Postscript.

It was unfortunately after the printing had been concluded that I received the excellent work of Aug. Hirsch in its revised form,[1] so that I am debarred from utilizing the valuable statements of this learned investigator. This would have been especially desirable to me in the section on leprosy, because Hirsch occupies almost the opposite standpoint from the one I have taken in the most important questions, namely, those of contagiousness and heredity. Although he believes the infectious nature of leprosy to be extremely probable, he positively denies the contagiousness of the disease. He says: "According to my conviction, there is not one fact presented which speaks decidedly and incontrovertibly for the transmission of the disease by contagion." On the other hand he writes: "Only one kind of transmission of leprosy cannot be doubted—I mean the one brought about by heredity." I have felt constrained to cite these views which are opposed to my assumption, but am nevertheless inclined to adhere to my opinion. As far as I can see, two hypotheses are now opposed to one another, and of these, I must look upon the one I defend as better supported, though not proven as yet.

Especially as to the spread of leprosy on the Sandwich Islands and the doubts raised by Hirsch in reference thereto, there is no room for doubting the fact that in the decennium 1850–1860 only isolated cases occurred, but a few years later, hundreds of cases already were observed. Hillebrand has lately (by letter) called attention to the fact that possibly the forcible general vaccination succeeding the small-pox epidemic of 1872 may have contributed to diffuse leprosy in the pronounced, above-described manner. The vaccination in most instances was performed by laymen, and the supposition is not entirely without foundation that with the vaccine virus leprous germs were transferred from the sick to the well.

Compare also in Hirsch, Sec. III., Yaws, Pian, p. 69; Sec. IV., Button Scurvy (Ireland), p. 77; Sec. V., Verruga peruviana, p. 78.

[1] "Handbuch der historisch-geographischen Pathologie." Zweite, vollständing neue Bearbeitung. II. Abtheilung, Stuttgart, 1883.

NEUROSES OF THE SKIN.

BY

PROF. ERNST SCHWIMMER.

Neuroses of the skin are affections of the common integument caused by disturbed nervous activity inducing alterations in sensation, nutrition, and motility. Hebra[1] considers the cutaneous neuroses as affections in which the disturbances of innervation run their course in the skin and its nerves without demonstrable pathological alterations. Kaposi[2] expresses a similar opinion. Neumann and Bulkley have enlarged the category of those affections to some extent. Auspitz[3] has collected into three classes the group of affections due to disturbances of nervous activity; namely, diseases of innervation of the vessels, diseases of the sensory nerves, and functional anomalies of the cutaneous nerve expansions. In a recent monograph,[4] I have thoroughly discussed the dermatoneuroses, and summarized all factors which physiology and pathology permit us to adduce in favor of this view.

Since the question respecting the trophic nerves[5] is not yet decided, and as objections might be raised against basing upon it the classification of neuroses of the skin, we shall divide and attempt to discuss nervous affections of the skin according to physiologically justifiable principles, including some anomalies of nutrition which may be looked upon as tropho-neuroses.

I. NEUROSES OF SENSIBILITY.

These consist in functional disturbances of the sensory nerves, and the qualities appertaining to them show alterations manifesting themselves as anomalies of the sensory apparatus. Diseases belonging to this class are either concomitant phenomena of other diseases, or they are separate forms distinguished by the fact that they run solely along the tracts of nerves, and are not followed by any disturbance of growth and (unless we include prurigo in this class) of nutrition. Neuroses of sensibility show disturbances either

[1] "Handbuch der Hautkrankheiten." Stuttgart, 1876, ii., p. 540.
[2] "Pathologie und Therapie der Hautkrankheiten." Vienna, 1880, p. 704.
[3] "System der Hautkrankheiten." Vienna, 1881.
[4] "Die neuropathischen Dermatonosen." Vienna, 1883. Urban & Schwarzenberg.
[5] Ibid., pp. 37 et seq.

in the direction of increased or diminished activity, the former being known as hyperæsthesia, the latter as anæsthesia.

1. *Hyperæsthesia of the Skin.*

This is a condition in which there is a high degree of sensibility. When the conductivity of the nerve-tracts is intact, then, with every increased excitability of the sensory cutaneous nerves, every intensified stimulus will cause the perception of a heightening of the sensibility. Hyperæsthesia of the skin is merely a partial manifestation of a quality inherent in the entire organism; but it is not necessarily connected with the increased sensibility of all categories of sensation, for the functions of the organism may be normal, and still the common integument may be hyperæsthetic. A large number of vaso-motor disturbances can be traced back to hyperæsthesia of the skin alone, and even after intellectual irritation we see alterations in color of the skin, accompanied by sensory disturbances, such as itching, burning, and stinging.

