

One suggestion more, and I am done. No visitor to the institute should fail to visit the Director's splendid special library of tuberculosis literature; it is a very imposing collection, including, as it does, a number of authoritative works in French, German, etc., and, so far as I am concerned, it might as well have been in Timbuctoo or Maritan language; for, all alike were Greek to me, except those written in English or Sanskrit.

ORIENTAL SORE OR BAGHDAD BOIL.

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General considerations.—This disease occurs in the tropical and sub-tropical regions of both the Eastern and Western hemispheres. The exact method of contracting the disease has not yet been definitely settled. Various parasites have been blamed, such as the bed-bug, the mosquito, and several others. Wenyon showed that an "oriental sore" can be experimentally produced by contaminating an abraded surface with some of the material from another sore. Auto-inoculation apparently also occurs, as it is quite common for a crop of "new boils" to appear in the vicinity of an existing one. Cunningham, in 1885, first demonstrated the presence of deeply-staining bodies in the endothelial cells of an oriental sore, and these bodies, which are now known as Leishman-Donovan bodies, have been shown to be present in every case, although in the so-called button or keloid forms contracted in Africa, it may be necessary to employ cultural methods before the presence of the organism can be demonstrated.

The exact relationship existing between kala-azar and oriental sore is still undecided. It has been shown that Leishman-Donovan bodies in kala-azar and oriental sore are indistinguishable and that the flagellate forms obtained by cultural methods are also practically identical in the two diseases. So far, however, I have neither seen nor read of a case showing kala-azar and an oriental sore at the same time, or even at different times. The presence of one of the lesions renders the patient immune to the other, at least that is the explanation usually given. It is, however, possible that we are dealing with different phases of the same disease. We know that the primary lesion of syphilis may be overlooked, and it is quite possible for the same thing to occur in the case of kala-azar.

Local symptoms and changes.—Several varieties of oriental sores have been described, but as all these varieties represent differences in the way a sore progresses and heals, it is better not to consider them as distinct types.

As a rule the disease makes its appearance as a small papule and is generally said by the patient to have started in a mosquito bite. This papule breaks down and forms a small crater, varying in size up to $\frac{1}{2}$ " \times $\frac{1}{2}$ " \times $\frac{1}{4}$ " deep. This change may occur in a few hours or it may take several weeks. It then develops along one of three lines.

It may develop into:—

1. A spreading shallow ulcer, with an indurated and heaped-up edge. The base of the ulcer becomes covered over by a thin yellowish scab, and if this scab is lifted off, a layer of pale granulation tissue is exposed. This is the variety which clinically resembles an early malignant ulcer. I have excised such a sore on the ground that the edges were suspicious of malignancy. The finding of the Leishman-Donovan bodies in the edges settles the diagnosis, but a microscopic section does not, as the appearance is indistinguishable from that of an epithelioma with well-marked cell nests. I have not seen any of these ulcers developing into a definite carcinoma, but it is quite possible that such a course might be pursued in the absence of treatment. When we consider the fact that minute particles of soot can give rise to a chimney-sweep's cancer and that this lesion sometimes remains unchanged for years before definitely becoming malignant, it seems quite justifiable to assume that the Leishman-Donovan bodies, which can cause a lesion showing epithelial proliferation clinically and microscopically indistinguishable from an epithelioma, may also be capable of giving rise to a true epithelioma. In both the sweep's cancer and in this variety of oriental sore, the epithelial proliferation is caused by a chronic irritant, but it does not depend on the life-history of the irritant, as soot is certainly not alive, whereas the Leishman-Donovan bodies are, and can be cultivated into living flagellates. As far as I am aware, no attempts have been made to produce a carcinoma in lower animals by employing Leishman-Donovan bodies as the irritant, although it has been shown that it is possible to produce an oriental sore in them in the same way as in the human subject.

2. A shallow serpiginous ulcer with an undermined but non-indurated edge. This has a tendency to spread at one edge while healing at the other. In this variety the Leishman-Donovan bodies can be easily found.

3. A hard nodule, generally quarter-inch to half-inch in diameter, slightly raised above the level of the surrounding skin. It looks like a smooth, fibrous nodule, but microscopically it contains cell-nests. The Leishman-Donovan bodies are not always found in these nodules, but the presence of the parasites can be demonstrated by cultural methods.

