

CHAPTER LXII.

THE TUMORS OF THE MOUTH.

EXOSTOSIS AND SUBACUTE INFLAMMATORY TUMORS.

THE term ostosis is derived from the Greek words εξ, "out of," and οστέον, a "bone;" it denotes an osseous tumor which forms on the surface of bones, or in their cavities; the first is called exostosis, the latter enostosis.

The following varieties have been named: Ivory exostosis, that which is ivory-like; lamina exostosis, that which is made up of distinct fibres or layers; spongy exostosis, that which is like the spongy tissue of bone.

Hyperostosis is precisely the same thing as exostosis, both being hypertrophies. Inflammatory osseous tumors are hyperostoses.

Because, however, there are great differences in the expressions of these conditions, they may be written of under special heads.

Exostosis, as commonly met with in the mouth, is strictly benign. It is generally recognizable by its extreme slowness of growth, the entire absence of pain,—except when it meets with some peculiar obstruction,—and freedom from disease in surrounding parts. It does not tend markedly to ulceration, and does not, except mechanically, affect the regions even most directly associated with it.

True exostosis has its origin in local irritation, perhaps always. It is true that reference is made by authors to an ossific diathesis, but, as is significantly remarked by Miller, a skeleton so susceptible is prone rather to the more common inflammatory products of caries, abscesses, ulcers, and necrosis.

That local irritation is the chief cause of exostosis is satisfactorily proven by reference to parts most subject to the lesion. The teeth, for example, are found affected in a thousand instances to one of any other bone, and certainly no bones are so constantly found in irritative conditions. The term bone is used, the reader being reminded that the portion of a tooth which takes on this morbid action, the cementum, is, in a surgical sense, that structure.

Non-specific exostosis, occurring on any portion of the maxillæ removed from the alveolar borders, is an exceedingly infrequent disease. With every opportunity for observation, the author is surprised at the small number of cases met with by him; and these, with a very few exceptions, have been of little consequence.

Around the base of the alveolar processes, however, and particularly on the lingual aspect of the lower jaw, the affection, in a minor form, is exceedingly

common; the enlargements vary from the size of a small shot to that of a rifle-ball. As pathological relations are concerned, the growths seem of little consequence; the treatment is, commonly, the very simple one of letting them alone.

It is not improbable, though, that cases may occur upon which operations will be demanded. The mode of procedure is simply to lay off from the tumor the soft parts, and, with a chisel or bur, cut away the mass; there is no hemorrhage or other trouble attendant on the operation. (See *Hyperostosis*.)

Exostosis of the fangs of the teeth—exostosis dentium—finds location in the cemental structure of the organs; for while the writer has seen two or three cases where the crowns of the teeth were enlarged, as if from a species of hypertrophy, yet these were so anomalous that the growth is to be described as associated exclusively with the fangs; and even here it is found in the majority of instances confined mostly to the apex, growing, bulb-like, as it were, about the end of the root.

The diagnosis of exostosis in these situations is not always without confusion. The most frequent pathognomonic feature is a sense of continued uneasiness about the parts, this not amounting to pain, but serving as a constant reminder of the presence of the tooth. The organ itself may or may not be carious. Pressure, or the stroke of an instrument, does not, in ordinary cases, either increase or diminish the soreness; the sense of fulness about the parts is particularly observed where the absorption of the alveolus is not proportionably active with the exostosis. In these latter cases, the extremest symptoms of neuralgia are not infrequently produced, and, if not comprehended, are of course treated without avail.

One of the most remarkable cases of dental exostosis on record is related by Mr. Fox. The subject was a young lady, who, at the time she sought the professional aid and advice of this practitioner, had suffered so severely and so long that the palpebræ of one eye had been closed for nearly two months, and the secretion of saliva had for some time been so copious as to flow from the mouth whenever opened. The patient had tried every medicine recommended by the ablest professional advisers, without deriving any permanent benefit, and was only relieved by the extraction of every one of her teeth.

The surgeon may infer from the mention of this case that he is likely to meet with many gradations of the trouble. Such inference is right. Cure is found in the removal of the affected member. This is easily accomplished with the aid of a pair of cutting-forceps, or by means of an engine drill.

