SOCIETIES' PROCEEDINGS

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May 1st, 1936

President—LIONEL COLLEDGE, F.R.C.S.

Discussion on Headache associated with Disease in the Nose

G. V. TH. BORRIES (Copenhagen): I wish to call attention in particular to those types of rhinogenous headache that have nothing to do with any affection of the sinuses and are more important than headaches associated with latent sinusitis. It would be going too far to mention all the forms of nasal neuralgia, pseudo-neuralgia, reflex neuroses and the different nasal syndromes on record in the literature. The pathogenesis of the different cases may vary, and there are frequently coincident causes. I shall merely mention the pathogenesis of the form which I consider the most frequent.

For various reasons there comes a congestion of the mucous membranes or other process obstructing the passage in the field of the middle turbinate bone, sometimes associated with hypersensitivity of the mucous membrane. This condition gives the patient a sensation of pressure on the ridge of the nose and causes headache—localized sometimes above the eye, but radiating in other cases towards the temporal and, especially, the occipital region. No doubt there are also vasomotor and other reflexes.

These forms have not attracted the attention of the rhinologists sufficiently. For in the first place this headache may have a violent course and may be distressing, in some cases almost insupportable for the patient, and in the second place in many cases it may be cured by quite simple rhinological intervention, even if it has persisted for many years before the patient comes for treatment.

Diagnosis.—The diagnosis is often difficult. In order to diagnose rhinogenous headache, it is not sufficient that the patient suffers from headache without presenting any signs of sinus affection. Only some of these cases are rhinogenous. It should at once be stated that rhinoscopy does not yield much information. It is true that, in some cases, the middle turbinate bone is hyperæmic,

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or that it conveys the impression of being incarcerated. But these rhinoscopic findings do not, as a rule, contribute much to the diagnosis, and they are not constantly found.

It must be admitted that it is frequently impossible to make the diagnosis. Still, we are not in all cases without any clue, and we may derive some valuable information from the following investigation :—

In the first place the site of the headache is important, for it is characteristic that it is located above the eye, though not constantly, and that it frequently radiates up to the skull and, notably, to the occipital region of the same side. At the same time the patient experiences pressure and tension across the root of the nose and tenderness of the medial orbital wall just above the internal palpebral ligament. Another characteristic feature is that the initial attack of headache follows coryza with nasal stenosis, and that subsequent attacks likewise have a tendency to occur in connection with coryza and nasal stenosis. Another important factor is the improvement which follows a dilatation of the middle meatus of the nose with the help of a cocaine tampon, and the recurrence of the headache a couple of hours after this dilatation.

Besides these typical cases, I have repeatedly experienced that severe cases which did not present a single characteristic symptom were cured or improved considerably after operative endonasal treatment.

The affection with which we have to deal is of a very serious nature. It does not involve danger to life but it is no exaggeration to say that it threatens the happiness of the patients. When they have been examined by medical practitioners, neurologists, roentgenologists, ophthalmologists, and rhinologists, who have vainly endeavoured to detect any objective symptoms, the fatal diagnosis of hysteria is reached, and this has embittered many a patient's life. The worst of it is, however, that as soon as the physician has pronounced that verdict, the patient's family and others have a welcome excuse for their lack of understanding of the troublesome patient. Suddenly he discovers that both the physician and the family have become non-comprehending and hostile powers. If he has not previously been hysterical, he is sure to become so then, and thus confirm the diagnosis.

Real headache is practically never due to hysteria. The detection of hysteria in a patient with headache does not imply that the hysteria has given rise to the headache, and does not exclude the probability that the headache has given rise to the hysteria. The physician who has pronounced the unjust verdict of hysteria may be inculpated as the real causative agent of the hysterical symptoms.

As I have already said, it is impossible to decide beforehand whether a headache is of rhinogenous origin. In several such cases

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I have performed the operation by way of experiment and have obtained an excellent result; in other cases the operation has been quite inefficient, and a subsequent close examination of the case report has not given any clue to the failure.

It is easy to see that statistics cannot be based on such cases, because ideas about the timeliness of operative intervention tend to change according to experience. The safest way is to operate on typical cases only—those which warrant the best results and the best statistics—but this implies that many cases which might have been cured escape.

Treatment.—Many slight cases are rapidly cured by dilatation of the median region with the help of a cocaine tampon. One of my patients was cured by a single dilatation after she had suffered from headache for three years and had undergone hospital treatment in a medical department of a university clinic without result. It is best to place a narrow cocaine tampon both laterally and medially to the middle turbinate bone, so that the tampons form, as it were, a ring around the concha. According to my experience pure cocaine, in a solution of from 5 to 10 per cent., is best. Adrenaline is not nearly so good, because it causes serous secretion from the mucous membrane.

Atropine also frequently has a beneficial effect, which agrees with the supposition that the chief cause of headache is the hyperæmia of the nasal mucous membrane.

Although the dilatation treatment is often sufficient, the severer cases require operative intervention. The principle is to procure more space in the medial region. Therefore, in the majority of cases there will be a partial or total resection of the middle turbinate bone; it may also become necessary to perform a resection of the septum. The treatment, however, must be strictly individual.

It may even happen that in certain cases the operation should not be carried out in the medial region, for if there is an obstruction of the inferior turbinate bone, part of that must be removed first. In some of these cases it may even be sufficient to operate upon the inferior turbinate only, because the obstruction in the medial region is secondary to the obstruction in the inferior region. There are cases in which galvanocautery of the inferior turbinate bone may be effective. I have treated several cases of headache of many years' standing, which had been vainly treated in other ways and which were cured immediately after the operation.

Myopathy or myalgia.—There are some cases in which operative intervention is not sufficient, and it must be supplemented by physical treatment of muscle and tendon infiltrations, particularly in the occipital region, though in the frontal and temporal region also. Such myalgias—or myopathies, as they are called by Danish

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authors—are of extraordinary importance, a fact which is certainly not sufficiently appreciated.

In Denmark this question has perhaps been discussed more than elsewhere, since Johannes Helweg, in 1920 and in a subsequent series of papers, declared that sciatica was not an affection of the sciatic nerve at all, but was a mere muscular affection, a muscular infiltration due to over-exertion or unsuitable use of certain muscles, a "*myopathia e labore*" or "*e functione*", as he terms it.

