ORIGINAL ARTICLES.

HÆMATOZOA OF MALARIA.

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Extended Abstract of Monograph kindly given by the Author.

[No apology need be made to our readers for the publication at this time of these abstracts, since their importance and interest are permanent, and may be made of much value to observers in various parts of the Province who have not had access to the original article. – ED.

OUR knowledge of the blood changes I am about to describe, dates from the researches of Laveran, in Algiers, which were communicated to the Paris Academy of Medicine in 1881 and 1882, and which were finally embodied in a large work on the malarial fevers, published in 1884. He found, as characteristic elements in the blood of persons attacked with malaria, (1) crescentic pigmented bodies; (2) pigmented bodies in the interior of the red corpuscles, which underwent changes in form, described as amœboid; and (3) a pigmented flagellate organism. These forms were looked upon as phases in the development of an infusorial organism which he regarded as the germ of the disease.

1. *The Forms which Exist within the Red Corpuscle.—(a)* The most common alteration in the blood of malarial patients is presented by a pigmented structure inside the red corpuscle. The attention of the observer will most likely be first attracted by the presence of a few dark grains in the stroma, and a careful study of a suitable specimen will soon lead to the conviction that these are not scattered loosely, but are enclosed in a fine granular or hyaline body in the interior of the corpuscle. The red discs in which they occur are usually larger, look flat, and are very often paler than normal; they may, indeed, exist as colourless shells. The number of corpuscles so affected varies extremely in different cases. In some instances they are readily found after a search of a moment or two, but, in other cases, a prolonged examination may be necessary. Only one is usually present in each corpuscle, but two or three, or even four, may occupy the stroma. They vary greatly in size, the smaller ones not occupying a fourth of the corpuscle, while the larger ones may almost fill it. A delicate contour line can usually be seen separating the body from the stroma; at times this is very distinct, particularly if the illumination is very bright. The substance appears hyaline, or very finely granular, and the pigment grains are scattered irregularly in it. They may be very numerous, and give a dark aspect to the body, or they may be scanty. They frequently present rapid Brownian movements. Occasionally a vacuole may be seen in the interior of the body. In several instances the bodies appeared to be enclosed in a clear space—vacuole—in the stroma. When first seen they are more or less spherical, but, as already stated, the outline may be indistinct. The pigment granules may be seen to alter their position in relation to each other. If the margin of the body is carefully observed, slow changes can be seen, which gradually bring about alterations in shape. These movements which appear to be amœboid in character, can often be traced with great ease. I have not seen any evidence of migration from the corpuscle.

(b) In seven cases peculiar hyaline structures existed in the interior of the red corpuscles, which differ from the bodies just described, in the absence of pigment and in the much greater activity of the changes. These bodies are devoid of structure, and the corpuscles in which they are present are not so pale as those with the pigmented forms. Marchiafava and Celli, who have given an excellent plate of these bodies, regard them as the initial forms of the pigmented bodies. One does occasionally see appearances indicative of commencing pigmentation, but they have not, as a rule, the solid aspect of the pigmented bodies. In three cases I have seen the following remarkable changes. The hyaline body, while actively changing shape, suddenly burst from the stroma, and disappeared, or formed only a few granules. Thus, in a red corpuscle, there were, at 3.40 P.M., two hyaline, irregular-shaped bodies, which were changing rapidly in outline. The alterations were so marked that the physicians present at the time had no difficulty in seeing them. The stroma of the corpuscle was of full colour. At 3.50 P.M., as I was carefully watching the forms, the corpuscle suddenly ruptured, and gave exit to two distinct masses, which quickly broke up into ten or twelve