ployed during the whole of this period. It must be borne in mind that no satisfactory result will be obtained if the injury be treated simply as a sprain by rest and cooling lotions. It is essential that the cartilage should be replaced, for otherwise it is as useless to rest the joint as it would be to rest an unreduced dislocation. When these methods have failed, or when the original condition has been badly treated, and the patient is left with a chronically inflamed joint, which is insecure, painful, and locking, the sooner an arthrotomy is performed and the interarticular cartilage is removed the better it will be for the patient. As might have been expected *a priori*, my inquiries show that the least satisfactory results are obtained when the patient has been allowed to go about with a damaged fibro-cartilage for months or years, the best results when he has had only a few attacks of painful fixation of a joint. In these latter cases the ligaments have not become stretched, and the joint quickly resumes all its normal functions.

I hope, Mr. President and gentlemen, that in giving you these results I have in some measure fulfilled the object for which this lectureship was founded. I have taken a subject which is frequently met with in practice, which is sometimes improperly treated from ignorance of its pathology, and which the experience of a large hospital is able to shed light upon. These were the subjects with which my master, John Hunter, delighted to deal, and it will be a great pleasure to me if you feel that I have in some manner followed the path pointed out by that great surgeon.

REFERENCES.

- ¹ *Annals of Surgery*, vol. 50, 1909, p. 974. ² *Ibid.*, p. 982.

CONSERVATIVE SURGERY OF THE NOSE.

BY

W. STUART-LOW, F.R.C.S.,

SURGEON, CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL;
LECTURER ON RHINOLOGY AND OTOTOLOGY, MEDICAL
GRADUATES' COLLEGE.

MANY of those who have bestowed sufficient attention on the subject of nasal obstruction and diseases of the nose, and observed post-operation results long and carefully enough, must have become fully cognizant of, if they have not severely adverted upon, the disadvantageous, not to say disastrous, consequences that only too frequently follow much of the present day intranasal surgery. Such consequences are to be largely attributed to and explained by one thing, and one thing only, and that is too great and quite unnecessary sacrifice of the mucous lining of the nose. This wholly unwarrantable and uncalled-for destruction of the invaluable velvety covering of the nasal interior is even oftentimes carried to such an extent that it would be no injustice or exaggeration to stigmatize it as mutilation.

It is now no uncommon occurrence for the rhinologist to meet with patients who have some time previously undergone an intranasal operation or operations complaining of annoying or embarrassing after-effects. This is all the more to be regretted when one realizes that such sequelae are oftener than not but little capable of remedy or amelioration, and might easily have been avoided.

Loss or impairment of the sense of smell, deprivation of the pleasurable sensation received on the inhalation of the cool fresh air along the nasal passages, and consequently inability to detect aerial vitiation; stuffiness of the nose, desiccation and incrustation of the nasal interior, frequent and paroxysmal sneezing, recurrent headache, dryness and soreness of the throat, and chronic or relapsing hoarseness, are some of the most commonly complained of consequences.

There can be little doubt, moreover, that such ruthless and careless injury of the mucous membrane, by wounding it, and thus reducing its protective mechanism against bacterial invasion, lays the victim open to sinus suppuration, and, indeed, supplies a very likely and feasible explanation of the increased prevalence of these chronic sinus suppurative conditions.

It seems to be forgotten by many of those who practise such surgery, resulting in so great a loss of the mucous membrane lining the interior of the nose, that this mem-

brane is covered with a ciliated epithelium, and therefore has very valuable, and, indeed, for the comfort of the individual, both physically and socially, indispensable functions; that the myriads of cilia in the nasal cavities are essential to the proper fulfilment of the duties of the nose as an aerial filter, cleanser, and moistener of the inspired air. It appears to be overlooked, too, how essential is the erectile tissue largely located in certain prescribed positions, such as the posterior half of the nasal septum, on the inferior turbinates, and on the under surface of the middle turbinates, to the carrying out of the special physiological actions of the nose as a warmer and moistener of the inhaled air.

