given above—after apparent proof that the vaccination was not at fault—became morbidly remorseful on account of his early gonorrhœa. The later consultations were influenced, by a statement of the sons, that their father, just before his death, some years before, had given them to understand, that he had transmitted the disease to their sister through a youthful folly.

It may be safely stated that the diagnosis of syphilis has often been made, on much more slender ground than in the foregoing case, and the source of infection accepted, not because there was any reasonable proof, but because it was not positively accounted for in any other way. The mere suspicion of an attack of syphilis in a man's youth, in the minds of many physicians, appears to warrant the assumption of an ever-present contagious element, and to account for any and every obscure trouble, which may afflict himself, his wife, or his children, to the end of life.

LESSON XIX.

GUMMY TUMOR OF BONE—LOSS OF SUBSTANCE WITHOUT CARIES.

Clinical case in illustration. Facts showing that the disease is local in its nature. The *dry caries* of Virchow due, like all tertiary lesions of syphilis, to mechanical causes. No *contagium* ever discovered in them. Lesions like those in case cited due to pressure from accumulation of lymphatic material. Similarity between the behavior of so-called *dry caries* and the tubercular syphilide. Van Buren and Keyes's explanation of the latter. Clinical case illustrative of the lesion termed Syphilitic Dactylitis. Behavior of this lesion shown to be identical with that of the so-called dry caries, and due to similar causes.

CASE VII. B. W. F.; aged 70; merchant. General health always good. Came complaining of the annoyance caused by two painless ulcers, about the size of a quarter-dollar, just above each frontal prominence. The edges were abrupt and sharp; the entire integument was penetrated, and the floor of the ulcers was covered with large florid granulations. These lesions were said to have appeared about six months previously, very soon attaining their present dimensions, and continuing quite stationary, in spite of many sorts of local application recommended by the family physician. As the patient's general health was perfect, no internal treatment had been resorted to. The gentleman was quite bald, and on examination, several depressed portions of the scalp were recognized, of about the same dimensions as the ulcers. It was evident, to the touch, that there had been a distinct sinking of the bone. This was uniform and to the depth of about one line; the scalp was smooth and movable at these points. In point of fact, the evidence of a former, so-called, *dry caries*, was incontestable. All had occurred within the year, or rather they had only attracted attention during that time. Throughout their course were not recognizable by the patient, from any discomfort or sensation of any sort experienced by him. A course of potass. iodide and biniodid. hyd. (mist. biniodid. hydrarg.) was prescribed,

under which, within the following month, the sores healed perfectly, with a firm cicatrix, scarcely at all depressed.

Remarks.—The foregoing case has an special value, in the fact, that the bone lesion, the "dry caries" of Virchow, is specific; that is to say, it is seen only as a sequel of syphilis, and is reliably diagnostic of that disease. Furthermore, it enables us to understand, better than any other sequel of syphilis, that the processes which result in destruction of tissue, of every variety of tertiary lesion or sequelæ, are not due to any destructive principle, or virus, circulating in the blood, but are due to mechanical obstructions of lymph vessels, through damage to such vessels or channels, during the early active stages of the disease. It is conceded by all scientific authority, that the late lesions, the sequelæ of syphilis, without exception, are characterized by a localized accumulation of the so-called gummy material. It is found in every so-called tertiary lesion, and in amount, sufficient to account for the damage associated with it, on purely mechanical principles. Pressure on vessels of nutrition results in loss of tissue through fatty degeneration, locally and in the parts distant, to which such vessels are distributed, obstruction of the adventitia of blood-vessels, resulting in pressure upon such vessels, is recognized as a cause of obliteration of their lumen. This gummy material has been proved not to differ, in the least degree, from accumulated normal lymphatic material. No contagium of syphilis has ever been detected in it. In the tubercular eruption this accumulation of gummous material, so called, is often absorbed, leaving cicatricial depressions, which are characteristic, without suppuration. It is recognized as resulting from pressure upon the tissue into which it is infiltrated, or in which it accumulates, causing absorption of the tissue. When the gummy material is taken up, the cicatricial depressions result.* Applying the same explanation to lesions

