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## ISCHNOCERA (MALLOPHAGA) INFESTING PARROTS (PSITTACIFORMES). II. GENERA *PSITTOECUS* CONCI, 1942, AND *FORFICULOECUS* CONCI, 1941

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### ABSTRACT

The A. characterizes the genera *Psittoecus* Conci, 1942 and *Forficuloecus* Conci, 1941. The type species of *Psittoecus* — *P. waterstoni* (Fresca) — is redescribed and figured; *P. eos* (Rudow) is discussed and its genitalia figured; *P. vanzolinii*, sp. n., *P. mollisoni*, sp. n., and *P. hoogstraali*, sp. n., are described and figured; *Psittoecus labidion* (Neumann) is considered as a species inquirenda. A lectotype for *Forficuloecus forficula* is selected, the species being discussed and figured; *F. meinertzhageni*, sp. n., is described and figured.

The genera dealt with in this paper are included in the *Echinophilo-pteris*-complex. Their relationships and meaning in the complex will be discussed more deeply in another paper. As in the previous paper of this series (Guimarães, 1974) only the taxonomic situation of the species is treated.

### *Psittoecus* Conci, 1942

*Psittoecus* Conci, 1942: 40.

*Uncifrons* Guimarães, 1942: 87.

*Psittaciphagus* Eichler, 1943: 116.

The last two names are synonyms of *Psittoecus*, as the three have the same type-species.

Hopkins & Clay (1952) included three species in this genus: *waterstoni* (Fresca, 1923), *eos* (Rudow, 1869), and *labidion* (Neumann, 1891). Without any doubt all these species are *Psittoecus*, but by the reasons adduced further on the last one will be treated as a *species inquirenda*.

Philopteroid species. Anterior part of head forceps-like as in *Echinophilo-pteris*, *Forficuloecus*, and *Theresiella*, but the hyaline extremity of the forceps more sclerotized and much shorter; preantennal region much shorter than the postantennal; the dorsal anterior plate is much wider than long, slightly sclerotized — with exception of the posterior tapering process — and with the lateral margins generally fused to the integument of the head, so that the preantennal suture

does not reach the lateral margins of the head. Premarginal carina with the posterior extremity ending before the anterior margin of the anterior dorsal plate. Postantennal suture absent. Transverse carina reduced to a very short strip near to the preantennal nodus. Coni strongly sclerotized, thinly pointed and bent backward over the first antennal segment. Setae of temporal margin as follows: o.s. much longer than m.t.s. 1, which is short and subocular; m.t.s. 2 short; m.t.s. 3 long; m.t.s. 4 short; m.t.s. 5 long; and m.t.s. 6 and m.t.s. 7 (?) short.

Pterothorax with 7 to 9 setae on the posterior margin in the female, and 5 to 6 one in the male; in the male the setae have a different arrangement than in *Echinophilopterus*. Two pairs of sternal setae.

Tergites I to VII as in *Echinophilopterus* and *Forficuloecus*, widely interrupted longitudinally in the midline; in the female tergite VIII is either entire or reduced to two little plates, one on each side of the segment; those of male absent. One tergo-lateral seta on each side of segments II or III and two on segments III or IV to VI; the setae of lateroposterior corners may be present on segment I or II onwards. Ventral surface of abdomen with spine-like setae on the first three sternites; numerous setae present on the remainder sternites. The tergal as well as the sternal setae of the abdomen are generally thin and very long.

Male genitalia of variable shape but completely different from those of *Echinophilopterus* and *Forficuloecus*.

Genital opening of male dorsal.

Type-species: *Philopterus waterstoni* Fresca, 1923.

***Psittoecus waterstoni* (Fresca, 1923)**

(Figs. 1 to 8)

Type-host: *Kakatoe galerita* (Latham)

*Philopterus waterstoni* Fresca, 1923: 196, fig. 1.

*Psittoecus waterstoni*; Conci, 1942: 40; Hopkins & Clay, 1952: 306.

*Uncifrons waterstoni*; Guimarães, 1942: 90, figs. 8 to 11.

*Psittaciphagus waterstoni*; Eichler, 1943, 116.