One of the most frequently encountered and most obvious forms of nasal obstruction is alar collapse. This is a condition that is many times missed in hunting for the causes of nasal obstruction, with the result that some redundancy perhaps in the inside of the nose is discovered and operated upon, while the first and real cause—alar collapse—is left undetected and untouched. A simple measure for the correction of this defect at the very entrance to the nose often saves the necessity for more extensive procedures inside the nasal cavity, and so obviates operations that under the circumstances cannot be curative.

The proper surgical treatment of alar collapse becomes, then, a step towards the conservative surgery of the nose by avoiding the necessity of operations farther in the interior of the nasal cavity. Indeed, one may assert that even such operations can never be successful in surmounting the nasal obstruction if the alar collapse is left untreated. The author has had many instances where patients have had the simple operation performed after the method here described on the narrow anterior nares, and where in the face of considerable interior obstruction the respiratory relief has been so great that further and necessary operative measures for a septal displacement have been postponed or refused, even when the obstruction has been of a very pronounced character.

The normal anatomy of the nasal cartilages is very remarkable, and affords an eminent example of a perfect mechanism for the maintenance of a patent and resilient anterior nasal aperture. The chief framework consists of four lateral cartilages—two upper and two lower. The upper plates are flattened and triangular in shape, with their apices above and the bases below. The inner borders of these plates are in apposition and supported by the cartilaginous septum mesially. To the bases are attached the upper convex margins of each of the lower lateral cartilages. The lower lateral cartilages are laterally elongated plates of thin cartilage, with a convex outer surface, and each meets its fellow in the middle line, the pair thus mainly forming the apex of the nose. Each of these lower lateral cartilages has two limbs—an outer, constituting the cartilaginous ala nasi, and an inner, participating in the formation of the central columna nasi. This inner limb only extends half or two-thirds of the length of the columna nasi, and ends in a rounded, pointed portion, which often projects quite visibly from the outer side of the central nasal column. The cartilaginous framework of the nasal entrance is completed by two more groups of structures—namely, the sesamoid, or segmental cartilages, and the mesial end of the nasal septum.

The operation that I have now been performing for some years with entire success in overcoming impeded nasal respiration caused by alar collapse and marked projection of the pointed ends of the inner limb of the lower lateral cartilage consists in excising the protuberance by submucous and subcutaneous resection. A crescent-shaped incision is made, commencing above on the side of the columna nasi, just anterior to the projection of the inner limb of the lower lateral cartilage, and passing alongside of this projection, which can easily be defined by the manipulating fingers of the disengaged hand. The incision ends at the lower angle of the nasal aperture, and is entirely through the skin. A second incision, beginning almost exactly where the first did, is then carried downwards behind the protuberance on the columna nasi nearly to the same position as the first; it may skirt the protuberance, as in the first incision, so as to excise a piece of skin of the width, at the widest part, of $\frac{1}{2}$ in. It may be necessary to remove half as much skin again as this if the protuberance is very large and the skin is redundant. This marked-out

piece of skin, with its subcutaneous tissue, is then dissected away. In some cases it facilitates the operation, if the skin be very adherent to the underlying cartilage, to remove the exposed cartilage at the same time. This is excised freely, and the cartilage trimmed down to a very thin piece. The soft structures are now reflected from the lower end of the nasal septum, and this cartilage is also freely removed. The broadened border of the septal cartilage is always excised, and the septal cartilage, too, for about one-fourth of an inch beyond it. The chief reason for taking away more than the mere projecting part of the septum is that it tends to let the upper nasal lateral cartilage sink down, and in such a manner leads to slight flattening of the nose. This is very desirable, as it pushes the outer limb of the lower lateral cartilage outwards, and so broadens and widens the nasal entrance. The incision is now firmly stitched up with catgut. Healing usually takes place by first intention, but this is always so if an oiled silk dressing with firm plugging is applied during the first twenty-four hours.¹ On the removal of the plugs the feeling of freedom of breathing is immediately experienced, the patients frequently giving generous expression to their sentiments on the pleasant change. This feeling of freedom is emphasized on exertion, as a greater current of air can be inhaled with facility.