This point of view which is applied by Helweg not only to sciatica but also to numerous other conditions of pain, has no doubt contributed to the explanation of many morbid conditions in general medicine.

Thus, one of Helweg's disciples, Lindahl,[1] recently found that pains in angina pectoris, as well as in pseudo-angina pectoris, originate from myopathies in the thoracic muscles, and he thinks that a reflex phenomenon from the heart is responsible for them.

I have published a case of mastoid operation performed twice on a patient who actually suffered from "*myopathia e labore*" in the surrounding muscles[2] (*cf.* previous works by Halle).

However, I shall not go into the details of this, but will confine myself to rhinology. Here, too, Helweg's point of view partly holds good, but only partly, for on the one hand cold—though Helweg rejects the theory—plays a great part in the occurrence of myalgia in rhinology, and on the other hand I think that myopathy is reflex in many cases.

Illustrative of this are some personal observations which I reported to the Danish Oto-Laryngological Society on May 2nd, 1923. I had for several years had repeated attacks of maxillary sinus empyema, the last of which was accompanied by violent pains of the type of trigeminal neuralgia. I then found out that these pains were associated with marked painfulness and tenderness in the occipital region on the same side, and that vigorous pressure on that place brought the maxillary pain to a stop. What surprised me was that, as soon as a lump of mucopus formed in the middle meatus, the occipital pain and tenderness recurred, but disappeared immediately when the mucopus was removed. This rapid alternation of occurrence and disappearance of the nuchal pains is highly suggestive of reflex processes. Other patients likewise presented symptoms of suddenly occurring pains in the occipital region due to disturbances in the mucosa. A patient on whom I operated for rhinogenous headache exclaimed when I removed his middle turbinate bone: "Now that was just as if you had stung me in the nape!" On palpation of the typical place it proved to be very painful. When a couple of days later I performed the same operation on the other side, this incident repeated

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itself. Another patient who was submitted to diagnostic suction of the nose, suffered violent pains in both occipital regions.

Besides the nape, the insertion of the levator anguli scapulæ muscle is a typical location of myopathy. A patient with rhinogenous headache repeatedly reported spontaneously that simultaneously with the pains in his forehead he experienced pains in the shoulder-blade on the same side. It was discovered that the typical place at the levator insertion was very tender.

Thus, there is a peculiar correlation between the mucosa of the nose and the insertions of the nuchal muscles. Without doubt, myalgia in the occipital region may originate as a reflex phenomenon from the nasal mucosa and, on the other hand, occipital myalgia may give rise to pains radiating to the frontal region. That may explain the old observation that the site of the pains in sinusitis does not always correspond to the sinus involved, for instance, a maxillary sinusitis may give frontal pains. In other cases the explanation may be, that pains in maxillary sinusitis, as mentioned above, often originate from the medial region and not from the sinus.

The question of what practical measures we should employ in rhinogenous headache coinciding with painful nuchal myopathy, and whether we should begin with a nose operation or with a treatment of the myositis, is difficult to answer. It would appear most natural to say: "Let us first treat the myopathy and subsequently, if that does not help, proceed to an operation." It is more attractive to attempt a non-operative treatment before having recourse to an operation. It should, however, be kept in mind that, in many cases, the myopathy is maintained by the nasal affection, so that the muscular pains either do not disappear or only disappear temporarily, so long as the nasal affection is not treated.

The more evident the nasal character of the patient's symptoms and the more likely the diagnosis of rhinogenous headache, the sooner will the surgeon resort to a nasal operation. In that case it will frequently be noticed that the occipital pain and tenderness disappear after the operation, without further treatment. In other cases more or less distinct remains of these symptoms will persist. In these cases it is necessary to examine the patient for myopathy in the neck even though he does not complain of pains in that region. Frequently the patient will not be relieved of his headache till those myopathies have been cured. The treatment of myopathy chiefly consists of massage, thorough massage applied by a specialist in massage of that particular region. Short-wave treatment may also be taken into consideration, but my experience of this therapy is not very extensive.

Such patients are highly susceptible to changes of temperature.

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Some of them are perfect " barometers " in their reactions to atmospheric changes, for in damp and heavy air they have pains, whereas clear sunshine, even if there is frost, has a beneficial influence not only with regard to their pains but on their general condition also.

Nor can they bear to be chilled. Particularly the almost imperceptible chilling of neck and shoulders in a posture of muscular rest often gives rise to pains. Therefore, such patients must endeavour to keep their shoulders and neck well covered when lying in bed. For reading, writing, or needlework they should not choose a seat near the window, because there may be a draught and, besides, their posture during these various occupations requires protracted tension of the muscles of the head and prevents the free circulation of the blood. During confinement to bed they should try to avoid the posture of half lifting of the head from the pillow in order to read or write. They should either sit upright or rest entirely with the head on the pillow. They should, however, endeavour to harden themselves ; their ablutions or warm baths ought, for instance, always to be followed by a cold shower or friction with cold water. Exercise taken in fresh cold air, even in frosty weather, is wholesome also ; on the whole these patients must not treat themselves too tenderly, but the hardening must not be commenced before the treatment is more or less terminated and the patient is free from symptoms.

Hyperæsthesia.—There are patients who, despite operation and massage, require treatment from quite a different point of view. Patients with rhinogenous headache frequently present such a degree of hyperæsthesia that it is almost impossible to introduce a tampon as far as the vicinity of the middle turbinate bone. On the other hand, patients with sinus affections may likewise present hyperæsthesia of the region of the middle meatus. In these cases the cocaine tampon must be introduced very cautiously, preferably only a small piece at a time. It may even be necessary to give a preliminary injection of some anæsthetizing solution in the medial region with a syringe or spray before the cocaine tampon can be introduced.

As soon as the region is anæsthetized it may sometimes be useful to touch it with a solution of nitrate of silver in order to bring about a gradual diminution of sensibility. In some cases the headache may be cured in that manner. It is in itself peculiar that local anæsthesia is required prior to the application of nitrate of silver, but it tends to illustrate the part which hyperæsthesia may play in some instances.