Hyperæsthesia manifests itself by different sensations, but its essential manifestations are pain and itching. Pain is a form of excited sensibility occurring only in the diseased nerve; itching occurs with all irritations of the nerve terminations in the skin and the mucous membranes; it is a symptom of numerous skin diseases, and we shall return to it more in detail with the description of pruritus cutaneus. It differs in degree from the sensations known as paræsthesiæ, such as tickling, burning, formication, which can be brought into more or less close connection with central or peripheral affections. The stimulations affecting the cutaneous nerves and followed by hyperæsthesia are often influenced by local conditions; in some cases, the intensity of irritation will produce merely an increase of sensation, and in others not; this latter phenomenon, however, is not always characterized by sensory, but also by increased tactile sensation. Such abnormal sensations manifest themselves in numerous skin diseases; eczema, dermatitis, pruritus, etc., at times shows a so highly increased irritability of the cutaneous general and tactile sensation that the skin appears painful to the touch.

2. *Anæsthesia.*

Generally, anæsthesia occurs with skin diseases only when the cutaneous malady is directly connected with an affection of the nervous system, as in macular leprosy, in gangrene of she skin, etc.

Anæsthesia may be complete or incomplete and is either central or peripheral.

a. Peripheral anæsthesia is excited by local influences on the skin, such as abnor ma temperatures, certain caustic or narcotic substances, and finally disturbance of circulation (ischæmia). Cold and heat act equally paralyzing and anæsthetizing. In certain conditions where cold in the form of ice bags is continuously applied for days, the sensibility of the skin disappears to such an extent that pricking and pinching often are no longer perceived. On the same principles is based the local anæsthesia with the ether spray (Richardson) for operative purposes. In congelations, the affected parts are anæsthetic for some time; but if destruction of the skin occur, the anæsthesia becomes permanent. Heat acts in a similar manner: if it be very intense and destroy the layer of the cutis, the papillary body perishes completely and total anæsthesia results.

Narcotic agents, used locally, often have a soothing effect and reduce morbid hyperæsthesia; but the agent must be applied to the cutis directly, so as to act there immediately on the nerve expansions, as when blistered surfaces are covered with opiates. It is possible to secure incomplete anæsthesia by subcutaneous injections of narcotics.

Peripheral causes also include affections in which the conduction to the centre is interrupted by exostoses, exudations, tumors, or injuries of the nerves.

b. Central anæsthesia is always spread over larger surfaces of the skin, because its causes are situated either in the brain or spinal cord. Such conditions are produced either artificially—as after large doses of narcotics, or by inhalations of ether or chloroform, or they are due to extravasations, traumata, tumors in the central organ, or to exostoses and injuries of the bones of the skull-cap and the vertebræ.

3. *Paræsthesia.*

This is a disturbance of sensibility midway between the two just discussed. The paræsthesiæ are best designated as associated sensations induced by internal irritations. Among these anomalies of sensation belong those of itching, numbness, formication, burning, the velvety feeling, etc. These anomalies are not isolated sensations, and we can presuppose that, wherever hyperæsthesia and hypæsthesia exist, paræsthesia will also be found. The integument is the field for these abnormal sensations which there manifest themselves as symptoms of grave central or peripheral nervous affections, and they are usually manifestations of pruritus cutaneus.

4. *Neuralgia Cutis.*

In general, the term neuralgia designates that affection of the sensory nervous apparatus which is characterized by pain. Neuralgia, however, presents still other symptoms which distinguish it from other affections running along the nerve-tracts. Among these we allude to the direction in which the pain extends. Neuralgia ordinarily keeps along the track of a nerve-trunk and spreads in this direction, and it shows no uniform increase of irritation, but is distinguished by a growing and lessening of the excitement (paroxysms), between which the nerve-trunk or branch is in a normal state (intermissions); moreover, it is always provoked by internal—that is, caused within the organism—morbid processes. Neuralgia is closely related to hyperæsthesia, but is not identical with it; for both can coexist independently, and may also mutually exclude each other; the same is true in regard to neuralgia and paræsthesiæ. The latter, in case they occur with attacks of nervous pain, are present not only at the time of the neuralgic paroxysms, but also irrespective of them. As early as 1850,[1] Türck found in neuralgias that anæsthesia was more frequent than hyperæsthesia in the corresponding portions of the skin lying above the painful spot, and Nothnagel[2] states that, in the first period of neuralgic disease, hyperæsthesiæ can probably always be demonstrated, but in the later stages, anæsthesiæ. According to Nothnagel, therefore, the pain causes the changes in the cutaneous sensibility in an ascending and a descending direction.

