secondary eczema which is characterized by scabs, crusts, and weeping surfaces. In this way, therefore, the original morbid picture might appear hidden and transformed by the sequel. In addition to this, we have the fact that in universal prurigo the places generally spared by it, such as the face and nucha, are likewise attacked by eczema; and if we closely examine the skin, we shall soon be able to distinguish the portions first affected from those subsequently attacked.

The pruriginous skin, moroever, presents a peculiarity in its darker pigmentation which is likewise provoked by the above-described symptoms, and more especially by the intense and continuous scratching; the same fact may be observed also in inverate scabies or long-standing prurigo pedicularis due to the pediculus vestimenti.

We must mention one more phenomenon which is never absent in an affection of long standing—the visible swelling and enlargement of the larger lymphatic glands; this stands in relation to the infiltration of the diseased surfaces and probably also to the irritation caused by the scratching. We find this state of the glands much more frequently in chronic prurigo than in prolonged scabies or eczema; it is also present in eczema of the scalp, but absent in psoriasis or other chronic dermatonoses. The swelling of the glands depends on the gravity and the duration of the affection As to the age of prurigo patients, experience teaches that the majority of prurigo sufferers exhibit this morbid state from the earliest period of life to adolescence and beyond. This fact *per se* indicates a special gravity of the morbid process, which has induced many observers, and Hebra among the rest, to make the statement that prurigo is an incurable disease lasting throughout the whole of life. But the experience of many physicians, especially of the Vienna school, shows that prurigo in early age is much more easily cured than if it is neglected in this stage and comes under treatment when the patient has reached adolescence.

Prurigo of the aged (prurigo senilis) really coincides with cutaneous itching, pruritus, because the characteristic factor, the formation of nodules, occurs not as a primary, but as a secondary phenomenon. For in this disease we find a very intense itching with numerous excoriations and few nodules; the latter in fact appear as papillary bodies of the skin swelled by the itching. The same remark applies to the local prurigo of the female and male genitals described in older works.

Anatomical Changes.

The more recent anatomical researches into this subject show actual disease of the skin and its appendages, as has been fully demonstrated by Neumann and Derby,[1] and especially by Gay.[2] The former found the hairs and their follicles very conspicuously altered, the hair thinned, the root-sheath loosened, and surrounding them an exudation into the corium and the papillæ, a thickening of the papillary body around the hair-follicle and the sebaceous glands by an accumulation of cells, with protrusion of the rete Malpighii. These investigations agree in so far with the condition of the prurigo nodules as the latter almost invariably seemed pierced by a hair and thus *a priori* led to the supposition of an alteration of the hair as involved in the pruriginous disease. Gay showed that the thickness of the horny layer caused by the plastic process is very conspicuous. In the later stage of the disease the sebaceous glands generally atrophy and the sudoriparous glands dilate by ample cell development in their efferent ducts and in the glandular canal proper.

[1] Sitzungsberichte der kaiserl. Academie zu Wien. 59 Bd.
[2] Arch. für Dermatologie, 1871, iii., pp. 1 et seq.

Diagnosis.

The morbid conditions manifested in prurigo can be mistaken only for scabies, eczema, and urticaria, but then merely in the beginning of the affection; such diagnostic errors are in fact not rare. With reference to scabies, examination will easily clear up the case, for the burrows of the parasite are visible in the shape of wavy stripes, one to two lines in length, slightly raised above the level of the skin; at the end of the track darker colored points can at times be observed (excrement of the acari). Therefore, those parts of the body should be carefully examined where the tracks are usually most frequent, *i. e.*, between the fingers, the genitals, the nipples, and those parts of the trunk around which the clothes are tightened. But in long-standing and extensive scabies, the parasitic burrows are often totally destroyed, and traces of recent tracks can hardly be found anywhere; but in such cases we will be assisted by the knowledge of the secondary symptoms of the disease as occurring in scabies, as well as by the pustules and vesicles on the extremities, scratch-marks on those parts of the skin where prurigo generally does not appear, such as the genitals, the palm of the hand, and some parts of the trunk.

Only the papular form of eczema could be mistaken for prurigo, but it rarely occurs as extensively on the extremities as prurigo, and besides, the former affection presents manifold forms as transitional stages, *i. e.*, the transformation of the efflorescences, the nodules, crusts, pustules, and serous exudations changing into crusts. It should not be forgotten that eczema presents quite different factors from prurigo as regards development, course, and duration; while, in the latter, trunk and face are more or less spared, this is not the case with eczema; fingers and toes are intact in prurigo, but not in general eczema; in the latter the flexor sides of the extremities are also less affected. Eczema, no matter how intense, clears up spontaneously here and there, prurigo does not.