* "The syphilitic tubercle is due to a diffuse hyperplasia of small cells in the substance of the true skin. These cells, which partake of the nature of the so-called gummy exudation, grow at the expense of the natural tissues, and cause the atrophy of more or less of the substance of the latter, even while there is apparently a hypertrophy, as evidenced by the little tumor called a tubercle. When, however, the adventitious newly formed cells go into atrophy, and are absorbed during the progress of the eruptions, then, not only does the tubercular prominence disappear, but the scar left attests the atrophy and absorption of the true elements of the skin tissue, which took place during the deposit of the morbid material."—Van Buren and Keyes on "Genito-Urinary Diseases with Syphilis," p. 583. D. Appleton & Co., New York, 1874.

of bone, like those designated the *dry caries of syphilis*, it will be seen that gummy accumulations in bone may follow the same course, and that the so-called *dry caries* is not a true caries at all, for there can never be caries without suppuration. The fact becomes evident, that the loss of bony material, which results in the depression, is caused through absorption of the bony material through pressure by the accumulated gummy deposit. Not producing suppuration or caries, but, by pressure, causing absorption of the bony structure without inflammation, without suppuration, without caries. In this way, and in this way alone, can cases of so-called dry caries, initiated without inflammation, progressing to well-recognized loss of bone structure, without suppuration, or caries, be satisfactorily accounted for.

SYPHILITIC DACTYLITIS.

G. B. W., printer, 45 years old; tall, delicate; has never been strong; supposed himself of scrofulous diathesis, as his mother was affected with a "salt rheum." In 1860 had an injury of the left leg which developed an indolent ulcer. From long-standing at his business this continued open, during six years, and was known, and treated from time to time, as the "printer's sore leg." Became an editor, and thus, relieved from necessity of standing, the ulcer healed. After this, occasionally took sarsaparilla, iodide of potass., etc., for his supposed scrofulous diathesis. Remembers to have had dull pains in his muscles, and also in bones: had also slight pain in fingers of right hand. These pains were relieved by application of tr. of iodine. Never had any evidence of an initial lesion of syphilis, or any

sore on any part of his body which was suspected to be such. Pain in his fingers first noticed about two years ago. Injured his fingers slightly, and swelling began. This was treated by local application of tr. iodine, but it continued, and after a few months the finger became distorted in shape, and appeared shorter than before. Middle finger of opposite hand then began to swell, like the first, without special pain. Physicians who examined him, attributed his difficulties to scrofula, and for several months he took hydriodic acid, cod-liver oil, etc. General health much improved but local trouble remained. Careful questioning failed to elicit evidence of any lesion of acute syphilis. A deeply copper-colored scar was found on the site of the chronic ulcer of the leg, previously described. The middle finger of either hand was swollen at the second joint. That of the right hand was slightly bent towards the forefinger, and shorter than the left by fully half an inch; slight crepitation and slight tenderness on pressure; increased mobility at the joint, which was evidently due to loss of bony tissue, chiefly in the distal end of the second phalanx. The second joint of the middle finger of the left hand was swollen, slightly sensitive on pressure; this trouble was comparatively recent, having occurred within three or four months. The characteristics of the bony lesions in this case were distinctly those of *dactylitis syphilitica*, and yet there was no syphilitic history to be obtained. The patient then remarked that he had a small sore on his back, which had been bothering him slightly, for several weeks. Examination showed a sharply cut ulceration, about the size of a silver half-dollar, extending through the thickness of the skin, perfectly characteristic of a late syphilitic ulcer, due to breaking down of a gummy infiltration or accumulation. This settled the diagnosis beyond a question, and the patient was at once put upon an anti-syphilitic treatment. Iodide of potassium in even three or four grain doses caused gastric irritability. Iodoform, which had been previously well borne, was resumed, 1 gr. (Warner's pills) thrice daily, and $\frac{1}{4}$ gr. of the protoiodide of mercury; also mercurial fumigations, twice weekly. This was continued for a month, with some appreciable benefit, and especially to the sore on the back. This, treated locally with iodoform, had entirely healed, when the patient began to complain of tenderness of his gums. Fumigations were omitted. The patient was not seen again until March 3, 1883. The pills of iodoform and proto-iodide of mercury had then been taken, twice daily (a third pill always causing digestive discomfort), for fully fifteen months. The second joint of the right middle finger, previously affected, was now apparently normal in every respect. That of the right, was free from tenderness, or any sign of inflammatory trouble, and was also reduced in size. The mobility was much increased. The first and second phalanges appeared atrophied and shortened as in the accompanying sketch. There was no longer any evidence of present diseased action, and discontinuance of specific treatment was advised.

