atrophic changes described above, and which is rarer than all others, portions only of the nail may be perceptibly thickened by increased growth, or the entire nail may be enormously increased in bulk, changed in color, and marked by the pinhead-sized dots or depressions, sharply cut in outline, where small circumscribed atrophic changes have occurred.

(*c*) *Separation of the Nail from Matrix, Bed, or Fold.*—This change, an exceedingly common one in syphilis, may involve one or all the nails of the hands and the feet. As a rule, several of the digits are affected, the hands by preference. The detachment may be partial or total.

Among partial detachments, much more common than all others, the mildest is seen in early periods after infection. The separation usually occurs first at the distal extremity of the nail where it is attached to the side of the nail-bed, and is visible beneath the nail-substance as a delicate linear or ribbon-like stripe, parallel with the long axis of the nail, resembling a serous exudation beneath the nail-substance; or the line of separation is whitish in hue, and the separation occurs at the bottom of the nail-groove or across the entire width of the nail. One-half or more of the nail may thus be detached from its connections, the separated substance undergoing the usual changes in color and polish.

When the separation is complete, it may result from changes beginning as in the partial forms described above, or with changes in the matrix, the latter being more common. Usually the latter ceases to provide for the further growth of the nail-substance, and the nail which is to be shed is simply slid along its nail-fold until it is exfoliated, undergoing meanwhile the atrophic

changes already described, in markings, striations, etc. upon its surface. When the nail-bed is left bare it is speedily covered with a substance which, in all favorable cases, eventually furnishes a new nail.

Variations from this type are furnished by defective and imperfect attempts, instead of by total cessation of effort, of the matrix to furnish the nail-substance. In the former event ridges of mingled atrophic and hypertrophic nail-substance mark the boundaries between the diseased plate, newly formed, and the healthier nail produced prior to the date of the infective process. As a result the nail is shed, and its successor is formed after a lapse of time in which the nail-bed is in part exposed and beset by imperfectly formed, thinned, irregular, or "worm-eaten" fragments of horny substance.

Diagnosis.—In general, the nature of the disorder of the nails is readily established, as there is usually a history, and in almost every instance other symptoms, of infection. The indolent course of the disease, the tendency to ulceration of the soft parts about the nail, and the deformity resulting in the production of a bulbous or club-shaped distal phalanx, are all significant. Ingrowing toe-nail, chiefly of the large toe, presents an obvious explanation for the tumefaction and pain. Chancres seated in the site of a "hang-nail," especially among physicians infected in the practice of their profession, are commonly associated with enlargement and induration of the epitrochlear gland of the limb involved. Tuberculous affections from inoculation of the manual digits are rarely situated at the nail-border, and they are usually of verrucous rather than of papular type.

Syphilis of the Mouth and the Tongue.

The study of syphilis as it affects the mouth is of great importance because of the frequent implication of this cavity, because of the persistence and significance of the symptoms presented, and because of the possibilities of transmission of the disease amply afforded. In such a region as this is well illustrated the tendency of the disease to exhibit its symptoms at sites of special irritation. The chewing and smoking of tobacco, the holding of pipes, cigars, and cigar-holders in the mouth, and even the practice of chewing a toothpick after meals, are fruitful sources of lesions in this region of the body. The drinking of very hot or iced fluids and the use of highly-spiced, acetous, or salted foods have a similar tendency.

Chancres occurring upon the tongue, the lips, and the tonsils have been considered elsewhere. It is needful here to recall the fact that lesions suggesting in appearance mucous patches of the tonsils, with an ashen surface and deep engorgement, deep indurations of the anterior segment of the tongue capped with a superficial abrasion or ulcer, and circumscribed scleroses with much tumefaction of the inside of the cheek or the gum, if associated with dense induration of the glands anatomically connected with these parts, should not hastily be taken for symptoms of consecutive syphilis.

The lesions of systemic syphilis in the oral cavity are, when more or less speedily succeeding the appearance of the chancre, usually superficial, multiple, and well-nigh symmetrical, as distinguished from those occurring later in the disease, which are often single and deep as well as destructive.