Urticaria can be mistaken for prurigo in the first stages or in recent outbreaks only if hastily examined; for, in prurigo, nodules are always found with the urticaria wheals; besides, the wheals are of short duration, and at the places where they have developed into nodules they do not relapse, as is the case with urticaria.

Etiology.

No indisputably certain landmarks as to the nature of the disease have been secured to the present day.

The older physicians believed that the irritating substances remaining in the organism, through impaired activity of the kidneys, furnished the incentive for an outbreak on the skin of an eruption impregnated with these substances.

Skin diseases connected with itching were also regarded as the outflow of a peculiar constitution of the blood, the so-called psoric dyscrasia. Assumptions of this kind are just as common-place as the view that prurigo is due to emotional affections, the nervo-sanguine temperament, taking cold, malnutrition, pungent drinks, atmospheric influences, etc.

Without entering further into the discussion of obscure causes, we shall proceed to the interpretation of the intense itching. Hebra believed the itching to be the consequence of a circumscribed exudation within the hair-follicles or the sebaceous glands which presses on papillary nerves and causes the irritation; but this view is negatived by the analogy of some efflorescences which frequently appear without this symptom.

Cazenave,[1] therefore, has explained the matter by relegating the exciting cause of the affection to the nervous system, in consequence of which there appear great hyperæsthesia with its sequels; accordingly the itching is the primary, and the nodular eruption, caused by the scratching, the secondary trouble. Hebra's objection to this view is, that the itching always sets in after the presence of the nodular eruption; but this does not hold good for all forms of prurigo, because in chronic cases with very slight and here and there even absent nodular eruption, we still hear the patients complain of intense itching.

Wilson is likewise inclined to consider prurigo as a neurosis. Auspitz,[2] however, has pleaded most thoroughly in favor of the neurotic nature of this malady and called it a true idioneurosis. He finds the histological alterations insufficient by far to explain the itching, and reaches the conclusion that, as regards prurigo, we must adhere to the idea of a neurosis of sensibility just as we do in pruritus cutaneus, but with this difference that in pruritus there is an absence of the cellular hypertrophy around the glandular formations, but, by the simultaneous hypertrophy of the smooth muscular fibres in prurigo, there is caused a sort of neurosis of contractility.

Respecting the idea of a neurosis we fully agree with Auspitz, but on the other hand, we look upon prurigo as a trophoneurosis, and for the following reasons: In recent cases, we find, preceding the nodular eruption, almost invariably an eruption of urticaria. The experienced practitioner knows this precursor of prurigo quite well; this symptom is distinguished from the angioneurotic form of pure urticaria by the persistence of the eruption and its transition into another papular form. Moreover, we find in severe prurigo that the nutritive disturbance of the skin is expressed even in its texture: it is lustreless, faded, shows an undeveloped or ill-nourished subcutaneous tissue; the outbreak and the continuance of the efflorescences with their sequels impart to the common integument the appearance of a diseased surface, and for this reason we might admit, in a restricted sense, the idea of a diathesis such as is ascribed to prurigo by French dermatologists. It has been most correctly named by Guibout,[3] a cachectic form of disease. Indeed, it is difficult to discard the idea that prurigo is a congenital disturbance of nutrition which might be called a cachexia; which, although not leading to marasmus, still if left to itself may persist as a grave general disease, while, on the other hand, it can be removed by prolonged and attentive treatment. The immediate and anatomical demonstration of the change in the peripheral or central nerves has hitherto not been furnished; but this proves nothing against our assumption.

Prognosis.

The disease does not admit of a favorable prognosis in general. The incurability of this affection, however, is merely relative. While on the one hand prurigo can in many cases in so far be ameliorated by appropriate treatment that the patient may be relieved for some length of time; on the other hand, in the majority of cases in children, prurigo can be cured. I have seen numerous cases in the latter disappear after several years' treatment.

In adults, prurigo is to be considered a disease dating from infancy, rarely of later development, but then only with difficulty curable.

[1] Annales des maladies de la peau. Paris, 1844, II.
[2] "System der Hautkrankheiten." Vienna, 1881, p. 105.
[3] "Leçons cliniques sur les maladies de la peau." Paris, 1876, p. 46.

Treatment.

The treatment of prurigo may be attempted by internal and external means.

