gradually disappeared. He remained in hospital for a month, and made an excellent recovery. When I saw him recently he was quite well, and his hearing was fair; he had had no further giddiness. The post-aural wound soon healed, and although there was a slight discharge from the ear for a month or two it is now dry.

In this case the symptoms attributed to cerebellar abscess were caused by the intracranial pressure of a large extradural abscess, and also by chronic perilabyrinthitis, which subsided as the mastoid suppuration cleared up. A more thorough examination of the vestibular apparatus would probably have helped towards a more precise diagnosis, but it is obviously impossible to carry this out in the case of a very sick man with a temperature of over 102°.

CASE II.

History.—D. B., a man aged 52, was sent into hospital by his doctor as an emergency acute mastoiditis. He complained of very severe pains in his head, which he had had for six or eight weeks, sometimes at the vertex, but mostly behind the left ear. He had been unable to sleep or to work for over a week. He had never had any ear discharge, and was not deaf. Two days before he came to hospital a swelling had appeared behind the left ear.

Examination.—The left mastoid region was swollen, and tender to the touch. There was no discharge from the left ear, and the tympanic membrane was opaque, but otherwise seemed normal. Rinne's test was positive, and the hearing was apparently unaffected; there was no vertigo, no nystagmus, no optic change apparent. His temperature was 99.6°, his pulse rate 112, and his respiration rate 24.

Diagnosis.—A diagnosis of acute mastoiditis on the left side was made, and an immediate operation was decided upon.

Operation.—I made the incision for the Schwartz mastoid operation on the left side, and pus appeared at once when I reached the bone. The mastoid cells were necrotic and full of pus, more so towards the tip of the mastoid process. I tracked the pus downwards and behind the lateral sinus to the posterior fossa of the skull, from which pus welled up as I made a wider opening into it. The dura mater over the cerebellum was bulging, and I made a crucial incision over the bulge, through which a small quantity of pus came out. I then opened up the antrum, "bipped" the wound, packed it lightly with gauze through to the cerebellum, and left the posterior wound open.

The patient was in hospital for just over a month, and left in good health, but with a post-aural sinus discharging. When I last examined him, three months after the date of the operation, this sinus had cleared up, and the posterior wound was completely healed. Rinne's test was positive; with the left ear he could hear the conversational voice at 35 feet, and a whisper at 6 feet.

This case presented no symptoms or signs of cerebellar abscess, nor, indeed, of any intracranial lesion, though perhaps the severity of the localized headache should have made me more suspicious than it did. It is also interesting as being a case of mastoiditis without any apparent middle-ear inflammation (so-called latent otitis media), which is rare in adults, but somewhat more common in children.

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, November 29th, 1924, p. 993. ² *Cerebellar Abscess*, English edition, p. 1. ³ *Diseases of the Ear*, p. 259.

VACCINE TREATMENT OF SPLENOMEGALY IN CHRONIC MALARIA.

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In the tropics the presence of children with chronically enlarged spleens is always regarded as a source of danger of infection, as the enlargement is evidence of the presence of the malaria parasite in large numbers in the spleen itself, with the possibility of its appearance in the peripheral circulation at any time. The percentage of children suffering in this way is taken as an index of the health of the community so far as malaria is concerned.

Being fully convinced that some antitoxin is formed in the blood of persons who have suffered from true dengue fever, which has a destructive action upon the malaria parasite, I obtained a serum from the blood of persons just recovered from true dengue and experimented with it, by intramuscular injection, upon children with chronic splenomegaly, as I concluded that it would probably destroy the parasite, in which case the spleen would gradually resume, at any rate to some extent, its normal size. Should my conclusions be correct, the shrinkage would prove the presence of the antitoxin.

The photographs reproduced are of the three children upon whom I first tried this method of treatment. They show: (1) the line of the splenic margin before treatment; (2) the shrinkage at the date the photographs were taken; (3) the costal margin.

Case A, a boy aged 8, and Case B, a boy aged 5, each received the first injection on October 16th, 1924, the second on October

23rd, and the third on November 11th. The photographs were taken on December 25th. Case C, a boy aged 13, received the first injection on November 9th, 1924, the second on November 16th, and the third on November 30th. The photograph was taken on December 14th. I examined this patient again on March 1st, 1925, and found the spleen normal in size, but very mobile, as the ligaments were very lax.

These cases were chosen as having enormous spleens, a deficient haemoglobin index, and as having been under the usual treatment for many months without effect. They had no other treatment but the serum after the first injection. I claim to have proved—

1. That an antitoxin against malaria exists in the blood of patients who have suffered from true dengue.
2. That the antitoxin is due to the presence of dead (not artificially killed) dengue germs, thus forming a true vaccine in the blood serum.
3. That this serum, being a vaccine, and having a destructive effect upon the malaria parasite, contains dead germs which must, in life, have had some close connexion with that parasite, or be a modification thereof, even as the active principle of vaccinia is a modification of that of variola, as, were there no connexion between the two diseases, malaria and dengue,

it could not possibly have the effect that it undoubtedly has.

4. The vaccine having such an effect on malaria parasites present in the circulation (even though not causing acute attacks of malaria) should, by its presence in the blood, prevent the proliferation of parasites injected into the blood as sporozoites by infected anophelines, and hence should act as a prophylactic against the disease.

5. The logical sequence is, therefore, that by injections of this vaccine artificial immunity from malaria can be procured; the length of time that immunity holds good, and the quantity of vaccine needed to make it absolute, being matters for further experiment.

CASE A.

CASE B.

CASE C.