly on the herpes, there is ample scope for constitutional treatment. Again, in the neuralgia of herpes, with a view to allay the irritability of the nervous system, we may be under the necessity of having recourse to the bromide of potassium, to the hydrate of chloral, or to more decided sedatives, and in violent neuralgia to ten-grain doses of sulphate of quinine.

The local treatment of both pemphigus and herpes calls into exercise our routine measures for the management of vesicles and exuding surfaces. The dredging-box occupies a prominent place amongst our *armamenta*; then comes a desiccant powder, such as oxide of zinc, simple or diluted with starch; next a lotion of lime-water with oxide of zinc, and, in case of need, the oxide of zinc ointment rendered cooling and gently stimulating by the addition of an eighth part of spirits of wine. In the majority of cases, little more than these remedies will be required; they fulfil the intention of rest and protection so important in surgical affections, and when additional protection is demanded, we may obtain it by a simple dressing with dry lint, or an ointment of zinc or resin, maintained in position by strips of adhesive plaster, or by a bandage.

In cachectic cases of pemphigus, and in the ulcerative herpes of elderly persons, the local treatment may require the addition of local tonics, that is, of moderate stimulants, such as—a dusting with the powder of cinchona bark, the addition of carbolic acid to the ointments, or a lotion of chloride of zinc, the intention of these remedies being not only to give tone, but to counteract a tendency to decomposition and gangrene.

In the treatment of herpes zoster, a dusting with diluted oxide of zinc powder, or the lotion of lime-water and oxide of zinc, covered with a layer of cotton wool, may be regarded as specific, and a similar zinc and lime-water lotion applied to local blotches, or in situations where an external covering cannot be employed, is the best treatment that can be devised. On the lip, and in herpes præputialis, I have sometimes succeeded in arresting the cutaneous inflammation at its outset, by painting the spot with tincture of iodine, and Lailier, as will be seen by the description of model No. 121, has had recourse to an alcoholic solution of perchloride of iron, consisting of one part to five.

In neuralgic herpes, our *armamentum chirurgicum* is sometimes set at defiance; fomentations of very hot water will occasionally confer a temporary relief, but the only remedy of real value is the subcutaneous injection of morphia, which I have several times practised with success. While in cases of frontal neuralgia, we learn that Mr. Bowman has obtained good results from the section of the frontal nerve.

FURUNCULOUS AFFECTIONS.

If I were to say that all the inflammatory affections of the skin take their origin in the follicles, I should undoubtedly be saying more than is perfectly warranted by the phenomena of cutaneous disease; but if I were to affirm that in every inflammation of the skin, congestion of the follicles plays a conspicuous part, I should be fully borne out by the illustrations that have come before us up to this time, and prospectively by nearly the whole of the remainder of the series. The follicle, in its early development, is a growth inward of the surface of the cutaneous layer of the embryo; but, from its inward position a change and somewhat of a concentration, of the normal cutaneous functions is

occasioned. While the visible surface of the skin is divided in its duties between sensation and secretion, the follicle is given up wholly to secretion, and at the same time assumes the prerogative of an internal and a glandular organ. From this circumstance it derives, on the one hand, a certain isolation which enables it to perform an independent part, and, on the other, from the possession of a more acute sensibility of organization, is apt to become influenced by morbid conditions of the general system which are unfelt by the rest of the skin. It is in some such manner as this that we must endeavour to explain those highly wrought operations of inflammation which we meet with in the next of the groups which comes under our consideration, namely, the pustulous and furunculous affections of the skin. In these affections the principal morbid characters are—a degree of isolation referable to the follicular origin of the disease; a deeper implantation within the skin; a more advanced development in the nature of the inflammatory product, namely, pyogenesis, and beyond this a tendency to gangrene, and sometimes to ulceration.

The ancient Dermatologists made a distinction of pustules into the cold and the hot; the former they named *psydracium*, the latter *phlyzadium*. The former, in fact, are simple vesicles produced on the surface of the skin, and deriving their purulent contents from the cells of the *rete mucosum*; we have already had examples of *psydracia* or cold, that is to say, non-inflammatory pustules before us in *impetigo*, which is sometimes an *eczema* of considerable intensity, and sometimes the mere effect of the *eczematous* inflammation operating on a feeble constitution. Such pustules are simply vesicles distended with a purulent fluid, and when they dry up and fall off, they leave behind them no mark on the skin, no trace of their previous existence.

The hot pustule or phlyzadium on the other hand is always more deeply seated, originating in the walls of a follicle, sinking deeply into the corium, and deriving its pus from the connective and other tissues of the substance of the skin. Hence, it is slower in its progress, more permanent, and more lasting; and when its scab falls off in a longer or shorter time, it leaves behind it a pit and a cicatrix of lasting endurance.

The phlyzadium is the true pustule of the skin, and we term it *ecthyma*; and *ecthymata* are frequently found in association with *furunculi*, thus establishing a relationship between them, and leading up to the little boil which is so commonly met with on the eyelid, namely, *hordeolum*; and that larger and multiple boil which has received the name of *anthrax* from the Greeks, and *carbuncle* from the Latins. Moreover, it is in this group, although unfortunately, not as yet in our collection, that we meet with a remarkable form of septic pustule, named *pustula maligna*, and certain exotic boils of much interest, for example, the Aleppo pustule or boil, the Delhi boil, the Scinde boil, and so on.

Turning to the catalogue for an illustration of the only example of furunculous affections that we have before us, namely, the pustulous affection *ecthyma*, we find a water-colour study of *ecthyma*, illustrating colour and form of the pustules and their several stages — incipient, mature, encrusted, ulcerative, and cicatricial stains. This drawing was made from a case of some interest in a surgical point of view, which pretty well illustrates the nature of the affection and its cause. A man having broken his leg, the leg had been confined in splints and bandages for several weeks. He experienced considerable irritation from the presence of the bandages, and when they were removed, the limb was found dotted over with *ecthymatous* pustules. They are

apt, not unfrequently, to occur in the neighbourhood of boils, particularly where the tissues of the skin have been lowered in vitality by the prolonged use of a poultice or water dressing; and they are met with occasionally without apparent cause, namely, as an idiopathic affection.

Like other diseases of the skin, ecthyma is variously modified by the state of constitution and age of the patient. When the eruption has broken out suddenly, it has been named *ecthyma acutum*; but when, as is more commonly the case, its outbreak and course are tediously prolonged for weeks and even months, it merits the designation of chronic—*ecthyma chronicum*. Ecthyma is essentially a disease of debility, of a low state of tone of the system; and, where the constitution has been depressed by debilitating causes, determining a state of cachexia, it has received other names which convey the idea of the nature of its existing state; for example, *ecthyma luridum*, *cachecticum*, and *gangrænosum*. A form of the eruption met with in ill-fed and ill-tended children has also been named *ecthyma infantile*; and in Ireland a similar affection has received the designation of “burnt holes.”

Surgical diseases require less variation of treatment than medical diseases, and a similar principle of treatment is applicable to every kind. The modifications, where such may be required, are demanded less by the variety or special peculiarities of the disease than by that of the constitution and habits of life of the patient. It is a rule without exception that we must endeavour to regulate digestion and elimination, and at the same time, or immediately after, do all in our power to restore the healthy tone and vigour of the organism. It seems a mere truism to say that a part will more readily recover its health when allied with a healthy whole than it will when the latter is unsound, but it

is a truism that should be borne always in mind and steadily acted upon in relation with every local disease. Another not less important rule of treatment is to remove or remedy the cause of the disease. The local treatment again differs from the constitutional treatment less in the principle involved than in the terms which we employ to give expression to it. For example, we must *palliate* and then we must *stimulate* and give tone. By palliation alone many an eruption may be cured; and a considerable proportion of the remainder will give way to a well regulated stimulation.

In the instance of ecthyma, after a tonic aperient, every kind of tonic may be called into requisition, whether dietetic, or digestive, or stimulant. Nitro-muriatic acid, with a bitter such as tincture of gentian, will do us good service in one case; and not less so will citrate of iron and quinine in others, and among children the phosphates of iron and lime and cod-liver oil. While, locally, we shall derive our best help from the lime-water and oxide of zinc lotion, and the benzoated ointment of oxide of zinc. Where ulceration is established, the unguentum resinæ will be required, or solutions of carbolic acid, nitrate of silver, or chloride of zinc.

In the treatment of boils we have to consider their period of growth. At first our remedies should be ectrotic; secondly, failing to arrest the progress of the inflammation, and directing our measures to the relief of the pain accompanying the pyogenic stage, we encourage suppuration; and, lastly, we resort to stimulant means to aid in the separation of the slough and the healing of the ulcer. Our ectrotic remedies suitable to the first indication are: the galbanum and opium plaster spread on wash-leather; pencilling with liquor plumbi; and pencilling with tincture of iodine. The treatment of the suppurative stage is accomplished by a poultice; and that of the healing stage by the old basilicon

ointment, the unguentum resinæ of our modern pharmacopœia. Nevertheless, other methods of treatment have their claimants for preference; for example, early incision, and, in the second stage, the application of potassa fusa.

The anthrax or carbuncle, or monster boil, is treated on a principle similar to that of the furunculus; and surgeons are divided in opinion between external support and pressure by means of a plaster; the early use of the knife; and the application of the poultice. Perhaps it may happen that some cases will run their course most favourably by support alone, while others are brought to a successful issue more speedily by the knife, and others of a painful character can only be relieved by the regular succession of hot and ample poultices. Likewise in the detail of operation by the knife, some may prefer a single incision, others a crucial incision, and others, again, sub-cutaneous incision.

TRAUMATIC AFFECTIONS.

We have now passed in review four important groups of cutaneous affections taking their origin in common inflammation: the first of those groups is represented by *eczema*; the second, by *erythema*; the third, by *pemphigus*; and the fourth, by *furunculus*; there remain, however, certain inflammatory affections which have their origin in *traumatic* causes, such as wounds, bites, stings, mechanical and chemical irritants, &c., and these I have grouped together under the head of traumatic affections.

It may, very reasonably, be inferred that this is a group into which may be drawn an extensive and interesting variety of illustrations; but at present we have in our collection only three examples of the class—namely, the ulcer met with in artisans engaged in arsenical manufactures; the coal-tar or

aniline pigments, which are known to give rise to inflammation of the skin; and affection of lymph vessels and glands occasioned by propagated irritation consequent upon inflammation of the integument.

Arsenic, when taken internally in large doses, or for a considerable period of time, is apt to give rise to erythema of the skin or dermatitis; and it not only affects the skin, but also certain of the mucous membranes, for example, the conjunctiva and mucous membrane of the nostrils and pulmonary passages. Inflammation of the conjunctiva has become the ordinary test of the saturation of the system by arsenic; just as redness of the free edges of the gums indicates saturation by mercury, and blueness of the same part saturation by lead.

Inflammation of the mucous membrane of the nares is sometimes accompanied with ulceration and perforation of the septum, and inflammation of the bronchial membrane very commonly, with a dry and irritable cough.

On the general surface of the skin, besides dermatitis, arsenic is apt to give rise to discoloration from excessive pigmentation and not unfrequently to desquamation. While on the palm of the hands and sole of the feet it produces not only desquamation, but also thickening of the epidermis to a considerable degree from hyper-nutrition, and occasions the formation of minute granular corns, each little corn corresponding with the aperture of a sudoriferous duct.

In certain manufactures in which arsenic is largely used, as in the production of pigments of a green colour, it would appear also that ulcers are not an uncommon phenomenon. The model No. 129 exhibits ulcers of the wrist, fingers, and thumb, produced by the irritative action of arsenic on the skin. The ulcers have the same general characters,—they are deep, coated on the surface by a buff-coloured gelatinous-looking

lymph, bordered by a dark-red margin, and surrounded by a purplish-red, thickened, and desquamating areola. The ulcers on two of the fingers occupy the side of the first phalanx near its base, and are larger than the rest, possibly from the facility of lodgment of the poison in the inter-digital grooves, one of the two ulcers being formed by the confluence of three sores of smaller size. On another finger the ulcer is smaller and situated at the side of the middle phalanx, while on the thumb the ulcer is seated immediately beneath the free extremity of the nail, and is partly covered with a black crust.

The patient was a man, *æt.* 55, of good constitution and good family history. In July, 1865, he took service in a factory of chemical products, and was employed in preparing an arsenical colour, the Schweinfurt green. After a month or six weeks he was attacked with catarrh and coryza, and was troubled with ulcers on the scrotum, sides of the fingers, and wrists. He was admitted into Bazin's wards, and was discharged cured at the end of forty days. In November he returned to his duties in the factory, and at the end of a month had a recurrence of his previous symptoms, namely, catarrh and coryza, which gave a nasal intonation to his voice, ulcers on the inner side of the thighs, on his fingers and wrists, and ulcerating papulæ on his cheeks near the angle of the mouth. At the end of the month of March, he was readmitted into hospital under the care of Lailier; at this time he was debilitated, his appetite was good, and his bowels were regular. There were ulcers on the inner side of the thighs and legs, on the scrotum, on the hands, wrists, and forearms, between the toes, on the cheeks, and within the nostrils, the septum nasi being perforated, and the lining membrane red and swollen. There was a mucous discharge from the nose, but no affection of the mucous membrane of the mouth and fauces. At this period the disease had been three months in

progress, but there were no indications present of constitutional symptoms occasioned by the arsenic, and at the end of a month he was discharged nearly cured, the treatment in the interval being of the most simple description, namely, warm baths, with aromatic wine, styrax ointment, and nitrate of silver; the essential treatment, in fact, being, abstraction of the cause.

Of a nature allied with arsenic, and according to some chemists, as a consequence of the presence of arsenic itself, the aniline dyes have the property of exciting inflammation of the skin. Their effects have been observed both in the hands and in the feet, from the use of gloves and stockings coloured with those pigments. The feet, however, have been most frequently the victims, and the dyes in some instances have been transferred to the skin, while in others, the pattern of the stocking has been found represented on the skin, by tracings and figures of inflammatory hyperæmia. The dermatitis occasioned by the coal-tar pigments is frequently set up in the course of a few hours; it presents the characters of an aggravated eczema, and is attended with considerable effusion beneath the epidermis, which it raises up into large blebs, sometimes occupying the whole surface of the sole of the foot.

A gentleman who had worn a pair of new socks of a crimson aniline colour for a few hours, suffered so much pain in his feet, that he was unable to walk for a short distance to his home; the pain was stinging and prickling, indicative of a special irritation of the nerves of the skin; the feet became swollen; they were red and hot, and covered with a papular and vesicular rash, the latter in a few places increasing to the extent of blebs of considerable dimensions.

Not unfrequently the inflammatory rash is transferred to the hands, even when those members have not been in contact with the poison, and a general irritation of the entire skin is sometimes set up by

the process, which once was called sympathy, but is recognized now as propagated irritation. The progress of the dermatitis is always slow, and the inflammatory irritation liable to recurrence at intervals of a few weeks for a considerable period of time, sometimes for several months, and in a few instances for years. This phenomenon is not without its parallel in some other affections of the skin, particularly in eczema, and is also met with in instances of dermatitis, occasioned by other irritant poisons.

A manufacturer writing to me on the subject of an "aniline orange dye," an acid pigment, which is so volatile as to stain paper brought in contact with the fabrics dyed by its means, and which would affect in a similar manner the human skin, observes:—"Several workmen have suffered severely from wetting their hands with this solution, even when the contact has lasted merely for a few minutes; the effects being an eruption of the skin, not only of the hands, but, in one case, of the whole of the arms, ears, and feet. The affected skin was covered with pustules, which became confluent; and when the eruption had apparently subsided, it returned again and again; two or three months elapsing before the effects finally disappeared."

A similar kind of eruption is sometimes occasioned by solutions of bichromate of potash; as, also, by certain poisonous shrubs, such as the rhus toxicodendron, or poison-oak of America, and the deadly nightshade, probably the atropa belladonna of the same country.

In our collection, this subject is not represented as I could have wished, either by drawings or models, but simply by two socks, Nos. 130 and 131. The former is a silk sock of a bright scarlet colour, probably dyed with the "coralline" pigment. A pair of these socks, worn for a day, gave rise to an intense inflammation of the feet, *dermatitis anilina*,

which lasted for a fortnight, and was repeated at intervals of a few weeks for many months. The general features of the inflammation were—heat, swelling, itching, tingling, and large blisters, while an eczematous irritation was propagated, more or less extensively, to the whole body of the patient, especially to the hands.

No. 131 is another sock of a mixed fabric, the colour being in a measure lost by washing; the socks were originally striped with purple, and the impression of the purple stripes was made visible on the legs of the patient in the form of dark red bands that resembled burns. As in the preceding instance, the *dermatitis anilina* was severe and recurrent and repeated for many months, and at its height gave rise to swelling of the inguinal glands.

The remaining example of traumatic affection is an instance of inflammation of the lymphatic vessels, or lymphadenitis of the arm. The model No. 132 exhibits a blotch of eruption on the metacarpus of the thumb and first metacarpal space, and a line of inflamed tubercles (*adenomata*) extending from this blotch upwards to the axilla. The blotch of cutaneous disease is partly covered by a thin squamous crust and partly denuded, and the tubercles are ten in number. The tubercle nearest the inflamed blotch is in a state of ulceration, as also are the second and the third. The fourth has the appearance of containing pus, and is reaching maturity; the next three tubercles have the dull purplish hue of decline, and are squamous at the summit, while the three remaining are in a progressive stage. In the intervals of the tubercles, particularly on the upper arm, may also be seen a pale ridge indicating a line of deep-seated inflammation and thickening following the course of the lymphatic vessels. A glance at the model is sufficient to show the progress and effects of an inflammation of the absorbents. This disease is termed by Bazin “*hydrose adenite*

traumatique," indicating the presence of tumours of adenoid tissue, or *adenomata*, in the course of lymphatic vessels.

The history of the case has unfortunately been omitted, and we are left to the conclusion that the inflammation of the lymphatic vessels was the consequence of the eczematous inflammation of the integument of the hand.

SPECIFIC INFLAMMATION.

EXANTHEMATOUS AFFECTIONS.

From inflammation of the skin taking its rise in common causes and pursuing a common course, we turn our attention in the next place to a dermatitis which derives its origin from a specific cause—a zymotic poison, and which presents phenomena of a special and peculiar kind. These poisons are the agents of the three important exanthematous eruptions, rubeola, scarlatina, and small-pox; also of the eruption of syphilis of the skin; and as there seems good reason to believe, of that other form of pox the elephantiasis Græcorum.

Of the nature of the poisons themselves we have very scanty information, our acquaintance with them being limited to the fact that some are both infectious and contagious and others only contagious.

Our knowledge of these poisons becomes more certain after they have been introduced into the system; then we have reason to believe that they enter the blood; that in the blood they set up a process of zymosis or fermentation, and that the poisonous ferment is conveyed by the blood to every part of the economy. The action of the poison on the skin is manifested by a state of hyperæmia which varies in tint of colour; a dull

crimson in rubeola; scarlet in scarlatina and variola; a dull red or yellowish red in syphilis, and a sombre purple red in elephantiasis. A slight form of exanthema resembling rubeola, but having peculiarities of its own, is termed, from the special nature of its colour, roseola, and false measles; and roseola, while it is often difficult of distinction from ordinary rubeola, is sometimes developed under the influence of the poison of syphilis, and then is denominated syphilitic roseola.

If we compare the pathological appearances of the exanthemata with diseases of common inflammation of the skin, we find the differentiation of follicle and interfollicular portion equally distinct in both. The hyperæmiation of rubeola appears in the form of puncta; not unfrequently the puncta are elevated into minute papulæ; and, moreover, there is the manifestation of obedience to the law of nerve-distribution in the skin.

No. 133 is a water-colour study of the exanthem of measles showing colour and manner of evolution; on one portion of the skin the fleckered or dappled appearance of the eruption is seen; in another, as on the face, the patches are more decided in colour and larger and interspersed with papulæ, while on the arm the papulæ are also evident, interspersed amongst the fleckered spots.

The colour of the exanthem is carefully imitated in this drawing; in some parts the dotted or punctated character, due to congestion of follicles, is very apparent; in other spots the follicles are elevated into distinct papulæ; and everywhere, namely, where there are puncta and where there are papulæ, there is a tendency to groupage into small clusters or islets, which we commonly denominate corymbi. In reality, in these few points the diagnosis of rubeola is established so far as observation of the skin is concerned; they are, — *first*, the crimson colour; *secondly*, the punctated rash; and *thirdly*, the dis-

position of the puncta in small clusters or little islets, which have been described as crescentic, but which, in reality, are obscurely oval in their figure. There may be reasons for believing a case of this kind not to be rubeola; under such circumstances it must be roseola or false measles; or, if the age of the patient and other concurrent evidence tend to lead the mind in a different direction, the case may be a syphilitic roseola. The exanthem must be one or other of these affections, the pathological appearance of the skin being the same in all.

Another inspection of this drawing shows that the papulæ are more prominent on the face than elsewhere, while the clustering is less distinct. The same explanation is applicable to both these conditions; the papulæ represent a greater degree of congestion than the puncta, and a greater degree of congestion obliterates the distinction of clusters by creating a general uniformity of redness of the whole surface. And this general blending of the distinctive appearances is still further effected by swelling, which is the consequence of congestion. It is a well-established fact with regard to the exanthemata that the hyperæmia is always greatest on those parts of the skin which are habitually exposed to the air, such as the face and the hands, because, in those regions the cutaneous circulation is habitually the greatest.

Scarlatina is distinguished from rubeola not only by the difference of tint of colour, but also, and chiefly, by the more general hyperæmia of the skin, and the consequent presence of swelling. Nevertheless, puncta may always be observed in scarlatina, and sometimes a certain amount of papulation. But in variola the papulation is more manifest than in either of the preceding exanthemata; and the sense of granulation or grittiness of the skin communicated to the touch at an early stage of the rash is regarded as one of the pathognomonic characters of small-pox.

The congestion of the skin occurring in the exanthemata is very naturally accompanied with serious disturbance of function of the integument, possibly with arrest of nutrition, and one of the consequences of arrest of nutrition is the loosening of the horny epidermis from the rete mucosum and its subsequent separation by desquamation. Desquamation occurs in all the exanthemata, but is most strikingly exhibited in scarlatina, wherein it is not uncommon to find the whole of the cuticle of the hands and feet, including the nails, separated in a single piece, like the exuviated epidermis of the serpent.

The preparations Nos. 134 and 135 are specimens of this kind, representing the chirotheca and podotheca cast off from the hands and feet at the breaking up of the fever of scarlatina.

Variola, or small-pox, introduces us to a new subject of interest; the folliculitis is more aggravated than in rubeola and scarlatina. At a very early period of the exanthem a sensation of granulation of the skin is communicated to the touch, the evidence of incipient papulation; then follow decided papulæ; and the papulæ by progressive development are converted, firstly, into vesicles and then into pustules. Employing the language of a bygone period of dermatology, we might say that the exanthem of variola is in the first instance an erythema, then a papula, next a vesicle, then a pustule, and subsequently an ulcer; but pathologically we regard these changes as the evidence of the progressive development of the eruption. And we should be perfectly prepared, as the consequence of an arrest of growth, to find the development arrested at either of these progressive points, as actually takes place in those forms of aborted eruption which are termed varioloid.

There is much interest in observing the progressive advance in development of the variolous pock—at first a mere point represented by the congested aperture of a follicle; then a conical papule, the follicle

being still further congested ; thirdly, a vesicle caused by effusion of liquor sanguinis around the papule, the centre of the vesicle being as it were pinned down by its connection with the epithelial sheath of the follicle. Effusion now becomes more abundant and active, the vesicle swells by its circumference, while it is depressed, or as it is technically termed *umbilicated*, in the centre, and so the pathognomonic vesicle of variola and vaccinia is produced. Later on the cavity of the vesicle is invaded by pus, the pus accumulates and breaks through the central point of adhesion of the vesicle, and so the arched dome of the mature small-pox pustule is produced. Subsequently the pustule and pus both dry up into an amber-coloured scab, which remains for some days embedded in the skin ; and when, at length, the scab falls off, a permanent cicatrix is left behind.

At present, unfortunately, we have no illustration of ordinary small-pox in our collection, but the specimens Nos. 136 and 137 are casts in wax and plaster of the breast of an infant, showing a varioloid eruption which appeared soon after vaccination, and was the cause of the child's death. The eruption commenced on the head and face, and thence extended to the neck and chest. On the chest there were more than one hundred vesicles, presenting the characteristic flattened and umbilicated figure of the variolous pock. They were for the most part discrete, but every here and there were confluent clusters of three, four, or five. On the neck the vesicles were confluent ; the intervals of skin between the large patches were vividly red, and the whole surface poured out an abundant ichorous discharge.

Upon the table we have several preparations taken from the Hunterian collection, and showing the pathology of small-pox and its destructive action on the skin.

Small-pox, as is well known, is not limited to man, and in the present group we find specimens, num-

bered 138 to 144, showing the form taken by small-pox in the sheep, *variola ovina*. The pock is a broad papule or flattened tubercle, on the summit of which a flattened vesicle containing lymph is developed. The pocks range in diameter from one line and a half to half an inch with a prominence of one line; they are for the most part discrete, but some few are confluent.

SYPHILOUS AFFECTIONS.

Unlike the poison of the exanthematous fevers, that of syphilis is transmitted only by personal contact, by contagion alone, and it reaches the individual sometimes in the form of a secretion from a syphilitic sore, sometimes through the normal secretions of the infected person, and sometimes through the agency of the blood itself. The first of these modes of transmission may be illustrated by the production of a primary sore, the second by the development of syphilitic constitutional symptoms without local sore, and the third by the conveyance of the poison to the fœtus in utero, the mother to all appearance being unaffected.

Like other zymotic poisons, the virus of syphilis has its period of latency or incubation, during which it is operating certain changes at the point of its entrance, as in the instance of primary syphilis; or it is slowly inducing zymosis in the blood, and preparing for constitutional phenomena which will pervade the whole of the organism. From seven to ten days of apparent safety may pass away before the local effects of the poison shall be manifested in the part which has been exposed to contagion, and nearly the same number of weeks before the zymosis is so far completed as to excite those constitutional changes in the system which are commonly denominated secondary syphilis.

