rare specimens) on the oral mucous membrane. These hypertrophies the author has frequently seen on the surface beneath the cavities of suction plates; they look like enlarged and indurated fungiform papillæ. Another form of such hypertrophy is induration of the membrane lying beneath the cavity; the parts are raised by sub-effusions, which organize and become as hard almost as cartilage. Still another form is the rugose,—several wheals running across the space; these indurations never degenerate or do any particular harm. In some instances they remain permanent after the removal of the offence; but, as a rule, are found to disappear in a few months after a plate is taken away.

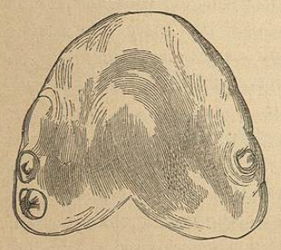
Hypertrophy of the gum in mass occasionally results from the mechanical irritation of dental plates. At the time of writing this page a case is being treated in the person of a lady suffering under such an enlargement; the trouble is in the upper gums, these seeming like thickened masses of gristle, and proving about as insensible as does this substance to medicinal impression.

Vulcanite, a material much employed in the construction of dental plates, is, to many mouths, a source of unbearable offence. The cases that come under observation are all alike,—soft, flabby, relaxed, congested, and very sluggish in recuperation, the gum-tissue seeming to be softened from surface to base. Acid and astringent lotions are adapted to the cure. The material called celluloid is to have preference over the former substance.

Silver is another material that it would perhaps be as well to dispense with in the construction of dental appliances; also gold too much alloyed with copper, running down, as it is sometimes found, to fourteen carats.

10 *and* 11.—In other parts of this work occasion is taken to treat, under what are deemed to be proper heads, various conditions, commonly associated under the common appellation of gum diseases. These diseases are of various expression, they associate with accidents, with idiosyncrasies, and with cachexia; examples are furnished in the epulic tumors, and in sympathetic disturbances.

FIG. 374.—VIEW OF GUMS INFLAMED BY VULCANITE PLATE.



Observation of Fig. 374 exhibits a congestion which has swollen the gums and tissues of the hard palate to an extent which conceals almost completely three posterior teeth which remain in the parts. The patient from whose mouth the drawing was made had worn a plate of vulcanite nine months; the parts were a dusky red,—flabby, relaxed, and exceedingly indolent. There was no particular pain,—simply a soreness, together with a tenderness on pressure, which tenderness had increased gradually until the removal of the piece became a necessity. The cause of irritation from such a plate is variously ascribed: the most probable is the exclusion of atmospheric air, and a consequent heating which

follows. To cure such cases it is found, in most instances, a necessity to remove the denture, after which stimulating and astringent washes are to be prescribed.

A very excellent combination is as follows:

℞.—Aquæ Coloniæ, ℥j;
Tincturæ capsici compositæ, ℥j;
Sodæ biboratis, ℥j;
Tincturæ cinchonæ,
Tincturæ pyrethri, āā ℥j;
Aquæ, ℥vj. M.

A second application, which justly receives much commendation, is borate of zinc ℥i to water Oi.

Borate of potassa and water in like proportions with that immediately preceding affords also a reliable lotion.

Where an alterative is indicated, an excellent and tasteless ointment is made out of the subiodide of bismuth.

Cases of hypertrophy from ill-fitting clasps or ill-adapted plates are not infrequently met with; sometimes such an induration will be found circumscribing a single tooth to an extent which half conceals it, the band being accommodated in a space existing between the gum and tooth. The author has known such cases give much concern by the obstinacy of their persistence after the removal of the cause of offence; but such anxiety is seldom well founded, for even should the induration remain it will exhibit no tendency to degenerate. In the treatment it is only necessary to remove the offending agent, and leave the case to nature.

