

Original Communications.

RÉSUMÉ OF RESEARCHES ON THE PATHOGENIC ORGANISM OF MALARIA.

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Historical Notes.—CLLUS and other ancient writers described the various forms of malaria which at that time, as at the present, were the most common diseases in Greece and Italy. Lancisi was the first to look upon malaria as a noxious effluvium given off by marshes. In 1716 he published his work at Geneva. He thought the disease was produced by small forms of animal life which owed their origin to putrefaction in marshes, were suspended in the air and were capable of penetrating the blood in some unaccountable manner. These ideas were commonly held in Italy at the beginning of the present century. Some observers thought the disease due to infusoria, some to vegetable organisms, and others attributed the phenomena to toxic principles secreted by some of the animals found in marshes, but until 1866 no organism was designated as specific. In that year Salisbury described small vegetable cells of the species of palmella as the cause of paludism. Several forms of bacteria have been credited by various observers with giving rise to this disease, but none are deserving of notice except that described as the *Bacillus Malariae* by Klebs and Tommasi Crudeli, in 1879. They claimed to have succeeded in cultivating these bacilli and to have produced phenomena analogous to those of malaria in animals by injecting liquids inoculated from first cultures. As their cultivations were made from the mud of marshy districts there is reason to doubt their purity, and the so-called pathogenic bacillus could not be said to have differed from other bacilli found in the soil. In 1880, Laveran, trying to account for the pigment in malarial blood, found spherical hyaline bodies without nuclei, and also crescentic bodies. A little later in the same year he discovered on the edge of several of the pigmented spherical bodies, movable flagella. He concluded at once that these parasitic

elements, nearly all pigmented, were the cause of palustral melanaemia, and also of the phenomena of paludism. Laveran's views have been confirmed by Marchiafava, Golgi, Celli, Bignami and others of the Italian school, and also by Manson, Councilman and Osler.

Methods of examination of the blood :

1. Have cover glasses scrupulously clean, drying in alcohol before using.
2. Clean the finger well, brush, wash in water and lastly in alcohol, drying perfectly, for moisture interferes with the shape of the corpuscles.
3. Ligature the finger tightly and prick with a sterilized needle so that a distinct drop of blood stands out prominently on the surface of the skin.
4. It is necessary that the preparation should be as thin as possible in order that the red corpuscles should not be in rouleaux as normally, therefore simply touch the drop of blood with the cover glass, avoiding coming in contact with the skin, for epithelium or foreign matter spoils the specimen. Press the glass well with another cover glass, getting as thin a preparation as possible. Prepare several in the same way, as all may not contain the parasites. If to be examined at once, mount immediately upon perfectly clean dry slides without any mounting medium. The parasites may be detected for three or four hours after the preparation is made in this way. If one wishes to use a very high power or to study the amoeboid movements of the organism, seal and ring with paraffin in order to stop the oscillation of the blood which causes drying up of the corpuscles. To preserve specimens allow the cover glasses to dry, pass through the flame of a spirit lamp, taking care that the side with blood on is not held downwards, or, better still, drop a little of a solution of equal parts of alcohol and ether on the cover glass, allow to dry, mount dry and ring with paraffin. They may