Conci and Eichler did not know specimens of Fresca's species when erecting their genera. In 1942, Guimarães redescribed and figured this species, based on specimens collected on *Kakatoe galerita* subsp., from Australia. However, some doubt as to the correctness of Guimarães identification arose after the discovery of other species of *Psittoecus*. Dr. Clay has happily obtained specimens worked by Fresca, in the Instituto Español de Entomología, Madrid, and, as always, was kind enough to compare them with the figures I sent to her. She advised me *in litt.* that "although the types are in poor condition I think there is little doubt that they are the same. The types of *waterstoni* are certainly not *eos* or *vanzolinii*".

Description — Head, pro- and pterothorax as characterized in the genus.

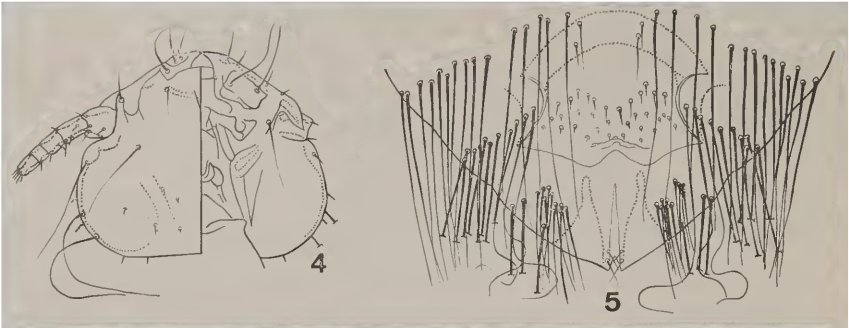
Male abdomen obovoid, with the terminal segment protruding backwards; tergal plates clearly outlined only at the inner halves; in



*Psittoecus waterstoni*: fig. 1, male; fig. 2, female; fig. 3, antenna of male.

segment I they are entirely outlined. On each side of midline of the tergal surface of the abdomen there are 3 to 4 setae (tergocentral) on segments I to V, 5 to 6 on segment VI and 7 to 8 on VII; one tergolateral seta on segment II, and 2 setae, of different length on segments III to VI; pleural region with 1 seta on segment I, 3 on II, 4 on III and IV, 5 on V, and 2 on VI\*; terminal segment with a fringe of setae on the posterior margin. Each one of the first three segments with a row of spine-like setae interrupted at the midline by a pair of ordinary setae; the three following segments with 9 to 10 long setae on each side; posteriorly to those segments there is a group of 5 to 9 setae near the lateroposterior corner, and one more internally; terminal segment with a group of 13 to 15 setae on each side of the ventral surface.

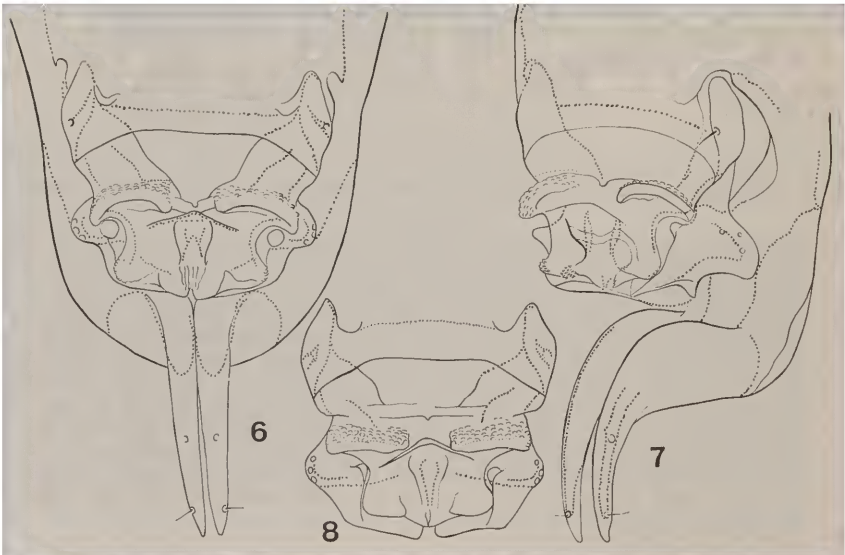
\* I consider as the setae of the latero-posterior corner those located between the spiracle and the lateral margin of the abdomen.



*Psittoecus waterstoni*: fig. 4, male head; fig. 5, female posterior extremity (ventral).

Genitalia — Basal apodeme oval, elongate, having at the lateral margins a band which becomes gradually wider posterad; in lateral view (fig. 7) the parameres taper posteriorly and are clearly curved in ventrodorsal sense; mesosome very complex and difficult to analyze.

