

A Review of the Genus *Pseudomenopon* (Mallophaga: Menoponidae)¹

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ABSTRACT

Seventeen species of *Pseudomenopon* Mjöberg are recognized and discussed, with illustrations for 16 of these. Included are 6 new species: *P. carrikeri* from *Heliornis fulica*, *P. mcclurei* from *Poliolimnas cinereus*, *P. phoenicuri* from *Amaurornis phoenicurus*, *P. raliculacae* from *Rallacula leucospila forbesi*, *P. pilgrimi* from *Gallirallus a. australis*, and *P. meinertzhageni* from *Ortygonax r. rytirhynchus*. There are 16 new synonyms: *P. pilosum* (Scopoli) (= *Menopon scitum* Piaget, *M. delicatulum* Piaget, *P. jacintoi* Tendeiro, *P. brazi* Tendeiro, *P. slo-*

torzyckae Lucińska), *P. scopulacorne* (Denny) (= *M. parumpilosum* Piaget, *M. tridens costaricense* Carriker, *P. rozcani* Keler), *P. dolium* (Rudow) (= *M. tridens* var. *insolens* Kellogg, *M. tridens* var. *par* Kellogg, *P. insolens frescai* Eichler, *P. stuchlyi* Lucińska, *P. janiszewskae* Lucińska), *P. concretum* (Piaget) (= *P. poliocephalus* Qadri, *P. mendesi* Tendeiro), and *P. lanceolatum* Tendeiro (= *P. timmermanni* Tendeiro). A key to the species is given.

There are currently 33 specific and subspecific names applied to lice of the genus *Pseudomenopon* Mjöberg. These are distributed among avian hosts of 3 orders—the Gruiformes, Charadriiformes, and Colymbiformes. Since there has been no comprehensive study of the available *Pseudomenopon* specimens, I undertook this work to determine the status of the names now in the genus, to redescribe the recognized species, to describe any new species found, and to provide a key for species identification.

In the following descriptions, numbers applied to certain head setae are those given by Clay (1969). Measurements are given in millimeters. Illustrations of similar parts are, for comparative purposes, drawn to the same scale and, unless noted to the contrary, are of specimens from the type-host. The nomenclature of the hosts follows that of Peters (1931, 1934).

Genus *Pseudomenopon* Mjöberg

Pseudomenopon Mjöberg, 1910: 50. Type-species: *Menopon tridens* Nitzsch = *M. tridens* Burmeister (a junior synonym of *Pediculus pilosus* Scopoli).

The known members of this genus share the following characteristics.

Head.—With preocular slit; preocular and occipital nodi well developed, associated carinae moderately developed. Alveoli of marginal temple setae 26 and 27 closely associated, with Seta 26 finer and shorter than 27; occipital setae 21 and 22 long, extending well beyond transverse pronotal carina, and with Seta 23 also long and with its alveolus in straight line with those of 21 and 22; temple setae 24, 29, and 31 long to very long; preocular setae 10 and 11 short, 9 very long, with adjacent seta 8 much shorter and finer; dorsal seta 16 anterior to and close to Setae 14 and 15 and Sensillum *c*; no evidence of Sensillum *d*; inner middorsal seta 17 longer than minute outer middorsal seta 18. Antenna (Fig. 3) with proportionately large pedicel, and small undivided terminal segment; mostly concealed beneath head. With unique trilobed gular plate (Fig. 11–16) typically with 4+4 setae; subocular setae as in Fig.

4; temples without ventral submarginal patch or rows of setae; hypopharyngeal sclerites weakly developed.

Thorax.—With 16 marginal pronotal setae (numbered 1–8 from lateral corner to midline each side), 1 and 3 short, 2 and 4–8 long; outer central pronotal seta short, inner seta minute; prosternal plate (Fig. 6) without setae other than usual 1+1 anteriorly. Normal vertically oblong postnotum. Mesothorax not as sclerotized ring; 4 medioanterior mesonotal setae, alveoli of each pair close together each side; mesosternal plate (Fig. 6) with 2 short, 3 long setae. Metanotum with only 2 short medioanterior setae, marginally usually with 12 (less often, 10, 11, or 13 or more); metasternal plate (Fig. 6) usually with 8 long setae. Ventral femur III with brush; 2nd tarsal segment of Legs II and III with combs of processes.

Abdomen.—Tergites I and II with short seta lateral to postspiracular seta; postspiracular setae very long on II–IV and VI–VIII, shorter on I, and variable on V; Tergites I–VIII of equal lengths, undivided, and without anterior setae. Pleurites without anterior setae, with prolonged ventroposterior corners on II–VI, and with internal thickenings well developed. Weakly developed lateral brush each side of Sternites IV and V, occasionally VI; Sternite I present, with 4 setae (less often 3 or 5). Anus of female essentially oval, without inner setae; last tergite with 1 very long seta each side, 1 shorter seta anterior to this, and row of inner posterior setae of varying lengths; Sternites VII and VIII fused; single row of short marginal setae on subgenital plate, usually with 3 long setae each side lateroanterior to this; ventral preanal plate medially indented; genital chamber usually with microtrichia as in Fig. 18. Last tergite of male abdomen with 2 very long setae each side, 1 shorter seta anterior to these, and 2 inner posterior setae each side; Sternites VIII and IX not fused; genitalia typically with symmetrical parameres and endomeral plate, large basal apodeme, and spiculate sac with significantly variable associated sclerites.

Pseudomenopon pilosum (Scopoli)

(Fig. 1–6, 11, 18, 21, 22)

Pediculus pilosus Scopoli, 1763: 384. Type-host: *Fulica atra* L.

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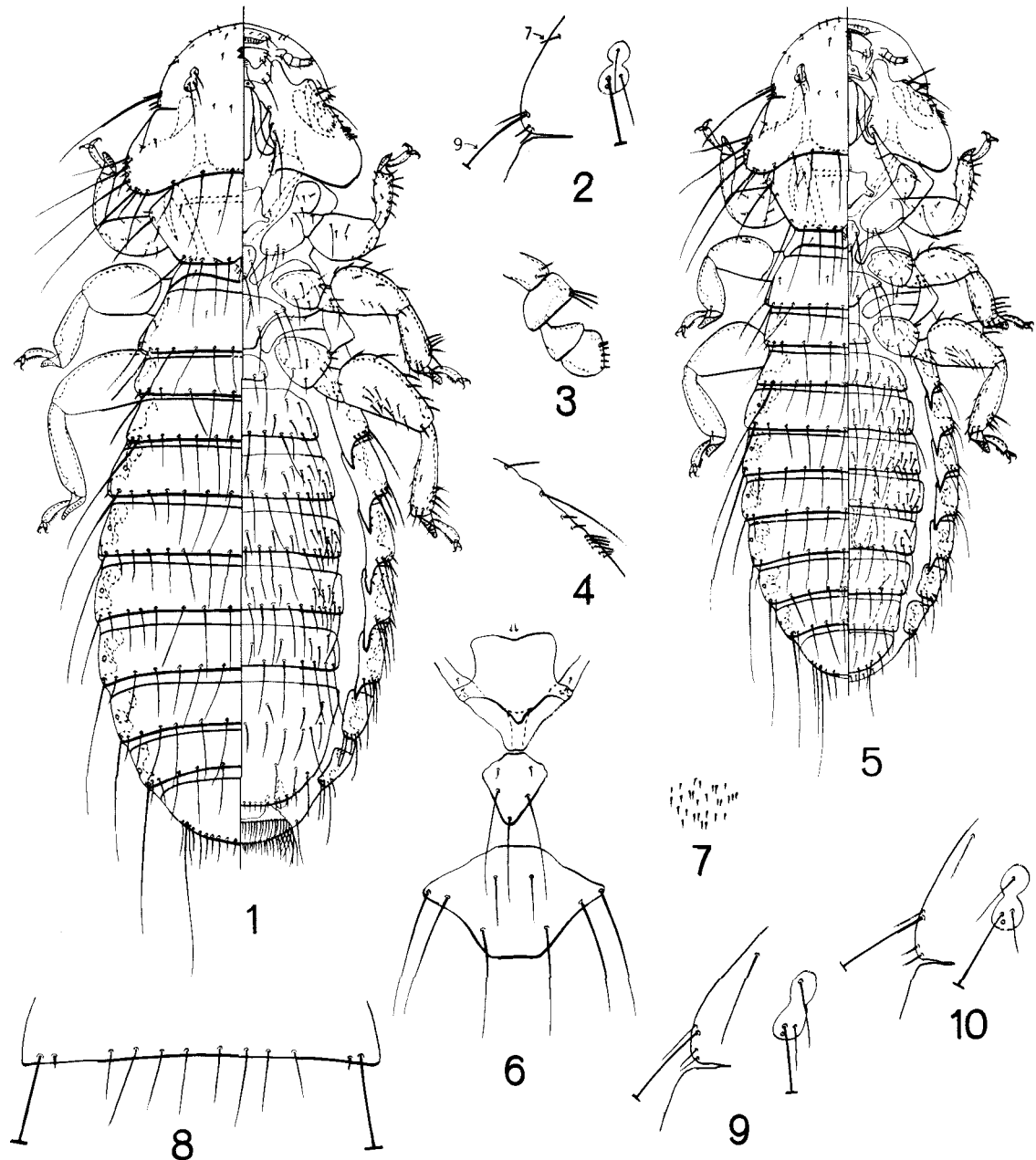


FIG. 1-10.—1-6, *P. pilosum*. 1, ♀; 2, lateroanterior head setae; 3, antenna; 4, subocular setae; 5, ♂; 6, thoracic sternal plates. 7, *P. carrikeri*, ♀ genital chamber spicules. 8, *P. lanceolatum*, ♀ tergite IV. 9, 10, lateroanterior head setae. 9, *P. rallliculae*; 10, *P. scopulacorne* (ex *Rallus longirostris*).

