

A REVIEW OF THE GENUS *FRANCISCOLOA* CONCI (Mallophaga: Menoponidae)^{1,2}

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Abstract: The genus *Franciscoloa* is characterized and 9 species, 7 of which are new, are described and illustrated. The new species and their type-hosts are: *aterrimi* from *Probosciger aterrimus*, *roseicapillae* from *Kakatoe roseicapilla*, *funerei* from *Calyptorhynchus funereus*, *leadbeateri* from *Kakatoe leadbeateri*, *thompsoni* from *Kakatoe haematuropygia*, *fulgidi* from *Psittirichas fulgidus*, and *rorati* from *Lorius roratus*. There is one new synonymy: *F. pallida* (Piaget) (= *F. cacatuae* Conci). A key is given to species of the genus.

In our study of the menoponid lice that occur on the parrots (Psittaciformes), we have concluded that, at least for the present, the genus *Franciscoloa* Conci, 1942, merits recognition as a distinct taxon (Price & Beer 1966). Even though Hopkins & Clay (1952) chose to synonymize *Franciscoloa* with *Psittacomenopon* Bedford, 1930, we believe sufficient morphological evidence is available to justify the maintenance of *Franciscoloa* and its separation not only from *Psittacomenopon* but from several other related genera subsequently erected by Carriker (1954).

As interpreted by us, only 3 currently-recognized names are known to pertain with certainty to specimens referable to *Franciscoloa*; these are *F. cacatuae* Conci, *Colpocephalum pallidum* Piaget, and *C. temporale* Piaget. A fourth species, *F. waar* Eichler, is so inadequately described (Eichler 1947) as to make its status impossible to ascertain; however, what few descriptive details are given in conjunction with the type-host, *Agapornis roseicollis* (Vieillot), would lead us to conclude it might not be a *Franciscoloa* species. On the other hand, it might be a *Franciscoloa* that is associated with an incorrect host. However, until the species is identifiable, it must remain as a *species sedis incertae* within *Franciscoloa* and will not be considered further here.

The known distribution of members of *Franciscoloa* is restricted to parrots from the South Pacific islands, ranging from Australia through New Guinea and the Solomon Islands to the Philippines. Recent collections of extensive series of these lice by the Bernice P. Bishop Museum (BBM) have made a significant contribution to our knowledge of the group. It is our intent here to redescribe the known species, to describe the species new to science, and to provide a key for their identification.

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In the following descriptions, a value in parentheses following the statement of range represents the mean. All measurements are given in millimeters. Unless stated to the contrary, all references to tergites, pleura, and sternites refer to the abdomen, and the illustrations are based on specimens from the type-host. The nomenclature of the psittaciform hosts follows that of Peters (1937).

Genus *Franciscoloa* Conci

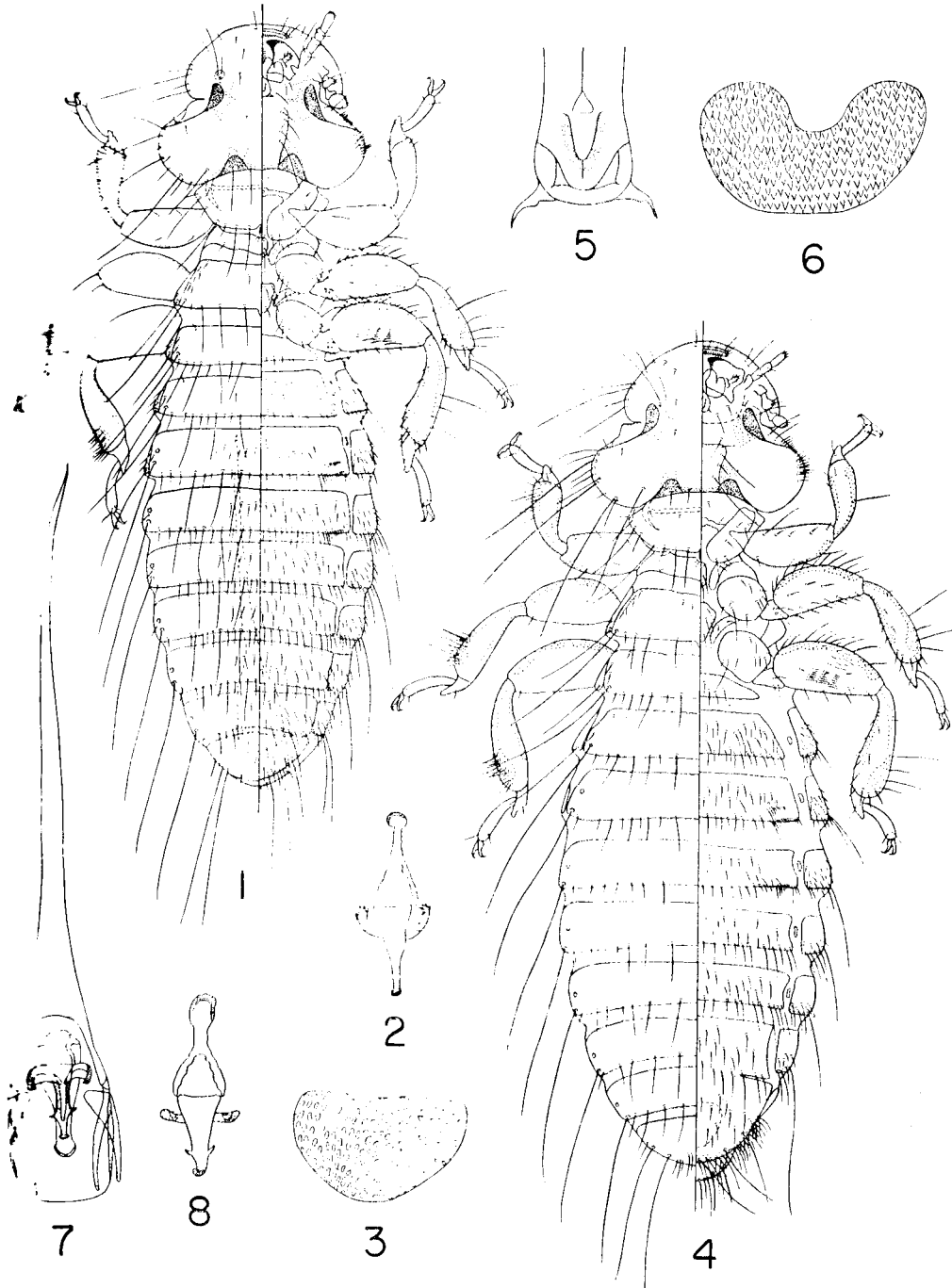
Franciscoloa Conci, 1942, Boll. Soc. Ent. Ital. **74**: 35 [Type-species: *Franciscoloa cacatuae* Conci, 1942].

This genus was established by Conci (1942) to include the single species, *F. cacatuae* (now synonymized with *Colpocephalum pallidum* Piaget in this paper), whose type-host is the psittaciform, *Kakatoe galerita triton* (Temminck). The genus was characterized as follows: Head of colpocephalid type, with weak ocular incurvature; distinct supraocular fissure. Antenna with segment II markedly enlarged. Evident esophageal sclerite. Mesothorax quite short, separated from metathorax. Abdominal sternite III with 2 (sometimes 3), sternite IV with 1 (or 2) combs of spines. Tergites without tufts of spines. Ventral surface of posterior femur with 3 (or 4) combs of spines. Genitalia of ♀ of characteristic form.