The constitutional or secondary symptoms are in

point of fact an exanthematous fever accompanied with general febrile disturbance of the economy, neuralgic pains, sore throat, and an eruption or exanthema of the skin. But here a great contrast makes itself manifest between the phenomena of the true exanthematous fevers and syphilis. The former are regular in their progress, limited as to time, and not prone to recurrence; whereas the syphilitic fever is subject to irregularity in a variety of ways; it is uncertain in its symptoms, uncertain in duration, and liable to repetition, not only at the expiration of several weeks but at successive intervals for many months and sometimes years.

It is also deserving of note that dermatosyphilis or syphilis of the skin, feels its way gradually in the integument. At a first attack it makes its appearance as an *erythema*; in a second attack a process of growth is added to the erythema, and it becomes a prominence of lesser or greater dimensions, a *papula*, in fact, slight in actual prominence, but ranging in breadth from a line to an inch, and even more; while in a third or later attack it will be *ulcerous*. Thus the syphilitic eruptions of the skin naturally arrange themselves into three classes, namely, *erythematous*, *papulous*, and *ulcerous*; and these, together with a degenerative form, are the *four* heads under which I have grouped the illustrations of dermatosyphilis contained in the College collection, amounting at present to one hundred and forty in number.

ERYTHEMATOUS syphilis, that is dermatosyphilis characterized by redness alone or redness with desquamation of the cuticle, is sometimes *general* in its eruption, and sometimes *limited* to a portion of the body. As an accompaniment of the syphilitic fever and a true secondary eruption, it is usually general, and presents itself either as a corymbose exanthem resembling measles, or in small round spots or maculæ from two to six lines in diameter.

Nos. 156 and 157 are drawings illustrating the corymbous or measly form of dermato-syphilis, an exanthem which is also known by the name of *roseola syphilitica*. I have already had occasion to observe that the redness of syphilitic eruptions is dull, in the acute forms approaching to crimson, and in this respect, as well as in the corymbous and generally punctated appearance of the rash, closely resembles measles, for which it might easily be mistaken. The type of form of an eruption, the pattern, if I might so call it, does not reside in the disease but in the organ in which it is developed, and in this particular the corymbous exanthem of common roseola, rubeola, and syphilitic roseola is identical for all; and it becomes necessary to explore in a different field of inquiry to determine whether such an eruption belong to one or other of these complaints. In a practical point of view the diagnosis is of considerable importance, no less, in fact, than the decision as to whether we shall prescribe for a consequence of deranged digestion and assimilation, for an infectious fever, or for syphilis. From the same train of reasoning we deduce the conclusion that it is inexpedient to confuse together two such very dissimilar affections as roseola and syphilis by calling them by the same name; and I venture to suggest that the term dermato-syphilis erythematosus, or erythematous syphilis of the skin, is both more correct and more in accordance with scientific knowledge and truth.

The drawing No. 155 represents a syphilitic eruption of the arm, exhibiting circular spots on which the cuticle is in a state of desquamation or has already desquamated, leaving a smooth red surface surrounded by an abrupt margin of broken cuticle. The spots range in dimensions between one line and a half and eight lines, the greater number measuring a quarter of an inch. They present the characteristic "*copper-colour*" of syphilis, and some, which

have declined, have left behind them brownish stains.

In reference to this case it may be mentioned that syphilis is essentially a disease of weakened nutrition and sanguification. It would seem as if the blood-corpuscles underwent decomposition, and that their colouring principle became diffused through the liquor sanguinis in an altered form, and was thence spread through the tissues. In this manner I should endeavour to explain the phenomena of altered pigmentation, which is so remarkable in syphilis, the muddy and sallow complexion of the skin, and that peculiar tint of colour of the eruption which is generally known as "copper-colour;" copper-colour being in reality a *reddish yellow-brown*. The copper-colour of syphilis is not always apparent, and therefore it does not do to rely very strongly on it as a feature of diagnosis. It is often not appreciable in the earliest eruption, but is better marked at later periods of the disease when the syphilitic cachexia is more confirmed; and is sometimes very characteristic. Another feature of the eruption evinced by this case, is the brown pigmentary stain which remains fixed in the skin for a considerable time after the hyperæmic spots have faded away. And a further evidence of disturbed nutrition of the skin is indicated by arrest of formation of the horny epidermis and its consequent exfoliation and desquamation from the inflamed parts. Sometimes the desquamation is general, but in the case No. 155 it was confined to the orbicular spots.

An interesting example of erythematous syphilis is shown in drawings 146 and 147, which represent that affection in an infant eleven months old. The disease was first manifested, at the age of six weeks, by excoriations of the mucous membrane of the month, angles of the mouth, nose, and eyelids, by apthæ, hoarseness, and mucous accumulation in the bronchial tubes, trachea, and nares. Three months

after this attack, the eruption made its appearance in the form of small circular spots, which increased quickly in size and became blended into blotches of considerable dimensions, slightly elevated, distinctly circumscribed, and gently rounded at the margin. A few of the original spots remained isolated, and formed circular disks somewhat depressed in the centre; an example of one of these latter spots is seen on the left buttock. The mother of the child was free from any syphilitic symptoms, but had suffered two miscarriages and occasionally from vaginal discharge and sore throat, the latter being attributed to catarrh. She was a healthy-looking young woman of twenty-six, and her husband, to all appearance, equally healthy.

In this illustration we have presented to us a phenomenon which I have already had occasion to note in ordinary erythema, a serpiginous force, a tendency to creep by the circumference into the immediately adjacent tissues, a propagation by contiguity, as shown by the depressed area in the centre of one of the circular spots. And this observation leads us onwards to the specimens numbered 158 to 163, and distinguished as annulate erythematous syphilis or dermatosyphilis erythematosa circinata. In these latter specimens, which, with one exception, are casts in plaster, the serpiginous tendency of the tumid erythematous blotches is strikingly manifested, and the opportunity given to the student of tracing the gradual development of the blotches, the rings, and their borders or limbs.

The circinate form of erythematous syphilis in a retrograde stage, when the prominence of the skin has subsided and only a dull circle of redness remains, is also exhibited in the model, No. 519, and the centrifugal development of the circles is further exhibited by the ring within ring of two of the spots. The model is one of the lower extremity, including the knee and adjoining part of the thigh and leg.

On the thigh are four large erythematous rings, ranging in diameter between one inch and a quarter and nearly three inches, the border of the rings having a breadth of between two and three lines. The two upper rings have met in their growth and become blended, and a similar blending is seen in the ring next in size. The two larger rings also present within their area the trace of a smaller ring, indicating a previous resting-point in their growth. From the absence of any trace of elevation, these rings have received in the Saint-Louis collection the name of "sypilide circinée sous-cutanée."

Erythema is also the form of syphilis which most commonly takes place in the palm of the hand, and is characterized by redness, desquamation, and frequently by chaps or fissures. Judging from the first view of the morbid appearances, the disease might be taken for an eczema. But it generally happens that one hand only is affected, and there is an absence of eczematous history. Moreover, when closely examined, there are none of the vesicular cells of eczema; there is no exudation, consequently there are no exudation-crusts, and the desquamation consists of normal epidermis. Again, there is a clear tendency on the part of the disease to recovery in the centre, and advancing growth towards the border; and a history of many weeks, sometimes months and years, without change. This pathological state of the skin corresponds in appearance with that of the "psoriasis" of Willan and Bateman, and the affection is very commonly denominated "psoriasis sypilitica."

Another element of differential diagnosis between syphilis and other affections of the skin, more especially eczema, is the absence of pruritus. A hand in the pathological state which I have just been describing would, if it were eczema, be intolerable from its itching; whereas, in dermato-syphilis there is none. This symptom, therefore, is very important in the differential diagnosis between dermato-syphilis and

all other diseases of the skin, and very seldom proves delusive.

The drawings 148 and 149 are good illustrations of the kind of syphilis which I have just been describing. The centre of the palm is recovering its normal structure, the rest is roughened by fragmentary desquamation of the cuticle. In some of the grooves of motion, particularly those of flexion of the fingers, are bleeding fissures, and an active state of the disease is visible at the wrist. The left hand was unaffected, but there were present on the penis two orbiculate patches, consisting of a furfuraceous area and prominent desquamating annulus. The patient was 49 years of age; he had never, to his knowledge, had chancre; fourteen years back he suffered under symptoms resembling secondary syphilis, namely, eruption of the skin, sore throat, and neuralgia; the eruption got well in six weeks, but the ulcerated sore throat, with occasional neuralgic pains, lasted for a year. On recovering from these latter symptoms, syphilitic erythema, with desquamation, appeared in the palm of his hands, and annoyed him for six years. Then the hands returned to their healthy state; but a few months later the disease reappeared in the right palm, which it has now occupied for six years. It began as a small desquamating spot, and increased and spread by the circumference until it pervaded the entire surface of the hand.

Nos. 150 and 151 are plaster casts of the hand, showing the same form of disease, the principal pathological features of the affection being desquamation of the cuticle of the palm, a well-defined inflammatory border, and a tendency to recovery of the normal state in the central area.

Nos. 152, 153, and 154 exhibit another example of the diffused form of erythematous syphilis, occupying the sole of the foot; the integument is vividly red, the epidermis in a state of constant desquamation, and the inflamed skin fissured here and there

with deep cracks. The prolonged duration of the disease, namely, ten or twelve years, is also an important pathognomonic character in aid of its diagnosis.

Dermato-syphilis always presents a circumscribed boundary; and a defined border may therefore be looked for as a pathognomonic sign of that disease. In the examples of palmar and plantar syphilis which we have just been examining, the serpiginous growth of the disease and its well-marked border are both conspicuous, as well as a tendency to the subsidence of the morbid process in the centre of the diseased patch. But there is another phenomenon in connection with palmar syphilis which is still more pathognomonic, namely, the circinate growth of the disease which we have already had occasion to observe in Nos. 158 to 163. This circinate growth is shown in specimens 164 to 170, in all of which a slightly elevated and distinctly marked circle is visible. In the centre of the ring the integument has recovered its healthy appearance, and the ring itself is sometimes uniform and sometimes nodulated from elevation of the epidermis; the epidermis being fissured every here and there, and partially separated, showing the deeply red congestion of the skin underneath.

The model No. 550, although named by Bazin "psoriasis palmaris non syphilitique," I nevertheless regard as an example of erythematous or desquamating syphilis of the palm of the hand. The circumscribed boundary of the eruption, its serpiginous growth and the complete restoration of parts of the included area, seem to me to mark it indelibly as one of syphilis.

Thus, in erythematous syphilis we have seen illustrated by the objects before us:—simple hyperæmia in clustered patches, sometimes uniform in tint of colour, and sometimes punctated; hyperæmia in small orbicular spots without elevation; hyperæmia

in slightly prominent spots like erythema papulosum, sometimes blending into irregular blotches, sometimes growing by the circumference and becoming depressed in the centre, and sometimes spreading out into well-defined rings, having a border of greater or less breadth, and a circular area in which the skin is returning to its normal state. Again, we have seen erythematous syphilis of the palm of the hand, sometimes irregular in its figure, and sometimes bordered by a well-marked ring whereon the morbid process is active, while the area of the ring has recovered its healthy aspect. Erythematous syphilis may therefore present itself under three different forms, — fixed, migratory, and circinate, as we have already seen illustrated in common erythema.

PAPULAR SYPHILIS.

Having thus passed in review our illustrations of hyperæmia without prominence or erythematous syphilis, we will now direct our attention to *hyperæmia with prominence*. In simple corymbous hyperæmia consequent on syphilis, we have already noted two shades of redness; for example, a general and apparently superficial blush and a deeper redness occurring in dots, which we know to result from hyperæmia of the follicles; the differentiation between papillary congestion and follicular congestion is thereby made manifest. And if we follow this differentiation a little further we shall find the red dots or puncta gradually lifted up until they give rise to small conical prominences or papulæ. We may sometimes note this process in an ordinary case of syphilitic roseola; in the midst of a cluster of dots there may be one which has grown up to the dimensions of a pimple, and as this kind of growth has taken place in many of the clusters at

the same time, there exist a considerable number of papulæ distributed over the surface of the body; and more in some regions where circumstances favour their growth than in others. As a rule, the first exanthem of the syphilitic fever is simply hyperæmic without further change; the congestion lasts for some days, then gradually subsides and fades away. But a recurrence of the syphilitic fever after a few weeks will always be attended with a prominence of the congested follicles, and the case has become one of a prominent eruption, of papulæ, or papular syphilis, meaning by that term not any difference in the nature of the cause, but simply a difference of manifestation of the disease. Pathologically the first impetus of the fever has produced dilatation of the capillaries, and has left behind it a susceptibility to being acted upon again in a similar manner; while the second impetus not only results in dilatation of the capillaries, but is accompanied with transudation and increase of bulk of the intervascular cell-structures.

The mechanism of the production of a syphilitic papule is therefore very simple, and the mechanism of its growth is merely a continuation of the same process. In every papular eruption of the skin there are always some papulæ which are larger than the rest; and some regions, such as the face, in which the papulæ are larger than elsewhere. A second attack of papular eruption will always be composed of papulæ larger than the first; and so we are led onwards from small prominences scarcely one line in diameter to others measuring more than an inch; the former we term papules, the latter tubercles, although the pathological constitution of the objects is the same, and for want of a more appropriate term, I have thought it desirable to include both under the head of "papular syphilis."

It must not be inferred, however, that nothing is

taught by the size of the prominence; the tubercle means duration, and represents a more chronic character in relation to the disease.

In the College collection the prominent or papular form of syphilitic eruption more than doubles the erythematous form, and nearly doubles the ulcerous form, and is both amply and accurately illustrated; our specimens being 63 in number, and ranging from Nos. 171 to 225, with the addition of eight new models recently arrived from Paris.

Nos. 171 and 172 are casts in plaster and wax of the arm of a young man, a West Indian, 27 years of age. Every follicle is projected outwards so as to form a pimple. The specimen is perfect as an illustration of the papular form of syphilis. In consideration of the multitudinous aggregation of the papulæ, the case seems deserving of the subjective title of "conferta," *dermato-syphilis papulosa conferta*; and a closer inspection informs us that the average size of the papulæ is one line, while a few scattered at intervals among the rest are more prominent and larger and measure two lines in breadth.

Contrasted with this crowded arrangement of the papulæ, the specimens Nos. 173, 174, and 175 exhibit a disseminated or scattered form of the papular eruption. The papulæ are isolated, and in No. 173 they range in diameter between one line and nearly three, that is, a quarter of an inch, the majority of the papulæ being intermediate in size between those extremes. This model also brings to our notice the fact of the existence of desquamation in papular syphilis as well as in erythematous syphilis, and the process by which it is accomplished. When the papula reaches maturity, the cuticle which covers it cracks around its base, and gradually separates and breaks away from the circumference to the centre. Hence, a very common appearance of the papules when in a state of desquamation, is a loose edge of cuticle resembling a frill, which encircles the base,

and a thin lamina on the summit, which is the remnant of the desquamation.

No. 175 is a lithographic drawing which exhibits the papular form of syphilis on the face; the papulæ, always large in that region, are remarkable for their prominence. Some have undergone suppuration at the summit, and some are surmounted by an exudation-crust of yellow or greyish colour, and thick and spongy in texture.

Nos. 176 and 177 are drawings of the back of the same patient, a young woman, aged 20, showing the variety of forms which the same eruption may assume in different regions of the body. Here, for example, may be seen, isolated and disseminated papulæ, papulæ in clusters on an erythematous base, and broad, flat, orbicular papules isolated and disseminated, for which the term tubercle seems more appropriate than papule. These tubercles are slightly convex on the surface, and "lentiform" in figure, their greatest breadth being four lines, that is, the third part of an inch.

The models Nos. 520 to 523 represent in a very striking manner the papular form of dermato-syphilis, the manner of its distribution, the modifications which it undergoes in relation to region, and the variation in figure of the eruption itself.

In No. 520, representing the breast and shoulder of a woman, there may be seen small and large papulæ, the former disseminated or aggregated and crowded together in clusters, the latter, five in number, of the kind denominated lentiform tubercles, flat, isolated, and scattered, and ranging in size between a quarter and half an inch in diameter. Another phenomenon is seen in this case, which is somewhat peculiar, namely, the aggregation of the minor papulæ around the scattered flat tubercles, as though the larger masses acted the part of foci of development to the smaller papulæ. One other point deserving attention in this model and illustrating

the follicular origin of the papule, is the appearance of the eruption around the nipple.

In the model No. 521, the back of the same patient, the papulæ are aggregated into three considerable groups around an equal number of large lenticular tubercles, and disseminated over the rest of the surface. The aggregated papulæ are in a state of desquamation, and some of the scattered papulæ are surmounted by vesicular points.

Thus it will be seen, that quite at the outset of our study of the papular eruption of syphilis, we encounter secondary changes of structure that establish a link with other subdivisions of the disease. In the erythematous form, we made acquaintance with slight general prominence, the follicular prominence of papulæ, and a vestige of the exudative process which constitutes the true significance of desquamation. So, in syphilis of the papular kind, we find among the earliest of the secondary pathological processes, desquamation, vesiculation, and pustulation, besides the accumulation of exudation-crusts. In the West Indian patient, No. 171, showing an aggregated papular eruption, many of the papulæ were converted into purulent vesicles previously to their subsidence. In No. 521, a certain number of the scattered papulæ became vesicular in their retrograde process, and in No. 175, several of the papulæ were surmounted with thick and spongy exudation-crusts.

No. 549 is a model of the breast of a woman exhibiting a papular syphilitic eruption; but as sometimes happens in papular syphilis, the congested vessels of the papulæ have relieved themselves by exudation, and are many of them surmounted by a vesicle; hence, this case is named by Guibout, vesicular-syphilis, "syphilide vésiculeuse;" the distinction implied by this term, however, is unnecessary, and otherwise objectionable, as leading to the accumulation of names. The model affords a good

example of a scattered or disseminated eruption, while every here and there a tendency to a corymbose type may be observed. Pathologically, the case must be regarded as a sporadic folliculitis developed in a syphilitic constitution, the vesication of the summits of the papules being merely an accidental complication.

Models 522, 523, 524, and 178, all illustrate papular syphilis more or less encrusted, the incrustation in the three former approaching more nearly to a loose and spongy cuticlè like that of lepra, than to an exudation-crust composed of dried exudative matter. No. 522 is a model of the face of a woman showing a papular form of syphilis remarkable for the production of an epidermic crust, hence the name assigned to it by Guibout, namely, "*syphilide squameuse végétante*." The eruption is disseminated most abundantly on the forehead and around the mouth; and in the latter situation has a tendency to become confluent in lines and small groups. The papulæ range in size from one to two lines in breadth. A large papule near the outer canthus of the left eye shows the colour of the eruption when the cuticular crust is removed, and in the centre of the forehead may be seen the yellowish-red or copper-coloured stains which remain in the skin after the subsidence of the papulæ.

No. 523 represents the back of the same patient. The papulæ are larger than on the face, and illustrate the terms disseminated, aggregated, corymbose, and coherent. Some of the papulæ are coherent, not in lines only, but in rings. The eruption is at its height, but here and there may be seen an incipient papule, antecedent to the formation of the crust, and, elsewhere, may be discovered retrograde pimples, as on the neck, which have left behind them the characteristic stain of syphilis. The removal of a crust on the right shoulder has brought into view a large tubercular

papule, showing its size, colour, and unbroken surface.

No. 524, a model of the face, exhibits an eruption of syphilitic papulæ of large size clustered around the eyelids, nose, and mouth, and extending from the forehead to the chin. A medium size of the papule is a quarter of an inch in diameter, while some reach the breadth of half an inch, their elevation being about two lines; and the greater part are encrusted with a thick, white, spongy crust of epidermis. In consideration of these characters, Hardy styles the case "*syphilide papulo-squameuse.*" In the centre of the forehead, just above the root of the nose, the papulæ form a rugged, confluent mass, in the hollows of which are seen evidences of exudation and ulceration; a discharge is also seen issuing from the nostrils, suggesting a similar state of the mucous membrane. The cluster of large and prominent papulæ upon the chin and at the angles of the mouth is very striking; and on the cheeks papulæ may be seen in the retrograde stage, subsiding in prominence, and leaving behind them copper-coloured stains. The small papules on the chin, and those on the eyelids, with thin, white encrusted heads, may be compared with No. 205.

Model 178 is another example of an eruption of small and large papulæ, thrown out upon the face and neck; on the forehead they are large and discrete, and on the neck they are small and confluent; around the apertures of the mouth and nares, and extending to below the chin, the integument is inflamed and thickened by infiltration, and the surface nodulated with papular and tubercular prominences, while at the openings of the nares and in the grooves at the base of the alæ nasi, are seen brownish-yellow incrustations, denoting the presence of exudation.

In my previous observations I have endeavoured to show that, while giving rise to specific results,

the manifestation or development of syphilis in the skin was governed by the special organization of the integument, and variously modified by its vital dynamics; that sometimes it was a simple hyperæmia or congestion, sometimes a state of hypertrophy, sometimes an ulceration from asthenia, and sometimes a positive disorganization resulting in loss of substance.

Pursuing my descriptive course, I have now to call attention to the specimens Nos. 179 to 184, illustrating that broad and flat papule, or rather tubercle, which I have named "lentiform." It is orbicular in shape, very slightly elevated, of a deep red colour, and prone to desquamation, the edge of cuticle around its base forming a kind of frill, and a remnant of cuticle still maintaining its hold upon the summit. The casts in plaster and wax, Nos. 179 to 182, are good examples of this kind of lentiform tubercle; their largest size on the face is a quarter of an inch, while on the back there is one which measures half an inch in diameter.

Of a similar nature are the lentiform tubercles exhibited in model 183. They are interspersed with various gradations of the syphilitic eruption; in one place erythematous blotches, next puncta, and then papulæ of different size. A new feature of the disease, however, is observable in this case, namely, the ulceration of the tubercles; and the model must be taken as an illustration of the transition of cutaneous syphilis from the papular or tubercular to the ulcerous form. The ulceration is superficial, and the ulcer of a yellowish tinge of colour and surrounded by a prominent border.

Model 184 exhibits an eruption of flat syphilitic tubercles, associated with venous congestion of the integument, probably resulting from phlebitis or obstruction of the deep venous circulation of the limb. One of the tubercles measures upwards of an inch in diameter, and two of smaller dimensions

have vesicated and burst, the rupture of the cuticle bringing into view a deep-red, pulpy surface, partially encrusted around its circumference with dried blood.

The flat tubercles which we have just been observing, ulcerating superficially on the surface, also lead us on to a correct appreciation of similar tubercles thrown up in the midst of a moist, exuding surface, as in the vicinity of the pudendum and anus, and themselves giving issue to a mucopurulent excretion, the so-called "mucous tubercles."

Model No. 185 represents the male pudendal region with a scattered eruption of these mucous tubercles, ranging in size between that of small papulæ and larger ones measuring half an inch in diameter, the latter showing signs of superficial ulceration.

If for a moment we go back to Nos. 171 and 173, the beginning of this series of papular eruptions, and compare those papules with the large, flat, and lentiform eruption of Specimens 179 to 184, and the large and prominent outgrowths of 185; we are almost led to believe in some difference of their nature, and it requires that we should have pursued the series with attention to be assured that the difference is nothing more than one of bulk; in the one instance, a single follicle being the seat of morbid growth, and in the other, a circular portion of the skin involving, with the follicles, also the interfollicular structures. In a similar manner we fall in very naturally with the change of term of tubercle for papule, while we admit, at the same time, that, in pathological nature, there can really be no difference between them.

These considerations likewise draw our attention to the modifications of the cutaneous eruption which results from mode of manifestation and growth. The papular, like the erythematous eruption, sometimes assumes the clustered or corymbose form and

sometimes the serpiginous form, growing by the circumference and fading in the centre, and in that manner giving rise to rings. We have already seen in several of the specimens which we have examined, that in a general papular eruption some of the papulæ will exceed others in magnitude, and now we may also learn that while the eruption is aggregated in one part of the body, as in No. 171, the same eruption may be segregated into clusters or groups in another, a state which we term corymbous. The plaster casts Nos. 171 and 200 are both taken from the same patient, the latter exhibiting the state of the abdomen on which the papulæ are developed in well-defined clusters or corymbi. In the same manner also it is not infrequent to find the eruption presenting a generally aggregate form on the trunk of the body, and a corymbous form on the limbs.

Specimens Nos. 197 and 198 are drawings of the corymbous form of the papular rash on the abdomen. No. 199 is a plaster cast of the abdomen on which the same form of eruption may be conveniently studied, and the drawing 201 and plaster cast 202 exhibit a corresponding eruption on the arm.

Next in order to these specimens which illustrate so well an affection of the skin in subdivisive compartments or districts giving rise to clustered groups of eruption or corymbi, we have a series of twenty-three specimens which exhibit the centrifugal or serpiginous manner of development or circinate form of the affection; and in these circinate or annulate forms we find two varieties of manifestation which call for our notice. In one of them, as shown in specimens Nos. 203 to 213, the papulæ are arranged in a concatenated circle around a central area, and not unfrequently a papule or the vestige of a papule may be seen in the centre of the area; while in the other, as seen in specimens

No. 215 to 225, the annulus is formed by the peripheral growth of a disk, and the subsidence of the central area to the level of the adjacent skin, leaving a circular limb of greater or less breadth.

In the drawings Nos. 203 and 204, representing the concatenated form of circinate papular syphilis, the diameter of the rings is half an inch, the limb of the ring being narrow and prominent, and the area yellowish and faded, while in the centre of the area of some of the rings may be seen a congested follicle, representing the starting-point of the inflammation and growth of the ring.

In the model No. 205, representing the face and neck of a young woman of twenty, the rings are somewhat larger than in the former specimens, ranging between a quarter and half an inch in diameter; they are collected most abundantly on the forehead, around the nares and mouth, and upon the chin, and in the latter situation are confluent in their arrangement; while on the rest of the face there will be observed a few isolated papulæ and several erythematous blotches.

No. 206 is a model of the back, on which the eruption is coarser in its character than on the face; the papulæ are of large size, measuring two lines in diameter; the rings have an average breadth of half an inch; here and there two or more rings have met in their growth, and become blended by their circumference, while on the shoulder is a broad blotch composed of numerous circles confusedly blended together. The papulæ are in a state of desquamation, and numerous isolated papulæ are scattered over the surface. This model is further illustrated by the plaster cast No. 207, on which is seen a considerable patch, made up of a confused assemblage of concatenate rings, the rings having a maximum diameter of seven lines and the papulæ of two lines. On other parts of the surface are seen smaller

patches similarly constituted, and separate isolated rings.

