eruption and other serious lesions may follow, until we have an instance of malignant precocious syphilis, which is attended by much suffering and may even imperil the patient's life. Usually, however, now that syphilis receives early and careful treatment, this eruption does not assume these destructive features; healing takes place under the crusts, which are then thrown off, leaving a smooth, deep-red surface, which may be slightly scaly and deeply pigmented for several months. On raising the crust from a fully-developed patch on the arm, we usually find a smooth, reddish-gray ulcer without undermined edges; on the face, however, the surface is likely to be uneven and frequently covered by little papillomatous elevations, over which the crusts are accurately fitted. This warty appearance, which is often seen on hairy parts, is the result of an increased cell-infiltration around follicular openings. These uneven surfaces gradually become flat and lose their color.

The course of this eruption is usually very chronic. On its invasion the pustules may be very numerous, or a few only may first appear on the head. Thus for long periods new pustules may appear as old ones fade. In other cases, a general, extensive rash may run its full course in a comparatively short time.

Coexisting lesions are those peculiar to the period at which the eruption appears. Rarely being an early eruption, we seldom find it coincide with the erythematous syphilide, except during a relapse of that lesion. It is not uncommonly found, in a sparse and limited form, with, or at the decline of, one of the papular syphilides. Condylomata lata are frequently present on regions which this eruption attacks, and very often it is continuous at the angle of the mouth with a mucous patch of the lip or cheek. Since it may occur at any time in the secondary or tertiary period of syphilis, any of the intermediary and many of the late manifestations of this disease may be present with it.

This syphilide most commonly attacks persons in a debilitated condition, those who have some organic disease, or who have neglected early treatment. The prognosis must, therefore, be based upon the patient's general condition as well as upon the eruption itself. The presence of the eruption, however slight, is an indication for careful and continued treatment, and for attention to the patient's nutrition and hygiene.

This syphilide may be mistaken for impetigo in its disseminated and in its confluent form. The lesions of impetigo retain their pustular character much longer than do those of syphilis. They are attended by heat and itching of the skin, and have an inflammatory areola; they are much more uniform in size than are the pustules of syphilis, and their crusts are of a greenish-yellow color, instead of the greenish-black of syphilis. The acuteness of invasion in the case of large patches of the simple eruption is in striking contrast with the slow, painless, and indolent character of the syphilide. These features, considered in connection with the history of the case, make the diagnosis clear.

The Ecthyma-form Syphilide.

There are two varieties of this syphilide, superficial and deep. The superficial is the earlier eruption, appearing at any time during the first year of syphilis, and is usually composed of a greater number of pustules. The latter resemble those of non-specific ecthyma in having a solid, elevated base, surrounded by a crust, and in their tendency to ulcerate. The deep form may be an intermediary lesion, or even a rather late one. The pustules of the superficial form vary in diameter from one to three lines. They begin as slight red elevations of the skin, which, in a day or two, become small, conical pustules. The pustules gradually increase in size, and crusts are formed by desiccation of the pus. The crusts grow in proportion to the bases of the pustules, and their yellow color soon becomes brown, which is rendered still darker by particles of dirt, and sometimes by admixture of a little blood. When fully formed their color is yellowish-brown, and their shape round or conical. As the pustules increase in size the crusts become flattened and even depressed at the centre. The base is at first of a bright red color, which soon becomes a dull reddish-brown, and it is surrounded by an abruptly limited areola. Beneath the crust, which is seldom firmly adherent, is an ulceration, involving the superficial layers of the derma, and having a smooth floor covered by a grayish-red film of molecular detritus, bathed in thick pus. After commencing treatment, and with improvement in the general health, the base becomes less dark, and contracts; the areola fades; the crust becomes hard, dry, and very adherent, and, if removed, a smooth red surface is seen, sometimes slightly papillated. This surface may be again covered by a thin crust made up chiefly of epidermis, which in turn falls off, leaving a smooth, reddish-brown patch, or a slightly elevated, papular, and scaly surface. Under unfavorable circumstances the areola and the base are redder and more extended, pus is secreted in greater quantity, the ulcer increases in depth and extent, in extreme cases reaching a diameter of one or two inches, and perhaps several ulcers may unite. In such cases the syphilis assumes a malignant form, and there is much systemic prostration. The course of such an ulcer is similar to that of the impetigo-form syphilide when the latter becomes serpiginous.