No part of the nasal interior has suffered more, or been more mauled and mutilated in the ardour of some enthusiastic but indiscreet operators to gain a clear passage, than the inferior turbinated bodies. Perhaps this is partially to be accounted for by the fact that the anterior ends of these bodies lie only a little distance from the nasal entrance, and are easily visible on tilting the nose. Not only have these parts been cut about and crushed unmercifully, but they have been burnt unnecessarily with the galvano-cautery. There are grave objections to cauterization when the result is that the surface of the mucous membrane is extensively destroyed, as is the case if the cautery terminal is freely rubbed over it, the parts to which the cautery has been thus applied being rendered functionless, as scar tissue takes the place of the normal lining.

Should nasal obstruction exist, and the occluding, swollen part of the turbinal be soft and resilient when touched with the nasal probe, and become shrivelled under the influence of cocaine solution, the best remedial means is the submucous application of the electric cautery point. This is done with the object of pinning down and contracting the turgid and sometimes oedematous mucous covering and underlying erectile tissue.

Anterior turbinectomy is an operation very extensively employed to correct firm enlargement of the anterior ends of the inferior turbinal. It consists in snipping off with special scissors as much of the anterior part of the enlargement as can be conveniently reached. In a large proportion of cases this operation is not a good one, since the same objection holds that too much tissue is sacrificed, and the anterior part of the turbinal annihilated as a functional organ in the anterior half of the nasal passage. The anterior end of the turbinal acts like the other parts of this structure in exerting a moistening, warming, and filtering influence on the inhaled air, but it has an additional function too, namely, that of sensation. Many nerve filaments are especially distributed over this part, and ramify in the mucous and submucous tissues as a dense network with fine terminal filaments passing up between the superficial cells.

The anterior end of the inferior turbinal acts as the sensitive finger of the nose, and thus interprets the humidity, purity, or vitiation of the inhaled air, and it is therefore of the greatest importance and utility that this most invaluable structure should be maintained anatomically intact and physiologically active.

There is a form of nasal obstruction very unamenable to treatment—namely, subjective nasal obstruction—a form of obstruction in which no visible or palpable obstruction is capable of detection, the nasal cavity being open enough, and often too much so. The mucous lining is more or less shrivelled and dry, the sense of touch impaired, and a feeling of stuffiness arises from the loss of the sense of feeling of the air entering the nose.

Anterior turbinectomy, from the amount of destruction of the mucous membrane, is very likely to be followed by a localized subjective impairment of sensation, resulting in

the loss of that pleasurable sense of coolness experienced on inhaling fresh air through the nostrils; that is really a more or less generalized subjective nasal obstruction.

As regards the surgery of the middle turbinal there is a strong tendency at the present time to overdo this, removing more bone than is often necessary, and at the same time sacrificing the mucous membrane. Middle turbinectomy is in many cases a most useful operation and beneficial in its effects, but, as in inferior turbinectomy, the mucous membrane should always be considered and conserved as much as possible. Such is most essential, as the special nerves of smell ramify over this bony enlargement, too much destruction being very liable to result in loss or great impairment of the special sense. It is very reprehensible to apply the galvano-cautery to the middle turbinal region, as is not unfrequently done, with the risk of olfaction being impaired or lost, or fatal meningitis ensuing.

