

***Aquanirmus australis* n. sp. (Mallophaga: Philopteriidae)  
from the New Zealand dabchick, *Podiceps rufopectus***

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*Aquanirmus australis* n. sp., from the New Zealand dabchick (*Podiceps rufopectus* Gray), is described and illustrated. Although showing affinities with both the *emersoni* and *bahli* species groups, it is distinguished from the former by the female head length, which is less than 25% of the total body length, and from the latter by the male terminal tergite, which does not extend beyond the sternal margin.

INTRODUCTION

The genus *Aquanirmus* was described by Clay & Meinertzhagen (1939) and reviewed by Edwards (1965). Nine species and one subspecies are currently recognised. In this paper the terminology of Edwards is adopted. In the description of the female, paratype dimensions are in parentheses.

Family PHILOPTERIDAE  
Subfamily DEGEERIELLINAЕ

*Aquanirmus australis* n. sp. (Figs 1, 2)

MALE. Total length 1.61 mm; head length 0.46 mm, head width 0.35 mm, cephalic index 0.76; ratio total length : head length, 3.5; antenna length 0.24 mm, length of basal segment 0.1 mm, length of second segment 0.09 mm, ratio basal : second 1.11; length of genitalia 0.17 mm, width of genitalia 0.11 mm, tube length 0.04 mm. Chaetotaxy and pigmentation illustrated in Figs 1A, 2A, genitalia in Fig. 2B.

FEMALE. Total length 2.29 (2.34) mm; head length 0.54 (0.56) mm, head width 0.42 (0.45) mm, cephalic index 0.79; ratio total length : head length, 4.2; antenna length 0.19 mm, length of basal segment 0.04 mm, length of second segment 0.06 mm, ratio basal : second, 0.72. Chaetotaxy and pigmentation illustrated in Figs 1B, 2C. Vulva (sternite VIII) with 14 stout spines in inner row, marginal row with 12-13 setae.

TYPE MATERIAL. HOLOTYPE ♂: Lake Whangape, Auckland (37°27'S, 175°12'E), on *Podiceps rufopectus* Gray (New Zealand dabchick), v.1972, P. R. Kettle. ALLOTYPE: Masterton, Wairarapa (41°10'S, 175°15'E), on *P. rufopectus*, ix.1958, P. R. K. PARATYPE: 1 ♀, Lake Kereta, Coromandel (36°54'S, 175°25'E), on *P. rufopectus*, x.1971, P. R. K. Repository: Entomology Division collection, DSIR, Auckland.

REMARKS. Edwards (1965) divided the species of *Aquanirmus* into three species-groups - the *bahli*- and *emersoni*-groups, occurring mainly in the Western Hemisphere, and the *colymbinus*-group in the Eastern Hemisphere. *A. australis* n. sp. is most closely allied to the *emersoni*-group, characterised by having "uniformity of pigmentation, ... lack[ing]

