All methods of administration, however, are often useless, and it has scarcely any effect in preventing relapses. It is, therefore, advisable to combine local treatment with the internal use of arsenic. Tar water internally is useless, as are also the carbolic acid pills recommended by Kaposi, and they may produce toxic symptoms. A similar danger is threatened by the use of tincture of cantharides (Rayer), increasing from four drops daily to thirty drops (!!).

Oleum phosphoratum, 2–5 drops t. i. d.; copaiba balsam, 4–6 gm. daily have also been recommended. Of greater value are the decoction of species lignorum and the subcutaneous injection of pilocarpine. Campana recommends its use in grown people with rigid skin, marked scaling, diminished nutrition and tonus of the skin, and also when the nutrition in general has deteriorated and other diseases are present. The alkalies and tinctur. colchic. (1–4 gm. daily), recommended by Bazin in arthritic psoriasis, were always combined with the external application of tar and alkaline vapor baths, so that definite therapeutic conclusions cannot be drawn therefrom.

External remedies are much more certain in their action than internal ones. At times, maceration of the affected skin is sufficient to produce recovery, for example, baths prolonged for hours in a tub or in natural thermal waters, or warm sulphur baths. As a rule, however, this merely removes the scales, and effective remedies, such as preparations of tar, must then be applied.

In the application of tar in psoriasis, the scales must first be removed, so that the remedy may act directly on the diseased skin. This can be effected by protracted baths, as mentioned above, and by rubbing the scaly parts with spiritus saponato-kalinus[1] or pumice stone. Less advisable are scratching with the sharp spoon, on account of the violent mechanical irritation; also rubbing with ether or solutions of salicylic acid. Softening of the scales by more violent caustics, such as acetic acid, solution of potash (1 : 2 to 10) is advisable only in very obstinate cases and when the skin is very thick, particularly in psoriasis of the palm of the hand.

The use of tar has some injurious effects, which occasionally contraindicate its further application. Sometimes a single application is so irritating that an acute dermatitis develops. In other cases it is used with advantage for a long time, but then the so-called tar acne develops. At first, merely the excretory ducts of the sebaceous glands and hairs are visible as black, somewhat elevated points, but little pustules soon take their place. When the applications are made to large parts of the body, we should always bear in mind the possibility of toxic symptoms from absorption; children in particular are very sensitive. The symptoms may be preceded by the passage of dark-colored urine, fever develops with nausea, vomiting, dizziness, and headache, black watery stools; the urine, of an inky black to olive-green color, giving a distinct odor of tar upon the addition of sulphuric acid. These symptoms usually disappear in a short time with the copious excretion of urine. Even a fatal termination, especially in children, has been observed from inunctions of tar ointment in scabies.

The application may be made either pure or diluted, once or twice a day, by rubbing it in with a stiff brush, after which the patient should either remain in bed for a number of hours under woollen blankets or he may attend to his ordinary avocations after the parts have been powdered with soapstone and bandaged with flannel. As the tar adheres very firmly to the clothing, it is advisable to wear flannel underclothing next to the skin. If the scaling continues for some time, the old layer of tar with the scales should be removed with soap spirit before a fresh application is made.

[1] ℞ Sapon. virid., 50.0–100.0; Alcoh. rectif., 100.0; Macera per hor. xxiv. filtr. Add. Eau de Cologne or Spirit. lavand., 10.0.

These may also be combined with advantage with protracted baths, the tarred patient remaining for hours in a warm bath. In a like manner, Hebra has made applications of the modified Vlemingkx' solution[1] (either with or without protracted baths), after the scales have been removed with pumice stone; but this method is quite painful in extensive psoriasis.

The products of distillation of tar and coal, such as naphthalin, resineon, carbolic acid, have proven of little service; this is also true of the β naphthol recommended recently by Kaposi.

The inconstant Rochard ointment[2] and the proto-iodide ointment must be used with extreme caution, on account of the violent pustular dermatitis to which they give rise.

Treatment with caoutchouc has proven useful. Rubber-cloth, used as a bandage or article of clothing, does not absorb the products of excretion from the skin, and these soften the integument. But its employment over the entire body is not devoid of danger, as several cases of serious acute dermatitis have been observed in consequence. It is useful to combine applications of tar with rubber bandages.