The superficial ecthyma-form syphilide begins by the development of pustules either in a disseminated or an aggregated form, about the scalp, particularly at its junction with the face and neck. They may appear gradually and without much febrile movement, or in a manner quite the reverse. Soon after, other portions of the body, such as the anterior surfaces of the legs and forearms, the trunk, and the inguinal and gluteal regions, may be invaded. In some cases this is accomplished in a week or ten days; in others small crops of pustules succeed each other at short intervals, and fully a month may be occupied in the complete development of the eruption. When this eruption occurs early, and especially in cases inefficiently treated,

the lesions are apt to be extensive and copious; occurring later, it may be limited to one region, and may even be unsymmetrical. The pustules may be isolated or grouped in patches, or in the form of circles or parts of circles. They may or may not leave cicatrices.

The deep variety of the ecthyma-form syphilide is usually a rather late lesion, but it is sometimes precocious. In the latter case it may be very malignant, and it is then the expression of profound syphilitic cachexia, thus constituting another instance of the "galloping syphilis" of the French. This syphilide begins as a papulo-tubercle. A round or oval elevation appears, upon which a quantity of yellow pus soon forms, and this becomes thicker and dries into a crust of a brownish-black color, owing to the effusion of a little blood. When fully formed, we find an incrusted papulo-tubercle, with a diameter of one-quarter to one-half of an inch. The firm, deeply-seated base has a dark coppery-red color, and is surrounded by an areola of a similar hue. The crust is generally rounded or conical, but may flatten out as it extends. A deep, punched-out ulcer, with sharply-cut edges, and a smooth, grayish-red surface, covered with a foul, rust-colored pus, underlies the crust, which can be removed with little force. In some cases the crust fully covers the ulcer, in others it is smaller, and is surrounded by a ring of ulceration. If untreated, the ulcer continues to increase, and may become serpiginous, invading extensive surfaces. Several ulcers may merge together. Influenced by treatment, the areola fades, the base contracts and becomes slightly wrinkled, and a granulating surface is found beneath the crust which becomes hard and adherent. In some cases, as a result of stimulation, a layer of epidermis soon covers the surface of the ulcer, but often profuse granulations spring up and may even rise above the level of the surrounding skin. After healing of the ulcer, there remains a coppery-red spot, which gradually fades, and finally leaves a shining white cicatrix, which is for a long time fringed by a narrow copper-colored areola.

This eruption is generally most abundant on the antero-exterior surfaces of the legs; often a few pustules may form on the corresponding surfaces of the arms, or about the face, and on the lower portions of the trunk. It is usually developed slowly, appearing in crops of from two to twelve at intervals of one or several weeks. It may be accompanied by cachexia, and not infrequently by fever of a remittent type. The course of the eruption is very slow and insidious, often extending over many months or even more than a year. In many cases there is no true cachexia, but simply extreme prostration. In such cases the ulcers are not numerous, and show only a slight tendency to spread.

The prognosis of this syphilide is variable. In the superficial form the eruption often gives much annoyance, yet it may disappear without leaving scars. The condition of the system is always below par, and the prognosis should be governed in great measure by the degree of improvement under treatment. In most cases a favorable

result may be expected in the course of a few months, but in rare cases prolonged cachexia follows.

The prognosis of mild and limited cases of the deep variety is usually good. In more extensive and relapsing cases, the outlook is less favorable; the presence of the eruption indicates a depraved condition of health, which is greatly aggravated by the irritation and drain of the deep ulcerations. A few months of proper treatment will, however, generally effect a cure.