Warty Teeth.—In this association reference is to be made to an anomalous confusion and development of teeth-germs to which the term warty has been applied. On another page has been discussed the aspect of dentigerous cysts. The rarity of these warty teeth permits few the opportunity of seeing them. Among recorded examples familiar to the writer are four by S. J. A. Salter, one by Mr. John Tomes, two by Wedl, two by M. Oudet, two by M. Forget, and one by Mr. Harrison.

To teeth of such anomalous development M. Broca has applied a name that has now come into somewhat general use, namely, odontomata. These



he, with all propriety and clinical justice, has classified into circumscribed and diffused,—the first including all masses in which recognition of the tooth exists; the second, where it is lost in an anatomical confusion of the structures. The odontoma described from the practice of M. Forget, on a succeeding page, constitutes the most marked example of the latter on record. Fig. 562 is an example of the former. A form of dental exostosis termed by Mr. Salter the enamel nodule exhibits a pearl-like protuberance growing from a tooth. Excrescences of this kind are considered to be essentially submerged cusps, being composed of a cone of dentine enveloped by a cap of enamel.

As an illustration of extreme dental hypertrophy, combined with the existence of an enamel nodule, attention may be directed to a specimen belonging to the Philadelphia Dental College, exhibited in Fig. 563. This mass is two and a half inches in length by two and five-eighths inches in circumference; it was associated with the roots of a left superior molar, and was extracted from the mouth of a laborer by Dr. S. H. Whitman, of Newport, Perry County, Pennsylvania.

In examining this specimen, it is observed that to the right of the palatine root, and connected with it, is a portion of enamel; being an outgrowth, as

FIG. 563.

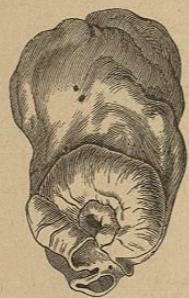
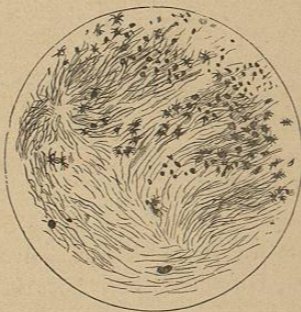


FIG. 564.



has been inferred, either of a wisdom or of a supernumerary tooth,—most likely, however, a production of the tunica propria of the tooth itself. Mr. Salter describes such cusps as being clothed with a pulp,—the *enamel pulp*.

A microscopical section of this growth is figured (Fig. 564) and described by Dr. J. H. McQuillen, through whom the specimen was received as a donation to the museum:

A first or outer section presents only the lacunæ and canaliculi charac-

teristic of cementum. A second cut differs somewhat from this, in having, in addition, certain spaces of no definite shape, and apparently being the blending of a number of the lacunæ. In a third section the lakes are quite numerous, and the canaliculi starting from them are of considerable length, and pursue a tortuous or curved direction, resembling very much the appearance and course taken by the dentinal tubuli in secondary dentine. Fig. 564 is from a drawing of one of the preparations as seen under the microscope. A few canals (cut transversely), evidently existing for the passage of blood-vessels, are observed, but no Haversian canals, as in bone, with the lacunæ and canaliculi arranged in concentric layers around them.

In the venereal, scorbutic, and tubercular hypertrophies or exostoses of the maxillary bones, the features of the common disease become quickly evident in the local trouble: so remarkably so, indeed, that no one would be likely to misunderstand the condition; presupposing the general disease to be recognized. The growths are rapid, painful, and almost always more or less amenable to constitutional treatment.

Scrofulous and scorbutic tumors differ from the venereal in being more loose and spongy in structure, and, in consequence, more apt to run into abscess, being possessed, as it were, of elements for their own destruction.

In these forms of maxillary disease, the lesion is commonly heralded by deep-seated, dull pains, which precede by some time the visible enlargement of the part. After the tumefactive process sets in, it goes on, if uncombated, until the parietes of the bone are completely disparted. Associated with this enlargement is an unhealthy condition of the soft parts.

As the disease advances, the centre of the tumor softens, while the character of pain changes, becoming sharp and throbbing; as pus forms, sinuses are created, and thus ulcerations occur on the face of the tumor. Enlargement of the maxillæ from these causes is, however, very uncommon, and might only escape being confounded with cancer by observation of the association with the disease at large.