As general hypertrophy of the gums is concerned, illustration may be made by referring to a case at present under treatment. The patient, a lady in fine health, middle-aged, wears a plate of gold containing seven scattered teeth. Wherever this plate bears upon the gum, the parts are enlarged, indurated, and scirrhus-like. If it were not for the absence of associate expressions of carcinoma, one might very readily infer the presence of such disease. The explanation of such induration is to be found in an imperfect adaptation of the denture, conjoined, perhaps, with a cachexia. The treatment has been the very simple one of advising the patient not to wear the plate, nor any other, until a cure is obtained. No medication has been deemed necessary.

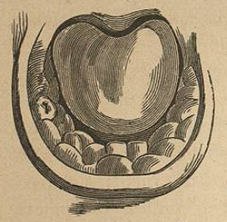
Still another class of cases exists in the hypertrophy of the mucous membrane lying beneath the surface of suction cavities. Sometimes this surface is found simply thickened and hardened; at other times it is seen broken into deep fissures; still again it is observed studded with papillæ, fungiform in character, and not infrequently possessed of a tendency to hemorrhage. Cases are met with where serious results threaten, yet seldom ensue. In one instance necrosis of the underlying bone exposed the nares.

TREATMENT.—This is generally to be tentative; the plate is to be removed, or at least the suction cavity must be. If the parts do not recover after such

removal of the offence, it may be found desirable to touch with zinc, iodine, or capsicum. If caries or necrosis ensue, such conditions are to be treated as referred to in the chapter on these diseases.

Fig. 375 exhibits a form of general hypertrophy of the gum structure occasionally met with. Such condition is oftentimes found to be but an expression of unobserved local agents of offence, upon the removal of which the overgrowth disappears. Where, on the contrary, it is seen to be an expression of constitutional condition, the related vice is to be corrected. The best local treatment consists in frequent incisions through the parts, and the application of tincture of iodine. Removal of the overgrowth by the knife is seldom, if ever, found to be compensating.

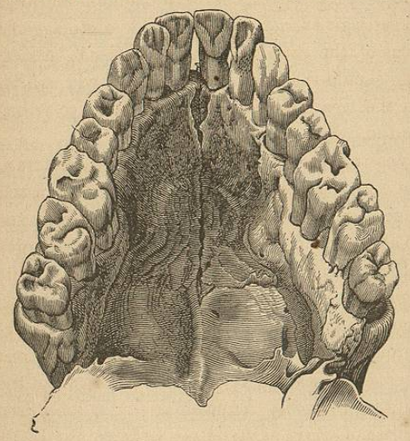
Fig. 375.



View of Case of General Hypertrophy.

Fig. 376, a case of chronic ulitis, with recession, is a type of a not uncommon condition, and has a great variety of meanings. The principal cause of such recession is found, according to experience, in the accumulation of small quantities of tartar

Fig. 376.—View of Chronic Ulitis, with Recession.



just below the free edge of the gums. A second cause, and a very prominent one, lies in a solidification of the tooth structure,—the equilibrium of circulation existing between the tooth pulp, periodonteum, and gum being thus disturbed. Causes strictly local, however, need only give concern as they affect the appearance of the parts and the health of the teeth; they are susceptible of remedy, requiring only attention and the proper skill. It will be readily inferred, however, from what has been said on previous pages, that

local lesions are not alone to blame for such conditions. "In forming a judgment," says Mr. Bell, "upon cases of this description, and even upon those in which the loss of substance is associated with more or less of diseased action, it is necessary to recollect that the teeth in old age are removed by this identical process,—namely, the destruction of their support by the absorption of the gums and alveolar processes; and as this step toward general decay commences at very different periods in different constitutions, it may, doubtless, in many cases, even in persons not beyond the middle period of life, be considered as an indication of a sort of premature old age, or an anticipation at least of senile decay, as far as regards these parts of the body."

In depressed conditions of the life-force, as witnessed in the habitual drinker and debauchee, such recession is generally found conjoined with suppuration, and affects all the parts alike; the gums are turgid, sluggish-looking, and more or less purple; the mucous membrane lining the mouth and throat is of a dirty red; the tremor and prostration of the system at large show the constitutional nature of the offence.