Drawings 208 and 209, and plaster casts 210 to 213, are illustrations of a similar form of papular syphilis of the circinate type; and all are from the same patient, a man fifty years of age. On the face, and particularly on the neck, may be seen concatenate rings of a circular or oval figure interspersed with isolated papulæ, while around the eyes and upon the forehead the papulæ have earned for themselves in consequence of their size the denomination of tubercles, and on the forehead have become blended together in a massive tuberosity blotch that calls to mind the aspect of tubercular elephantiasis. In the plaster cast of the back of the shoulder, No. 210, the papulæ are seen in three several forms, isolated, clustered, and circinate; the average bulk of the papulæ is two lines, and the diameter of the rings about an inch. The two following casts, representing the arm and face, exhibit similar forms, and the cast No. 213 the massive tuberosity of the forehead.

From the concatenated circle to the discoid circle the transition is very obvious; the papule or tubercle is endowed with the property of serpiginous migration, and creeps into the surrounding integument, while the point first affected subsides to the normal state of the skin. The difference between the concatenate circle and the discoid circle would seem to be that in the one the *tendency* is conveyed from the centre to the circumference, while in the other the pathological process itself is in such wise propagated. Nevertheless, in the discoidal rings as well as in the papular rings it is far from rare to find the central prominence still remaining and surrounded at a short interval by the circinate limb.

The plaster casts Nos. 215, 216, and 217 are taken from the same patient, a gentleman aged

about twenty. On the hip are seen two discoidal rings measuring one inch and a quarter and one inch and a half in diameter; in the centre of the area of both rings a certain degree of prominence is observable, particularly in the smaller ring. On the thigh there are several circular disks ranging in size between half an inch and one inch and a half in diameter; the smaller disks have a flattened area, but the larger are a little prominent in the centre. No. 217 is a cast of the penis, on which are two circular disks, the one measuring three quarters of an inch, the other one inch; the smaller of the two is perfectly flat, while the larger presents in the centre a tubercular prominence.

Nos. 218 to 223 are casts in wax and plaster of the neck and leg of a young woman, aged 20, who became the subject of a syphilitic eruption a month after a miscarriage. On the side of the neck are seen several annular disks interspersed with isolated papulæ. The disks range in size between two lines and ten lines in diameter; some have a tubercular centre, while the largest is a simple ring with flattened area and bordered by a narrow limb only one line in breadth. On the nape of the neck the preponderating character of the eruption is tubercular; one tubercle is flat and measures a quarter of an inch in diameter, and near it is an annular disk with a prominent centre. On the shin are several flattened tubercles, and one of larger dimensions which has taken on a suppurative and ulcerative action.

No. 551 is another example of prominent or protuberant syphilis manifesting itself as a broad flat tubercle, a kind of tubercular plate, upwards of an inch in diameter. Bazin terms it "plaques syphilitiques," associating it in name with the well-known "plaques muqueuses" which are met with near apertures lined by mucous membrane, or in grooves in which moisture is apt to collect. The

principal plate bears evidence of peripheral growth ; it has a prominent margin, is papulated, and in a state of desquamation ; the central boss or protuberance is also papulated and squamous, while the intermediate area is depressed and wrinkled. Near the principal plate is another of smaller dimensions, and apparently presenting a retrograde stage.

The drawing of a female head, No. 225, shows a solitary circle on the side of the face, but of a later period than the preceding examples, and at a retrograde stage of its course ; while a very interesting example of retrograde syphilis is seen in the model 525. The eruption has been of the papular or tubercular centrifugal kind, as may be seen along the margin of the blotches, which are bounded by a border consisting of arcs of circles of about three quarters of an inch in diameter. Two isolated circular spots situated on the shoulder, show the size of separate tubercles, and the border raised along one margin of their periphery manifests the tendency to a partial centrifugal growth. This tubercular constitution of the eruption has produced a gyrated mottling on the back of the shoulder, while on the neck and front of the chest the eruption is in a state of superficial desquamation. The model illustrates very successfully the muddy complexion of the skin in syphilis, the brown pigmented stain which follows the copper-coloured period, and the superficial desquamation which very commonly ensues ; the desquamation having its principal seat at the summit of the follicles.

In successive attacks of syphilis the disease would seem to acquire an increased impetus, or possibly, and with greater likelihood, the tissues lose their capability of resistance—the result is pathologically the same ; a *first* attack, or, as we may term it, period, induces hyperæmia alone, which we designate erythema ; the *second* attack or period is papulous ; the *third* period is suppurative and ulcerous ; and

beyond this is a fourth period, one of disorganization or degeneration and consequent destruction. In our present review of the dermato-syphilitic affections I have had the opportunity of noticing the occasional intrusion of papulation into the period of erythema, and also the occasional transition of papulation into exudation and ulceration. We have an inkling of a similar notion of succession in the adoption of the terms secondary and tertiary. But, as at present employed, these terms are simply expressive, in the most vague manner, of a period of time, and any distinction between them must be altogether arbitrary. After the lapse of ten years from the moment of inoculation we may safely declare an eruption to be tertiary, but it is impossible to say where secondary ends and tertiary begins. While, on the other hand, if we adopt the progressive development of the eruption of the skin as our landmark, we shall have a more certain and a more pathological basis for our classification of the periods of the disease. It is for this reason that I wish to urge the acceptance of the four divisions to which I have just alluded, and according to which I have grouped the one hundred and forty illustrations of syphilis included in our collection; they are, the erythematous group and the papulous group which we have already examined, and the ulcerative and degenerative group which remain for our investigation.

I have never seen any form of syphilitic eruption which I should consider entitled to the designation of vesicular and pustular; and both of these states when they occur may be more accurately treated of as papulæ vesicating at the summit, or as papulæ or papular tubercles suppurating at the summit, and, in fact, representing the commencement of the ulcerative process and the ulcerative period of the disease. I may remark with regard to the specimens of papular syphilis Nos. 171 and 200, that

many of the papulæ were surmounted by purulent vesicles, the contents of which subsequently dried up into thin crusts. Then we find further examples of purulent vesicles in No. 175; in No. 521, where they have desiccated into prominent crusts; and in several more besides.

The specimens Nos. 226 and 227 present the nearest approach to pustular eruption that I have hitherto met with, but I cannot recognize the case as one representing a genuine pustule, but rather as a papule passing rapidly into a state of suppuration and ulceration. The distribution of the eruption in this case has a corymbose character, and the eruption itself presents the successive stages of—papule with pustular summit, fully developed pustule, and deeply embedded crust concealing an ulcerous surface.

The model No. 228 is another illustration of a similar nature, but evincing a more chronic character of disease; and the eruption, moreover, is in the stage of decline. A number of retrograde papules are scattered over the surface, as well as numerous thick, brownish-yellow scabs; the largest of the scabs measuring nearly half an inch in diameter.

These suppurative forms of small dimensions prepare us for a state of ulceration which is remarkable for the production of an abundance of viscous, puriform exudation, and crusts of considerable thickness resulting from the desiccation of that exudation. This form of eruption is commonly denominated *rupia*, from the Greek word *ρουπιος*, signifying dirt or filth; but, pathologically, *rupia* is simply an ulcer or state of ulceration attended with a puriform secretion, and the desiccation of that secretion into a crust. I should wish to limit the use of the word *rupia* to syphilitic sores in particular, inasmuch as considerable practical inconvenience arises from the confusion of syphilis with other affections of a more innocent description.

We have already seen the mode of beginning of a rupia:—At first there is some degree of hyperæmia; then follows the thickening belonging to a flat tubercle; upon the latter the cuticle is raised into a vesicle of greater or less extent filled with puriform contents; the puriform matter dries up into a crust, while new matter of a similar kind is formed beneath it and around its circumference, and thus by centrifugal progression, such as we have already seen in operation in the discoidal circinate tubercles, the crust attains considerable dimensions; and if the crust be removed, we shall find beneath it the active cause of the secretion and crust,—namely, ulceration, sometimes so superficial as to heal up without leaving a mark behind, and sometimes of considerable depth and followed by a permanent cicatrix. The crust, therefore, varies in figure and dimensions, being sometimes flat and rugged and showing on the surface traces of its mode of growth, and at other times conical and comparable in shape to a limpet-shell; the former, the flat and rugged crust, having been likened to an oyster-shell.

The model No. 229 brings to our notice a good example of rupia, the encrusted ulcerations are situated on the hip and upper part of the thigh, and range in size between half an inch and one inch and a half. The crusts have a dark-brown colour, are embossed in the centre and raised towards the border, and the skin surrounding them is, for a short distance, red and tumid. Sometimes a rupture occurs at the extreme edge of the crust, and then an ulcerated fissure is brought into view, from which an oozing of sanguineous pus makes its issue.

No. 552 is an excellent example of an ulcerous and encrusted form of syphilis. The model represents the side of the face of a woman, thirty-six years of age. The main ulcer with its protecting

crust is situated immediately in front of the ear, and measures nearly two inches in its longest diameter, while two small encrusted ulcers are met with, the one on the forehead, the other in the concha of the ear. The large crust has a dark brown colour, is marked on the surface by concentric ridges, resulting from the peripheral and centrifugal growth of the ulcer, and is bounded by an inflamed and prominent border.

Lailier tells us, with regard to this case, that the first noticeable illness of the patient began with sore throat; there was considerable disorganization of the walls of the fauces from ulceration, and the right eye had become affected with conjunctivitis, keratitis, and iritis. Moreover, that the ulcer was five months in attaining its present size.

The next model, No. 553, being that of the leg, also represents a case of rupia, and is peculiarly interesting from affording a demonstration of the mode of development and growth of the ulcers which constitute the disease. On this model there are four large crusts, eight of smaller size, and four vesico-pustules which mark the incipient stage of the affection; and the order of growth of the eruption is shown to be:—*first*, a vesico-pustule with contents more or less aqueous or purulent, surrounded by a blush of redness in the form of a halo; *secondly*, a crust produced by the desiccation of the fluid contents of the vesico-pustule, and also surrounded by a red areola, the latter in a state of desquamation; *thirdly*, the conversion of the red areola into an annular vesico-pustule, and the formation of another red and desquamating areola around its boundary; and, *fourthly*, the desiccation of the fluid exudation of the annular vesico-pustule, its conversion into crust and incorporation with the original crust. The red areola always retains its place, is always more or less red, always more or less indurated by infiltration, and occasionally some-

what tumid; desquamating on the surface, and undergoing deeply those changes which centrally convert it into a vesicle, and peripherally throw out a reddened halo which marks the extension of the disease into the surrounding skin. The perfected crusts exhibit on the surface a series of excentric ridges as evidence of their progressive centrifugal growth, and the presence of a ridge more prominent than the rest, of a more prominent centre, or of a more prominent boundary, becomes the index or evidence of a more active exudation, and consequently of a more active inflammation at a corresponding period of its existence. When the crust is removed, it is found to cover in and conceal a superficial ulcer of similar dimensions with itself.

Lailier terms this case *ecthyma rupiforme*, for the reason that if the pustules existed alone they would correspond with *ecthyma*; but as they do not exist alone, but are shown by the model to be merely the incipient stage of an ulcerative syphilis, the simple designation *rupia* appears to me to be preferable. The patient was a man, 29 years of age; four years back he had chancre, followed by mucous tubercles in the mouth and fauces. The *rupia* was recent, only fourteen days old, and was excited by a bruise on the knee, appearing first at the seat of the bruise, and subsequently becoming disseminated.

The drawings Nos. 230 and 231, together with the plaster cast No. 232, illustrate the prominent form of *rupia*, *rupia prominens*; the peculiar configuration of the crust being due to a greater relative proportion of the secretion and more measured onward progress by the circumference. In *rupia prominens* the contents of the first developed vesicle are lifted up by the formation beneath and around them of a stratum of a similar material, and every stratum as soon as it has acquired a moderate degree of inspissation is lifted upwards by another stratum

produced beneath it until the crust assumes the figure of a regular cone marked by concentric lines and concentric ridges. In the figure, the pustular vesicles are seen in progressive stages of growth, and around the fully formed crusts there is a blush of redness and a loosened state of the epidermis, and if the crusts were forcibly removed we should find underneath a superficial ulcer. The conical figure of the crust is also in some measure dependent on the region of the body attacked; on the limbs of this patient the crusts were flat—of the oyster-shell kind, as compared with the limpet-shell,—and one situated on the thigh measured two inches in diameter.

The specimens Nos. 233 to 238 illustrate another case of *rupia prominens*; the eruption appearing in isolated pustules during a period of six months. The most characteristic crust was developed upon the eyebrow, carrying upwards in its growth the hairs of that region. An inflamed raw edge is seen at its base; the crust itself being preserved in preparation No. 236. On the arm of the same patient was the ulcer delineated in the drawing No. 233, and represented on the wax and plaster casts Nos. 237 and 238. The ulcer is of the asthenic kind, devoid of pus, uneven of surface, and moistened by a colourless fluid; the edges are pale, thin, and somewhat livid, and exteriorly to the edge is a narrow halo of hyperæmia.

Model No. 239 is another example of syphilitic *rupia* affecting the leg; the surface is studded with superficial ulcers united by an erythematous base and intermingled with pustules, cicatrices, and purple stains. The pustules are covered with thick black crusts, and the ulcers, which range in size between half an inch and an inch and a half, are circular in figure, smooth and uneven in surface, and surrounded by a prominent black border, with an inflamed areola beyond.

No. 240 is a water-colour drawing illustrating a local form of rupia or chronic ulcerative syphilis; the disease occupies the side of the knee, and is partly cicatricial and partly ulcerative, the ulcers being coated over with thick black crusts, from beneath one of which is seen exuding a drop of sanguineous fluid. The cicatricial portion of the patch is depressed into shallow pits corresponding with pre-existing ulcers, is extensively foveolated, and discoloured by the deep red-brown or copper colour, characteristic of syphilis. The pigmented cicatrices of two healed ulcers are seen a little lower down the leg.

A not uncommon seat of ulcerative syphilis is shown in the model No. 243; the disease is apt to occur in the walls of the matrix of the nail, commonly its posterior wall, and frequently extends to the rest of the matrix. The end of the finger is swollen, the nail in course of separation, and the general aspect of the disease extremely repulsive.

No. 555 also illustrates ulcerative syphilis of the end of the finger, or as it is now commonly called *dactylitis syphilitica*. The last joint of the finger is tumid and highly inflamed, and the matrix of the nail is involved in the disease.

Another interesting illustration of syphilis is shown in the photograph No. 241. The cachexia of syphilis is very decided, it destroys the corpuscles of the blood, subsequently converted into pigment; it induces emaciation and gradually exhausts the powers of the constitution. The photograph before us is an example of this kind, and highly characteristic of the syphilitic cachexia, the emaciated limb, the brown pigmentation, and the deeper shades of pigment which mark the situation of cicatrices.

Let us for a few moments review our progress along the ranks of pustular and ulcerative syphilis, beginning with the well-defined looking pustules of Nos. 226, 227, and 228; then proceeding onwards

to the encrusted ulcers of rupia, sometimes marked by flat rugous crusts, and sometimes by conical crusts; next the local modifications of the disease, the ulceration of the matrices of the nails, then the cicatrices, and lastly the evidences of cachexia manifested by deep pigmentation of the skin and emaciation.

These are examples of the *fixed* forms of syphilis, but now we must retrace our steps to pursue the development of certain migrating or serpiginous forms, such as have been already illustrated in nearly all the groups of cutaneous disease which we have heretofore examined, and which process is so strongly impressed on the character of cutaneous syphilis. Indeed, I may refer to this feature of the affection as one of the *laws* of cutaneous disease; and syphilitic inflammation is simply obeying that law in sometimes maintaining its position fixed and immovable, and sometimes diverging into a migratory mode of growth.

In two of the preceding specimens, Nos. 203 and 205, we have seen papular syphilis assuming a circinate form and giving rise to rings which are dispersed over the face or congregated in considerable number around the apertures of that region. The Model No. 244 might almost be taken as an advanced stage or degree of a similar case, in which the papular ring has passed into the state of ulceration and the ulcerated rings have become surmounted with amber-coloured crusts. The average size of the rings is half an inch in breadth, but few are perfectly complete, being ordinarily broken at some point of their circumference. I must also draw attention in this case to the presence of a tubercle at the commissure of the lips, which has become converted into a mucous tubercle by the moisture of the region resulting from the issue of saliva from the mouth.

In the Model No. 245, representing the arm, we

have an expansion of the principle of growth initiated in the preceding model, and in consequence of the larger size of the crusts and more decided presence of ulceration, we may very justly give it the name of *rupia circinata*. The eruption consists of rings having an average diameter of a little over one inch; some are isolated and some confluent, the latter constituting blotches of considerable extent. The limb or border of the circle is surmounted with crusts, generally six or eight in number, resulting from the desiccation of vesicles and their contents, and the area of the rings is of a purple red colour, varied now and then by the white and livid hues of a cicatrix. Here and there, where a crust has been rubbed off, the moist surface of a superficial ulcer is exposed to view, and on the hand will be found a well-marked illustration of the brown, red, and livid stain so commonly left upon the skin by *rupia*. The large compound blotches afford ample evidence of their original constitution of confluent rings, the circumference is formed of arcs of circles, and broken rings may be traced within the area, the crusts occupying parts of such broken rings. The model evinces in its emaciation and in the pigmentary discolouration of the skin, strong evidences of cachexia, which we may presume to be syphilitic cachexia. The history of the patient is remarkable; he was thirty-two years of age, the primary syphilitic sore continued for a period of two months, was accompanied with swelling of the inguinal glands, and was healed by local applications alone without internal medicine of any kind. Seven months after the cure of the primary disease the present eruption made its appearance by slow degrees, first attacking the arms and then extending to other parts of the body, having been six months in progress at the time of making the model. At the latter period he had also, ulceration of the fauces, pains in the head, cough, loss of

appetite, and was much reduced by debility. We have no history here of complication by constitutional treatment, mercurial or otherwise, and no regular order or succession of cutaneous manifestations.

Equally interesting and very similar to the former case is the Model 526, which exhibits several large map-like blotches distributed over the side of the trunk. The blotches are serpiginous in growth and ulcerous at the border, the area being studded over with ulcerating tubercles and ulcerating surfaces encrusted with a dark amber-coloured scab. They are composed of rings which have grown by the circumference until they have become united and blended together, the peripheral margin still continuing its growth, and central fragments of the rings retaining their place as separate tubercles. The progress of the eruption may be traced out upon the model from mere hyperæmic spots without elevation, such as are seen on the hip, to large ulcerated tubercles, a quarter or half an inch in diameter; then onwards to small unbroken rings; next to broken rings; and then to arcs of larger and larger circles. The contrast in colour between the sound and morbid skin is one of the features of diagnosis of the disease, as also are the sharply defined boundary of the eruption with its dull red margin, and the dull crimson and purplish hue of the included area. Every tubercle within the area may be seen to be part of a retrograde ring; while some of the tubercles in common with the skin of the area itself, are in a state of desquamation.

Where all is chronic, it is difficult to draw the line between the chronic and the more chronic; but such a distinction is forced upon our attention when pursuing the progressive development of syphilis of the skin. That which peculiarly designates a recent form of the disease is its general eruption like an

exanthem, while the most distant period of all is indicated by its limited and almost solitary character, and the local nature of its seat. I have left behind and undescribed, in the papular group, a series of nine specimens which are of the more chronic character to which I refer, and which I will now bring under your notice.

The drawing 194 represents a large papular blotch of eruption on the shoulder; near it is a second and smaller blotch, and between the two are several isolated papules. The border of the blotch is papulated, and the individual papulæ as well as those around the circumference of the blotch are covered with a thick epidermic scale. Now, the history of this patient is as follows:—She was married at the age of twenty-three; within the first year she gave birth to a healthy child; and, two years later, she had a miscarriage, consequent, no doubt, upon syphilis. But not until four years after this miscarriage was there any symptom in herself which could be ascribed to syphilis. Then, a blotch of eruption similar to that in the drawing made its appearance on the sacrum and subsequently went away without treatment. After another interval of four years the present blotches showed themselves on her shoulder, and had been six months in existence when the drawing was made. She has had no other symptom of syphilis, and is now thirty-three years of age; nevertheless, we have good reason for believing that she has been for seven years in a state of syphilisation. The form of eruption in this case is that which might be denominated by the followers of Willan *psoriasis syphilitica*.

A somewhat similar illustration is seen in the plaster cast No. 195, which is that of the hip of a young man aged 26. The physical signs of the eruption are:—A large blotch nearly six inches in diameter presenting the ordinary lesions of a centri-

fugal syphilis, namely, papulæ in different stages within its area, together with an uneven and interrupted border composed of segments of papular rings surmounted by epidermic concretions. The patient had three such blotches on his body, one on the opposite hip, and one on the arm; the eruption having been in existence for seven months. Otherwise he was a healthy young man employed in the Fire Brigade, and formerly in the navy. At the age of twenty-one he had a chancre and bubo, both of which got well without other treatment than rest and low diet; and no syphilitic symptoms of any kind were evinced until five years later, when the blotches now under consideration made their appearance, and have occupied their present position without change for seven months. He never experienced any form of general eruption of the skin, never had sore throat, and never neuralgia.

We may also take under consideration in this place the plaster cast No. 196, which represents a large elliptically figured blotch situated across the upper part of the buttocks, and manifesting signs of having crept slowly on by the circumference until it attained its present dimensions. The area of the blotch is rugged and wrinkled, and marked in several places by deep pits; the active elements of the disease, the papules or tubercles, fifty or sixty in number, are to be found chiefly near the circumference, where they may be seen singly and in clusters, the latter being sometimes circular and sometimes linear, in groups of from three to twelve. The diameter of the tubercles averages a quarter of an inch, and each is surmounted by a thin epidermic scale. The patient was a naval officer forty years of age, and besides this larger blotch he had two others on the face, one composed of six or eight tubercles on the forehead, and a cluster of three or four on the side of the cheek. The blotches had existed for seven years when the cast was taken;

during the first four of these years the tubercles were frequently in a state of superficial ulceration, but for the latter three years ulceration had ceased. The period of inoculation dated back to eighteen years previously to the eruption of the skin at which time he had chancre with bubo; but during the interval there was no affection whatever of the skin, although for three or four years immediately succeeding the sore he was troubled with frequent sore throat.

Chronic syphilis often presents itself with indications of considerable obscurity. Let me instance a typical case of common occurrence, wherein the eruption manifests the papular or tubercular form, but is even more isolated and local than the preceding. The plaster cast No. 188 represents the lower part of the face of a hospital nurse. The whole of her visible syphilitic disease is comprehended in the small tubercular blotch situated on the chin, and two small papular tubercles on the edge of the lower lip. To the syphilologist there is a specific character in the appearance of these tubercles. The dermatologist rejects them by elimination from every other group of cutaneous disease save this. They had been in existence for many months; but a short course of iodide of potassium dissolved them like magic, and the skin returned to its normal state.

No. 186 is a water-colour drawing of papules of an equally prolonged period. In No. 187 the papules bear a similar character, in duration they extended to seven years; whilst in the wax and plaster casts, Nos. 189 and 190, the papulæ and nodulation of the thickened skin are of a chronic nature, and along the border of the ala of the nose there is evidence of ulceration.

But, at this point, in the domain of chronic syphilis, a new observation is forced upon our attention. These large papulæ sometimes heal of them-

selves, or more correctly, some subside and disappear, while others are in course of development and maturation. But the peculiarity of their mode of healing is, that although there has never been any breach of their surface, they leave behind them a permanent cicatrix and sometimes a deep indentation or pitted hollow in the skin. A good illustration of this peculiar phenomenon is seen in the wax and plaster casts, Nos. 191 and 192; and in the water-colour drawing No. 193. In case 191 the eruption had been slowly travelling across the face for years, from the cheek in front of the ear to the nose, and finished by enveloping the nose. Whereas, at no time did there exist more than half a dozen tubercles at the same moment in the state of maturity. The case No. 193 presents evidence of a somewhat similar character, for although the entire face is deformed with pits, there are only a few of the papules in the active state.

Again, transferring our investigation from the papular period as represented by the drawing No. 194, to the ulcerative period, we find in the drawings Nos. 246 and 247 a state of disease which is little more than an advanced stage of the papulous affection; there is the same circinate figure, the same serpiginous centrifugal growth, but the limb of the circle and the individual tubercles included within it are coated over, not merely by a product of abnormal nutrition, a scale of epidermis, but by a crust composed of dried secretion exuded by an ulcerated surface. The patient was a healthy-looking man, aged 42 years; for twenty years of his life he had been suffering under venereal disease, and during the latter sixteen years from constitutional syphilis. For the first eight years of the constitutional affection the eruption was non-elevated; during the next six years it was elevated and squamous; and for the last two years, serpiginous and ulcerous.

The ulceration in the preceding case was of the superficial kind; but occasionally we meet with examples in which it is deep, and sometimes of a phagedænic character. An instance of deep ser-piginous ulceration partly covered by a thick brown crust and partly denuded is seen in drawings Nos. 248 and 249. Near the upper part of the cheek is a pustule indicating the formation of a new ulcer, and on the rest of the lip and on the nose a deeply pitted cicatrix marking the foregone progress of the disease. The cicatrix is most striking on the right side of the nose and adjoining part of the face, as shown in Nos. 250 and 251. The patient was twenty-five years of age; and all this mischief had occurred within two years, the ulceration on the right cheek having existed for six months.

In No. 556 we have presented to us the operations of chronic ulcerative syphilis in the face; the disease commenced apparently on the ridge of the nose, and has thence travelled centrifugally and slowly to the rest of that organ, and also to the left cheek. On the ridge of the nose is an extensive cicatrix. The left ala nasi is partly destroyed, and a sinking in of the ridge of the nose affords evidence of internal mischief. The existing activity of the disease is manifested at the margins of the cicatrix by thick crusts resulting from exudation, and the ulcerative process having ceased at several points, the crusts are here and there isolated. Hillairet designates this case as one of "lupus," but as in England we reserve that term for scrofulous ulceration, I have preferred to speak of it as chronic ulcerative syphilis, for of its syphilitic character there cannot be a doubt.