These lesions correspond strictly with those already studied as of occurrence in the skin, being of the type of macules, papules, tubercles, warts, scales, pustules, gummata, and ulcers. Each type, however, acknowledges a modification due to the peculiarities of site, the mouth being habitually moistened with mucus and saliva, and being exposed to friction of contiguous surfaces and of articles of ingested food and drink, which, as already shown, add the effect of heat, cold, and chemical agents to the other effective causes of disease in this region. Again, the pressure upon the tongue and the inner face of the cheeks of carious and even sound teeth having projecting edges, not appreciated in conditions of health, is capable of inducing or modifying the symptoms here presented. As a rule, however, the syphilitic lesions of the mouth are of moist rather than of dry type, with the result that the mucous patch is probably of greater frequency as a syphilitic symptom than any other lesion exhibited in the course of the disease, particularly in male patients using tobacco.

Macular Syphilis of the Mouth.—Well-defined broad areas of vivid or dusky redness may often be seen over the arch of the soft palate, upon the tongue and the pillars of the fauces, and along the gingivo-labial furrows soon after general syphilis is declared. At times the redness is limited to finger-nail-sized plaques, or even punctate spots of heightened color, upon the mucous membrane. These spots may disappear on proper treatment, or they may persist and furnish a basis for the evolution of one or more of the other lesions to be mentioned.

The chief complication of patches of this type is the assumption of an erosive and superficial or ulcerative

and deep action, due, as a rule, to the irritant effect of the agencies already described. In milder expression the epithelium loses its attachment to the underlying tissue in consequence of a macerative effect upon the weakened membrane, and the reddish pellicle first seen on examination disappears, leaving a raw-looking and tender spot the size of the original macule. In other cases a sharply-cut ulcer results, with floor more or less speedily extending to the depth of the mucosa, assuming a linear shape with its long axis at right angles to the lines of traction (along the width of the tongue, parallel with the groove of the gingivo-labial junction, etc.).

The papular syphiloderm is represented on mucous surfaces by the mucous patch (*plaque muqueuse*, mucous tubercle, moist papule, etc.). These lesions are single or more commonly multiple, usually very well defined patches, which, being at first, and usually but for a brief time, reddened macules, speedily acquire an opaline hue over their flat surface, suggesting the action of nitrate of silver upon mucous membrane. They vary in size from a split pea to that of a bean, but they are often of greater size, involving a space as large as a penny or as extensive as the inner face of the lip or the arch of the palate. They are roundish, oval, or very irregular in contour, and they are often perceptibly raised above the general level. They are usually painful, and they are often seen *en face* on membranes in contact, such as the inner face of the cheek and the gum, and the two halves of the angular crevice behind the last molar teeth. A variation of this lesion is seen when a diphtheroid and bulkier film extends over the face of the patch or patches.

The most common complication of this lesion is the

superficial erosion which succeeds it, and which becomes visible as a vivid or dull-reddish, moist and shining or dry and glazed sequel of the removal, by friction or other agency, of the pellicle of epithelium covering the typically developed mucous patch. The elevation of these plaques by infiltration is not uncommon, and a further but rarer complication is furnished when this hypertrophic effect is exaggerated. In the latter event a well-elevated roundish disk, obviously thickened, and often with a distinctly elevated rim, rises, especially within the labial angles, but also elsewhere; this disk is usually less painful than the simplest expression of the mucous patch, and is annoying chiefly by reason of its interference with the motions of the mouth. Often it is traversed by one or more fissures, which are then painful and apt to bleed when the tissue is unusually stretched.

Papules of moist type—seen on mucous membranes, and much more rarely in the mouth than about the vulva or the anus—also at times assume a verrucous aspect, and are represented by growths resembling the pointed wart or the venereal wart, already described. They are usually smaller in the mouth than in the other regions where they occur, they do not furnish an offensive secretion, and they are more amenable to local treatment. The so-called "toad's-back" appearance of the tongue is produced by the confluence of a number of flattish and aggregated papules, each retaining its individual outlines, and producing thus an effect resembling the markings on the carapace of a terrapin.

Ulcerative complications of the papules of syphilis in the mouth (mucous patches, etc.) are of the type already described, superficial and often exquisitely painful in the earlier and less irritative stages, deeper and reaching to

the corium and beyond in the greatly irritative and later lesions of the disease. Ulcers here have a marked tendency to creep along the lines traced by the angles of adjacent surfaces, but they also occur as formidable circular lesions in the crypts of the tonsil, on the posterior wall of the pharynx, and on the inside of the lips.