In addition to these features cited by Conci (1942), we would add the following as shared by the known members of *Franciscoloa*. Head with temple width much greater than preocular width; 3 very long marginal temple setae on each side; with preocular slit; terminal antennal segment undivided, only slightly longer than wide, and projecting beyond head margin; 2 medium setae immediately anterior to subocular comb row; sitophore sclerite of hypopharynx as in fig. 5; without ventral spinous processes; preocular and occipital nodi moderately developed, but without evident carinae between each preocular and occipital nodus on a side.

Pronotum with variable marginal setae, dorsally with only 2 pairs of setae: prosternal plate poorly developed, without setae. Metanotum with row of marginal setae; at most 1-2 pairs of minute to short medioanterior setae. Mesosternal plate narrow, elongate, with 2 minute anterior setae and up to 4 short posterior setae. Metasternal plate trapezoidal, with variable chaetotaxy.

♀ abdomen with tergites I-VIII of essentially same length, undivided, and with marginal but without anterior setae. Widest at IV, or equally wide at III-IV, with sides gently rounded from IV-VII. Postspiracular setae usually very long on I-VIII. Sternites VII-VIII fused medially, with indentation laterally marking division. Vulval margin essentially semicircular to slightly flattened, with complex chaetotaxy of rather long marginal and submarginal hooked and straight setae. Ventral anal margin usually covered by posterior vulval margin; dorsally, anus with at least 2 pairs of stouter longer inner setae.



Figs. 1-8. 1-4. *Franciscoloa aterrimi*, n. sp.: 1, ♂ ($\times 50$); 2, extruded ♂ genital sclerite (upper), penis (lower) ($\times 125$); 3, ♀ internal genital chamber structure ($\times 150$); 4, ♀ ($\times 50$). 5-8. *F. pallida* (Piaget) (ex *K. galerita*): 5, ♀ sitophore sclerite of hypopharynx ($\times 300$); 6, ♀ internal genital chamber structure ($\times 150$); 7, ♂ genitalia ($\times 115$); 8, extruded ♂ genital sclerite (upper), penis (lower) ($\times 125$).

Internal reticulate structure of genital chamber present.

♂ abdomen differs from that of ♀ principally in ventral terminalia, but also is generally of smaller size and often has anterior tergal setae. Genitalia essentially symmetrical, with slender tapered basal plate, distinct penis, and usually distinct genital sclerite.

Franciscoloa pallida (Piaget) Figs. 5-8, 10-12, 19.

Colpocephalum pallidum Pgt., 1880, Pediculines: 526 [Type-host: *Plectolophus moluccensis* = *Kakatoe moluccensis* (Gmelin)].

Franciscoloa cacatauae Conci, 1942, Boll. Soc. Ent. Ital. 74: 35 [Type-host: *Cacatua triton* = *Kakatoe galerita triton* (Temminck)]. **New Synonymy.**

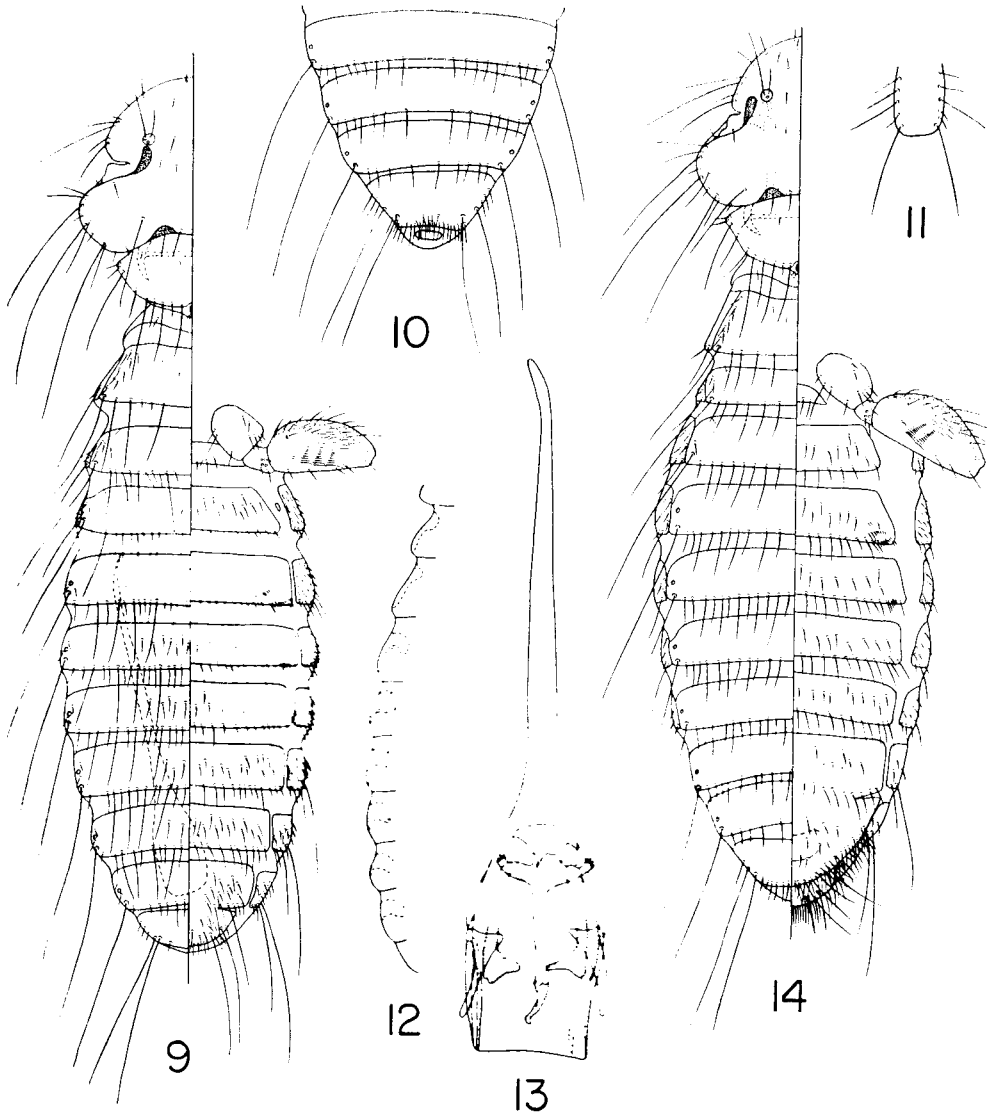
♀. Close to fig. 4. 2 pairs of minute mid-dorsal head setae (as in fig. 14). Both pairs of occipital setae of short to medium length. Gular setae as in fig. 11, with at least 1 side, usually both, with 1-2 short fine setae between posterior long setae. Each side of margin of pronotum with 4 long, 4-6 shorter setae (fig. 19), with total of 8-10 (9.3). Metanotal margin with 10-13 minute to long setae; metasternal plate with 5-9 setae. Marginal tergal setae, except for very long postspiracular setae, of short setae scattered among setae approximately 2 × their length: I, 15-19 (16.8); II V, 17-24 (20.6); VI, 15-20 (18.2); VII, 14-19 (16.5); VIII, 9-14 (11.2); longest setae on I-VII not extending over half way across following tergite (fig. 10). Last segment with 2 very long setae on each side, preceded by 2-4 medium setae, and with total of 17-29 (21.5) medium inner posterior setae; small terminal plate (fig. 10). Each side of sternite III with 2 comb rows of 13-19 setae each, IV with single short row of 3-6 setae. Sternal setae (omitting comb rows of III-IV): I, 2-6 (4.3); II, 31-46 (38.9); III, 34-41 (36.0); IV, 41-57 (47.8); V, 36-50 (44.2); VI, 33-46 (40.9); VII, 33-44 (37.2). Dorsal anal fringe with 43-58 (49.5) close-set setae. Internal structure of genital chamber much as in fig. 6. Specimens always weakly pigmented, appearing white to light yellow in uncleared state.

