ADDENDUM

The paper [Kohn, A. J. 1978. The Conidae (Mollusca : Conidae) of India, *J. nat. Hist.*, **12** : 295-335] received recently provides a complete list of *Conus* of India, especially of the mainland, their characters for identification and notes on ecology. The paper recorded two species, *Conus lorosii* Keiner and *C. malacanus*. Huress in Brugniere from Nicobar Islands, which are not included in the present paper. The occurrence of *C. miles* L. was treated as unverified, but the presence of about thirty specimens in the Zoological Survey of India, establishes its record beyond doubt. Author's thanks are due to Prof. A. J. Kohn, University of Washington U.S.A., for the reprint.

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HAEMOPROTEUS MEGAPODIUS SP. NOV. IN *MEGAPODIUS FREYCINET ABBOTTI* OBERHOLSER (MEGAPODIIDAE) FROM THE SOUTH NICOBAR

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(With one plate)

Members of the family Megapodiidae (Order Galliformes) are curious fowl-like birds, remarkable for their reptile-like nesting habits. They have long been attracted the attention of the ornithologists. However, no report is, so far, available on the blood parasites from these birds. Recently, the authors received some blood smears through the kind courtesy of Sri S. S. Saha of this department, from a South Nicobar Megapode, *Megapodius freycinet abbotti* Oberholser of Campbell Bay, Great Nicobar Island, India for study. Interestingly, one new haemoproteid species was encountered from this bird which forms the basis of this paper.

DESCRIPTION

Type host : *Megapodius freycinet abbotti* Oberholser

Type locality : 24 km Post on North-South Road, Southwest of Campbell Bay, Great Nicobar Island, India.

Macrogametocyte : (Pl.I, Figs. 1 & 2) N = 15. Mature parasites straight to slightly haltaridial with conspicuous median constriction, usually lateral to erythrocyte nucleus, occasionally subterminal in position, and sometimes twist the host cell nucleus to 90° Parasites average 14.3 μm (1.5) by 1.9 μm (0.4) and 36.9 μm^2 (1.7) in area, occupying about 43% of the host cell-parasite complex. Cytoplasm matrix vacuolated, moderately coarse, unevenly stained blue, centrally patchy and peripherally denser. Parasite nucleus submedian, roundoval, averaging 1.5 μm (0.01) by 1.0 μm (0.01) and 1.5 μm^2 (0.2) in area, staining rose. Pigments average 21 (2.2) per parasite in the from of discrete and scattered granules, black to yellow-brown in tinge ; volutin granules absent. Erythrocyte nucleus displaced slightly laterally (NDR=0.7) or tilted to 90° (fig. 3.). Host cell hypertrophied in length (3.7%) and in area (5.4%) but relatively unchanged in width. Host cell nucleus atrophied in length (14.2%) and in area (14.7%) however, the width remaining unchanged. Macro-gametocytes are common, the ratio to microgamatocytes being 66 : 34.

Microgametocyte : (Pl. I, Figs. 4 & 5) N=10. Parasites, smaller than macrogametocytes, average 10.5 μm (0.3) by 3.3 μm (0.7) and 30.2 μm^2 (3.2) in area, with slight or no median constriction. Cytoplasm stains faint blue peripherally, central region unstained. Parasite nucleus diffuse, not exactly distinguishable from the cytoplasm. Pigment granules 20 (1.6) per parasite, localised at the poles. NDR=0.6 (0.1). Host cell atrophied in length (9.0%), in width (2.8%) and in area (12.0%). Host cell nucleus atrophied in length (19%), in width (4.1%) in area (29.5%). Remaining characteristics as for macrogametocytes.

Immature gametocyte (Pl. I, Figs. 4 & 6) *:* N=10. Small sausage-shaped parasites measuring 5.5 μm (9.6) by 2.0 μm (0.2) and 7.6 μm^2 (0.8) in area ; initiate development lateral to erythrocyte nucleus ; cytoplasm granular, vacoulated staining light blue ; pigments 10 (1.4) per parasite ; host cell slightly hypertrophied in width in some cases ; host cell nucleus remaining unchanged. Double infection (Fig. 6) of immature gametocytes is not uncommon.

Uninfected erythrocyte : N=15. Cell 13.3 μm (0.8) by 7.7 μm (0.5) and 78.8 μm^2 (5.1) in area. Cell nucleus 6.3 μm (0.5) by 2.3 μm (0.1) and 12.2 μm^2 (1.6) in area.

Type material : Holotype (Z. S. I. Reg. No. Pt.1924) is designated to a blood smear taken from *Megapodius freycinet abbotti* from Campbell Bay, Great Nicobar Island, India, 9. iv. 1977, coll. *S. S. Saha Paratypes* (2 slides Z. S. I. Reg. No. Pt. 1925, 1926) collection data same as for holotype.

Discussion

The available experimental data on the genus *Haemoproteus*, summarised by Bennett and Campbell (1972) and Bennett *et al.* (1975), indicate that haemoproteids are quite specific at the family level and sometimes at the species level (Baker, 1966, 1966b). The principle has widely been used as the basis for taxonomic distinction of the bird-inhabiting haemoproteids. The other primary taxonomic characteristics such as gametocyte-shape and its quantitative measurements lend support to the specific determination of the parasite.

Haemoproteus megapodius differs from all the five haemoproteid species viz., *Haemoproteus chapini, H. chucari, H. lophortyx, H. releyi* and *H. santosdiasi* known from the family Phasianidae (Order-Galliformes) for its characteristic constriction in the macrogametocytes, relatively unstained broad microgametocytes and occasional twisting of the erythrocyte nucleus by the parasite. It also differs from other haemoproteids of the order Galliformes (10 spp. in all excluding those two species from *Centropus* of the Cuculidae. wrongly included in the check list of Levine and Campbell, 1971 under the family Tetraonidae)

in the shape of the macrogametocytes, in the effect of the parasite on the host cell and in its quantitative measurements.

The present species closely resembles *H. fringillae* Labbe, 1894, a parasite of *Fringilla coelebs* (Family Fringillidae) and of other passeri. form species. The mature gametocytes of *H. fringillae* possess marked constriction centrally like the species described in the present paper. However, *H. megapodius* is smaller than *H. fringillae* and is usually sharply constricted centrally.

A perusal of literature indicates that there is no haemoproteid-species reported, so far from the Megapodiidae (Coatney, 1936, Berson, 1964 ; Levine and Campbell, 1971). Thus, considering strong familial specificity among the Haemoproteidae and for the characteristic morphologies presented by the parasite, the name *Haemoproteus megapodius* sp. nov. is proposed, to mark its specific identity.

SUMMARY

Haemoproteus megapodius sp. nov. is described from the South Nicobar Megapode, *Megapodius freycinet abbotti* Oberholser from Campbell Bay, Great Nicobar Island, India. The species is distinguished by its characteristic constriction in the macrogametocytes, broad unstained microgametocytes and occasional twisting of the host cell nucleus by the parasite.

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