Menopon tridens Burmeister, 1838: 440. Type-host: *F. atra*.
Menopon scitum Piaget, 1880: 442. Type-host: *Copsychus mindanensis*—error. New Synonym.
Menopon delicatulum Piaget, 1880: 448. Type-host: *Piconotus ochrocephalus*—error. New Synonym.
Menopon tridens var. *major* Piaget, 1880: 480. (nec *Menopon quadrifasciatum* var. *major* Piaget, 1880: 441). Type-host: *F. atra*.
Menopon tridens var. *pacificum* Kellogg, 1896: 166. Type-host: *F. americana* Gmelin.
Pseudomenopon thompsoni Eichler, 1937: 97. (nom. nov. for *Menopon major* Piaget, 1880: 480, nec 1880: 441).

Pseudomenopon jacinto Tendeiro, 1965: 23. Type-host: *Hydrophasianus chirurgus* (Scopoli). New Synonym.
Pseudomenopon brazi Tendeiro, 1965: 23. Type-host: *Podica senegalensis petersii* Hartlaub. New Synonym.
Pseudomenopon zlotorzyskae Lucíńska, 1969: 359. Type-host: *Gallinula chloropus* (L.). New Synonym.

MALE.—As in Fig. 5. Broadly rounded median portion of gular plate (Fig. 11). Head seta 7 less than $\frac{1}{2}$ way to base of Seta 9 (Fig. 2). Marginal pronotal seta 3 about as long as to twice length of Seta 1. Marginal tergal setae: I, 11-12; II, 12-14;

III-VII, 11-12; VIII, 8-10. Postspiracular seta on V usually less than 0.20, much shorter than those on IV or VI. Sternal setae: II, 22-27; III, 20-35; IV, 22-42; V, 22-38; VI, 16-25; VII, 9-18; VIII, 8-13. Subgenital plate with 6-12 setae. Genitalia (Fig. 21, 22) 0.41-0.48 long, 0.08-0.10 wide, with principal sclerite 0.12-0.18 long, variably flexed from as in Fig. 21 to as in Fig. 22.

FEMALE.—As in Fig. 1. Gula, head seta 7, pronotum, and postspiracular setae as for male. Marginal tergal setae: I, 12-16; II-V, 13-23; VI-VII, 12-17; VIII, 10-13. Last tergite with 15-20 inner posterior setae. Sternal setae: II, 23-29; III, 29-41; IV-V, 35-50; VI, 26-37; VII, 16-20. Subgenital plate with 9-27 marginal setae. Anus with 51-62 ventral fringe setae, 50-69 dorsal, these being comparatively short laterally (Fig. 18); some with evidence of small ring 0.01-0.02 diam in genital chamber region.

Dimensions.—Preocular width, ♂ 0.32-0.36, ♀ 0.36-0.40; temple width, ♂ 0.42-0.50, ♀ 0.49-0.56; prothorax width, ♂ 0.33-0.38, ♀ 0.39-0.45; metathorax width, ♂ 0.35-0.40, ♀ 0.44-0.51; total length, ♂ 1.30-1.57, ♀ 1.66-1.95.

Remarks.—This species is best recognized by its broadly rounded gular plate, short head seta 7, shape and size of the male principal genital sclerite, and details of size and chaetotaxy of the female. The host range of *P. pilosum* is quite broad; it occurs on 6 species of *Fulica*, as well as on several other genera of the Rallidae (Gruiformes); additionally, it has been found on a species of *Podica* (Gruiformes: Heliornithidae) and *Hydrophasianus* (Charadriiformes: Jacanidae), making it the only *Pseudomenopon* species thus far to occur on 2 host orders. Initially, I had felt that certain of the series studied belonged to taxa other than *P. pilosum*. However, as I examined more specimens, especially of the very long series from *F. americana*, I found myself unable to separate these series by any reliable means. So, even though a wide spectrum of hosts is involved, there is no other recourse presently known than to consider them all as *P. pilosum*.

Material Examined.—6 ♂, 4 ♀ (including 4 ♂, 1 ♀ neoparatypes of *P. pilosum*), *F. atra*, England, W. Australia, Siam; 144 ♂, 124 ♀, *F. americana*, U.S.A.; 6 ♂, 19 ♀, *F. ardesiaca* Tschudi, Peru, Bolivia, Colombia; 3 ♀, *F. armillata* Vieillot, Chile; 3 ♂, 2 ♀, *F. cristata* Gmelin, Kenya, S. Africa; 4 ♂, 18 ♀, *F. gigantea* Eydoux & Souleyet, Bolivia, Peru; 3 ♂, 1 ♀, *Gallinula angulata* Sundevall, St. Helena; 24 ♂, 31 ♀, *G. chloropus*, India, Thailand, Philippine Is., Egypt, Israel, Sudan, S. Africa, England, Scotland, U.S.A.; 2 ♂, 3 ♀ (all paratypes of *P. jacintoi*), *H. chirurgus*, Rajputana, Ceylon; 4 ♂, 4 ♀, *Podica senegalensis* (Vieillot), Belgian Congo, N. Cameroon; 2 ♂, *Porphyryla martinica* (L.), Guiana, Venezuela. Questionable records: 1 ♂, 1 ♀, *Amaurornis phoenicurus* (Pennant), Rajputana; 1 ♂, *Capella megala* (Swinhoe), Philippine Is.; 1 ♂, *Gallix cinerea* (Gmelin), Thailand; 1 ♂ (type of *M.*

delicatumum), *P. ochrocephalus*, no locality; 1 ♂ (type of *M. scitum*), *C. mindanensis*, no locality.

Pseudomenopon carrikeri, n. sp.

(Fig. 7, 24)

Type-host: *Heliornis fulica* (Boddaert).

MALE.—Essentially as for *P. pilosum*, except with gap between median tergal setae and 2 lateral setae each side, much as in Fig. 8, and with genitalia having only tapered, relatively short sclerite in shape similar to basal accessory sclerite of *P. pilosum* (Fig. 24).

FEMALE.—Also much as for *P. pilosum*, except tergal setae distributed as for male, median marginal tergal setae on I not extending across following tergite, and spiculation of genital chamber coarser, more as in Fig. 7.

Remarks.—*P. carrikeri* is very close to *P. pilosum*, being distinguished primarily on details of the male genital sclerites. It is the only species of *Pseudomenopon*, other than *P. pilosum*, known to occur on the Heliornithidae.

Material Examined.—Holotype ♂, *H. fulica*, Tres Zapotes, Mexico, 7 Mar. 1940, M. A. Carriker, Jr., 412; in collection of U. S. National Museum. Paratypes (from type-host): 1 ♂, 1 ♀, same data as holotype; 1 ♀, British Guiana, British Museum Collection.

Pseudomenopon mcclurei, n. sp.

(Fig. 23)

Type-host: *Poliolimnas cinereus* (Vieillot).

MALE.—Close to *P. pilosum*, except head seta 7 extending up to ½ way to base of Seta 9, only 10 marginal metanotal setae, only 14 setae on Sternite II, and subgenital plate with 14 setae. Genitalia (Fig. 23) close to those of *P. carrikeri*, with only elongate tapered sclerite, but with long heavy spicules over its apical portion.

FEMALE.—Close to *P. pilosum*, except head seta 7 and margin of metanotum as for male, margin of Tergites III and IV with only 12 setae, and with medium lateral anal setae, more as in Fig. 20.

Dimensions.—As for *P. pilosum*, except male with preocular width 0.31, prothorax width 0.29, and metathorax width 0.31.

Material Examined.—Holotype ♂, *P. cinereus*, Calatagan, Batangas, Luzon, Philippine Is., 16 Mar. 1965, H. E. McClure, SE-1741; in collection of U. S. National Museum. Paratype: 1 ♀, same data as holotype.

Pseudomenopon scopulacorne (Denny)

(Fig. 10, 12, 20, 25)

Menopon scopulacorne Denny, 1842: 200, 221. Type-host: *Rallus aquaticus* L.

Menopon parumpilosum Piaget, 1880: 421. Type-host: *Trichoglossus ornatus*—error. New Synonym.

Menopon tridens costaricensis Carriker, 1903: 178. Type-host: *Laterallus albigularis cinereiceps* (Lawrence). New Synonym.

Pseudomenopon rowani Keler, 1951: 34. Type-host: *Atlantisia rogersi* Lowe. New Synonym.