Some patients are quite aware of their hypersensibility, for they know that the mere inspiration of cold air is enough to provoke the pains.

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Societies' Proceedings

Correlation between Rhinogenous Headache and Eye Affections

There is another phenomenon which must be considered analogous to rhinogenous headache, namely the rhinogenous eye affections, particularly rhinogenous conjunctivitis. It is strange that modern rhinology is greatly interested in rhinogenous orbital phlegmons and rhinogenous optic neuritis, but very little in rhinogenous conjunctivitis. This is the more remarkable seeing that about twenty-five years ago this was well known amongst rhinologists. I have reported a typical instance of this disease in a woman 26 years old, who had for a long time been troubled with a conjunctivitis on the left side, for which she had been treated for four months by an eminent oculist, without effect. Subsequently she had been submitted to an exploration of the right maxillary sinus, which proved to be sound. I had recourse to a resection of the inferior turbinate bone, and as soon as this operation was accomplished, the patient declared she had a sensation as if a stone had been removed from her eye. The conjunctiva, which had been very red, acquired its normal pallor the following day, and thus the patient in the course of one day was cured of an affection which had troubled her for eighteen months.[3]

I emphasize this instance, because the pathogenesis of rhinogenous conjunctivitis is possibly a phenomenon comparable to rhinogenous headache, and also, because I think that many of the remarkable symptoms witnessed in a case of rhinogenous optic neuritis might be explained from the same point of view.

In conclusion I hope to have demonstrated that it is time to abandon the standpoint, still advocated in many places, according to which a headache cannot be of rhinogenous origin if rhinoscopy does not reveal any abnormalities and X-ray examination shows normal sinuses.

F. J. Cleminson: This paper will be confined to the discussion of pain due to inflammations of the nasal sinuses. Such pain is an interesting study because it involves points which are not easy to explain. Much debate has been provoked by the problems of its radiation and its reference to regions at a distance from its true source; even yet we are by no means sure what the true solution may be.

Radiation of pain can be well exemplified by considering a dental lesion. A tooth seldom aches alone. First its immediate neighbours are involved, and then the corresponding teeth in the other jaw. Soon all the teeth on that side of the face may be painful and, if the lesion is progressive, the pain spreads through the entire territory of the Vth nerve and finally seems to involve the whole

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of that side of the head, including the ear, and may spread into the neck and even down the inner side of the arm to the fingers of the same side. And so when a sinus is acutely inflamed the pain seems first to be localized in the situation of the sinus itself, but later it spreads to more distant regions, and finally an intense neuralgia of the whole side of the head may develop in which it is hardly possible to select any point of special intensity. More commonly, however, the pain of each sinus or group of sinuses seems to select certain areas which have come to be especially associated with them.

Let us first consider inflammation of the maxillary antrum. In none of the textbooks actually consulted was pain in the ear given as one of the symptoms, though St Clair Thomson states that " tinnitus, vertigo, earache, Eustachian catarrh, and purulent otitis media may first attract attention to a sinusitis". Yet referred pain in the ear is frequent. In 1919 I was asked to see a medical man confined to bed with an acute otitis media which was causing him great pain and anxiety. There were, on examination, no changes to be seen in the tympanic membrane, and the hearing was normal. But the maxillary antrum on that side was dull on transillumination and, on puncture, was found to contain foul pus under pressure. The pain in the ear was relieved by lavage. There was no pain anywhere except in the ear, and this was so localized as to deceive the patient completely, in spite of his medical training.

Influenced by this striking case, I have since noticed the frequency with which patients suffering from antral disease are conscious that some of their pain, usually in acute cases, is referred to the ear, though it must be seldom indeed that it is entirely confined there. In fact, I have never yet seen a second case. Watson-Williams[4] reported a case in 1910 in which pain in the ear was the only symptom, but it had a long history and the source was a chronic infection of the sphenoidal sinus.

It is natural that pain due to the antrum should be referred to the ear, for it is common knowledge how frequently pain from the teeth, e.g. an impacted wisdom tooth, is referred to the ear and the posterior dental nerves which supply the upper teeth run in the outer wall of the antrum, in a vulnerable position. Colledge,[5] in a paper on " Referred Pain " read at the summer meeting of this Section in 1932, says, " Other causes of pain in the ear are an empyema of the antrum or of the sphenoidal sinus." He showed diagrams from Fenton and Larsell[6] to illustrate the most probable path of referred pain. Sensory fibres from the mucous membrane of the palate and the nose pass through the sphenopalatine ganglion and reach the geniculate ganglion by way of the vidian and great superficial petrosal nerves. From this ganglion fibres run with the VIIth nerve which, as the ramus cutaneus facialis, leave it, to join the auricular branch of the vagus (Arnold's nerve) and so supply

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the posterior part of the external auditory meatus, the tympanic membrane, and the skin over the mastoid process and the back of the pinna. This path is equally available for referred pain from the sphenoid. Pain over the mastoid in connection with the sphenoid was first described by Tilley[7] in 1905, and, in a paper read three years ago at a meeting of the Medical Society of London, he supports this view of the path taken.

It is more difficult to explain the radiation of pain into the neck and down the arm into the fingers, but evidence has recently been brought forward by Fay and Kuntz that there are fibres in the great deep petrosal—and therefore in the vidian nerve—which are derived from the vagus and perhaps even from the spinal accessory. It is also probable that there are splanchnic afferent fibres in the great deep petrosal which leave the cord in the white rami of the upper thoracic segments. The heart has a similarly derived nerve supply and we know that in spasm of the coronary arteries, that is in angina pectoris, the pain is also referred to the inner side of the arm and into the fingers. Possibly therefore the paths of reference for this arm- and finger-pain are very similar, whether arising in the teeth or sinuses or in the arteries of the heart. For in each case we have vagal and splanchnic afferent fibres available and, in the case of the heart, there is no other possible path, as spasm of the arteries does not affect the pericardium. Morphologically, moreover, the heart belongs to the cervical region and not to the thoracic.