The vaso-motor symptoms accompanying neuralgia may be either angiospasm or angioparalysis; we frequently find erythemata as sequels of neuralgia, most pronouncedly in trigeminal neuralgia; at times, eruptions of urticaria are noticed, especially in cases in which they are provoked by malaria, as in the typical hemicranias, occipital neuralgias, etc. Now and then trophic alterations in the shape of disturbances of nutrition and growth of the skin and its appendages occur after neuralgia. These are: eruptions of vesicles and bullæ (zoster and pemphigus), superficial erythemata, with inflamma-

[1] Eulenburg: "Lehrbuch der Nervenkrankheiten." Berlin, 1878, i., p. 44.
[2] Virchow's Archiv, 54 Bd.: "Schmerz und cutane Sensibilitätsstörung."

tions of the skin, actual erysipelata remaining confined to a circumscribed region corresponding to the neuralgia; moreover, anomalies in the sebaceous and perspiratory secretions, discoloration and falling of the hair, etc.

PRURITUS CUTANEUS, ITCHING OF THE SKIN.

This forms, on the one hand, an invariable concomitant of numerous skin diseases, on the other, it is an independent affection; accordingly, we treat of pruritus in a symptomatic and an idiopathic form.

1. *Pruritus Cutaneus Symptomaticus.*

Itching is a sensation which is not clearly definable in words, and which, produced by an irritation of the papillæ of the skin, yet differing from the sensations of burning, tickling, and pain, causes an irresistible inclination to scratch. The itching sensation may be produced by local or general causes.

Among the local factors are included the itching eruptions, such as eczema and prurigo, also urticaria. Some forms of psoriasis are ordinarily likewise accompanied by itching, still the eruption is often very extensive without causing any itching. The cutaneous affections due to animal parasites, acarus scabiei, bugs, fleas, as well as some others caused by vegetable parasites, such as herpes tonsurans, eczema marginatum, are always accompanied by violent itching, while pityriasis versicolor never, or only exceptionally causes any itching. In the cicatrization of ulcers, during the formation of granulations, an intense itching, too, frequently appears. Again, itching occurs as a symptom of certain general morbid conditions; for instance, some hepatic diseases connected with icterus; furthermore, in exanthematous fevers, such as scarlatina and measles, both with the appearance of the exanthem and in the stage of desquamation; on the other hand, in certain dyscrasic conditions such as syphilis and scrofulous affections, pruritus is usually entirely absent.

The internal processes during itching are difficult to trace. The facts that some acute exanthemata as well as icterus cause itching, that intense pruritus is at times found in medicinal erythemata, leave it to be inferred that, under some conditions, a noxious element gets into the blood and excites the nerve termini in the papillæ. In other cases, however, we must consider this hyperæsthetic state as a local process independent of some influence on the blood. Such a process would be, perhaps, the stasis of the blood in the papillary body which is usually found in exudative conditions. The increased plethora within the efflorescences produces pressure on the nerve termini which is felt as an itching sensation, and the pruritus persists as long as the stasis; but whenever the morbid exudation diminishes with the defervescence of the affection or by the removal of some vesicles or nodules by the scratching consequent on the violent irritation, the itching will now and then decrease.

It is self-evident that, in the case of the parasitic affections of the skin, some less remote factors for the explanation of the itching can be found.

b. Pruritus Cutaneus Idiopathicus s. Prurigo sine Papulis.

This affection was in former times often mistaken for prurigo. In this connection we will only point out that, although both forms of disease resemble each other closely with reference to the nervous accidents, they still are not identical processes; the chief difference being, that in pruritus the itching present is general or exists on circumscribed spots without a papular eruption, while prurigo shows an itching nodular eruption.

Pruritus cutaneus has also been termed pruritus formicans and senilis (Willan), or prurigo latens (Alibert), partly because the itching provokes a sensation resembling the crawling of ants, partly also because this nervous condition is very frequently observed in old people. With respect to the symptoms in pruritus we must point out that in every long-standing similar affection excoriations in variable number and extent occur, owing to the continuous violent irritation, in consequence of the scratching, and the original morbid picture is then easily overlooked. It is important, therefore, to distinguish the excoriated nodules in prurigo from the excoriated epidermis in pruritus, and the various alterations occurring in the two forms of disease will be readily and distinctly perceptible.

The distinction between pruritus universalis and pruritus localis is perfectly justifiable practically.