♂. Head and thorax as for ♀, except for pair of short spiniform setae often, but not always, present near anterodorsal head margin and 7-14 (10.4) setae on metasternal plate. Marginal tergal setae of lengths as in fig. 1, but not extending beyond bases of setae of following tergite, and numbering: I, 15-20 (17.7); II, 21-28 (24.8); III VI, 24-33 (27.0); VII, 19-25 (22.3); VIII, 12-16 (14.8). Usually no anterior tergal setae, but occasionally III and/or IV with 1. Internal pleural thickenings well developed (fig. 12). Sternal combs as for ♀. Tendency for few more sternal setae: I, 5-11 (7.7); II, 38-51 (45.2); III, 34-47 (40.3); IV, 45-58 (52.6); V, 46-52 (49.5); VI, 40-53 (46.0); VII, 37-45 (40.9); VIII, 36-44 (38.7). Genitalia (fig. 7) with short tapered penis having small barb on each side of shaft, and with genital sclerite without lateroposterior processes but with fairly long expanded medioposterior projection; in extruded position as in fig. 8. Pale-bodied, as for ♀.

Dimensions: Preocular width, ♀ 0.41-0.45, ♂ 0.41-0.45; temple width, ♀ 0.55-0.59, ♂ 0.52-0.58; head length, ♀ 0.40-0.45, ♂ 0.37-0.43; prothorax width, ♀ 0.40-0.42, ♂ 0.35-0.40; metathorax width, ♀ 0.53-0.56, ♂ 0.45-0.50; total length, ♀ 2.31-2.45, ♂ 1.94-2.15.

SPECIMENS EXAMINED: 1 ♀, 1 ♂ syntypes of *C. pallidum* Pgt., Slide No. 734a, in the Piaget Collection of the British Museum (Nat. Hist.); 104 ♀♀, 120 ♂♂, *Kakatoe galerita* (BBM-NG 722, 752, 761, 20683, 20708, 20938, 20939, 21560, 21865, 22617, 22671,

28711, 29318, 29768, 50181, 50262, 50404, 50405, 50469, 50496, 50497, 50500, 50501, HC 42, 174), SE, NE, NW New Guinea (Riaet, Bulolo, Wau, Ilugi, Nabire, Tegona, Popondetta, Balimo, Saputa, Embi, Vogelkop), New Britain (Gaulim); 2 ♂♂, *K. galerita* (Meinertzhagen Coll. 15813), N. S. Wales; 2 ♂♂, *K. galerita*, no data; 1 ♀, *Trichoglossus haematod* (L.) (BBM-SI 23536), Solomon Is.; 1 ♀, *Lorius roratus pectoralis* (P. L. S. Müller) (BBM-



Figs. 9-14. 9, *Franciscola roseicapillae*, n. sp., ♂ (×50). 10-12. *F. pallida* (Piaget) (ex *K. galerita*): 10, ♀ dorsal terminalia (×50); 11, ♀ gula (×75); 12, ♂ abdominal internal pleural thickenings (×50). 13-14. *F. thompsoni*, n. sp.: 13, ♂ genitalia (×115); 14, ♀ (×50).

NG 724), NW New Guinea (Vogelkop); 65 ♀♀, 62 ♂♂, *K. ducrops* (Bonaparte) (BBM-SI 23813, 23838, 23881, 23909, 24204, 24207, 24236, 24237, 24249, 24445, 24464), Solomon Is. (Boala, Santa Ysabel I.; Haleta, Florida Is.).

The foregoing description of *F. pallida* is based on data for lice from *K. galerita*, since we, having not yet seen the type-series of *Colpocephalum pallidum*, had presumed *F. cacatuae* to represent the valid name for this species. However, with the subsequent availability for study of the syntype ♀ and ♂ of *C. pallidum*, we found all discernible features of these to agree essentially with those of *F. cacatuae*, thereby necessitating placement of the latter name as a junior synonym. The ♀ syntype does show only 15 medium inner posterior setae on the last tergite, but this is sufficiently close to the lower limit for our *K. galerita* material as to carry no special significance.

Franciscoloa aterrimi Price and Beer, n. sp. Figs. 1-4.

Type-host: *Probosciger aterrimus* (Gmelin).

♀. As in fig. 4. Chaetotaxy of head close to *F. pallida*, but apparently with only 1 pair of minute mid-dorsal head setae. Each side of pronotum with 4 long, only 3-5 shorter setae. Metanotal margin with 8-10 setae, none minute; metasternal plate with 6-8 setae. Marginal tergal setae: I, 13-18 (16.1); II-III, 14-21 (17.0); IV, 14-19 (15.4); V-VI, 10-18 (13.5); VII, 10-12 (11.3); VIII, 9-10 (9.7). Last segment with 2 very long setae on each side, preceded by only 1 medium seta, and with total of only 2 11 (7.9) medium inner posterior setae; without small terminal plate. Each side of sternite III with 2 full comb rows of 14-21 setae each and few short scattered spiniform setae occasionally suggesting abortive third row; sternite IV with 1 comb row of 7-16 setae. Somewhat more sternal setae on: I, 4-10 (7.3); II, 53-67 (62.0); III, 40-51 (45.0); IV, 50-63 (55.0); V, 47-55 (51.0); VI, 42-47 (44.6). Dorsal anal fringe with only 21-26 (24.4) setae. Internal structure of genital chamber as in fig. 3. Specimens well pigmented, dark brown, even after treatment with potassium hydroxide.

♂. As in fig. 1. Head and thorax as for ♀, all specimens without short spiniform setae near anterodorsal head margin. Marginal tergal setae: I, 10-20 (15.8); II, 18-22 (20.5); III-VI, 19-27 (22.6); VII, 15-21 (17.5); VIII, 13-17 (14.9). Irregular single row of short anterior setae on: II, 0-1; III, 6-10 (8.3); IV-VI, 7-11 (8.9); VII, 3-7 (5.8); VIII, 1-3. Internal pleural thickenings near to *F. pallida* (fig. 12). Sternal combs and sternal setae much as for ♀. Genitalia very close to *F. pallida* (fig. 7), but differing in having no lateral barbs on penis shaft (fig. 2). Specimens dark, as for ♀.

Dimensions: Both ♀ and ♂ as for *F. pallida*.