Of internal remedies arsenic alone may be tried in the dose of one to two centigrams per day gradually increased; in our opinion it may do good service as auxiliary to a local treatment, but it often fails both alone and when combined with external remedies. Some time ago Kaposi[1] (Dr. Kohn) tried carbolic acid in a larger series of cutaneous affections associated with violent itching. He started with the idea that tar and its preparations, which externally form valuable remedies, may also prove useful internally. He tried carbolic acid in pill form (℞ Acid. carbolici, 5 grams; Pulv. et Extr. liq., q. s. ft. pil. No. 50), both in children and adults, starting with from five to ten per day. According to the statements made (l. c.), the remedy was serviceable in numerous cases, and proved of use in prurigo without any external treatment, but later experiments have not confirmed these results.

Potassium bromide[2] is said to have proved useful now and then, and an Italian physician claims to have seen rapid cure of prurigo by daily doses of ten to twelve grams. Oscar Simon[3] and Pick[4] recommend pilocarpine, 0.01 gram daily subcutaneously, and this has given good results in my hands in numerous cases. The same may be said of ergotin in doses of from 0.05 to 1 gram per day. Narcotics, such as opium, lactucarium, hyoscyamus, chloral hydrate, chloroform, are of no use in prurigo.

The number of external remedies in ordinary use is greater than that of the really serviceable ones, of which we specially mention: water, and the preparations of sulphur and tar.

Water may be used in the form of cold lotions or warm baths, but we recommend the latter as undoubtedly the more useful of the two. Tub-baths permit the patients to submit the affected surface *in toto* to the soothing influence of the water at a mild temperature of from 22–26° C.; the longer the patients remain in such a bath the more soothing it acts, and this fact alone clearly brings out the difference between eczema and prurigo, both of which represent morbid processes distinguished by intense itching.

In eczema, the warm bath increases the hyperæmia of the skin; in prurigo it moderates it. The longer the patient can remain in the bath, the more favorable it is for his condition; this also explains the effectiveness in many chronic cutaneous diseases (prurigo among the rest) of the prolonged baths as used for many years in Switzerland, where the patients can stay in the baths from six to eight hours continuously.

Such protracted baths, of course, may also be taken at the various thermal spas, provided they do not contain strongly irritating ingredients, as do the iodine, iron, and saline baths. As sulphur likewise exerts a favorable effect on prurigo, and as it is immaterial in what form we employ it, sulphur baths may be placed first in the list with the indifferent thermal baths. In our experience, baths are not only an excellent, but even an indispensable remedy for prurigo, and with it we combine the other agents, according to choice and applicability.

In cases where there is no river or soft water at our disposal, it is best to mix it with carbonate of soda, one or two pounds for a bath for an adult, which does not interfere with the simultaneous addition of sulphur or tar preparations. An effective remedy

[1] "Ueber den innerlichen Gebrauch der Carbolsäure." Archiv für Dermatologie, 1869, p. 219.
[2] Schmidt's Jahrbücher, 1871, iv., p. 164.
[3] Berliner klin. Wochenschrift, 1879, No. 49.
[4] Vierteljahrsschrift für Dermatologie, 1880, p. 67.

easily incorporated with the bath is tar, and the so-called tar baths are often of more use in prurigo than in psoriasis. The tar bath is taken thus: The affected surfaces are painted in part or *in toto* (the latter is to be avoided, owing to the absorption of the tar, with subsequent symptoms of intoxication) with a solution of tar in ol. cadini or rusci; the patient then gets into the bath, remaining one-half to one hour, then washes thoroughly, and slightly rubs simple ointment or vaseline into the skin.

The sulphur and tar remedies may be employed in prurigo with or without baths. Patients with moderate prurigo may take a simple prolonged full bath, subsequently rubbing in some sulphur or tar ointment; for instance: ℞ Lactis sulphuris, 5 grams; Ol. cadini, 2.5 grams; Glycerini, 10 grams; Ung. simpl., 40 grams; M. S. ointment; or ℞ Naphtholi, 3 grams; Ung. simpl., 60 grams (Kaposi). Dusting the anointed parts with a mixture of starch and rice-flour facilitates the intimate contact of the ointment with the skin. In more intense prurigo, with considerable infiltration of the skin and copious crust-formation, the affected parts may be well rubbed with soft-soap or solut. Vleminckx previous to the bath, and subequently anointed with sulphur-tar ointment. When improvement has set in, the soft soap may be omitted, and we employ only the tar baths; subsequent to each bath the skin is greased with simple cerate or fat. In many patients, besides, the itching is diminished by wearing close-fitting under-garments of tricot or flannel, as well as caoutchouc clothing.

