causing annoyance by the desquamation and the feeling of stiffness produced, and giving rise to pain when fissures are formed.

In some cases the disease creeps slowly up the fingers until it reaches the nails, which then become thickened and brittle. In some instances one or more well marked rings of papules occur on these localities. If not cured, these soon coalesce and form a patch, which runs the usual course.

As a rule, the affection spreads by the formation of new distinct papules at the border of the original patch. Exceptionally when a large patch has formed in the hollow of the hand, the disease extends by a crescentic margin, a line or more in width, which is distinctly elevated, and, as it invades healthy tissues, the parts left are scaly and subacutely inflamed. In this way the whole palm or sole, with the corresponding surfaces of the fingers or toes, may be involved. Sometimes the lesion progresses in this crescentic manner up the inner side of the foot towards the ankle, and around the radial or ulnar borders of the hand, generally not invading the dorsum and not passing the line of the wrist. The lateral surfaces of the fingers may likewise be affected.

Several years are occupied by this process, and as a result we sometimes find general cornification of the dense parts of the epidermis with thickening of the thinner parts. The dense, hard stratum of epidermis covering the sole, and rather less frequently the palm, often becomes perforated with minute holes, while from it may be dug hard masses of epidermis having a chalky appearance. This affection is called by some "*Syphilis cutanea cornea.*" All of these forms of epidermal thickening are very often wholly uninfluenced by internal treatment, and always require vigorous local measures.

To the question whether syphilis produces genuine scaling eruptions we must answer that, while they may be scaly and no infiltration of granulation cells can be found in their later stages, all syphilitic scaling eruptions begin as a true papular syphilide. Owing to the fact that the integument of the palms and soles is so firmly bound down and is subject to such constant compression and attrition, and also to the fact that the cell-infiltration in these regions is not limited to the vicinity of follicles, the lesion becomes spread out into extensive patches. Probably the specific feature of the process is the deposit of cells, which are subsequently absorbed; resulting from this is a low grade of inflammation and a chronic epidermal cell-increase. Therefore, while the papular lesion is characteristic of syphilis, the scaling which follows is in all essentials similar to that of psoriasis. The application of the term psoriasis is, however, objectionable. Moreover, the result of treatment shows that the papular affection is influenced by mercury, while the scaling condition is unaffected.

The diagnosis of the early papular syphilides of the palms and soles is generally easy, since neither eczema nor psoriasis produces similar appearances. In their early stage the color and situation of the patches indicate their nature, while the history of the case and the

coexistence of other syphilitic lesions furnish additional evidence. When the patches are diffuse, their resemblance to psoriasis is almost perfect. The latter, however, is often more scaly, is usually more scattered, and is scaly from the first, or begins as rosy red patches and scaling spots.

It is always important to get the patient's idea of the manner in which the affection began. In cases of psoriasis similar conditions have been observed elsewhere on the body. Psoriasis usually begins in early life, the syphilitic affection generally occurs after puberty. It is very rare indeed for psoriasis to appear exclusively in these localities; when seen here it may usually be found elsewhere, especially on the elbows and knees. Some authors mention, as a point of distinction, that the scales of psoriasis are silvery, while those of the papular syphilide are dull and dry. We have seen the scales of the specific affection silvery, resembling asbestos. In many old chronic cases the diagnosis cannot be made from the study of the eruption itself, but only after a careful consideration of its history and of the case in general. Certain chronic palmar eczemas resemble the scaling syphilide. Usually there is more thickening in the former, and there is always much itching. It is more diffuse than the syphilitic affection, and has a tendency to invade contiguous parts.

The Pustular Syphilides.

These syphilides constitute an important group of eruptions, which though less common than the erythematous and papular forms, may appear at the earliest stage of syphilis, at any time in its secondary period or even late in its tertiary period. They vary in severity from a mild and ephemeral eruption to one of the gravest character. The size of the pustules varies from that of a pin's head to that of a ten-cent-piece; they may be acuminate, globular, or flat; they are generally round, but sometimes oval; and they are surrounded by a dull coppery-red areola. Some have a well-marked papular base, the pustule being a minor part of the lesion; beneath all of them there is more or less infiltration. They may begin as papules or as distinct pustules. They vary greatly in number, sometimes covering the entire body, or, on the contrary, being limited to special regions. They show a marked tendency to appear on localities rich in hair and sebaceous follicles, while certain ones are prone to be developed in particular regions. The pustules may be either scattered or in groups, and are almost always symmetrically placed. Relapses of this syphilide are common; the earlier the eruption the more rapid is its invasion and the more numerous are its lesions, while later eruptions appear slowly, in limited numbers and with a marked tendency to localization.