Vacuum pain in the frontal sinus is now almost universally accepted as being of fairly frequent occurrence, and it is only to be expected that it should occur most often in this sinus, owing to the length of its ostium—the fronto-nasal duct. But that it may also arise from the antrum, in children at any rate, the following case will show. It occurred in 1922. The patient was a boy aged 8 years, a member of my own family. In the course of a cold he began to complain of pain round the left eye and in the neck. On transillumination the left antrum was duller than the right. The frontal sinuses were too small to be translucent. As the pain grew worse, drops of argyrol and adrenalin were instilled into the nose. In a moment or two a sound of brief duration, best described as moist and sucking, was heard to come from the nose. Brief as it was, it had hardly died away before the small patient exclaimed: "The pain's gone!" This rather dramatic demonstration seemed to be entirely convincing, and if vacuum pain can occur in the antrum it can occur in any of the other sinuses.

Experience has led the writer to believe that in chronic antral infection the most common single site of discomfort—for it is often a discomfort rather than pain—is just above the eye in an area which corresponds to the inner two-thirds of the eyebrow or just

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above it, so that the name "eyebrow pain" describes it fairly accurately. It is found perhaps even more commonly in children than in adults and in some cases is combined with pain or discomfort referred to the ear.

Frontal sinus pain is probably more true to type than any other but it can be simulated by the pain in antral disease. The following case, which happened in 1914, will show how closely it can be imitated by pain referred from elsewhere. The patient, a woman aged 50, had for some years had a pain in the supra-orbital region, with no overflow or reference elsewhere, and so severe in character that at times she was compelled to remain in bed. Various forms of treatment had been applied to the nose and the advisability of an exploration of the frontal sinus had been discussed. There were no physical signs of disease—the sinus was clear on transillumination—so an X-ray examination was carried out, a less usual proceeding in diagnosis of sinus disease then than now. The sinus was clear but the skiagram showed a large apical abscess above a premolar of the same side. The tooth was removed, the pain ceased, and later the patient was reported to be able to walk ten miles a day and to have completely recovered her old mental energy.

A very interesting and baffling referred pain is that in the occipital region, usually from a sphenoidal—but sometimes from a frontal or posterior ethmoidal—inflammation. It is sometimes described as a neuralgia, and is familiar to all of us. Efforts to find an explanation for it have been unavailing. There are possibilities in the connections of the Vth nerve in the upper cervical part of the spinal cord, but this explanation is not favoured by neurological friends who have been questioned about it. Davis and Pollock[8] have brought forward experimental evidence that efferent impulses along post-ganglionic fibres may produce some chemical effect in their distribution, which so affects the cerebrospinal nerve-endings that pain impulses are generated in them. Thus impulses along the post-ganglionic fibres of the superior cervical ganglion may cause pain in the area of the Vth cranial nerve and also in the sensory area of the cervical nerves. Here is a possible, but perhaps hardly probable, route for pain referred to the occiput.

GAVIN YOUNG: In these remarks reference is intended, unless otherwise specified, to headache which is the result of chronic nasal disorders. Disturbance of function, or structural deformity, in the upper part of the nasal cavity, is much more commonly associated with headaches, than is any disease in the lower part. There are two reasons for this: the first is that the air-channel in the upper part is narrower, and the second is that the communications with the sinuses are all in the upper part of the nose. The chief factor in the production of this type of headache appears

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to be vascular engorgement of the mucosa of the middle turbinate region. The causes of such congestion are (1) infective, and (2) allergic.

In the first type high deviation of the septum will be found, causing narrowing of the upper airway, either from pressure of the middle turbinate against the lateral wall of the nose, or—on the concave side of the septum—from an enlarged or cellular middle turbinate. There is no case more suitable for submucous resection than the high deviation which obstructs sinus drainage. It is not necessary to postulate the presence of suppurative sinus disease in cases of headache of this type. Submucous resection, with freeing of the middle meatus, either by displacement mesially, of the middle turbinate, or by reduction of the anterior end, gives a satisfactory result in many cases.

In the case of suppurative sinusitis, I wish to discuss only the essential cause of headache. Headache in chronic antral disease is not of the severe, depressing type associated with acute antral empyema. It is due, rather, to chronic congestion of the middle meatus, or to the toxæmia accompanying the condition, or to both causes. It may also be manifested, as infra-orbital neuritis, which comes into the category of faceache rather than headache.

In frontal sinusitis, chronic headache is due usually to chronic empyema, which drains only with difficulty.

The second factor mentioned as causing congestion in the upper part of the nose, is allergy. The type of case referred for investigation of headache, associated sometimes with rhinorrhœa and sneezing, is familiar. In a proportion of these cases there is no structural deformity and no gross lesion of the sinuses can be discovered, so that the unwary may be tempted to give a negative report. The possibility of rapid turgescence in the middle meatus must not be overlooked, and the nasal mucosa should be tested for sensitiveness, by touching the anterior vascular area of the septum with cotton-wool to provoke sneezing. Such a process of congestion following on one of the recognized stimuli of allergic reaction, may cause severe headache. In the foregoing type of case, there is no evidence of polypoid degeneration of the mucosa, and these patients suffer more from headache than do patients in the more advanced state of allergy in which the nasal cavity is full of polypi.

A type of headache in the treatment of which I have to confess failures, is that found in a large proportion of cases of atrophic rhinitis. These headaches are not necessarily the result of sinusitis. Sinusitis is not present in a great many cases of atrophic rhinitis. No more satisfactory explanation of this kind of headache occurs than the fact that a large column of cold inspired air is constantly impinging upon tissue which is the site of a chronic suppurative process. A possible parallel is the case of the patient

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who has undergone submucous resection where one nostril has been completely blocked by the deviation. Here we may find headache following exposure to cold air, until the nasal passages have become accustomed to their new conditions.

The possessor of the adenoid facies may often be the subject of headache, particularly occipital headache, without concomitant ear trouble. This headache may be brought on by exposure to a cold wind, or by the presence of the sufferer in an overheated and badly-ventilated atmosphere for a prolonged period. It may well be due to the very narrow nasal passages which are characteristic of the condition, associated with some vasomotor instability.