Most nasal obstructions are located either on the turbinated bones or on the nasal septum, and are either soft or resilient, or hard and cartilaginous or bony, if not a combination of these two qualities. There are many cases, however, in which the obstruction is considerable, being principally caused by firm enlargement of the inferior turbinals; it is a good deal aggravated by slight or moderate disturbance in the position of the septum. It would be stretching the principle of always attacking the nasal septum in preference to the turbinals too far, however, to seek to reduce the redundancy by always operating on the septum. The proper and better method, where the obstruction is mostly due to the enlarged condition of the turbinals, and especially the inferior, consists in removing a portion of the obstructing factor. This is commonly accomplished by the use of the electric cautery or by cutting away whole pieces of the turbinals, anteriorly and posteriorly, or nearly the whole turbinal is bodily wrenched away. It is such mutilation of the turbinals that I wish to condemn, and for which I substitute the operation which I have named *anterior submucous turbinectomy*.

The principle of the operation of anterior or middle submucous turbinectomy is essentially a submucous resection of the turbinated bones; it is applicable to either the inferior or the middle turbinals.

The method consists in incising and dissecting up the soft structures from the underlying bone, and in making a submucous resection of the bone, and extracting the resected portion. In this manner the flaps of mucous membrane are allowed to subside on to the outer wall of the nose, and their integrity is maintained. For the operation some special instruments are necessary, and considerable care must be exercised that the soft structures are not torn or perforated.

The patient sits in an upright position, and has the head sufficiently supported. The exterior and vestibule of the nose are first sterilized with a solution of ethereal soap, or a weak solution of lysoform, and afterwards sponged with a 1 in 2,000 solution of spirit and bichloride of mercury. The anterior half of the inferior turbinal is rendered anaesthetic by (1) applying repeatedly a 10 per cent. solution of cocaine by means of cotton-wool mops, and (2) applying for ten minutes to the turbinal surface a pad of wool soaked in this solution. This usually completes the anaesthesia, but if it is thought desirable to make this more perfect, a submucous injection of eucaine or cocaine may be made. To diminish the amount of haemorrhage, which is often considerable, it is a good plan to pack a strip of gauze, soaked in a solution of suprarenal, under and over the turbinal about to be operated upon, and leave it in position for ten or fifteen minutes. With a good reflected light and nasal speculum in position, a clear view of the turbinal is obtained, and an incision through the mucous membrane down to the bone is made by means of a special short-bladed, crescent-shaped knife. The incision should extend longitudinally for nearly half the length of the turbinal surface, and be along the most dependent part; it should be continued anteriorly up to the point of attachment of the turbinal to the outer wall of the nose. A sharp-pointed, somewhat curved deflector should now be introduced at the incision, and the soft tissues raised from the bone. This is done on both the upper and under surfaces, and with persevering and cautious manipulation an upper and a lower flap are gradually freed. A blunt, curved deflector is used

after the separation has gone a little way, and in this manner one can work with greater confidence and less danger of slipping, or of buttonholing the flaps. The process of raising the mucous membrane is sometimes best completed by means of a special long speculum with slightly curved blades. The blades of the speculum are gradually insinuated between the bone and its soft coverings, and so a good view of the bone can be obtained. It only remains now to cut through and extract the cribriform piece of the bone. This is accomplished by first severing its connexion with the outer, denser portion by means of a pair of short-bladed scissors pushed forcibly backwards, and then with a pair of long, thin forceps, roughened longitudinally, the extraction of the severed piece of bone is completed. The flaps should be pressed outwards on the outer wall of the nose, and maintained in position by means of plugs of cotton-wool firmly wedged into the nasal passage, the object being to bring the cut edges into apposition, so that healing takes place very rapidly. To facilitate the removal of these plugs it is an excellent plan first to adjust a strip of oiled silk over the cut surface and to pack the woollen plugs over it. In such a manner the wool is prevented from adhering to the wound, and the whole can be pulled out with the greatest ease and only very slight traction. The plugs are usually left in position for forty-eight hours. When the middle turbinal is under operation the same steps are followed, but the incision is carried along the under surface and up on to the anterior border. The soft tissues are deflected from the bone on each side, and the bone is removed either with Grünwald's forceps or curved scissors. The flaps are then pressed together by means of woollen plugs passed up on either side—one along the septum and one on the outer wall.