Somewhat similar in its character to the preceding, but less actively ulcerating, of longer duration, and occurring in an older person, namely, of fifty-two years of age, is the form of disease illustrated by the model No. 252. In this model we find on the right

cheek a papule similar to that with which the disease commenced; there are crusts on the ala nasi, deep cicatricial pits on various parts of the face, and a general hypertrophic swelling of the upper lip.

Another case of a similar character is represented by the drawings Nos. 253 and 254. The latter of the two drawings exhibits the great improvement which had taken place in the disease after a treatment of nineteen days, by a modification of the Zittmann cure. In the first drawing there is much inflammation, swelling, and the evidence of ulceration; while in the latter the greater part of these symptoms have disappeared.

The drawing No. 255 illustrates the serious damage capable of being effected by syphilis. The patient was a lady thirty-five years of age and married fourteen years. Three years after marriage she became the victim of syphilis; and three years back the syphilis assumed the form of abscess and ulceration. Unlike the examples of centrifugal serpiginous growth, which heretofore we have had the opportunity of investigating, the ulceration in the present instance is unilateral, spreading by a crescentic curve on one side and healing on the other, so as to give rise to a form of sore, which is denominated "horse-shoe ulcer," and is very characteristic of constitutional syphilis. The distortion of the hand and fingers in this case from contraction of tendons and atrophy, is very remarkable.

More than a century and a half ago, namely, in the winter of 1709 and early part of the year 1710, there occurred at Stavanger and Egersund, on the coast of Norway, a violent outbreak of a disease, so repulsive in its nature and terrible in its results that it received from the people the name of radesyge, or bad disorder. This disease was confounded with another disease common to that country, namely, elephantiasis, and although the weight of evidence was in favour of regarding it as a manifes-

tation of syphilis, yet the two diseases have remained more or less confused ever since.

Now, it so happens that about twenty years ago, I had the pleasure of demonstrating to my friend and distinguished colleague, Dr. Boeck, of Christiania, the typical forms of the cutaneous diseases of this country; and amongst others of the casts which I submitted to his inspection was the plaster cast No. 196, to which he immediately applied the term *radesyge*. He moreover promised me that, on his return to Christiania, he would put in practice my method of making casts in plaster of rare forms of cutaneous disease, and would send me a specimen of his work.

Not very long after this interview, I was gratified by receiving from him the plaster cast No. 256, as an example of the *radesyge* of Norway; and an inspection of this cast tells a simple and indisputable tale of chronic syphilis. The seat of the disease is the back of the thigh; the surface is pitted and uneven from the ravages of ulceration; here and there are deep circular ulcers with thick vertical edges, and interspersed among the rest the somewhat remarkable and pathognomonic horse-shoe ulcers. No one familiar with the action of syphilis on the skin can hesitate for a moment in recognizing this well-authenticated instance of *radesyge* as a chronic ulcerative syphilis; as an example, in fact, of that advanced period of syphilis which is commonly denominated "tertiary syphilis."

It would be interesting to pursue the investigation of syphilis into other organs and tissues besides the skin, but the limits of my subject prevent me from entering upon them. I am, however, unwilling to pass over without some observations, the very interesting series of models representing syphilis of the tongue, ranging from No. 257 to 261, and also No. 558; not merely on account of their own intrinsic beauty, which is great, but also on account

of the illustration which they afford of the affection of a tissue directly allied with the skin, namely, the mucous membrane.

The model No. 257 exhibits evidence of cutaneous syphilis by the erythematous spots dispersed on the cheeks as well as by the papulæ apparent at the commissures of the mouth. The surface of the tongue towards its tip presents the appearance of tubercular thickening; while one of the tubercular prominences has undergone ulceration at the summit, and the ulcer, of circular figure, is surrounded by a thickened border.

The next model, No. 258, represents the progress of an ulceration which has lasted between three and four years. The disease began as a papule, which soon became ulcerated, while at present the tongue is swollen, nodulated, indented along the edges by the teeth, and over the anterior half of its length spotted with superficial ulcers, red in the centre and of a greenish-yellow tint towards their margin; the ulcers communicate with each other here and there, and so constitute a kind of network, the meshes of the network being represented either by sound mucous membrane, or by a reddened surface and a superficial abrasion.

I have more than once had occasion to refer to a remarkable change which takes place in the pathological nature of syphilis in a very advanced stage of its existence, commencing at what is termed the tertiary period, and thence extending to its latest term of duration. This change consists in an alteration and degeneration of the structures which it affects, and results in the conversion of the normal tissues into a substance *sui generis* of inferior organization and feeble vitality; a substance in which the normal constituents of the part are altogether lost, which undergoes spontaneous softening, and is susceptible of being removed by solution and internal absorption, leaving a hollow space where it

had previously existed. I might illustrate this change by reference to the phenomena of ulceration in which the affected tissues are dissolved and removed, and the operation is perceived on the surface in the form of a sore. In the degenerated structure which I am now endeavouring to describe a similar, probably an identical change, takes place, which is visible to the eye only by its results. The cutaneous tubercles of tertiary syphilis often disappear, but they inevitably leave behind them a permanent cicatrix; and yet there has been no lesion of the implicated surface, no solution of its continuity. The tissues composing the tubercle have gradually softened, and are then removed by absorption from within.

Now, in very advanced periods of syphilis, this degenerative change is the one usually followed by the disease; portions of natural structure become the seat of the morbid process; the affected part is swollen and constitutes a tumour of greater or lesser dimensions, and such a tumour may be termed a syphiloma. This kind of tumour is also known by other names, such as *gummatum* or gummated tumour. The gummated condition generally precedes ulceration in tertiary syphilis, and syphilitic thickenings and induration at advanced periods of the disease are generally due to a similar change.

The model No. 259 presents us with an example of syphilitic tumour or syphiloma of the tongue, and on the most prominent part of the swelling there is seen a syphilitic ulceration; another superficial ulceration appearing at the edge of the organ.

In No. 260 a gummated tumour or syphiloma has taken possession of one lobe of the tongue, the affected lobe being increased in bulk, both in length and thickness. The tongue is red, its surface altered in appearance, and superficially ulcerated at the posterior part. Other evidence of syphilis is observable in the papular eruption scattered over the face.

When these syphilomata become absorbed, they leave behind them hollows on the surface of the organ in which they were situated, and the parts affected have the appearance of being in a state of atrophy. Or, such an appearance may be produced as is shown in No. 261, wherein the surface is broken up into deep grooves, the borders of the grooves being tumid and prominent, but the mucous membrane unbroken.

No. 558 is another example of the tumor gummatous; but, in addition to this, we have presented to view a swollen and uneven organ indented along the edge, in parts aphthous, in others marked by superficial ulceration and cicatrices, and towards the root by a deeply-fissured ulcer. Further evidences of syphilis may likewise be detected at the commissures of the mouth where there exist redness and thickening, and on the cheeks, where we perceive a few scattered papulæ.

Other forms or types of syphilis of the tongue are seen in the drawings Nos. 263 and 264. In the former of these the character of the lesion is an oblong or polygonal patch of a deeply-red colour, and denuded of epithelium. Several such patches are seen on the surface of the organ; they are smooth in appearance, slightly prominent, and hard to the touch, from infiltration of their tissue. The drawing No. 264 illustrates a more chronic period of the disease, in which the surface is glazed, denuded of papillæ, and seamed with deep grooves, the borders of the tongue being nodulated and uneven.

It may be admitted as a generally recognized truism that no tissue and no organ of the body is safe from the invasion of syphilis; but this aphorism strikes us with additional force when we are led to discover syphilosis even in the substance of the hair. The drawing No. 266 represents a state of trichosyphilis, or syphilosis of the hair, which formed the subject of a paper presented by me to the Medico-

Chirurgical Society in the year 1867. The hairs, normally of a red colour, were swollen from point to point, causing a varicose appearance, the varicose portions being black in colour and brittle, sometimes breaking through in the course of combing, and sometimes splitting longitudinally. Under the microscope the hair was found to consist of medulla and cuticle, the fibrous layer being absent or so far attenuated as to be scarcely appreciable. The actual pathological state of the diseased portions of the hair was an arrest of development at the cell-stage, an accumulation of pigment, and probably a hyperplasia of the cell-structure. The patient, aged 26, lost his hair after syphilis, and when reproduced the hair of the beard exhibited the characters already described.

In making a general survey of syphilis in reference to the manifestation of its operations in the cutaneous tissues, we perceive that the pathological processes involved in these operations are of the simplest kind, and are governed and controlled by the structure and organization of the skin itself. Thus, in the *first* place, there is hyperæmia alone; *secondly*, there is hyperæmia with hypertrophy, constituting the papular form of manifestation of the disease; *thirdly*, there is hyperæmia with hypertrophy and ulceration; and *fourthly*, there is hyperæmia with hypertrophy and degeneration of substance.

Moreover, as the "fons et origo" of these successive phenomena, we recognize a specific poison which is present in the blood, which, by a process of zymosis, accumulates in the blood, and which, by its peculiar action on the tissues, occasions the development of constitutional syphilis, and gives rise to those pathological processes in the skin which we have just been considering.

In concluding my remarks on constitutional syphilis and the manifestation of syphilis by the integument, I must not omit to call attention to two

beautiful models of primary syphilis recently added to our collection, and numbered 557 and 554.

No. 557 is a model of the pudendum of a young girl, exhibiting a large indurated circular ulcer or chancre situated on the left nympha. The ulcer is deeply excavated, and nearly three-quarters of an inch in diameter; the margin is red and angry, the base smooth and buff-coloured, and both nymphæ are considerably swollen.

No. 554 is a model of the face of an adult female, bearing on the cheek and near the commissure of the mouth a large ulcer, similar in appearance to that seen in the former model. The ulcer is oval in figure, and measures nearly an inch in longest diameter; it is elevated from thickening of its base; has a smooth buff-coloured area or floor, and is bordered by a prominent margin or rim. Some redness around it is probably due to applications which have been used in its treatment; and it is termed by Guibout, under whose care the patient was admitted, "indurated chancre." The cheek on the affected side is swollen, and there is some enlargement below the jaw suggesting the inference of swelling of the lymphatic glands.

We have next to turn our attention to the consideration of constitutional syphilis in a therapeutical point of view; and regarding it as taking its origin in a virus capable of setting up a zymotic process in the organism, our first efforts must be directed to the elimination of the specific poison from the blood, and the restoration of the tissues to their normal and healthful condition. It may be stated as a general axiom that all eliminating means are useful in syphilis, and that the use of eliminants should be furthered by all our resources for the restoration and renovation of the tissues and for the support of tissues injured and enfeebled by the operations of a debilitating cause.

Consequently, if elimination and restoration be our sole aim,—the great principle to be kept in view—it follows that the expedients to that end, namely, our pharmaceutical and therapeutical means, must be very numerous, and an explanation is thereby afforded of the abundant variety of methods of treatment, which from time to time have been proposed and warmly advocated by their supporters, for the treatment of syphilis. Nevertheless, if we were to analyze these various methods in detail we should discover that the principle is the same in all, and that each and every successful treatment may be resolved into the two processes represented by the words, *elimination* and *restoration*.

A famous method of treatment, once in great favour, consisted of Epsom salts, milk diet, and clinical decubitus. Another method of treatment, still in vogue in Germany, and sometimes applied very successfully in our own country, is the “Zittmann cure,” a combination of sweating, purging, and starving, also supplemented by clinical decubitus. One of the most successful cures that ever came under my notice, the case represented in drawings Nos. 253 and 254, was effected in the course of a few weeks, principally by infusion of elder-flowers and jalap, with low diet.

It is satisfactory to know that the methods of treatment of syphilis are various and numerous, as their abundance increases our resources, and enables us to modify our plan to suit the particular circumstances of the case. We are by no means warranted in concluding that one method of treatment is wrong and another is right, or that the plan which we ourselves adopt is necessarily the best. No doubt that plan is above all others the best which conforms most completely to the medical axiom, “*tuto, cito, et jucunde.*”

Amongst our remedies for the treatment of syphilis there are *two* which have stood the test of time, and

that still more formidable test, use and abuse, and which, nevertheless, still continue to occupy a first place in general estimation. I need hardly say that the remedies to which I allude are mercury and iodine, the latter in the form of iodide of potassium. Mercury does us good service, and is our best friend in the beginning and towards the end of syphilis; while in the intermediate period, that of the so-called secondary syphilis, iodide of potassium takes the prominent place, and mercury falls into the second rank.

Except in the case of the hydrargyrophobic, usage has determined that we should administer blue pill in primary syphilis, and the iodide of potassium at every period of secondary syphilis; while for the tertiary or chronic period we may have recourse to the iodide of potassium, to the perchloride of mercury, or perchance to one of the iodides of mercury.

When science placed these grand remedies in the hands of the surgeon as the cure, the undoubted and complete cure of syphilis, the gift was associated with the precept that they should be used with judgment and discretion, in a word, they should be used properly. Scarcely a remedy which we possess has been more abused in its administration than mercury; and yet, when cautiously employed, mercury is as safe and as gentle a spirit, as certain and swift a messenger, as its god-reputed namesake; and not less perfect in its peculiar uses is iodide of potassium, although equally demanding judgment and discrimination.

An enumeration of the most reliable of the forms of mercury at present in use for the treatment of syphilis will suggest their respective qualifications; they are, blue pill, the iodide, the subchloride, the perchloride, the cyanuret, mercurial vapour, mercurial ointment, and mercurial liniment. The forms of administration of iodine are less numerous, being almost limited to the iodide of potassium and iodide of iron.

Now, from the numerous examples of syphilis which we have had before us as the groundwork of our present inquiry, I will select a few cases for the purpose of illustrating the method of treatment which I should myself adopt in the treatment of this disease, without presuming to say more than that it is the method which I prefer, and have found in practice generally successful.

Thus, if I take the case of infantile syphilis represented by drawings 146 and 147, it may be premised that infants at the breast are capable of being reached by mercury and iodide of potassium administered to the mother. But if the mother evince no symptoms of syphilis, it may be worthy of question whether we should have recourse to remedies which might possibly disturb the normal secretion of milk. In the latter case, and especially in the instance of an infant nearly twelve months old, we may unhesitatingly have recourse to the perchloride of mercury in doses of a thirtieth of a grain twice in the day, and with the certainty of a beneficial result.

In all the eruptions of a recent period, the so-called secondary syphilis, and also in the ulcerative forms, we shall find our best ally in the iodide of potassium supplemented by a mild mercurial. Thus, in the numerous cases which we have just been examining, with very few exceptions, I should prescribe five grains of the iodide of potassium, twice in the day, and either a Plummer's pill or a pill containing one grain of the protioduret of mercury at bedtime, with a firm conviction that I was doing my very best in the interests of my patient.

In selecting a vehicle for the administration of the iodide of potassium, it is necessary to bear in mind that it always acts best when largely diluted; hence our dose of five grains of that salt should be dissolved in at least half a pint of a bland fluid acceptable to the stomach, such as the compound decoction of sarsaparilla, or the equally diluted compound fluid

extract, or if convenient and practicable, in a pint of the diluting medium. Where sarsaparilla shall be found too costly, other decoctions may be substituted, such as that of saponaria, and very possibly the same end might be attained by simple water.

Now, it is a well-known fact that the iodide of potassium loses its curative power after a certain period of time, and the period at which this failure of power occurs has seemed to me to be about ten days. Hence, at the end of every ten days I arrange that my patient shall increase his dose, in the ratio of half the original dose. Thus, from the first to the tenth day he will take five grains twice in the twenty-four hours, or ten grains daily; from the eleventh to the twentieth day he will take seven grains and a half twice in the day, or fifteen grains daily; and from the twenty-first to the thirtieth day he will take ten grains twice in the day, or twenty grains daily.

In many cases such a course of the iodide of potassium as I am now describing, assisted by the one mild mercurial pill at bedtime, will be sufficient to complete the cure. But where the cure is not accomplished in the space of thirty days, the remedy may be continued, but always in augmenting doses, the periods of augmentation being always the allotted ten days, until the cure is considered perfect, or until symptoms arise which, for the moment, prohibit its further use. When the dose has reached thirty grains in the day it might be desirable to administer it in doses of ten grains three times a day, and so on for doses above that quantity.

In my own practice I very rarely find it necessary to proceed with this treatment beyond thirty or forty days, and this I consider to be *a course* of the iodide of potassium. But I hold it to be an important element of success that there should be no breach in the course, no interval of omission, and that the patient should evince as much truth to himself as he

expects from the hands of his doctor. When the required course is accomplished the remedy should cease; and if at any later time it were called for, it should be pursued in an exactly similar manner.

I not unfrequently meet with patients who have been dallying with the iodide of potassium for some considerable time, who have been taking it irregularly and intermittingly, of course without the slightest advantage to themselves, and to the great perplexity of the prescriber. In all these cases I endeavour to secure a "fallow," a respite from the remedy, of not less than three weeks; and then I begin and pursue the course in the manner already described.

It occasionally happens that our patient is so thoroughly saturated with the iodide of potassium that moderate doses produce no impression on his system; he is callous even to large doses, and it is only under the influence of enormous and therefore injurious doses that any result can be obtained. It is thus that we sometimes hear of cures effected by large and hazardous doses; whereas, were the patient brought into a normal state before the treatment, by abstinence from the remedy, the smaller doses would prove equally efficacious.

Later on, in the most chronic period of the disease, and in those obscure cases of which so many occur to us in practice, the tonic preparation of mercury, the perchloride, comes in again for its share of use. An old-fashioned remedy, called Lignum's drops, has long been in favour with the public for the cure of cutaneous eruptions, and its efficacy would appear to consist in the fact of its being a solution of the perchloride of mercury, so that when it meets with eruptions which are syphilitic it is capable of bringing about some remarkable cures.

Diet must be considered as a part of the constitutional treatment of syphilis, and with reference to diet, those principles which are at present in vogue

in the treatment of fevers and their consequences depending upon a specific poison, would seem to be equally applicable in the instance of syphilis. The purgative treatment, with milk diet, and the Zittmann treatment are alone rendered supportable by clinical decubitus which protects the patient from the exhaustion of muscular exercise. But in the instance of the iodide of potassium and alterative mercurial treatment, where ordinary exercise is permitted and the pursuit of the ordinary avocations of life, the diet should conform with the necessities of the latter condition, and be generous rather than the reverse.

The local treatment of syphilis differs from that of other affections of the skin chiefly in the more frequent recourse to mercurial remedies; and the appeal to these remedies for the exercise of their specific properties. The erythemata and papulæ, both small and large, require no external treatment; they yield as satisfactorily to the constitutional remedies, without other means, as with their united aid. In the ulcerous forms the black wash and yellow wash are both valuable appliances, so likewise is the local use of the iodide of potassium; while in chronic states of the disease, and especially when the affection has reached the degenerative period, inunction with the several ointments of mercury leads to the most successful results.

Mr. President and Gentlemen,—I have now completed my present course of lectures, and I beg of you to accept my sincere thanks for the great attention which you have given to my remarks. You will have perceived that it is my design to furnish a complete description of the objects contained in the dermatological collection of the college museum, and if I shall be honoured by election to this chair for the ensuing year I shall proceed onwards in my undertaking.

I cannot, however, take my leave without being reminded that this is the anniversary of our great and distinguished master, JOHN HUNTER; a man to whose comprehensive mind every work of the Creator was interesting and important, in whose sight nothing was too small for observation, and nothing created in vain, whether the humblest plant or animal, or the highest example of organization. In the field of pathology in all its departments his zeal and faith were equally energetic and pure; whether he were investigating what may be termed the physiology of pathology, as in his grand labours on the blood, on inflammation, on syphilis, or whether he were illustrating morbid changes in the integument. He has left behind him in the splendid museum which will for ever be a chaplet to his fame, many valuable specimens of dermatological interest; and if his spirit be with us and round about us this day, as I doubt not it is, I am fain to hope that he will not look disapprovingly on our present occupation. I believe it to be impossible that he could do so. No whole would seem perfect to him without the perfection of its parts, for the soul of *Hunter* was essentially all-embracing and universal.

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LECTURES ON DERMATOLOGY.

SESSION 1873.

LECTURES ON DERMATOLOGY.



MR. PRESIDENT AND GENTLEMEN,

OF the three previous courses of lectures which I have had the honour to deliver in this college, the first was simply introductory, and the second and third were devoted to *two* important groups of cutaneous diseases, namely, such as are due to common inflammation, and such as are produced by a specific blood poison.

The pathological characters of the *first* of these groups may be stated to be:—hyperæmia, exudation, suppuration, and sometimes mortification, and it was represented by eczema and lichen, erythema and erysipelas, herpes and pemphigus, and furunculus with anthrax.

The pathological characters of the *second* group are:—an eruption thrown out upon the skin under the influence of a constitutional fever, and presenting sometimes hyperæmia alone, sometimes prominence in the shape of pimples and tubercles, sometimes pustules and ulceration, and sometimes disorganization. And the representatives of the group are:—the exanthematous fevers, namely, rubeola, scarlatina, and variola; syphilis, and elephantiasis græcorum.

ELEPHANTIASIS.

Elephantiasis is a disease which was well known in ancient Greece, and to the Greeks we are indebted for the term by which this and many other cuta-

neous diseases were distinguished. The Greeks had under their observation an affection which pervaded the entire economy of the individual like our exanthematous fevers and syphilis, and which was pre-eminently destructive of life. Nothing can be more perfect than the account given of the disease by the immortal Celsus. In his *third book*, chapter xxv., he observes:—"The disease which the Greeks call elephantiasis is almost unknown in Italy, although very common in other regions of the world. The entire body is attacked, even to the bones. The surface of the body is thickly studded with maculæ and tubercles, at first red, then becoming brown; the skin is remarkable for inequalities, in some parts thickened, in others thinner than natural; in some, hard; in others, soft; in many parts rugged and apparently coated with scales; the body is emaciated; the bones, the calves of the legs, and the feet, are swollen. When the disease is of long standing, the fingers and toes become lost in the swelling; feverish symptoms are developed; and the patient sinks overwhelmed with suffering."

Modern experience has verified the remarks of Celsus in every one of these respects, and we are now perfectly familiar with the fact that elephantiasis is "very common in other regions of the world" besides Greece; it is one of the penalties which the British nation pays for its world-wide colonies, and we are made painfully aware of its presence both in the West and in the East Indies; while the researches of our distinguished colleagues, Danielssen and Boeck, have disclosed its very extensive distribution throughout the Scandinavian territories. Canada, South America, Africa, the Islands of the Indian Ocean, China, the Pacific Islands, and, notably, the Polynesian Isles, must also be added to the "other regions of the world" wherein elephantiasis is unfortunately but too well known.

As the term elephantiasis is of Greek origin, and applies to a disease known to and observed by the Greeks, and prevalent even to the present day in the Greek Archipelago, it has been the custom since the revival of learning to designate this disease as the elephantiasis of the Greeks, elephantiasis græcorum. And a celebrated author of the first century, namely Aretæus, quotes, as a reason for this name, the resemblance of the tubercular and discoloured skin to that of the elephant; and also by its vastness and terrible nature, the disease is so much greater than other diseases, as the elephant is bigger than other terrestrial animals.

In the early days to which I am now referring, the word "lepra," expressive of *roughness*, was employed as a generic term to distinguish all cutaneous diseases that were not otherwise characterized by "smoothness," "colour," or "magnitude;" and the Arabian physicians adopted the word lepra as the synonym of the disease named by the Greeks, "elephantiasis;" hence, at the present time, elephantiasis græcorum and lepra arabum must be regarded as synonymous terms, and elephantiasis in some parts of Europe is still spoken of as lepra. It was under the popular name of leprosy that elephantiasis spread as an epidemic throughout England, Wales, Ireland, and Scotland, and had its home in Great Britain for fifteen centuries, and it is also under that name that the Leprosy Committee of the College of Physicians received its appointment at the hands of the British Government in 1862; on the appeal of the Governor of the Windward Islands of the West Indies stationed at Barbados.

I may here mention, by way of parenthesis, that the word elephantiasis has also been given to another and comparatively insignificant affection, of a more restricted character, at the suggestion of the Arabians, and that disease is therefore styled ele-

phantiasis arabum. But the Arabic word for this disease implies simply "elephant leg," and not, as does the Greek word, an affection of the whole body. So that while the Arabians bestow upon the local affection the term elephantiasis, they call the general affection lepra; and, on the other hand, the Greeks apply the term lepra to a local affection, the lepra of Willan and his followers; while in some of the schools of Europe and America the lepra græcorum is named "psoriasis;" so that a tangle is here created which is no doubt puzzling to the student and to those who have not made dermatology a study, but one which, like the famous Gordian knot, might be easily set right by means of an incisive determination to adhere to our ancient landmarks, and, at least, make the endeavour to be right.

The observations of all writers on elephantiasis, and particularly the careful researches of Danielssen and Boeck, have shown to us a close resemblance in principal features between that disease and the exanthematous fevers and syphilis. In the *first* place there is a specific poison; *secondly*, there is a period of incubation; *thirdly*, there is a feverish reaction, accompanied by an exanthem and a concurrent cessation of the fever, with a slow return to the normal state. Then as in syphilis there is periodical repetition of the feverish exacerbation, with its secondary effects on the skin and deeper tissues. In the earliest manifestation of the disease by the skin there is nothing more than a hyperæmia, followed by discoloration; at a more advanced period the exanthema is attended with prominence, giving rise to papules and tubercles; later on there is ulceration, at first superficial and then deep; and finally subcutaneous and deep-seated disorganizations of a destructive kind.

So closely does the eruption on the skin resemble that of syphilis, that one of the first cases I had the opportunity of observing closely, I mistook for

syphilis. And I was not alone in my error, for an able and distinguished physician, who has now been taken from us, Elliotson, made a similar mistake. But the patient, who was himself a physician, and had undergone a prolonged and severe course of mercury and iodide of potassium, soon convinced me, by the narrative of his case, that the disease could not be syphilis; although, with that peculiar and shrinking horror which we generally find associated with elephantiasis, he never hinted at the possibility of leprosy beyond the fact elicited at a later period, that he had been in charge of a leper institution in India.

