PRELIMINARY NOTE UPON A LEUCOCYTOZOAN OF THE DOG.

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THE increasing interest displayed in comparative parasitology since the recent advances in the study of tropical disease induces me to record the discovery of what I have reason to think is a new and hitherto undescribed parasite of the leucocytes of the dog.

During February, 1904, I had occasion to examine the blood of a number of dogs from the Tezpur District of Assam. While thus engaged I came across the parasite to which this note refers.

The dogs harbouring the parasite were of English breed, born in Assam. One was a year and the others two and three years old respectively. They did not present any marked symptoms beyond a slight anaemia and some little febrile disturbance. Their temperature appeared to vary between 98° and 101° F. Examination of the blood showed the presence of nucleated red blood cells in small numbers.

Fig. 1.—Blood film showing parasites (P) lying in protoplasm of large mononuclear and polymorphonuclear leucocytes; N, nucleated red blood cell.

On examining dried blood films from these dogs stained by Leishman's modifications of Romanowski's stain, many of the polymorphonuclear and transitional leucocytes were seen to be harbouring one or more oval nucleated bodies. These bodies presented a clear outline and a more refractile contents than the protoplasm of the leucocytes in which they lay. They almost gave the impression of being contained in a capsule in the interior of which could be distinguished a more or less vague nucleated mass. In some cases this mass appeared to suggest a vermicule-like body coiled upon itself. Careful examination failed to show anything like signs of degeneration in these bodies, and appeared to negative the idea that they might be undergoing endoleucocytic digestion. This, together with marked changes in contour and position of the nucleus, exhibited by many of the leucocytes harbouring them, seemed to indicate the probability of the bodies being parasitic in nature.

Once or twice free parasites were noticed, but it is possible that they may have been derived from leucocytes destroyed during the spreading of the blood film. Many of the apparently unaffected leucocytes showed a small circular deeply-stained mass lying near the nucleus, to which it appeared to be attached by a faintly-staining tail-like process. This body, the nature of which is not apparent, may perhaps prove to be some earlier stage of the parasitic invasion.

The examination of fresh films exhibited the parasite as a rod-like refractile body lying in the protoplasm of the leucocyte, sometimes upon and at other times to one side of the nucleus.

On a later occasion—in May, 1904—fresh films were again examined by Captain S. P. James, I.M.S. (to whom I had demonstrated the parasite), and myself, and a vermicule which the former had managed to free from its enclosing capsule was watched for some time while it exhibited a side-to-side movement of one extremity, upon which appeared a markedly-refractile spot.

The body stains well by methylene blue, thionin blue, and haematoxylin, and preparations may be improved by counter-staining with eosin. Leishman's stain, however, gives the best results. Measurements in dried films show the parasite to be from 8 to 10 microns long by 4 or 5 broad, with a nucleus of from 2 to 3 microns in diameter. The nucleus is sometimes central and at other times placed near one extremity.

It is difficult at present to suggest the class to which this probable parasite belongs. Up to the present I have been unable to trace any description of a similar parasite being found in the leucocytes of warm-blooded animals. A high authority upon the protozoa to whom I showed my specimens has suggested to me the possibility, judging from its morphological affinities, of this parasite proving to belong to the haemogregarines. Should this idea prove to be correct, it

Fig. 2.—Drawing showing parasite lying in protoplasm of polymorphonuclear leucocyte (greatly enlarged); P, parasite; N, nucleus of parasite; L, nucleus of polymorphonuclear leucocyte, partly covered by parasite.

follows that the discovery will bear a double significance, being the first haemogregarine reported as occurring in the blood of mammalian host, and the first haemogregarine to be found as a parasite of the leucocytes, in contradistinction to those already known to occur as parasites of the erythrocytes of cold-blooded animals.

ACUTE POISONING BY A SINGLE CASTOR-OIL SEED.

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THOUGH the castor-oil seed is known to contain a poisonous albuminoid substance located in the embryo, I am sure that many do not realize the virulence which it possesses. I think, therefore, the following case, in which most acute and dangerous symptoms arose after the ingestion of a single seed, may be instructive.

History.—On March 13th, 1905, a farm labourer, in robust health, aged 28, who was on a visit to Liverpool, was watching some bags of castor-oil seeds being loaded on one of the Atlantic liners; one of the bags burst, and he picked up a seed and ate it. He noticed that it "burnt his mouth and throat a little, and made his eyes water," and then almost immediately he felt weak and collapsed, his knees giving way, and he staggered to a policeman at the dock entrance, who gave him an emetic of salt and water, which had effect. He complained of "feeling choked, and as if he could not breathe," and he was unable to stand. The policeman therefore rang up the horse ambulance, and he was brought with