A NOTE ON ORIENTAL SORE.

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In order to prevent any possibility of my being credited with priority in noting flagellate forms in cultures from Oriental sore by those readers of this JOURNAL who may not have access to the literature of this subject, I bring to notice the following facts: In the *Quarterly Journal of Microscopic Science*, new series, No. 212, vol. liii, part 4, p. 753, Minchin, in a postscript to a communication by Dr. Row, draws attention to the fact that parasites of Oriental sore have been cultivated by Nicolle in Tunis—a fact that seems to have escaped most workers on this subject. Dr. Row's more recent work on the development of flagellates from cultures of Oriental sore in 1908 and 1909 is dealt with by Minchin in the same volume (p. 747). Dr. Row exhibited his preparations at the Bombay Medical Congress in February, 1909.

In my paper on Oriental sore of North India in the BRITISH MEDICAL JOURNAL of September 11th, 1909, p. 647, I was unable to criticize the results of previous workers on the flagellate forms of this class, as they were not then available to me; since, however, Dr. Row's interesting communication has appeared in print, I should like to draw attention to the following points in connexion with what is termed Oriental sore.

The term "Oriental sore" is an anomaly as it stands at present, for under this name are grouped what seem to me several clinically distinct affections of the skin and subcutaneous tissues which occur in tropical and subtropical countries. Recent laboratory research^{1,2,3} on the Leishmania group indicates the probable existence of a series similar to *Leishmania donovani* in their early stages, but having culturally different requirements of temperature, acidity, etc., and differing in morphology after culture from one another. It is quite reasonable to expect that as in the case of other classes of protozoa, such as *trypanosoma*, *spirochaeta*, and *piroplasma*, further work will reveal more varieties of what are to-day grouped under one heading. I briefly referred to this in my last paper.

There are several clinical types of Oriental sore in India alone and certainly two types in Arabia. Amongst Oriental sores in North India we find the three following types:

1. *Monghyr phora*—a pale yellow painless raised area varying from $\frac{1}{4}$ to $\frac{1}{2}$ in. square surrounded by a faint red margin. This sore is usually situated on the face near the lips, eyes, or on the cheek or on the forehead. Such an Oriental sore is found commonly in Gujrat, in the Lahore district, and in the Himalayas. It does not break down as other sores do. It may last for over a year, and after healing with a faint scar the disease may recur on other parts of the body, such as the elbow joint or wrist. The cultural forms and characteristics of this type of Oriental sore I have briefly described in my preliminary communication of September 11th.

2. *Chambal* is a large flat-surfaced ulcer fairly deep, with a bed of raised papilliform prolongations of the corium, which support a mass of epithelial debris.

3. *The typical Delhi boil* I have described in my previous communication, and from what I can remember of Dr. Row's communications at the Bombay Medical Congress it was a similar condition of "deep-seated boils" that afforded the material for Dr. Row's cultures. The natives of North India recognize the clinical differences between the affections, and it is interesting to note that there are striking differences between the cultural characteristics noted by Row in South India in 1908 and myself later in North India in 1909. Row, using (infected) unheated undiluted serum, obtained flagellates in seventy-two hours at 25° to 28° C. Skeins of banana-shaped parasites with parallel sides and rounded ends were seen in forty-eight hours. Using "*Monghyr phora*" material and the same culture medium (infected capsules of unheated undiluted serum) I found that flagellates only showed under similar conditions in five days. The banana-shaped parasites noted by Dr. Row I have never yet found.

The parasite Row described from South India is encapsulated and according to his plate is chiefly of an oval type. Further he states that each parasite is lodged in a clear space in the macrophage. The parasite worked with

in North India has no capsule, is almost entirely torpedo-shaped, has no clear space around it, and distends the mononuclear cell it invades almost to bursting point. The rosy red parasites seen in culture tubes from cases of "*Monghyr phora*" apparently do not occur in the type of Oriental sore worked at by Row. If they occur they are not described by him, nor does he record flagellated bodies of this type.

There are several other points of difference, which will, however, be dealt with in my second paper on Oriental sore. Dr. Row's interesting communication now being available for criticism and confirmation by workers at this disease in different parts of the world, it will be interesting to note if, as I believe, several varieties of *Leishmania* morphologically similar in their early forms, will be found responsible for the various clinical conditions at present loosely grouped under the incorrect term "Oriental sore."

[NOTE.—In the method of cultivation mentioned in my previous paper I beg to point out two errors: 29 c.cm. should be 2 c.cm., and 50 c.cm. of venous human blood should be 5 cm.]

REFERENCES.

¹ Le Kala-Azar, Infantile, Charles Nicolle. *Annales de l'Institut Pasteur*, May, 1909, p. 361. ² Ibid., June, 1909, p. 441. ³ Sur une infection à corps de Leishman (ou organismes voisins) du Gondi, *Comptes rendus de l'Académie des Sciences*, tome cxlvii, October 28th, 1908, p. 763.

SOME OBSERVATIONS ON TUBERCLE IN BOMBAY:

WITH SPECIAL REFERENCE TO A PRECIPITATION
SERUM-REACTION.*

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(Preliminary Communication.)

It would appear that tuberculous disease, which is very common in Bombay, and which runs often a very acute course, could be propagated with equal facility and equal rapidity in the laboratory animals by experimental infection. Yet when one actually comes to work with tuberculous material (mainly sputum from phthisical cases), it is interesting to note that at best one can produce a very chronic infection in guinea-pigs and hardly any disease in rabbits. Out of about 30 animals experimented upon, in not a single instance has death ensued as a result of acute general tuberculosis.

The minimum limit of the disease artificially induced in guinea-pigs has been 11 weeks and the maximum 28 weeks, giving an average of 16.3 weeks for all the animals who have succumbed to the disease. Further, a series of 3 guinea-pigs (infected with 0.1 c.cm. of sputum) show no signs of any deep infection, the only obvious lesion being adenitis of the set of lymphatic glands proximal to the seat of infection. And another series of 4 rabbits infected with 0.2 c.cm. of another sputum (rich in tubercle bacilli) are quite unaffected. In the first lot of these it may be that the virulence of the tubercle bacilli has undergone a marked diminution of virulence, as the patient from whom the infecting material was obtained was showing marked improvement in health at the time, and has been practically well for the last three years.

The results obtained so far seem to indicate that there is a great variation in the virulence of the different specimens used for infection, and it is not unlikely that both in behaviour and culture the tubercle bacilli are not all identical. But further study will throw light on this. And we may then learn what percentages are allied to particular species (bovine, human, etc.).

The particular specimen of sputum which has been chiefly used in the experiments so far completed by me was derived from a patient who died about six months from the time of his showing any symptoms or signs of the disease; it may therefore be taken to be of a fairly average virulence, and yet the results produced by this material in guinea-pigs appear to me so striking that I propose to give a summary of the effects produced after a subcutaneous infection. The animals for the first two months or more invariably flourished—that is, put on weight, and were to all appearances well, and it was only towards the last few days before their death that they

* Read at a meeting of the Bombay Branch of the British Medical Association.