No wonder therefore that from time to time we find writers anxious to establish a relationship between these two diseases. Albeit, the resemblances between them are confined to the external manifestations of the affection only. Upon a similar basis, if such were permitted, we might find an argument for a relationship between syphilis and the exanthematous fevers; just as at the present moment there are believers in a radical identity between rubeola, scarlatina, and variola, and just as we well know all these affections were originally included under the generic name of variola. It is quite true that the exanthematous fevers, syphilis, and elephantiasis all belong to the same family, all originate in poisons which act upon the blood, and through the blood on the nervous system and the rest of the economy; but starting, all of them, as it were from the same egg, each follows a different course, and arrives at a different conclusion. The exanthematous fevers exhaust the fuel which gives them life rapidly and completely, they run a short and regular course never to be repeated; but in the fact of their non-repetition we may infer that they have made a permanent impression, and left an indelible stamp on the organism. Syphilis is more chronic than the exanthematous fevers; it repeats

its attack again and again; but after a prolonged, although indefinite period of existence, generally leaves the constitution at least comparatively unharmed. While elephantiasis is still more chronic than syphilis, and although, like it, it is periodical in its attacks, it inevitably destroys life at the end of from ten to twenty years.

With these preliminary remarks on the analogies and mode of manifestation of elephantiasis, I will now proceed to exemplify the disease by the illustrations contained in our Museum.

No. 281 is a drawing of the back of a young man aged 21; he was born in Jamaica, and was the son of British parents. The integument is marked by blotches of a brownish-yellow colour, the blotches being studded over with the dilated orifices of sebiferous follicles. At an earlier period these blotches were of a dull red hue, and represented the first, or erythematous stage of the disease, and to this stage the pigmentary alteration had succeeded. The disease first showed itself at the age of 16, and had therefore existed for upwards of four years when the drawing was made. Besides alteration of colour, there was an appearance of coarseness of the skin, reminding us of brawn, or possibly of the rind of an orange; and the dilated openings of the sebiferous ducts exuded a copious oily secretion. There was also apparent, on touching the blotches with the finger, a certain hardness or density, the consequence of infiltration. Moreover, besides colour and density, the sensibility of the skin was deficient; at an earlier period the sensibility had been more acute than natural, but subsequently the sensibility became benumbed.

The drawing before us may therefore be taken as an illustration of the *erythematous*, or rather of the post-erythematous stage of the affection; and the signs of the erythematous period may be thus stated:—At first a simple redness of a dull or purplish hue,

commonly developed in spots ranging from half an inch to an inch in diameter; next a thickening of the skin, beginning in the centre and spreading to the circumference, marking the deeper pathological changes taking place in the integument; then the substitution of a pigmentary discoloration for the previously existing redness, which latter had become more and more dull and purple in hue. Other signs of the disease were the perforated appearance of the skin producing an unwonted degree of coarseness, and associated with this the exudation of a greasy secretion; while at a later period the follicles were often contracted and prominent, resembling cutis anserina, loaded with dry epithelium, the secretion dried up, and the epidermis also dry and in a state of exfoliation. To these, the outward signs of the disease in the skin, there is only to be added to complete the picture, alteration of sensation, one while unusually acute and afterwards benumbed. A sensation of general coldness was the most annoying symptom experienced by this young man.

It is a well-known fact in connection with the exanthemata that they are always more abundantly and more actively developed on the regions of the body exposed to the atmosphere and exterior sources of irritation than they are on the covered parts of the frame. Hence in the present case, although the cutaneous manifestation on the back was simply *erythematous*, on the face the centres of the maculæ, which I have already described as being dense and infiltrated, had become projected into the form of papules and small tubercles, presenting, in fact, the type of tubercular leprosy. We have already seen this same process in operation in syphilis, which I have therefore found might be conveniently classed into erythematous, tuberculous, and ulcerative; and a similar arrangement is applicable to elephantiasis, which in its earliest stage is simply erythematous, in a more advanced stage is tuberculous, and later

still assumes the ulcerative character. In the case at present under consideration, the transition of the one stage into the other is shown by the fact that on the trunk of the body the exanthema is simply erythematous, while on the face it was tubercular. And in a patient at present under my observation, while the tubercular manifestation of the affection is strongly marked on the face, there is no trace whatever of its presence on the trunk of the body or proximal portions of the limbs.

No. 267 is a photograph which illustrates in a very striking manner the signification of the term "tubercular leprosy." The face is studded with an eruption of small tubercles, which are especially abundant upon the forehead and around the chin; and in the midst of smaller tubercles a few of larger size may be detected. The features of the patient are somewhat tumid; the skin is embrowned by pigment, and the countenance marked by an expression of gloom and despondency. This was not simply apparent, the poor boy was subject to great depression of spirits, and was often found in tears. The disease first showed itself at the age of eleven, and he died at eighteen. His parents were Europeans, his father being a clergyman of the English Church, and he was born at Ceylon, where he no doubt contracted the disease.

There is another feature of the disease visible in this photograph that must not be passed over without mention, and that is the swollen state of the hand. The hands and the feet are always more or less swollen and œdematous in elephantiasis, and there is also apparent, as a characteristic sign of the affection, a hollowness of the first metacarpal space referrible to atrophy of its muscles.

No. 268, the photograph of an English boy, born in Bombay of British parents, illustrates still further all the symptoms to which I have heretofore referred. There is the singularly gloomy countenance; the

deeply pigmented skin; the numerous tubercles dispersed over the face, but most abundant on the forehead and chin; the swollen and œdematous hand, and the hollow metacarpal space. But that which is more conspicuous in this patient than in the former is the corrugated superciliary ridge which gives a lion-like expression to the countenance, and suggested to the ancient Greeks the terms *Leontia* and *Leontiasis*, which are accepted synonyms of the disease. There is also pretty constantly associated with the tubercular growth of the superciliary ridges the loss of eyebrows. In this case also the ears are deformed by tubercles; tubercles are seen on the chest and arms, and a large tubercular mass on the forearm; the wrist is altered in shape by tubercles, and so also are the fingers. The disease is evidently more actively developed in this case than in the former; it had been in existence more than double the period of time, and its entire duration was thirteen years instead of seven. A brother of this lad died of the same disease in India at the age of 23.

No. 269 is another example of tubercular leprosy in a young man 18 years of age. He was born in India like the others, but on the Malabar coast of Hindostan, and was the son of British parents. The photograph represents the state of his face, trunk, and upper extremities five years after the commencement of the disease: the skin discoloured and blotched; features exhibiting a melancholy expression; integument thin and ill-nourished; face deformed with tubercles, which are most abundant on the forehead, and particularly in the line of the superciliary ridges, and are early destructive of the eyebrows; next we find the tubercles clustered around the chin, and then on the ears. A few tubercles are also met with on the cheeks, and some on the neck and arms. The hands are lank and thin, swollen about the wrist, and the first

metacarpal space is hollowed by muscular atrophy. Not unfrequently, as in this case, the fingers are slender and tapering towards the end.

Nos. 270 and 271 are smaller photographs of the three preceding cases, exhibiting the most prominent features of the disease in a more striking manner—for example, the puffed and bloated face and swollen hand of No. 267; the melancholy expression, heavy, prominent, and hairless eyebrows, elongated ears, attenuated arms, and swollen hands of No. 268; and the considerable deformity of face from numerous tubercles, the emaciation, and deep metacarpal hollows of No. 269.

The four cases already described are those of young men ranging in age between 16 and 24; all of them the sons of British parents; all born in our colonies, one in the West, and three in the East Indies; two of the number sent, apparently in good health, but actually with the seeds of the disease in their blood, to this country, for their education, and two for medical treatment. The age at which the disease made its appearance in these poor boys was respectively—7, 11, 13, and 16 years; and of this small number two are dead at the age of 18 and 20; in the former, a boy of sensitive organization, after seven years' duration, and in the other, a boy of duller character, after thirteen years. The last of these boys, moreover, had a brother who suffered from a similar disease, and died at the age of 23. The places of birth in these four cases were—Jamaica, Bombay, Malabar coast, and Ceylon.

I may now direct your attention to another class of cases, namely, that of adults, in whom the disease has appeared at mature age, persons who have resided for some years in the West and East Indies.

No. 272 is the photograph of a gentleman in the Civil Service of Bombay. He went to India at the age of 40, was 60 when this photograph was taken,

and died within two years afterwards. He was so listless in manner that it was difficult to obtain from him any connected history of his ailment. He believed himself to be in perfect health, and applied to me simply for the cure of the small tubercles which were scattered over his face. The tubercles were small, rarely exceeding the size of a split pea, but so numerous as to deform his features; the skin was tawny in colour, and the expression of his countenance dull and sombre. He had no affection of the hands or feet, no pains or loss of muscular power, but there were numerous pigmented blotches of irregular figure scattered over the trunk of his body.

Nos. 275 and 276 are casts in plaster of Paris, of the forehead and ear of a military officer who had served for many years in the West Indies. He was first attacked with elephantiasis when he was 45 years old and died at 63, exhausted by chronic ulceration of the larynx and dysentery; the duration of the disease in this instance being eighteen years. The cast of the forehead shows a succession of tubercles congregated along the line of the eyebrows, from which the hairs were broken off. The integument is thickened and deeply wrinkled, and perforated over the whole surface by the dilated apertures of enlarged follicles. The ear is remarkable for the extreme elongation of its lobe.

It has been stated by authors that the sufferers from elephantiasis, the ancient lepers, were the type of the satyrs of the poets; and this idea was remarkably illustrated by the poor gentleman from whom these casts were taken. He was tall and gaunt in figure, limped with one leg from the presence of an ulcer on the heel; his face was kite-shaped in form, surmounted at the summit by two large tubercles or bosses on the forehead, suggestive of the notion of young horns; the features were coarse and tuberculated; the skin of a deep coppery-

red colour; ears of a similar colour, and strangely elongated; and voice loud and hoarse.

It will be remembered that in an early state of society, lepers were cast forth from towns and cities, without any provision being made either for their abode or sustenance. They were therefore forced to do for themselves the best that they could: they lived in the forests, in holes and caves, but they frequently made themselves remembered by their fellow townsmen, by carrying off supplies of food, and occasionally the female peasants, who were the bearers of those provisions, on their way to the market. These depredations and these acts of violence, gained for them the names of "latrones," robbers and brigands; and their supposed lasciviousness "satyri," or satyrs; while from the latter word are derived the terms "satyria" and "satyriasis," which are synonyms of the disease. It must, however, be remarked that there is no proof of any special lasciviousness of nature about the leper, but, on the contrary, young persons affected with this disease are generally deficient in sexual development and power, and those other changes which ordinarily take place at puberty are retarded. So also, in adults, there is nothing to warrant this kind of accusation which has been so generally levelled against them.

No. 277 is a model of the face of a girl affected with tubercular elephantiasis. She was born on the coast of Africa, at Senegal, her parents being French, and her father the governor of the prison of the place. She was nursed by a negress; first showed symptoms of the disease at the age of eight, and died at 19, the course of the disorder being, therefore, eleven years. The model illustrates very well the gloomy expression of countenance; the discoloured and pigmented skin; the eruption of tubercles most remarkable upon the forehead; the heavy, tuberculated and leonine brow divested of eyebrows;

and the tubercles and elevated blotches of a purple-red hue developed on the rest of the face. Moreover, the nose is flattened and somewhat sunken, possibly from ulceration within the nares. It was remarked with regard to this case, that although the patient was not wanting in intelligence, at the age of seventeen there was no development of mammæ and a general deficiency of sexual development, and no hair upon the pubes, the genital organs resembling those of a child of eight or ten years old.

No. 278 is another model of the face of a young girl affected with tubercular elephantiasis. Compared with the former, the tubercles are smaller and less numerous, but evince a tendency to ulcerate. On the right eyebrow and eyelid, on the nose, and on the upper lip several of the tubercles are surmounted with thick crusts indicating the presence of ulceration; there is likewise ulceration visible along the border of the nares, and the upper lip is swollen; but there is no ulceration of the mucous membrane and periosteum apparent externally.

No. 279 is the hand and part of the forearm; and No. 280 the leg and foot of the same patient. The pigmentary discoloration is obvious in every instance which we have examined; there is a general darkening of the skin and frequently a discoloration in patches, as may be seen on the leg, such discoloration being the vestige of a foregone hyperæmia; and frequently, in the centre of such a patch may be seen, as well as felt, a thickening which a little further growth converts into a prominence or tubercle, such as appears on the back of the hand and forearm, the latter nodulated with small tubercles of a purplish-red colour. We next observe the emaciation of the limbs and the swelling of the hand and of the foot. On the hand, moreover, we are reminded of the exhaustion of nerve-power by the sinking in of the first metacarpal space from

atrophy of its muscles. If the patient were before us, we should have besides a tale of neuralgic suffering, and find certain parts of the skin insensible and benumbed. The fingers are swollen; crusts upon the knuckles betoken the presence of ulceration, and similar crusts around the nails indicate a like ulceration of the unguis walls. Besides these appearances visible on the foot, there is a general exanthema of the leg in the form of dull red maculæ of nearly half an inch in diameter.

No. 274 reminds us of the common occurrence of leprosy in the Chinese territories, and particularly of the tubercular kind. In this photograph the tubercles are seen in abundance on the superciliary ridge, on the cheeks, on the chin, and on the ears.

No. 273 again brings to our notice the frequency of this disease among the natives of the East. The photograph presents us with four examples of elephantiasis, such as it is met with in Syria. The signs of the disease are the same, but the extent to which their development has proceeded is evidently very considerably advanced. In all will be seen the tuberculated and deformed features, the heavy leonine brow divested of hair, the enlarged and nodulated ears, and the swollen hands and feet. But in these figures there is another feature which as yet we have had only slightly represented, namely, ulceration. In the models Nos. 278, 279, and 280, ulceration was manifested by thick exudative crusts. In No. 277 there is evidence of ulceration within the nares and disease of the periosteum and of the bone. While in three of the Syrian photographs may be seen ulceration of tubercles, extensive ulceration of the skin, evidences of ulceration of the mucous membrane of the nose and destruction of bone; and in the case of the hands and feet actual loss by enucleation of entire bones.

In discussing the most obvious of the manifestations of syphilis, I found it convenient to arrange

them under four heads, namely, the erythematous, the hypertrophic, as evidenced by papules and tubercles; the ulcerative, and the degenerative; and these same four heads embrace similar manifestations occurring in elephantiasis. Thus we have seen that the earliest stage of the cutaneous manifestation—and mucous must be included with cutaneous—is hyperæmic or erythematous, with the subsequent pigmentary change. Next follows the hypertrophic process, which gives rise to prominent blotches, to papules and tubercles. To this succeed softening of the tubercles and ulceration, and lastly, comes a process of disorganization and degeneration, which results in the elimination of the flesh in the form of a transparent and viscid discharge and enucleation of the bones divested of their covering tissues.

All these processes are included under the general term of *elephantiasis tuberosa*, or tubercular leprosy, the form of the disease which we have been considering up to this time. But there is another form of the affection, in which the nervous system is principally, if not wholly attacked, and that is named *elephantiasis anæsthetica*. The earliest development of the hyperæmia of the skin is an expression of a vaso-motor paresis, and this earliest exanthem is accompanied with abnormal sensibility to a variable degree. Prickling pains, aching pains, and shooting pains are so many symptoms of a morbid state of the nerves of the part affected. And after the continuance of these pains for a period of time sensation becomes benumbed, and the part is rendered insensible or anæsthetic. And to such a length is the anæsthesia carried in certain cases, that the skin may be burnt with fire without attracting the attention of the patient.

We may therefore conclude that although the cachexia of elephantiasis pervades every organ and every tissue of the body, the force of the disease

may be sometimes directed more exclusively on the skin and mucous membranes; sometimes on the deeper structures; and sometimes on the nervous system, the latter constituting that form of the affection which is denominated anæsthetic leprosy, *elephantiasis anæsthetica*. These forms of the disease were originally described as if they were distinct and separate entities, but a more philosophical view of the question is to regard them as differences—not of nature, but merely of manifestation.

No. 282 is a coloured photograph of anæsthetic leprosy, as it was presented in a young man 23 years of age, after having existed for four years. It will be noted that no tubercles are apparent, the special characters of the case being a deeply-pigmented state of the skin, a melancholic expression of countenance, swelling of the hand, and a strongly-marked metacarpal hollow, affording evidence of muscular atrophy. Indeed, while hypertrophous growth followed by ulceration may be taken as the typical characteristic of tubercular leprosy, insensibility and atrophy are the conspicuous characters of leprosy of the anæsthetic kind.

This case reminds us of the earliest or erythematous stage of elephantiasis, of spotted or macular leprosy, the skin being studded with a multitude of small round spots of a yellowish-red colour. In several parts the spots are blended together so as to form blotches of considerable extent; one of these blotches puffed up by œdematous infiltration is apparent on the forehead, and if we had the means of testing this blotch, we should find it to be perfectly insensible. Another feature in the history of leprosy is manifested in this case by the somewhat remarkable redness of the skin, a fiery red which is not confined to the common integument, but is also seen in the conjunctivæ; the redness has

a yellowish character, and may be taken as representing the copper-colour which we are in the habit of attributing to cutaneous syphilis. And it was this colour which no doubt suggested another of the synonyms of the disease, namely, elephantiasis or *lepra rubra*; the *mal rojo* of Spain. It is also worthy of note, in reference to the present case, that the patient, although the son of European parents, had grown so swarthy in complexion as to resemble a native Indian rather than an Englishman, and to become a striking contrast to his brothers and sisters. The melanic change in the skin has also been made the basis of a synonym, as for example elephantiasis or *lepra nigra*, *mal noir* and black leprosy.

Whatever the cause of leprosy may be, and we are as much in the dark with regard to it as we are to that of other exanthematous fevers, the cachexia which it induces is known to pervade both the fluids and the solids of the system, and, indeed, every one of its tissues. Pathologists have discovered its presence in nearly all the organs of the body, but most especially in the surface-tissues, namely, the skin and mucous membrane, and in the brain and nerves. The nerves are often so extensively affected that a sudden blow or concussion to the body jars painfully through the entire frame. One poor lad informed me that he always dreaded walking along the streets from fear that he should receive an accidental knock, the effect of which he described as shooting like lightning through his limbs. And nearly always, swellings or nodosities of the nerves may be detected underneath the skin, and when pressed upon give rise to shooting pains.

It is chiefly in the anæsthetic form of the disease that we meet with another curious phenomenon, namely, a disorganization of the deep-seated tissues extending not only to the bone, but even displacing or dislocating the bone, and only ending with its

enucleation. The effect of this is to shorten and distort the limb, and sometimes to amputate or lop off portions of the fingers, to enucleate metacarpal and metatarsal bones, also carpal and tarsal bones, and sometimes to remove the long bones and produce a stump at the elbow or knee. This occurrence belongs to a chronic period of the disease, and is commonly termed mutilating leprosy, *elephantiasis mutilans*.

The mutilant operation of leprosy is generally preceded by an aching pain taking place over a joint; it may be of the hand, or it may be of the foot; and in the course of a short time a blister filled with turbid fluid is formed at the painful spot. Not unfrequently, however, the blister is developed without any pain whatever, and no warning is given until the bulla has made its appearance. This stage of the affection has been fancifully denominated *pemphigus leprosus*. When the blister bursts, a viscous glairy discharge, sometimes transparent and sometimes turbid, issues from its base, a superficial ulcer is produced; and after several weeks the ulcer heals, leaving behind it a thin cicatrix generally divested of pigment.

At a more advanced period of the disease, however, the ulcer evinces no inclination to heal, it sinks more and more deeply into the flesh, the exudation becomes still more abundant, is colourless, transparent and glairy, and so continues without any tendency to slough for a lengthened period—weeks and even months. During all this time the patient is unusually well in health, there is no pain or soreness about the ulcer, and it performs very efficiently the office of an issue. In the end, however, a loose bone makes its appearance at the bottom of the ulcer, and forcing its way gradually to the surface eventually falls out or is removed. It may be one of the phalanges, a metatarsal or metacarpal bone, or even a carpal or tarsal bone. But it is worthy

of note that the last phalanges are rarely if ever attacked in this way; it is always one of the more central or deeper bones. Hence, in the photograph No. 273, although the hands and feet have undergone extraordinary distortion by this mutilating process, the nails still remain in their normal situation.

After the ejection of the bone from the ulcer the sore gradually heals up, and the patient remains for a time in a tranquil state. But after the lapse of a period of variable duration, a similar process, namely, the blister and the ulcer, makes itself manifest on another extremity. Thus if the first occurred on the right foot, the second will very probably be formed on the left hand, and so in succession for those that follow after, the one side alternating with the other, and the hand alternating with the foot.

In this way nature seems to have pointed out a principle of treatment which in fact is the only one at present known in connection with the disease, namely, a *derivative treatment*. Patients have told me that they are never so well as when the glairy secretion is active and abundant; and that some time after the sore has healed up a *malaise* begins to make itself felt, and increases until another issue has become in like manner established.

It is in this way that those curiously malformed hands and seeming stumps have been produced which have suggested the term "mutilans"; for not only are the small bones of the hands and of the feet thus eliminated without the necessity for excision, and with a perfect freedom from pain during the operation, but even those of the forearm and of the leg, giving the semblance of an amputation at the knee or at the elbow. It is also a matter of interesting observation that it is in such cases as these that we occasionally meet with examples of spontaneous cure of the disease.

The history of leprosy is especially interesting from its universality of distribution throughout the world. It is presumed to have taken its origin on the Nile, and thence to have spread in every direction, until, at the present moment, it is found in the northernmost parts of the globe as well as at the equator. Nevertheless, it may be said to show a marked preference for the tropical zone,—India, China, South America, and Africa; and although met with in the interior of continents, yet without doubt it possesses a considerable predilection for rivers, seacoasts, and islands. It must also be remembered that the disease once possessed itself of the British isles, and in comparatively recent times was found lingering in the Orkneys, Shetland, and the Farøe islands.

And what, it may be asked, is the CAUSE of elephantiasis? Is it in the air, the waters, the earth, the food, or is it a creation of man himself? The simplest answer to this important question, and that most in accordance with existing information, is that *we do not know*, and yet some guess at the cause is necessary to conduct us to an efficient method of treatment. If a child be born in certain parts of the West or East Indies, it is liable to become the victim of elephantiasis. Even an adult does not wholly escape a similar danger, although, as might be expected, the danger is greatest at the nutritive period of life, when growth is active, and when the organization is busily attracting from without air and food in abundant quantities and with considerable energy. It may therefore be assumed that, in certain countries, the cause, whether atmospheric or telluric, is constantly present, and that all that is necessary to give origin to the disease is a predisposition engendered by debility proceeding from whatever cause. I, therefore, assume debility to be the starting-point of the affection, and

as favouring the operation of causes which under other circumstances would have exerted no morbid influence on the economy.

In a country where the disease exists endemically or epidemically, it is reasonable to infer that bodies infected by the disease may possess the power of exhaling and diffusing into the atmosphere around them a special virus which may excite the disease in other bodies favourable to its reception. In other words, that the disease may be infectious or contagious. Thus an European child committed to the care of a nurse in whom the disease is lurking, but yet in a latent state, may receive the virus exhaled from her lungs or imbibe it with her milk. In the case of the adult the former must be the mode of its reception; and when an old physician presents himself as a leper, having long had the care of leper patients, I see no more obvious mode of origin of the disease in him than the contamination of the atmosphere by the patients and the absorption and assimilation of the virus by himself.

It is a remarkable fact that Danielssen and Boeck, who have so thoroughly investigated the disease in Norway and Sweden, arrived at the conclusion that it was in no way contagious; while many well-known facts in its history prove beyond doubt that, under certain circumstances, it must be contagious. There can be no question as to the accuracy of observation of these distinguished physicians, and we may conclude with them that leprosy is really not contagious in the countries where their researches have been made, although it is so unquestionably in other parts of the world.

In the instance of a British physician who had become a leper after he had taken charge of a leper hospital, shall we decide that the atmosphere of leprosy in which he constantly lived communicated the disease to himself? or shall we refer it to the miasmatic, malarial or other causes, atmospheric and

telluric, which gave rise to the disease in his patients? There may be reason to hesitate in coming to a conclusion, but I should myself suspect the animal miasma proceeding from the infected persons rather than the telluric influences.

In general, our patients can throw little or no light on the cause of the disease; sometimes it has been referred to nurses and sometimes to association at schools. The army officer who had acquired the disease in Jamaica attributed it to sleeping in an unclean bed which had been previously occupied by a diseased negro. And the case of anæsthetic leprosy is peculiarly interesting from having been acquired at the same time with syphilis. The patient, although born in India, and a subaltern medical officer, had no knowledge of elephantiasis; he regarded his illness as syphilis only, and he was sent to England for cure on that presumption. In England he put himself under the care of an eminent surgeon, who treated him for syphilis; and it was not until he presented himself before me that the real nature of the disease was discovered. His case, therefore, illustrates two points in the history of elephantiasis, the one being its contagious property and the other the similitude of its phenomena to those of syphilis.

The history of this disease in various parts of the world forces upon us the conviction that it must be contagious. Like other contagions it is undoubtedly subject to variety and modification; it is more rife and more contagious in some parts of India than it is in others; for example, on the Malabar coast, and it is undoubtedly more common in the islands of the Indian ocean than on the mainland. Madagascar and Mauritius may be regarded as hotbeds of elephantiasis, and numerous instances of the disease have come under my notice which were acquired in the latter island. On the other hand, the disease loses its contagious properties

in the North, and although epidemic, would seem to be propagated by hereditary predisposition, assisted by telluric and atmospherical causes.

The north-east coast of South America, the district of Surinam, affords strong evidence of the contagion of elephantiasis; this evidence is reported in a pamphlet by Drogmat-Landr , entitled "Contagion, the sole cause of the propagation of Leprosy." Surinam received its first European colony, consisting of English, in 1630, at which time elephantiasis was unknown; shortly afterwards African slaves were imported into the country; and, in 1728, a law was passed prohibiting the intercommunication between the negroes and the European population, in consequence of the spread of leprosy. In 1790 a leper hospital was established for the negroes, and the whites were ordered into seclusion. In 1795 there were 200 patients in the hospital, and in 1812 more than 500.