Priesnitz's hydropathic measures act in a similar manner. The patient is placed in wet linen cloths and then wrapped in woollen blankets. After perspiring profusely for a number of hours, he is placed in a cold bath with douche, in which he is rubbed with cloths. He is then placed in a dry pack for a little while.

An occasionally effective but heroic method of treatment is the soft-soap cure. With a brush or piece of flannel, soft soap is rubbed upon the infiltrated spots until they bleed, small portions of the body being treated each time, so that about a week is required to treat the entire body in general psoriasis. The patient, who is kept in woollen blankets during the entire period of treatment, remains in them for several days longer until profuse desquamation occurs, and he is then given the first bath.

The therapeutics of psoriasis has received recently a valuable addition in chrysarobin, which is obtained from Goa powder (from Angelim Amargoso in Bahia, Brazil).

Chrysarobin in used in the form of ointment (5–20%), being slowly rubbed with warmed fat for a few hours in an oil-bath. It must be remembered that chrysarobin causes a discoloration of the clothing (at first yellow, then blue or violet upon being washed with soap) and also of the hair, and that its application to the scalp, therefore, is excluded. By means of a brush the ointment is rubbed, at first once, then twice a day, upon the psoriatic patches which have been deprived of scales, and the parts then covered with a flannel bandage or flannel underclothing worn next to the skin. If the formation of scales continues, they must be removed repeatedly.

After repeated inunctions, a punctate, later diffuse redness, and occasionally marked swelling appear at the points of application and in their vicinity. But almost from the first appearance of the redness, the psoriatic patches come out distinctly by a peculiar play of colors, a bright ring forms around them, and while they gradually fade into a pale rosy color, the neighboring parts still remain very red. If the inflammatory redness becomes painful or the psoriatic patches have remained destitute of scales and of a pale color for a number of days, the inunction is discontinued or is only repeated after the inflammatory symptoms have subsided for a few days.

[1] ℞ Calc. viv., 500.0; Aq. font., q. s. ut f. pulv. æquabil. ℞ Flor. sulf., 1,500.0–1,000.0; Aq. font., 10,000.0, Coque usq. ad remanent 6,000.0, filtra. This contains CaS_2, CaS_5, and oxidation products of S.

[2] ℞ Iodin. pur., 0.7; Calomel, 1.25; Leni igni fusis add. Unguent. rosat., 60.0.

If the hands have been treated with chrysarobin, it may give rise to violent conjunctivitis by coming in contact with the eyes during the night, and it is, therefore, advisable to wear gloves at night.

Even after extensive inunctions, Kœbner[1] was unable to discover the drug in the urine, nor did he observe symptoms of absorption or albuminuria. Lewin and Rosenthal[2] state that, after its use in rabbits, they detected it in the urine together with symptoms of nephritis.

Pyrogallic acid,[3] in a 5–10% solution or in the form of ointment, applied once or twice a day with a brush to the patches of psoriasis, is slower in its action than chrysarobin, but is useful, is unattended with noteworthy inflammatory symptoms, and does not stain the clothing as deeply as the latter drug. Rubbing with soap upon the affected parts and full baths must be taken a number of times during the treatment. Light-brown discoloration of the skin occurs at these spots and can be removed by benzin; the inunction must be repeated until scaling ceases. Upon the application of stronger solutions (to 20%), the formation of vesicles and necrosis of the skin occurs, attended by great pain. In extensive psoriasis, the drug should be employed with extreme caution, *i. e.*, not applied to too large parts of the skin, as grave symptoms of absorption with a fatal termination may ensue. Neisser[4] has reported a case of this kind.

Rufigallus acid has been used by Neumann[5] and Lang,[6] but it acts more slowly than chrysarobin and pyrogallic acid, and also stains the clothing. It is employed by Lang with oil with a strength of 10% in the form of ointment. Kœbner[7] has observed good results from the application of powdered zinc, free from arsenic, in the form of ointment.

In addition, appropriate treatment must be adopted for any anæmic, dyspeptic conditions, etc., which may be present. In a few cases, entire change of diet has had favorable effects.

LICHEN PLANUS.