The presence of rhinolith may be discovered mainly on account of pain referred to the branches of the Vth cranial nerve, the secondary symptoms of obstruction and discharge being slowly progressive and, possibly, not so obtrusive on that account. Finally there is a condition which is characterized by recurring lancinating pain in the face, a psychogenic condition, usually, with no organic basis. I have been tempted to mention this subject, because of a recent leading article in the *British Medical Journal*. In the course of the article, the writer, a London physician, stated that these patients provided a rich harvest for the throat and nose surgeon—in many cases the septum would be resected or an antrum operated upon—with entirely unsatisfactory result so far as the pain was concerned. The rhinologist of experience knows well the type of patient indicated ; a patient who is not always female, who may have a deviation of the septum, and who may even have a mild degree of sinusitis ; but there should be little difficulty after close questioning concerning the symptoms, in assuming a psychogenic basis for the condition, not at all associated with the nasal disorder found.

HERBERT TILLEY said that all members would agree with Dr. Borries' general statement that there were other intranasal lesions besides sinus inflammation which might cause headache, especially if he was referring to those common types associated with a purulent discharge and possibly accompanied by polypoid changes in the mucous membrane of the affected sinus. This assumption would appear to be correct because Dr. Borries had mentioned " a pathological state of the mucous membrane of the region of the middle turbinate bone (hyperæmia and increased sensibility) " as a condition capable of causing " rhinogenous headache not of sinus origin ". He ventured to question the validity of this example as a non-sinus intra-nasal factor capable of producing headache, and in support of this friendly criticism he would show two or three microphotographs representing the early and later stages of a non-suppurative mucoperiosteal infection of the middle turbinates

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which were removed from patients who complained of homolateral pain in the lower frontal and upper nasal regions. In each case the mucous membrane covering the anterior end of the turbinate was hyperæmic, smooth or finely granular, very sensitive to touch and to cold inspired air. In each instance the entire bone was removed and the histological sections prepared by the late Dr. Albert Gray in the Ferens Institute (Middlesex Hospital).

The specimens showed desquamation of the superficial epithelium, inflammatory changes in the mucoperiosteal layers invaded by micro-organism, some of which had already invaded the bony capsules of the underlying ethmoidal sinuses or cells.

At a later stage of infection small colonies of organism could easily be seen and, finally, still in a later stage large polypoid granulations were visible which without doubt would have ultimately developed into nasal polypi with or without suppuration in some of the cells. With such pathological changes in mind, it would not be correct to regard the accompanying rhinogenous headache as not due to sinus disease. This type of " silent osteitis " was described in more detail in the " Semon Lecture " of November, 1934, where an endeavour was made to throw light on certain cases of local or referred pains caused by sinus infections which were not necessarily associated with suppuration.

Dr. BORRIES (in reply) said he agreed that other factors might play a great part, especially sexual difficulties, because most of the patients were women of from 20 to 30 years of age, and that was the period of greatest endocrine activity. Painful occipital infiltration was often present in both nasal and sinus cases. In 80 per cent. of the cases, pressure with the finger on the affected side would reveal a tender spot, and he thought this was a reflex phenomenon along the Vth nerve.

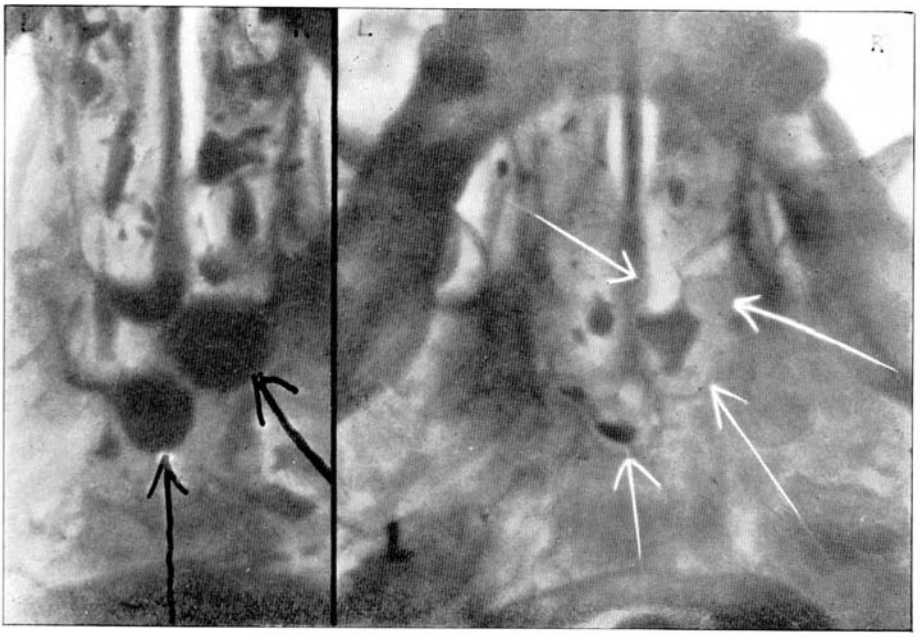
F. A. PICKWORTH showed a lantern slide, made from two skiagrams supplied by Mr. Bedford Russell, to demonstrate (1) a thickening of the sphenoidal sinus membrane and obstruction of the right ostium coincident with severe headaches, and (2) the absence of such swelling in a headache-free interval—as illustrating the pathology underlying some forms of headache.

Dr. Pickworth said: I have reason to believe that this is a commoner condition than is generally supposed.

The skiagrams are those of a patient who has had right-sided severe headaches two or three times a month for several years, the attacks being so bad that eventually a colleague opened the frontal sinus. He found it, however, of normal appearance.

A skiagram of the sphenoidal sinus taken after the injection of lipiodol in a headache-free interval did not reveal any convincing abnormality of the sinus membrane, but it so happened that the

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Submento-vertical skiagram after injection of lipiodol.
Left: No swelling of sphenoidal sinus membrane. Headache-free.
Right: Swelling occluding the ostium. Severe headache.

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introduction of the lipiodol was followed (as sometimes occurs in allergic people) by the characteristic headache, and Mr. Russell, fortunately for the elucidation of the pathology, decided to take another picture. This was done four days later, just after the maximum headache had begun to disappear, and showed, as Mr. Russell said in his letter, that the lining of the right sphenoid had bulged up in several places—presumably with œdema. Mr. Russell said that an interesting mechanical condition appeared to exist—namely, that the maximum swelling in the right sphenoid was on either side of the ostium, so that these two swellings seemed to be creating a sort of valvular resistance near the ostium, the lipiodol being squeezed past in a thin stream.