Another form of this recession is associated with the sickly and weak; here the part is even lighter than in health, is shrivelled and shrunken, clasping the neck of the tooth tightly and closely,—seeming, indeed, shrinking within itself. These cases are always anæmic, being found usually in the female sex, or in males inclining to phthisis. Everything that tends to induce such a condition is to be regarded as a predisposing cause; such are bilious and inflammatory fevers, the excessive use of mercurial medicines, the venereal virus, anything occasioning deterioration of the fluids of the body. Persons of cachectic habit are far more subject to the condition, and generally in its worse forms, than individuals in the enjoyment of good health. Because of the truthfulness of such assumption it is seen that the condition is an occasion of warning. In the writer's experience, he has not infrequently had occasion to recognize in recession of the gums a first expression of declining health.

Treatment.—This is of course to be directed to cause. Where this is found to be of a strictly local nature excellent effects are secured by scarifying the affected parts three or four times a week, and touching them lightly with chloride of zinc; a solution in strength of about gr. xx to water ℥j. Sometimes the edges may be pared and brought together with a single stitch; this little operation, however, only applies where the tissues are reasonably loose and fairly healthy, and the recession is V-shaped. Compound tincture of capsicum is an excellent provocative of granulations; iodine also acts happily. The parts are always to be scarified to allow such applications to be of any use. The various washes recommended are, of course, serviceable or not, according as they are adapted to indications: of these, the stimulating and astringent will be found most frequently demanded. Where the teeth are thus exposed without apparent lesion, either of a local or a general nature, the trouble is to be deemed incurable.

Congenital Union of Gums.—Dr. W. S. Carter reports the following anomalous case, which, with a few others, is presented as an interesting study in this direction of oral troubles: Mrs. W. was delivered, after an easy labor at full term, of a living male child. The infant was perfectly quiet for a few moments after its birth, and then spasmodic respiratory efforts were made. Thinking the throat might be obstructed by mucus, endeavor was made, using the finger, to remove it. The finger passed readily between the lips, but could get no further than the gums, which both to sight and touch were found firmly united.

As it was necessary to act promptly, the tissue uniting the gums was divided. This tissue appeared to be about as thick as the gums, and was cartilaginous, extending as far back on either side as the angle of the jaw. Notwithstanding a free division, which enabled the child to breathe with more facility, the jaws were immovable.

After letting the patient rest a few hours, it was decided to use force to separate the jaws, and make a further careful exploration. This exploration showed a tough membrane, one-eighth of an inch in thickness, passing from the palate bone above, and inserted into the lower gum. Upon the division of this and the use of some little traction, the jaws were separated.

In two weeks the gums had healed, the child took nourishment readily, and was doing well.

Other malformations also existed in this case: viz., the fingers and toes were webbed, and the ears were in rather a rudimentary condition,—the integument passing from the head over the anterior surface of the upper third of each of these.

When the mother was about three months pregnant, her son, about six years of age, had a severe convulsion, the jaws being spasmodically closed. She was alone at the time, and her terror was excessive; and, indeed, since then, during all the remaining months of her pregnancy she states the frightful scene had scarcely ever been absent from her mind.

We have delayed, remarks the editor in whose journal this interesting communication appears, for some weeks the publication of Dr. Carter's extraordinary case, in order that we might, if possible, find recorded some similar cases or case; but after a diligent search we have been utterly disappointed. Even Saint-Hilaire, to whose study of the various anomalies of organization science is so greatly indebted, fails us in presenting any analogous instance.

While almost any one of the external openings of the body may be imperforate, yet this condition much oftener affects the inferior than the superior orifices: *e.g.*, closure of the anus as a congenital condition is more frequently met with than closure of the eyelids, closure of the vagina than of the external auditory meatus.

