

charge constantly increasing in quantity. At the expiration of that period he was put on copaiba, tincture of iron, and quinia, and sent to the seaside for a few days. The discharge quickly began to diminish, and after the eighth day disappeared entirely. A success of this kind would not, however, lead to the inference that every man afflicted with a purulent discharge is to be treated with tonic stimulants. On the contrary, though large opportunity has been enjoyed by the writer in prescribing for this condition,—gonorrhœa,—it is seldom that indications have seemed to call for anything more than a strictly local treatment; at any rate, to such treatment the disease has been found quickly to succumb.

On a previous page it was suggested that puruloid conditions of the antrum had origin chiefly from two directions: first, from diseased teeth; second, from constitutional disturbance. It was also desired to convey the inference that where the fault is markedly in the first of the directions, the practitioner would err on the right side if, in his consideration of the case, he should incline to look on the tooth only in the light of an exciting cause, searching farther for what might be a predisposing condition. It is, however, to be inferred that lesion of the cavity may exist, while yet constitutional condition has nothing at all to do with the matter, and is not to be taken into account in the treatment. As a line in practice running between the two states, allusion is to be made to the fact that cases are met with where inference of constitutional association seems most marked, and yet where patients are quickly cured without resort to other than local treatment. These are the kind of cases in which the medical man is to feel his way: if he be an observer, it is not likely that more than a week will pass without his arriving at a just conclusion.

Coming now to the investigation of cases where the cause is to be found in cachexia, we have to refer back to the general features of disease as manifested on mucous membranes.

The most common, and indeed not very infrequent, cause of engorgement of the antrum—particularly mucous engorgement—is simple catarrh of the Schneiderian membrane. The patient takes a cold, the excitement expends itself about the nares; by simple continuity of structure the lining membrane of the sinus becomes vascularly excited; perhaps the duplication at the orifice, because of greater nearness to the central ring of inflammation, becomes congested to such extent as to close the opening: thus we have the elements for retention, and the mucus thus confined will, if not vented, sooner or later act as such a source of irritation that it becomes to the membrane of the cavity almost precisely what the virus of gonorrhœa becomes to the same character of membrane lining the urethra. Trouble from this cause is, however, generally so slight, and so quickly over, that it is seldom prominently marked, either to patient or practitioner.

The symptoms designating this condition are, first, simple vascular excitement of the membrane lining the nares, accompanied with increase of mucus.

As the grade of inflammatory action advances to complete congestion, the excess of mucus associated with the immediately preceding stage is succeeded by a most uncomfortable deficiency in the secretion.

This dryness is associated with all nasal inflammations of advanced grade, but when the trouble is to implicate the antrum it is even specially marked.

A single moment's consideration of the parts makes this plain: the nares are the natural outlets for the antral secretions; in ordinary Schneiderian catarrh the extensive secretory surfaces of the antra are comparatively unaffected: of course they serve to lubricate, to a greater or less extent, the passages. When, however, the grade of inflammation is of sufficient extent to congest the duplicatures of membrane which form the nasal outlets, then, because of the retention of the mucus, the extreme dryness is induced. This excessive dryness may be said, therefore, to offer the first diagnostic sign of antral engorgement from simple catarrh. From this point the disease advances or declines. If it decline, the trouble will have proved of such trifling inconvenience as scarcely to have attracted attention. If, on the contrary, it advance, the patient is soon made conscious of the engorgement by a sense of growing heaviness in the cheek, this being attended by soreness of a dull, sluggish character. The progress of the disease, from this condition, is precisely the same as that described as accruing from dental lesions.

TREATMENT.—This is to be conducted on general principles. Where the disease is met in its incipient stage, it will, perhaps, be found unnecessary to do more than administer a saline cathartic; or, what is found most satisfactory treatment, to give the patient at bedtime one-sixth or one-quarter of a grain of sulphate of morphia dissolved in an ounce of the liquor ammoniæ acetatis. This latter treatment is seldom found to fail in breaking up a limited congestion.

Where, however, the disease has advanced to engorgement, and the antrum is found to be enlarging, it may be necessary, in order to insure against more serious lesions, that treatment be directed immediately to the cavity. To accomplish this the second molar tooth is to be extracted, and penetration of the cavity effected through the alveolus of the palatine fang; in this way such medication as may seem indicated is readily employed. Indeed, for a cure it may be only necessary to keep the wound patulous, leaving the rest to nature.