Holotype ♀ (BISHOP 6902), *Probosciger aterrimus* (BBM-NG 50471), Balimo, SE New Guinea, H. Clissold. Paratypes: 1 ♀, same data as holotype; 2 ♀♀, 2 ♂♂, *P. aterrimus* (BBM-NG 50061, 50062), Oriomo, SE New Guinea, Clissold; 2 ♂♂, *P. aterrimus* (BBM-NG 50190, 50241), Balimo, SE New Guinea, Clissold; 1 ♀, *P. aterrimus* (BBM-NG 22594), no other data.

OTHER SPECIMENS: 7 ♀♀, 1 ♂, *Kakatoe galerita* (BBM-NG 50496, 50497, 50498, 50500, 50503), New Guinea (Tegona).

This species is best separable from *F. pallida* in the darker body pigmentation; the ♀ with fewer tergal setae on I-VIII, fewer inner posterior setae on the last tergite, fewer

dorsal anal fringe setae, and without a terminal dorsal plate; and the ♂ by having anterior tergal setae on III-VIII and no barbs on the penis shaft.

We have examined the type-material of *Menopon commissum* Neumann from *Probosciger aterrimus*; this specimen does not bear femoral or sternal combs and is, therefore, not a member of the *Colpocephalum*-complex.

***Franciscoloa roseicapillae* Price and Beer, n. sp. Fig. 9.**

Type-host: *Kakatoe roseicapilla* (Vieillot).

♀. Close to *F. pallida*, differing only in the following features. Dorsal head and thorax much as in fig. 9, but without anterodorsal pair of spiniform head setae. Marginal tergal setae with longest setae on II-VII extending over half way across following tergite: I, 14-18; II, 20-23; III-IV, 22-28 (23.9); V-VI, 18-24 (20.8); VII, 15-18; VIII, 10-13. Only 13-18 (15.6) inner posterior setae on last segment. Specimens perhaps lightly pigmented, but none seen in uncleared state. Slightly larger dimensions.

♂. As in fig. 9. Head and thorax close to *F. pallida*. Abdomen near to *F. aterrimi*. Marginal tergal setae: I, 17-21 (19.3); II, 21-27 (25.0); III-V, 26-32 (28.2); VI, 24-28 (26.0); VII, 22; VIII, 13-14. Anterior tergal setae: I, 0-2; II, 2-5; III, 8-12; IV, 15-17; V, 11-14; VI, 7-9; VII, 3-6; VIII, 0-2. Last segment with 2 very long setae on each side, preceded by 3-5 minute setae, and with 2-5 minute inner posterior setae. Sternal setae close to *F. pallida*, but with more on IV, 56-70 (62.5); V, 57-65 (59.9); VI, 48-56 (52.3); VII, 47-54 (50.8). Genitalia as for *F. pallida* (figs. 7, 8). Slightly larger dimensions than either of foregoing species.

Dimensions: Preocular width, ♀ 0.47, ♂ 0.45-0.47; temple width, ♀ 0.60-0.62, ♂ 0.58-0.60; head length, ♀ 0.41-0.45, ♂ 0.41-0.42; prothorax width, ♀ 0.42-0.43, ♂ 0.40-0.41; metathorax width, ♀ 0.55-0.58, ♂ 0.49-0.52; total length, ♀ 2.45-2.59, ♂ 2.20-2.31.

Holotype ♂ (CSIRO), *Kakatoe roseicapilla*, Gungahlin, A. C. T., Australia, 8. I. 1963, K. Simpson; in Australian National Insect Collection, C. S. I. R. O., Canberra, Australia. Paratopotypes: 7 ♀♀, 3 ♂♂, same data as holotype.

OTHER SPECIMENS: 4 ♀♀, 1 ♂, *Kakatoe sanguinea* (Gould), Zoo, London.

The ♀ of *F. roseicapillae* resembles *F. pallida*, being tenuously separable only by the longer marginal tergal setae and generally fewer inner posterior setae on the last segment. On the other hand, the ♂, while resembling *F. pallida* in its genitalia, is otherwise similar to *F. aterrimi* in having anterior tergal setae.

***Franciscoloa funerei* Price and Beer, n. sp. Fig. 20.**

Type-host: *Calyptorhynchus funereus* (Shaw).

♀. Very close to *F. pallida*, differing only as follows. Gula more often without shorter seta between long posterior setae (fig. 20). Total marginal pronotal setae 10-13 (11.5) on each side. Metanotal margin with 14-18 short to long setae. Tergal chaetotaxy close to *F. roseicapillae*, with longest marginal tergal setae on II-VII extending well over half way across following tergite. Total marginal tergal setae: I, 18-20 (18.8); II-V, 20-26 (23.0); VI, 19-24 (21.1); VII, 18-22 (19.4); VIII, 14-17 (15.3). More and slightly longer sternal

setae: I, 3-6 (4.7); II, 46-57 (50.7); III, 40-46 (42.5); IV, 55-63 (58.2); V, 52-58 (54.7); VI, 44-49 (46.2). More darkly pigmented, especially on lateral portions.

♂. Head and thorax as for ♀, without pair of short anterodorsal spiniform head setae. Tergal and sternal setae quantitatively as for *F. pallida*; no anterior tergal setae. Longer tergal setae, with longest extending beyond bases of setae of following tergite. Genitalia as for *F. pallida* (figs. 7, 8). Body darkly pigmented, close to *F. aterrimi*.

Dimensions: Preocular width, ♀ 0.44-0.47, ♂ 0.43-0.46; temple width, ♀ 0.58-0.63, ♂ 0.57-0.62; head length, ♀ 0.39-0.41, ♂ 0.37-0.38; prothorax width, ♀ 0.44-0.48, ♂ 0.40-0.44; metathorax width, ♀ 0.54-0.60, ♂ 0.49-0.53; total length, ♀ 2.32-2.47, ♂ 1.94-2.05.

Holotype ♀ (CSIRO), *Calyptorhynchus funereus*, Tasmania, Maydema, 15. VII. 1960, B. C. Mollison; in Australian National Insect Collection, C. S. I. R. O., Canberra, Australia. Paratypes: 1 ♀, 2 ♂♂, same data as holotype; 2 ♀♀, 1 ♂, *C. funereus*, Tenterfield, N. S. W. Australia, IX. 1962, K. A. Hindwood; 4 ♀♀, 3 ♂♂, *C. funereus* (Meinertzhagen Coll. 15812), S. Australia; 1 ♀, 1 ♂, *C. funereus*, no data.

OTHER SPECIMENS: 1 ♀, *C. baudinii* Lear, no data.

This species has overall affinities closest to *F. pallida*, especially in the absence of anterior tergal setae for the ♂. But it differs in its generally darker pigmentation, and often in its gular and thoracic chaetotaxy. The ♀ chaetotaxy is closest to *F. roseicapillae*, but the ♂ does not have the anterior tergal setae of that species.

Franciscoloa leadbeateri Price and Beer, n. sp.

Type-host: *Kakatoe leadbeateri* (Vigors).

♀. Unknown.

