and of the interosseal, and the general distribution of nodules all over the body; *thirdly*, and most important, by the discovery of the leprosy bacillus.

With a sterilized platinum rod some of the nasal and throat discharges were smeared very thinly on a glass slide, dried, and stained with carbol fuchsin in exactly similar way to the method used for demonstrating tubercle bacilli. Both bacilli retain the carbol fuchsin stain after being treated with weak sulphuric acid.

The leprosy and tubercle bacilli resemble each other in size, shape, and staining properties, but the former tends to accumulate in masses, and, from the drawing taken, this clumping arrangement can be seen in a marked degree.

The bacillus can also be got by scraping a nodule with a scalpel until a little serum exudes, laying this on a slide, and staining it. This latter method, however, is rather painful if local anaesthesia is not used, and if there be no anaesthesia of the skin. In this particular case the skin has been tested from time to time, but no anaesthesia whatever can be made out. If anything, the skin is hyperaesthetic at certain places.

The recognized treatment of this malady is by one or other of three drugs—Chaulmoogra oil, arsenic, or mercury, but preference is given in most cases to Chaulmoogra oil, as distinctly beneficial results have been obtained by its regular and long-continued use. In cases like the above, where there are extensive nodules, and the formation of a crusty exudate on the skin, local as well as constitutional remedies must be applied.

Sir Malcolm Morris, by whose kind permission I publish this case, uses the following ointment for the skin, rubbed in twice a day:

R.	Ac. salicylic.	...	...	gr. xx.
	Ichthyl.	...	...	5 ss.
	Hydrarg. oleates, 10 per cent.	...	...	3 ss.
	Zinc oxid.	...	...	gr. xxx.
	Vaseline	...	...	ad 3 j.

In addition the oil is given in capsule commencing with 10-m doses three times a day, and increasing the dose gradually, until about 1 drachm is tolerated thrice daily. Under the above treatment this particular patient has vastly improved. The nodules have subsided, and in many places disappeared altogether. Whether this improvement, however, will continue is doubtful, as the ultimate prognosis in all cases of leprosy is extremely unfavourable.

KALA-AZAR IN THE ROYAL NAVY,*

WITH ILLUSTRATIVE CASES.

By FLEET SURGEON P. W. BASSETT-SMITH, R.N.
(Communicated by permission of the Director-General, R.N.)

While employed in a naval hospital at home, and dealing with diseases from foreign stations, it is one's fortune to meet occasionally with some of the more obscure cases of irregular fever and cachexia, the etiology of which is unknown or only partially known. Of the latter, the disease called kala-azar, Dum-dum fever, etc., is of particular interest, especially when attacking Europeans, or when it has been possible to demonstrate the parasitic organism. That the disease is more common than is usually supposed is very likely: I can look back on 4 cases under treatment in my wards in which the clinical evi-

dences were very strong, though it is only in the present instance that proof has been obtained; for want of this proof the other cases were returned as "splenic anaemia." In the latest account of the disease, by Leishman, the original endemic centre in Assam and Bengal has been widely extended, though definite cases from other regions

Fig. 1.—Hepatic blood multiplied 1,000 times.

are not common. He mentions Southern India, Ceylon, Burma, China, Egypt, Tunis, and Algeria. In my 4 cases the first contracted his illness in South Africa; the second was originally a merchant seaman, and had been much to India. In both the symptoms were typical—very large spleens, very low white blood counts, and relative very low polymorphonuclear counts. In both 2 c.cm. of blood was drawn off from the spleen with negative results. These cases were fully reported in the BRITISH MEDICAL

Fig. 2.—Citrated culture forty-eight to seventy-two hours. Leishman bodies. Kala-azar.

JOURNAL of November 11th, 1905. I attribute the want of success in finding any parasitic organisms then to the large quantity of blood drawn off and not to their being absent from the organ.

