

**THE *NEOPSITTAONIRMUS* (MALLOPHAGA:
PHILOPTERIDAE) FROM *CACATUA*
(AVES: PSITTACIFORMES)^{1,2}**

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Abstract. Descriptions and illustrations are given for *Neopsittaconirmus albus* from *Cacatua galerita* and for a new species, *N. shanahani*, off *C. ducorpsi* from the Solomon Islands.

Guimarães (1974) has published a review of the philopterid genus *Neopsittaconirmus* Conci from the Psittaciformes (Aves). Unfortunately, in this excellent work, the only lice available from the cockatoo genus *Cacatua* Vieillot was a short series from *C. haematuropygia* (P. L. S. Müller). Guimarães described the new species *Neopsittaconirmus emersoni* for this series, but he was unable to contribute to the identity of any of the 3 names previously applied to *Neopsittaconirmus* from *Cacatua*.

We have 2 long series of *Neopsittaconirmus*, one from *C. galerita* (Latham) and the other from *C. ducorpsi* (Bonaparte). The 1st of these represents *Neopsittaconirmus albus* (Le Souëf & Bullen); the 2nd we believe to be a new species. It is our purpose here to redescribe *N. albus*, thereby confirming its identity as a *Neopsittaconirmus*, and then describe the new species. The use of the host genus *Cacatua* instead of *Kakatoe* Cuvier is consistent with current usage as expressed by Rand & Gilliard (1967) and Mayr (1945), whereas grouping of species into higher categories follows Peters (1937). Specimens were loaned for study by Bishop Museum, Honolulu, Hawaii (BISHOP).

***Neopsittaconirmus albus* (Le Souëf & Bullen)**

FIG. 1-8

Lipeurus albus Le Souëf & Bullen, 1902, *Vict. Nat.* 18: 157. Type-host: *Cacatua galerita* (Latham).

♂. As in FIG. 4. Very pale specimen. Antenna dividing head into equal pre- and postantennal portions; scape enlarged, 1st 3 segments subequally long, last 2 much shorter, and 3rd with apical hook (FIG. 7). Pronotum with 1 medium lateroposterior seta on each side; pteronotum usually with 3 very long and 1-2 shorter setae at each corner. Short single tergo-central seta on each side of abdominal segment II (1st apparent segment), longer on III-V; 2-3 tergo-central setae on VI-VIII; single very long tergo-lateral seta on each side of III-VII, with shorter outer corner seta on VI-VII as well as on VIII. Tergite IX (FIG. 5) short medially, with group of 6 or so setae on each side, including 1 very long seta. Abdominal sternites II-VII each with 1-2 short to long sterno-central setae on each side; ventral terminal segments with only lateral setae, most very long, as shown in FIG. 4. Genitalia (FIG. 2) with short

