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ON A NEW HÆMOPROTOZOAN.

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(Contribution from the Government Bureau of Microbiology, Sydney, New South Wales.)

(Pl. lxxii.)

The blood parasites of Australian animals have received very little attention as yet. Our only snake hæmoprotezoan known is *Hæmogregarina shattocki*,¹ described by Messrs. L. W. Sambon and C. G. Seligmann. The host is the Diamond Snake, *Python spilotes*, Lacép. Blood films taken from a close ally, *Python amethystinus*, Schneider, captured during a trip to Port Curtis, Queensland, revealed the presence of numerous parasites inhabiting the erythrocytes only. The percentage of infected cells was 1·8. A few corpuscles were infected by two sporozoans (Pl. lxxii., fig. 25.) By using Giemsa's stain the organism becomes differentiated from the host and appears bluish whilst the latter stains pinkish. The nuclei of both become deeply stained. I have followed Sambon and Seligmann's terminology and their extended definition of the genus *Hæmogregarina*.

The red corpuscles vary in size from twenty μ long by 9·6 μ broad to nineteen μ by seven μ , the variation being mainly due to alteration as a result of making the film. A typical specimen is shown in Pl. lxxii., fig. 1.

No merozoites were present either in the plasma or in the cells. There were plenty of young forms, long, thin, and more or less crescentic in shape, lying within the host. The concavity more usually faced the nucleus of the latter (Pl. lxxii., fig. 2, 3). The opposite condition is seen in Pl. lxxii., fig. 4, 7.

The ends of the parasite are nearly alike, though, generally, one is slightly wider and more rounded than the other. The former is regarded as the anterior end, and the nucleus is often

¹ Sambon & Seligmann—Proc. Zool. Soc., 1907, p. 284.

seen nearer this end as a dense deepstaining body, having about the same width as the animal. The size of the parasite at this stage is from nine μ by 1.8 μ to thirteen μ by 2.4 μ , the nucleus being about two μ long. One or two specimens were only as long as the nucleus of the host (Pl. lxxii., fig. 23). The corpuscles were not much affected at this stage, their nuclei remaining central.

The young forms increase in bulk and become encapsuled as sporonts, the ultimate host being probably a tick since these ectoparasites are frequent on snakes. In the encapsuled parasite the posterior end becomes bent round so as to be close to the cell (Pl. lxxii., fig. 12, 14). This "tail" is very short and is not distinguishable in most of the specimens. The nucleus is either median or approaches the anterior end, and is now relatively larger and less dense, vacuoles appearing to separate its chromatin fibres. The cytoplasm has a number of deeply-staining granules occurring at each end of the cell. The capsule is hard to make out unless the tail is well marked (Pl. lxxii., fig. 14, 21).

The sporonts vary from twelve μ by 3.6 μ to 10.5 μ by 2.4 μ , the average being 10.8 μ by three μ . They are thus very much smaller than *H. shattocki*.

There are also large forms present. These resemble schizonts (*i.e.*, the stage which undergoes fission to produce merozoites) in most of their characters but do not possess the large refracting granules in the cytoplasm. These cells are reniform and broad, with a fairly distinct capsule. The nucleus is round, large and approximately medium. The size of the latter is from three to four μ long by 2.5 to three μ broad, the parasite varying from 13.5 μ by 4.5 μ to eleven μ by four μ . Perhaps these are only large sporonts in which the "tail" is not visible (Pl. lxxii., figs. 19, 21).

The host cell does not seem to be affected to any degree by the organism, though the nucleus is usually displaced, sometimes actually lying against the periphery (Pl. lxxii., fig. 21). The only ones of both host and parasite are parallel in nearly every instance. Exceptions are sketched in Pl. lxxii., figs. 10, 16. The distortion of the host cell shown in some of the figures was, no doubt, artificially produced in making the film. I propose for this sporozoan the name, *Hamogregarina amethystina*, borrowing the specific name of the host. Its nearest ally seems to be *H. pococki*, Sambon and Seligmann, from the erythrocytes of the Indian python, *Python molurus*, Linn.

The range of *Python amethystina*, Schn., is from the Moluccas and Timor, through New Guinea to New Britain and New Ireland and southerly to Northern Queensland.

I have recently taken a number of ticks from the specimen but have not yet examined them to ascertain whether the other stage in the life-cycle is present in them.

I wish to express my thanks to the Director of the Bureau of Microbiology (Dr. F. Tidswell), for his assistance and for his courtesy in obtaining permission to publish this note of work, performed, mainly, in the State Laboratory; also, to Mr. A. R. McCulloch, of this Museum, for determining the snake.