L.chen planus is characterized at the onset by very small (not one-half to one-quarter as large as the head of a pin) polygonal, flat elevation of the skin, of a normal color, or slightly yellowish. Extraordinarily small papules, in groups, with a shining, somewhat excavated surface, can be observed, especially upon the delicate integument of the penis. In a little while they become higher and broader, assume a deeper color (yellow, deep cherry-red to bluish-violet), and thus constitute the lichen papules described by Wilson as "shining, smooth, and flat," which often, though not constantly, present a shallow excavation. This excavation occupies the entire surface of the papule, and its deepest point is in the middle, which only exceptionally, however, corresponds to the excretory duct of preformed tegumentary structures. At a later period, the little nodules, which have become somewhat larger, and occasionally somewhat more pointed, become covered with a very thin coating of scales, which are removed with considerable

[1] Paper read before the Berl. Med. Gesells., 1878.
[2] Virch. Arch., Bd. 85, S. 118.
[3] Wien. Med. Jahrb., iv., 1878, S. 78. Wien. Med. Blätt., May, 1878.
[4] Zeitschr. f. Klin. Medicin, Bd. i., 1879, S. 88.
[5] Wien. Med. Blätter, 1879, 22.
[6] Volkmann'sche Sammlung.
[7] Verbal communication.

difficulty. At first, the nodules are arranged in groups over a small space, and then gradually develop in the intervening normal spaces, thus forming larger or smaller plaques (l. aggregatus, Wilson); others remain as individual typical nodules (l. discretus, Wilson). The lichen plaques are elevated, of a violet or bluish red, copper red to deep violet color. Small whitish points and streaks, with ramifications, are seen embedded even in the smaller ones, and these give to the larger ones a peculiar appearance. The larger plaques are covered with a few scales, which often project like thorns, have a granular surface, and, at the edges, but separated from the normal skin by a steep red border, they present whitish miliary spots. More rarely, medium-sized plaques are observed, which feel between the fingers like firm infiltrations spreading deep into the skin, similar to tumors of the skin. On the body, the nodules are often arranged in the segment of a circle, in some cases in the shape of a cockade, in other places the little nodules have arranged themselves in straight or whip-like curved lines, corresponding to pressure of the clothing or the tracks of scratching by the nails. Especially upon the penis and scrotum flat, angular nodules extend along fine white streaks which spread in many directions from a white point like a spider's web; the entire figure is covered with thin scales of a silvery lustre.

An affection which, as it seemed to me, is not rare in England, is the occurrence of moderately large plaques of lichen upon the knee; they are extraordinarily firm, and covered with a few scales. They often continue unchanged for a number of years, and ordinarily cause pruritus.

While the disease slowly spreads for months, and finally affects the entire integument, some nodules and plaques undergo spontaneous resolution. The nodules sink in and leave a depression with more or less deep-brown discoloration. In like manner the plaques leave a shallow, atrophic, sepia-colored depression, which only disappears after a long time.

New, very small papules often form in the shape of a ring around such a discolored portion of skin. In other cases (usually those of long standing), papule follows papule, so that, for example, the entire anterior aspect of the thorax is converted into a uniformly red, thickened portion of skin, covered with the finest scales; in addition, numerous pointed nodules project from their midst, giving the feel of a grater. In the cases of general lichen described by Hebra, the entire integument was thickened, so that motion was impaired, and slight fissures of the skin occurred on the flexor aspects of the joints. The nails were usually thickened, uneven, brittle, opaque and brownish, but the hair was unaffected.[1]

The disease begins without constitutional symptoms; in many cases the nodules are only revealed to the patient by sight; in others, pruritus is present from the beginning.

I have seen almost all parts of the body, except the face, affected affected primarily by lichen planus. As a rule, however, very large portions of skin present a few elevations from the beginning. The flexor side of the forearm, the integument of the penis with the glans, the scrotum, sacral region and abdomen, are the favorite sites of the affection; secondarily, no part of the integument is spared, and papules have been observed even upon the tongue, cheek, and pharynx.

Lichen mainly affects individuals between the twentieth and fiftieth years, but

[1] In a case of general lichen under my observation, the hairs had fallen out, the papular, syphilide-like, hard, conical, copper-colored eruption covered the entire body; in addition, there were depressed, atrophic, discolored portions of skin.

Kaposi has observed the disease in a child eight months old, and in two children between three and four years old. The statements with regard to sex vary. The disease seems to be much more frequent in the better classes, but its causes are unexplained.