♂. Head with 2 pairs of minute mid-dorsal setae; inner occipital setae long, extending entirely across prothorax, and outer setae shorter, fine, about third length of inner. Gular setae as in fig. 20, lacking short seta between long posterior setae. Each side of pronotal margin with 4 long setae and 7-8 shorter ones. Metanotal margin with 9 long and 2 minute setae; metasternal plate with 12 setae. Long marginal tergal setae extending at least across following tergite, with short setae interspersed in row, much as for *F. roseicapillae* (fig. 9). Marginal tergal setae on I-VIII, respectively, 9, 14, 19, 19, 20, 17, 19, and 12. Medium anterior setae on IV-VII, 1, 3, 1, and 1. Last segment with 2 very long setae on each side, preceded by 1 minute seta, and with 9 minute inner posterior setae. Without development of internal pleural thickenings. Sternal setae somewhat longer than for *F. roseicapillae* (fig. 9); those on I-VIII, respectively, 0, 35, 40, 53, 51, 44, 36, and 35. Genitalia distorted, but apparently as for *F. pallida* (figs. 7, 8).

Dimensions of ♂: Preocular width, 0.50; temple width, 0.62; head length, 0.41; prothorax width, 0.44; metathorax width, 0.54; total length, 2.31.

Holotype ♂ (CSIRO), *Kakatoe leadbeateri*, C. Australia; in Australian National Insect Collection, C. S. I. R. O., Canberra, Australia.

The relative lengths of the occipital setae, the long marginal tergal setae, along with the virtual absence of anterior tergal setae and small number of marginal tergal setae, will separate this species from the closely-related preceding species.

***Franciscoloa thompsoni* Price and Beer, n. sp.** Figs. 13, 14.

Type-host: *Kakatoe haematuropygia* (P. L. S. Müller).

♀. As in fig. 14. Head with 2 pairs of mid-dorsal setae, with inner slightly longer than outer. Occipital setae medium length. Gular setae as for *F. leadbeateri* (fig. 20). Each side of pronotum with 9-10 marginal setae of lengths as illustrated. Margin of metanotum with 10 long setae; metasternal plate with only 2-4 setae. Marginal tergal setae with longest setae reaching to or beyond middle of following tergite and shorter setae half this length: I, 13-16 (14.2); II, 17-22 (19.6); III-VI, 21-27 (23.0); VII, 18-22 (19.9); VIII, 10-12 (11.0). Postspiracular seta on IV much shorter than others, at most reaching only to or slightly beyond tergite V. Last segment with 2 very long setae on each side, preceded by 1 medium seta, and with total of 9-12 medium stout inner posterior setae. Apparently without small terminal plate. Each side of sternite III with 2 comb rows, IV with single row of 5-8 setae. Sternal setae: I, 3-4; II-III, 29-34 (31.6); IV-V, 36-45 (40.7); VI, 33-43 (37.8); VII, 31-36 (33.2). Dorsal anal fringe of 35-41 (38.6) setae. Internal structure of genital chamber close to *F. pallida* (fig. 6).

♂. Head and thorax as for ♀, but with 5-8 setae on metasternal plate. Abdominal chaetotaxy both qualitatively and quantitatively close to ♀, except for slightly fewer tergal setae: I, 11-15 (12.6); II, 13-16 (14.6); III, 15-20 (18.4); IV-VI, 18-23 (19.9); VII, 14-18 (15.6); VIII, 9-13 (10.6). Without evident internal pleural thickenings. Sternite VIII with 28-32 (29.4) setae. Genitalia (fig. 13) unique, with very long penis having irregular apical portion, with elongate lateral plates, and with proportionately short parameres.

Dimensions: Preocular width, ♀ 0.39-0.42, ♂ 0.38-0.39; temple width, ♀ 0.57-0.58, ♂ 0.49-0.52; head length, ♀ 0.36-0.42, ♂ 0.34-0.36; prothorax width, ♀ 0.36-0.41, ♂ 0.34-0.38; metathorax width, ♀ 0.50-0.53, ♂ 0.42-0.51; total length, ♀ 2.12-2.27, ♂ 1.86-1.95.

Holotype ♂ (BISHOP 6903), *Kakatoe haematuropygia* (BBM-PI 2594), Balabac Is., Palawan Province, Philippines, 22.IV.1962, M. Thompson. Paratypes: 11 ♀♀, 7 ♂♂, same data as holotype; 3 ♀♀, 2 ♂♂, *K. haematuropygia*, Calamianes, Palawan Province, Philippines, 27. III. 1947.

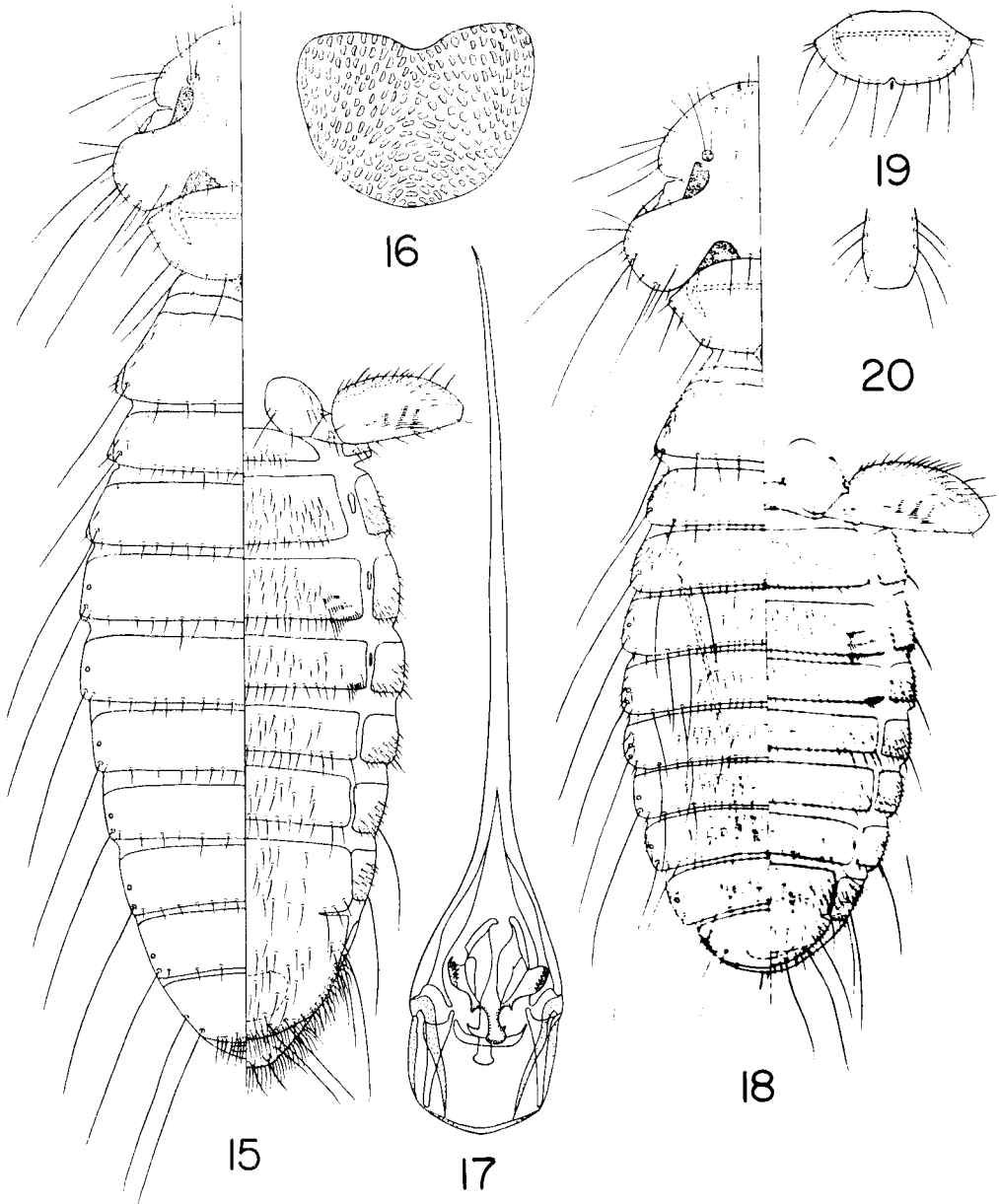
This species is best separated from related forms by the shorter postspiracular setae on IV and by the ♂ having unique genitalic structures and no anterior tergal setae.