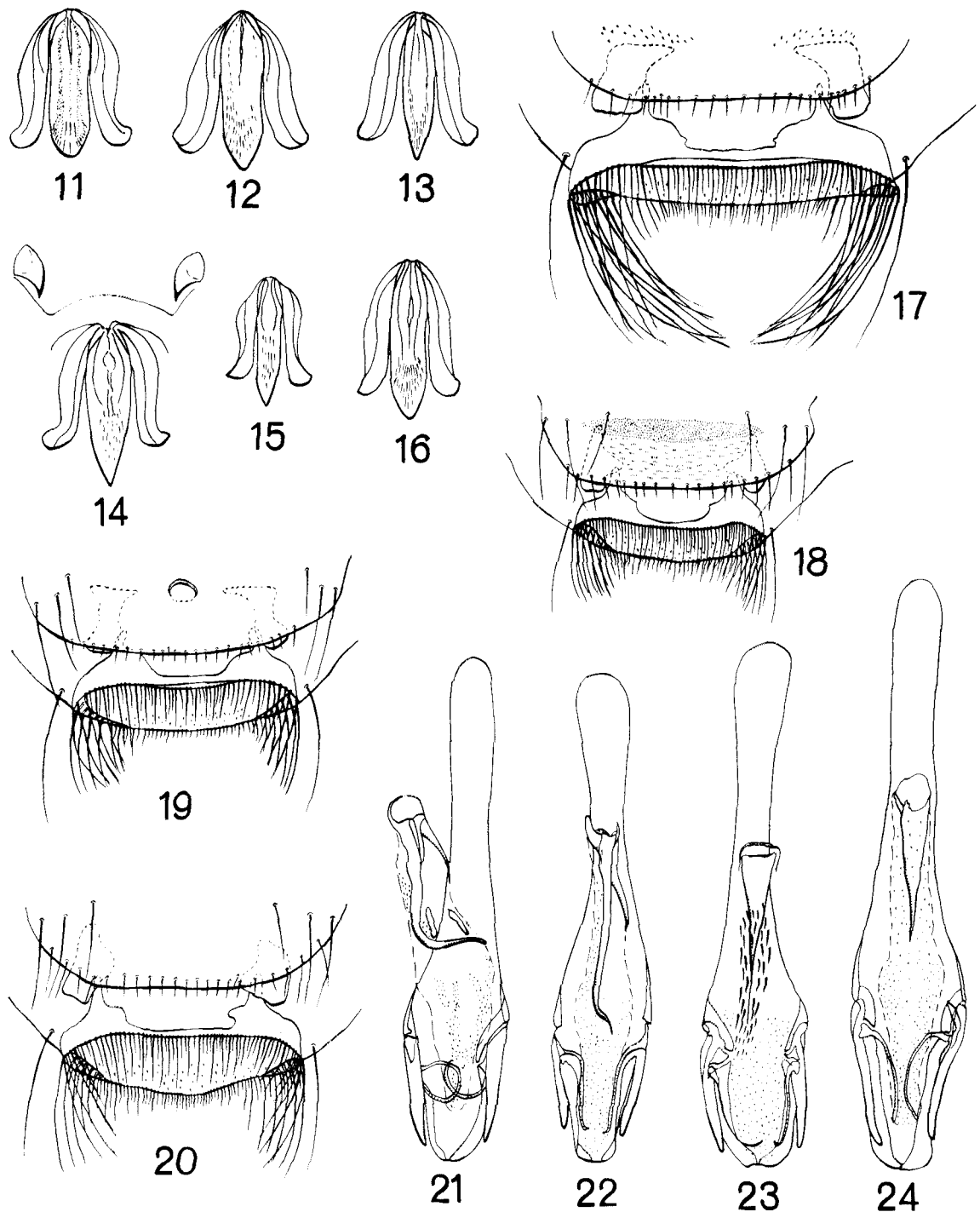


FIG. 11-24.—11-16, Gular plates. 11, ♀ *P. pilosum*; 12, ♀ *P. scopulacorne* (ex *Rallus longirostris*); 13, ♀ *P. rostratulac*; 14, ♀ *P. stresemanni* (including postpalpal processes); 15, ♂ *P. quadrii*; 16, ♂ *P. meinertzhageni*. 17-20, ♀ ventral terminalia. 17, *P. braçofortci*; 18, *P. pilosum*; 19, *P. lanceolatum*; 20, *P. scopulacorne* (ex *R. longirostris*). 21-24, ♂ genitalia. 21, *P. pilosum*; 22, *P. pilosum* (ex *Hydrophasianus chirurgus*); 23, *P. ucclurci*; 24, *P. carrikeri*.

MALE.—Median gular plate (Fig. 12) not as broadly rounded as for *P. pilosum*, although somewhat variable around that as shown. Head seta 7 reaching $\frac{1}{2}$ way or slightly more to base of Seta 9

(Fig. 10). Marginal pronotal seta 3 longer than Seta 1. Marginal tergal setae: I, 12; II-IV, 12-17; V-VI, 12-14; VII, 10-12; VIII, 9-11. Postspiracular seta on V usually not over 0.20, much shorter

than those on IV or VI. Sternal setae: II, 23-31; III, 27-38; IV-V, 29-51; VI, 24-33; VII, 14-24; VIII, 8-17. Subgenital plate with 9-15 setae. Genitalia (Fig. 25) 0.48-0.55 long, 0.09-0.12 wide, with well defined to vaguely defined complex of sclerites as shown.

FEMALE.—As for male, except in the following. Marginal tergal setae: I, 11-12; II, 13-18; III-VI, 13-22; VII, 14-19; VIII, 11-15. Last tergite with 19-22 inner posterior setae. Postspiracular seta on V variable, from much shorter than to approaching length of those on IV or VI. Sternal setae: II, 25-34; III, 35-44; IV-V, 39-59; VI, 31-48; VII, 16-33. Subgenital plate with 18-31 marginal setae. Anus with 57-79 ventral fringe setae, 52-76 dorsal, these being moderate in length laterally (Fig. 20).

Dimensions.—Preocular width, ♂ 0.30-0.35, ♀ 0.35-0.41; temple width, ♂ 0.41-0.50, ♀ 0.48-0.59; prothorax width, ♂ 0.29-0.38, ♀ 0.36-0.43; metathorax width, ♂ 0.33-0.43, ♀ 0.45-0.56; total length, ♂ 1.33-1.67, ♀ 1.86-2.17.

Remarks.—The male of *P. scopulacorne* is recognized by the combination of gular shape and unique genital sclerites; the female is often inseparable from those of several other species, as evidenced by its placement in 3 couplets of the female key. The single specimen—a female—of *M. parumpilosum* is not identifiable with certainty. However, there are no apparent features that are divergent from those of *P. scopulacorne*. In view of the fact that this specimen is from an incorrect host, and that no further material will enable better placement, the best course is to consider it a junior synonym of the earlier described and widely distributed *P. scopulacorne*. All known hosts for *P. scopulacorne* are from 5 genera of the Rallidae (Gruiformes), with its broadest distribution being within *Rallus* (8 species) and *Lateralus* (4 species).

Material Examined.—1 ♂, 4 ♀, *R. aquaticus*, England; 1 ♂, 11 ♀, *R. degans* Audubon, U.S.A.; 4 ♂, 17 ♀, *R. limicola* Vieillot, U.S.A.; 37 ♂, 52 ♀, *R. longirostris* Boddaert, U.S.A., Cuba; 1 ♂, *R. pectoralis* Temminck, Tasmania; 1 ♂, 3 ♀, *R. philippensis* L., Philippine Is., Australia; 2 ♀, *R. striatus* L., Java; 1 ♂, *R. torquatus* L., Philippine Is.; 3 ♂, 2 ♀, *A. rogersi*, Tristan da Cunha; 1 ♂, *L. albicularis* (Lawrence), Costa Rica; 1 ♂, *L. jamaicensis* (Gmelin), U.S.A.; 3 ♂, *L. leucopyrrhus* (Vieillot), no locality; 1 ♀, *L. ruber* (Sclater & Salvin), Mexico; 11 ♂, 20 ♀, *Porzana carolina* (L.), U.S.A., Panama(?); 1 ♂, *P. pusilla* (Pallas), Philippine Is.; 1 ♂, 2 ♀, *Rallina curizonoides* (Lafresnaye), Formosa, Philippine Is. Questionable record: 1 ♀ (type of *M. parumpilosum*), *T. ornatus*, Celebes.

Pseudomenopon rostratulae Bedford

(Fig. 13)

Pseudomenopon rostratulae Bedford, 1919: 722. Type-host: *Rostratula benghalensis benghalensis* (L.).

MALE.—Essentially as for *P. scopulacorne*, except for slender pointed median gular plate (Fig. 13).

FEMALE.—Also close to *P. scopulacorne*, except for

gula as for male; tendency for more tergal setae, mostly due to short among long setae: I, 12-16; II, 18-21; III-IV, 20-22; V-VII, 18-22; VIII, 16; and more sternal setae: II, 35-38; III, 54-59; IV, 64-68; V-VI, 57-66; VII, 39-43.

Remarks.—It is interesting that *P. rostratulae*, very close to but separable from *P. scopulacorne* principally only on gular shape, is limited in its distribution to a species of host in a different order, the Charadriiformes (Rostratulidae).

Material Examined.—4 ♂, 5 ♀, *R. benghalensis*, N. Rhodesia, Uganda, Philippine Is., Formosa.

Pseudomenopon dolium (Rudow)

(Fig. 26)

Colpocephalum dolium Rudow, 1869: 393. Type-host: *Colymbus cristatus* L.

Menopon tridens var. *insolens* Kellogg, 1896: 166. Type-host: *C. nigricollis californicus* (Heermann). New Synonym.