The diagnosis of this syphilide is almost always quite easy, although it may be mistaken for ecthyma. The superficial form is to be distinguished from a similar ecthyma, by the peculiar course, situation, and appearance of the syphilitic pustules, as compared with the more inflammatory, pruritic pustules of ecthyma, which are more uniform in size, have yellowish-brown crusts, and much less tendency to ulceration. Moreover, ecthyma usually occurs on the legs of broken-down subjects, and is an eruption of papules and pustules, the latter forming only superficial ulcers. In some cases of phtheiriasis, in uncleanly and unhealthy persons, pustulo-crustaceous ulcers, somewhat resembling those of syphilis, are seen, but with care a diagnosis can always be made. The discovery of the pediculus vestimentorum, the presence of minute blood-crusts caused by the bite of the insect, and very often scratch-marks, and a general papular and pruritic condition, establish the diagnosis of phtheiriasis.

The deep ecthyma-form syphilide might perhaps be mistaken for *ecthyma cachectica livida*, since the latter occurs in much debilitated subjects. The histories of the cases, and a comparison of the lesions, render the distinction clear. The lesions of syphilis are less inflammatory than those of the non-specific eruption; they involve much less of the surface, but extend much deeper, and they secrete much less pus. Moreover, the areola of the simple lesion is either bright red or deep purple, and is much more extensive than that of the syphilitic pustule.

Rupia.

This name derived from the Greek ῥύπος, dirt, is applied to an eruption composed of ulcers surmounted by laminated crusts. It appears sometimes precociously during the first year of syphilis, but it really belongs among the late lesions. It usually shows intense syphilitic infection, and is often accompanied by fever. It has never been seen in hereditary syphilis. Although a pustulo-crustaceous eruption, it partakes of the nature of tertiary lesions, in the deep-seated infiltration always present beneath the crusts.

Rupia may be divided into two varieties: one, in which the crusts are small, numerous, and quite generally scattered; another, in which they are large, less numerous, and more localized. All of the lesions of rupia begin as a red spot, which soon becomes a flat pustule, which dries into a greenish-brown crust. Subsequent changes are very slow and of great interest. The initial crust is usually small, and

underneath it is a superficially ulcerated, infiltrated surface. The infiltration and ulceration extend somewhat beyond the original crust, and another layer of crust is formed beneath it by the secretion from the ulcerated surface. Thus several distinct but adherent laminations are formed as the ulcer increases in size, each succeeding one being larger than its predecessor. This result is mainly due to the fact that the pus is quite thick, and that it is secreted slowly and dries very quickly. The process may continue until the crusts reach a diameter of half an inch or even two inches. In rare cases they have been seen with a diameter of fully six inches. When completed, the rupial crust is conical, distinctly laminated, of a brownish-black color tinged with green, similar to a dirty oyster-shell. The crust itself is hard, firm, and adherent, although its layers are often perfectly distinct. Underneath it we find an unhealthy, grayish-red, ulcerated surface, bathed in thick, ichorous pus, and surrounded by a slightly undermined margin. The depth of this ulcer is rarely so great as that of the severe ecthyma-form syphilide. It generally involves about one-half the thickness of the derma. Around each ulcer is an areola of a coppery-red color, which merges into healthy tissue. The growth of these encrusted ulcers is quite slow and often intermittent.