Pruritus universalis generally occurs by extensive portions of the skin or even the entire surface becoming attacked by violent itching. This condition may appear both in old and in young individuals, can often be brought into close causal connection with disturbances in the abdominal functions, with affections of the liver and kidneys, especially with cirrhosis of the liver, hepatitis, and Bright's disease, and may frequently be observed in young girls subject to menstrual anomalies, as well as in pregnant women as a consequence of gravidity. Pruritus universalis, however, is most frequently found in advanced age, where it forms a most annoying condition, because the nervous symptoms usually persist for a long time and can be made to disappear but very slowly. Wherever internal causes exist, the itching will call attention to the fundamental affection, and in this respect pruritus universalis possesses some diagnostic importance.

Pruritus localis shows great preference for certain parts of the body, and pruritus of the sexual apparatus especially is associated with the most troublesome incidents.

In accordance with the localities we distinguish:

a. Pruritus ani.—In adults it is often a concomitant of hemorrhoidal affections and in children a symptom of intestinal worms which is rarely absent. The disease usually extends from the anal mucous membrane to the perineum and backward as far as the coccyx. The itching is generally more intense at night, in consequence of the heat of the bed; the patients cannot abstain from scratching, and artificial eczema is frequently produced in this manner.

b. Puritus genitalium.—In men the scrotum is the usual seat of the affection, but almost always in connection with pruritus ani. The skin of the scrotum presents no pathological alteration in the beginning of the affection, only after prolonged existence we find excoriations, or slight serous exudations on the affected skin as sequels of the artificial eczema which is of later origin. Scrotal pruritus is generally remarkably intractable. I have observed patients in whom the attacks of itching and simultaneous pain were of such intensity that the patients acted as if demented.

Pruritus pudendi muliebris is encountered most frequently at the transition of the vaginal mucous membrane into the labia minora or majora, or else it is limited to the clitoris and the labia minora. In children it should never be neglected to examine for ascarides which are in the habit of migrating from the anus into the vagina; in women, diseases of the uterus, leucorrhœa, vaginismus, etc., are often the cause of the affection; frequently, however, these phenomena are entirely absent, and the itching appears simply as an idiopathic neurosis. In young girls the violent hyperæsthesiæ may lead to the disagreeable complications of onanism and nymphomania, and even women in the climacteric age are not exempt from this evil. Devergie was one of the first to observe pru-

ritus in connection with diabetes mellitus and claims to have cured both maladies by arsenic. I, too, have repeatedly seen diabetes and Bright's disease conjoined with general and local pruritus, but I was unable to note any effect from the use of arsenic.

Local pruritus, besides, occurs as pruritus of the palms of the hands and the soles of the feet, with on the whole moderate symptoms which ordinarily are not persistent and by no means lead to complications similar to those just mentioned. Several years ago, Duhring called attention to a peculiar form of pruritus—pruritus hiemalis,[1] occurring in some individuals usually about winter time. The itching ordinarily begins at the extremities and then spreads over larger parts of the body. I myself know several persons who for years have been in the habit of presenting themselves about winter time with their cutaneous itching and its consecutive complications, such as excoriations and eczema, and in whom we must think of some neuropathic factor caused by cold, judging from the recurrence of the affection at a certain season and its abatement with milder weather.

The Diagnosis

of pruritus offers no difficulties when all factors are closely observed. In the first place, the subjective sensations are to be noticed. In the beginning of the affection the patients complain of continuous and troublesome itching, and inspection of the skin shows no alteration. But when the neurosis persists for days or weeks; and the patients, forced by the itching, begin to "belabor" their skin energetically, then in the daytime, excoriations, wheals, thin crusts, and stripes are observed as the result of scratching at night. In the case of a skin affected with pruritus, therefore, the question always suggests itself whether we have to deal with a commencing or a long-standing disease; in the former case, the objective symptoms are still slight, in the latter already very numerous. In dealing with an affection characterized by intense itching, when the skin presents a whole series of alterations, we have only to consider the differential diagnosis. In eczema we always have to bear in mind inflammatory changes or in its modifications such alterations as point to an exudative process—weeping, red, scaly, crusty, or infiltrated surfaces; in scabies and prurigo, changes determined by a certain fundamental affection; in the former, the burrows of the parasite, the formation of pustules and nodules, as well as often a definite locality of the malady; in the latter, alterations to be considered more in detail in the description of this disease. Chronic urticaria, owing to the temporary appearance of itching, probably offers greater difficulties than the above-named affections; but the intense effects of scratching are usually absent, and the statements of the patients or the inspection of the skin at definite times—namely, when the exanthem is in the habit of appearing—together with the observation of the wheals, render the diagnosis positive. Pemphigus pruriginosis will not fail to show the presence of bullous efflorescences which are absent in pruritus.