Tubercular lesions of mucous membranes are simply enlarged papules developing with complications of the types described above. Pustules occurring in the syphilitic mouth are results of secondary infection with staphylococci; they are usually seen only after rupture of the roof of the lesion, when the floor of the original chamber is to be recognized as an erosive or ulcerative patch.

The fissures which form as a result of syphilis of the mouth may be complications of one or several of the lesions described above, or may be the direct results of local irritation at certain special sites. These sites are the outer angles of the lips, often involving both the mucous and cutaneous surfaces, the margins and dorsum of the tongue, and the muco-cutaneous borders of the centre of the lips; but they also develop elsewhere. Care is required to recognize even deep longitudinal fissures of the tongue, the walls of the crevices, when the organ is protruded, often falling together and wholly concealing a crack extending deeply beneath the mucous membrane.

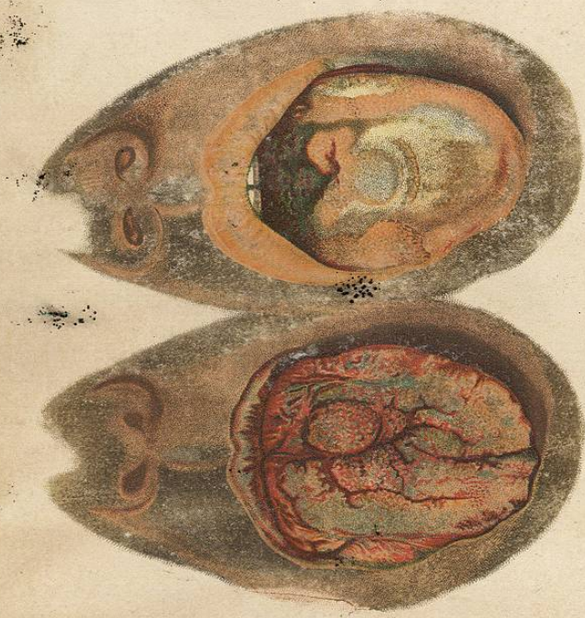
The squamous lesions of syphilis in the mouth are of the type usually described as "dry," the failure of secretion at the involved points being usually conspicuous. They appear, rather more rarely than mucous patches, on the borders of the tongue, on the inner aspect of the lips, on the lingual tonsil, and along the line of the inner faces of the cheeks corresponding with the junction

of the teeth of the upper and lower jaws. They are dry, infiltrated, and usually circumscribed patches, rarely as uniformly rounded or oval in contour as mucous patches, and linear in shape or in ribbon-like bands. Their color is grayish or bluish-white, occasionally almost silver-white with a lustrous aspect. Often, when seated upon the tongue, the affected organ has a shaven appearance, the French from this circumstance giving to this condition the term *glossite tonsurante*. Livid, opaline, bluish-white, slate-tinted, and otherwise colored patches of thickened and scaling epidermal tissue are often seen in the mouths of syphilitic patients, especially of men who have been chewers, and more frequently smokers, of tobacco. These conditions may be observed in the first, second, or any subsequent year after the date of infection. They are at times amenable to treatment, but they are often refractory.

Leucoplasia of the Mouth (Leucokeratosis linguæ; Leucoma buccæ; Psoriasis linguæ; Leucoplakia buccalis; "Smoker's patches of the mouth," etc.).—It is impossible to study the scaly patches of the mouth occurring in syphilis without considering a series of phenomena exhibited in this region, the pathological and clinical position of which, with respect to syphilitic and other disease, is not yet completely established. By no distinctive features can these symptoms be in each case assigned with certainty to one category or another. They stand in different cases in some relation to syphilis, to epithelioma, and to lichen planus. What is definitely known can be summarized as follows: In male patients, almost exclusively in smokers, but also in others, appear patches, striæ, spots, plaques, fan-shaped lesions, and bands of a dull-whitish, opaline,