This condition is illustrated in the composite figure, the left showing the sinus filled with lipiodol in a headache-free interval, and the right the same sinus containing lipiodol, but during a period of headache, and enormous swelling of the sphenoidal sinus membrane which occluded the ostium of the right sinus, the causative relationship of the clinical and pathological conditions being sufficiently obvious from inspection. The photograph emphasizes the clinical importance of *any* thickening of the sinus mucosa noted in a symptomless period as suggesting the possibility of similar allergic swellings occurring during periodic headache. In cases of mental disorder where such thickenings of the mucosa are very commonly found clinically and *post mortem*, any investigations made during or shortly after the onset of headache or mental symptoms would have great research value.

REFERENCES

1 LINDAHL, Thesis, Copenhagen, 1935.
2 BORRIES, *Ugeskrift f. Læger.*, 1935, 75.
3 ———, " Rhinogene conjunctivitis," *Festschrift Kobo.*, Tokyo, 1934, 122.
4 WILLIAMS, P. WATSON, *Proc. Roy. Med.*, 1929, xxii., 1430 (Sect. Laryng., 60).
5 COLLEDGE, LIONEL, *ibid.*, 1932, 1753 (Sect. Laryng. and Otol.).
6 FENTON and LARSELL, *Ann. Otol. Rhin. and Laryng.*, xxxvii., September, 1928, 739.
7 TILLEY, HERBERT, *Brit. Med. Journ.*, April 1st, 1933.
8 DAVIS and POLLOCK, *Arch. Neurol. and Psych.*, 1932, xxvii., 282.

Nasal Tuberculoma

(A Case of the late Dr. DAN MCKENZIE)

By W. E. CARNEGIE DICKSON

JUST before his last illness the late Dr. Dan McKenzie suggested to me that we should give a joint demonstration to the Section

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upon this case, as he considered it interesting and unusual; and I feel that it is carrying out his wish for me to communicate it.

On *February 13th*, 1934, Dr. McKenzie handed me a specimen for examination, marked "Growth from the nasal septum." He had just removed it from the nose of a woman, aged 50, and he thought it was probably a malignant tumour growing from the ethmoid region.

The mass was about the size and shape of half a small cherry, the flat surface representing the plane of removal, and the cut surface having a variegated appearance, some parts being pink, others semi-translucent and pale yellow to white in colour. From the examination of sections, stained with hæmatoxylin and eosin, and by van Gieson's method, I gave Dr. McKenzie a preliminary provisional report that the condition might prove to be either granulomatous or neoplastic, as it had characteristics common to both conditions. It was highly cellular, but had numerous capillaries, and at parts was infiltrated with both polymorphonuclear leucocytes and plasma-cells, the latter being so numerous in some areas as to suggest the possibility of the condition being a so-called "plasmacytoma". I did not find anything in these sections to suggest neuro-epithelioma or any other form of neural or glial neoplasm. Figs. 1 and 2 illustrate the appearances at the surface, which was covered by squamous epithelium showing slight irritative proliferation; the subjacent loose cellular connective tissue contained small round cells and numerous plasma cells (Fig. 3). In some parts there was just the suggestion of caseation, with coalescing endothelioid cells and some breaking-down polymorphonuclears, making it necessary to consider the possibility of tuberculous or gummatous change. On cutting and examining numerous further sections, a single but very typical tuberculous giant-cell system was found (Figs. 4 and 5), and, after search of many Ziehl-Neelsen stained sections, a little group of four tubercle bacilli (Fig. 6), another of two bacilli, and again a single bacillus, were found, and the diagnosis of tuberculoma was definitely established.

Dr. McKenzie then told me that there had been some obscure abdominal condition, possibly tuberculous, when the patient was 20 years old. On *April 23rd*, 1934, he wrote to tell me that the patient had died of tuberculous meningitis on *April 4th*.

Dr. A. Gordon Gilchrist has supplied the following additional notes. He saw the patient from time to time during the period 1929-32, on account of chronic mastitis, and later because of a swelling of the first right metacarpal bone and, a little later, of the left ankle. The radiologist stated that there was a marked periostitis of the first metacarpal, which he was inclined to think infective but not tuberculous. The ankles were normal. There was no improvement on treatment with salicylates.

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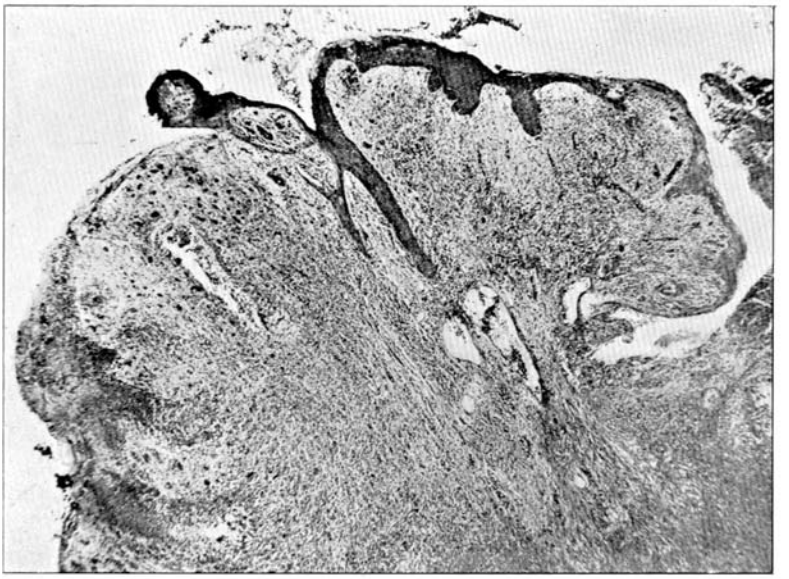


Fig. 1.
Very low magnification, showing general structure of the granulomatous mass. In this portion, it consists chiefly of non-caseated young granulation tissue (for details see Figs. 2 and 3). The irregular nodulated surface is shown at the top, partially covered by squamous epithelium, which shows a moderate degree of chronic irritative non-neoplastic proliferation, whilst over some parts of the surface it has desquamated off. Methylene blue and eosin. ×32.