Remarks.—Nothwithstanding the failure to obtain any proof of acquirement of syphilis in this case, the peculiar history, appearance, and nature of the deformity of the fingers, made its syphilitic origin almost a certainty. The presence of a characteristic late syphilitic ulcer set the question, if one could have been raised, perfectly at rest. Ordinarily, a full course of treatment suitable for late syphilitic lesions, viz., small doses of mercury and gradually increasing doses of iodide of potassium would have been employed, but the idiosyncracy of the patient prevented. And yet under the mild continuous use of iodoform and proto-iodide of mercury the case went on without discomfort, to complete recovery in the right, and the same (leaving only deformity from previous bony loss) in the left.

The nature of the lesion in this case, is almost, if not precisely, identical with that of the former one, in which the so-called dry caries—loss of bone without necrosis—was present. It has been shown to be due to accumulations of germinal material (gummy deposits) in and around the joints. Absorption of bony material causes the final deformity, and this is brought about by pressure from purely mechanical conditions. A full and most

admirable account of *dactylitis syphilitica* may be found in Bumstead & Taylor on Venereal Diseases, (Phila., 1879,) p. 671, *et seq.* On p. 675 they remark: "These bony swellings may remain in an indolent condition for along time, and finally the gummy deposit may be absorbed, or it may soften and be discharged through asinus. . . . *The absorption of the bone is unaccompanied by ulceration of the soft parts*" (p. 576).

In the excellent work on Genito-Urinary Diseases with Syphilis, by Van Buren & Keyes, (N. Y., 1874,) page 625, they say of such cases: "Appearances similar to those found in *dry caries* have been encountered in the affected phalanges after death. The gummy deposit, after producing great swelling of bone by its infiltration, *undergoes absorption without ulceration*, as in *dry caries*, and results in loss of substance of the bone, which is not replaced by new tissue. If very rapidly formed, the gummy deposit may undoubtedly break down and be eliminated externally."

It is immaterial in regard to treatment, whether the so-called gummy deposit is in the bone structure, in the fibrous or cartilagenous structures, or in the adjacent soft parts: wherever it is imprisoned, so as to produce mechanical pressure, the parts must yield sooner or later, either slowly, through absorption, or setting up an inflammatory process, more or less acute, cause death of tissue. The same behavior of the so-called gummy material will be recognized in every kind of late or tertiary lesion (syphilitic sequelæ), viz., absorption of unyielding surrounding structures from mechanical pressure, or inflammation and suppuration necrosis through direct mechanical injury, or indirectly through destruction or impairment of vessels of nutrition.

LESSON XX.

SYPHILITIC SEQUELÆ INVOLVING NASAL BONES, VOMER AND VAULT OF THE HARD PALATE.

Clinical case in illustration. Treatment by internal remedies. Slow progress through this agency. Final cure without deformity. Second case treated by mechanical removal of necrosed bone. Operated on through nasal orifices by means of the dental engine. Prompt recovery. Syphilitic necrosis a local disease. Early removal of dead bone advisable. Recovery usually as prompt as when the disease results from other causes than syphilis.