The negroes themselves were so strongly impressed with a belief in contagion, that they often revenged themselves on their masters by bringing children entrusted to their care into contact with lepers, and several instances are recorded where the children so exposed became the victims of leprosy. Drogmat-Landr  adduces twelve cases in support of his views of contagion, and some of these cases are sufficiently remarkable to be deserving of our notice. For example:—

"1. A young lady, born in the colony, of Dutch parents, was attacked with leprosy in her childhood. A slave, on her death-bed, confessed to the young lady's mother, many years after, that she had often brought the child into contact with a leper.

"2. The daughter of a retired major was sent to a school kept by a widow, an European. The widow's son presented early symptoms of elephantiasis, of which he ultimately died. The two children were much together, and the little girl, some time after, became attacked with the disease. The mother of the little girl took the disease from her daughter; next, the major became affected; and subsequently, another little girl, a play-

fellow. Four persons in their turn were infected from one and the same source.

“ 3. A young lady succumbed to leprosy at the age of from 23 to 25 years. Several years afterwards, an old negress who died in the Batavian Institution confessed to one of the officers that she had frequently taken this child to the house of a leper, believing her to have been the child of the officer to whom she narrated the fact.

“ 4. A little girl, the child of a superior officer, associated very constantly with the daughter of the major already spoken of ; she also was attacked, and died of the disease.

“ 5, 6. A member of the courts of law had four daughters, of whom the two elder were seized with leprosy, and died at the age of 19 and 22. The eldest was suckled by a negress who suffered severely from the disease, and died of it ultimately. The second daughter was suckled by her mother. The disease manifested itself for the first time in the daughters after they had left school.

“ 7, 8. The daughter of a solicitor, having lost her mother, was suckled by a negress ; she had a companion of about her own age, the child of a member of the Colonial Council ; the children played with a little negro boy who was suffering from incipient symptoms of leprosy, and was subsequently sent to the leper hospital. Both the girls took the complaint. At 16, the disease was strongly marked in the first-mentioned ; in the other it was manifested between 11 and 12, and at 20 she died.

“ 9. A physician noticed, on the thigh of one of his children, a boy, aged two years, a small red spot ; other spots showed themselves in the course of time, and at the age of six the disease was fully confirmed. The boy died of dysentery, epidemic at the time, at the age of 12 ; he had been several times taken to the house of a leper.”

The Polynesian islands, in the Pacific ocean, have also of late afforded a strong illustration of the contagion of this disease. Elephantiasis had never been seen in Sandwich Island until 1848, or possibly several years later ; but in less than twenty years the disease was of ordinary occurrence at the public dispensary, and was estimated by census at four in every thousand. Dr. Hillebrand, who records these facts, observes that the first leper seen by him lived in a small village near the sea, and in a thinly-populated district ; and when he sought

him out, eight years afterwards, he ascertained that he was in an advanced stage of the disease, and that in the immediate neighbourhood of his abode six other persons had been similarly attacked.

The disease, it is presumed, was conveyed to the islands by the Chinese, among whom it is extremely common; and it spread from Honolulu, the chief town of the group, to the central portions of the island, the more distant parts enjoying still a state of immunity.

If, therefore, we are to accept the teachings supplied by these facts, we must arrive at the conclusion that under favouring conditions of climate elephantiasis is certainly contagious; but that in the absence of these conditions is propagated only by heredity. In this manner alone can we conciliate the differences of opinion which have been expressed by able men all pursuing the same investigation. On the side of non-contagion we have Danielssen and Boeck, and the Leprosy Committee of the London College of Physicians; while on the opposite side are the names of men who have had ample opportunities of practical observation, headed by Drogmat-Landr  and Hillebrand.

The history of elephantiasis among the Chinese in respect of contagion and heredity is very curious. Under the belief of contagion the lepers are isolated from society, and live in villages by themselves. They are grouped into classes corresponding with the generation they occupy in reference to the manifestation of the disease. Marriage with a leper is interdicted by law; but lepers themselves are permitted to intermarry; sons and daughters of lepers are permitted to intermarry with sons and daughters, but with sons and daughters only; grandsons and granddaughters are also permitted to intermarry, and so on to children of the fourth generation, who are freed from all

restrictions whatever, and may marry as they choose.

The hereditary transmission of leprosy is strikingly illustrated in a report from New Brunswick, in Canada, wherein it is shown that about the year 1822 one member of a French colony was afflicted with leprosy, the disease having been previously unknown in that country; and that forty years later, when a number of cases were under treatment in the hospital, the patients were all derived from the family of which that one person was the head.

Not less remarkable in connection with the varied characteristics of leprosy is the fact mentioned by Newton, the author of an excellent essay on anæsthetic leprosy. His experiences are drawn from the northern boundary of Hindostan, at the foot of the Himalaya range, where the disease presents almost exclusively the anæsthetic and mutilant type. And, in general, I believe I am correct in saying that elephantiasis is more commonly anæsthetic in the interior of continents than it is upon the coast. Again, among the Africans the tubercular form of the affection would seem to prevail, while in the Hindostanee the anæsthetic form is most frequent; and in the examples of the disease which have reached this country from India, the tubercular variety of the disease exceeds the anæsthetic by a considerable majority.

The PATHOLOGICAL manifestation of elephantiasis is a cachexia associated with colloid metamorphosis of the tissues and their subsequent destruction. Thus in the case of the skin, as shown in this diagram of the section of a leprous tubercle copied from Neumann, the whole thickness of the derma is closely studded with minute globular cells, some accumulated in small clusters and others irregularly dispersed. The immediate consequence of this degene-

rative metamorphosis is a considerable swelling of the derma, a swelling which unfolds and obliterates the papillæ cutis while the normal tissues are in process of destruction; the fibrous network of the corium is scarcely to be discovered; the hair-follicles are altered in structure and bent, and the hairs broken and dwindled; while the epithelium both of the hair-follicles and of the sebiparous follicles and glands is dry and laminated. These cell-growths are likewise met with in the rete mucosum, and there is atrophy of the horny epidermis. The vessels and nerves are reduced in number, and there is an absence of fat. In the midst of this general destruction, vestiges only of the normal tissues are discoverable, with the exception of the arrectores pili muscles, which are described as being in a state of hypertrophy.

With the naked eye, lustrous bands of grey colloid matter may be traced through the face of a section of the skin to the subcutaneous fibrocellular tissue; and we have only to imagine this colloid degeneration extending through the connective framework of the soft parts down to the fibrous envelope of the bones, the periosteum, to comprehend the implication of a bone in the disease, and its subsequent isolation and enucleation. And it is this same degenerated matter in combination with serous fluid, that constitutes the copious glairy transparent discharge which is common to the disease.

A similar process, set up in the connective envelope of the nerves, in their neurilemmata and in the connective tissue of their filaments, serves as an explanation of the swellings of the nerves met with in elephantiasis; and the progress of the degenerative metamorphosis to the nerve substance, resulting in the destruction of its normal composition, likewise explains the loss of sensation and atrophy, which are the characteristics of elephantiasis anæsthetica, and enables us to understand the spontaneous

enucleation of bones, and, as it were, amputation of limbs without pain.

But besides the colloid metamorphosis or degeneration, which is the specific morbid change occurring in elephantiasis, there exist, the anæmia of ordinary cachexia, the numerous local congestions visible in the skin, the abnormal pigmentation consisting of melasmic and leucasmic alterations, together with œdematous infiltration, particularly conspicuous in the extremities. At an early stage of the disease the congestion of the cutaneous tissues gives rise to passive hypertrophy of the sebiparous follicles and glands, hypertrophy of the sudoriparous glands and ducts, and also of the muscular tissue of the skin; but a later period is marked by atrophy, the sebiparous and sudoriparous glands cease their functions, their ducts become loaded with epithelial exuvia, and then stand up prominently on the skin like *cutis anserina*, and in association with this atrophic change the epidermis is thrown off by exfoliation, giving rise to what has been improperly denominated "scales." The nutrition of the hairs also fails, the hair-follicles are bent out of their position by the colloid matter, and the hairs themselves become brittle, breaking off close to the level of the skin, and finally ceasing altogether to be formed.

I am proud to be able to say, that never was such a body of facts, illustrations, and experience collected together in elucidation of this remarkable disease as has been assembled upon the present occasion. Dr. Milroy, our special commissioner on leprosy, has not only been present himself, but has permitted me to make use of portions of his manuscript reporting the results of his inquiry. Several of our Indian colleagues have honoured me with their presence and supplied me with information, and one of their number, Dr. Vandyke Carter, has very liberally given us the opportunity of examining a series of beautiful drawings showing some of the more striking

tegumentary appearances of anæsthetic leprosy, his dissections of the affected nerves, and the microscopic characters presented by the morbid nerve-tissue.

The DIAGNOSIS of elephantiasis, or leprosy, turns upon its collective symptoms and upon the habitat of the patient. I have shown that the so-called varieties of the disease are simple modifications, having reference to the seat of the morbid phenomena; that when the surface of the body is attacked the tubercular element will predominate, constituting elephantiasis tuberosa; that where the nerves and nerve-centres are chiefly affected, the result will be painful sensations, and subsequently loss of sensation, and therefore elephantiasis anæsthetica; while in the case of the implication of the deeper tissues and bones of the limbs, the case will be elephantiasis mutilans.

In the early stage of the affection the appearances on the skin might be suggestive of roseola, or erythematous syphilis, for, in fact, the exanthem is the same in character in all the three diseases. It is certainly more chronic than roseola, and, when inquiry is made, more chronic than is common in syphilis; but the likeness is so close, that of the cases which we have just had so recently under our observation; one was mistaken for syphilis by so able an observer as Elliotson; and one, namely, the case of anæsthetic leprosy, was sent from India to England under the supposition of syphilis, after having undergone the examination of several medical boards, and on his arrival in England the patient was again subjected to mercurial treatment under the same belief.

But when, in addition to those macular appearances on the integument, we find the skin benumbed and deprived of sensation, we are made aware of a symptom which has no existence in syphilis. If a

case of leprosy were for the first time brought under my notice, my attention would first be attracted by the melasmic condition of the skin, next the peculiarly gloomy and melancholy countenance of the patient. Then if there existed a somewhat frowning, prominent, and nodulated brow, I should no longer have any doubt as to the nature of the disease; and especially if I found the hands somewhat swollen, the back of the hand tumid, the wrist altered in shape by tubercular prominences, and the first metacarpal space depressed into a hollow.

I now refer to an example of the disease in its very early stage; but the tuberculated features of a more advanced period; the deeply pigmented face with very probably congested conjunctivæ and anæsthesia, of the nerve-stricken form; and the distorted and possibly mutilated condition of the hands or feet of the mutilant variety; are characters so strongly marked, that they would be recognized at once by those who had never seen and had read but little of the disease.

The PROGNOSIS of elephantiasis is one of the worst features of the affection. Cases are on record in which the disease has become cured; but those are only cases of a mild type or are purely local in their attack; in fact, are the exceptional cases which are to be found in the outskirts of every grave disease. In general, the most sanguine expectation of the duration of the affliction does not exceed from ten to twenty years: and as we have seen by the cases which we have just passed in review, the life of the disease may be stated at from ten to fifteen years for the tubercular form, and from fifteen to twenty years for the anæsthetic form.

Death is usually brought about by exhaustion, sometimes consequent on ulceration of the larynx, and sometimes on chronic diarrhœa or dysentery.

In the TREATMENT of leprosy, the first and most natural suggestion is that of changing completely the hygienic surroundings of the patient. Change to a better climate, a more genial or more bracing air; sufficient exercise; exhilarating occupation and associations; bathing and cleanliness; and good and nutritious and sufficient food. From the earliest periods of medicine these recommendations have been proclaimed, and we find wine and serpent broth, probably a kind of turtle soup, occupying a place at the very head of ancient remedies. While articles of diet which have been pointed out as injurious are, preserved and especially salted meats and fish; and as the disease is endemic on the banks of certain rivers and on certain parts of the seashore where fish may be supposed to constitute an excessive proportion of the food of the people, so fresh fish also has been condemned. In fact the most perfect diet that could be attained is the mixed meat and vegetable diet of England, with a proportionate supply of our excellent beer.

Medicines used as specifics may all be said to have failed; and only such as are employed in the way of ordinary tonics deserve to be mentioned; such, for example, as quinine; quinine with iron, phosphoric acid and strychnia; preparations of iron; the vegetable bitters and mineral acids. Danielssen and Boeck believed that they had obtained good results from arsenic; and Beauperthuy favours the tonic preparation of mercury, namely, the perchloride.

Certain vegetable specific remedies have received the sanction of able men in our Eastern colonies; for example, the *asclepias gigantea* or mudar, of Playfair, administered in conjunction with calomel by Robinson; the *hydrocotyle asiatica* of Boileau, the merits of which have been tested in the Mauritius; the *chaoul moogra odorata*, which has been spoken of favourably by my friend Dr. Mouat; and

the *veronica quinquefolia*, which has received the approbation of several authors.

Danielssen and Boeck regarding elephantiasis as a dyscrasis of the blood leading on to a general cachexia, employed as their remedies, in addition to generous diet and cod-liver oil, small bleedings from the skin by the aid of cupping, and internally sulphate of magnesia, arsenic, tincture of cantharides, iodide of mercury; and for neuralgic pains the iodide and bromide of potassium.

Locally, in pursuance of the theory of imitating nature's processes, and finding that the tubercles tended to softening and absorption, they painted the larger prominences with the acid nitrate of mercury; and the smaller ones with a solution of potassa fusa and distilled water, one part to two; while for effecting a similar purpose on the rest of the skin they employed baths of caustic potash and sulphuret of potash. They ventured even to apply caustic potash to tubercles situated within the larynx which threatened to suffocate the patient, mixing the caustic with honey. The application was attended with a violent fit of coughing, but was always succeeded by benefit.

In the anæsthetic form of the affection they aimed at neutralizing or arresting morbid action in the nerves and spinal cord by cupping and counter-irritation, while pursuing the constitutional treatment already indicated. Thus they cupped repeatedly in the region of the spine; they used the moxa, they established issues, and excited a more general irritation of the skin by tartarized antimony; having recourse to iodide of potassium and the bromide of potassium for neuralgic pains.

Under the belief that the tissues principally attacked in elephantiasis were the gelatinous and not the albuminous, and that the agent of the disease was a specific zymotic virus, Newton prescribed acetic acid and carbolic acid in combination with

alcohol; meeting other indications with quinine to improve digestion; nitro-hydrochloric acid to stimulate the liver; strychnia to strengthen the nervous system; cod-liver oil as a nutritive agent; and a cholagogue cathartic of podophyllin, aloes and ipeacuanha to obviate constipation. He likewise recommends a tincture of the young roots of plumbago rosea, the *lal chitra* of the native language, in drachm doses three times a day, for anæsthesia.

Newton, founding his observations on elephantiasis anæsthetica, draws especial attention to the neuralgic pains of this form of the disease, and states that it is pain which urges the leper to seek medical assistance. The early stage of the affection is marked by a benumbed condition of all the faculties, by drowsiness, loss of memory, languor, lassitude, and aversion to society; but at a later period these symptoms disappear, and he recovers his energies more or less completely. At first the deranged innervation of the integument is manifested by sensations of cold and heat, by tingling and pricking; and these painful sensations are increased by pressure, so that the patient can neither walk nor use his hands without extreme pain; and this painful condition coexists with loss of sensation or anæsthesia of other parts. Subsequently, as anæsthesia increases in the integument, the deeper tissues of the body become the chief seat of pain, and especially the bones, the tendons, and the joints, the pains being of a burning character, and compared to penetration by red-hot iron. These pains are constantly present in the joints, and particularly and pathognomically in the dorsal and lumbar region of the spine. Hence Newton lays considerable stress on what he terms "latent pain," and remarks, that although the surface may be anæsthetic, pressure will always discover a deep-seated pain referrible very commonly to the periosteum or

perichondrium, and without this latent pain, he says, the case is not one of elephantiasis. He further notes in connection with the anæsthetic state of the skin that a very trivial pressure or moderate irritant will produce a blister or excoriation.

For the deep-seated pains and for the anæsthesia Newton prescribes blisters, and sometimes glacial acetic acid with carbolic acid (*partes æquales*), by way of a caustic, applied by means of a linen compress. The tincture of the *lal chitra* already spoken of he likewise uses, in combination with the liniment or vinegar of cantharides, as a blister. And after the warm bath he recommends inunction with oil, with which is combined some antiseptic agent, such as tar, kerosine, turpentine, or tincture of iodine. For fetid ulcers he has recourse to a solution of chloride of zinc.

Within the last quarter of a century other methods of cure have from time to time found a place in our medical journals; and latest amongst these is the professed cure of Dr. Bhau Daji, of Bombay. The treatment in this instance, as described by a patient, would seem to consist of a nutritious diet; exercise to the extent of producing perspiration; a bath with saponaceous friction; inunction with oil three times a day; and the administration of ten drops of a "red oil" twice in the day. What the red oil may be I do not know; it would seem to be a secret remedy, and therefore unworthy of our attention. The rest of the treatment carries us back to a principle of management which has been recognized and adopted from the earliest times.

But a method of treatment that has of late assumed considerable importance, and has been thought by our Government to be worthy of a special mission of investigation, is that of the late Dr. Beauperthuy, of Trinidad. The mission has been placed in the hands of an able investigator into questions of public health, namely, Dr. Gavin

Milroy; and his report to the Colonial Office will shortly be placed within reach of the profession.

The Beuperthuy method of treatment has already been published by Dr. Bakewell, who gave me the opportunity of observing its operation; and I have since put it in practice myself in several cases which have subsequently been intrusted to my care. The general management of patients according to the Beuperthuy method is similar to that previously in use, namely:—A nutritious and generous diet, with good air and sufficient exercise; the chief peculiarity in the treatment being the local application of the cashew nut-oil or *oleum anacardii occidentalis*, an oil obtained from the shell of the cashew nut.

The change of climate from the tropics to Britain is undoubtedly favourable to the cure of this disease; but whether England, with its variable and moist atmosphere, is the very best that could be selected is an open question. As a certainty it may be stated that the disease progresses quite as rapidly here as it would do if the patients remained in the country where the malady first made its appearance. My own experience would favour a dry and temperate climate, in an inland situation, rather than that of an island like our own.

The diet of England is in every way suitable for these cases; a rich animal food, with farinaceous aliment of the best quality, excellent vegetables, and good beer. Salted and preserved provisions are not of common use, and are only known to us as a luxury, and fish is too scarce to be made a general article of food.

Our climate is also especially well adapted for exercise; and of late years we have made some progress in our comprehension of what has been termed the Turkish Bath, which is really a hot-air bath, with frictions of the skin and manipulation of the skin and flesh as a substitute for exercise.

Besides a good and substantial diet, fresh air and

sufficient exercise, Dr. Beauperthuy had recourse to the tonic-alterative action of the perchloride of mercury administered in doses of $\frac{1}{24}$ th of a grain night and morning. Aphthæ and ulcerations of the fauces and mouth he touched with a solution of nitrate of silver, half a drachm to the ounce; and for sanguineous discharge from the nostrils he injected a solution of alum. Moreover for œdematous swelling of the feet he recommended a foot-bath of warm oil.

In addition to the remedies made use of by Beauperthuy, I have myself painted the aphthæ and ulcerated surfaces within the fauces and mouth with sulphurous acid. I have also given sulphurous acid combined with liquor cinchonæ internally; and have found a mixture of acetic acid and carbolic acid with quinine and brandy, as recommended by Newton, of considerable service as an internal remedy.

The oleum anacardii, or cashew-nut oil, acts upon the morbid skin in a manner somewhat similar to the caustic potash solution employed by Danielsen and Boeck; it produces a copious exudation from the surface to which it is applied; it robs the morbid skin of the excess of fluid with which its tissue is infiltrated, and in this manner reduces the bulk of the tubercles, the swelling of the nervous knots, and the œdema of the distended integument. It is therefore especially adapted for tubercles wherever they occur; and one or two applications will sometimes render a surface nodulated all over, perfectly smooth, and at the same time remove the more deep-seated hardened knots that are felt in the morbid integument.

The oil is applied with a camel's-hair brush, and a certain region is selected for the purpose; it may be a part or the whole of the face, or more or less of a limb, or any other portion of the body where tubercles, thickening, and induration of the skin are present. There is no pain at the first application of

the oil; but after a few hours there may be more or less pain, in proportion to the degree of sensibility left in the skin; for the same reason, while at first the applications are perfectly painless, they become painful subsequently, in consequence of the restoration of the functions of the cutaneous nerves. In this sense the remedy constitutes the test of the existing sensibility of the skin. On the day following the application of the oil, the surface to which it was applied is coated over with a moderately thick crust of dried exudation-matter, partly of a glairy, viscous nature, like the product of the deep ulcers already spoken of, and partly semipurulent, while at the end of a week, when the crust has usually peeled off, the surface below is smooth and soft to the touch; and very frequently the pigmentary discoloration which previously existed is removed.

When the crust has exfoliated from the part first treated, the oil may be applied to a second part, and so on in succession until every portion of the morbid skin has undergone the process; and, should the tubercles reappear, the application may be made to the affected skin until the tubercles cease to be formed, and until the integument has regained its natural texture and sensation.

It has seemed to me that the exudative process set up by the *oleum anacardii* is not merely local in its operation, but that it performs the office of a general derivative or general emunctory to the whole organism; that, in fact, it represents the copious and continuous discharges which I have already spoken of as flowing from deep-seated ulcers, and which, while they last, exert so favourable an influence on the general comfort and health of the patient.

Dr. Milroy remarks, in a communication made to me on the 2nd of December, 1872, "The weak and indeed, in my opinion, the faulty part of the Beau-perthuy treatment is the long-continued adminis-

tration of corrosive sublimate as the main internal remedy; it seemed to me that it often retarded rather than promoted the progress of amendment. The general character of the malady seems to require steel and bark with nourishing food, &c. The prospects of the preventive are on the whole more encouraging than of the curative treatment."

Dr. Milroy has likewise favoured me with a few extracts from his MSS. on this subject. Thus he observes:—

"All that I have seen and heard during my Mission has left the conviction on my own mind, had any doubt existed before, that leprosy is a constitutional cachexy, or a diseased condition not of any one part or texture of the body, but of its whole framework and system (*morbis totius corporis*). The malady to which it has the greatest analogy is unquestionably scrofula; and it will greatly aid the reader, more especially the unprofessional one, in appreciating the subject under consideration, if he will keep this idea always before him. It is not a little curious that the very same appellation of 'king's evil' has been given (in the West Indies) to both disorders, indicating at least a seeming affinity, if nothing more.*

"Both are certainly morbid diatheses rather than particular or individual diseases. It requires the co-operation or concurrence of various agencies, singly or combined—as of age, food, hygienic condition, climate, &c.—to excite the development of some one or other of their distinctive signs or symptoms.

"Both are undeniably liable to be hereditary, *i.e.*, transmissible from parents to offspring. On this head there is no difference of opinion. But it is equally true, and this is a point that is very noteworthy, that both occasionally occur when no trace whatever of hereditariness, direct or indirect, can be detected; in other words, both are liable to be acquired or become developed independently of congenital taint or predisposition. If such be really the case, and medical experience seems to prove it beyond gainsaying, it is obviously a matter of prime moment to discover the probable circumstances which favour this development."

"Great praise is due to Dr. Beaupertuy, in that he was the

* The king evil, or king of evils, is an appropriate term for the great or king leprosy; the greatest of skin diseases; but where leprosy does not exist, there scrofula may be and indeed is the king evil. The Scotch termed elephantiasis "the mickle ail," or great disease.—AUTHOR.

first fairly to take in hand and grapple with the difficult subject of the treatment of leprosy in the New World, and that he did not cease his benevolent endeavours until he had forced it upon public attention not only in Venezuela and the West Indies, but also in Great Britain and France.

“To him belongs the credit also of having first practically recognized the necessity of a wholesome and nourishing diet as a fundamental and cardinal point in the treatment, preventive and curative, of the malady.”

“It is too commonly believed that Dr. Beauperthuy’s treatment consisted mainly, if not entirely, in the administration of certain medicines, and in the use to the diseased skin of cashew-nut oil, and other vesicant or escharotic applications. The value of these remedies was dependent, he always maintained, upon the simultaneous adoption of a suitable diet, without which it was in vain to expect any real benefit.”

“The general impression left on my mind from personal examination of the patients under Dr. Beauperthuy’s treatment, was, on the whole, encouraging. In many of them there was a marked amendment in their general state, and also in the diminution or disappearance of tuberculated surfaces, and in the more or less considerable restoration of sensibility in parts which had been once completely anæsthetic.

“To talk of a *cure*, or the perfect recovery of sound health in any instance, would be a misuse of language. Probably, however, as much improvement had been effected as could reasonably be expected in any case of grave strumous cachexy, in the course of four, five, or six months.”

“On the subject of prevention, Beauperthuy thus wrote to me :—‘Among the prophylactics of leprosy, wherever a tendency exists, I would direct the following hygienic precepts :—To reside in an airy, clean dwelling, at a distance from all miasmatic and malarial influences ; to observe strict personal cleanliness and use frequent bathing ; to live on nutritious diet, composed of fresh animal food and vegetables ; to abstain entirely from salted meats, and fish, &c. ; and to have daily exercise and occupation, short of inducing fatigue. By these means, in conjunction with appropriate medical treatment, the progress of the disease may in numerous cases be arrested, and the constitution of the patients will be improved and rendered less susceptible of external morbid influences.’”

There remains to be noticed the inunction of the skin, which formed so conspicuous a part of the treatment of the ancients and which has latterly

been revived in India by Newton and Bhau Daji. In a disease like elephantiasis which permeates every tissue of the body, which has been spoken of as an universal cancer, it behoves us to reject nothing in the way of treatment which may, even remotely, tend towards cure; but rather to assemble together every operation and every process which shall hold out an expectation of benefit.

A review of those several processes as well as a conviction of the necessity for their regular and systematic use, conjoined with the fact of the multiplication of leprosy, both in our colonies and at home, lead us to the consideration of a subject which I brought under the notice of the British Medical Association some years ago, in a paper, entitled "On the Question of providing Medical Asylums for the Lepers imported into this Country from our Colonies."

Thus, for example, we require :—

1. Appropriate hygienic conditions.
2. A properly regulated diet.
3. Efficient exercise.
4. The use of the hot-air bath and frictions and manipulations while within the bath.
5. Inunction with oil.
6. The internal administration of medicines.
7. The external use of medical remedies, including application to tubercles and ulcerations within the fauces and mouth.