The treatment of inflammatory tumors of these and similar types is to be conducted in consideration of their twofold requirements. The systemic influences are to be corrected, while, locally, as a rule, they will be found to succumb to the treatment commonly directed against similar lesions of the soft parts. Great confidence is to be entertained in the use of tents and stimulating injections.

There is a simple inflammatory tumefaction of the maxilla sometimes met with, which might be mistaken for specific exostosis. It is to be distinguished, however, by the rapidity of the formation and by the greater soreness attendant on it; it comes as a cold in the head, or on the chest, comes,—without, in the majority of cases, the patient being able to assign any cause,—and it is found soon to give way to antiphlogistics. This tumefaction is extra- rather than intramaxillary; it is simply a periosteal exudate, and has no constitutional association.

In this connection, attention is to be directed to a form of tumor frequently found in the mouth, which, clinically, is classifiable with the exostoses. Allusion is made to an apparent expansion of bone frequently found in association with a strumous diathesis, and invariably in connection with periodontally diseased teeth or roots of teeth.

These tumors have a common history. The nerve of a tooth dies, and the periodontium takes on a chronic irritative condition, or perhaps a tooth has been fractured in attempts at extraction, and the root, or some portion of it, has been left in the socket. After a time, sooner or later, a slight swelling, apparently of the gum, is observed. This may readily be taken for a chronic alveolar abscess; there is no pain, however, associated with the enlargement, which is soon seen to differ from abscess in the slowness of its evolution; it is also hard, being perfectly unyielding under pressure. As we watch such a case, month after month, we find that it gradually grows, giving the impression of an expansion of the bone under the gum, although, as we understand, there are no special or marked signs of such cystiform condition. If we pass an exploring-needle into the tumor, it feels as if it were cutting its way through spongy bone; and so indeed it is, as dissection reveals that the cancellated structure has taken on hypertrophic action. It is such spongy enlargement that bulges out the overlying parts and makes the tumor. The author has treated quite a number of these growths, invariably in connection with the inferior jaw. He does not think they are often to be found in the superior, such chronic conditions being in the latter relation more apt to induce caries, which disease is known to be as uncommon to the lower as it is common to the upper jaw. These tumors either remain fixed in character, after growing to the size of half a walnut, or, in very bad subjects, they degenerate into abscess, and discharging thus the offending body, correct themselves. Such spontaneous cure is, however, not common.

The surgical treatment of the growths is both simple and effectual. It is enough, not infrequently, to remove the tooth or root, particularly if, in connection with such removal, the socket is kept open for a few weeks with a tent of cotton or sponge. A certain method of cure consists in cutting away, with a bur or gouge, the enlarged mass: this is easily accomplished by using the opening made in the extraction of the tooth as a means of ingress to the mass; the disease can, in this way, be taken out, particle by particle, without external incision, and with a wound not larger than that made by the preliminary extraction. After such operation the parts are to be well syringed, and a tent kept in the tooth-socket, to insure granulations from the circumference of the wound. In two or three weeks cure will be found complete.

In this connection attention is to be directed to an obscurity which sometimes exists in the diagnostic relationship of diseased teeth,—that is, no teeth or roots of teeth seem to be present. A sufficiently close observation, however, will always detect in the neighborhood a fistulous opening; it may be

very minute, but it is seldom, if ever, absent. If a probe be passed into the orifice, it will lead to the offending agent.

HYPEROSTOSIS.

In connection with the simple tumors, reference is now to be made to general facial hyperostosis sometimes existing. In a work published by Mr. Heath, being a Jacksonian prize essay of the Royal College of Surgeons, England, the following illustrative diagram and description of a case are given:

The patient, when about forty-five years of age, and apparently in perfect health, was exposed to a cold wind; immediately after which he perceived an itching and heat in the eyes, a swelling of the face rapidly supervening. A small tumor formed just below the inner angle of each eye, which burst, and after twelve weeks he was able to resume

his employment. He suffered from inflammatory attacks in the growth, with much pain in the head on more than one occasion. He consulted many medical men; but no treatment relieved the disease nor retarded the growth of the enlargements, which increased slowly and were of stony hardness. The eyes were projected from the orbits by the tumors. The right inflamed and burst. The left was accidentally ruptured by a blow. The patient lived to be over sixty years of age, and died of apoplexy, having been occasionally maniacal during the last two

years of life. The portrait is taken from the work of Mr. Howship ("Practical Observations on Surgery"). The skull of the patient is preserved in the College of Surgeons, and shows, as might be anticipated from the portrait, two large masses of almost exactly symmetrical form and arrangement, which have partially coalesced in the median line. The tumors are as hard as ivory, and consist of very close, cancellous structure. They project more than three inches from the face, and an inch beyond the malar bones on each side. The man attributed the growths to repeated blows received on the face in fighting.