Some pustules become encrusted more quickly than others; as a rule the secretion of the large ones dries sooner than that of the small. In all cases the size and form of the crust correspond to those of the

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pustule. The crusts of the small pustules have a greenish-brown color, those of larger and later ones a greenish-black color, similar to that of an oyster-shell. They are usually of firm consistence, and somewhat adherent. Their surface is rough and sometimes distinctly laminated, and may be flat or conical. Their shape may be round, oval or like a horse-shoe. Under small crusts there is usually little, if any, ulceration, and their removal exposes a well-marked papule; under larger ones is an ulcerating surface, more or less deep, of a grayish-red color, covered with a quantity of thick brownish-yellow pus.

The earlier eruptions, being papulo-pustular, usually cause no destruction of the skin, while the late ones, being extensive, deep and localized, leave cicatrices, which remain pigmented for a long time, but finally become shining white.

Though the visible changes are pustulo-crustaceous, the base of all of these lesions consists of an infiltration of small round granulation cells similar to that of papules. In the early history of these lesions molecular decay and pus formation seem to be in proportion to the cell-infiltration, the destruction of tissue very often being limited to the death of the new cells, since perceptible change in the skin itself seldom exists. In other cases the derma melts away with the infiltration, leaving nothing of the original framework.

The Acne-form Syphilide.

This syphilide is thus called because, like *acne vulgaris*, it attacks the hair and sebaceous follicles, and because it is a papulo-pustular lesion. It consists of conical or slightly rounded pustules varying in diameter and elevation from one-third of a line to a line. Sometimes the pustules are as small as a pinhead. The pustules may form the whole eruption, or they may be mingled with miliary papules or the erythematous syphilide.

When appearing at the beginning of the secondary stage as a general eruption, they are usually accompanied by fever, which sometimes reaches the highest point observed in syphilis, and by other symptoms peculiar to that stage. The mode of invasion may be rapid or subacute. In the former case the small red spots rapidly become papular and then pustular, the lesion reaching its full development within twenty-four or forty-eight hours. In such cases the pustules are generally numerous and scattered over the whole body. In the subacute form they appear slowly, and for several days may look like papules, on the apices of which a small quantity of pus slowly forms. The lesions are less numerous, more localized, and more likely to be grouped than in the acute form. The fever in the latter mode of invasion often arises abruptly, and continues at a high grade for several days, when it may fall abruptly or slowly to a point between 99° and 101°. In the subacute form it usually rises slowly to 100° or 101°, and may remain at or about that elevation for several weeks.

The color of the base of the pustules is at first bright red, but, as in the case of miliary papules, it soon becomes dull brownish-red. This change first occurs on the legs and face, and upon the former the pustules are sometimes accompanied by hæmorrhagic effusion. The apex of the pustules is at first yellow, but is soon transformed into a greenish-brown, slightly adherent crust. In many cases, particularly of small pustules, the purulent apex is thrown off, leaving a papule, which may be surrounded by the detached rim or collarette already described as a feature of the papular syphilides. Subsequently the papule is absorbed, leaving a small pigmented spot. In cases not treated, and especially in badly nourished subjects, the pustules become small ulcers. Their base extends, being very hyperæmic, and the crust enlarges with the extending ulceration. It may thus happen that some of the pustules run together, although there is no general tendency to fusion; and they may be distributed in the form of complete or partial rings.

This eruption generally begins about the face, scalp, back of neck, and shoulders, and may thence invade the trunk and extremities, being more copious on the scapular, sternal and gluteal regions, and on the outer aspects of the limbs. We frequently find syphilitic papules or erythematous patches on the inner surface of the arms and legs and on the anterior aspect of the trunk. When the pustules are scattered over the entire body, they may be closely crowded together or separated by marked intervals. The first eruptions are always more copious than relapses, in which the pustules appear possibly grouped in patches or in a ringed form about the face, scalp, or shoulders, usually having been preceded by an erythematous or papular syphilide.

This eruption, which generally appears from the third to the sixth month of the secondary period, may run a chronic course, occupying several months in the development and complete disappearance of the lesions. Having run its course it usually does not relapse in its original form, but in the form of larger and deeper pustules or tubercles.

Commonly the skin is not destroyed, the pustules merely leaving small brown spots, which disappear in a few months. The hair of the scalp falls from the affected follicles, but is usually replaced; exceptionally the follicle is destroyed, and a minute cicatrix results.

The prognosis of this syphilide is not so good as that of other earlier forms. The eruption itself is troublesome, and the general health is rather more frequently impaired after this rash than after others.

The concomitant symptoms vary with the date at which the eruption appears. If it is the first rash it is of course accompanied by symptoms and lesions peculiar to the period of invasion; at a later period it may coexist with alopecia, onychia, mucous patches, iritis, neuralgias, nervous symptoms, and perhaps lesions of the bones and testes.

