

blister and as average of six determinations gave 12.5 iron per 1,000,000 parts of serum; (2) milk (cow's) as average of three determinations, 14.6 per 1,000,000; (3) a sample of sherry wine, 14 per 1,000,000; and (4) a sample of claret highly recommended for anæmics, 32 parts iron per 1,000,000 parts of wine.

Elgin.

A CASE OF MALTA FEVER IN WHICH THE DIAGNOSIS WAS CONFIRMED BY AGGLUTINATION OF THE MICROCOCCUS MELITENSIS.¹

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THE clinical applications of the phenomena of agglutination undergo almost daily extension on account of the certainty and facility of the process, and whereas the serum reaction was originally regarded as a valuable means of distinguishing between different micro-organisms cultures of pathogenic bacteria are now employed as diagnostic tests which act by producing distinctive agglutinations with the blood serum obtained from patients. A case of this kind, in which the agglutination reaction was made use of for the diagnosis of an illness the clinical symptoms of which had entirely disappeared, will be briefly described in the following article. The patient was a young medical man in the Emperor Francis Joseph Hospital in Vienna; he had returned from the South in the beginning of the present year suffering severely from fever. The clinical history of the case, for my knowledge of which I am indebted to information kindly supplied by the patient and by Primarius-Doctent Dr. Kovacs, presents a variety of characteristics and an abstract of it is accordingly given.

The medical man in question spent the winter of 1896-97 in Ajaccio as a travelling companion and about a week before his return to Austria he fell sick in the beginning of February, 1897, with high fever, headache, and debility. There were no shivering fits; the remissions of the fever and the highest points attained in the elevations of temperature, which took place almost every evening, were irregular. The bowels were for the most part confined. This feverish condition was occasionally attended with rheumatic symptoms and lasted till June. After several weeks' stay in the hospital a non-febrile period set in for the first time towards the end of June and was followed in July by a slight relapse, since which time the patient's health has remained good. Quinine, salicylic acid, and antipyrin had not any effect on the fever, but somewhat large doses of phenacetin seemed to produce subjective improvement and also to influence the course of the temperature. The illness was attended by emaciation and simple anæmia, symptoms which quickly disappeared after the cessation of the fever. The most remarkable feature of the case was the acute high fever, which lasted four months from the beginning of February with alternate remissions and somewhat prolonged exacerbations, but nevertheless was not attended by any positive clinical symptoms beyond enlargement of the spleen and a moderate amount of anæmia. There was a slight relapse which passed off without further incident and was followed by complete recovery. Typhus fever and malaria, which suggested themselves in the first stage of the illness, could be excluded without hesitation, neither could tuberculosis be admitted, for notwithstanding the long duration of the fever there was no clinical manifestation of this disease and as the case had terminated by complete recovery it seemed to remain undiagnosed.

Not long ago I had the opportunity of reading R. Bensaude's monograph on serum diagnosis, and his statements as to the possibility of recognising Malta fever by this method, as had in fact been done by Wright six months previously, induced me to try it in the present case. A sample of micrococcus Melitensis (Bruce), most kindly supplied from Kral's bacteriological laboratory, served as the test material.²

This minute coccus, which Bruce in the year 1887 recognised as the cause of Malta fever and obtained in pure cultivation, produces a similar disease in the monkey; with the serum from a trial bleeding to which the convalescent had submitted some days before it now showed very distinct agglutination. The reaction not only took place quite promptly, but proved successful without much delay when the serum was diluted 300 times, all the micrococci being massed together in heaps; even when the blood was diluted 1000 times there was a formation of isolated heaps, a result which did not occur in a control experiment without the addition of serum. The micrococcus Melitensis did not agglutinate with samples of serum derived from other sources and the serum under examination gave next to no reaction with typhus bacilli and other pathogenic bacteria. Having regard to Wright's experiments, the very energetic action which the serum of the case now described exercised on the micrococcus Melitensis left no doubt that the illness had been Malta fever; moreover, the clinical symptoms, especially the course of the fever, agreed perfectly with the description which Bruce and other authors have given of this disease.

Malta fever is endemic not only in the island of Malta but in Gibraltar, Cyprus, Crete, and on the Mediterranean coasts; according to recent statements based principally on the application of serum diagnosis it is also endemic on the shores of the Indian Ocean. It likewise seems to occur on the coast of Dalmatia; at least, it happened four years ago that I made a post-mortem examination of a man who had arrived from the Brionian Islands, and although I did not at the time succeed in making a positive diagnosis the appearances nevertheless agreed perfectly with the descriptions of the post-mortem appearances in Malta fever, a disease, however, which is seldom fatal.³ The agglutination phenomena obtained with the micrococcus Melitensis therefore constitute an accurate and easily applicable diagnostic means of identifying cases of Malta fever as well as of carefully studying the geographical distribution and epidemiological relations of this interesting infectious complaint.

Recent Literature of Malta Fever.

Bensaude, *Le Sérodiagnostic (Les Phénomènes d'Agglutination des Microbes et ses applications à la Pathologie)*, Paris, 1897, Georges Caré et Naud. Bruce, *Note on the Discovery of a Micro-organism in Malta Fever*, *The Practitioner*, September, 1887. Bruce, *Sur une nouvelle forme de Fièvre rencontrée sur les bords de la Méditerranée*, *Annales de l'Institut Pasteur*, April, 1893. Hughes, *Sur une forme de Fièvre fréquente sur les côtes de la Méditerranée*, *Annales de l'Institut Pasteur*, August, 1893. Hughes, *THE LANCET*, July 25th, 1896. Scheube, *Die Krankheiten der warmen Länder*, Jena, 1896, G. Fischer. Wright and Semple, *Employment of Dead Bacteria in Diagnosis of Typhoid and Malta Fever*, *Brit. Med. Jour.*, May 15th, 1897. Wright and Smith, *On the Application of the Serum Test to the Differential Diagnosis of Typhoid and Malta Fever*, *THE LANCET*, March 6th, 1897. Wright and Smith, *On the Occurrence of Malta Fever in India*, *Brit. Med. Jour.*, April 10th, 1897. Synonyms for Malta Fever, according to B. Scheube: Malta typhus, Mediterranean fever, Gibraltar fever, Rock fever, Neapolitan fever, Gastric remittent fever, Bilious remittent fever, Gastro-bilious fever.

³ After drying a small portion of the spleen which had been preserved in alcohol I rubbed it up with bouillon; the fluid thus obtained, corresponding to a twenty-fold dilution, gave obvious although incomplete agglutination with the micrococcus Melitensis; a similarly hardened and treated spleen taken from quite a different class of case gave no reaction, but this reaction yields the best results only when combined with a control experiment. The spleen contained granular pigment of a colour varying from brown to brownish-black; there were no typhus bacilli or malaria parasites; it could not be precisely determined on section whether minute cocci were present or not.

HOSPITAL REFORM.—The first annual meeting of the Hospital Reform Association was held on Wednesday afternoon at the offices of the Medical Defence Union, King William-street, Dr. Ward Cousins presiding. Mr. Garrett Horder read the annual report which showed that the association had received but indifferent pecuniary support, but had been responsible for wide discussion of topics of the greatest professional interest. Mr. Garrett Horder submitted a scheme for the better administration of medical relief in the out-patient and casualty department of the hospitals, and after a brief discussion a committee was formed to inquire into the practicability of the scheme.

¹ Translated from the Wiener Klinische Wochenschrift, 1897, No. 49.

² Written information stated that it was derived from a culture sent to Kral by Professor A. E. Wright, of Netley, on May 18th, 1897.