The various names given to the lesion in different countries seem to show that the progress of the lesion differs in different localities, and the names Baghdad Boil, Oriental Sore or Granuloma, and Biskra Button are obviously suggestive of the variety seen in these places.

The factors controlling the course pursued by any given case are imperfectly understood. A small papule, after developing into a crater, may rapidly become a nodule. I have seen as many as a dozen on a forearm follow this course, and ultimately disappear in the course of a month. Another papule, after breaking down, proceeds to develop into a spreading ulcer, as described above, and ultimately heals, leaving a slightly depressed, smooth scar, which is white in the centre and pigmented at the periphery. The surrounding skin is also pigmented for a distance of half to one inch. These scars are amusing in view of the teaching in England up to quite recently, that a soldier or sailor with a pigmented scar may safely be assumed to have had syphilis. Numerous mistakes must have been made in the past, and, indeed, as the Wassermann is + in almost a third of the cases of oriental sore, it is still possible for errors to arise.

General symptoms.—As a rule general symptoms are absent, except in the early stages. During the papule stage there may be general malaise, a rise of temperature to 100°–102°, vague pains in the joints and muscles, and slight tenderness of the nearest intercepting lymph nodes. These symptoms disappear as soon as the papule has broken down, but recur with the appearance of any fresh papules. As a rule the nearest lymph nodes enlarge slightly and remain enlarged until the sores have completely healed. There may be slight lymphangitis for a day or two, but it is rare. In only one case have I seen more pronounced symptoms. This was a patient who developed successive crops of papules at intervals of three to six weeks. About six to twelve appeared at a time, and, altogether, during the eight months he was under treatment he developed over a hundred oriental sores. In his case all the stages and varieties could be examined at the same time.

Every new crop of papules was accompanied by a rise of temperature to 101°–103°, nausea and vomiting, vague pains in the abdomen, and changes in the joints. Both knees rapidly filled with fluid, but there were no particular changes. The ankle joints showed considerable particular infiltration. Other joints became painful, but no accompanying changes could be made out. In two to three days all these symptoms disappeared. The knees were always treated by the application of a tight bandage, over a thick layer of wool, extending from a point three inches above the joint to a point three inches below it. All the fluid was invariably absorbed in two to three

days. The infiltration of the particular structures of the ankles also disappeared in a few days. The abdomen showed nothing abnormal, and the spleen could not be felt.

Treatment.—This can be considered under two headings:—

(1) Internal remedies,

(2) Local measures,

(1) *Internal remedies.*—Several drugs have been tried; such as antimony salts, salvarsan, and other arsenical compounds.

The best results have been obtained by the intravenous administration of a 1% solution of antimony tartrate, starting with 5 c.c. and gradually increasing the amount up to 10 or 15 c.c. It may be given daily or every other day.

(2) *Local measures.*—These can be further subdivided and will be considered under three headings, (a) Local applications, (b) Ionization, (c) Complete excision.

(a) *Local applications* cause necrosis and sloughing of the sore, and repeated applications are generally required to completely eradicate the lesion. This method is painful and is strongly objected to by the patient after his first experience of it. The following represent a few of the multitude that have been tried:—

Twenty per cent. methylene blue ointment.

Two per cent. antimony tartrate ointment.

Five per cent. potassium permanganate ointment.

Powdered permanganate.

One per cent. solution of mercuric chloride.

Five per cent. solution of potassium permanganate.

(b) *Ionization.*—This has been recently tried by Captain T. G. Evans, Officer-in-charge of Physio-therapeutic Department of the 34th General Hospital. He has reported several cases of complete cure following 2–4 applications, at intervals of three to four days. The best results have been obtained in early cases in the crater stage. In the more advanced stages cures are not so rapidly obtained, but even in these a considerable amount of improvement can always be observed, after a few applications, and a cure is ultimately obtained.

(c) *Complete excision.*—This method has undoubtedly given the best results. An isolated sore should always be completely excised, together with a margin of half-inch of the surrounding healthy skin. The skin edges are then accurately sutured together in the ordinary way. So far, all the cases I have treated by this method have healed by first intention.