Diagnosis.—The history of the case, the usual presence of other lesions, and the appearance of a generally distributed pustular syphilide preclude the possibility of mistake. Acne vulgaris resembles it in certain particulars. Acne, however, generally begins about puberty, and is confined to the face and back and rarely attacks the hair of the scalp. It is never attended by systemic reaction. Moreover, it presents papules, pustules, and comedones, which have no uniformity of size; some are indeed miniature furuncles, and all have at some time a more or less hyperæmic areola. The pustules retain their character indefinitely, and, on pressure, pus exudes from a cavity, whereas in the syphilitic lesion the pus surmounts a papular base. Acne attacks exclusively the upper parts of the body; syphilis may be general.

In its papular stage the pustular syphilide, when grouped, may resemble lichen, the distinguishing points of which have been given in describing the miliary papules.

Some French writers have called this eruption a "vesicular syphilide," since the purulent contents of the pustule are occasionally so thin as to resemble serum. About the face, and especially the chin, a few well-marked vesicles may, in rare cases, be seen. They are very minute, may be grouped in a ringed form, and they either become pustular or they flatten, scale, and become pigment spots. Usually pus is present from the first.

In exceptional cases pustules are found on the sides of the thorax along the line of the ribs, presenting some resemblance to *herpes zoster*. They are always symmetrical, whereas herpes is rarely so. The syphilitic lesions are not preceded or followed by pain as is the case in herpes. In the latter affection, moreover, the lesions are generally limited to the intercostal spaces, and, if found elsewhere, follow the course of some nerve, whereas in syphilis the localities are quite definite and other specific lesions may coexist.

The Variola-form Syphilide.

This eruption is much less common than the acne-form variety, and is interesting chiefly in its resemblance to varicella and variola. It is rarely the first eruption of syphilis, but appears after any of the early rashes.

It consists of round, superficial pustules, the epidermis covering the pus being rather thin. It begins in the form of red spots, which within a day or two become pustules with a diameter and an elevation of one or two lines. These pustules are surrounded by a limited, deep-red areola, and there is evidently not very much thickening at their bases. When fully developed they flatten slightly at the centre, some presenting marked umbilication. The epithelial cover of the pustules slowly shrinks, becomes darker, and finally, in a few weeks or sooner, deep, greenish-brown crusts, about half a line in thickness, are formed, which adhere somewhat closely to a slightly

exulcerated base. In general the pustules run an indolent course and do not increase much in size, but in aggravated cases they become very large and may run together. They may be disseminated over the body or grouped in particular regions, and they sometimes form circles and parts of circles.

These pustules have no tendency to a follicular origin, but are found on parts where the skin is soft and delicate, frequently like other syphilides, upon the forehead and at the line of junction of skin with mucous membrane. They are generally sparse on the outer aspect of the extremities, more numerous on the anterior of the trunk, and often abundant near the genitals and in the inguinal region. In rare cases they are found on the palms, and still more seldom on the soles; I have seen but one instance of the latter, and very few such cases have been reported.

On account of the large size of the pustules this syphilide has been called by some French writers "*pemphigus syphiliticus*," and, owing to its occasional development upon the palms, it has been claimed that pemphigus may occur here in acquired as well as in hereditary syphilis. The large pustules which may form in these regions in acquired syphilis are not, however, pemphigoid bullæ. The thickness and firm attachment of the skin of these parts prevent elevation of the epidermis to a great degree; hence the pustules spread out and run together, thus coming to resemble bullæ. While admitting the rare occurrence of pemphigus in acquired syphilis, I do not believe that it is developed upon the palms and soles.

The mode of invasion of this eruption is generally rather slow, and is seldom accompanied by very pronounced febrile movement. It begins about the face and thence spreads slowly over the body in the course of one or two weeks. The crusts, which form when the pustules reach their height, fall off, leaving pigmented spots. Sometimes new crops rapidly succeed old ones, so that an eruption may last several months. The eruption is greatly influenced by treatment; although its full arrest is difficult, future outbursts may be prevented.

I cannot say from my own experience how such an eruption, if left to itself, might progress, but it would probably ulcerate deeply and induce a condition of marasmus. Under such circumstances, when the eruption seems to assume a malignant type and is accompanied by cachexia, we have an illustration of a somewhat rare form of syphilis called by the French "*precocious malignant syphilis*" (*syphilis maligne précoce*) "*gallopping syphilis*" (*syphilis gallopante*). Any form of pustular syphilide may assume these characters.

A very limited eruption of this syphilide sometimes occurs on the face or body, or symmetrically on the arms. Such a rash runs a slow course, usually without much fever, and generally occurs in cases where treatment has been stopped too early.

This eruption rarely appears earlier than the third month, and may be seen as late as the second year of syphilis. With it may

be found lesions peculiar to this period, and frequently a sparse papular eruption, mucous patches, or condylomata lata.

