THREE SPELEOGNATHID NASAL MITES FROM AUSTRALIAN BIRDS

by

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SUMMARY.

Boydaia hirundoae Fain from Hirundo neoxena (Passeriformes), Neoboydaia philomachi (Fain) from Limosa lapponica (Charadriiformes) and Speleognathopsis porphyriosis n. sp. from Porphyrio melanotus (Gruiformes) are the first speleognathid mites to be recorded from Australian birds.

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The speleognathid mites parasitizing the nasal passages of Australian vertebrates (mammals and frogs) have been reviewed by Domrow (1961) and Fain (1961, 1962), but no species were then known from Australian birds. Recent collections in Queensland have yielded the three species detailed below. The latest classification is that of Fain (1963a), to which Clark (1964) has suggested certain modifications.

Boydaia hirundoae Fain.


This species, parasitic in swallows in Europe and Africa ¹ (Hirundo rustica and H. abyssinica), may now be recorded from Australia — two females from the welcome swallow, H. neoxena (Gould) (Hirundinidae, Passeriformes), Brisbane, 18.XI.1963, R. D.

Neoboydaia philomachi (Fain).


¹. In listing African birds, I have followed the system adopted by Zumpt (1961).

The original records are from an old world scolopacid (*Philomachus pugnax*), and various U. S. shore birds. The species may now be recorded from Australia—one female from the bar-tailed godwit, *Limosa lapponica* (Linné) (Scolopacidae, Charadriiformes), Half Tide, near Sarina, vi.1964, R. D. and J. S. W.

**Speleognathopsis porphyrorionis** n. sp.

*Diagnosis.* — The genus *Speleognathopsis* Cooreman, as restricted by Fain (1962), contains two Congolese species. These are the typespecies, *S. galli* Cooreman, 1954, from domestic and guinea fowl (*Gallus gallus* and *Numida meleagris*, Galliformes), and *S. benoiti* Fain, 1955 from plovers (*Vanellus crassirostris* and *V. senegalus* Charadriiformes). *S. porphyrorionis* n. sp. is easily separated from both by its transverse (rather than longitudinal) scutum, and unilobate (rather than bilobate) pulvilli. To judge from the original descriptions, there are also the following setational differences, which may be tabulated:

<table>
<thead>
<tr>
<th>Species</th>
<th>Presensillary setae</th>
<th>Postsensillary setae</th>
<th>Sternal formula</th>
<th>Coxal formula</th>
<th>Adanal setae</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>S. galli</em></td>
<td>0</td>
<td>2.4.2.2.4.2 = 16</td>
<td>2.2</td>
<td>1.0.1.0</td>
<td>2 barbed</td>
</tr>
<tr>
<td><em>S. benoiti</em></td>
<td>2</td>
<td>6.4.2.2.4.2 = 20</td>
<td>2.2.2</td>
<td>2.0.1.1</td>
<td>6 barbed</td>
</tr>
<tr>
<td><em>S. porphyrorionis</em></td>
<td>2</td>
<td>4.4.2.2.4.2 = 18</td>
<td>2.2.2</td>
<td>2.1.1.1</td>
<td>6 nude</td>
</tr>
</tbody>
</table>

Note added in press. Later in the same week that this manuscript was mailed, I received two reprints directly relevant to this species (Fain, 1962, *Rev. Zool. Bot. afr.* 66 : 363-369; 1964, *Bull. Soc. roy. Zool. Anvers* 33 : 3-12). These contain the description of, and a nomenclatural amendment to, *Neoboydaia (Ralliboydaia) latiralli* Fain, who (1963a) considers *Ralliboydaia* a synonym of *Neoboydaia s.s.* *Laterallus* is a Brazilian rallid, and its parasite is extremely similar in all its chaetotaxy to *S. porphyrorionis*, whose host is an Australian rallid. Further, both species possess undivided pulvilli, unlike the two species of *Speleognathopsis* considered above. In *lateralli*, tarsal claws III and IV are unequal, and Dr. Fain (*in litt.*) mentions that this is also the case in *porphyrorionis*.