lead-white and silver-white tint, smooth and shining or roughened and beset with milium-sized nodules, which are consecutive to mucous patches or which occur in the mouths of syphilitic patients where such lesions have existed. They occur along the line of the jaws, on the gums, at the commissure of the maxillæ, in the folds between the lips and the gums, on the sides and dorsum of the tongue, and elsewhere. They may be the seat of fissures or may result in ulceration. In rare cases they exfoliate; still more rarely there may occur a highly exaggerated hypertrophy of the implicated tissue, in which a stripe of dead-white, thickened, and exceedingly dry tissue covers the dorsum of the tongue or one of the other regions named above, this tissue being so bulky as seriously to interfere with the necessary movements of the mouth. Epithelioma, not only in those of advanced years but in men of middle age, is liable to result from the long-continued irritation of the part. In other cases the disease is without question a lichen planus of the mouth, not to be distinguished as to etiology from the other patches here described, seeing that lichen planus of the integument often responds to a very marked extent to the agents by which the involved tissue is irritated.

It is practically impossible in many cases to draw a distinction, merely from the clinical appearance, between these several symptoms, nor is the fact greatly to be regretted. The leucoplasic condition is, in fact, not a disease, but a symptom common to several diseases. As pigment settles about the syphilitic and eczemato-varicose ulcer of the leg, and as the elephantiasic affection of the same organ occurs as a complication of syphilis, lymphangitis, erysipelas, and other maladies, so the scaling patches of



Syphilitic disease of the tongue (Hutchinson).

the tongue irritated by tobacco-smoke, carious teeth, neglect, and bad treatment form in both the syphilitic and the non-syphilitic patient, in the victim of lichen planus and in the patient who eventually succumbs to a grave cancerous affection of the mouth. It is safe, in all cases admitting of any doubt, either carefully to exclude the possibility of syphilitic infection or to treat the patient for that disorder.

Gummata of the Mouth.—Gummata occur in all the regions of the mouth as circumscribed or diffuse infiltrations, but they are most often encountered in the mass of the tongue, usually on one side, with well-defined limitations. They begin as insidiously evolved pin-head to small-egg-sized masses, usually single, at times multiple, though rarely numerous, breaking down into ragged ulcers with a rapidity and a facility not noted in the course of similar lesions of the derma. They occur, as a rule, several years after infection, but in obtinate users of tobacco, especially in chewers (as distinguished from smokers, who suffer from mucous and scaly patches), they have been seen as early as during the first year of infection.

When the hard palate is involved, it is common to discover in nearly the centre of the palatine vault a lentil-sized firm mass, which with astonishing rapidity softens until it exhibits a central orifice through which a probe can detect dead bone. In other cases a painless or possibly slightly tender gummatous nodule of the hard palate may persist for months without softening, attention being called to it by a persevering explorer of the case of a patient suffering from some other obscure symptom of the disease, upon which important light is shed by the discovery of the oral lesion. When very large

gummata form and rapidly disintegrate, the result in grave cases is only equalled by the severe ravages of cancer in the same region. The oral and nasal cavities are in these cases rapidly fused until they expose to view a single gaping chasm, with the possibility of performance, imperfect yet surprisingly satisfactory, of necessary function. Here, as so often in the history of destructive syphilis, the repair wrought by skilful treatment is extraordinarily happy in results. The huge clefts and cavities of the tongue close, with the production of a sound scar-tissue which may resist disease for the remainder of life, and from which one can scarcely estimate the degree of the original damage. The use of an obturator, after all ulcers have been healed, by cutting off the nasal from the oral cavity may restore to the voice its natural timbre. All these grave changes occur in broken-down subjects of disease, or in those from some cause specially predisposed to complications of this character.

Diagnosis.—The distinction between scaly patches, lichen planus, and smoker's patches has already been considered. Cases are of frequent occurrence where a differential diagnosis is impossible, for the reason already given—that the conditions described under these terms are often symptoms common to several diseases. Mercurial stomatitis with ulceration is readily distinguished by the fetor of the breath, the symmetrically swollen condition of the tongue, the indentation of its sides by the teeth, and the line at the border of the gums. The condition known as *exfoliatio areata linguæ* (a phrase describing symptoms rather than a disease) is characterized by the occurrence, especially in subjects of a tender age, though adults also suffer, of a well-defined elevated

patch spreading in circular outline over the tongue in areas as large as a penny and larger, leaving the tissue where it has extended smooth and varying in color, in different cases, from a light rosy shade to an empurpled hue. Often the patch dips down over the tip or the sides of the tongue. The area is commonly unilateral in site, not often symmetrically involving the two sides of the organ. However much these areas may suggest syphilis, they are, as a matter of fact, rarely seen in that disease. In some cases they are, without question, the result of grinding the tongue between the teeth in the sleep of young patients with digestive disorders.