B. W.; 37. Syphilitic history: active stage three years previous; irregularly treated for about a year, during which he had a sparse papular eruption lasting a couple of months, also ulcers in the mouth and throat at the same time. Since then, had no evidence of syphilitic trouble, until about three months previous, when he began to have slight pain in his nose with some nasal catarrh. This continued to annoy him, the discharge increasing, and finally tinged with blood, and at times quite fœtid; tenderness over the nasal bones also increased, and a redness appeared, with increased soreness. Had been under care of physician, who gave him internally some iodide of potassium, and a wash to use. This dissipated the odor, but the soreness increasing he concluded to seek other aid. Examination showed the nostrils filled with hard black scabs; odor fœtid. Probe introduced strikes loose bone; a flat ragged piece about the size of a half-dime removed; quite extensive surface of dead bone recognized, but no more could be removed. Patient put upon mist. biniodid., 1 teaspoonful thrice daily. Besides this, iodid. of potass., increasing one grain at each dose up to sixty, largely diluted with milk; permanganate of potassium, two grains to water an ounce, to be used through a syringe in cleansing and deodorizing the parts. Subsequently, several pieces of turbinated bone came away and also several pieces of the nasal bones. As soon as any portion was found loose it was carefully eliminated; medicines faith-

fully used; potass. iodid. up to ʒi. three times a day, but it was nearly three months before the necrosed bone ceased to separate, and the discharge to lose its characteristic fœtor, and finally to cease. Fortunately, the destruction was not sufficient to produce any external deformity, and the case was claimed as showing peculiarly satisfactory results of treatment.

CASE II. W. G. H.; aged 17. History of active syphilis, under care of Dr. Leving, of London. A little over two years, after began to suffer with foetid nasal catarrh. Was said to have been treated by Mr. Walter Coulson, of London, with iodide of potass., etc.; Trouble continued increasing, when he presented to me early in Jan., 1880. Necrosis extensive and was evidently progressing; discharge profuse; odor fœtid. Probe touched dead bone at several points, and some small pieces of the vomer were removed. Tissues covering arch of hard palate, red and tender. Patient put upon full course of biniodid. with increasing doses of iodid. potass. In the course of a few days the inflammation of tissues covering hard palate increasing, a perforation ensued. This affected patient's voice unpleasantly, and as he was a public singer, he was greatly disturbed, and begged for some more efficient mode of relief. Instead of encouraging him to wait, under an efficient specific treatment, until the slow separation of the necrosed bone was effected, I sent him to Dr. J. H. Goodwillie, whose demonstrations in removal of necrosed bone by aid of the dental engine I had witnessed on several occasions, and who subsequently published an account of the case at my request, and has sent me a copy for insertion in this place. Of the condition of the patient, Dr. G. says:

"He now has necrosis of the vomer and vault of the palate, with a small hole in the latter. Fœtid discharge from the nose, occasionally stained with blood from excessive granulations. Administered iodide of potassium and cod-liver oil. Local treatment consisted in blowing into the nasal cavities iodoform and camphor triturated to an impalpable powder, with subnitrate of bismuth

and sulphate of potash, to reduce the superabundant granulations, and so have less bleeding during the operation. By invitation of the late Professor James R. Wood, M.D., to deliver a clinical lecture on extirpation of bones of the mouth and nose, I operated on this patient at his clinic at Bellevue Hospital, January 15, 1880. Administered four ounces of whiskey before the operation, and kept him under the influence of nitrous oxide during the operation, which lasted about fifteen minutes. No external incision was made, and the necrosed vomer lower portion of the ethmoid, both inferior turbinated bones and vault of the hard palate, were removed, by the revolving knives, through the nostrils.