They are, indeed, undoubtedly congeneric, despite the fact that *lateralli* quite lacks a dorsal shield (as does *Neoboydaia*), while *porphyrorionis* has this structure distinctly present (as in *Speleognathopsis*). However, *N. philomachi* (Fain) is inter-

1. Although *S. benoiti* was mentioned only once in this paper, in a dichotomous key, it was thereby, in the terms of Article 13 (a) (i), "accompanied by a statement that purports to give characters differentiating the taxon " and the criteria of availability for this earlier name are therefore satisfied. The formal description of the species, however, was not published until the following year (Fain, 1956).
mediate (in this respect at least), showing fragments of a dorsal shield, and I therefore doubt this structure is always a good generic character. The palpal segmentation is also believed a weak character, even subgenerically, by CLARK (1964), and this is to be expected in an endoparasitic group where the palpi are always reduced, and never more than 3-segmented (I am most grateful to Dr. FAIN for the loan of a para­type of lateralli, which, I feel, shows 3-segmented palpi). As these two characters, in addition to the eyes (often weak or obsolescent), are the basis of the presently accepted classification, it would seem that CLARK’s suggestion that more fixed characters such as chaetotaxy be used to produce a new system has point. If the genera so defined can be correlated with host preferences, as in the present example, they should certainly be natural ones.

As Speleognathopsis Cooreman is the older of the two taxa above, the new Australian species has been assigned, but not without reservations, to that genus. It would, I believe, be pointless at this time to reassign any species, even though lateralli and porphyrionis must be congeneric.

Types. — Holotype female and two paratype females from the nasal passages of the eastern swamp­hen, Porphyrio melanotus Temminck (Rallidae, Gruiformes), Samford, S. E. Queensland, 24.1.1964, R. Domrow and J. S. Welch. Holotype: National Insect Collection, C.S.I.R.O., Canberra; paratypes: Dr. A. Fain, Antwerp, and Q.I.M.R.

Female. — Idiosoma 445 μ long in engorged, slightly flattened specimen figured, wider in anterior half. Cuticle minutely striate-punctate, hydrophobic. Eyes absent. Scutum subcuticular, rather wider than long, well defined anteriorly, but extremely weak posteriorly. Sensillae flanking scutum, filamentous, each immediately preceded by presensillary seta. Postsensillary setae eighteen in number, arranged 4.4.2.2.4.2. All setae on dorsum subequal (except smaller presensillary pair), barbulate and slightly clavate.

Venter. Sternal formula 2.2.2. Genital plates elongate oval, each flanked anterolaterally by two setae, and bearing three setae. Anal plates each flanked posterolaterally by three setae and diaphanous membrane. All ventral setae barbulate except filamentous adanal.

Legs all six-segmented, with coxae fused into body wall. Cuticle distinctly striate-punctate, overlying sclerotized meshwork, which is strong, both dorsally and ventrally, on all segments including coxae. Coxal formula 2.1.1.1. Number of setae on each segment (from trochanter to tarsus) normally as follows—leg I 1.5.4.5.12; leg II 1.4.4.3.8; legs III and IV 0.3.3.3.7 (one specimen with right femur I and left femur II each lacking one barbulate seta). Leg setae of two types—filamentous (simple or bifid) and barbulate (those at apices of tarsi quite rounded rather than clavate). Tarsi I and II with free solenidion dorsobasally as detailed by FAIN (1963b) for S. benoiti. Tibia I with internal sensory organ described by Boyd (1948) for Boydaia sturni (Boyd). Pulvilli entire, clavate, upwardly directed between paired claws, with peripheral fringe of ciliations which point down-
Fig. 1. — Speleognathopsis porphyronis n. sp. Dorsum of female.
Fig. 2. — *Speleognathopsis porphyronis* n. sp. Venter of female.
wardly. Claws I and II slender, evenly curved; III and IV slightly stronger, more abruptly bent, and sinuous in distal quarter.

Gnathosoma with texture similar to that of legs, but rather weaker on chelicerae and dorsum of palpi. Gnathobase with two pairs of setae. Palpi with three free segments; tarsus with one dorsal and two ventral setae, and ventro-internal solenidion (see FAIN, 1963b). All setae barbulate.

REFERENCES


CLARK (G. M.), 1964. — One new and one previously unreported nasal mite (Acarina, Speleognathinae) from North American birds, with observations on speleognathid taxonomy. J. Parasit. 50 : 158-162.