Epitheliomatous changes in the mouth are often difficult to distinguish from syphilis of the same region. In cancer the process is slower than in syphilis; the patient, as a rule, is older; the pain is commonly greater; the floor of the resulting ulcer is more florid; the lesion in advanced cases is larger and bulkier; in less advanced cases there is a decided tendency to assume a verrucous or fungiform aspect; the edges of the ulcerated patch are everted; and the disturbance of function is decidedly greater. In any advanced case the degree of cachexia produced is practically the same in the two affections.

In *tuberculosis* of the mouth the lesions are slow of evolution, are usually at first superficial, and are not often limited to the tongue; the induration is slight; the ulceration is superficial and is studded with puncta of caseous degeneration; and systemic sympathy is marked. In all these diseases glandular enlargement may accompany the mouth-lesions, but in carcinoma the adenopathy of typical cases is more constant; it is less frequently noted in tuberculosis; and in syphilis it chiefly complicates chancre of this region.

Pemphigus vegetans and other forms of pemphigus and herpes in many cases exhibit mouth-symptoms. The mucous membrane of the mouth is then usually raw, red macules representing the floors of bullæ whose roof-wall has been ruptured. In these patients there are pain, exquisite sensitiveness of the mouth, and in bad cases extreme dysphagia; but the presence of bullous lesions elsewhere, the temperature record of the patient, and the relative acuity of symptoms are all significant.

Pathology.—Anatomical study of sections of tissues in most of the complications described above indicates that the inflammatory, hyperplastic, sclerous, gummatous, and degenerative processes in the mucous and submucous tissues are in all respects analogous to those recognized in the skin and in the subcutaneous tissues. Small-celled infiltration, interstitial hyperplasia, epidermal hypertrophy, elongation and thickening of the papillæ of the corium, endarteritis, and increase in the number of rete-cells, often with smaller cells within the limits of the original protoplasmic envelope, are to be recognized in most processes. The presence of giant-cells in numbers, as well as of bacilli, distinguishes tuberculous disorders of the mouth; while nests of cells in the corium are characteristic of the epitheliomatous changes to be recognized as complications of leucoplasic patches.

Syphilis of the Respiratory Tract.

Syphilis of the Nasal Passages.—The frequency of involvement of the nose and the nasal passages in syphilis is due to the exposure of these regions in so many cases to climatic and other influences, as well as to the anatomical peculiarities of the parts.

Chancres within the borders of the nares are exceedingly rare. An indurated lesion following, after a proper interval, the employment of instruments for the treatment or observation of any disorder of this region, if accompanied by enlargement and induration of the neighboring glands, should be regarded as highly suspicious. In the early periods of syphilis the more common affections of the nose are acute and chronic rhinitis, macular and mucous patches, and circumscribed and diffuse gummatous infiltration of tissue. In these cases the chief symptoms are local thickenings, a sero-purulent discharge from the nares, and sensations of pain and fulness of the part. Gummatous changes may occur in any portion of the nasal cavity, beginning with the mucous and submucous tissue, and spreading thence, often with destructive violence, to periosteum and bone. So delicate are the osseous and other structures of this region that their involvement may be followed by degenerative results in an incredibly brief time. A patient complaining of nasal symptoms may even in the course of a few days suffer a perforation of the septum or exhibit bony sequestra exfoliated and thrown off in a fetid discharge. At times the turbinated bodies enlarge and exhibit traces of fibroid degeneration. The term *ozæna* was formerly given to the catarrhal symptoms common to these patients, a disgusting odor being imparted to the breath by the destructive changes going on in periosteum and bone, accompanied by discharge of a purulent, hemorrhagic, or serous fluid often mingled with detritus of bone. The highly offensive odor of this secretion is often as disagreeable to the patient as to those with whom there is personal contact. As a result of the several changes indicated, the bridge of the nose