The diagnosis of this syphilide is generally easy. Prodromal symptoms observed in smallpox and varicella, such as backache and eruptive fever, are noticeably absent, and there is much less general disturbance. In the acute eruptions there is great heat and tension of the skin, and at the outset small shot-like papules may be felt, which rapidly pustulate. More or less diffuse patches of hyperæmia, accompanied by sensations of itching and burning of the skin, are sometimes present. Variola progresses so rapidly that its character is perfectly clear after the second day. The slow development of the syphilitic eruption, and the absence of subjective symptoms are distinctive points in the diagnosis.

The Impetigo-form Syphilide.

This syphilide, like the preceding, is a pustulo-crustaceous eruption, and attacks the more superficial layers of the skin, differing from it, however, in the fact that the lesions are not so distinctly circumscribed, but have a tendency to involve a much greater surface and often to assume a serpiginous character.

The resemblance of this eruption to simple impetigo is in the grouping of the pustules, in their fusion, and chiefly in the somewhat similar appearance of the crusts. The pustules of the specific eruption are usually much larger and flatter than those of the simple form, and their resemblance is hardly so close as to warrant the term impetigo-form applied to them. They dry so quickly into crusts that the pustular stage is soon lost.

This syphilide almost never occurs as the first exanthem, but rather during a late relapse, its earliest appearance being at the decline of the initial rash, and its usual time of evolution being about the middle or latter part of the first year of syphilis. In cases not treated, it may occur during the second or even the third year. Most of the pustules have a peri-follicular origin, and are found on hairy parts, rarely on the hands and feet. When this syphilide occurs early, the pustules are rather discretely distributed over the whole body; when it appears later, they are distinctly localized and grouped, the eruption in the latter case being called *impetigo sypilitica conferta.*

The pustules begin as circumscribed red spots which rapidly become elevated by yellow pus seated beneath the epidermis. These spots, few of which are papular, are sometimes small and round, and again are very large and irregularly oval. After the effusion of pus, each patch becomes covered by a dark-brown adherent crust. The crusts of several pustules may run together, their mode of formation being indicated by incomplete lines of separation. Their surfaces are usually flat, their edges rounded and in relation with the margin of the ulcer, and they are surrounded by a narrow dull-red areola.

Upon the face, at the margin of the hairy scalp, in the scalp itself, about the alæ nasi and commissures of the lips, upon the chin and in the beard, these crustaceous pustules run together and form patches, usually not more than two inches in diameter. In the hairy parts the outline of the incrustation is generally not at all regular. Only in late eruptions do the pustules unite and form large patches. On the trunk, a few may be seen over the sternum and in the hypogastric, inguinal, and gluteal regions. On the anterior aspect of the forearms, and more rarely of the thighs, some may also be found, and here they are likely to be grouped and to increase rapidly in size, a pustule sometimes reaching a diameter of an inch or more within two weeks. The pustules usually retain their circular form as they increase in size, but sometimes they become kidney-shaped; this peculiarity is noticed rarely on the face, but more commonly on the forearm.

In some untreated and broken-down cases, these pustulo-crustaceous lesions take a serpiginous course, invading the superficial layers of the derma, generally of the upper extremities. They progress by a ring of ulceration, covered by a crust and inclosing an area of skin already healed. This ring of ulceration is prone to extend in a circular form on the face and in an oval form on the arms. When the patch is a few inches in diameter, the aspect of the original lesion is wholly lost. We then find a distinctly raised ring, one to three lines in breadth, of a yellowish-brown or black color, which incloses a round spot of slightly hyperæmic skin. The ring gradually extends until the whole forearm and part of the arm, the greater part of the face, or the entire sternal region may be invaded. Even in the worst cases, surprisingly little alteration of the skin follows this process, and, in many, no change whatever is apparent.

Besides this superficial form of the serpiginous syphilide there is a similar lesion which attacks the tissues more deeply and induces destruction and cicatrization of the skin. This latter eruption I shall call the *serpiginous tubercular syphilide.* The *superficial serpiginous* syphilide may also begin as a variola-form pustule, and may persist many months or even years. While it usually attacks large areas superficially, it may also attack deeper portions of the skin. In the latter case, the areolæ of the pustular ulcers become thickened and more red, and the crust becomes more elevated and uneven. Underneath the crust, ulceration progresses, and, instead of the superficial grayish-red ulcer usually found, there is a deep and sharply cut excavation, with a red, uneven surface, freely covered with secretion. When the eruption takes this course, it has been called *syphilitic impetigo rodens,* but there is no reason to consider it a distinct eruption rather than a complication.

The ulcerations vary in size; in neglected cases, we have seen them large and deep on the scalp and in the beard, and more superficial upon the forehead. In some cases the alæ of the nose may be lost. The destruction of tissue is generally greater about the face and head than elsewhere. Severe cachexia may occur coincidently with this

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