Furthermore, in many cases it will be important to bear in mind the fundamental affection, Bright's disease, diabetes, senile metamorphosis, local diseases such as those of the hemorrhoidal vessels, etc., in order to accurately estimate a local or general pruritus.

Treatment.

In all cutaneous diseases producing itching, such as eczema, puritus, psoriasis, pityriasis rubra, urticaria, this troublesome symptom will disappear with the causative disease, if the treatment appropriate to that affection is employed. Much more

[1] "An Undescribed Form of Pruritus." The Amer. Journ. of Dermatol. New York, 1874, p. 193.

readily than in these diseases is the itching overcome in the parasitical cutaneous affections—scabies, herpes tonsurans, favus, etc.—by the destruction of the animal or vegetable parasites. But where the pruritus does not depend upon other affections of the skin, endeavors should always be made to relieve other morbid conditions. In disease of the stomach and liver, the alkaline saline springs are generally followed by very favorable results. In anomalies of menstruation or chlorosis, iron and bitter tonics are indicated, their choice and application depending on the degree of the malady. But despite all internal medication, the local treatment must never be kept out of sight; it acts directly soothing, and is more effective than the most diverse narcotic agents, such as opium and its alkaloids, potassium bromide, chloral, hyoscyamus, etc.

The chief feature of local treatment in general pruritus is the use of cold ablutions and douches. Swimming and full baths, in the summer season, may be taken in the river, at other seasons in the various indifferent thermal institutions, or at home in bathtubs. While cold water is used twice daily in the form of rapid ablutions (not in the form of a cold-water cure which is injurious in pruritus), the baths may be taken daily, either pure or with the addition of sodium carbonate, one-half to one kilo for each bath, in which the patients remain for half an hour or more at a temperature of from 20–24° C. Steam baths, once or twice per week, have also a favorable effect.

The varions preparations of tar often prove effective as inunctions in the form of ointments and solutions. The empyreumatic oils may be used with considerable effect, namely: Ol. rusci, cadini, fagi, and carbolic acid in one or two per cent solution, naphthol in three to five per cent solution. For instance: ℞ Ol. cadini, 10; Glycerini, 20; Alcoh. rectif., 150; Spts. lavand., gtt. xx. M. S. Externally. Or, ℞ Acidi carbolici, 3; Æther. sulph., 2; Alcoh. rect., 150; Aq. dest., 50. Or, ℞ Naphtholi puri, 4; Ung. emollientis, 80; Bals. Peruviani, 2.5.

When tar and its derivatives fail completely, as is unfortunately sometimes the case with pruritus, especially the senile form, or whenever it loses its efficacy after a certain time, I have often seen satisfactory results from sulphur ointments—Lac. sulphur., 5 grams; Ung. simplic., 40 grams, with or without tar. Corrosive sublimate also proves of use sometimes, both in the form of lotions and as an addition to baths, perhaps according to the following formula: ℞ Hydrarg. bichlor. corr., 3 grams; Mur. ammon. depurati, 10 grams; Aq. font. dest., 80 grams. M. S. To be applied to one full bath.

Frictions with alcoholic liquids, in conjunction with chloroform, cologne water, and ether, may also be tried, but they help only palliatively, and not invariably. Chloral in the form of ointment (5:40), recommended by some French physicians, has often failed in my hands. In local pruritus, according to its seat, the same treatment as in general pruritus may be used. In pruritus scroti and pudendi, with the tar inunctions, diachylon ointment may be applied through the day and even by night with temporary amelioration of the paroxysms of pain; but in these generally inveterate forms the remedies require to be changed frequently, many having but a passing effect. In all forms of pruritus pudendalis, cleanliness is the first requisite in treatment; the ointments must always be prepared with pure and fresh fat, and the solutions must not be too strong. The drugs to be recommended are carbolic (1 to 2 per cent) and boracic acids; for instance, ℞ Acidi boracici, 2.5 grams; solve in aq. ferv. Acid. salicylici, 4 grams; Alcohol. rectif., 50 grams; Aq. dest., 100 grams. M. S. Lotion. Or, ℞ Acid. borac., 5 grams; Glycerin., 20 grams; Spts. vini, 100 grams. M. S. Externally. The sublimate lotions recommended by Trousseau (0.08–0.1 : 200 of water) are often useful; painting with solution of silver nitrate, or even touching with the solid stick, should be