Case 3 was a chief stoker, aged 38. There was a history of chronic anaemia, commencing while in South Africa, attended with slight fever, recurrent haemorrhages from nose, stomach, and bowel (at times severe); great enlargement of the spleen, a reduction of the red cells to 2,000,000, the white being 2,100, and haemoglobin 40 per cent. The

* Read before the Society of Tropical Medicine and Hygiene.

Fig. 3.—A, Admitted to Haslar. B, Blood from liver; Leishman bodies abundant. D, Discharged from Haslar.

polymorphonuclear cells were relatively much decreased. In this case no parasitic bodies were found in the peripheral blood, and he refused to have any drawn off from either spleen or liver; therefore although all the symptoms pointed to kala-azar, its existence was not proved.

Case 4. The patient the subject of this paper was admitted last November for malarial cachexia.

He gave the following history: From 1894 he served on the East and West Coasts of Africa, where he contracted malarial fever; from 1896-1901 on the Australian coast; in 1902-3 he was on the East Indian station, and lived on shore in Bombay and Trincomalee; in 1904-6 he was in China, being quite well; he lived on shore at Hong Kong and Wei-hai-wei, and visited Shanghai, Tientsin, Hankow, and Siam. On arriving in England in 1906 he began to feel ill, was treated for influenza for a month, and then, improving, went to the Mediterranean. After three months, vomiting, anorexia, loss of flesh, pallor, headaches, and irregular fever set in. He was treated for malaria, and invalided to England.

On admittance to Haslar he was a very old, cachectic-looking man, the skin was dry and earthy, he complained of headache, dyspepsia, epistaxis, and general weakness. The spleen extended to within 1 in. of the middle line and nearly down to the crest of the ilium; it was smooth and hard. The liver was also enlarged; the urine was not albuminous. The blood gave 3,800,000 red cells and 2,000 whites. A relative count gave polymorphonuclear cells 48 per cent, large lymphocytes 27 per cent, and small lymphocytes 25 per cent. There was irregular fever and a fast pulse.

These symptoms continued, the fever being of an undulant character. A small quantity of blood was drawn off from the liver, and Leishman bodies, both singly and in groups, were found. He was put on atoxyl, calcium lactate, iron, and bone marrow; under this treatment, the atoxyl being pushed to 12 grains a day, the hæmorrhages stopped, the fever passed off, and he gained weight. A glance at the chart will explain how possible it is in such a case to confuse this condition with Mediterranean fever, as Bentley did; more particularly so as I have myself had one case of eighteen months' standing with such marked cachexia and splenic enlargement that I drew off some blood from his spleen to seek for the bodies, and found instead a pure culture of the *Micrococcus melitensis*. Only 0.5 c.cm. was drawn off from the liver of the present case; it contained some liver cells, fairly abundant Leishman bodies, most of which were single and pyriform in shape, but collections of even fifty were found. The blood was sterile bacteriologically. A portion of the fluid drawn off was mixed with a citrate solution, incubated at 20° C., and daily examined for developmental forms. On the second day fission forms were seen, but from that day the bodies rapidly broke up, the swollen nuclei alone taking up the stain. The attempt to cultivate the organism was thus only partially successful, the bodies on the second and third day were like some seen on slides of Indian cases which were given me by Major Leonard Rogers, I.M.S.; they also resemble very much some stages in the evolution of trypanosomes as seen in rats.

After being discharged from Haslar, the following condition was noted: Appearance of a marked crop of petechiae over upper limbs and trunk lasting a short time, temporary enlargement of the cervical glands; after a short period of normal temperature there was another wave of pyrexia, the fever reaching 102.6°; this lasted two weeks, when he lost flesh markedly, but there was no further hæmorrhage or diarrhoea, though more cough and a troublesome stomatitis set in. A film showed no change in the character of the blood. The atoxyl treatment had been continued intermittently.