***Franciscoloa fulgidi* Price and Beer, n. sp.** Figs. 15-18.

Type-host: *Psittrichas fulgidus* (Lesson).

♀. As in fig. 15. 2 pairs of minute mid-dorsal head setae. Both pairs of occipital setae short. Gular setae as for *F. pallida* (fig. 11). Each side of pronotal margin with 7-9 setae of lengths as shown. Metanotal margin with very long lateral corner seta, 6-7 short median setae; metasternal plate with 3-6 setae. Marginal tergal setae, except for very long postspiracular setae, short: I, 16-20 (18.0); II-V, 18-26 (22.1); VI, 15-21 (17.8); VII, 13-17 (14.6); VIII, 8-9. Last segment with 2 very long setae on each side, preceded by no setae, and with 14-17 inner posterior setae; small terminal plate. Each side of sternite III with 3 comb rows, IV with 1 row of 6-8 setae. Sternal setae: I, 15-17; II, 72-87 (77.8); III, 60-67 (64.5); IV, 48-54 (52.0); V, 43-46 (44.8); VI, 34-43 (38.5); VII,

31-38 (35.3). Dorsal anal fringe with 50-61 (56.3) setae. Internal structure of genital chamber as in fig. 16.



Figs. 15-20. 15-18. *Franciscoloa fulgidi*, n. sp.: 15, ♀ (×50); 16, ♀ internal genital chamber (×150); 17, ♂ genitalia (×115); 18, ♂ (×50). 19, *F. pallida* (Piaget) (ex *K. galerita*), ♀ pronotum (×50). 20, *F. funerei*, n. sp., ♀ genitalia (×75).

♂. As in fig. 18. Head wider than that of ♀, with more short anterodorsal setae and with longer occipital setae. Pronotum as for ♀. Longer median marginal metanotal setae; 8-12 setae on metasternal plate. Tergal chaetotaxy quite different from ♀. Marginal tergal setae, with lengths as shown: I, 20-24 (22.5); II-VII, 25-34 (29.4); VIII, 16-17. Anterior tergal setae on I-VIII, but much more numerous on posterior tergites: I, 1-6 (3.8); II, 7-25 (15.8); III, 5-17 (9.5); IV, 9-21 (12.5); V, 21-35 (28.5); VI, 41-60 (48.0); VII, 46-74 (59.3); VIII, 48-55 (50.3). Internal pleural thickenings much as for *F. pallida* (fig. 12). Sternal combs as for ♀. Sternal setae: I, 11-18 (15.8); II, 79-98 (87.8); III-VI, 59-74 (66.5); VII, 67-84 (74.3); VIII, 45-53 (49.3). Genitalia (fig. 17) with barbed penis and genital sclerite with pair of short pointed lateroposterior projections in addition to expanded medioposterior process.

Dimensions: Preocular width, ♀ 0.47-0.50, ♂ 0.53-0.55; temple width, ♀ 0.68-0.72, ♂ 0.70-0.73; head length, ♀ 0.42-0.45, ♂ 0.45-0.47; prothorax width, ♀ 0.47-0.51, ♂ 0.50-0.51; metathorax width, ♀ 0.64-0.68, ♂ 0.60-0.63; total length, ♀ 2.47-2.73, ♂ 2.21-2.43.

Holotype ♂ (BMNH), *Psittrichas fulgidus* (Meinertzhagen Coll. 13361), New Guinea; at British Museum (Nat. Hist.). Paratopotypes: 19 ♀♀, 9 ♂♂, same data as holotype.

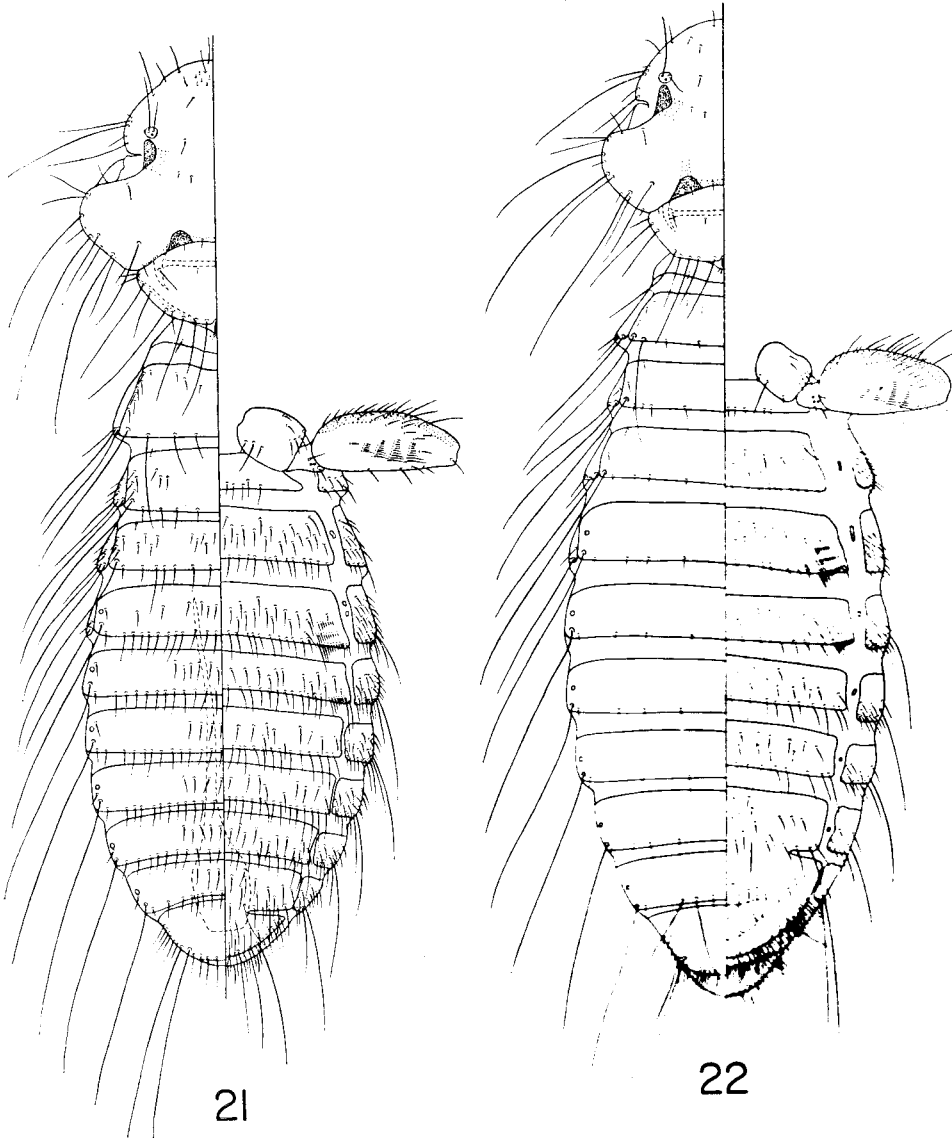
This species is easily separable from all 6 of the foregoing species by the distinctive tergal chaetotaxy of the ♀ and ♂, by the possession of 3 comb rows on each side of sternite III, and by features of the ♂ genitalia.