The small rupial eruption begins either about the face or on the inner and outer surface of the forearms. It may then invade the trunk and lower extremities. The crusts vary in diameter from half an inch to an inch. Lamination is first visible when their diameter is about one-quarter of an inch. Their number varies; sometimes upon the face only a small portion of healthy skin is left intact. Upon the face and forearms their height is often greater than their breadth. They are more common on the forehead and near the nose and mouth than on other parts of the face. In some cases only one region is invaded, as the face or the forearms, but the eruption is rarely seen on the lower extremities alone. It generally appears in crops of a limited number, which may follow each other at short intervals, and extend over a period of several months or a year. Proper medication, however, will certainly abort such an eruption more or less promptly. In some cases of an eruption composed of many small pustules, even when no treatment has been followed, the crusts have been known to reach a diameter of nearly or quite one inch and then to dry and fall off, the subjacent ulcer healing meanwhile. In other cases the crusts may run into each other and assume a horseshoe-shape. This eruption may occur during the first year of syphilis, but is generally observed later.

The eruption composed of large crustaceous ulcers usually presents a limited number of lesions. Exceptionally we find only one crust, but in some cases as many as twenty or thirty. The diameter of a crust in a case that has been long neglected may be even more than two inches. This eruption is most common on the face and trunk, but may occur on the extremities, and may be unsymmetrical. The

lesions appear singly, or two or three may be developed at the same time; they grow slowly and painlessly. After having reached a diameter of an inch their growth is much slower, many months being occupied in the growth of a crust four inches in diameter. The ulcers underlying the crusts of the large variety of rupia are rather deep, but rarely involve the whole thickness of the derma. They resemble those of the small variety. After removal of one of the conical crusts a thinner one of a similar color is formed, unless the surface is thoroughly stimulated. Profuse granulations may spring up which hinder cicatrization. Under proper treatment the ulcer slowly heals, until a deep red, glazed spot is left, which gradually becomes thinner and lighter colored, and, finally, a white, shining surface is left, which is depressed below the general level, and around which a rim of brown pigment remains for months, corresponding with the former areola. These cicatrices are usually not traversed by fibrous bands, but scattered over them are minute holes which indicate the openings of sebaceous follicles.

The prognosis of rupia is not good as to the lesion itself, nor as to the general condition of the patient. In some rare cases of precocious evolution this eruption becomes general, the lesions being large and numerous, and the general condition being at the same time much depressed. Without careful and vigorous treatment, this malignant form of syphilis may be fatal. The small and general form of rupia, although accompanied by cachexia, may be cured in a few months. The ulcers usually occasion much annoyance and suffering.

The large form of rupia is of considerable gravity and calls for energetic local and constitutional treatment. Although many cases recover, death sometimes occurs.

A question of diagnosis cannot arise, since no simple eruption resembles rupia.

During the visit of the late Prof. Boeck, of Christiana, to this country, he treated several cases of syphilis by syphilization, using pus from chancroidal ulcers. Upon each inoculated spot a pustule formed, which rapidly became covered with a crust, that increased by laminæ and in fact was rupial. The bodies and arms of two men were, as a result, covered with rupial crusts, which varied in diameter from one to three inches and were identical in every respect with those caused by syphilis.

The Bullous Syphilide.

Much confusion has been introduced into syphilography by the latitude given to the term pustule. From the fact that some forms of syphilitic pustules are not situated upon an elevated base and are large and globular, with a tendency to run together, the existence of a true pemphigoid syphilide has been asserted. Further study has proved these lesions to be pustular and not bullous; yet in some cases true bullæ are developed on syphilitic patients.

The eruption begins like ordinary pemphigus by an effusion of serum beneath the epidermis, which slowly increases, until, at the end of a week or two, a bulla the size of a pea is formed. The serum soon becomes turbid and milky, and is finally converted into a thick yellow pus. The bullæ vary in size, some being as large as a walnut. They are surrounded by a dull-red areola, which on the legs may be due to effusion of blood. The pus soon dries into a dark, greenish-black, adherent crust.

Under favorable circumstances, the underlying ulcer, which is usually not very deep, becomes cicatrized and the crust falls off, leaving deeply pigmented, more or less atrophic spots. Sometimes, however, no change is produced in the skin. Without treatment, especially in cachectic patients, the ulceration increases in depth and extent, and the lesion may then resemble rupia.