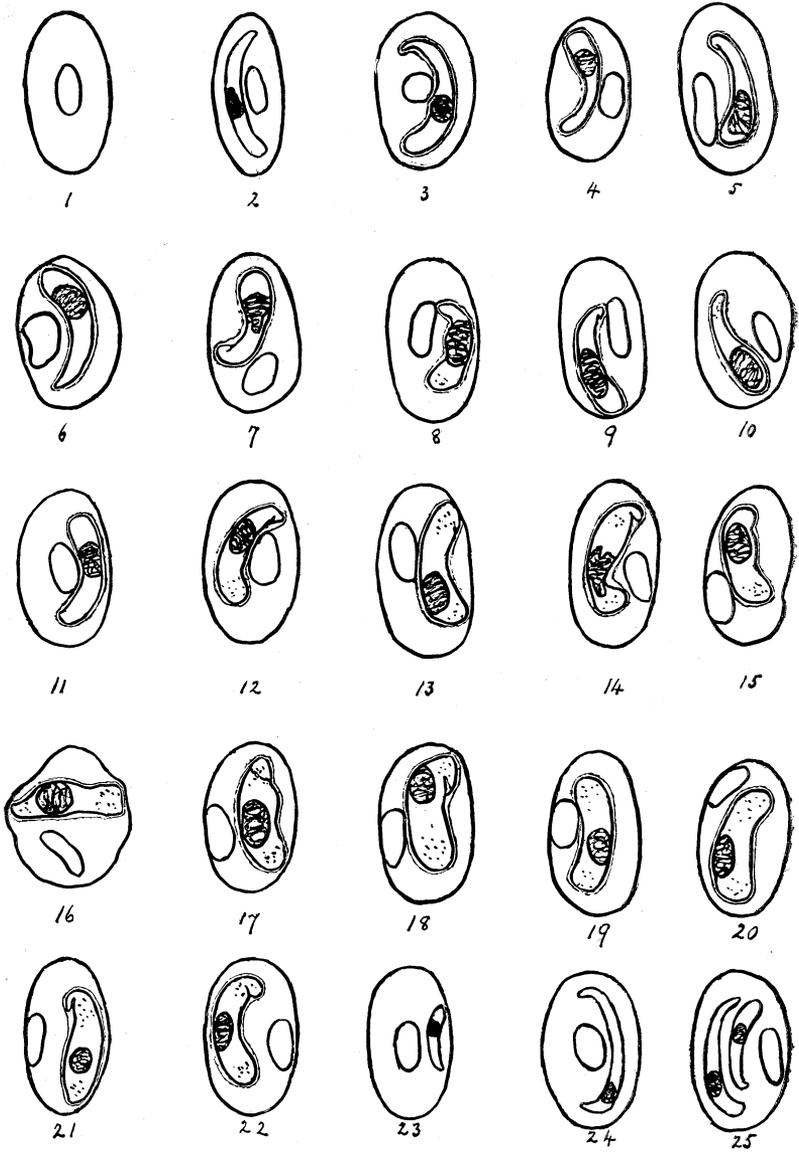
The figures were drawn using compensating ocular, one-eighteenth oil immersion objective and a Zeiss camera lucida.

A type slide has been presented to the Trustees of the Australian Museum, Sydney.

EXPLANATION OF PLATE LXXII.

HÆMOGREGARINA AMETHYSTINA, *Instn.*

- Fig. 1. Uninfected erythrocyte.
Figs. 2, 23, 24. Parasites without capsule.
,, 3 to 22. Encapsuled parasites.
Fig. 28. Very young form.
,, 25. Erythrocyte containing two parasites.



[The following corrections were published in the Table of Contents
for Volume 7 in February, 1910—Sub-Editor, September, 2009]

CORRECTIONS.

- Page 132, line 11—add “*C.*”
,, ,, line 22—delete “*u.*”
,, 213, line 5—for “*bullocki*” read “*bullockii*.”
,, 214, line 4—for “*œmula*” read “*œmula*.”
,, 215, line 13 from the bottom—for “silk on *stabilimentum*” read
“silk or *stabilimentum*.”
,, 221, line 22—for “Belle View Hill” read “Belle Vue Hill.”
,, 262—*Chiton torri*, Hedley and Hull. As this name is preoccupied
by Mr. H. Suter (Proc. Malac. Soc., vii., 1907, p. 295) for a
New Zealand species, the Australian shell may be known as
Chiton torriana, Hedley and Hull.
,, 270, line 4—for “*avicircularia*” read “*avicularia*.”
,, 285, line 3—for *Bothriembryon gunni*” read “*Bothriembryon gunnii*.”
,, 285, line 8—for “*Bulinus gunni*” read “*Bulinus gunnii*.”
,, 285, line 14—after “Mt. Farrell” insert “Family Helicidæ,”
,, 330, under heading No. 5, line 3—after “Adelaide” insert
“Johnston.”
,, 331, line 1—omit “8.”
,, ,, line 8—for “9” read “8.”
,, ,, line 12—for “10” read “9.”
,, 335, line 11—for “Australia” read “Australian human.”
,, 336, under heading 23, line 2—omit the comma after “which.”
Plate xiii., explanation—lines 3 and 5 for “Inorthographic” read
“Orthographic.”
,, l., explanation—for “Amboipo” read “Amboiba.”
,, li., explanation—for “Amboida” read “Amboiba.”
,, liii., explanation—for “Amboida” read “Amboiba.”
,, lxiii., explanation—for “*Gasteracantya*” read “*Gasteracanika*.”
,, lxxii., explanation—for “fig. 28” read “fig. 23.”
,, lxxxi.—transpose 2 and 3.