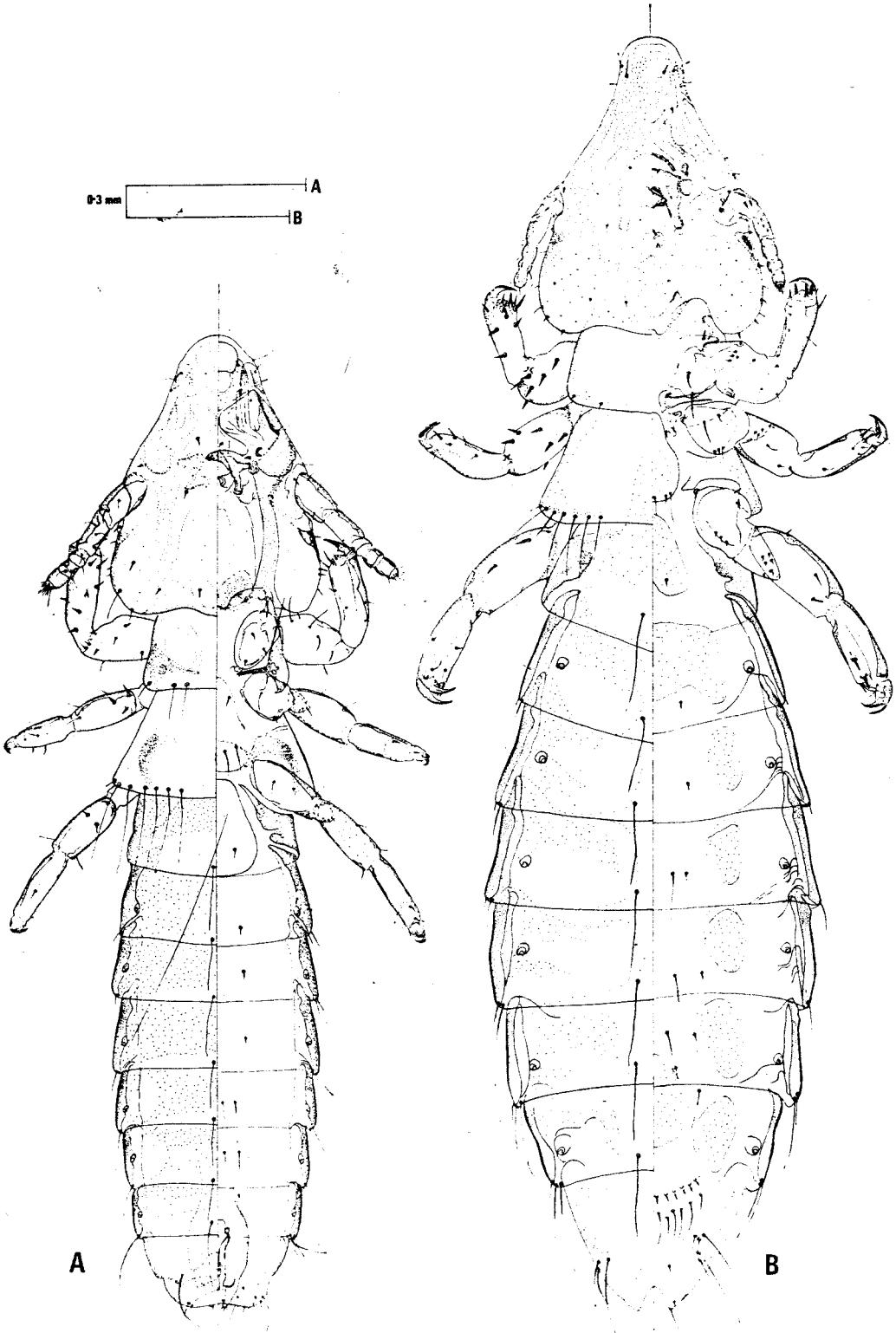


FIG. 1—*Aquanirmus australis* n. sp.: (A) dorsal/ventral view, male; (B) same, female.

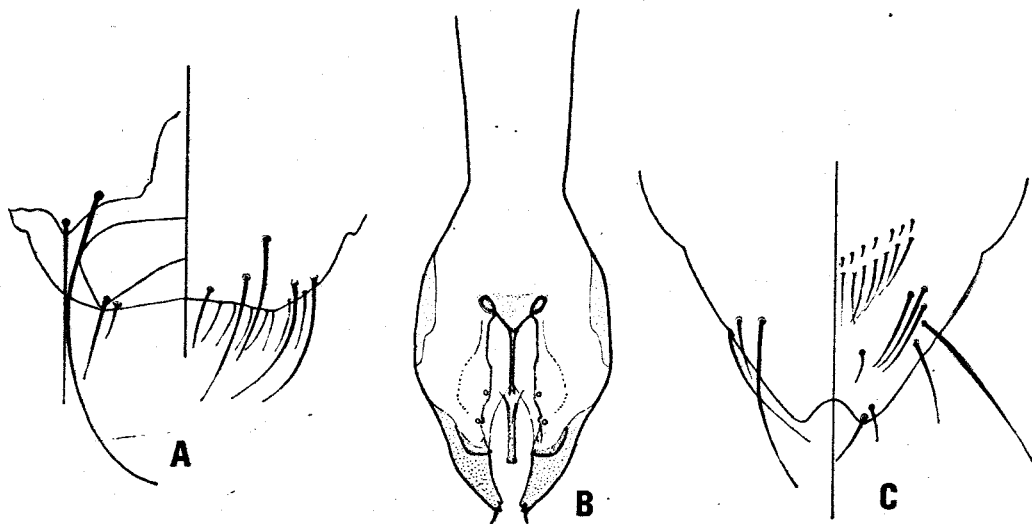


FIG. 2.—*Aquanirmus australis* n. sp.: (A) dorsal/ventral view, terminal segment, male; (B) genitalia, male; (C) dorsal/ventral view, terminal segment, female.

obvious tergal bands or other pigmentation accentuating buttresses and carinae. Male genitalia essentially egg-shaped in outline, broadest towards distal end. Terminal tergite of male does not extend beyond sternal margin at midline. Length of this tergite along midline significantly more than 50% of length at longest point."

Edwards stated that the female head length is less than 25% of the total length in the *emersoni*-group, and greater than 25% in both the *colymbinus*- and *bahli*-groups. From his original data this appears incorrect, the *emersoni*-group females having head lengths greater than 25% of their total length, and the females of the other groups, less than 25%. *A. australis* (female ratio total length : head length, 4.2) does not conform to Edwards's proportion clause for the *emersoni*-group, and in this respect and in male genital structure shows affinities with the *bahli*-group. In Edwards's scheme of suggested relationships, *A. australis* appears to lie between *A. podilymbus* Edwards, 1965 (*emersoni*-group) and *A. bahli* Tandan, 1951.

The *emersoni*-group occurs mainly in the Western Hemisphere, the exceptions being *A. emersoni* Edwards, 1965, which has been recorded from Czechoslovakia as well as North America, and *A. australis*, described here from New Zealand.

According to Oliver (1955), *Podiceps rufopectus* is most closely related to *P. poliocephalus*, which occurs in Australia. No *Aquanirmus* have been identified from this latter species. The indications, assuming that grebes originated in the Western Hemisphere, as suggested by Edwards, are that their spread to Australasia was from North America via eastern Asia rather than via Europe.

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