No portion of the soft tissue on the hard palate was removed. On the completion of the operation, he was directed to blow his nose, to free his nasal cavity of the cut-up necrosed bones and blood, and then he was positively forbidden to again blow his nose, for the next twenty-four hours. After that time, the clotted blood was carefully removed by the dressing nasal forceps, and the nasal cavity completely covered by blowing in the iodoform and camphor powder.

"On the second day a nasal douche was given before the application of powder.

"On the next day after the operation he was able to attend to his daily duties.

"The wax model illustrating his case shows the opening in the palate one-fourth inch in length before the operation. Atrophy of the nose before the operation, from the non-respiration and constant blowing of the nose, as seen in the right ala, and the development of the ala, as seen in the left side of the nose, after the operation.

"The other model shows the opening in the palate closed and a new deposit of bone over the palate.

"He is in perfect health at the present time."

In syphilitic caries involving the vomer, the nasal and turbinated bones, and contiguous bony structures difficult of access to ordinary surgical proceedure, the removal of diseased bone requires especial instruments.

and skill not within the reach of the ordinary surgeon. The dental engine affords access to such necrotic processes, and until the surgeon can personally avail himself of the facilities it affords, for removal of carious bones in such situations, it is my opinion, that the best course will be, to relegate cases of this nature, to men who, like Dr. Goodwillie, have the mechanical skill and experience in the use of the dental engine requisite to perform the operations necessary for the complete removal of diseased bone in these localities. Otherwise we must usually follow the old plan of waiting, until the separation occurs, through the tedious process of exfoliation, aided by such internal remedies as have heretofore been relied upon for the care of these cases. This involves the danger of deformity, and delay in cure, which it seems to me few surgeons, aware of what especial skill in the management of the dental engine can accomplish, will feel inclined to accept. My own experience in several cases of syphilitic caries of the bones of the skull, where I had operated for removal of the diseased bone, and found rapid recovery result, has convinced me that, when syphilitic necrosis occurs, it is a purely local matter, and that it is good practice, in all such accidents, to remove the dead bone at the earliest practicable period, and that, as a rule, to which there are few exceptions, such removal will result in as prompt recovery as when the necrosis has occurred from other causes than syphilis.

LESSON XXI.

GUMMY TUMOR OF BONE—PRODUCING BRAIN SYMPTOMS, ETC.

Clinical case in illustration. Such lesions of rare occurrence before the second or third year of syphilis. Insidious in access. Sometimes producing extensive loss of bony tissue. First signs often through occurrence of vertigo, epilepsy, aphasia, or paralysis. Same symptoms may occur from accidents of the acute stage of syphilis. Cases in illustration. Possibility of confounding the brain and nerve disturbances of late syphilis, with those due to processes of the active stage of the disease. Mauriac's views in support of this position. Cornil's views.

CASE VIII. L. G., 35; policeman. In good general health. Had a history of irregularly treated syphilis, twelve years previous. About five years ago, he first noticed a swelling on the top of his head; also soon after, another on the left side: not tender, causing no inconvenience or pain. About a month after, he received a blow on tumor No. 1, after which he had much pain, and it finally suppurated and discharged pus freely. Examination showed an ulcer, about an inch in diameter, perforating the scalp just anterior to the vertex. The probe touched bony material at once, and a loose piece, half an inch square, was readily extracted. The second and more recent swelling was about the size of half a pullet's egg, very hard and insensitive. The man was at once put upon a mixture of biniodide of mercury and iodide of potassium, the latter in increasing doses.

The open lesion, which was at first quite painful, soon became less so, and the iodide, at the end of a month, had been raised to seventy grains three times a day, in a tumbler of milk, and was well borne. Within three months (notwithstanding several intervals of two or three days each, when he was prevented from taking his medicine) the hard tumor had entirely disappeared. His only complaint was of occasional vertigo. This continued after the healing of the necrosed lesion, which occurred a month or two later, leaving a cicatricial de-