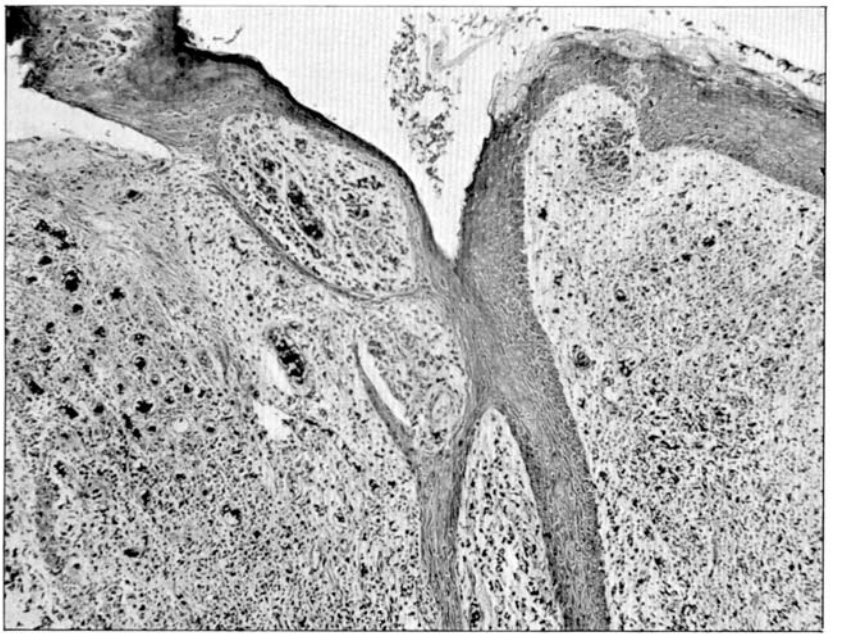


Fig. 2.
Ordinary low-power. Part of surface shown in Fig. 1. The young granulomatous tissue at one part contains numerous congested small vessels, whilst other parts are comparatively non-vascular. Methylene blue and eosin. ×100.

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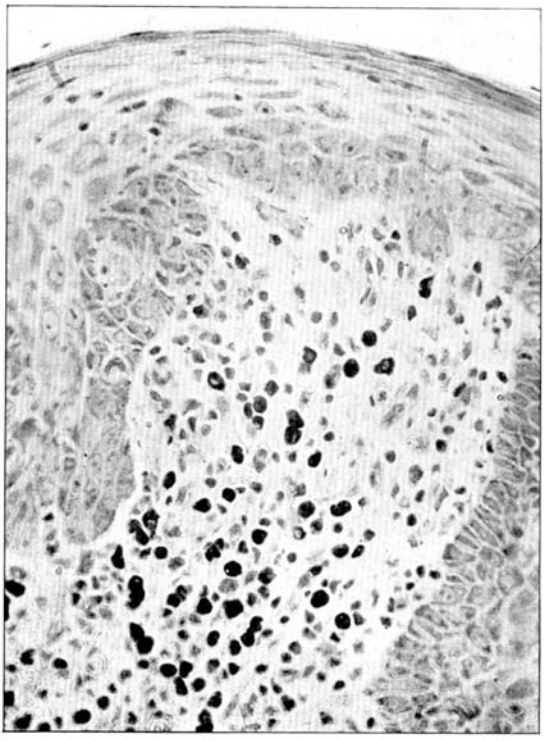


FIG. 3.
High-power view of section near surface, showing slight chronic inflammatory proliferation of the surface epithelium, but no tumour-formation. The subjacent loose connective-tissue contains small round cells and numerous plasma cells (the darkly-stained bodies). Pappenheim's stain. ×350.



FIG. 4.
Low-power view of a similar portion of the surface of the mass, showing a typical large tuberculous giant-cell in the centre of a chronic "tubercle". The irregularity of the surface is also well shown. Hæmatoxylin and eosin. ×100.

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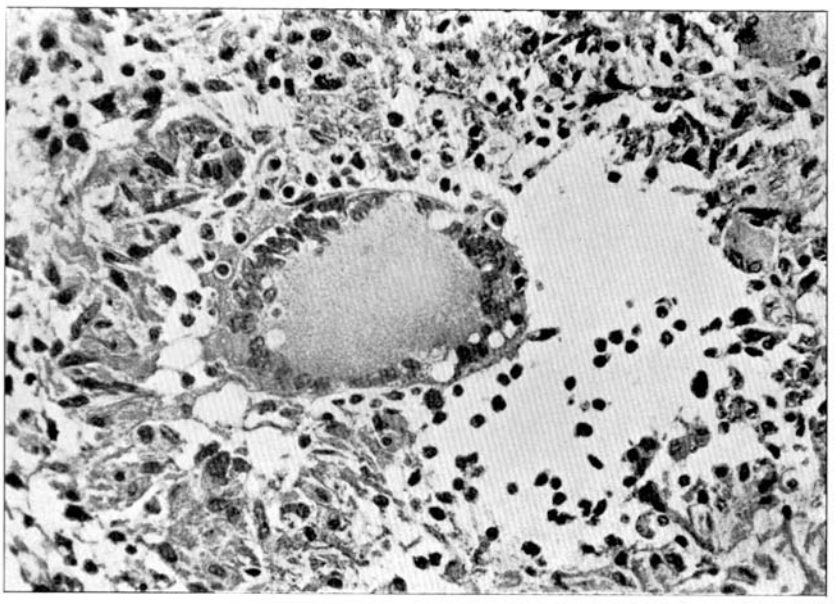


FIG. 5.
High-power view of the tuberculous giant-cell seen in Fig. 4. It shows the typical peripheral distribution of the nuclei and "hyaline" or "caseous" centre. Around it on the left is a zone of rather chronic "endothelioid" cells, whilst "small lymphocytes" are present in only moderate numbers. Hæmatoxylin and eosin. ×400.