Menopon tridens var. *par* Kellogg, 1896: 166. Type-host: *Aechmophorus occidentalis* (Lawrence). New Synonym.

Pseudomenopon insolens frescai Eichler, 1952: 33. Type-host: *Polioccephalus ruficollis ruficollis* (Pallas). New Synonym.

Pseudomenopon stuchlyi Lucifiska, 1969: 364. Type-host: *C. grisegena* Boddaert. New Synonym.

Pseudomenopon janiszewskae Lucifiska, 1969: 365. Type-host: *C. auritus* L. New Synonym.

MALE.—Gula as for *P. scopulacorne*; otherwise, much as for *P. pilosum*, except for tendency for more sternal setae: II, 23-30; III, 31-40; IV-V, 34-44; VI, 24-34; VII, 15-25; VIII, 10-14; and genitalia (Fig. 26) with unique principal sclerite 0.20-0.21 long, slightly flexed at apex, with short barb and vague forking terminally, and conspicuous accessory basal sclerite ca. ½ length of principal sclerite.

FEMALE.—Gula and tergal and sternal setae as for *P. scopulacorne*; otherwise, as for *P. pilosum*, except only 40-51 setae in ventral anal fringe.

Remarks.—The recognition of the male *P. dolium* is based mainly on the structure of the genital sclerites; the female, like so many others in the genus, is not overly distinctive, but is separable by its small number of setae in the ventral anal fringe, in combination with gular shape, dimensions, and chaetotaxy. This species is the only 1 known from the grebes (Colymbiformes); it has been taken from 6 species of *Colymbus* and 1 species each of *Aechmophorus* and *Polioccephalus*. The single questionable collection from the loon, *Gavia immer* (Brünnich), may represent a natural infestation, but it certainly needs confirmation before being accepted. The loon, described originally as *Colymbus immer* and placed with the grebes, is now in the order Gaviiformes and is, according to Austin (1961), totally unrelated to the grebes.

Material Examined.—3 ♂, 8 ♀, *C. cristatus*, India, Israel, Estonia; 2 ♂, 4 ♀, *C. auritus*, U.S.A.; 4 ♂, 12 ♀, *C. grisegena*, U.S.A., Czechoslovakia; 5 ♂, 8 ♀, *C. nigricollis* (C. L. Brehm), U.S.A.; 6 ♀, *C. occipitalis* (Garnot), Bolivia; 5 ♀, *C. taczanowskii* (Berlepsch and Stolzmann), Peru; 1 ♂, 11 ♀, *A. occidentalis*, U.S.A., Canada; 7 ♂, 5 ♀, *P. ruficollis*,

England, Belgian Congo, India. Questionable record: 1 ♂, 12 ♀, *G. immer*, U.S.A.

Pseudomenopon concretum (Piaget)

(Fig. 32)

Menopon concretum Piaget, 1880: 481. Type-host: *Porphyrio poliocephalus melanopterus* Bonaparte.

Pseudomenopon poliocephalus Qadri, 1936: 638. Type-host: *P. poliocephalus poliocephalus* (Latham). New Synonym.

Pseudomenopon mendesi Tendeiro, 1965: 32. Type-host: *P. madagascariensis madagascariensis* (Latham). New Synonym.

Pseudomenopon mendesi porphyrii Tendeiro, 1965: 35. Type-host: *P. porphyrio* (L.).

MALE.—Median gular plate slender, pointed (Fig. 15). Head seta 7 at least $\frac{1}{2}$ way to base of Seta 9. Marginal pronotal setae 3 at least twice length of Seta 1. Marginal tergal setae: I, 12-14; II-IV, 12-19; V-VI, 12-16; VII, 12-13; VIII, 10-11. Postspiracular seta on V variably much shorter than, to approaching length of, those on IV or VI. Sternal setae: II, 20-24; III, 31-41; IV, 39-53; V, 37-47; VI, 25-36; VII, 17-24; VIII, 15-18. Subgenital plate with 14-19 setae. Genitalia (Fig. 32) 0.56-0.62 long, 0.10-0.13 wide, with unique forked sclerite.

FEMALE.—Much as for male, except median gular plate larger (Fig. 13); marginal tergal setae: I, 13-

17; II, 18-24; III, 21-26; IV, 20-29; V, 18-29; VI, 16-25; VII, 16-21; VIII, 12-17; last tergite with 22-29 inner posterior setae; sternal setae: II, 24-28; III, 36-47; IV-V, 42-61; VI, 36-48; VII, 22-32; subgenital plate with 20-25 marginal setae; anus with 73-87 ventral fringe setae, 81-94 dorsal, with lateral setae comparatively short (Fig. 18).

Dimensions.—Preocular width, ♂ 0.36-0.42, ♀ 0.42-0.47; temple width, ♂ 0.51-0.57, ♀ 0.58-0.66; prothorax width, ♂ 0.37-0.42, ♀ 0.43-0.51; metathorax width, ♂ 0.43-0.50, ♀ 0.50-0.62; total length, ♂ 1.53-1.73, ♀ 1.93-2.22.

Remarks.—The unique forked genital sclerite permits easy recognition of the male *P. concretum*; the generally more numerous tergal and anal setae, along with the pointed gular plate and usually large dimensions, separate the female. The known host distribution of this louse is on 3 of the 4 species recognized in *Porphyrio* and the single species of *Megacrex*, all of these in the family Rallidae (Gruiformes).

Material Examined.—6 ♂, 23 ♀ (including 1 ♀ paratype of *M. concretum*), *P. poliocephalus*, New Zealand, Tasmania, Rajputana; 1 ♂, 1 ♀ (both paratypes of *P. m. mendesi*), *P. madagascariensis*, S. Africa; 6 ♂, 9 ♀, *P. porphyrio*, W. Australia, W. Pakistan, S. Africa; 6 ♂, 6 ♀, *Megacrex inepta* D'Albertis and Salvadori, New Guinea.

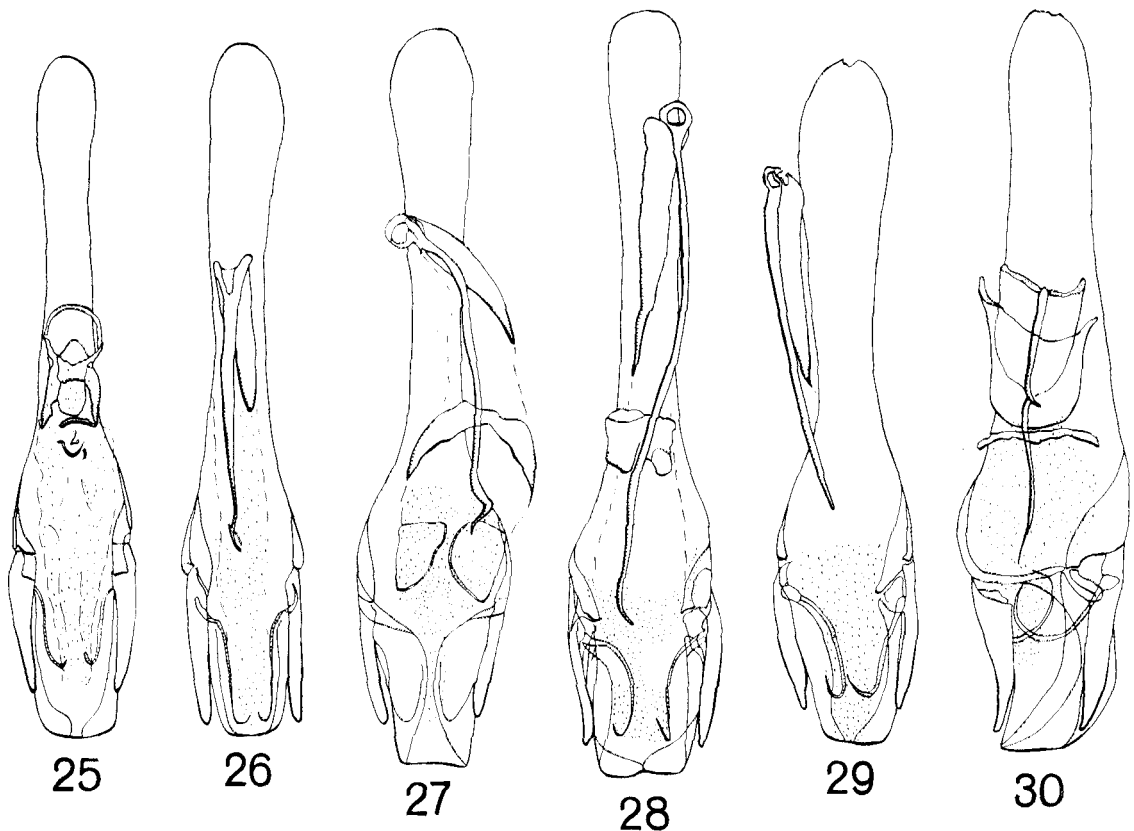


FIG. 25-30.—♂ genitalia. 25, *P. scopulacorne* (ex *Rallus longirostris*); 26, *P. dolium*; 27, *P. pfliegeri*; 28, *P. phoenicuri*; 29, *P. pilgrimi*; 30, *P. qadrii*.

Pseudomenopon stresemanni Eichler

(Fig. 14, 33)

Pseudomenopon stresemanni Eichler, 1949: 250. Type-host: *Aramus scolopaceus carau* Vieillot.