***Franciscoloa temporale* (Piaget)** Figs. 21, 23, 24.

Colpocephalum temporale Pgt., 1890, Tijdschr. Ent. 33: 252 [Type-host: *Macroglossus aterrimus* = *Probosciger aterrimus* (Gmelin) — perhaps error. Possibly *Alisterus amboinensis* (L.)].

♀. Dorsal head and thorax as for ♂ (fig. 21). Both pairs of occipital setae minute. Gular setae as for *F. pallida* (fig. 11). Marginal pronotal setae 9-10 on each side; outer dorsal pronotal seta medium length, reaching lateroposterior margin of pronotum. Marginal metanotal setae 8-9, with median 4 usually short and outer setae long; metasternal plate with only 2 setae (1 specimen with 4). Marginal tergal setae, except for very long postspiracular setae, all short, fine, of uniform length: I, 8; II-VII, 9-14 (10.5); VIII, 8-11 (8.8). Last segment with 2 very long setae on each side, preceded by 1 minute seta, and with 9 long fine inner posterior setae; with small terminal plate. Sternal comb rows as for *F. fulgidi*. Sternal setae: I, 11-14; II, 50-63 (56.3); III, 45-53 (49.5); IV-VI, 35-55 (43.2); VII, 34-39 (36.5). Each side of sternite II with slightly longer stouter seta lateroanterior to other setae, this seta about 2× length of nearest anterior setae. Dorsal anal fringe with only 28-36 (33.8) setae. Internal structure of genital chamber close to that of *F. aterrimi* (fig. 3).

♂. As in fig. 21. Head and thorax as for ♀, but with longer median marginal metanotal setae and with 5-7 setae on metasternal plate. Longer marginal tergal setae than ♀, but of fairly uniform length: I, 8-12 (10.0); II, 14-19 (15.8); III-VII, 20-31 (25.1); VIII, 15-18 (16.8). Irregular single row of short anterior setae on most tergites: I, 5-9 (6.5); II, 11-18 (15.0); III-IV, 6-14 (10.0); V-VII, 5-11 (8.4); VIII, 4-7 (5.8). Internal pleural thickenings much as for *F. pallida* (fig. 12). Sternal combs and sternal setae on I-VII as for ♀; VIII with 33-43 (39.8) setae. Genitalia (fig. 23) with penis and genital

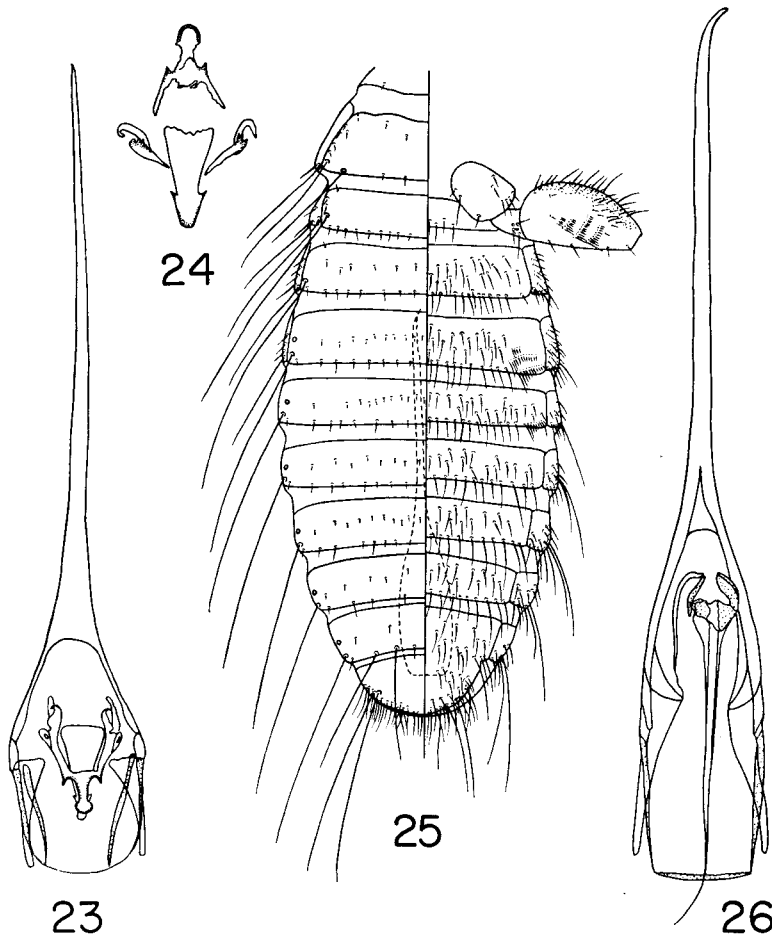


Figs. 21-22. 21, *Franciscocola temporale* (Piaget), ♂ ($\times 50$). 22, *F. rorati*, n. sp., ♀ ($\times 50$).

sclerite much as for *F. fulgidi*; extruded penis and genital sclerite as in fig. 24.

Dimensions: ♀ as for *F. fulgidi*; ♂ as for *F. fulgidi*, but with narrower preocular width, 0.47-0.51; prothorax width, 0.45-0.46; and metathorax width, 0.56-0.58.

SPECIMENS EXAMINED: Holotype ♀ (BMNH), of *C. temporale* Pgt., Slide 1308 in the Piaget Collection at the British Museum (Nat. Hist.); 4 ♀♀, 8 ♂♂, *Alisterus amboinensis* (BBM-NG 22358), New Guinea; 3 ♀♀, *A. amboinensis* and *A. chloropterus* (Ramsay)



Figs. 23-26. 23-24. *Franciscoloa temporalis* (Piaget): 23, ♂ genitalia ($\times 115$); 24, extruded ♂ genital sclerite (upper), penis (lower) ($\times 125$). 25-26. *F. rorati* n. sp.: 25, ♂ pterothorax and abdomen ($\times 50$); 26, ♂ genitalia ($\times 115$).

pooled collections BBM-NG 22414 and 22415), New Guinea.

Piaget (1890) based the description of *C. temporale* only on a ♀ specimen. We initially believed his species was represented by our *F. aterrimi* series, but his illustration seemed to vary from our fig. 4, showing a head proportionately broader across the temples and a broader somewhat telescoped abdomen. An examination of the ♀ type of *C. temporale* subsequently confirmed that it differs in many features from *F. aterrimi*. Many of its setae are missing, but it is closest to ♀♀ of our series from *Alisterus amboinensis* and should be considered as conspecific with those lice.