Where the impediment to free nasal breathing is due to the firm enlargement of the anterior one-third or one-half of the inferior turbinals, or to blocking of the middle meatus by the hypertrophy of the middle turbinal, this method of extracting the bone and pressing the flaps together is the most satisfactory in its results. On the removal of the plugs the feeling of freedom of breathing is immediately experienced. There are no disagreeable effects, as the parts heal by first intention. The subsidence of the enlargement of the turbinal is permanent, and, if properly performed, there can be no failure of the operation nor any necessity for its repetition.

In recent years the introduction of Killian's improvements in the operation for deviations and displacement of the nasal septum has marked a great advance in intranasal surgery. Like many good things, however, Killian's operation for submucous resection has been overdone. Many operators, in their enthusiasm for a perfectly free nasal passage, have gone in for removing so much of the septal support as to bring about a falling-in of the nasal bones or cartilages, or both, resulting in hideous deformity. It is more particularly in children that great care has to be taken in performing operations on the nasal septum for displacements causing nasal obstruction. The original cause of septal displacements and deformities is, doubtless, in a large proportion of cases traumatism, the commonest being falling on the nose in the nursery when the child is very young. The nasal septum, once driven out of the straight, is very likely to continue to grow in the abnormal direction into which it has been forced. These deformed septa are by no means uncommon in children, and the question is still unsettled as to the advisability of operation at the tender age. It frequently happens that a young boy of 6 or 7 years comes before the operator for nasal obstruction and is found to be suffering from enlarged tonsils and adenoids, and, at the same time, has a marked degree of impeded nasal respiration, due probably to a very evident deviation of the septum. Much disappointment may be incurred, if rash promises of amelioration have been made, when it is found that nasal respiratory impediment is as bad as ever after the operation for tonsils and adenoids has been performed. It then becomes imperative to do something in the way of operation on the nasal septum. After a large experience in operating on such cases, mostly in boys ranging in age from 6 to 12 years, I have now no hesitation in strongly urging the advisability and practicability of such operative procedure, providing that certain precautions are observed. The chief practical point in operating on this kind of case is not to remove too much of the septum nasi, remem-

bering that it is the support of the nasal bridge, and therefore to leave behind sufficient to ensure that the nasal bones and cartilages are sufficiently sustained. In children I simply aim at getting away the most prominent part of the impediment, always being most particular to leave alone the upper third or half of the obstruction, and only making a tunnelled passage for the respired air to pass freely through.

Another imperative practical point in operating for this redundancy is to make every endeavour to injure the mucous membrane as little as possible. It should simply be clearly cut, and carefully and completely reflected, and then neatly replaced and sutured, the object being to get union by first intention so that a repletion of granulations is prevented. Another way of aiding this object is to dress the wound with oiled silk, which means that the serum exuding from the wound is kept applied to it, and this serum dressing ensures immediate aseptic union. The nostril is then packed with dry gauze to act as a splint and so prevent the entrance of air for twenty-four hours. With these provisions I am certain that this operation can be done in these young subjects with safety and great advantage, and should therefore be unhesitatingly undertaken when the amount of nasal obstruction is sufficient to demand operative interference. In carrying out this resection operation on the adult septum there is little doubt but that the mucous membrane is too often too much injured, and so healing is retarded and the efficacy of the operation impaired, since one of the results of this is the formation of excess of granulation tissue in the nose and fibrous thickenings and adhesions.

In the instance of frontal sinus surgery, again, the major operation is not uncommonly embarked upon before intranasal surgical measures have been sufficiently tried, with the result that discredit is cast on an otherwise signally good operation. Here the more conservative measures of intranasal surgery are most essential to the success of the frontal sinus operation; and, indeed, the necessity for this operation may be often avoided by reducing the dimensions of the middle turbinal and thoroughly clearing the middle turbinal region of polypi, granulations, and carious cells. In this way drainage is facilitated and the lower part of the naso-frontal canal and hiatus semilunaris opened. Where this has not been done and the radical frontal operation undertaken, great risk of failure to cure the case is run and the difficulties of the operation increased, since it is often almost impossible to insert a sufficiently large drainage tube from the sinus into the nose. The simpler, shorter, and easier course should, therefore, always first be followed—namely, that of adopting intranasal methods preliminary to the larger and more hazardous operation on the frontal sinus itself.