MALE.—Median gular plate pointed, with pair of pointed postpalpal processes (Fig. 14). Head seta 7 reaching almost to base of Seta 9. Marginal pronotal seta 3 from 2–3 times as long as Seta 1. Marginal tergal setae: I, 12–14; II–IV, 16–19; V–VII, 13–16; VIII, 10–11. Postspiracular seta on V very long, subequal to those on IV or VI. Sternal setae: II, 31–32; III–V, 45–55; VI, 36–37; VII, 22–27; VIII, 12–14. Subgenital plate with 14–15 setae. Genitalia (Fig. 33) large, 0.63–0.71 long, 0.11 wide, with very long (0.50–0.54) slender principal sclerite.

FEMALE.—As for male, except marginal tergal setae: I, 16–19; II–VI, 23–27; VII, 19–21; VIII, 16–17; last tergite with 17–22 inner posterior setae; sternal setae: II, 34–38; III, 54–60; IV–V, 61–70; VI, 46–51; VII, 28–33; subgenital plate with 19–22 marginal setae; anus with 59–62 ventral fringe setae, 63–74 dorsal, with lateral setae moderately long (Fig. 20) and without evidence of genital chamber ring.

Dimensions.—Preocular width, ♂ 0.39–0.40, ♀ 0.45–0.46; temple width, ♂ 0.54–0.55, ♀ 0.63–0.65; prothorax width, ♂ 0.40–0.41, ♀ 0.47–0.50; metathorax width, ♂ 0.45–0.46, ♀ 0.58–0.61; total length, ♂ 1.60–1.72, ♀ 2.14–2.24.

Remarks.—This is the only known species of *Pseudomenopon* that has a pair of pointed postpalpal processes in the adult stage. Clay (1969) has pointed out that these processes are present in some, possibly all, nymphs of *Pseudomenopon*. Therefore, proper identification of *P. stresemanni* requires the certainty that one is dealing with adult lice. Of the first 6 families listed by Peters (1934) under the Gruiformes, the only 1 found by me to have *Pseudomenopon* is the monotypical limpkin family Aramididae, which has *P. stresemanni*.

Material Examined.—5 ♂, 35 ♀, *A. scolopaceus* (Gmelin), Brazil.

Pseudomenopon pfliegeri Eichler

(Fig. 27)

Pseudomenopon pfliegeri Eichler, 1952: 34. Type-host: *Porphyryla alleni* (Thomson).

MALE.—Gula near to that of Fig. 13, but variably between that and Fig. 12. Head seta 7 over ½ way to base of Seta 9. Marginal pronotal seta 3 longer than Seta 1. With only 10 marginal metanotal setae. Marginal tergal setae: I–VI, 10–12; VII–VIII, 8; some with distinct gap in row of tergal setae, as in Fig. 8. Postspiracular seta on V ca. 0.25 long. Sternal setae: II, 19; III–V, 27–30; VI, 21; VII, 15; VIII, 9. Subgenital plate with 10 setae. Genitalia (Fig. 27) 0.52 long, 0.11 wide, with principal sclerite 0.23 long and abruptly deflected apically, and with accessory sclerites as shown.

FEMALE.—Much as for male, except marginal tergal setae: I–III, 11–12; IV, 13–14; V–VII, 10–12; VIII, 8–9; last tergite with 19 inner posterior setae;

sternal setae: II, 18–21; III, 30–34; IV–V, 35–43; VI, 26–31; VII, 16–17; subgenital plate with 17–20 marginal setae; anus with 60–65 ventral fringe setae, 58–70 dorsal, with lateral setae as in Fig. 20.

Dimensions.—Preocular width, ♂ 0.33, ♀ 0.39–0.40; temple width, ♂ 0.45, ♀ 0.58; prothorax width, ♂ 0.31, ♀ 0.41; metathorax width, ♂ 0.36, ♀ 0.49–0.50; total length, ♂ 1.30, ♀ 1.86–1.92.

Remarks.—The male of *P. pfliegeri* is recognized by a combination of genitalic detail, gular shape, length of head seta 7 and postspiracular seta on V, and certain quantitative chaetotaxy; the female is identified using primarily a number of chaetotaxy features. The only known host for *P. pfliegeri* is a species of *Porphyryla* (Gruiformes: Rallidae).

Material Examined.—1 ♂, 2 ♀, *P. alleni*, Belgian Congo.

Pseudomenopon phoenicuri, n. sp.

(Fig. 28)

Type-host: *Amaurornis phoenicurus* (Pennant).

MALE.—Generally as for *P. pfliegeri*, except as follows. Metanotum occasionally with 11 or 12 marginal setae. Few more marginal tergal setae: I, 11–12; II, 12–16; III, 11–15; IV, 10–13; V–VII, 10–12; VIII, 9–10. Postspiracular seta on V usually less than 0.20 long, much less often up to 0.30. Sternal setae: II, 16–28; III–V, 23–39; VI, 24–29; VII, 13–19; VIII, 8–15. Subgenital plate with 8–18 setae. Genitalia (Fig. 28) 0.46–0.57 long, 0.10–0.11 wide, with long (0.30–0.43) essentially straight slender principal sclerite and with basal accessory sclerite ca. ½ this length.

FEMALE.—Also generally as for *P. pfliegeri*, except as follows. Metanotum and postspiracular seta on V as for male. Marginal tergal setae: I, 12–13; II–III, 11–19; IV–VI, 12–18; VII, 12–14; VIII, 10–12. Last tergite with 19–22 inner posterior setae. Sternal setae: II, 24–32; III–V, 33–52; VI, 29–39; VII, 14–23. Subgenital plate with 20–23 marginal setae.

Dimensions.—Preocular width, ♂ 0.33–0.38, ♀ 0.37–0.44; temple width, ♂ 0.46–0.53, ♀ 0.52–0.63; prothorax width, ♂ 0.31–0.39, ♀ 0.36–0.49; metathorax width, ♂ 0.36–0.44, ♀ 0.44–0.60; total length, ♂ 1.38–1.70, ♀ 1.73–2.21.

Remarks.—The male is close to that of *P. pfliegeri*, but separable by its straighter, longer, principal genital sclerite; the female demonstrates such a plasticity of characters that it is difficult to identify with certainty, keying out in 4 couplets and inseparable in 1 instance from 2 other species. The host range is fairly consistent, in that *P. phoenicuri* has been taken from 4 genera of Rallidae, 3 of which (*Tribonyx*, *Amaurornis*, *Gallicrex*) are listed consecutively in Peters (1934).

Material Examined.—Holotype ♂, *A. phoenicurus*, Subang, Malaya, 25 June 1962, M-01504; in collection of U. S. National Museum. Paratypes: 33 ♂, 41 ♀, *A. phoenicurus*, India, Malaya, Thailand, N. Borneo (total of 13 collections). Other material: 8 ♂, 5 ♀, *Gallicrex cinerea*, Malaya, Formosa, Philippine

Is., Thailand; 1 ♂, 3 ♀, *Porzana fusca* (L.), Thailand; 6 ♂, 5 ♀, *Tribonyx mortierii* DuBus, Tasmania. Questionable record: 1 ♂, *Rallus aquaticus*, Formosa.

***Pseudomenopon cinereum* (Piaget)**

Menopon cinereum Piaget, 1885: 111. Type-host: *Himantornis haematopus* Hartlaub.

MALE.—Median gular plate pointed, near Fig. 13. Head seta 7 over ½ way to base of Seta 9. Marginal pronotal Seta 3 longer than Seta 1. With 12 marginal metanotal setae. Marginal tergal setae: I, ?; II, 13; III-VII, 12; VIII, 10. Postspiracular setae on II-VIII very long, all from ca. 0.35-0.50 long. Sternal setae: I, 4; II, ?; III, 37; IV, 46; V, 38; VI, 32; VII, 22; VIII, 14. Subgenital plate with ca. 10 setae. Genitalia 0.55 long, 0.10 wide, with principal sclerite 0.25 long and relatively straight and narrow (much as in Fig. 31), accessory sclerites indistinct.

FEMALE.—Unavailable.

Dimensions of Male.—Preocular width, 0.36; temple width, 0.50; prothorax width, 0.36; metathorax width, 0.37; total length, 1.36 (telescoped).

Remarks.—From what can be associated with the single specimen available, it appears that *P. cinereum* is closest morphologically to *P. pflegeri* and *P. phoenicuri*. However, it differs from *P. pflegeri* by the generally much longer postspiracular setae, more setae on some tergites and sternites, somewhat larger dimensions, and suggestions of differences in the genital sclerites. The much longer postspiracular seta on V and consistently shorter principal genital sclerite of *P. cinereum* separate it from *P. phoenicuri*.

Material Examined.—1 ♂ (lectotype of *M. cinereum*), *H. haematopus*, no locality.

***Pseudomenopon ralliculae*, n. sp.**

(Fig. 9, 31)

Type-host: *Rallacula leucospila forbesi* Sharpe.

MALE.—Median gular plate broad, near Fig. 12.