The skull of a Peruvian (3093, College of Surgeons, London) is also alluded to by the same author. In this case the lesion is of a more diffused character, all the bones of the face, as well as the frontal and the adjacent parts of the sphenoid and parietal, being enlarged and thickened in a remarkable manner. The nasal fossæ and orbits are nearly closed, the superior maxillary bones having grown into great knobbed and tubercular masses, in which their original form can hardly be discovered. The hard palate is similarly diseased. The lower jaw is enormously enlarged at its right angle, and in

FIG. 565.—HYPEROSTOSIS.



the greater part of its right half it measures upwards of five inches in circumference; all but three of its alveoli are closed up. A section of the lower jaw shows that its interior is composed of an almost uniformly hard and compact, but finely porous, bone. There is no history attached to the specimen.

Hyperostosis is simply exostosis or enostosis. It is analogous to hypertrophy of the soft parts, and has a similar meaning.

As can be very well understood, varieties in form and character present themselves. These growths are sometimes associated exclusively with the face of a bone, as in the ordinary exostosis. In these cases the periosteum may separate the two bodies. In other instances there is hypertrophy of the bone proper. The condition is one of disease only as there is a lack of correspondence in other parts. Any section of a hyperostosed bone exhibits the peculiar features of bone-substance; it may be, as is often seen, that the cellular substance is compressed and much altered, but there is the distinction to be observed between it and a cortical boundary, and the analysis remains the same,—that is, as the constituent parts are concerned. When these hypertrophies associate exclusively with the medullary canal, as in long bones, they obliterate or diminish the cavity, and, if of sufficient size, expand the external parts into a tumor, greater or less in size.

The history of any form of hyperostosis is the history of certain of the phenomena of inflammation; there is, from some cause or other, irritation attended with vascular changes, the effusion of plastic matter being associated with osseous transformation. What this source of irritation is, and how to control it, are matters which necessarily invite the attention of the surgeon.

Reference has been made on a preceding page to the hypertrophies of the specific conditions; such enlargements are easy enough to understand, even if not so easy to remove. But the hyperostoses here considered are not of such character, but are entirely of local signification; hence a local source of offence is not to be sought for in vain, as, for example, in Mr. Howship's case, where the osteitis was justly attributed to blows received. The inflammatory thickening of bone, alluded to a few pages back in connection with diseased teeth-roots, is but another illustration of the results of local irritation.

That the hyperostoses are to be viewed, and in every way treated, as simple overgrowths, is certainly well exhibited by Mr. Quekett, who, submitting to microscopic examination portions of all the osseous tumors in the Royal College of Surgeons, confirms the position in all particulars. The rates of the growths of such tumors are influenced by individual susceptibilities or peculiarities. There is certainly in this respect the greatest possible difference. In the Osteographia of Mr. Cheselden is an engraving of an osseous tumor surrounding the head of a tibia, which measures exactly one yard in circumference. An imposing growth is also figured in Mr. Paget's Surgical Pathology.

In this latter case, as Professor Clark describes the tumor, the hardest parts have neither Haversian canals nor lacunæ. In the less hard parts the canals are very large, and the lacunæ are not arranged in circles around them; everywhere the lakes are of irregular or distorted form.

A remarkable specimen of an osseous tumor of the left upper maxilla (Fig. 566), from the *Traité de Pathologie Externe*, found in the Musée Dupuytren, is described in Mr. Heath's essay as being limited behind by the pterygoid process, internally by the intermaxillary suture, above and externally by the malar bone. The tumor encroaches considerably upon the cavity of the mouth, and reaches back as far as the front of the spine. Its form is bilobed, and in the deep sulcus between is to be seen a molar tooth. All the other teeth of the jaw have disappeared, and there is no trace of alveoli. The left orbit and the nasal fossa are not sensibly diminished in size, but the cavity of the mouth is almost entirely occupied by the posterior lobe of the tumor. The lower jaw has, in this case, undergone several remarkable alterations. It must at first have combated the growth and produced the deep sulcus between the lobes; but in its turn the tumor has reacted on the jaw with the following effect: it has caused a double luxation, the left condyle resting against the root of the zygoma, and the glenoid cavity being filled with soft material. The teeth of the left side have disappeared, and absorption of part of the coronoid and the whole of the alveolar process has taken place, so that only the base of this part of the bone is left. The outer surface of the growth is smooth, and presents numerous vascular grooves of good size; at many points it is perforated with holes. The vascularity of the other bones of the face does not appear to be augmented.