Furuncular Epidemics.—It will be found the experience of every one who has observed in the direction, that during the existence of furuncular epidemics, mucous and purulent engorgements of the antrum are more than usually common. This is not strange, if we consider the epidemic condition in the light of an exciting cause alone; for in no single instance where his attention has been called in such direction has the writer been unable to discover a predisposing cause in a dead or diseased tooth. The same state of things exists in regions where the intermittents are endemic. All the odontalgias and cephalalgias of the country are apt to be quotidian, tertian,

or quartan. Furuncle is a condition associated, it would seem, with some derangement of the digestive or cutaneous functions. When epidemic, it would be in proof that a condition exists adverse to the performance of certain physiological functions. With the existence of a predisposing cause of disease about the antrum, it is not at all strange that the addition thereto of an exciting cause should at once increase the effect of the irritant even to the production of acute disease: and this, in truth, is the case: the patient escapes the purulency of boils, but he has purulency of the antrum.

TREATMENT.—This need scarcely be referred to: it consists, first, in removing the source of local irritation; secondly, in combating the constitutional disturbance.

Scorbutus.—This diathesis, as may be inferred, predisposes to antral purulency and ulceration. To understand the local condition thus induced, it is only necessary to examine the gums in an individual so afflicted. The state of the antrum is akin to that of the mouth. Treatment, to be successful, must be from the constitutional stand-point. If injection of the cavity be indicated, it is to be gotten at as before directed, or a canula can be passed into it through the natural opening in the middle meatus: the latter is, however, difficult, and therefore liable to objection. A delicate trephine used upon the wall of the canine fossa is the preferable way.

The *Exanthemata* are said to associate, not infrequently, their sequelæ with this cavity. Treatment thus demanded could need no special consideration: it would be a treatment founded on general principles.

The Mercurial Diathesis.—Reference has been made to troubles of the cavity thus provoked. Mercury holds a double pathological relation to the antrum; it predisposes from its constitutional relations, and actively and locally excites, through the periosteal inflammation it induces in the alveoli of the teeth. (The same is to be remarked of the condition known as scurvy.)

TREATMENT.—The indications here are twofold. Resolve, if possible, the inflammation about the teeth (see chapter on *Periodontitis*), and eliminate the mercury from the system. Chlorate of potash and the common muriate of soda are valuable medicines in the direction.

Syphilis.—This is a disease which it might be inferred would have affinity for such mucus-lined surfaces as the antrum. Now, the author's may be a singular experience, but, in contradiction of many who have written on the subject, he must say that, with the wide scope afforded by such a hospital as that of Blockley (in which, for over a year, he gave the study of the venereal disease a very close attention), he was unable to find a single case of disease of the antrum which could with justice be attributed to the vice. As remarked on a previous page, instances are met with where the origin has been traced in such a direction; and it will not do to deny that, in some cases, it has been justly so traced; but, in every example seen, the mercury administered for the cure of the syphilis seemed to have much more to do with the condition than any dyscrasia induced by the virus.

Among what may be termed anomalous cases of antral disease, mention is to be made with benefit, perhaps, of one presented at the author's clinics, the child being under charge of Dr. Cruise.

Patient, infant, two weeks old. Six days after birth the attention of the mother was called to an uncommon restlessness, which quickly associated with a growing swelling of the right side of the face, the eyelid being soon closed from œdema. Examining the case closely, discovery was made of a distending antrum, every portion of the common wall gradually bulging. Pressure upon the roof of the mouth, with counter-support to the cheek, caused a slight ejection of bloody pus from the nose. Diagnosis secured, a bistoury was passed through the attenuated, softened wall of the canine fossa, the withdrawal of the blade being followed by much pus and blood.

The treatment of the case, continued by Dr. Cruise, consisted in the frequent injection of black tea, of a strength as prepared for the table. Several spiculæ of bone came away, leaving the little patient, after two or three weeks, in what might be termed a common state of health. No injury was known to have happened this child in its passage through the pelvic straits. The mother was quite hearty; the father, however, was scrofulous. Three still-births had preceded the present live one.

Cases of what may be termed mechanical disease of the antrum will be encountered by every surgeon in the persons of those who, having met with the accident of limited exposure of the cavity, are in the habit of wearing plugs of cotton, wax, or wood in the break, which plugs escape into the cavity. The treatment required is, of course, the simple one of getting away the foreign body,—a matter, however, not always easy to accomplish.