When the itching is most intense at night, the patient is to use the baths with the other remedies in the evening before retiring.

Sublimate baths have not done me near as good service as the treatment above given.

By this plan, if persistently carried out, we have always secured improvement and temporary cure. But we are unable to prevent relapses, and in many cases we can do nothing but modify this treatment and, in intractable forms, we employ the several remedies for some length of time, and thus give the patient a better chance for improvement. The same method of treatment in a milder form applies to children as well as to adults.

The vesicular and in part also the bullous affections are also trophoneurotic diseases, and vesicular eruptions break out after nerve lesions—a fact clearly denoting the neurotic influence in the formation of this efflorescence.

The type of the vesicular affections is

HERPES.

In 1798 Willan and Bateman gave a clear and distinct definition of herpes which even to-day must be recognized as correct and appropriate. According to our present definition, herpes is a cutaneous affection, characterized by a series of transparent vesicles on a slightly reddened base; they are mostly the size of a hemp-seed, joined into groups, and follow the direction of some cutaneous nerves; they dry in the course of a few days (eight to ten), while their whitish serous contents become turbid; they disappear leaving pigmented spots of brief duration. When this process is several times repeated, this typical course is remarkable, but not especially characteristic; of far more importance is the painfulness which, however, generally occurs almost exclusively in herpes zoster.

Herpes tonsurans is a parasitic affection, and as such has in common with the vesicular diseases here discussed merely the manner of its first appearance in the shape of vesicles and it would be more appropriate to designate it only by the term tinea or trichophyton tonsurans.

Willan divided herpes into several varieties, namely, herpes phlyctænodes, zoster, circinatus, labialis, præputialis, and iris. This division corresponds to the natural condition and might be retained even to-day; but as the ἕρπης φλυκταινώδης is nothing but the generic term for vesicular affections, herpes phlyctænodes really represents no variety, and therefore may be dropped. Hence we notice only the other species, and shall treat of them in the following order: 1. Herpes labialis; 2. Herpes præputialis; 3. Herpes zoster.[1]

1. *Herpes facialis* (*Hebra*); *Herpes labialis* (*Willan*).

The term herpes facialis derived from Hebra is far more appropriate than that employed by Willan; for, although this form occurs most frequently on the lips, it appears also on other parts of the face, such as the cheek, the nose, the eyelids, and the ears. The number of the vesicles joined into groups is not constant; their appearance is usually preceded by a faint redness (erythema). Should herpes occur simultaneously on the upper and lower lip, it is called herpes bilateralis. On the lip the vesicles are usually found near the vermilion border; the several efflorescences are not always sharply defined; the outlines blend, and we then see, instead of numerous small vesicles, a single bleb often the size of a pea. The contents of the vesicles usually dry after three to six days into a brown or yellowish crust which falls spontaneously. If the crust be detached before it has dried up, the healing is rendered more difficult, a red weeping surface remaining behind which dries into a still more firmly adhering scab.

It is customary to consider herpes labialis as the consequence of a morbid disturbance within the organism, and it cannot be denied that herpes at times shows itself in some febrile conditions, with the subsidence of the pyrexial symptoms. Often it is a concomitant of grave diseases, especially intermittent fever and inflammations of the thoracic organs.

In such cases it has no prognostic value, for grave diseases may equally often run a favorable or unfavorable course, without being at all associated with herpes.

Bleuler[2] collected the statistics of 216 cases of pneumonia in which herpes was present 88 times; among these, in 44 deaths, herpes was found 14 times—proof sufficient that herpes is not always to be looked upon as a favorable prognostic sign.

In some cases the herpes vesicles appear also within the mouth, on the mucous membrane of the tongue, the pharynx, the tonsils, but the presence of the vesicles there cannot always be clearly demonstrated, the oral secretion soon producing maceration of the thin mucous layer and destruction of efflorescences. In their places there appear on the mucous membrane reddish spots denuded of epithelium which are painful and render alimentation difficult. Often it is hard to distinguish herpes of the mucous membranes from aphthæ, and in that case it will be necessary to ascertain whether herpes is present on the external skin. This process is frequently connected with affections of the stomach or abdomen, and we must never fail to direct attention to this circumstance.

Herpes labialis is a quite painless cutaneous affection, and the slight tension and burning of the affected parts are its only disagreeable symptoms. Finally we must point out that not all kinds of herpes occurring in the face belong to facial herpes; but that

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[1] Herpes iris and circinatus we have already described with the erythema of the same name.

[2] Bleuler: "Klin. Beobachtung über Pneumonie." Zürich, 1865.