I have ventured to bring these short notes forward, as further study and a better look-out for examples of this interesting disease are required, especially in the navy, where such cases may possibly be passed as malarial cachexia, etc. Also the marked improvement in his condition, at least for a time, under atoxyl treatment is noteworthy; and, lastly, all positive evidences of such diseases are worth recording.

For the last month the patient has been perfectly free from fever, has had no bad symptoms, has gained weight, is able to walk long distances, and now the improvement is so marked that he is about to return to Australia.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF RETROVERSION OF THE GRAVID UTERUS.

On April 8th I was called to a young primigravida (at the end of her third month), who was suffering from retention of urine. I found the cause to be acute retroversion. After emptying the bladder by catheter, I tried, without success, to rectify the malposition. I then inserted a small rubber ring, wishing, rather than hoping, that it might prevent the recurrence of retention. A short time previously I had found a ring to be quite efficient in the treatment of retention due to the pressure of a fibroid; but in that case the uterus, though heavy, was free to move. The patient was directed to remain in bed and to adopt the knee-chest position frequently. She suffered no further inconvenience, and on April 11th I found that the pelvis was in the normal condition. Reviews of books quite lately published indicate that active treatment of this accident is not yet universally recognized as harmful. Until recently no one believed that the impacted uterus could escape unaided. How, indeed, should it escape? Impaction produces congestion, and congestion aggravates impaction. Clearly, then, the uterus ought not to release itself. Nothing can be more certain, except the fact that it does release itself—usually, if not invariably.

London, N.

O. E. HIGGINS.

SOME USES OF PEROXIDE OF HYDROGEN.

ABOUT nine months ago I was called in to see a doctor friend who was suffering from a carbuncle on the back of the neck; it did not look very much—an area of inflammation about $\frac{1}{2}$ in. in diameter with a central point of pus. With a probe charged with liquid carbolic acid I made a small opening so as to allow of free drainage, and I did this on three successive days; but the inflammation rapidly spread, until there was a red inflamed area involving the whole of the back of the neck. Under an anaesthetic I inserted a pair of dressing forceps, opened them at right angles, and then scraped away a quantity of rotten tissue, leaving a hole as large as a golf ball, with free drainage to the whole of the infiltrated area. Although this gave very considerable relief the inflammation still spread, until the whole area from the occipital protuberance to the seventh cervical vertebra was involved. I doubted the advisability of opening up any more tissue by an incision, and Mr. Tubby, who at this stage kindly saw the case with me, agreed with me, and suggested a trial of peroxide of hydrogen. Compresses of peroxide and cold water, 1 in 3, were therefore applied forthwith, and the effect was remarkable. The inflammation at once ceased to spread, the huge gaping hole took on a more healthy character, and in two months from the beginning of the original boil the neck was healed. Since then I have had further proof of the value of peroxide, this time in connexion with one of those apparently trivial and localized inflammations of a finger which start as a pustule, and which, in spite of attention, involve the tendon sheaths, demanding free incision with the insertion of drainage tubes, and ending in permanent deformity. The experience was a personal one. On the first phalanx of the index finger of the left hand a small boil developed, which, though opened with a sterilized instrument, rapidly spread, until it looked as if it would be a repetition of what I had seen before—a question of free opening and a permanently stiffened finger. Fortunately, I remembered peroxide of hydrogen, and, having wiped out the small opening leading to the inflamed area with a pledget of wool soaked in peroxide, covered it with a moist dressing of peroxide and water, 1 in 3. In a few hours there was obvious improvement, and in three days the place was well. On a similar condition developing on another finger no attempt at opening up the head of pus was made; an application of the peroxide cut the inflammation short in a night. I would lay it down as a rule that in dealing with these localized inflammations of the skin there is always the danger of a secondary infection in opening them up, and that the best treatment is a peroxide compress, as in the majority of cases nothing more will be required.

Barnes.

G. S. HOVENDEN, M.D., B.S. Lord.