Multiple sores can also be completely excised, and any raw areas, which cannot be completely covered over by skin, are allowed to granulate, and, if necessary, grafted later on.

So far, I have not seen any signs of recurrence in any of the cases treated by excision, although

some have been under observation for two months afterwards. Moreover, it is possible that excision may completely eradicate the disease. We do not know at present how far the lesion is a local disease, and how long it remains local.

I have seen a case in which a second crop of sores appeared on a leg which had been completely healed for six months. The first crop had been treated by local applications, combined with antimony internally; and the scars, which were situated about two inches above the site of the second crop, seemed quite healthy. It is possible that the second crop represented a fresh infection, but it is safer to assume that these scars, or some other tissue in the body, may have harboured the parasites in a latent condition, and that the second crop merely represented a recurrence of the original attack.

DEMONSTRATION OF FLAGELLA OF SPIROCHÆTA CARTERI.

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To our knowledge no one has yet demonstrated the presence of flagella in *spirochæta carteri*, the variety of spirochætes found in Indian relapsing fever. Recently there has been a small epidemic of this fever in Indore, Central India, and a report of our observations will be made in due course. Just now, however, we would bring to the notice of your readers a method by which we have been able to demonstrate the flagella of the microbe. Two of us (P. B. and S. W. B.) first made an attempt to stain them by van Ermengem's method without success. One of us (P. R. B.) then suggested the employment of the method of Nicolle and Morax, which in his hands had proved successful with other organisms. The use of this method gave perfectly satisfactory results, the spirochæte showing one or two flagella at one or both ends. The following is the technique of the process employed:—

Receive blood, from the pricked finger of a patient, in citrated normal saline solution, in the proportion of 1 in 10, and centrifuge. Place a drop of the supernatant clear fluid on a thoroughly clean glass slide, touch it with the end of another glass slide (with rounded edges), held at an angle, allow the drop to spread along the edge by capillary attraction, and draw the upper slide slowly towards the end of the lower slide in a direction away from the drop, so that the fluid follows the edge of the moving slide and is not pushed before it; dry in air and stain by method (iv) described at p. 151 of Besson's *Practical Bacteriology* (Eng. trans. Hutchens; 1913). After washing and drying, examine in cedar wood oil. If the preparation be satisfactory, put on a

cover-glass, thus mounting the specimen in oil. Protect from unnecessary exposure to light. As a rule the best fields of the preparation are those in which the background is almost colourless.

The method requires some practice and care to ensure success, and all preparations are not equally satisfactory. The slides must be perfectly clean, and before use must be heated rather strongly by passing through flame and allowed to cool.

Our later trials with van Ermengem's method have met with success, but the results so far have not been nearly as satisfactory as those with the method here described.

Our thanks are due to Mr. Prataprao, artist, Indore, for the accompanying drawings, made from a successful preparation under the microscope.

THE TEMPORARY OFFICER IN WAR.

BY AN A. D. M. S.

THESE are days of Sabhas and National Congresses, of discussions, in and outside the public press, with regard to the possibility—sometimes even the desirability—of a closer social intercourse between East and West. And yet it seems in many quarters to have escaped notice that an experiment on a hitherto unprecedented scale is actually on foot, and that one at least of the Indian Services previously consisting almost entirely of Europeans, has opened its portals wide to Indians during the war. Not only this, but officers of different races—Hindus, Europeans, Mohammedans, Parsis—are actually living and even messing together to an extent never dreamt of before. In face of the reforms now apparently in prospect, this seems to me, both from the medical and the social standpoints, a most important departure. Circumstances have brought it prominently to my notice, in its various stages, and under different conditions, and I purpose to attempt an estimate of how far it has succeeded, and in what respects, if any, it may be said to have failed.

The beginning of 1915 found me installed as Superintendent of a Provincial School for Sub-Assistant Surgeons, with the concurrent charge of a large hospital which dealt with a considerable amount of surgery. Like the rest of the few remaining I.M.S. men remaining in civil employ in the Province (be it said in palliation that we had already for the most part applied for active service), I was short-handed, and doing a considerable amount of work not ordinarily associated with the post.

Some of the most efficient members of the staff of both hospital and school, together with a large proportion of our European nurses, had left early in the war to join a war hospital. This we had to accommodate ourselves to from the