FIG. 566.—OSSEOUS TUMOR.



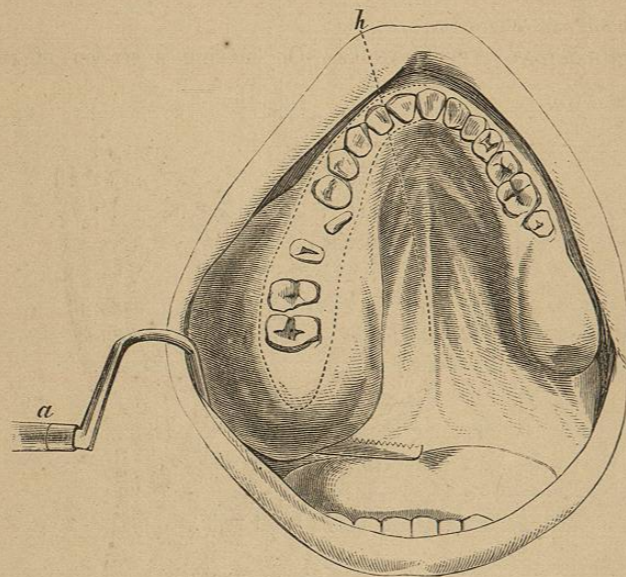
In Guy's Hospital Reports a case is described by Mr. Hilton in which a tumor similar in signification to the one just referred to spontaneously separated from the face. The patient was a man aged thirty-six, who, twenty-three years before Mr. Hilton saw him, noticed a pimple below the left eye, close to the nose, which he irritated, and from that spot the tumor appears to have originated. The disease, in its growth, displaced the eyeball, giving rise to excruciating pain, which subsided on the bursting of the ball. It began to loosen by a process of ulceration around its margin six years before it fell out, which event was unattended by bleeding or pain. The tumor weighed fourteen and three-quarter ounces. It was tuberculated externally, and an irregular cavity existed at the posterior part. A section presented a very hard, polished surface, resembling ivory, and exhibited lines in concentric curves, enlarging as they were traced from the posterior part.

The huge cavity left by the separation was bounded below by the floor of the nose and antrum, above by the frontal and ethmoid bones, internally by the septum nasi, and externally by the orbit, which last had been considerably encroached upon by the growth.

Among several rare and interesting cases in this direction described by Mr. Hilton, particular mention is to be made of that of a lad, William Mars, born with a general enlargement of the whole left side of the face,—cheek, jaw, teeth, tongue. As the boy grew, so in a relative proportion enlarged the left side. The exact mesian line of distinction was curious to observe: the left side of the tongue was quite one-third larger than the right, the papillæ likewise showing the distinction. Commencing with the left central, the teeth were also one-third larger than their fellows of the opposite side. The ears, also, differed in size. No sense of discomfort was experienced by the patient. This congenital peculiarity was confined strictly to the head, all other parts being in correspondence.

The cut of a case of osseous hypertrophy—being the exact duplicate of an impression in plaster in the cabinet of the Hospital of Oral Surgery, taken by a

FIG. 567.—HYPEROSTOSIS OF TUBEROSITY OF MAXILLA.



practitioner of a distant county, in whose own mouth also the tumor exists—is kindly sent the writer by D. H. Goodwillie, M.D., of New York, the following description accompanying:

Osseous Tumor of the Right Superior Maxilla.—Mrs. B., aged forty-four years, has always enjoyed good health. About six years ago she noticed that the alveolus of the right superior jaw began to enlarge,

and has gradually increased to the present time. In size and shape it very much resembles a hen's egg, the large end presenting posteriorly. It extends antero-posteriorly from the right superior canine to the internal pterygoid process, laterally from near the centre of the palate to the maxillo-malar fossa, forward to the canine fossa, and to a slight degree into the antrum of Highmore.