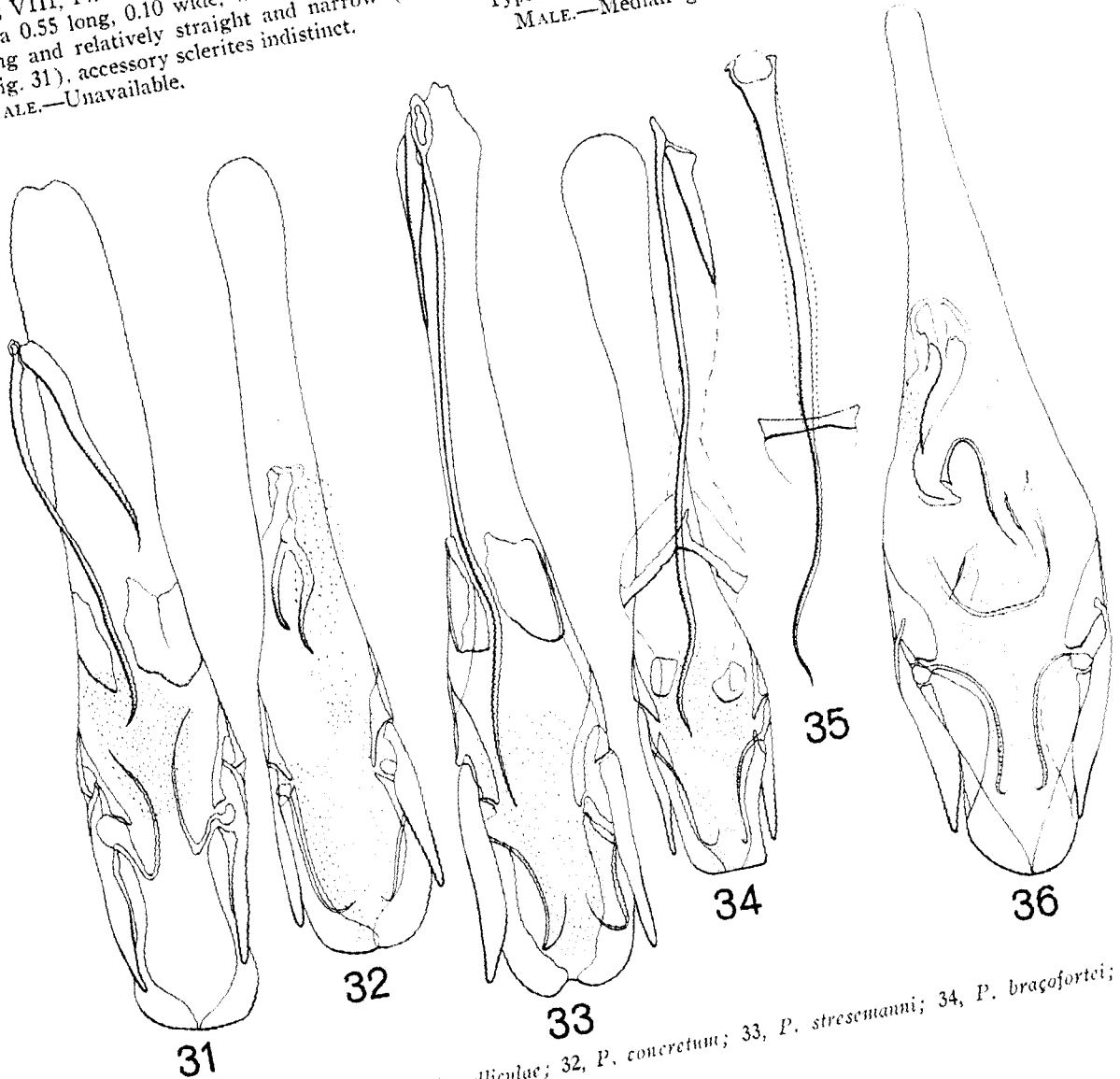


FIG. 31-36.—♂ genitalia. 31, *P. ralliculae*; 32, *P. concretum*; 33, *P. stresemanni*; 34, *P. braşofortei*; 35, *P. lanceolatum*; 36, *P. meinertzhageni*.

but variably rounded to bluntly pointed. Head seta 7 extending to or beyond base of Seta 9 (Fig. 9). Marginal pronotal seta 3 about twice length of Seta 1. With 10 marginal metanotal setae. Marginal tergal setae: I, 12-14; II-V, 14-16; VI-VII, 12-14; VIII, 9-10. Postspiracular seta on V much shorter than those on IV or VI. Sternal setae: II, 29-33; III-V, 36-44; VI, 32-36; VII, 26-28; VIII, 18-19. Subgenital plate with 20-24 setae. Genitalia (Fig. 31) large, 0.65-0.68 long, 0.11-0.12 wide, with long (0.29-0.31) narrow principal sclerite, and accessory basal sclerite ca. $\frac{1}{2}$ this length.

FEMALE.—As for male, except marginal tergal setae: I, 12; II, 16-19; III-V, 17-21; VI, 16-18; VII, 15-17; VIII, 12-14; last tergite with 20-22 inner posterior setae; sternal setae: II, 30-33; III-VI, 41-56; VII, 25-29; subgenital plate with 24-28 marginal setae; anus with 70-75 ventral fringe setae, 74-82 dorsal, with lateral setae of moderate length (Fig. 20).

Dimensions.—Preocular width, δ 0.36, η 0.39; temple width, δ 0.51, η 0.55-0.56; prothorax width, δ 0.37-0.38, η 0.41-0.42; metathorax width, δ 0.45-0.46, η 0.51-0.53; total length, δ 1.58-1.70, η 1.91-1.99.

Remarks.—*P. raliculatae* is best recognized by both sexes having long head seta 7, the male having such large genitalia, and the female various chaetotaxy features. This louse is thus far known only from 1 of the 2 species of *Rallicula* (Rallidae).

Material Examined.—Holotype δ , *R. l. forbesi*, Lake Louise, Sepik Dist., New Guinea, 15 Feb. 1970, BBM-98447; in collection of Bishop Museum, Honolulu. Paratypes: 3 δ , 4 η , same data as holotype.

Pseudomenopon pilgrimi, n. sp.

(Fig. 29)

Type-host: *Gallirallus australis australis* (Sparrman).

MALE.—Gula much as in Fig. 12. Head seta 7 extending from $\frac{1}{2}$ to near base of Seta 9. Marginal pronotal Seta 3 equal to or shorter than Seta 1. With 12-13 marginal metanotal setae. Marginal tergal setae: I, 12; II, 14; III, 12-13; IV-VII, 12; VIII, 10. Postspiracular seta on V less than 0.20 long, distinctly shorter than those on IV or VI. Sternal setae: II, 23-26; III-IV, 28-32; V-VI, 23-26; VII, 12-13; VIII, 7-9. Subgenital plate with 11-12 setae. Genitalia (Fig. 29) 0.48-0.51 long, 0.10 wide, with relatively straight principal sclerite 0.25 long, and accessory basal sclerite over $\frac{1}{2}$ this length.

FEMALE.—As for male, except margin of metanotum with 14-17 setae; marginal tergal setae: I, 13-17; II-IV, 21-23; V-VI, 18-21; VII, 15-18; VIII, 12; last tergite with 13-17 inner posterior setae; sternal setae: II, 26-30; III, 31-44; IV-V, 41-52; VI, 29-43; VII, 19-25; subgenital plate with 20-21 marginal setae; anus with 59-60 ventral fringe setae, 55-58 dorsal, with moderate lateral setae much as in Fig. 20.

Dimensions.—Preocular width, δ 0.34-0.35, η 0.39-0.41; temple width, δ 0.46, η 0.53-0.56; pro-

thorax width, δ 0.33-0.35, η 0.40-0.42; metathorax width, δ 0.37-0.38, η 0.47-0.48; total length, δ 1.42-1.51, η 1.82-1.91.

Remarks.—The male of *P. pilgrimi* is separable by its short marginal pronotal seta 3, the lengths of head seta 7 and postspiracular seta on V, in addition to genitalic details; the female is recognized by its large number of marginal metanotal setae.

Material Examined.—Holotype δ , *G. a. australis*, Puponga, New Zealand, 4 Feb. 1968, R. L. Pilgrim; in collection of Canterbury Museum, Christchurch, New Zealand. Paratypes: 1 δ , 2 η , same data as holotype.

Pseudomenopon qadrii Eichler

(Fig. 15, 30)

Type-host: *Porzana porzana* (L.).

MALE.—Median gular plate narrow, pointed (Fig. 15). Otherwise, much as for *P. scopulacorne*. Genitalia (Fig. 30) grossly different from all other known species, with complex of sclerites as shown; elongate central piece with thick basal portion ending in curved point, followed by much narrower piece; unique basal accessory sclerites.

FEMALE.—Unavailable.

Dimensions of Male.—Preocular width, 0.33-0.34; temple width, 0.45-0.46; prothorax width, 0.32; metathorax width, 0.36; total length, 1.40-1.43.

Material Examined.—3 δ , *P. porzana*, Arabia.

Pseudomenopon meinertzhageni, n. sp.

(Fig. 16, 36)

Type-host: *Ortygonax rytirhynchos rytirhynchos* (Vieillot).

MALE.—Close to *P. scopulacorne*. Median gular plate as in Fig. 16. More sternal setae on VI, 37-39; VII, 30; VIII, 21-23. Subgenital plate with 27-28 setae. Genitalia (Fig. 36) very large, 0.70-0.72 long, 0.17 wide, with complex sclerites as shown.