It seems to me hardly too much to say that this elaborate process, of daily recurrence, can only be efficiently carried out in an institution devoted to the purpose. And that our only chance of cure or of a knowledge of the proper method of effecting a cure of this disease can be derived from the practice of an Institution, such as that to which I now refer.

LEPRA GRÆCORUM.

I now pass away from lepra as comprehended by the Arabians, the popular leprosy of ancient as well as of modern times, to the lepra of the Greeks, the lepra of Willan, and the lepra of the ninth of the groups of my dermatological series. Willan, in his endeavour to establish an artificial order of cutaneous diseases, naturally sought to obtain several representatives of that group, for a group would seem to be absurd which contained only a single disease. It was thus that he collected together lepra, the type of roughness; psoriasis, the type of itchiness, combined with desquamation; and pityriasis, the type of a slighter kind of desquamation, namely, a furfuraceous or branny desquamation, about which there is much to be said hereafter. In his effort to draw every affection presenting a desquamating character into this order of squamous diseases, it soon became evident that the psoriasis of Willan, besides containing certain forms of lepra, likewise, and even to a greater extent, comprehended the desquamating forms of chronic eczema. The true lepra is not essentially a pruritic eruption; but the word psoriasis signifies "itchiness," and was therefore well suited to distinguish dry and chronic eczema, with a thickened base and copious development of fragmentary epidermic laminæ.

While the question remained stationary at this point, dermatologists employed themselves in establishing a diagnosis between lepra and psoriasis, and ultimately agreed to their separation. Willan was evidently justified in assigning the term "lepra" to the lepra of the Greeks; and having assured myself that the balance of truth was largely in favour of his views, I adopted this term, and have since never hesitated to describe and illustrate the disease by that name.

Not so, however, our Continental brethren, for, while admitting that Willan had erroneously included cases of chronic eczema with those of lepra under the term psoriasis, they preferred to call the lepra of the Greeks and the lepra of Willan *psoriasis*, instead of lepra; and we are therefore under the necessity of adding the word psoriasis to that of lepra as a synonym, when speaking of and describing the latter disease.

But these same authors, while naming the lepra of the Greeks psoriasis, have also appropriated the word lepra to the elephantiasis of the Greeks, the leprosy which has just been made the subject of our research. I can recognize this perversion of nomenclature only under protest; and shall ever maintain that the disease named by the Greeks lepra, and described by Willan as lepra, the disease which is at the same time the type of roughness and of the squamous affections, is also the disease to which that term is rightly applied; while that other disease described by the Greeks themselves under the name of elephantiasis, is most correctly represented by that designation.

Lepra, therefore, the lepra Græcorum, the lepra alphas of the Greeks, or common white leprosy, is an eruption of the integument distinguished by the presence of a white scale, looking as if it were stuck upon the skin like a wafer, and of a circular figure. The scale is slightly elevated above the level of the adjacent surface, and is composed of epidermis altered in texture and colour, and surmounting a somewhat prominent or thickened base. The base is more highly vascular than the neighbouring skin, and bleeds easily when injured, and the margin of the base is perceptible around the circumference of the scale as a narrow halo.

The appearance or physiognomy of lepra is well shown in the series of thirty preparations now before us, ranging in number from 284 to 313.

No. 284 is a model of the thigh, on which this eruption of white circular spots, consisting of a spongy glistening scale, resting as it were upon the skin, and each circular disk surrounded by a narrow red border or rim, is well exhibited. In this model the spots range in size between two lines and three inches in diameter. Some of the smaller disks are covered by a scale of considerable thickness; in other places the scale has been removed, bringing into view the red, smooth, and prominent base on which the scale rested.

The vascular disk which constitutes the real morbid affection is more or less thickened and elevated, ordinarily papillated in the centre from hypertrophy of the cutaneous papillæ, and smooth and tumid at the circumference from infiltration and hyperplasia. The vascular congestion is associated with hypertrophy, and hypertrophy of the vascular tissue is accompanied with hypertrophy of epidermis. Hence the pathological state of the skin is one of vascular congestion with altered nutrition, the altered nutrition resulting in increased growth of tissue, together with increased and altered growth of epidermis. To render the pathological circle complete there is need of one factor more, which is tissue-debility. Hence a weak state of skin, whether hereditary or accidental, is the first cause of hyperæmia or congestion, and thence follow the consequences of excess of nutritive matter poured into a debilitated tissue, namely, redundant growth or hypertrophy. When the morbid action ceases, the hypertrophic material is absorbed and removed, and the epidermis returns to its normal structure and appearance.

No. 285 is a scale of lepra of considerable size, exhibiting the appearance of its surfaces as well as its intimate texture. The external surface is ridged in concentric circles, suggesting a successive peripheral or centrifugal formation, and conveying the idea of being lamellated and imbricated. The internal

surface is a mould of the morbid derma from which it was removed; it has a varnish-like smoothness, and at the centre is foveolated for the reception of hypertrophous papillæ. This portion of the scale is thick and condensed, while nearer the circumference the scale is looser in texture and spongy, the sponginess of the scale being due to the presence of an infinity of minute globular spaces filled with air; and to these globules of air the scale owes its snowy whiteness and the refraction which gives it its glistening appearance. Moreover, it is evident, from an examination of this preparation, that the scale of lepra is not a mere lamina of exfoliated cuticle such as we meet with in chronic eczema, the proper psoriasis, but a pathologically altered epidermis, and the very type of a scale.

The next phenomenon that attracts our attention in connection with lepra is its mode of growth. In the model No. 284 may be seen disks which are only two lines in diameter, while others have reached to a size of three inches. When seen at the very earliest moment of its development, the hyperæmic congestion is confined to the vascular plexus of a follicle of the skin, that mysterious organ wherein so many affections have their early origin and seat. At this initial period the congested follicle constitutes a minute papule, while the epithelial lining of the follicle has increased in thickness, and assumes the dead white colour peculiar to lepra: this epithelial lining forms a small conical prominence at the outlet of the follicle, and the prominence, composed of altered epidermis, very quickly increases in size.

It happens only rarely that a single isolated follicle becomes the seat of origin of a scale, more frequently several adjacent follicles are affected at the same moment, and the resulting scale is larger and broader. But whether one only or several follicles be the seat of origin of the disease, the tendency


of the morbid process is to spread by the circumference and involve adjacent follicles as well as the interfollicular area. It is thus that a scale no bigger than a small papule, and not exceeding one line in breadth, will in a few days become as large as a drop of water, and later still acquire the size of a piece of money, and even an extent of several inches in diameter. These degrees of size have suggested a variety of names, which, however, must be taken as having no other meaning than that of gradients of bulk; for example, *lepra papulosa*, *lepra guttata*, *lepra nummularis*, and so on.

There is another way in which the eruption of *lepra* grows, and that is by the production of a cluster of follicular centres at the same time, giving rise to so many tubercular prominences. Then these tubercles become united by a thickened base, and large uneven blotches are produced which sometimes surround the convexity of a joint, as of the elbow, and sometimes an entire limb or a considerable extent of the surface of the body: this is termed *lepra diffusa*, and also *lepra inveterata*.

Nos. 294 and 295 are drawings illustrating a case of *lepra diffusa* or *inveterata*, in which the eruption occupies nearly the whole extent of the arm. Indeed, in this case the tubercular prominences have become so closely blended with each other as to produce one continuous layer, abundantly intersected by the lines of motion of the skin, the area between the lines being surmounted with thin white glistening scales of altered epidermis; and it is only by examining the circumference, or the surface whence the scales are removed, that we are enabled to discover the tubercular constitution of the blotch. In a case of this kind, where there exists considerable congestion of the skin with considerable infiltration, the quantity of morbid epidermis and the rapidity of its production are often very remarkable. Every movement of the body breaks off an abundance of scales,

and on rising in the morning the patient's bed is found to contain an incredible quantity of scales.

The next noteworthy phenomenon appertaining to the disk of lepra relates to its mode of growth. It grows by the circumference, and after a time heals in the centre, so that that which was originally a solid disk is by degrees converted into a ring, the belt of the ring varying in breadth in accordance with the joint activity of the healing process in the centre, and the centrifugal growth at the circumference. The presence of a ring is therefore an indication of the decline or dispersion of the eruption, and is a means of helping us to a prognosis of the probable duration of the attack.

After another period of time, and as the healing process gains on the growing process, the ring itself gives way at one or several points; that is to say—parts of the ring heal, while other portions remain. In its complete state the ring will represent the letter **O**; when it heals at one point of the circle it has the figure of a **C**; and sometimes, when healed at several points, it may resemble a chaplet of beads, or a series of detached islets are left in its place. Other curious forms are produced by the blending together of rings; thus if two rings approaching each other by their circumference become blended at the point of contact, the figure produced is that of the numeral **8**; if three of the rings meet in a similar manner we should then have presented to us the figure of a trefoil  leaf. And in the case of several rings meeting in linear order they would form a chain **OOO**; so in like manner, the most complicated figures may result from the contact by growth of a number of rings and the breaking up of parts of the rings by the healing process; and it is to this complication of form that the term *lepra gyrata* has been applied.

It is therefore perfectly obvious that, as far as figure is concerned, a case of *lepra vulgaris* may,

according to the stages of its growth, be successively a lepra papulosa, a lepra guttata, a lepra nummularis, a lepra discoidea, a lepra circinata, a lepra gyrata, &c. &c., these terms having no other meaning than that of indicating accidental appearances of the disease. In reality, the only important variations of character as deduced from appearance are those which belong to its development as a discrete or as a diffused eruption.

To ensure an example of lepra in its highest perfection it is desirable to obtain one which has been allowed to run its course without interference. Such a case may be met with occasionally among the out-patients of a hospital or at a dispensary; but the instinct of "soap and water" is so strongly impressed upon the habits of the people, that such an opportunity rarely falls to our lot. Above the very lowest class of patients the eruption is considerably modified by ablution and also by remedies; hence it may be presented with the original scale entire, with a scale of secondary formation and irregular in appearance, or even perfectly smooth and totally divested of scale.

It must also be mentioned that there are other modifications of appearance of the eruption which have reference to its pathological force; the scale may be more or less thick; more or less dense or spongy; more or less white; and reproduced with more or less redundancy. So the bed or matrix on which it rests and by which it is formed may be more or less bright or dull in its redness, and occasionally, as a consequence of languid circulation, is purplish or even livid, the latter appearance doubtless suggesting one of the terms employed by Willan, namely, lepra "nigricans." Then if we bear in mind that the morbid skin which produces the scale is thickened by vascular repletion by hypertrophy and infiltration, we shall at once understand that the prominence and density of the affected patch

may be variously modified. Slight hæmorrhage from the vascular patches, whenever they are rubbed, is among the commonest of the phenomena of the disease; and no less common is the tendency to crack into chaps and fissures sometimes of considerable depth. Indeed, if we reflect for a moment on the acquired hardness and density of the morbid skin and the frequent occurrence of the eruption on parts which are liable to be stretched by the motions of the integument, we shall perceive that the cracking of the skin is inevitable.

When, however, the healing process in the skin is perfectly established, the eruption in general disappears without leaving behind it the slightest trace of its previous existence. But occasionally the seat of the patches may be discovered by a pigmentary stain which will remain for a variable space of time and then disappear; the pigmentation being probably due to the decomposition of some of the blood-corpuscles detained in the capillary network of the congested skin, or driven into the intervascular tissue and subsequently converted into pigment.

But the most interesting of the habits and modifications of lepra are those which are consequent on its regional distribution. There are certain parts of the body on which it is constantly present, if absent on all the rest; there are other parts of the body on which it may be said never to appear; some on which it almost always presents the disseminated character, and others on which it equally commonly occurs in the congregated or diffused form.

For example; if very slightly or even obscurely developed or may be wholly absent on every other portion of the body, it will pretty certainly be found on the convexities of the elbows and knees; so that, given a case of dry eruption of the skin attended with desquamation, which may be one of dry eczema or lepra; if it be ascertained that it is permanently

established on the convexities of the elbows and knees, the diagnosis of lepra will generally prove correct.

Lepra, again, is so extremely rare on the face and hands, that it may be said never to occur in those regions otherwise than exceptionally. It is doubtless because these parts of the body are braced by constant exposure to the atmosphere that they are favoured with this valuable immunity. And as a practical fact, it enables us to exercise one of the most pleasant of our offices, namely, to afford assurance to our patients afflicted with this disease, that the face will in all probability escape.

A common locality of the eruption is the scalp, and in that situation it assumes the diffused form, generally encroaching for a short distance upon the forehead and terminating by an abrupt border. It is, however, worthy of remark with regard to the scalp, that the disease has no tendency to the destruction of the hair, and in this respect differs from chronic eczema, and especially from that form of chronic folliculitis denominated xerasia capitis, and included by modern authors under the denomination of pityriasis.

Another situation, in which lepra presents a considerable modification of its ordinary characters is the matrix of the nails; and happily in that situation it is not very common. It appears beneath the nail as a circular yellowish disk, usually about a couple of lines in diameter; there is no prominence; and although the pathological change in the epidermis is the same, it is less exuberant and more dense in consequence of the compression of the nail. But when the morbid disk reaches the lateral wall or the periphery of the matrix, the nail is separated from its bed and loosened, and sometimes assumes the appearance of onychogriphosis.

If we turn our attention to the models and preparations before us, we shall find several illustrations

of the peculiar features of the disease to which I have just referred. As a general observation it may be stated that lepra prefers for its development, after the knees and elbows, the limbs and the trunk of the body; it selects the shin and the forearm in preference to the thigh and upper arm, and the outer side of the limbs and the dorsum of the trunk, where the skin is tough, to the inner side of the limbs and the front of the trunk, where the integument is thinner and more sensitive.

Our model No. 284 may be taken as typical of the ordinary appearance of lepra, the so-called *lepra vulgaris*, represented by circular disks, ranging in size between half an inch and two or three inches in diameter.

The drawings 294, 295 illustrate the diffused form of the eruption, covering, as in this example, the greater part of a limb, the *lepra diffusa* or *lepra inveterata*.

No. 310 is a wax cast of the elbow and part of the arm, showing the smaller form of the eruption denominated *lepra guttata*; and in the midst of the drop-sized spots are some that are merely papular.

Nos. 312, 313 are drawings of the guttated form of the eruption; the spots are numerous, the largest not exceeding half an inch in diameter. In this particular example, the scales were remarkably thin; whereas in *lepra guttata* they are often of considerable thickness.

No. 311 is a cast in plaster taken from the same patient, and the very slight elevation of the patches is distinctly perceptible.

No. 300 is a model of the back of the trunk, from the nape of the neck to the loins, exhibiting the healing or retrograde stage of lepra. The circular patches or disks are for the most part converted into rings; and the rings are various in diameter, in the breadth of their area and also in that of their belt or limb. In several situations the rings have

come into contact or are blended at the circumference, and are more or less broken up so as to form map-like figures of irregular form and considerable extent. These two characters, the development of rings and the blending of the circumference of the rings, suggested to Guibout the terms "psoriasis gyrata et circinata," which he has given to the case; or, according to the nomenclature of Willan, *lepra gyrata et circinata*. Pathologically, the eruption is simply "*lepra vulgaris*" in the declining or healing stage, or, as it is sometimes called, the retrograde stage. In the midst of the larger and centrifugal patches may be seen, here and there, small drop-sized spots covered by a thick scale, the type of *lepra guttata*. Moreover, at the circumference of some of the blotches may be detected evidence of hæmorrhage, reminding us of the facility with which bleeding takes place in consequence of slight injury. The patient from whom this model was made was a young man 24 years of age, and the eruption was so extensive on his limbs and the scales so thick that progression was very seriously impeded thereby.

Nos. 301, 302 are drawings exhibiting the healing or declining stage of *lepra*; there is scarcely a perfect disk left, they are all converted into rings; on the arm two rings have become joined at the circumference, and given rise to a figure of 8; while the majority of the rings are broken up by the healing process into segments; and in certain situations the irregular distribution of the figures is suggestive of the term *lepra gyrata*.

The casts in wax and plaster, numbered 303 to 306, likewise illustrate the declining, or healing, or retrograde stage of *lepra*; none of the original disks remain, and the rings are so broken up that only one retains its annulate figure.

The model No. 307 is another example of healing *lepra* in a more advanced stage of dispersion. The

segments of circles are large and irregular, and like No. 301, the case is denominated by Guibout psoriasis gyrata et circinata. On the forearm are likewise to be seen one or two guttate papulæ; and in the palm of the hand several small papulæ barely a line in diameter.

No. 308 is another example of healing lepra in which scales have ceased to be formed; and the drawing 309 shows the brown pigmentary stains or "umbrae," left behind by the eruption when it has otherwise disappeared.

No. 293 is a drawing showing the clustered or diffused form of the eruption; such as is commonly met with on the elbow, while over the rest of the limb the patches are discrete. And between the discrete patches may be observed pigmentary "umbrae" or stains.

No. 296 is a photograph in which the clustered or diffused form of the eruption, as commonly evinced in its disposition around the elbow, is also shown.

No. 297 is a cast in plaster, exhibiting a large blotch of lepra of the clustered and diffused kind developed on the leg, just below the knee.

The drawings and casts, numbered 286 to 292, are all taken from the same patient, a girl fourteen years of age, who had been affected with the disease from infancy. The eruption is of the severer kind, taking a deep hold on the skin; forming large blotches, sometimes uniformly prominent and sometimes tuberculated, and resembling the form already denominated lepra inveterata. In one place may be seen a patch which is gradually expanding into a ring, evincing the healing stage; and in another there are broken rings, assuming the gyrated form.

But there are three special characters presented by this case; the *first* is the eruption on the back of the hand and fingers, one of the exceptional situations of its occurrence, but less exceptional than its outbreak on the face. The papular character of the

eruption in this situation is also particularly noteworthy. The *second* is the fissured state of the borders of the blotches as seen on the hands, a condition resulting from the condensation and hardening of the morbid skin. And, *thirdly*, the deep transverse grooves on the nails, marking periods of arrest of nutrition of those organs.

No. 298 is a model exhibiting lepra on the hand, and also in the nails. On the palm of the hand the eruption is deeply cracked and fissured in the lines of motion of the skin. On the dorsum of the hand the eruption is papular and tubercular, while on the knuckles are several patches approaching the dimensions of disks. At the ulnar border of the hand are also seen two deep fissures or rhagades.

No. 299 is another example of lepra of the hand; on the dorsum of the organ is a broad blotch of diffused lepra, and above and below it several patches of small size; but the most important feature of this illustration is the transversely grooved condition of the nails, the grooves almost warranting the denomination of fissures. Hence the case is termed by Bazin "*psoriasis unguium.*"

DIAGNOSIS.—If now we should be asked the diagnosis of lepra, in other words, how is lepra to be known and distinguished from other cutaneous diseases, the answer must be framed on the characters which these illustrations have brought so forcibly under our observation. In the first place it is *dry*, never giving exit to any exudation, except when torn or fissured, and then it simply bleeds. Secondly, it produces a *scale* of altered epidermis of peculiar structure but *white* in its colour, a peculiarity which suggested to the ancient Greeks the term *alphos*, and for the separate patches "*alphoi.*" Thirdly, the patches on which the scales are formed, and consequently the scales themselves, are *circular*, and although they range in size from one line to

several inches, may be said to present a general average of an inch. And fourthly, however scantily the patches may be dispersed over the body and limbs, they are sure to be present on the elbows and knees.

We might perhaps, advantageously add to these more striking characters of the disease the distinction arising out of its discrete and clustered or diffused distribution; the alterations of figure which result from growth and dispersion, for example, the rings and segments of rings and broken portions of the belt of the rings, and the pigmentary stain or umbra which it frequently leaves behind it in the skin. Then we have its chronic history; the absence of disturbance of the general health, and very frequently the absence of all local symptoms, and particularly of pruritus.

The diseases with which lepra might possibly be confounded are chronic or dry eczema, a desquamating form of syphilitic eruption which, from its resemblance to lepra, has erroneously received the name of lepra syphilitica, and the papular eruption, lichen planus. In chronic eczema, there is often a similar degree of thickening of the skin to that found in lepra; its patches may be more or less rounded, although not so accurately circular, but the desquamation is different: the scale of lepra is a pathologically formed and abnormal product, whereas the scale of eczema is simply an exfoliation of thin plates of normal cuticle, resulting from disturbance of nutrition. Then there is the special characteristic of chronic eczema, namely pruritus, which has gained for it the name of psoriasis, and which is either entirely absent in normal lepra or exists only to a limited degree. Lastly we have the contrast in the history of the two affections, the one an altered nutrition of the skin, the other an inflammation; the one accompanied with other evidences of eczema and the other free from all such com-

plication. Nevertheless, however distinct a typical case of lepra may be from a typical case of chronic eczema, there are intermediate forms between the two, which are sufficiently obscure to be determined only by the aid of experience. It was these obscure cases that led to the confusion of diseases which we meet with in Willan and Bateman's group of psoriasis, and which undermined the modern terminology of the two affections.

The diagnosis between the flat, circular tubercle or rather plate of chronic syphilis, coated over by a moderately thick scale, and creeping onwards by its circumference, and the plate or disk of lepra, is sometimes even more difficult than that between a patch of chronic eczema and lepra, and to make ourselves certain we are obliged to fall back on the medical history of the patient. The redness of lepra as well as that of syphilis is dull; the elevation of the plates may be identically the same; and the scale of syphilis may be a product of abnormal cuticle resulting from a dystrophic function of the morbid skin, and neither an exudation as is commonly the case, nor a simple exfoliation. The history of the case will, however, undoubtedly unravel the mystery, although the evidence must be sought for rather in the absence of the leprous diathesis than in the proof of the presence of the syphilitic cachexia; and if any obscurity still remained, all such obscurity will be disposed of by the operation of a few doses of iodide of potassium, which will cure the syphilis but produce no effect whatever on the lepra.

Lepra is essentially a diathetic disorder, and implies a defective state of the skin, but this is a state which is normal to the individual and consistent in him with a perfect standard of health. It has its habit of appearing at certain periods of life, of increase and decrease with the seasons, of growing and dispersing, and without any derangement or

disturbance of general health. And the medical man is appealed to, not for any symptoms of illness, but for a deformity that it would be convenient to have removed. When the eruption is of small extent and of moderate growth, there are not even any local symptoms, and, but for the appearance, the patient would have no knowledge of anything being wrong. It is an inconvenience rather than a disease, or if a disease, a disease only in the slightest degree of the term.

But when the affection is sudden in its attack or active and extensive in its growth, it may then become a subject of considerable uneasiness and suffering. It is no uncommon thing to hear it spoken of by our patients as producing no discomfort whatever, and in other cases as being attended with a little prickling and itching when the person becomes warmed by exercise, and when the scales, having accumulated to a considerable extent, become the source of mechanical irritation. It is *leprous* indeed, that is, it is rough to the touch and rough in appearance to the eye; but it is not *psoric*, that is itchy, and consequently not psoriatic, as is that other and commoner affection, the *psora Græcorum*, eczema of our days, or chronic eczema. Hence, in children and young persons it may exist for years without attracting any special notice, and may be altogether left to itself; being regarded, as it truly is, as a part of the constitution of the individual.

But as age advances, lepra is subject to complications and to become affected by aberrations of health. Congestions set up in the system by disorder of assimilation, may be determined to the visibly weak point in the organization, namely, the skin; and thus a chronic inflammation may be established in the leprous patches. They may become red and hot and indurated, infiltration may take place in their tissue; they may crack and bleed.

and even give forth a serous exudation. In this state also they may be invaded with intense pruritus, and for the obvious reason that eczema has been superadded to the original complaint; the case is one of eczematous lepra, and taking the itching as the leading symptom, it might very truly be termed psoric lepra, or, more simply, psoriasis. This eczematous state of lepra, however, is evidently a complication; the case is not one of normal lepra but one of abnormal lepra.

Not unfrequently, we meet in adults of middle age, or beyond middle age, with gouty lepra; the lepra itself may have been in existence from their youth, but it has given them no concern; the accustomed habits of an English gentleman have kept the scale in subjection, but on the occurrence of the form of malassimilation which we denominate gout, the lepra has suddenly burst forth with severity, it has rapidly become transformed into broad and extensive blotches of an intensely red colour, excessively pruritic, and moistened over the surface by an evident exudation. This state of lepra, this lepra rubra, is often associated with general derangement of constitution, and requires handling with care; it may have broken out as a sequence of symptoms of considerable internal disorder, and is the means of relieving that condition of disorder by derivation; or, presenting itself for the first time to the medical man, the local inflammation may be too quickly allayed by the treatment adopted, and the internal irritation of which it is for the time being the reflex, may be set up again. It was thus that in a case that came recently under my care in a gentleman of advanced age, a suddenly-relieved lepra rubra became a grave irritation of the alimentary canal, and the stomach rejected for awhile every kind of food that was put into it.

In a case of this nature, without a knowledge of the previous medical history of the patient, or with-

out the experience which could distinguish between the raised smooth tumid and circumscribed blotches of lepra, and the partially encrusted, broken and ill-defined patches of eczema, the diagnosis might be at fault, and the treatment consequently unsuccessful.

The PATHOLOGY of lepra may be expressed in two words, hyperæmia and hyperplasia. The hyperæmia results from accumulation of blood in the vessels of the papillary layer of the corium and of the papillæ; hence the perceptible redness of the patches, their manifest prominence, and the bleeding that so abundantly follows any slight injury. This accumulation of blood brings with it two consequences; in the first place, some portion of the liquor sanguinis exudes from the capillaries and infiltrates the adjacent tissues; and in the second place, the superabundant plasma thus supplied to the tissues gives rise to hyperplasia of cells—of fibrous tissue-cells in the corium and papillæ, and of epidermic cells in the rete mucosum. The infiltration and hyperplasia both tend to increase the bulk of the affected tissues, and so the prominence of the patch occasioned by the hyperæmia is further augmented, and the state of hypertrophy effectively established. Thus we find, as the pathological condition of lepra, hypertrophy of the superficial portion of the corium, hypertrophy of the papillæ cutis, and hypertrophy of the cells of the rete mucosum and of the scales of the epidermis. Or in the words of Neumann, to whom dermatology is so much indebted for his excellent microscopical examinations of morbid states of the skin:—"Psoriasis (lepra) is an affection of the superficial layer of the corium and papillary body, associated with marked cell-proliferation, as the result of which the papillæ appear greatly enlarged. This hypertrophy of the papillæ, however, does not constitute the characteristic appearance of psoriasis, as it is observed also

in other chronic skin affections, as in prurigo and eczema, in which it appears only after long duration of the disease, whilst in psoriasis it is a primary change. The excessive formation of epidermis is therefore only a hyperplasia of the cells of the Malpighian layer, associated with increased desquamation." *

The infiltration existing in the tissues of the morbid skin affords a satisfactory explanation of the extreme lightness and, as it were, frothy and glistening appearance of the scales of lepra; the cells of the rete mucosum are permeated with serous fluid derived from the corium; and when these cells take their place in the construction of the epidermis their fluid evaporates, small hollow spaces are left in the place of the lost fluid and these minute spaces become filled with air.