Again, how often is Killian's major operation for the radical cure of frontal sinus and ethmoid cell suppuration undertaken when the better procedure would be the simpler "Ogston-Luc" operation? There are few cases in which the condition of things in the frontal sinus is such that this order of operative gradation would not be the most beneficent to follow—namely, first, through intranasal methods; secondly, operation on the frontal sinus by removing as much of the anterior wall as is necessary to clear out its diseased contents, and pass a large drainage tube downwards into the nose; and, thirdly, the Killian's operation on the frontal sinus and the anterior and middle ethmoid cells, in which not only are the anterior wall and floor partially removed, but the nose is opened into laterally by levering up the ascending process of the superior maxillary bone, and the ethmoid cells are scooped out to as great an extent as is discovered to be necessary to get rid of all caries and suppurative implication.

As a preliminary to surgical operation on the maxillary antrum, it is the custom of many operators to nearly annihilate the inferior turbinal on the same side, as they aver that this is essential to ensure free drainage into the nose; they accomplish this by performing anterior turbinectomy, but are often not content with removing the anterior end of the turbinal, and even extend the destruction to the posterior parts. Some of these authorities seem to have had doubts about the warrantability of this procedure, and recently a modification that is not much less reprehensible has been adopted—namely,

dislocation upward, temporarily, of the entire inferior turbinal, and its replacement after the antral disease has been removed. This, like anterior turbinectomy, is I am sure, quite unnecessary for the successful eradication of antral disease. Here, again, submucous turbinectomy is all that is needed, if the turbinal is excessive in size, preliminary to the antral surgery. If the redundancy of the turbinal is of a soft nature, galvano-cautery puncture is the best means of reducing it; and if the enlargement is of a firm consistency, submucous turbinectomy is the proper and best method, as the soft coverings of the turbinal are in this manner least disturbed, and are still left fit to perform their inestimable and essential functions.

The real test of successful surgical operative interference in the nose is, without doubt, to be ascertained by the answer to the question, How does the patient feel as regards freedom of respiration through and comfort in the nasal interior and pharynx six months afterwards? The most beneficent surgery is the most conservative as regards the preservation of the mucous lining, and is almost always attained by operating successively in stages, rather by what we might call physiological, than by severe, sweeping, sacrificial surgery.

REFERENCE.

¹ *Lancet*, May 4th, 1907.

ON

THE CONNEXION OF ENLARGED CERVICAL GLANDS WITH CARIOUS TEETH, ENLARGED TONSILS, AND ADENOIDS.

By H. OSBORNE, M.D., M.R.C.S., D.P.H.,

ASSISTANT MEDICAL OFFICER TO THE SALFORD EDUCATION COMMITTEE.

THE subject of enlargement of lymphatic glands in the neck of the child is one of real importance, for, although in most cases the lowering of the general health associated therewith may be comparatively insignificant, yet the susceptibility of children with chronically enlarged glands to infection from trivial causes would seem to be well established, and in a considerable proportion of cases there ensue developments which seriously undermine the health or (when suppuration occurs) cause permanent disfigurement.

This little investigation being merely of a preliminary and somewhat crude character makes no pretence of shedding much additional light on the etiology of glandular enlargement. It merely presumes to supply a certain amount of statistical evidence as to the relation existing between "enlarged lymphatic glands in the neck" on the one hand and "carious teeth, enlarged tonsils, and adenoids" on the other hand. The numbers dealt with are comparatively small, and the results correspondingly liable to error.