FEMALE.—Generally in poor condition, but discernible features as or close to those for *P. scopulacorne*, with ventral anal fringe up to 87 setae.

Dimensions.—Preocular width, δ 0.36-0.37, η 0.41; temple width, δ 0.49-0.50, η 0.56-0.59; prothorax width, δ 0.36-0.37, η 0.40-0.45; metathorax width, δ 0.42, η 0.50-0.54; total length, δ 1.58-1.63, η 2.00-2.11.

Remarks.—The genitalic sclerites of the male of *P. meinertzhageni* could approximate those of a distorted *P. qadrii*; however, these genitalia are much larger, of somewhat different shape, and, in addition, the gular plate is larger and rounded and the overall dimensions are all larger. The female is apparently inseparable from that of *P. scopulacorne*.

Material Examined.—Holotype δ , *O. r. rytirhynchos*, Brazil, Meinertzhagen 13417; in collection of British Museum (Natural History). Paratypes: 1 δ , 2 η , same data as holotype. Other material: 1 η , *O. r. landbecki* (Hellmayr), Chile.

Pseudomenopon braçofortei Tendeiro

(Fig. 17, 34)

Pseudomenopon braçofortei Tendeiro, 1965: 38. Type-host: *Limnocorax flavirostra* (Swainson).

MALE.—Median gular plate rounded, much as in Fig. 11. Head seta 7 extending ca. $\frac{1}{2}$ way to base of Seta 9. Marginal pronotal seta 3 about twice length of Seta 1. Marginal tergal setae: I-II, 12; III-VII, 10; VIII, 8. Postspiracular seta on V much shorter than on IV or VI. Sternal setae: II, 19; III-V, 29-33; VI, 20; VII, 15; VIII, 8. Subgenital plate with 11 setae. Genitalia (Fig. 34) 0.58 long, 0.10 wide, with very long (0.48) slender principal sclerite, and other sclerites as shown.

FEMALE.—Rounded median gular plate large, 0.18-0.19 long. Head seta 7, pronotal, and postspiracular setae as for male. Marginal tergal setae: I, 13-14; II-VI, 15-19; VII, 14-15; VIII, 12-13. Last tergite with 22-24 inner posterior setae. Sternal setae: II, 24-29; III, 35-38; IV-V, 41-48; VI, 34-36; VII, 22-25. Subgenital plate with 21-23 marginal setae. Anus with 69-72 ventral fringe setae, 60-64 dorsal, with long lateral setae (Fig. 17). Coarse spicules in genital chamber (Fig. 17) in addition to usual smaller more numerous ones.

Dimensions.—Preocular width, δ 0.35, η 0.41-0.43; temple width, δ 0.46, η 0.57-0.58; prothorax width, δ 0.35, η 0.44-0.45; metathorax width, δ 0.39, η 0.53-0.58; total length, δ 1.51, η 2.04-2.14.

Remarks.—The very long, uniformly slender principal genital sclerite best characterizes the male of *P. braçofortei*; the female is recognized by its long lateral anal setae and the large rounded gular plate. As with 9 of the other species of *Pseudomenopon*, this louse is known only from a single host species, in this instance that of the monotypical genus *Limnocorax* (Rallidae).

Material Examined.—1 δ , 3 η , *L. flavirostra*, Tanzania, Transvaal.

Pseudomenopon lanceolatum Tendeiro

(Fig. 8, 19, 35)

Pseudomenopon lanceolatum Tendeiro, 1965: 41. Type-host: *Metopidius indicus* (Latham).*Pseudomenopon timmermanni* Tendeiro, 1965: 44. Type-host: *Actophilornis africana* (Gmelin). New Synonym.

MALE.—Median gular plate narrow, pointed (Fig. 15). Head seta 7 almost reaching base of Seta 9. Marginal pronotal seta 3 and 1 subequal. Marginal tergal setae: I, 12; II, 14; III-VII, 12; VIII, 10; tergal setae typically as in Fig. 8, with distinct gap between median setae and 2 setae each side. Postspiracular seta on V long, approaching length of those on IV or VI. Sternal setae: II-III, 23-28; IV-V, 36-41; VI, 24-31; VII, 20-21; VIII, 14-15. Subgenital plate with 9-13 setae. Genitalia much as for *P. braçofortei* (Fig. 34), but with sclerites as in Fig. 35, principal sclerite broader basally and not as heavily pigmented (0.46-0.49 long), no evident basal accessory sclerite, and straight transverse median sclerite.

FEMALE.—As for male, except marginal tergal setae occasionally I with 13, III-VII with 11; last tergite with 15-19 inner posterior setae; sternal setae: II, 28-30; III, 41; IV-V, 43-52; VI, 32-38; VII, 17-22; subgenital plate with 22-27 marginal setae; anus with 49-53 ventral fringe setae, 50-60 dorsal, with relatively short lateral setae (Fig. 19); prominent sclerotized ring, or partial ring, 0.03 diam, in genital chamber (Fig. 19).

Dimensions.—Preocular width, δ 0.35, η 0.38-0.40; temple width, δ 0.48-0.49, η 0.54-0.58; prothorax width, δ 0.35-0.37, η 0.40-0.44; metathorax width, δ 0.40-0.44, η 0.51-0.55; total length, δ 1.45-1.52, η 1.75-1.84.

Remarks.—The male genitalia of *P. lanceolatum* resemble those of *P. braçofortei*, in that both have a very long principal genital sclerite; however, they differ in the shape of this sclerite as well as in additional genitalic features, the shape of the gula, and certain chaetotaxy details. The female of *P. lanceolatum* is identified by its qualitative and quantitative chaetotaxy. A paratype slide of *P. lanceolatum* contains 3 η , all presumably of this species; however, 1 is not conspecific with the other 2 which do represent *P. lanceolatum*. Since females are difficult to identify, I am unable to determine it with certainty. *P. lanceolatum* is the only member of this genus, other than *P. pilosum* from *Hydrophasianus*, to be recorded from the Jacanidae (Charadriiformes).

Material Examined.—2 δ , 5 η (including 2 δ , 3 η paratypes of *P. lanceolatum*), *M. indicus*, India, Thailand; 2 δ , 3 η (all paratypes of *P. timmermanni*), *A. africana*, Uganda.

NOMEN DUBIUM

Pseudomenopon crecis Bechet, 1963: 75. Type-host: *Crex crex* (L.).

This is described from 1 η . It is figured with a narrowed pointed median gular plate and with what appear to be long lateral anal setae. The 1 η I have from *C. crex* has a broad rounded median gular plate and shorter anal setae; it is inseparable from *P. pilosum*. However, since no male of *P. crecis* is known, and since the female I have is obviously different from that upon which *P. crecis* was based, nothing can now be done with this specific name.

KEY TO SPECIES OF PSEUDOMENOPON
MALES(exclusive of *P. crecis*)

1. With pair of pointed postpalpal processes (Fig. 14) *stresemanni*
Without pair of pointed postpalpal processes 2
2. Genitalia (Fig. 36) over 0.15 wide, with complex sclerites as shown; subgenital plate with over 25 setae *meinertzhageni*
Genitalia less than 0.15 wide, with sclerites otherwise; subgenital plate with fewer than 25 setae 3
3. Principal genital sclerite conspicuously bifurcate as in Fig. 32 *concretum*
Principal genital sclerite not conspicuously bifurcate as above 4

4. Genitalia as in Fig. 30, with complexity of sclerites as shown *quadrii*
5. Genitalia otherwise 5
5. Principal genital sclerite very long, over 0.45 (Fig. 34, 35), extending over $\frac{3}{4}$ length of genitalia, and with short, or absent, basal accessory sclerite 6
- Principal genital sclerite shorter, less than 0.45, usually at most $\frac{1}{2}$ length of genitalia, or with proportionately longer basal accessory sclerite 7
6. Genital sclerites as in Fig. 34, with uniformly slender principle sclerite and short basal accessory sclerite *bracofortei*
- Principal genital sclerite broadened basally, without evident basal accessory sclerite, and with straight transverse median sclerite (Fig. 35) *lancoelatum*
7. Broadly rounded median gular plate (Fig. 11); principal genital sclerite variably flexed, often as in Fig. 21 or 22, less than 0.20 long, with no indication of apical barb and/or division; head seta 7 not extending over $\frac{1}{2}$ way to base of Seta 9 (Fig. 2) *pilosum*
- Median gular plate conspicuously tapered or pointed; or principle genital sclerite essentially straight, shaped otherwise than above, or with suggestion of apical barb and/or division as in Fig. 26; or head seta 7 longer 8
8. Genitalia over 0.60 long (Fig. 31) and subgenital plate with at least 20 setae *ralliculae*
- Genitalia shorter and subgenital plate with fewer setae 9
9. Genitalia with narrow well-defined principal sclerite and at least additional basal accessory sclerite (Fig. 26-29) 10
- Genitalia either with only tapered sclerite (Fig. 23, 24) or with vaguely-defined complex of sclerites much as in Fig. 25 14
10. Principal genital sclerite at least 0.30 long, essentially straight (Fig. 28) *phoenicuri*
- Principal genital sclerite less than 0.30 long 11
11. Head seta 7 extending less than $\frac{1}{2}$ way to base of Seta 9; principal genital sclerite with apparent apical barb and/or division as in Fig. 26; postspiracular seta on V usually less than 0.20 long *dolium*
- Head seta 7 extending at least $\frac{1}{2}$ way to base of Seta 9; principal genital sclerite as in Fig. 27, 29, or 31; postspiracular seta on V variable in length 12
12. Postspiracular seta on V less than 0.20 long; marginal pronotal seta 3 not longer than marginal seta 1; principal genital sclerite straight (Fig. 29) *pilgrimi*
- Postspiracular seta on V more than 0.20 long; marginal pronotal seta 3 longer than marginal seta 1; principal genital sclerite variably sharply deflected near apex to straight (Fig. 27 or 31) 13
13. Postspiracular seta on V more than 0.30 long; principal genital sclerite essentially straight, as in Fig. 31; Sternite VI with over 26 setae; temple width over 0.47 *cinereum*
- Postspiracular seta on V less than 0.30 long; principal genital sclerite deflected sharply near apex (Fig. 27); Sternite VI with fewer than 26 setae; temple width less than 0.47 *pflegeri*
14. Genitalia much as in Fig. 25 15
- Genitalia as in Fig. 23 or 24 16