The term "inflammation" is so extremely elastic in its application to morbid appearances, that we cannot be surprised that lepra, presenting as it does the phenomena of redness and swelling with alteration of structure of the cuticle, and in certain instances unmistakable manifestations of inflammation, should be included among inflammatory affections. Nevertheless, its principal phenomena are those of dystrophia or altered nutrition, and in the majority of cases it more nearly resembles an hypertrophy than it does an inflammation. Still, however, although it differs widely from the violent forms of inflammation, it is undoubtedly equally far removed from those imperceptible operations which in some instances tend to develop a hypertrophic growth. Its position between the two must be one of neutrality; and if for a moment its inflammatory tendencies have to be recognized,

* "Text-Book of Skin Diseases," by Dr. Isidor Neumann: translated by Alfred Pullar, M.D., page 169.

The same book is also translated by Lucius D. Bulkley, A.M. M.D., of New York.

they must be regarded as of an infinitely subacute character. Lepra is not purely non-inflammatory, neither is it decidedly inflammatory, and the appearances presented by it when examined by the microscope are such as would result from a passive hyper-nutrition.

CAUSE.—If we now turn our attention to the cause of lepra, we shall find still further reason to regard it as a dystrophic affection rather than an inflammation. It obviously has its origin in feebleness of the skin, and the local feebleness may be traced back to feebleness of constitution, while the feebleness of constitution creates a tendency or diathesis. Hence it has been repeated again and again that the subjects of this affection are in good health; but it is evident that a disorder of the skin, even when nothing more than a defect of nutrition, is inconsistent with a state of perfect health, it is an admission of a weakness somewhere, and what that weakness is we will now endeavour to discover.

Lepra is well known in a number of instances to originate in heredity, and the examination of five hundred cases gave me as a result, that the proportion in which heredity occurred was upwards of thirty per cent., namely 157. But another and very important consequence issued from the same inquiry, which was that 65 out of the 500, namely nearly eight per cent., could be traced to a consumptive stock; while further investigation established that in almost every instance a defect in the parental stock might be discovered,—that sometimes there were the evidences of struma, sometimes of cancer, sometimes syphilis, and at other times cachexiæ, having their origin in different sources.

Some few years since I put on record in the *JOURNAL OF CUTANEOUS MEDICINE* several cases illustrating the origin of lepra from a consumptive and

cancerous stock. One of those cases was a strong, robust-looking man, 32 years old, who had been the subject of leprosy since the age of seven; the disease was not hereditary, but his father died of consumption, his mother being healthy. The issue of this semi-phthisical stock was ten children, of whom three suffered from leprosy, and three from phthisis. Another of the cases to which I have referred was that of a gentleman aged 45, who had been troubled with leprosy for a period of ten years; his mother died of cancer and his father of gout. The children of this marriage were six in number; one suffered as just stated from leprosy, one died of cancer, and of the remainder one only survives. A further example of the hereditary transmission of a morbid diathesis capable of manifesting itself in the children of a weakly stock, but in a manner different from the original, is the following. A healthy man and woman married, after having lost their respective married partners from consumption. The husband's first family were three in number, of whom two died young, and one is weakly. The wife's first family was also three, two dying in infancy, the survivor having delicate lungs; while the present family numbers eight, two of whom suffer from leprosy, and the remaining six are delicate.

The diathesis or predisposition to the disease being present, its development may obey a considerable number of exciting causes. Indeed *every cause* capable of exciting disturbance of function or illness may be equally an exciting cause of leprosy; for example, dentition, the constitutional changes occurring at puberty, the eruptive fevers, shock to the nervous system, or derangement of assimilation. The statistics of five hundred cases of leprosy gave as a result, that the eruption was more common in the male than in the female (268 to 232, majority 36); but that between the ages of 10 and 15, when the

greatest number of cases occurred, and during which period menstruation is established, the majority is in favour of the female (45 to 33, majority 12). The earliest period at which the disease has been observed by me is three months; after that two years and a half; under five years there occurred seventeen cases out of the 500 already mentioned, and under ten years fifty-nine; while at the other extreme of life the eruption in one case made its first appearance at eighty-five, in another instance at seventy-three; and above fifty years of age there were thirty-four cases.

The *prognostics* of lepra Græcorum are: that it is perfectly safe as affecting life, but extremely uncertain as to cure. Originating as we have seen in an inherited inherent debility, the cure of the affection implies the removal of that debility, and the substitution of constitutional strength for existing weakness. To succeed in this object many favourable conditions are requisite, and much help on the part of the constitution itself; but where no recuperative power is present in the organization, then our hopes of cure must be small. There are cases doubtless when lepra may be regarded as a lifelong ailment, which will accompany its possessor from the cradle to the grave, but, on the other hand, there are other cases in which the eruption disappears spontaneously, never to return. This latter fact furnishes to us a stimulus to aid, as far as our means will permit, the restoration of the powers of the constitution, and with the hope that such restoration will be successful in sweeping away the disease. The eruption always favours one season of the year in preference to another; thus it will be better during the cheerful months of summer, when the skin is called into active exercise and is best nourished, than in the dull and colder season of the

year. And on the same principle it will often disappear on a change from a cold to a hot climate, as in a migration from England to India. On the other hand, if for some months it have shown signs of amelioration, an exacerbation or a new outbreak may be expected during the winter months. It is likewise influenced by the alteration of temperature, which takes place in the transition from winter to spring, and also from autumn to winter. And in a similar way it has been known to disappear entirely during pregnancy or after a severe illness, to recur subsequently. In all these phenomena we see it always following temporary changes in the constitution, and exhibiting a tendency to cure when perfect health is restored and the diathesis consequently removed. In some statistics of the manufacturing classes it has been shown by Dr. Purdon of Belfast, that the disease is less frequent among them than in persons of a better position in life. And this fact might have been anticipated, and may be explained by the more hardy habits of the manufacturing class and their exposure to vicissitudes of temperature, which tend, when they are properly fed, to render them robust.

The TREATMENT of leprosy founded on the preceding data, presents to our minds several prominent considerations. In the *first* place we should endeavour to neutralize the predisposition and so correct the diathesis. In the *second* place we should remove the local affection; and in the *third* place we should aim at fortifying the constitution, and thereby curing the disease.

If it be clearly recognized that leprosy has its origin in an inherent debility, we must do our best to remove that debility by the help of diet, air, and exercise. The value of the hygienic conditions air, exercise, and bathing, are generally recognized by

the entire community; but the advantage of diet in the removal of a diathesis is less well comprehended. For my present purpose I should compare the human child to a growing animal of any other class, or to an arable field; we can neither expect wholesome flesh nor a productive crop, without good, sufficient, and substantial food on the one hand, or an unstinted supply of manure on the other. In the case of the animal, be it ox, horse, or dog, we should not doubt of compassing any amount of perfection we might desire; wholesome flesh, sound fat, a perfect skin, and complete muscular power, by the agency of food. If we could select our animal, we should not overlook the advantages of stock; but even in the case of a faulty stock, we might expect, with increased diligence and care, to obliterate any existing infirmity, and bring the animal up to a high, if not to the very highest, standard. The same reasoning applies with equal force to the human individual; food and hygienic means properly selected and judiciously employed are capable of rendering the tissues firm and sound and the organization healthy. The means are so simple as to be known to us all; but their application is perhaps not so clearly understood: the food should be a happy combination of the animal and the vegetable, with a judicious distribution of the meals over the three periods of the day. But each of these three meals should be equal in nutritive capacity, because each is required to supply the waste of the preceding interval and to support the individual until the period of the next renewal of his food arrives. We must avoid all preconceived ideas and prejudices which have been and are derived from habit and custom, by discarding the commonly employed terms for our meals, such as breakfast, dinner, and tea; and using instead the more significant designations of—morning, mid-day, and evening meal. The relative value of these

terms may not at first sight be observed, but they might be practically illustrated by our expectations on the occasion of an invitation to tea or an invitation to supper. However, in the case of children whom we have to rear and nourish into strong men and women, the formula of breakfast, dinner, and tea, should be altered into—breakfast, dinner, and supper, or, better still, into the morning, mid-day, and evening meal; or, as it is expressed in the stable, the three feeds a day.

Now, to remove a diathesis from the child of a leprous stock, the standard which I should aim at reaching might be expressed in the language of the stable as three feeds of oats—good, well-filled, and weighty oats—a day, and a handful of beans; and by such a diet, honestly persevered in and judiciously regulated, I should hope, not only to eradicate the innate tendency to lepra, but likewise that of every other form of dyscrasic disease, including struma, phthisis, ringworm, and cancer. Indeed, it seems to me that in the state of a functionally healthy childhood, the manifestation of disease from any other causes than those of contagion, such as the exanthemata and fevers, would be impossible; and in the case of contagion, unless its virulence were excessive, even that would fail of taking effect.

The next indication, and the one which is paramount in the eyes of the patient, is the removal of the eruption; and experience has shown that water and soap may accomplish very much in effecting that object; for not only does the process of ablution remove the scale but it likewise stimulates the congested and infiltrated patches of skin to a more healthy action. Our remedies, therefore, under this head must be—the bath in every convenient shape, with an abundance of soap; and, first among the soaps, is the so-called soft-soap, or potash-soap, or the more elegant Naples soap. In certain situa-

tions, as upon a limb, around the trunk of the body, and especially on the elbow or knee, the most efficient mode of removing the scales is the water-dressing, a fold or pad of linen saturated with water and covered with a waterproof envelope; if this be worn at night, the epidermic scale will be so far softened by the morning that it will all rub off by the aid of a piece of flannel, or of a soft brush and soap; and this should be repeated day after day until the scale ceases any longer to form. The common hand- or foot-basin may be all the bath required, but, wherever practicable, the hip-bath would be more suitable, and, better still, as a more luxurious method of effecting the object, the full-length bath. The same amount of liberty is permitted as to the temperature of the water, which may, as before, be adapted to convenience, to the temperature of the atmosphere at the time, or to the susceptibilities of the sufferer. In an institution provided with proper help, we might submit our patient to a regular process of soaking and friction, or packing and friction, and we should thereby accomplish our purpose in a short space of time; but where we have to accommodate our treatment to the convenience of the patient, we must throw no difficulties in the way, but content ourselves with what we can get, rather than what we could wish. Our patient will often expect to be cured without trouble to himself, and is not unfrequently the least zealous of the three parts which, according to Hippocrates, are necessary to a cure,—namely, the physician, the patient, and the disease. If, after a few days, our patient return to us with portions of scale adherent to the morbid surface, we may feel assured that he has neglected the instructions which he received, and which I am in the habit of summarizing briefly in the words, “keep down the scales by every possible means.”

It will naturally be inferred that a similar amount of soaking and friction is not applicable in every example of the disease, and that the treatment may require modification in degree, although none whatsoever in principle. The congested integument sometimes bleeds freely on the disturbance of the scale; sometimes it is made sore by the frictions and soap, and is disposed to chap or crack; and in cases such as these we may find it necessary to recommend a milder process; while, on the other hand, in very chronic cases, I have found benefit in the employment of pumice-stone for the removal of the scales. As an illustration of the capabilities of the simple remedy to which I am now referring, namely soap and water, I may mention that a young lady, who was extensively covered with lepra, and who was extremely anxious for its removal, came back to me with a skin perfectly free from the eruption at the end of three weeks after having received the instructions I have now laid down. She told me that she had immediately put in practice the active soap-frictions which I had recommended, and had performed them so effectually that she had denuded every patch on her body, and made the skin so sore, that she could scarcely move a limb without cracking the inflamed surface, and was therefore obliged to keep her bed for nearly a fortnight, but that she was, nevertheless, perfectly satisfied with the result; while Nature, by the sudden diversion, seemed equally pacified, and withdrew the attack she had made on the cutaneous surface.

When the scale has been effectually removed, and even while it is in course of removal, we have next to direct that the patches be thoroughly rubbed with tar. The mode of using the tar is to rub it into the morbid skin by means of a piece of flannel, and to continue the friction until some soreness is produced; the quantity of tar required for the purpose

is small, and the object to be kept in view is to rub it into the skin so as to procure its absorption by the morbid tissues. Tar is one of those therapeutical remedies which has maintained its ground firmly for a number of years, and which must be regarded at the present time as the very best we possess for the local treatment of lepra. Of its precise mode of operation we have no definite knowledge: it may be that it acts by virtue of its stimulant property alone; but I am more inclined to think that it exerts some special influence on the morbid tissues, for when it has been used largely it not only excites an inflammation of the follicles of the skin which in appearance resembles acne and has been denominated tar-acne, but it has also been detected in the urine, and in cases where it has excited vomiting, in the contents of the stomach also.

Thus we must add to our instructions for the local treatment of lepra by means of saponaceous frictions and ablution, the active friction into the morbid skin of tar by means of a piece of flannel. Here again I may call to mind the varying susceptibilities of the integument, and the necessity of modifying the force of our treatment in accordance with that susceptibility. Hence, my usual instructions are, to use the tar-friction diligently at night, and the soap-friction and ablution in the morning. But in cases of less sensitiveness of skin, or where a more rapid cure is required, or in clinical cases, the tar might be used both night and morning.

There are three kinds of tar employed medicinally in this country, namely, the *pix liquida*, commonly denominated Stockholm tar, the juniper tar or *huile de cade*, and a mineral oil called Barbadoes tar. I am not aware that there is any difference in the therapeutical value of these forms of tar, but there is some difference in their odour, and it is frequently necessary to select that which is least appre-

ciable to the smell. I usually prefer for use the juniper tar, from an idea that it penetrates the skin more actively than the others; for internal administration the Stockholm tar is ordinarily prescribed; but the least objectionable in point of odour is, probably, the Barbadoes tar. Either of these tars may be employed for frictions in lepra, and may be used most conveniently in their pure state. But where it may be found desirable to use the tar in a diluted form, then the unguentum picis liquidæ of the British Pharmacopœia will answer very well, or an ointment made extemporaneously with either of the tars in combination with benzoated lard; and to render the ointments of tar more solvent of albumen, an addition may be made to them of carbonate of potash.

It is a matter of curious observation that on certain parts of the body the eruption will yield more easily to local treatment than on others: such parts are the hairy scalp and the face; and it is fortunate that this is the case, for in these regions the eruption is necessarily more inconvenient than elsewhere, and the application of tar, from its colour and smell, more than usually objectionable. In both of these localities, however, the red oxide of mercury ointment or the white precipitate ointment very quickly removes the disease, and leaves nothing to desire in the way of a remedy.

I need not trouble you with a host of external remedies, all of a stimulative character, which have from time to time been advocated for the treatment of lepra; their enumeration would include every stimulant compound in the pharmacopœia. And I need only say here that when the objection to the odour of tar is so insurmountable that the remedy cannot be employed, I would point to the unguentum hydrargyri ammoniati as an useful but very inferior substitute.

In my description of lepra I have spoken of it as

sometimes presenting an inflammatory character, as being sometimes chapped and fissured, or as being aroused into a painful and angry state by over-severity of treatment. In all these cases the benzoated oxide of zinc-ointment comes to our aid as a valuable application, and one which may be used as often as necessary, and without question or stint.

The *third* indication which I have laid down for the treatment of lepra is that of fortifying the constitution, and thereby attempting to *cure* the disease. For this purpose we have still to direct our first attention to hygienic and dietetic principles, and at the same time to regulate any function which we may find disordered, or which may need reformation. I have already stated that any cause which could give rise to other forms of disease may be an exciting cause of lepra; and not unfrequently the eruption may be greatly relieved, or be made to disappear by a proper medication directed to the removal of the exciting cause alone, aided by the local treatment already described. Let me, for example, illustrate the suffering induced by dentition; the disorders of menstruation; the derangements of digestion; or the malassimilation which gives rise to gout. In all these instances the indication is one of relief to the general health; after which we may bring into play any special appliances which experience has proved to be useful in this eruption.

These observations also tend to show us that remedies may sometimes obtain very undeservedly the credit of being cures of lepra which, in fact, are only cures of that state of deranged health which suffices to keep up and probably to aggravate the eruption. It was thus that on one occasion I found myself accredited with a cure for this disease, which I had prescribed to give tone to the digestive organs,

namely, nitromuriatic with a bitter, and to counteract the mischievous effects of bleeding, purging, and starving, to which the patient had been subjected, with the view of eliminating the supposed *causa morbi* from the system. And in the same category must be placed a long list of medicines which have from time to time been recommended, and which sometimes have been simply the last remedies employed when the disease was already tending towards spontaneous cure.

One, among the host of remedies which have been advocated for the treatment of leprosy, is the balsam of copaiba. Hardy, of Paris, employing this medicine for another purpose, observed, to his surprise, that in a patient afflicted with that disease the skin was restored to its healthy condition. But the value of the remedy needs further confirmation. Experiments made by myself have failed to elicit any favourable results; and the qualities of the substance, as is well known, are such as violently to nauseate and disgust the stomach. If, as I suppose, the *modus operandi* of copaiba is to stimulate the skin through the agency of the capillary circulation, I should feel inclined to search for more agreeable as well as more efficient means.

When the health is otherwise good in every respect, and when no appreciable disorder of the economy remains beyond that debility which is the essence of the diathesis, we shall then find an admirable and perfect remedy in arsenic. Arsenic is essentially a nutritive tonic, and has a special tendency to exercise its virtues on the skin, and therefore is precisely the kind of remedy which we should wish for when a nutritive debility was the essence of the disease and a special nutritive debility affecting the tissues of the skin.

A few other remedies which have obtained a certain reputation in the treatment of leprosy, have

similar properties to arsenic, but probably in a partial and more limited degree. Thus I have already adverted to the stimulant action of tar upon the skin; and tar has been used as an internal remedy with some degree of success in the treatment of this disease. The perchloride of mercury, again, has the credit amongst us of being a nutritive tonic; that is, of giving energy to the nutrition of the tissues of the whole system. And the perchloride of mercury in doses ranging from $\frac{1}{2}$ to $\frac{1}{4}$ of a grain, administered twice or three times in the day, has also been found useful in the cure of lepra, and has formed the basis of several popular nostrums for cutaneous complaints.

The influence of arsenic on the surface tissues of the body is shown by the redness of conjunctiva which accompanies its prolonged use, by the accumulation of pigment in the skin, and also by the increase in thickness of the epidermis. Its neurotonic or neurostimulant properties are indicated by a feeling of warmth which pervades the whole surface of the skin in persons of an habitually chilly nature, by the excitation of pruritus, and also, when acting injuriously by spasmodic contractions of the hands and feet, and sometimes by loss of sensation. But where emaciation is present in any degree, when waste of tissues is exemplified without any other apparent cause than that of insufficient nutritive power, then the restoration of the appearance of health in the system, the plumpness of the body, the firmness and freshness of the skin effected by arsenic, are very remarkable.

Our pharmacopœia is rich in arsenical preparations: for example, there is that well-known and excellent remedy, the solution of Fowler or liquor arsenicalis; then there is the acid solution of de Valangin, the liquor arsenici hydrochloricus—these are a host in themselves, and a good physician would

require nothing more. Nevertheless, we possess besides another alkaline salt of arsenic, the arseniate of soda, as well as the arseniate of iron, and sundry others which are not included in the pharmacopœia of Great Britain. Arsenic is also occasionally employed in its primitive form, as in the celebrated asiatic pill.

In the adoption of arsenic as a remedy, the first requirement is to regulate the dose with accuracy; this is undoubtedly best attained by employing a solution, such as either of the three solutions already mentioned. The dose of the two more commonly employed solutions, namely, liquor arsenicalis and liquor arsenici hydrochloricus, as prescribed by the British Pharmacopœia, ranges between two and eight minims, and the estimated dose of arsenic in solution $\frac{1}{60}$ th to $\frac{1}{12}$ th of a grain. We have here a good and safe standard of quantity, and can therefore administer the remedy without danger and with every chance of success. In my own practice, I am in the habit of prescribing from three to four minims of either of these solutions three times a day for a child labouring under leprosy, and from four to six minims as the dose for an adult.

In the administration of so potent a medicine as arsenic we should always proceed with a watchful eye, so as to be able to check in an instant any injurious effects that may arise, and even be ready to anticipate them. It is therefore advisable to begin with a small dose, and gradually rise to the maximum dose, and to suspend the use of the remedy for awhile immediately any symptoms of disagreement may chance to manifest themselves. For such a purpose the medicine may be omitted for a day, or two or three days, and then resumed as before. By this simple precaution the remedy is robbed of all its dangers, and becomes perfectly harmless; so that, during a long practice and a long experience, I have very rarely, indeed, met with any

inconvenience from its use, and such inconvenience when it has arisen has been of a trivial and transient nature.

And what, it may be asked, are the symptoms that we have to look for as indicating an injurious operation of arsenic when employed as a medicine? They may be stated as follows:—*first*, an irritant action on the mucous membrane of the stomach and alimentary canal, giving rise to loss of appetite, nausea, spasms, and colic; *secondly*, a peculiar action on the nervous system, producing nervous depression, and a sense of exhaustion; in the third place there is œdema of the subcutaneous connective tissue, and pruritus; and *fourthly*, certain secondary effects, among the earliest of which are conjunctivitis, and subsequently dermatitis; and later still certain dystrophic changes in the skin manifested by melasma and hypertrophy of the epidermis.

On the manifestation of any of these symptoms, it is a matter of prudence to suspend the use of the remedy for a longer or shorter period; if the medicine have only been taken for a brief interval, a few days may be a sufficient rest; but if it have been in use for a considerable time, then a longer abstinence becomes necessary. But as we rarely have the opportunity of watching our patient from day to day, we require some general direction to be given to him while taking arsenic, and practically I rely upon the injunction “that the medicine is always to be stopped if any symptoms of internal uneasiness or discomfort arise.” For whether such symptoms be the direct consequence of the arsenic or of other causes of irritation, and this the patient is unable to decide, the temporary cessation of the medicine is equally necessary.

The possibility of the occurrence of unfavourable symptoms from the use of arsenic, and the consequent interruption of a course of treatment probably

necessary to the cure of our patient, have been the means of suggesting certain precautions which cannot be too strictly enforced: the *first* of these is to make the dose of the vehicle as small and as pleasant as possible, so as to avoid disgusting the stomach; and the *second* is to exhibit the medicine with and at the end of a meal. In my own practice, I limit the bulk of the dose to sixty minims, the vehicle in such a case being steel wine and syrup, and the flavour of the medicine being very like that of a weak liqueur. This I find may be taken by the youngest child without repugnance and even with pleasure, a consideration of much importance where a medicine is required to be taken three times a day for several months. The second precaution is intended to prevent the contact of the arsenic with the coat of the stomach, to secure its due admixture with the whole mass of the food contained within the stomach, and to ensure its conveyance into the system with the chyle and the general circulation of the blood. And these precautions have not only the advantage of making the use of our remedy as safe as possible, but they likewise secure to us the maximum power of the medicine with the minimum dose.

Arsenic is now too familiar with the medical profession to need any defence from me. Mr. Hunt, who has probably used it more largely than any other medical man in this country, vouches for its entire harmlessness, and declares it to be less dangerous than any other drug in the Pharmacopœia. We have another illustration of its innocuousness in the village of Whitbeck, in Cumberland, where the inhabitants are supplied with water from a river largely impregnated with arsenic, to so great an extent in fact, that ducks and even fish, with the exception of eels, are unable to live in the stream. It is also mentioned of this place that when a

railway was made in the locality, some of the men, and also some of the horses, suffered sundry inconveniences from the use of the water, but that these inconveniences quickly passed away, and then it was remarked that the horses employed at Whitbeck were distinguishable from others by their sleekness and excellent condition.

We are occasionally met by the inquiry whether arsenic, when taken for a considerable time, can be left off without injury to the constitution? The treatment of lepra is a ready answer to that question; no instance is on record, neither, as I believe, was ever one known, in which, after a prolonged course of arsenic, any necessity was felt on the part of the patient for the renewal of its use on the ground of self-gratification. The case of the arsenic-eaters rests on different grounds: they adopt it as a custom, and are reported to experience a sensation of vigour from its use. I am ready to accept this declaration as true, for I have many times met with persons who have expressed their delight at the feelings of strength which they experienced when taking arsenic as a medicine, but in one instance only has it occurred to me to hear such a remark as that made by a young lady, namely,—“that it did her so much good, and made her feel so well, that she would like to take it always.” Nevertheless, when taken as a habit, and not with the specific object of curing disease, the habit may assume the character of a necessity, and like smoking and opium-eating, or dram-drinking, cannot be abandoned without a struggle.

As to the quantity of arsenic taken at a dose by the arsenic-eaters, I am not aware of any satisfactory information. A lady, who had acquired this habit in Australia, once gave me a small fragment such as she was accustomed to put into her mouth for chewing; the fragment was one of arsenious

acid, and weighed one grain; the disintegration of this fragment was the act of the teeth, which would subdivide it into many smaller fragments. But, as we know, arsenic is very slightly soluble, and, in the form of crystalline fragments, one grain could but offer a very limited surface to the action of the solvents of the alimentary canal; hence it may fairly be inferred that the grain of arsenic in this case would scarcely supply an amount of solution greater than that of an ordinary medicinal dose. And with regard to the other cases of arsenic-eating that have been reported, I should be inclined to say, "ex uno disce omnes."

I have now, Sir, completed the fourth annual Course of my Lectures on Dermatology; and have to thank you, as well as my audience, for the attention which you have been good enough to give me.

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