

## MELIOIDOSIS.

NOTES ON A CULTURE OF *B. WHITMORI* FROM SAIGON.

BY A. T. STANTON, M.D., F.R.C.P. AND  
WILLIAM FLETCHER, M.D., M.R.C.P.

(From the Institute for Medical Research, Federated Malay States.)

BEFORE the year 1925 melioidosis had not been recognised outside the towns of Rangoon, Kuala Lumpur and Singapore. We had long thought it probable that the disease has a much wider distribution and that the apparent freedom of the country districts was due to the absence of laboratory facilities and the almost insuperable difficulty of diagnosing melioidosis without recourse to the laboratory. In February 1925, a case of the disease was recognised more than a hundred miles from Kuala Lumpur, a Tamil who died on the twenty-sixth day of his illness at a village about half-way between Kuala Lumpur and Singapore; *B. whitmori* was cultivated from his spleen, liver and lungs which had been sent for examination to the Institute for Medical Research.

Recently it has been discovered that melioidosis occurs in French Indo-China. In January 1926, Dr F. H. Guérin, Director of the Pasteur Institute of Saigon, very kindly sent us a culture of *B. whitmori* which had been isolated by Drs R. Pons and M. Advier from the blood of a native woman. An account of the case precedes this note; it appears to have been an example of the septicaemic form of melioidosis.

When the Saigon culture was plated out on eosin-methylene-blue agar, two kinds of colonies appeared; one, the ordinary corrugated or rugose type and the other, an ultra-rugose form, very corrugated and wrinkled, and so sticky that if it were touched with a needle it adhered to it and peeled off the surface of the medium. Colonies of both kinds were inoculated into liquid media; in both the organisms were motile, but those from the ultra-rugose colonies were much more active than the others. The ultra-rugose type of organism produced a corrugated growth on glycerine agar within twenty-four hours, the ordinary type grew luxuriantly but corrugation did not appear until after forty-eight hours. Both kinds fermented lactose, saccharose, glucose, mannite, dulcitol, maltose and dextrin with the production of acid but no gas. Indol was not formed by either.

Cultures made from the ordinary type of colony were agglutinated to full titre by immune sera prepared with strains of *B. whitmori* isolated in Kuala Lumpur. Cultures made from the ultra-rugose colonies were agglutinated to 30 per cent. of full titre.

The results of inoculating guinea-pigs with this ultra-rugose strain were as follows: an animal inoculated subcutaneously died a week later; there was a dark, dry area of necrosis at the site of inoculation, which measured about three centimetres in diameter and was nearly one centimetre in depth; the spleen was enlarged, and there were small, dark, circumscribed haemorrhagic areas in the lungs; *B. whitmori* was isolated from the heart, the spleen and the necrotic patch in the abdominal wall. A second guinea-pig was inoculated with this ultra-rugose strain by placing a loopful inside the right nostril; at the end of a week the animal was ill, there was a discharge from the nose and it died on the ninth day; on examination the spleen was found to be enlarged and the lungs congested. Cultures of *B. whitmori* were obtained from the heart, the spleen and enlarged cervical gland; these proved to be of the rugose type.

Cultures made from the colonies of the ordinary corrugated type appeared to be less virulent. A guinea-pig inoculated under the skin of the abdomen showed on the seventh day a black depressed area of necrosis, two centimetres in diameter, surrounded by a raised, red zone of inflammation; the inguinal lymphatic glands were the size of large peas. The animal died on the twenty-first day; there were numerous caseous glands in the groin, axilla and cervical region; the spleen was greatly enlarged and studded with caseous nodules. Cultures of *B. whitmori* were obtained from the spleen, from the heart's blood and from a caseating gland; in each, growths of the rugose type of *B. whitmori* were obtained.

The most striking characters of the ultra-rugose (Saigon) strain are as follows: (a) it forms a corrugated growth on ordinary nutrient agar in about twenty-four hours, whereas the ordinary human strains do not do this except on glycerine agar and then not until after forty-eight hours; (b) it is more actively motile than most strains; (c) it ferments sugars rapidly; (d) it is very virulent.

In these respects the Saigon strain resembles the strains isolated from guinea-pigs, rabbits and rats, in 1913, when there was an epizootic among the laboratory animals in Kuala Lumpur.

#### SUMMARY.

The biological characters, and pathological effects in animal inoculation, of a strain of *B. whitmori* from Saigon are described. It is the most virulent strain of the organism from a human source that has so far been encountered. The case from which the organism was recovered was an example of the septicaemic form of melioidosis.

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