The mucous membrane over the surface of the tumor appeared a little lighter in color than normal; this, no doubt, was due to the tension on it by the parts below. On the face of the enlargement could be seen the fangs of the first and second molars. The canine and bicuspidati were not decayed. First bicuspid and canine retained their normal position in the jaw, but their crowns were somewhat buried in the tumor. The crown of the second bicuspid could all be seen above the surface of the tumor, but the whole tooth was raised out of its natural position, and thrown inward about one-half an inch. One of the roots of a molar was lying longitudinally in the soft parts on the surface.

Patient has experienced no pain, nor discharge from the mouth or nose, during the long period of growth; from its apparent firm texture, together with the excellent health the lady has always enjoyed, there appears no doubt of its benignant character.

PATHOLOGICAL APPEARANCES.—On making a section of the tumor

FIG. 568.



through the longitudinal direction of the teeth, the following was to be seen: At the apex of the second molar tooth there was a small, soft cyst,

containing some pus, and for a short distance surrounding this the bone appeared quite cancellated, but the rest of the tumor was quite dense in structure. The pulp of the canine and of first bicuspid had still some vitality, but that of the second bicuspid was dead. The pulp-chambers were decreased in size by a deposit of osteo-dentine upon their walls. Slight hypertrophy existed of the cementum around the fangs. A large nerve entered the growth on its buccal side.

The microscopical examination of this tumor, as made by Dr. J. W. S. Arnold, and as shown by his drawing (Fig. 568), exhibits cancellated tissue almost entirely; the outer edge being a thin layer of more compact bony tissue. In the spongy part is a small amount of soft marrow, containing the usual constituents of fetal marrow,—*i.e.*, medulla-cells, and myeloplaxes with oil-globules.

Exostosis, or, more correctly speaking, hypertrophy, of the tuberosity of the maxillary bone, the condition shown in Fig. 567, is a quite frequent affection, being associated, as the author infers, with the continuous excitability engendered in this part by that elongatory process which terminates only in adult life. The propriety of operating upon these cases is to be determined by the individual conditions. The majority of such tumors are safely to be let alone, as they exhibit little or no disposition to change from year to year. Associated with these hypertrophies the author has met with neuralgia of such severity that only through section of the affected part could relief from suffering be procured.

CHAPTER LXIII.

THE TUMORS OF THE MOUTH.

SELF-EXPLAINING CYSTIC TUMORS.

THE self-explaining cystic tumors of the jaws are, all of them, dental: of this the author is now entirely satisfied. In a former edition of this work* these cysts were described as being of two kinds, simple and compound: the first, the simple, were alluded to as mere expansions of the outer plate of the bones,—wind-bags, the old writers called them. The second class, the compound, were described as cysts containing peculiar contents, which contents induced the cysts and constituted the lesion to be studied; such contents being teeth in a state of full or partial or anomalous development, the tumor being the odontocoele, or, as it might as well be termed, the dentigerous cyst.

The Simple Cyst.—All writers on surgery have remarked the existence, in the mouth, of this form of tumor,—a simple expansion of the bone, with varying fluid of gaseous contents. Different authors differently describe and name them. The term *spina ventosa* is, perhaps, about the most unmeaning that has been applied. As the author *knows* them, their history may be written as follows: there is first remarked on the side of the jaw, either superior or inferior (no preference seems to exist), a slight flattened enlargement; this increases slowly, until the swelling reaches the size of half a hickory-nut; they are seldom seen larger. No pain attends the growth, and, outside of the mental disquietude induced, no functional or other disturbance associates. The slowness of growth is such that it may require from one to three years to reach the size alluded to. This tardiness, absence of pain, and of constitutional disturbance form marked diagnostic signs. Another sign, one on which most writers lay particular stress, is the giving forth, on pressure, of a parchment-like crackling; with this last the author seems to have had a peculiar experience, for, while he has treated quite his share of such cases, it has not been his experience to find such crackling sound in any one of them, and while of course it would ill become any individual to assert that such a crackling is never to be heard, yet it is to be impressed that the sign is not by any means a constant indication, consequently is not to be given a heed demanded for it. In most of these tumors, septi, more or less in num-

* Diseases and Surgery of the Mouth, Jaws, and Associate Parts.