morning and worse in the evening. A diffuse headache is often due to nasal obstruction or rhinitis, but it can also be caused by disease of the accessory cavities. We all know the distressing symptoms which follow a so-called cold in the head (acute rhinitis). Professor Guye, of Amsterdam, calls the complex of symptoms which follow nasal obstruction or rhinitis "aproxesia," the inability to concentrate the thoughts on any one subject. These symptoms—diminished capacity for work, loss of energy, dislike to go anywhere or do anything, forgetfulness, loss of memory, general mental depression, etc.—have in some cases been so severe as to cause patients to commit suicide.

OVER-ZEAL.

In conclusion, I should like most strongly to dissociate myself from those enthusiastic practitioners who think that every little spur or deviation of the nasal septum, or slight hypertrophy of the mucous membrane of the nares, is most dangerous and harmful, and must always be removed. Nor do I believe that all diseases are of nasal origin. But I do think that in all cases of asthma, hay fever, laryngitis, bronchitis, deafness, headache, gastritis, etc., the nares should be carefully examined, and, if necessary, treated. Every patient who suffers from nasal obstruction or nasal discharge should be thoroughly treated, especially in childhood. In fact, it should be part of the routine examination on the part of the physician, to ask the patient if he can breathe with his mouth shut, if one or both sides of the nostril are not occasionally blocked, if he can smell and taste, and if there is any discharge from the nares. If this were done thoroughly, a good many mistakes in diagnosis would be prevented, and many patients saved from much unnecessary suffering.

NASAL DISEASE AS A CAUSE OF HEADACHE.

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It is now a well-recognized clinical fact that headaches may in some instances be caused by nasal disease, but the relative frequency of this cause, the special character of the pain, and the detection of the various conditions of the nose giving rise to pain are not so well known.

Practically we find that diseases of the nose giving rise to headache may conveniently be placed in three groups. First, acute and chronic catarrh, or suppuration in the nose or its accessory cavities; second, deformities or diseases which cause mechanical interference with the functions of the nose; third, cases of latent obstruction, which are specially apt to escape detection.

In the first group of cases the pain is usually located at the root of the nose and the frontal region, less frequently in the occipital and vertical regions. We are all familiar with the headache which at times accompanies an ordinary nasal catarrh—a pain which may in some cases be little more than a sense of weight and fullness, but in others may vary from a dull aching pain across the root of the nose and in the frontal region to one of the greatest severity.

In acute suppuration of the antrum or frontal sinus the pain is experienced in the same areas, but is constant and usually more intense, and in the case of antral suppuration there may be pain localized in the antrum with infraorbital neuralgia, and in either case there may be tenderness on palpation over the sinus affected.

In chronic suppuration there is often no pain at all, but in some cases severe frontal or occipital headache is present, frequently every day, showing a remarkable tendency to recur at particular and regular periods of the day. The headache in these cases is almost invariably present when the subject awakes in the morning; as the day advances the pain becomes less severe, and usually passes off entirely during the latter part of the day.

There is no fixed relation between the area over which the pain is experienced and the particular sinus affected, even in cases which are apparently precisely similar, although the seat of pain is usually constant in the same case. Frontal pain seems to be just as frequent when the antrum is affected as when the frontal sinus is attacked. In disease of the antrum, the pain is usually frontal, in frontal sinus disease it may be frontal or occipital, when the sphenoidal sinus is affected it may be occipital or may be felt at the back of the eyes.

Pain is invariably present in acute sinus suppuration and

in about half the cases of chronic empyema. I have notes of several cases in which constantly recurring headache was the only symptom of chronic sinus suppuration, and the frequent use of the handkerchief directed attention to the nose. In such cases, where the headache is severe, no importance may be attached by the patient to the presence of a nasal discharge from which only slight inconvenience is experienced. In some instances the suffering during an attack is so great that the patient is entirely incapacitated from work, and the resemblance to the typical forms of migraine so marked that the differential diagnosis may be difficult.

Syphilis may attack the nose, causing ulceration of the mucous membrane and necrosis of the bone, and may give rise to a purulent discharge with severe pain. In these cases the pain is usually worse towards and during the night. The tuberculous affections of the nose are not usually accompanied by much pain.

In the second group of cases the headache is almost invariably frontal, and is associated with constant nasal obstruction on one or both sides. In the third group the symptoms are very similar, but there is no obvious obstruction to nasal respiration during the daytime. The congestion of the mucous membrane over the turbinate bones is intermittent, and always worse when the subject assumes the horizontal position. In both these groups the tendency is usually for the pain to be present in the early morning and to pass off during the later hours.