At times, the lichen appears to be preceded for a long time by an affection of the nails.

Anatomy.—In opposition to previous observers, R. Crocker,[1] believes that the anatomical process at the onset is a superficial inflammation independent of the hair-follicles, and he distinguishes two varieties. In one, the cellular infiltration which starts from the upper wall of the vessel of the uppermost part of the cutis, constitutes three-quarters of the height of the papule; the excretory duct of a sweat-gland often passes through the middle of the papule; the infiltration starts abruptly from the normal parts. In the other series, the papule consists of proliferated rete cells, the horny layer in the centre of the papule is very much thickened, and sinks like a funnel in the correspondingly depressed rete, which, upon the desquamation of the horny layer, causes the umbilicated appearance. The interpapillary prolongations project somewhat deeper than normal; the infiltration in the papillæ does not occur so abruptly as in the first case. The sweat-ducts often appear to determine the localization of the papules.

In the larger plaques of lichen, Neumann[2] found the chief changes in the upper layers of the cutis. The layer of horny cells is thickened, and there is considerable increase of the rete, especially the prickle-cells, the nuclei of which are granular and swollen. The papillæ are enlarged, their vascular coils broader and twisted, the adventitia proliferated; the proliferation is much more considerable beneath the dilated vessels. In the upper part of the connective tissue of the cutis, the proliferated cells are arranged in islets or in meshes. No changes in the hair-follicles and sebaceous glands. Parenchymatous changes in the sweat-glands develop early; they become broader, and are surrounded by proliferated cells. According to Neumann, the whitish-gray miliary objects, which are visible macroscopically, consist of these pathologically changed sweat-glands (?). In the later stages, rusty brown and black pigment is found free, and in the cells of the upper parts of the cutis, the papillæ, and the adventitia of the vessels.

From sections of the earliest papules, I conclude that the process begins as a perivascular proliferation of the vessels of the upper layers of the cutis, and is followed by an infiltration of cells into the papillæ, following the course of the nerves.

Diagnosis.—Disseminated lichen must be distinguished from *papular eczema.* The latter is recognized by the brighter redness, greater size, more conical form of the papules, and also by its speedy conversion into the vesicular, pustular, or squamous forms, or in recovery. In *psoriasis punctata,* scales accumulate rapidly upon the reddened spots, which are very little elevated, and at the first very small plaques undergo peripheral concentric growth, while the plaques of lichen are composed of smooth, polygonal, flat, shining, but firm papules, which are very little or not at all scaly. Furthermore, psoriasis is never followed by cicatrices, or cicatricial atrophy of the skin with intense brown discoloration, as in lichen. The latter disease is often mistaken for the small *papular syphilide.* But the latter is almost always attended by severe constitutional symptoms and pains in the bones and muscles, and is rarely attended by pruritus. Upon close

[1] Lancet, 1881, Feb. 19th, p. 285.

[2] Vierteljahrschr. f. Dermat., 1875, "Ueber eine noch wenig gekannte Hautkrankheit (Dermat. circumscr. herpetiform.)."

inspection, moreover, the papules are pointed, round, often covered with a brownish crust; when plaques develop, the centre is almost always depressed and copper-colored. In addition, the tendency of syphilis to polymorphism of eruptions is present.

In the very rare cases of general lichen in which the characteristic primary eruption cannot be discovered, a diagnosis is often impossible.

Treatment.—According to Hebra and Wilson, arsenic is the sovereign remedy, and its action is much more certain than in psoriasis. The method of administration is the same as that employed in psoriasis. Hebra gave three to twelve Asiatic pills daily in three doses; six weeks are said to elapse before its effect is produced. But such large doses are not always necessary, especially since a number of cases have a tendency to spontaneous recovery. Kœbner has secured recovery in a very short time by small quantities of Fowler's solution, injected subcutaneously. Wilson recommended corrosive sublimate externally, in small doses, and Vidal extols, in addition to bitters internally, the external application of glycerolé d'Amidon, 20.0; tartaric acid, 1.0, and baths with vinegar (1 litre to the bath). W. Boeck[1] recommended oxidizing remedies internally, especially chlorate of potash and nitric acid. T. Fox[2] recommends asafœtida and mercurials, in addition to nourishing diet. Unna[3] recently has employed, with good success, inunction of the entire body with: unguent Wilsoni, 100.0; acid. carb., 4.0; corrosive sublimate, 0.1 to 0.2, the patient then being kept in woollen blankets for a week. He has seen recovery under this treatment in six weeks (?). Prof. Kœbner has recently employed with success subcutaneous injections of pilocarpine.