15. Median gular plate not over 0.12 long, narrow, tapering to point *rostratulae*
- Median gular plate over 0.12 long, broader, usually rounded to bluntly pointed *scopulacorne*
16. Genitalia with prominent heavy spicules in region of genital sclerite (Fig. 23); less than 18 setae on Sternite II, 28 on Sternite III *mcclurei*
- Genitalia without prominent heavy spicules in region of genital sclerite (Fig. 24); over 18 setae on Sternite II, 28 on Sternite III *carrikeri*

FEMALES

- (exclusive of *P. quadrii*, *P. cinereum*, and *P. crecis*)
1. With pair of pointed postpalpal processes (Fig. 14) *stiresemani*
 - Without pair of pointed postpalpal processes 2
 2. Metanotal margin with at least 14 setae ... *pilgrimi*
 - Metanotal margin with only up to 13 setae 3
 3. With very long lateral anal setae (Fig. 17), curving inward and almost touching; large rounded median gular plate (Fig. 11), at least 0.18 long *bracofortei*
 - With shorter lateral anal setae; median gular plate variable, either not broadly rounded or not over 0.17 long 4
 4. At least abdominal tergites IV-V with distinct gap between 2 lateral setae each side and central marginal setae (Fig. 8); genital chamber with conspicuous sclerotized partial ring over 0.02 diam, or without ring 5
 - Abdominal tergites without such gap within marginal setal row; without such conspicuous partial ring in genital chamber, or with smaller ring .. 7
 5. Median marginal tergal setae on I not extending to alveoli of setae on following tergite .. *carrikeri*
 - Median marginal tergal setae on I extending to or beyond alveoli of setae on following tergite 6
 6. With very short seta adjacent to postspiracular seta on IV-V, subequal to adjacent pleural seta (Fig. 8); genital chamber with conspicuous sclerotized partial ring over 0.02 diam (Fig. 19) *lancoelatum*
 - With longer seta adjacent to postspiracular seta on IV-V, longer than adjacent pleural seta; genital chamber without ring *pflegeri* (in part)
 7. Temple width over 0.60 and/or metathorax width over 0.56 8
 - Temple width 0.60 or less and metathorax width 0.56 or less 9
 8. Tergite IV marginally with more than 19 setae; over 80 setae in dorsal anal fringe *concretum* (in part)
 - Tergite IV marginally with fewer than 19 setae; fewer than 80 setae in dorsal anal fringe *phoenicuri* (in part)
 9. More than 54 setae on Sternite VI, 36 on Sternite VII *rostratulae*
 - Fewer than 54 setae on Sternite VI, 36 on Sternite VII 10
 10. Tergites II-V each with 20 or more setae and over 80 setae in dorsal anal fringe; median gular plate tapered to point *concretum* (in part)
 - Some of Tergites II-V with fewer than 20 setae or fewer than 80 setae in dorsal anal fringe; median gular plate variable 11
 11. Postspiracular seta on V long, approaching length of those on IV or VI 12
 - Postspiracular seta on V much shorter than those on IV or VI 14

12. At least 1 of Tergites V-VII with fewer than 12 setae; Tergite VIII with 9 or fewer
 *pflegeri* (in part)
 All of Tergites V-VII with at least 12 setae;
 Tergite VIII usually with 10 or more 13
13. Tergite VI usually with 16 or more setae, VII with
 15 or more *scopulacorne* (in part)
 Tergite VI with only up to 15 setae, VII up to
 14 *phoenicuri* (in part)
14. Head seta 7 not extending over $\frac{1}{2}$ way to base of
 Seta 9 (Fig. 2); broad median gular plate, not
 tapered to point 15
 Head seta 7 extending over $\frac{1}{2}$ way to base of Seta
 9; variably rounded to pointed median gular
 plate 17
15. Only up to 51 setae in ventral anal fringe
 *dolium* (in part)
 Usually more than 51 setae in ventral anal fringe 16
16. Tergites III-IV both with 13 or more setae; most
 of Tergites II-VII with 14 or more setae
 *pilosum*
 Tergites III-IV with only 12 setae; most of Ter-
 gites II-VII with only up to 13 setae
 *mcclurei* (in part)
17. With 16 or more tergal setae on VI 18
 With only up to 15 tergal setae on VI 20
18. Head seta 7 long, extending to or beyond base of
 Seta 9 (Fig. 9) *ralliculae*
 Head seta 7 shorter, not reaching base of Seta 9 19
19. Not over 53 setae in ventral anal fringe
 *dolium* (in part)
 Over 53 setae in ventral anal fringe
 *meinertzhageni* (in part)
 *scopulacorne* (in part)
20. Most of Tergites II-VII with 14 or more setae
 *phoenicuri* (in part)
 *meinertzhageni* (in part)
 *scopulacorne* (in part)
 Most of Tergites II-VII with only up to 13 setae 21
21. Median gular plate broadly rounded, close to Fig.
 11 *mcclurei* (in part)
 Median gular plate usually more tapered, with
 blunt point, close to Fig. 12 *phoenicuri* (in part)

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REFERENCES CITED

- Austin, O. L., Jr. 1961. Birds of the World. Golden Press, New York. 316 p.
- Bechet, I. 1963. *Species de Pseudomenopon* (Mallophaga) din fauna R.P.R. Stud. Univ. Babes-Bolyai, Ser. Biol. 2: 74-9.
- Bedford, G. A. H. 1919. Anoplura from South African hosts. Rep. Dir. Vet. Res. S. Afr. 5-6: 709-36.
- Burmeister, H. C. C. 1838. Mallophaga. Hdb. Entomol. 2: 418-43.
- Carriker, M. A., Jr. 1903. Mallophaga. from birds of Costa Rica, Central America. NE Univ. Stud. 3: 123-97.
- Clay, T. 1969. A key to the genera of the Menoponidae (Amblycera: Mallophaga: Insecta). Bull. Br. Mus. (Nat. Hist.) Entomol. 24: 1-26.
- Denny, H. 1842. Monographia Anoplurorum Britanniae. Henry G. Bohn, London. xxiv + 262 p.
- Eichler, W. 1937. Einige Bemerkungen zur Ernährung und Eiablage der Mallophagen. Sitzungsber. Ges. Naturforsch. Freunde zu Berlin 1937: 80-111.
1949. Mallophagen von *Aramus scolopaceus*. Ornithol. als Biol. Wiss.: 249-52.
1952. Mallophagen-Synopsis. 15. Genus *Pseudomenopon*. Zool. Anz. 148: 30-40.
- Keler, S. v. 1951. Zwei neue Mallophagenarten von *Atlantisia rogersi* Lowe. Z. Parasitenk. 15: 34-56.
- Kellogg, V. L. 1896. New Mallophaga, 1, with special reference to a collection made from maritime birds of the Bay of Monterey, California. Proc. CA Acad. Sci. (Ser. 2) 6: 31-168.
- Lucińska, A. 1969. Die mitteleuropäischen *Pseudomenopon* Mjög.-Arten (Pseudomenoponidae, Mallophaga). Pol. Pismo Entomol. 39: 355-68.
- Mjöberg, E. 1910. Studien über Mallophagen und Anopluren. AR Zool. 6: 1-296.
- Peters, J. L. 1931. Check-list of the Birds of the World, vol. 1. Cambridge, MA. xviii + 345 p.
1934. Check-list of the Birds of the World, vol. 2. Cambridge, MA. xvii + 401 p.
- Piaget, E. 1880. Les Pédiculines. Essai monographique. E. J. Brill, Leide. xxxix + 714 p.
1885. Les Pédiculines. Essai monographique. Supplement. E. J. Brill, Leide. xii + 200 p.
- Qadri, M. A. H. 1936. Some new Mallophaga from North-Indian birds. Z. Parasitenk. 8: 638-44.
- Rudow, F. 1869. Neue Mallophagen. Z. Ges. Naturwiss. 34: 387-407.
- Scopoli, J. A. 1763. *Pediculus*. Entomol. Carniolica: 381-5.
- Tendeiro, J. 1965. Études sur les Mallophages. Observations sur le genre *Pseudomenopon* Mjöberg, 1910, avec description de six espèces et une sous-espèce nouvelles. Rév. Estud. Gérais Univ. Mocambique 2: 1-88.