The actual cause of the pain in the head in all three groups of cases seems to be (a) the pressure of hypertrophied and swollen parts upon each other, more especially the middle turbinate against the septum; (b) actual congestion and inflammation of the nasal mucous membrane; (c) retention of pus; (d) the disturbance of the blood and lymphatic circulation at the base of the skull: this may probably be reflex, since it is possible to have a complete nasal obstruction without any headache whatever. The differential diagnosis of empyemata of the sinuses of the nose is beyond the scope of this paper, but the presence of a purulent discharge in the middle meatus or between the middle turbinate and the septum is an indication of an affection of one or more of the accessory cavities for which surgical interference may be required.

In the second group of cases a careful examination of the nose will reveal the presence of the obstruction to nasal respiration. It must be remembered that the obstruction may be in the posterior portion of the nose, and posterior rhinoscopy will demonstrate an obstruction in a nose which may appear perfectly free to anterior inspection. Growths and inflammatory swellings in the nose, spurs, and deviations of the septum and various forms of hypertrophy of the turbinates may be present.

In the third group the abnormally erectile character of the mucous membrane over the turbinate bones may not be detected at the first examination, but a furrow or depression in the mucous membrane over the septum will often be seen opposite the turbinate, caused by the pressure of the turbinate during the intermittent periods of enlargement. The characteristic history of restless sleep, morning headache, dry mouth and throat on awakening will be obtained.

In all cases it must not be forgotten that headaches and nasal suppuration or obstruction may exist together, but it does not follow that the nasal disease is the cause of the headache.

CONCLUSIONS.

The following facts seem to be clearly established:

1. Nasal disease is undoubtedly the cause of headaches in a certain percentage of cases, although it is doubtful whether it is possible for headache to be produced by any nasal condition which does not give rise to discharge, or to obstruction to normal nasal respiration.
2. In all cases of persistent headache, a careful examination of the nose should be as much a routine practice as the examination of the urine, the teeth, and the eyes; since in some instances the nasal symptoms may be ignored by the patient, and a careful examination of the nose will be necessary to establish the diagnosis.
3. Suppuration in the accessory sinuses and marked nasal obstruction, constant or intermittent, should be thoroughly treated.
4. Small spurs, deviations, and hypertrophies not causing obstruction should be left alone, as no relief will be given from the headaches by treatment of these.
5. If the middle turbinate bones are enlarged and pressing

upon the septum, especially upon the tubercle, and if all other possible causes of headache have been eliminated, partial removal of the hypertrophied bone should be advised, since in many such cases complete relief is given.

A NOTE ON RHINITIS CASEOSA.

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(From the Physiological Laboratory, King's College, London.)

A CASE of this interesting condition is reported by Mr. W. H. Kelson in the *BRITISH MEDICAL JOURNAL* for December 31st, 1904. The author gives an account of the cheesy material removed, which in his case consisted of a mass which was structureless except for a faint striation. It was composed of fatty material, and contained no cholesterin and no remains of epithelium.

Recently a case occurred in King's College Hospital, under the care of Mr. Arthur Cheatle, to whom I am indebted for an opportunity of examining this interesting deposit. The clinical features of the case were in no marked way different from those of Mr. Kelson's case, but the deposit differed very considerably.

It was a putty-like material with a very offensive faecal smell. It was yellowish in colour, and I expected to find that it was largely fatty in nature. On the contrary, however, it contained practically no fat. It gave only the very slightest reaction with osmic acid, and the ethereal extract left no greasy stain when evaporated.

The extract with chloroform contained cholesterin in small quantity, which gave Salkowski's test, and consequently was true cholesterin, not iso-cholesterin. On incineration, there was an extraordinarily large residue, mainly calcium phosphate.

On microscopical examination the deposit was seen to consist of a mass of needle-shaped crystals of calcium phosphate. These were embedded in a granular mass of detritus, none of the granules of which could be stained black with osmic acid. Staining with methylene blue gave no evidence of epithelial cells or other organized residue, but with iodine and sulphuric acid I was able to stain several hyphae of an unrecognizable fungus.

In discussing the etiology of this condition Mr. Kelson dismisses tuberculosis as a cause, and the subsequent rapid cure of these cases is certainly not suggestive of tuberculosis. The theory of its analogy with cholesteatoma is also difficult to reconcile with the absence of any epithelial remnants. The other theory suggested by Mr. Kelson is that it is a condition of chronic suppuration with retention. On the one hand the nature of the deposit in the case under my own notice is certainly very different from that of inspissated pus, while there is no evidence that there has ever been retention of pus, the deposit being found free in the nasal cavity.