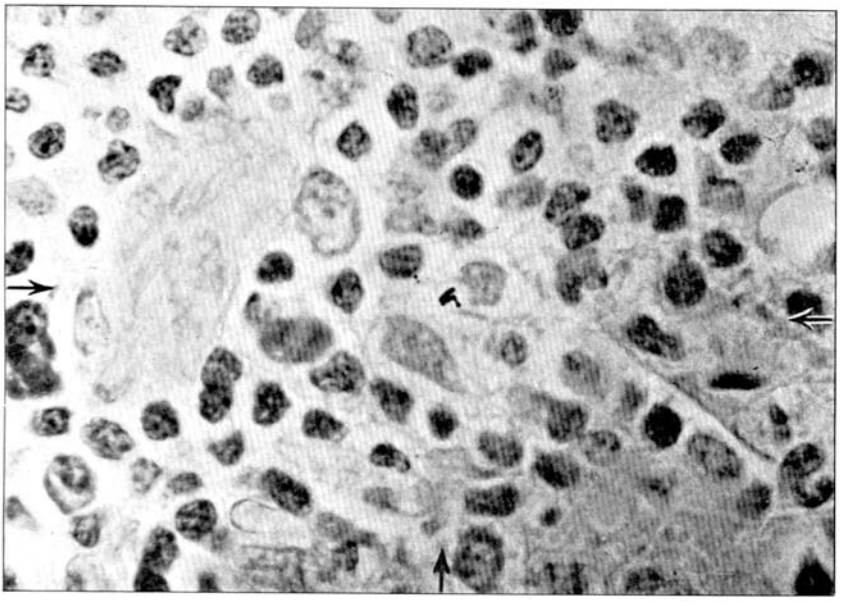


FIG. 6.
A small group of tubercle bacilli which in the actual specimen show typical "beading" but this is seen only in the lower right hand bacillus in the photograph. Ziehl-Neelsen carbol-fuchsin. ×1,250.

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Royal Society of Medicine

CASES

Tumours in Cheek. ? Fibro-myxoma.—MYLES FORMBY.

Female, aged 33. *May*, 1932: Caldwell-Luc operation and removal of encapsulated tumour, which had caused painless swelling in right cheek for 18 months. Edges of cavity diathermized. *June*, 1934: Noticed cheek swelling again—gradual increase in size without any other symptoms. Seen 18.3.36: Condition thought to be fibrocystic disease. 28.3.36: Partial excision of right maxilla. Uneventful recovery. Section of tumour removed in 1932 said to be fibro-myxoma. The Wassermann reaction is negative.

The PRESIDENT said he thought that the growth was a giant-celled tumour. The forecast was good, and nothing further need be done.

Œsophageal Pouch.—LESLIE POWELL.

The patient, a man, aged 51, has had difficulty in swallowing for the past year; he had been able to get his food down, but it stuck at about the root of the neck. There has been no vomiting, and he has not lost weight. In other respects he feels well. On examination with the œsophagoscope I could not find the opening, but there was no sign of growth or ulceration. The passage of the tube was obstructed by a smooth swelling behind the posterior wall of the œsophagus.

The PRESIDENT said that, from the skiagram, there seemed no doubt that there was a pouch. The question which might arise was as to whether malignant disease also was present. A certain proportion of cases of the kind were accompanied by malignant disease, or malignant disease had supervened at a subsequent date. The outline in this case seemed somewhat more irregular than in the typical case of simple pharyngeal pouch. It would be well to examine the patient with the œsophagoscope before attempting to remove the pouch.

Postscript.—The pouch was removed 9.5.36. [L.P.]

Specimen: Carcinoma of Trachea.—E. WATSON-WILLIAMS.

Male, aged 56. *April 6th*, 1936: Gradually increasing dyspnœa for six months: recently several attacks during which he could not draw breath at all for some seconds. Cough and hæmoptysis one year ago; not recently; no loss of weight; during the last month slight dysphagia ("the first mouthful sticks") and slight huskiness at times. On examination, definite respiratory stridor even while lying in bed, most marked on inspiration; no sucking-in of root of neck or of ribs. Diagnosis; neoplasm of trachea below upper end of sternum. Larynx normal; X-ray report: "Neoplasm of superior mediastinum." Tracheotomy, local anæsthesia;

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lower bronchoscopy; just above the bifurcation of the trachea (upper edge 15·5 cm. from the pomum Adami) a broad sessile growth springs from the posterior wall, projecting forward to reduce lumen to semilunar slit; surface ulcerated. Rubber tube inserted past growth (probably into right bronchus). Œsophagoscopy: at 26 cm. from upper gum, lumen almost obliterated by firm mass beneath anterior mucosa; no ulceration. The patient later developed pneumonia and died.

Report on biopsy: "Rapidly growing carcinoma." The specimen shows a large growth invading the trachea and right bronchus, and compressing the œsophagus.

ABSTRACTS

EAR

Questions on Localization within the Central Vestibular System. 1. *Inflammatory, Non-suppurative Diseases of the Brain Stem (Encephalitis).* RUDOLF LEIDLER. (*Monatsschrift für Ohrenheilkunde*, lxx., 1936, 801.)

This paper describes fifteen cases of non-suppurative encephalitis in which the central vestibular system was affected.

1. In all cases only the vestibular apparatus was concerned, the cochlea remaining intact.

2. In no case was the caloric reaction normal. Several cases showed total lack of response. Experiments on reptiles suggest that the caloric reaction is a much younger and therefore more vulnerable reflex than the response to rotation.

3. All patients, with the exception of two, gave abnormal (nystagmus) response to the caloric and rotation tests. Analogous abnormal reactions occurred in experimental animals, in human anencephaly, after birth injuries and in disturbance of consciousness. The author believes that rhythmic nystagmus is a phylogenetically young mechanism which, when disturbed, tends to revert to an older suppressed mechanism of single phase deviation.

4. Spontaneous horizontal nystagmus was present in seven cases.

5. Vertigo played an important rôle in the history. The frequent dissociation of the vertigo and other vestibular symptoms was striking.

Discussion on the cause of giddiness, the problem of the thalamus, etc.

6. An attempt to correlate the symptoms with a more accurate localization in the central vestibular system.

DEREK BROWN KELLY.

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