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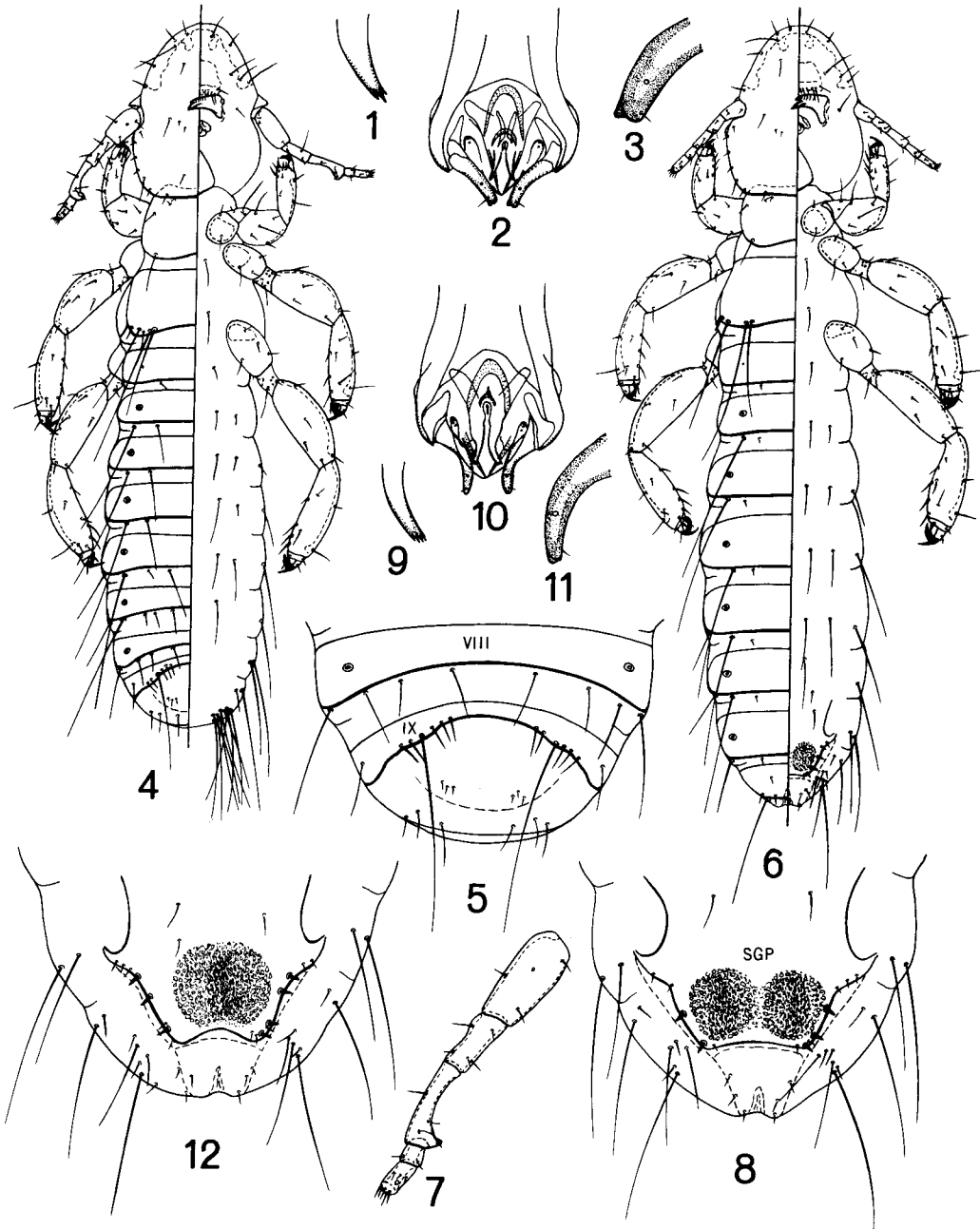


FIG. 1-12. 1-8, *Neopsittaconirmus albus*: 1, ♂ mesosomal arm; 2, ♂ genitalia; 3, ♂ paramere; 4, ♂; 5, ♂ dorsal terminalia; 6, ♀; 7, ♂ antenna; 8, ♀ ventral terminalia. 9-12, *N. shanahani*, n. sp.: 9, ♂ mesosomal arm; 10, ♂ genitalia; 11, ♂ paramere; 12, ♀ ventral terminalia.

wide basal apodeme; parameres short, stout, directed toward midline, and apically cleft with short seta (FIG. 3); pair of median mesosomal processes directed outwardly, appearing more or less pointed apically (FIG. 1).

♀. As in FIG. 6. Much as for ♂, except as follows. Antennal segments all subequal. Minute single tergoventral seta on each side of II-VIII. Tergite IX almost as long as preceding tergites, with 1 long and 2 short marginal setae on each side. Ventral terminalia as in FIG. 8; subgenital plate (SGP) with slightly concave posterior margin, 2-4 short stout spiniform setae on each side; reticulation of genital chamber in form of 2 circles, each with densest particles medially.

Dimensions (in mm): Temple width, ♂ 0.38-0.44, ♀ 0.39-0.45; head length, ♂ 0.49-0.53, ♀ 0.50-0.53; prothorax width, ♂ 0.28-0.32, ♀ 0.30-0.32; pterothorax width, ♂ 0.43-0.49, ♀ 0.44-0.51; total length, ♂ 2.03-2.20, ♀ 2.33-2.68; ♂ genitalia width, 0.21-0.23.

MATERIAL EXAMINED: 49 ♂♂, 44 ♀♀, ex *C. galerita*, New Guinea (25 collections).