There is, however, another condition which may be somewhat analogous—namely, the chronic catarrh which in the gall bladder is accompanied by the formation of calculi containing calcium compounds and cholesterin. Is it not possible that in rhinitis caseosa we have another mucous membrane in a state of chronic catarrh in which a similar process is taking place, leading to the formation of these pultaceous masses, secondary decomposition being responsible for the offensive odour?

CHRONIC SUPPURATIVE OTITIS MEDIA: THE NECESSITY OF EARLY, SYSTEMATIC, AND ENERGETIC TREATMENT.

By HENRY SMURTHWAITE, M.D.,
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It is not my intention to enter at length into the origin of the disease of chronic suppurative otitis media. The greatest percentage of cases arise during childhood, and apart from the specific febrile diseases—of which scarlet fever claims the largest number—chronic catarrhal conditions in the middle ear is the starting point, the latter being dependent on adenoid vegetations in the postnasal space. Subsequently micro-organisms find their way up the Eustachian tube, or, it may be, by the blood or lymph channels, to the middle ear, and there set up conditions which result in acute inflamma-

tion of the lining membrane, with, finally, pus formation and perforation of the membrana tympani, the same tending to become chronic from lack of appropriate treatment.

In looking back over a period of years, facts stand out clearly before my view, and now in the light of riper experience I can unhesitatingly say that many a valuable life to the State might have been saved had early energetic treatment, systematically carried out, been adopted. But I think you will all agree with me that many of these cases of "running ears" have been left to cure themselves as best they could, or at most only a half-hearted endeavour to stay the mischief has been attempted. Of course, unfortunately most of such cases are to be found among the poor who have to battle with insufficiency of food and general unhygienic surroundings; nevertheless, this should make us not the less earnest in our efforts.

I am quite confident were I to go round the National Board schools in this town and examine the ears of the children attending those schools, I should find a large number suffering from discharging ears of a more or less mild or severe type; and, what is more, a large percentage of these cases were under no form of treatment whatever, their parents having no idea of its existence, or attached no importance to the same from pure ignorance of its possible danger.

When so much is nowadays being written and talked about the physical degeneration of the race, surely it is high time the State appointed medical men, as in Germany and America, to periodically examine children attending the national schools, who, apart from their recognizing and preventing the dissemination of the infectious diseases, would nip in the bud many early cases of suppurative ear disease which, if untreated, might ultimately terminate fatally, or lead to a more or less permanent deafness.

INFECTION BY WAY OF THE AUDITORY NERVE.

As certain facts bearing on my last remarks, I may instance 3 cases of death in the Royal Infirmary during the present year, the primary cause of which being directly attributable to old-standing and untreated middle-ear disease. In 2 of these cases the immediate cause of death was cerebral abscess, while in the third the patient died from acute septic lepto-meningitis. It is not generally recognized that septic mischief in the middle ear can reach the brain or its coverings by way of the labyrinth and auditory nerve, but that such is a fact this case fully illustrates.

CASE I.

The patient, with a pustular discharge from the ear, and showing signs of sinus thrombosis, was operated on, but on opening up the lateral sinus it was found quite patent. The mastoid and antrum were thoroughly cleared out, the wound dressed, and the patient sent back to bed. The following day death supervened, the patient having never regained consciousness from the time she was brought into hospital. At the necropsy it was found that, although the sinus and brain were quite healthy, there was pus in the subarachnoid space, which, while not extending over the convexities, was most marked on the cisterna basillia. Injection of the vessels was not a prominent feature, this stage evidently having given place to pus formation, of which there was a large quantity. No doubt, had this patient survived a few days longer, a cerebellar abscess would have resulted, for the pus was gravitating to the posterior fossa, and would, sooner or later, have burst through on to the surface of the brain, which point I suggested at the International Congress at Bordeaux this year when recording the case. Through the courtesy of Mr. Leech, whose patient the case had been, I made sections of the petrous bone, and by this means was able to trace pus from the labyrinth along the lymph sheaths of the auditory nerve to the meninges by way of the internal auditory canal. The semicircular canals were full of pus, the same having found its way into the vestibule through a perforation in the foramen rotundum.

This is an instructive case, and should make us bear in mind that we have not always got to the seat of the disease, apart from cerebral or cerebellar abscess, after the performance of the radical operation and opening up of the lateral sinus.

Otologists are now convinced, from the number of cases recently reported, that suppurative labyrinthitis, secondary to septic middle-ear disease, is of much more frequent occurrence than was formerly supposed to be the case. Either the round or oval window may be perforated, or a necrosis of the horizontal semicircular canal's bony wall may exist, and thus a propagation of infection from the middle ear to the labyrinth is possible, but the mode of origin of septic labyrinthitis in the greatest percentage of cases, according to statistics, is through direct communication between the middle ear and vestibule from perforation of the fenestrae rather than necrosis of the bony walls.