In regard to congenital adhesions of the mouth hitherto described, they have been from adherence, sometimes complete, in other instances partial,

of the lips. Even this malformation the illustrious Boyer spoke of as a possibility, never having seen it; but Velpeau discovered that Haller had pointed out its occurrence in the human species and also in the inferior animals, that Schenkius had met with cases upon which he had to operate, and that Desgenettes had seen a seven months' fœtus with imperforate mouth.

In Saint-Hilaire's work, chapter iii., *Des Anomalies par Continuité des Parties ordinairement disjointes*, section i., *Des Anomalies par Imperforation*, will be found the following, which may be of some interest in connection with Dr. Carter's report: The imperforation of the nares is much less frequent than that of the eyelids; nevertheless, Littré and Jean Bianchi have seen it in subjects in whom other irregularities also were found, and Oberteuffer has also several times observed the same condition.

In a case mentioned by Littré, the closure of the nares was complicated with closure of the mouth, the skin passing over both apertures, an anomaly of still less frequent occurrence. The closure of the mouth has also been seen where the nares were unobstructed, but these cases presented various other deviations also.

As to the possible influence of the sudden and severe terror to which the mother was subjected, which Dr. Carter mentions, in causing the malformation, it probably is better neither to affirm nor still less to deny. Certain it is that the tendency of the observant and thoughtful in our profession is not to reject as "old wives' fables" all that is told of the very strong influence of maternal impressions upon the fœtus, fables which have so long found such general credence with mothers and with the public. Those who are interested in the study of this question will find an admirable and philosophic discussion of it, by Dr. Alfred Meadows, in the seventh volume of the *London Obstetrical Society's Transactions*. It occurs in connection with the report of a case of *Monstrosity*, given by Dr. M., the mother attributing the deformities of her offspring to the fact that during the earlier weeks of her pregnancy she was greatly horrified by being shown some of Aristotle's plates, in which were exhibited deformities resembling this, and specimens of other monstrosities.—*Western Journal of Medicine.*

Stomatitis and Pharyngitis Leucæmica.—In *Virchow's Archives*, Dr. F. Mosler relates the case of a male forty years old, and previously of sound health, in whom, in the course of some fifteen months, there took place gradually a swelling of the glands on both sides of the throat, attended with inflammation of the mucous membrane of the mouth and pharynx, with flaccidity of and hemorrhage from the gums, followed by swelling of the axillary and inguinal glands, and finally of the liver and spleen. There was now an evident increase in the white particles of the blood. In the case described, the only etiological agent to which the morbid phenomena it presented could be referred was inordinate exertion of mind and body. The condition of the throat was of especial interest. Its mucous membrane was

red and swollen, and over its surface there were spread numerous medullary elevations having a smooth, shining appearance. Both tonsils were enlarged, and their surfaces presented the appearance of a congeries of large, dense, medullary knots. The secretions of the surface of the mouth and larynx and of the salivary glands were greatly increased by talking. After a thorough rinsing of the mouth, its secretions gave an acid reaction. The patient had not suffered previously from any disease of the mouth or throat. The person was attacked with this only after the lymphatic glands of the neck had become enlarged, and, at first, with their increase or diminution the throat affection became worse or better. Finally, under the use of quinia and iron, remedies which exerted a beneficial influence on the entire morbid phenomena, recovery resulted. Dr. M. believes that the form of stomatitis and pharyngitis here described is a specific disease resulting from a leucæmic dyscrasy. The inflammation of the mouth, which in its symptoms had a close resemblance to scorbutic stomatitis, was probably caused by an irritation due to some morbid chemical product in the blood and the secretions of the lymphatic glands, by which, also, according to Dr. M., is to be explained the affection of the mouth met with in cases of diabetes, the nature of which is still, however, unknown.