The written description and figure of *L. albus* provided by Le Souëf & Bullen (1902), although lacking in detail, show no discrepancy with these lice we have studied. Since we have specimens from numerous collections off the type-host, it leaves no doubt as to the correctness of this host and the placement of this louse in *Neopsittaconirmus*.

All details, both written and illustrated, given by Guimarães (1974) for *N. emersoni* are in agreement with *N. albus*, with the consistent exception that every dimension is 10-20% less than the minimum of each range for *N. albus*. Since *N. emersoni* is from a different species of host (*C. haematuropygia*) from a well-removed geographical locality (Philippines), we feel this size differential is sufficient to justify its recognition as a distinct species.

Neopsittaconirmus shanahani Price & Emerson, new species

FIG. 9-12

Type-host: *Cacatua ducorpsi* (Bonaparte).

♂. Much as for *N. albus*. Outer tergal seta on VII much longer and heavier than corresponding seta on VI, approximately size of adjacent pleural seta on VII. Genitalia (FIG. 10) with slenderer curved parameres (FIG. 11) and median mesosomal processes appearing to have blunter apex (FIG. 9).

♀. Also much as for *N. albus*. Outer tergal seta on VII longer and heavier, as described for ♂. Posterior margin of subgenital plate with more pronounced median concavity (FIG. 12); reticulation of genital chamber as single large median circle, with particles densest at midline.

Holotype ♀ (BISHOP 10,658), allotype ♂ (BISHOP), ex *Cacatua ducorpsi* (BBM-SI 24237), SOLOMON IS: Santa Ysabel I, Boala ± 20 mi (32 km), 18.VIII.1964, P. Shanahan; paratypes, SOLOMON IS: all from type-host, 47 ♂♂, 48 ♀♀ (BBM-SI 23535, 23588, 23813, 23838, 23879, 23881, 23909, 24110, 24204, 24236, 24237, 24464).

Although *N. shanahani* is in many ways similar to *N. albus* and *N. emersoni*, thereby differing from all other *Neopsittaconirmus* reviewed by Guimarães (1974), it is easily separated by the longer heavier outer seta on tergite VII of both sexes, the large median reticulate genital chamber structure and medioposterior subgenital plate concavity of the female, and details of the male genitalia. It represents the only known *Neopsittaconirmus* from the host subgenus *Ducorpsius* Bonaparte.

The identity of 2 names applied to *Cacatua* lice is still uncertain. *Lipeurus capreolus* Gervais, from *C. sulphurea* (Gmelin), is dubiously included as a *Neopsittaconirmus*, as discussed by Guimarães (1974). Since its type-host, together with those of *N. albus* and *N. emersoni*, is included by Peters (1937) in the subgenus *Kakatoe* (= *Cacatua*), and since its distribution is in the Celebes area far from the Solomon Islands, it is felt that there is minimal chance of its proving to be conspecific with *N. shanahani*. The other name, *Lipeurus eos* Giebel from *C. roseicapilla* Vieillot, is unidentifiable, since it was described from a single nymph. Again, the type-host locality in Australia and placement by Peters (1937) in the subgenus *Eolophus* Bonaparte would seem to justify its anticipated uniqueness, should it eventually be shown to be a *Neopsittaconirmus*.

LITERATURE CITED

- Guimarães, L. R. 1974. Ischnocera (Mallophaga) infesting parrots (Psittaciformes). I. Genera *Neopsittaconirmus* Conci, 1942, and *Psittaconirmus* Harrison, 1915. *Arq. Zool.* 45: 121-201.
- Le Souëf, S. A. & H. Bullen. 1902. Descriptions of some Mallophaga from Australian birds. *Vict. Nat.* 18: 155-58.
- Mayr, E. 1945. *Birds of the Southwest Pacific*. Macmillan Co., New York. xix + 316 p.
- Peters, J. L. 1937. *Check-list of birds of the world*. III. Harvard Univ. Press, Cambridge, Mass. xiii + 311 p.
- Rand, A. L. & E. T. Gilliard. 1967. *Handbook of New Guinea Birds*. Weidenfeld & Nicolson, London. x + 612 p.