Local remedies, such as tar, Costar's paste (tincture of iodine and tar, or, more properly, iodine, 7.5; colorless oil of tar, 30.0) or other irritants, weak solutions of potash, soft soap, solutions of thymol, etc., have often proved sufficient in the plaques of lichen which remain localized. The pruritus must be treated symptomatically. The internal administration of arsenic often ameliorates the pruritus within a few days.

LICHEN ACNEIQUE. LICHEN CIRCINATUS.

This disease is characterized by small pointed papules, usually of a dull red color, the tip being covered often with a yellowish or grayish-brown crust. The papules are either scattered irregularly or grouped in arcs or circles. In addition to these papules which appear to correspond to the hair-follicles, there are somewhat elevated red discs, scarcely as large as a twenty-pfennig piece, which are covered with a slightly irregular, grayish-yellow, thin crust. The crust is clearly defined by a steep, wall-like, circular border. Rarely we find pale papules, from the tips of which a clear drop exudes, and also pale-red spots, which look as if brushed with a gum-like fluid. In addition, we sometimes find irregularly defined, somewhat scaly patches, about as large as the hand, and of a yellow to a bright yellowish-brown color; these are surrounded by the small, pointed red papules, and by brownish punctate depressions. The site of predilection of the acne-like papules is the sternal and interscapular region, but they may be present also on the remaining parts of the thorax and back. The large yellow plaques are found particularly on the abdomen and thighs.

Yellowish, irregular, flat patches are found occasionally on the legs; they scale very little and grow somewhat pale on pressure with the finger. In its milder grades as acne-

[1] Arch. of Dermat., vol. i., Taylor.

[2] Med. Times and Gazette, 1873, vol. i., p. 540.

[3] Monatshefte für pr. Dermatolog., Hft. i., 1882.

like papules, the disease is remarkably frequent in men from the twentieth to the fortieth years, and often becomes annoying on account of the pruritus. Its duration is variable, but it may last for months or years. In rare cases it begins suddenly and spreads rapidly.

Etiology.—Nothing is known positively concerning its etiological factors. Occasionally there was very profuse perspiration, in other cases pallor of the face with a flat thorax; the majority of the patients were vigorous and well built. In one case, slight psoriasis and occasional violent epistaxis were also observed. The wearing of flannel, to which the disease has been attributed, was denied in the majority of cases. The affection is very similar to lichen scrofulosorum, but it does not present the symptoms of scrofula, such as glandular enlargements, etc.; it is also distinguished by the age at which it appears, by the absence of the complications of lichen scrofulosorum (acne with a hemorrhagic border, scrofulous eczema of the genital region), and also by its localization, since the milder grades of lich. scrof. affect mainly the abdomen.

R. Crocker[1] has found, in the scales, mycelia and spores similar to those of pityriasis versicolor in size and shape; in order to demonstrate them better, he employs ether and chloroform. They are situated mainly in the papules, not in the scaly patches. He regards the disease as an abnormal pityriasis versicolor.

My own observations have never resulted in the discovery of fungi which are similar to the Mikrosporon furfur. Crocker's spores are very like the Torula communis, which is found in scales of the most varied origin.

So far as known, the disease is not contagious.

The affection often resists for a long time the use of active remedies; it may disappear apparently, but in a few weeks resumes its former status.

Diagnosis.—We must differentiate: 1. ordinary *acne;* in lichen acnéique the often merely punctate crusts are situated upon a pointed, superficial, pale-red elevation, which corresponds apparently to the excretory duct of a sebaceous gland; acne constitutes more deeply-seated, broad, hard, deep-red papules of varying size, often painful on pressure, and which usually have purulent contents; in addition, comedones are also present, and the yellowish plaques described above are never observed in it. 2. *Lichen scrofulosorum.* 3. *Pityriasis rosea:* in this there are circular discs with a red areola, while, in lichen, the prominent feature is an irregular boundary of those parts of the skin which are stained more deeply, with peripheral formation of papules and acne-like little nodules. 4. *Eczema papulosum:* the long duration of the individual papules, the polymorphism, arrangement and localization of the eruption, facilitate the diagnosis. 5. *Pityriasis versicolor:* in this disease, the patches may be removed like a membrane, and the fungus may be discovered without difficulty; in addition, no pointed papules are found.

