the left lateral sinus thrombosed? If so, had the thrombus spread from the right side, or was it a primary condition? On February 14th and 16th there was a slight rigor, which strongly suggested sinus thrombosis. Antipneumococcus serum was injected on the 17th, and polyvalent staphylococcus serum on the 18th and 19th. The general symptoms of toxæmia were so slight that it was thought that the infection was most probably staphylococcal. As a matter of fact, an examination of the pus obtained from the lateral sinus showed that the causal micro-organisms were the *Staphylococcus pyogenes albus* and Hoffmann's bacillus or a similar micro-organism. These injections had no obvious effect. On the 19th there was slight twitching of the left side of the mouth and tenderness along the left jugular. An examination of the left ear showed no signs of any recent disease; no optic neuritis. It was decided to expose the right lateral sinus.

Second Operation.

Under chloroform no thickening of either jugular could be detected. Before the lateral sinus was exposed over 3-in. of sclerosed bone had to be cut away, and two more gouges were sacrificed. With the greatest difficulty (owing to the intense hardness of the bone) the sinus was exposed along about an inch of its course. It was full of fluid stinking pus. As there had been some twitching of the left side of the body, and the exposed dura was bulging, it was incised, but nothing escaped. This proceeding was, I think, an error, but no harm resulted. The pus was collected and a vaccine prepared by the Clinical Research Association. At the end of the operation the patient's condition was too precarious to allow ligature of the jugular to be carried out. The result was eminently satisfactory; the patient's condition rapidly improved, although his temperature did not fall much and his pulse remained rapid. The pulse became stronger and regular and he felt much better. His tongue rapidly became clean.

Five days later the vaccine arrived, and was at once used. An increasing dose was given daily, and each was followed by an evening rise of temperature. The following doses were injected: 25 millions, 50 millions, 75 millions, 100 millions, and 125 millions. After the fifth dose symptoms like those of serum disease appeared, skin rashes and joint pain, so the treatment was discontinued. On March 7th the temperature sank to normal. The mastoid wound was healing rapidly. It had been irrigated daily with boracic lotion and hydrogen peroxide and packed with iodoform gauze.

March 10th. The patient's temperature began to rise again, and he received an injection of 175 millions of vaccine.

March 16th. A swelling appeared over the inner aspect of the right tibia, which was red and tender. This did not go on to suppuration, but rapidly got well.

March 20th. The temperature is gradually falling to normal. There was a little diarrhoea with bloody stools. The wound has almost healed.

The patient now appeared likely to make a good recovery, but further complications soon appeared. The temperature became normal, the patient seemed perfectly well, but a swelling appeared over the left squamous part of the temporal bone. This eventually fluctuated, and the patient was anaesthetized and the scalp incised. Nearly the whole of the squamous portion was found loose as a sequestrum and was removed. The skull bones were necrosed all round and a probe could be passed down to the dura in every direction. The dura was exposed over an area of about one square inch and was bathed in pus. The patient, however, declared that he was perfectly well, and his temperature was normal. There were no signs of meningitis. No sooner had this wound healed than a fresh swelling appeared. It was incised, and again bare bone, riddled with holes and widely necrotic, was exposed. The process was repeated until hardly a square inch of his skull escaped. In all, he had twenty operations, and often had six or seven tubes in his head, draining pus. All the time he remained perfectly well. After a full year's treatment in hospital he was discharged hale and hearty, and returned to his work as a fitter at Worcester. Before doing so he was two months at a convalescent home, and the last time I saw him he looked the picture of health.

The question may be asked, Is this case an example of the triumph of vaccine therapy? It is at least extraordinary that a man with such extensive osteomyelitis of his skull should remain in perfect health, with no temperature, and no sign of any cerebral irritation. Mr. Leedham-Green, who saw the case, said he had never seen one like it, and I have never heard of one. In Tilley's book, *Diseases of the Nose and Throat*, a skull is figured on page 188 which gives some idea of the condition of my case, although fortunately his skull was not quite so bad.

THE department of public health in Queensland has commenced this year a campaign in Brisbane against mosquitos, the main object in view being the abolition of dengue fever and filarial disease. The co-operation of all householders is being sought by circulars and visits from officials from the public health department instructing them how to abolish breeding places on their premises and exclude adult mosquitos from their houses.

NASAL OBSTRUCTION DUE TO OSTEOMATA OF THE POSTERIOR NARES.

By F. P. STURM, M.Ch.,

LEIGH, LANCs.

OSTEOMATA of the nasal cavities are so infrequently met with that they constitute the rarest of all the varied causes of nasal obstruction. Cases have been reported by Stein, Ballenger, and Boenhaupt, but nothing definite is known as to the etiology of the condition. Iodides are stated to be of value in cases with a specific history (Ballenger). The following is the single instance of the condition with which I am personally acquainted.

A boy aged 11 was sent to me by Dr. M. J. Halton for operation on account of deafness and complete nasal obstruction. The septum and turbinates as viewed by anterior rhinoscopy were apparently normal. Both drumheads were retracted and immobile; tuning-fork tests revealed typical conductive deafness. The tonsils were enlarged; the naso-pharynx was packed with suppurating adenoid masses which occluded the Eustachian tubes and rendered it impossible to obtain a view of the posterior nares by means of the rhinoscopic mirror. A former operation by another surgeon, four years previously, had lacerated the soft palate, and torn the right half of the uvula completely away. There was no history of syphilis or tubercle.

Under a general anaesthetic the ragged edge of the palate was trimmed, the remains of the uvula removed, the tonsils enucleated, and the adenoids curetted away. Digital examination

Posterior rhinoscopic image.

then revealed a dense bony enlargement of the posterior end of each inferior turbinate. These growths completely occluded the upper respiratory passages, and all but met in the middle line behind the vomerine plate. Each was of the size of a cherry, and of such ivory denseness that neither spokeshave nor saw was able to make the slightest impression, though repeated attempts were made with both these instruments and with posterior nasal forceps. The result of the operation has been that the deafness has completely disappeared and the general health greatly improved, as would naturally follow the removal of suppurating adenoids and diseased tonsils, but the nasal obstruction remains, and will almost inevitably result in the recurrence of the adenoids.

If this case comes up for operation again, or in any similar case, one would be inclined to attempt the removal of the bony tumours by means of a long-bladed gouge or chisel introduced by way of the anterior nares. The accompanying illustration is a sketch of the posterior rhinoscopic image made two months after the operation.

NOTES ON ARTHRITIS.

BY

J. RUPERT COLLINS, M.A., M.D.(DUB.UNIV.),

PHYSICIAN TO CHELTENHAM GENERAL HOSPITAL.

THAT there is a very real difficulty in making a satisfactory classification of the various forms of arthritis is recognized by most writers on the subject, and in practice there is sometimes still greater difficulty in placing a particular case so as to conform to the academic connotation of any particular type. The difficulty suggests that the customary classification is an artificial one and does not correctly represent this form of disease. There is nothing strange in different micro-organisms causing very similar symptoms, and, in fact, *a priori*, it is more remarkable that these primitive vegetable organisms when planted in the body should evoke such dissimilar and characteristic symptoms in the host as many of them do. It is, then, not difficult to see that any classification based on symptoms or morbid anatomy must be a confused one. When the bacteriology of arthritis is more complete, it will be an easy matter to picture clearly the arthritic changes produced by infection in general, together with the peculiar phenomena associated with infection by certain bacteria in