This eruption occurs mostly on the forearms and legs, where it may be aggregated. When it invades the trunk it is more copious about the chest, but is generally discrete. Its invasion is usually very slow. Its course is also very chronic and unattended by any marked symptoms, except soreness and sometimes heat in the bullæ and ulcers. Fresh bullæ may form during the course of the eruption, or after it has once disappeared.

The bullous syphilide is almost always a late eruption. Mistakes have arisen from considering certain exceptionally large pustules, or those which have been formed by the fusion of several of the variolaform pustules, as bullæ, and calling them syphilitic pemphigus. These bullæ are found even at a late period only in those who have had repeated relapses of syphilis in a severe form and in those having visceral lesions. The opinion has been expressed that an eruption of this kind is a mere coincidence, a pemphigus occurring in a syphilitic subject. In many cases there are certainly no distinguishing marks between the bullous eruption of syphilis and pemphigus, and the diagnosis must then be made from the history and from the associated lesions and symptoms. There are cases in which the syphilitic history is clear, and the bullæ soon form rupial crusts and leave typical tubercular infiltrations.

The Tubercular Syphilide.

This syphilide consists of deeply-seated, circumscribed infiltrations into the skin, resembling in appearance the large, flat, papular syphilide, and being, in reality, nothing more than an exaggerated form of the latter lesion. The whole thickness of the skin is involved, whereas in the papular syphilide the deeper layers escape; the latter is a secondary manifestation, while the tubercular syphilide is a tertiary lesion.

The tubercular syphilide seldom ulcerates, but disappears by interstitial absorption; hence, it has been called *non-ulcerative* or *resolutive*.

The resolutive tubercular syphilide may appear even before the second year of syphilis; it is usually developed between the third and sixth years, but may be seen as late as the eighth or tenth year, and, according to some authors, even as late as the fifteenth or twentieth. It is usually met with in cases that have not been thoroughly treated at the outset. Its course is very chronic and marked by numerous relapses, many years passing while it travels over the body. It causes no pain, heat, or itching, but merely produces thickening of the skin. When it appears early, it may form a general and copious eruption; but, later, the tubercles may be limited in number and confined to a single region.

The tubercles begin as deep red spots, which slowly increase in size and thickness until, when fully developed, they have a diameter of from one-half an inch to an inch. Sometimes they are as small as a split-pea, and again they are more than an inch in diameter. Their surface is flat or rounded, and their borders are sharply defined. The smaller lesions are more elevated and rounder than the larger. Upon the face they often have a shining appearance, and on parts where the epidermis is thick and rough they look dull and dry. The color of the tubercles is at first dark-red, with possibly a tinge of crimson, but frequently it is a light pinkish-red. Their surface is usually quite smooth and free from scales, but sometimes a layer of small size and quite adherent are seen. Where the epidermis is thick, the proliferation is occasionally free, giving the tubercles somewhat the appearance of psoriasis.

The tubercles first appear on the forehead or back of the neck near the scapulæ. They may be limited to these regions, or may invade the trunk, always more copiously on the back and over the gluteal regions. In front they are generally scattered, but in some cases they occur in large numbers over the sternal region, on the borders of the axillæ, and over the deltoid muscle. They are more copious on the outer aspects of the extremities near joints than on the inner. The backs of the hands and feet may be spared, but tubercles are sometimes developed on the palms and soles, and soon pass into a scaling condition.

The course of the eruption is very slow; several weeks or even months and years may pass before the entire body is covered. When the eruption is general, the tubercles are usually disseminated without order, rarely showing a tendency to circular distribution. Fresh crops often fill the interspaces of those first developed. When precocious, the eruption may be very copious. In the few cases I have seen of recurrence of this eruption, the tubercles were almost in contact with each other. Such cases are rare, and belong to the group of malignant precocious syphilides.

An eruption of tubercles is likely to be general when occurring within two years after infection, and in those who suffer from a severe form of syphilis, or who have been improperly treated during the