Treatment.—This consists mainly of the application of tar, soft soap, soap spirit, Wilkinson's ointment, white precipitate ointment. Crocker recommends inunctions with natrium subsulfurosum, 1.0, with 9.0 fat; or thymol, 1.0, vaseline, 15.0. In obstinate cases, the internal administration of arsenic is recommended.

PITYRIASIS RUBRA. DERMATITIS EXFOLIATIVA GENERALIS.

Pityriasis rubra is a very rare, usually chronic disease, with a fatal termination, in which the skin has a deep-red color throughout, and is covered with large lamellæ of scales.

Gibert (1860) gave a good description of some cases of this disease. In one, the face

[1] Lancet, Oct., 1881, p. 742.

escaped, the forehead was dry, thickened, covered with whitish fine scales; the skin in general felt like parchment, the desquamation occurred in large lamellæ like the layers of an onion, the scales were adherent at one edge, and were removed by rubbing; the skin was then seen to be reddened. The pityr. rubr. was preceded occasionally by a vesicular eruption; during its course, weeping occurred only at the very tense and consequently ruptured places; the nails were elongated and bent. The affection ended fatally by marasmus.

Under the term "herpetide exfoliatrice," Bazin[1] includes this affection, together with other dermatoses, such as eczema, psoriasis, pemphigus, which are associated with profuse scaling. These diseases may pass into one another, and finally, after enormous production of scales, terminate fatally from some intercurrent disease.

E. Wilson[2] includes under the term dermatitis exfoliativa, not alone a primary affection, but also the terminal stages of various profusely scaling diseases, in which the absence of primary or characteristic eruptions renders the diagnosis impossible.

Hebra[3] stated that pityriasis rubra "is unaccompanied by any other symptom than a constant, intense dark-red color, without notable infiltration, formation of papules or fissures, without weeping or formation of vesicles; it is associated with slight itching, and almost always spreads over the entire integument." The redness disappears on pressure, giving place to a yellowish color. At the places which are free of scales, the skin occasionally has a vitreous, glistening red color, through which the deeper parts of the skin are visible. The temperature of the skin is somewhat elevated, but subjectively there is a feeling of chilliness. At the beginning, there is a branny desquamation, but later the scales become larger. The affection begins at various parts of the body, with deep-red scaling patches. Alopecia and changes in the nails occur during the disease. The patients may pursue their occupation for years, until emaciation, the feeling of tension in the skin, its diminished elasticity, secondary changes (fissures, gangrene), and impaired nutrition gradually cause the fatal termination from phthisis, nephritis, or some other intercurrent disease. The disease affects particularly males in the prime of life.

Hans v. Hebra[4] reports a case in which the autopsy revealed a solitary tubercle of the cerebellum, in addition to pulmonary and intestinal tuberculosis. Fleischmann states that he has found cerebellar tubercles post-mortem on several occasions in children who had suffered from a cutaneous affection similar to pityriasis rubra.

Chronic pitryasis rubra does not always appear to begin with red, scaly patches, since in one of H. v. Hebra's cases the eruption was preceded by an impetiginous eczema of the scalp.

Kaposi[5] believes that he cured one case, and also reports that a colleague suffered from pityriasis rubra, which terminated favorably.

Dermatitis Exfoliativa Acuta.—Corresponding to the chronic form of pityriasis rubra is the acute, usually benign form which has been described under various names. It often occurs with slight febrile or general symptoms, at first usually in the form of round, red infiltrated discs, like circumscribed dry, more rarely moist eczema, which soon becomes covered with branny scales and itch moderately. The

[1] "Affections cut. arthrit. et dartreuses."
[2] Med. Times and Gazette, 1870, i., p. 118. Lectures 1870–78.
[3] "Hautkrankheiten," i. Aufl., 1862.
[4] Vierteljahrschr. f. Dermat., 1876.
[5] "Vorlesungen," S. 393.