The ♀ of *F. temporale* is close to *F. fulgidi*, but is best separable by the smaller number of tergal and dorsal anal setae. The ♂ genitalia are close to those of *F. fulgidi*, but the ♂ is easily separated by its fewer anterior tergal setae, its much shorter occipital setae, and other features of chaetotaxy.

Franciscoloa rorati Price and Beer, n. sp. Figs. 22, 25, 26.

Type-host: *Lorius roratus* (P. L. S. Müller).

♀. As in fig. 22. 2 pairs of minute mid-dorsal head setae. Both pairs of occipital setae minute. Gular setae close to *F. pallida* (fig. 11). Each side of pronotal margin with 8-9 setae; outer dorsal pronotal seta in length near to *F. fulgidi*. Metanotal marginal setae as for *F. temporale*; metasternal plate with 3-5 setae. Tergites I-VII each with 8-11 marginal setae, with all but very long postspiracular setae being short and fine; tergite VIII with 8-10 marginal setae, including 4 long setae in addition to postspiracular setae. Last segment with 2 very long setae on each side, preceded by 2-4 medium lateral setae, and with 19-27 (23.6) medium inner posterior setae. Sternal comb rows as for *F. fulgidi*. Sternal setae: I, 7-11 (8.9); II, 31-38 (35.5); III-IV, 37-52 (46.0); V, 35-43 (39.4); VI, 31-38 (33.9); VII, 27-31 (28.9). Dorsal anal fringe with 21-24 setae. Internal structure of genital chamber close to *F. fulgidi* (fig. 16).

♂. Head and thorax much as for ♀. Abdomen as in fig. 25. Marginal tergal setae, except for very long postspiracular setae, of minute among short setae: I-IV, 15-24 (18.1); V-VI, 13-19 (16.4); VII, 10-12 (11.0); VIII, with longer setae as for ♀, 8-12 (10.0). Irregular single row of minute anterior setae on majority of tergites: I, 0-1; II, 6-14 (9.2); III, 15-22 (17.3); IV, 17-25 (21.8); V-VI, 13-21 (17.5); VII, 10-18 (12.6); VIII, 0-3. Internal pleural thickenings close to *F. pallida* (fig. 12). Sternal setae close to *F. temporale*. Genitalia unique (fig. 26), with proportionately long endomeral plate and with penis very long, tapered to hair-like ending extending beyond endomeral plate.

Dimensions: Preocular width, ♀ 0.45-0.49, ♂ 0.45-0.47; temple width, ♀ 0.66-0.68, ♂ 0.65-0.67; head length, ♀ 0.44-0.47, ♂ 0.44-0.46; prothorax width, ♀ 0.41-0.44, ♂ 0.40-0.44; metathorax width, ♀ 0.58-0.62, ♂ 0.54-0.55; total length, ♀ 2.43-2.59, ♂ 2.20-2.32.

Holotype ♂ (BISHOP 6904), *Lorius roratus* (BBM-NG 20681), Gaulim, New Britain, 26. X. 1962, H. Clissold. Paratypes: 2 ♀♀, 2 ♂♂, same data as holotype; 1 ♀, 1 ♂, *L. roratus* (BBM-NG 28692), Popondetta, SE New Guinea, P. Shanahan; 1 ♀, *L. roratus* (BBM-NG 29756), Saputa, New Guinea, Clissold; 2 ♀♀, *L. roratus* (Meinertzhagen Coll. 13387), New Guinea; 1 ♀, 1 ♂, *L. roratus*, New Guinea; 2 ♀♀, 1 ♂, *L. roratus* (BBM-SI 24230), Boala, Santa Ysabel Is., Solomon Is., 17.VIII.1964, Shanahan; 6 ♀♀, 6 ♂♂, *L. roratus* (BBM-SI 23546), Solomon Is.

The small number and short lengths of the tergoventral setae of the ♀ of *F. rorati* relate this species to *F. temporale*, but the ♀ may be separated by *F. rorati* having a shorter outer dorsal pronotal seta, long tergoventral setae on VIII, and more inner posterior setae on the last segment. The ♂ of *F. rorati* is quite different from ♂♂ of all other known species by its highly distinctive genitalia and tergal chaetotaxy.

KEY TO SPECIES OF FRANCISCOLOA

1. Each side of sternite III with only 2 well-developed comb rows (occasionally 1-4 short scattered spiniform setae anterior to 2nd row)..... 2
- Each side of sternite III with 3 comb rows, with anterior, or 3rd, row of at least 4 close-set setae 10

- 2 (1). Postspiracular seta on IV much shorter than on III or V, extending, at most, across or slightly beyond tergite V. ♂: genitalia with unique long penis (fig. 13) **thompsoni***
 Postspiracular seta on IV longer than above, extending at least across tergite VI. ♂: genitalia closer to figs. 7, 17, 23, or 26 3
- 3 (2). ♀: unknown. ♂: not over 20 marginal tergal setae, including postspiracular setae, on each of II-VII **leadbeateri***
 ♀♀. ♂: several to all of II-VII with over 20 marginal setae, including postspiracular setae 4
- 4 (3). Only 1 pair of minute mid-dorsal head setae. ♀: dorsal anal fringe of fewer than 30 setae; not over 12 inner posterior setae on last segment. ♂: penis without barbed shaft (fig. 2) **aterrimi***
 With 2 pairs of minute mid-dorsal head setae. ♀: dorsal anal fringe of over 40 setae; more than 12 inner posterior setae on last segment. ♂: penis with barbed shaft (fig. 8) 5
- 5 (4). ♂♂ 6
 ♀♀ 8
- 6 (5). With row of at least 8 anterior setae on each of tergites III-V (fig. 9) **roseicapillae***
 Without anterior setae on any tergites (rarely 1 such seta on III and/or IV) ... 7
- 7 (6). More than 14 marginal metanotal setae; specimen darkly pigmented, especially laterally **funerei***
 Fewer than 14 marginal metanotal setae; specimen very pale, weakly pigmented **pallida** (Piaget)
- 8 (5). Longer tergal setae on II-VII not extending over half way across following tergite; specimen very pale, weakly pigmented **pallida** (Piaget)
 Longer tergal setae on II-VII extending over half way across following tergite; pale to well-pigmented specimen 9
- 9 (8). Usually not over 40 setae on sternite II or 50 on V; metanotal margin with not over 14 setae **roseicapillae***
 More than 40 setae on sternite II and 50 on V; metanotal margin usually with more than 14 setae **funerei***
- 10 (1). Tergite VIII with 3-4 marginal setae, exclusive of postspiracular setae, much longer than corresponding setae on VII (figs. 22, 25), and with not over 5 anterior setae on tergite VIII. ♂: genitalia as in fig. 26 **rorati***
 Tergite VIII either with marginal setae, exclusive of postspiracular setae, shorter and of same length as corresponding setae on VII (figs. 15, 21), or, if longer setae present, then patch of over 40 anterior setae on VIII (fig. 18). ♂: genitalia as in figs. 17 or 23 11
- 11 (10). ♀: tergites II-V each with more than 15 marginal setae, including postspiracular setae. ♂: patch of over 40 anterior setae on each of tergites VI-VIII (fig. 18) **fulgidi***
 ♀: tergites II-V each with fewer than 15 marginal setae, including postspiracular setae. ♂: not over 12 anterior setae in single row on each of tergites VI-VIII (fig. 21) **temporale** (Piaget)

* Described as new.

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