Blue Line in Saturnine Affections, and its Pathognomic Value. (*Archives de Médecine Navale*, and *Gazette Hebdomadaire.*)—Dr. Falot refutes the authors who believe that the blue line along the gums is formed by an accidental deposit on the buccal mucous membrane of lead furnished by dust contained in the air or food, or still more in fluids that have been adulterated or accidentally charged. According to M. Grisolle, among others, the blue line is the livery of the lead-worker, not a symptom of poisoning, but a simple deposit, and a sign of the worker's occupation. Dr. Falot quotes the observations of Beau, Barlow, Gregory, Smith, and Lecoq, all of whom observed the blue line in patients undergoing an internal treatment with pills of subcarbonate or acetate of lead; and he gives, in addition, the reports of some cases of his own, which were gathered in an epidemic of colic in a ship's crew at the Gaboon, the cause of which was lead-poisoning. Finally, after having established by experiment the impossibility of reproducing the blue line artificially by touching the gums corresponding to the incisor and canine teeth of the lower jaw with a brush dipped in acetate of lead, and after having proved that oxygenated water, and water sharpened by sulphuric acid, the ordinary reagents of lead, had no influence upon the blue line when it is plainly established, Dr. Falot proves that the line is the result of an elimination of the lead, and indicates by its manifestation that the lead, carried along by the circulation, comes to be deposited in the tissue of the gums, where it forms a combination which reveals its presence by a more or less intense blue coloration. Dr. Falot finishes his contribution by representing the blue line as a sign of penetration of lead into the economy, and he derives the important conclusion for forensic medicine, that its presence may denote lead-

poisoning, although an analysis of the viscera may not have revealed the smallest trace of the metal.

It will be remembered that a few years ago Dr. Hilton Fagge described, in an interesting paper, the microscopical characters of the lead line on the gums, and its dependence on the deposit of black pigment in and around the capillary loops. The same facts were described, almost at the same time, by M. Cras in the *Archives de Médecine Navale* (February, 1875, and May, 1876), and further observations by him were submitted recently to the Société de Chirurgie. He has examined the line in portions excised from the gums of many patients, and found that it was easy to demonstrate the presence of lead in all the capillaries by the action of chromic acid. This stains the whole gum of a yellowish color, but the capillaries are distinctly marked by a much deeper tint, in consequence of the formation of chromate of lead. If now the section be washed in distilled water, and treated with sulphide of sodium, the black tint of the capillaries is rapidly reproduced. Examination with high magnifying powers shows that the pigment is for the most part in the interior of the capillaries. M. Cras asserts that this line is not the only effect of lead upon the gums, and he describes another change antecedent to the lead line, and more constant, which he terms "saturnine gingivitis." The gums have two aspects,—the one free in the mouth covered with epithelium, the other adherent to the teeth and periosteum. These two surfaces unite at the narrow festooned border, which the epithelium covers as far as the place at which the gum adheres to the neck of the tooth by its periosteal surface. The interdental processes, which fill up the furrow between the gums and the teeth, present two surfaces adherent to the teeth. The capillary circulation of the gum is constituted by two plexuses: the one superficial, papillary, with fine vessels; the other, deep and periosteal. It is always the periosteal plexus which is the seat of the deposit of lead; the papillary plexus is normal. He asserts that every lead line is accompanied by a detachment of the gum from the tooth. On separating the loosened edge of the gum by a needle, a drop of pus, retained between the gum and the tooth, often escapes. The excision of the edge of the gum for examination is easy and painless, the interdental processes being especially convenient for the purpose. It will be seen, if the periosteal aspect be removed, that there, in the section, the line is replaced by a dotted area due to the black infiltration of the capillary loops. Thus, the line which is visible on the outer aspect of the gums is only the edge of the layer of blackened capillaries on the periosteal surface. The mechanism of the production of the line is, according to M. Cras, as follows: First, by the chronic inflammation of the gum, the edge is separated, and in the space between the gum and the tooth organic matters accumulate. The sulphuretted hydrogen disengaged during the decomposition of these organic substances passes, as soon as produced, into the walls of the capillaries, and, acting in them on the metal brought by the blood, a deposit of sulphide of lead takes place in the capillary network. The gingivitis and deposit extending around