In order to obtain the required statistics it was, of course, necessary to adopt standards of enlargement or disease; thus, three standards, "A," "B," and "C," were adopted in each condition, as follows:

Teeth A. No carious teeth present.
Teeth B. One to four decayed teeth present.
Teeth C. Above four decayed teeth present.

Similarly:

Tonsils A. No enlargement of tonsils.
Tonsils B. Moderate enlargement.
Tonsils C. Much enlargement (almost meeting).

Likewise:

Adenoids A. Adenoids (causing symptoms) not present.
Adenoids B. Adenoids causing moderate symptoms.
Adenoids C. Adenoids causing marked symptoms.

Again:

Glands A. Glands which are barely perceptible on palpation—roughly up to the size of a lentil.
Glands B. Moderately enlarged glands—roughly up to the size of a haricot bean.
Glands C. Enlargement beyond the size of a haricot bean.

The glands noted were those situated anterior to the sterno-mastoid muscle and those lying under the jaw, which could be readily felt when the head was moderately extended. Glands lying behind the sterno-mastoid muscle were disregarded.

The method adopted was to correlate the "A," "B," and "C" groups of glands with the "A," "B," and "C" groups in the case of teeth, tonsils, and adenoids, respectively.

This correlation was carried out in respect of four groups of children, as follows:

- I. 636 boys of 12 years of age,
- II. 551 girls of 12 years of age,
- III. 666 boys of 5 years of age,
- IV. 621 girls of 5 years of age,

making a grand total of 2,474 children.

The results of the correlation of glands with teeth, tonsils, and adenoids, are shown in tables of percentages.

On the evidence of these tables it would appear that the presence of decayed teeth, enlarged tonsils, and adenoids, are all associated with an increase in the percentage of children with enlarged glands, but, at the same time, this increase would appear to be much more pronounced in the case of tonsils and adenoids, and comparatively little in the case of carious teeth. For instance, the percentages of "C" glands occurring in association with "B" tonsils or "B" adenoids, are distinctly greater than the percentage of "C" glands with "C" teeth; and this holds good in each of the four groups of children.

Granted that the presence of either enlarged tonsils or adenoids is associated with enlargement of glands in the neck, we have still to consider whether such association is due to a general lymphatic hyperplasia involving both glands and other lymphoid structure, such as tonsils, or whether it is rather the catarrhal conditions to which tonsils and adenoids predispose that give rise to glandular enlargement. There is a third possibility—namely, that infecting organisms may obtain access more readily by way of enlarged tonsils and adenoids than through the healthy throat and nose.

These points might be cleared up by accumulating data bearing on:

- (a) The effect on glands of operation for tonsils and adenoids.
- (b) The effect on glands of catarrhal conditions co-existing with enlarged tonsils and adenoids, and comparing with the relation existing between glands and tonsils and adenoids without catarrhal symptoms, and so on.

It is proposed during the present year to go into these questions in as detailed a manner as time will allow.

TABLES SHOWING CORRELATION OF GLANDS WITH TEETH, TONSILS, AND ADENOIDS.

Teeth.	Tonsils.	Adenoids.
A=No caries.	A=No enlargement.	A=No adenoids.
B=1 in 4 carious.	B=Moderate enlargement.	B=Moderate adenoids.
C=Above 4 carious.	C=Marked enlargement.	C=Marked adenoids.

I.—12-Year-Old Boys (636 Examined).

Glands.	Number Examined.	Teeth.			Tonsils.			Adenoids.		
		A	B	C	A	B	C	A	B	C
A. Not exceeding size of a lentil	30	5.9	5.0	3.3	5.3	1.6	0.0	4.8	5.0	0.0
B. Up to size of a haricot bean	484	78.4	76.2	74.6	78.8	65.1	38.1	77.7	40.0	33.3
C. Beyond size of a haricot bean.	122	15.7	18.8	22.1	15.9	33.3	61.9	17.5	55.0	66.7
To'tals	636	100	100	100	100	100	100	100	100	100