Female larger than the male. Chaetotaxy of abdomen similar to the male, but on some segments the number of setae is different. Tergo-central setae fewer in number on segments III to VII; only 3 setae on the lateroposterior corner of segment V, but on segment I there are 2 setae, instead of one, as in the male. Sternal setae or spinelike



*Psittoecus waterstoni*: fig. 6, male genitalia; fig. 7, male genitalia (3/4 lateral view); fig. 8, endomerteral complex.

setae on the six anterior abdominal segments as in the male; posteriorly to the vulva there are three long and one group of median length setae on either side. The genital plate is a faint bent band, somewhat narrow, with the margins parallel; posterior margin of genitalia with a slight concavity in the midline (it is difficult to be sure of such a shape because the margin is very transparent and feeble); several minute short setae scattered on the genitalia.

## Measurements of a pair in mm

	Length		Width	
	♂	♀	♂	♀
Total	1.650	2.040	—	—
Head	.530	.600	.650	.760
Prothorax	.180	.190	.340	.400
Pterothorax	.140	.160	.500	.610
Abdomen	.850	1.170	.840	1.090

Material examined: 14 ♂, 20 ♀ collected on *Kakatoe galeria* subsp., from Australia.

*Psittoecus eos* (Rudow, 1869)

(Fig. 16)

Type-host: *Kakatoe roseicapilla* (Vieillot)

*Docophorus eos* Rudow, 1869: 15 (Hosp.: *Cacatua eos*); Piaget, 1880: 35; Kellogg, 1908: 13.

*Philopterus eos*; Harrison, 1916: 93.

*Psittoecus eos*; Hopkins & Clay, 1952: 306 (*Kakatoe roseicapilla* (Vieillot)); Clay & Hopkins, 1955: 60.

Clay and Hopkins (1955) upon the examination of material from Rudow's Collection, transferred *eos* to *Psittoecus*, advising that the specimens examined were similar to *Psittoecus waterstoni* described by Guimarães, in 1942, from which it differed by characters of the male genitalia.

I also had the opportunity to examine material of Rudow's Collection (2 ♂ 1 ♀) and I am able to confirm Clay and Hopkins's assertion.

The condition of the specimens does not allow me to discuss in further detail the differences between *eos* and *waterstoni*. The male genitalia, however, show such differences that I have no doubt in considering both as good species.

The copulatory apparatus of *eos* is more simple and less sclerotized than in *waterstoni*. The length of the basal apodeme is a little less than twice width and the lateral margins slightly divergent posterad.

The endomeres (?) are represented by two roughly cordiform plates, clearly separated in the midline, each one showing in the anterior half of the internal margin a more sclerotized projection, with the distal margin denticulate.

Penis (a structure between the two endomeral plates) short, not reaching the distal end of endomeres.

The condition of the specimens does not allow a good study of chaetotaxy. It seems, however, that it is same as in *waterstoni*.

The parameres are quite wide at the base (the two together are nearly as wide as the basal apodeme), tapering backward and, at least in the specimens examined, little sclerotized. It is not possible to say whether the ventrodorsal curvature of the parameres — so conspicuous in *waterstoni* — does exist in this species.

Measurements of the Lectotype (male): Total length — 1.600 mm; head length — 0.500 mm; head width — 0.620 mm.

*Psittoecus vanzolinii*, sp. n.

(Figs. 9 to 11)

Type-host: *Kakatoe galerita* subsp.

Material examined: 1 male from the type-host.

The specimen has not complete indications of host and locality, and is not in good conditions for study. The excessive compression by the cover-slide provokes a distortion of the thorax and abdomen. The specimen is too transparent, except for some structures as part of the anterior dorsal plate, mandibles, carinae of thorax, tergal plates of abdominal segment I, and genitalia, which are, apparently, sclerotized in a normal way. So, it is not possible to be sure that its transparency is due the processes of moulting. It is even possible to suppose that the species is very poor sclerotized, as in *P. waterstoni*. In spite of such deficiencies I think it convenient to describe and name it, due to its importance in the characterization of the genus.

Head (fig. 9) with the preantennal region shorter than in *waterstoni*. Although only one sex is known the shape of segments I, II and IV allows me to suppose at least a slight sexual dimorphism of the antennae. Length of o.s. more or less 1/3 of m.t.s. 3 or m.t.s. 5; pt.s. 1 and pt.s. 2 of medium length; the latter with length identical to that of o.s.

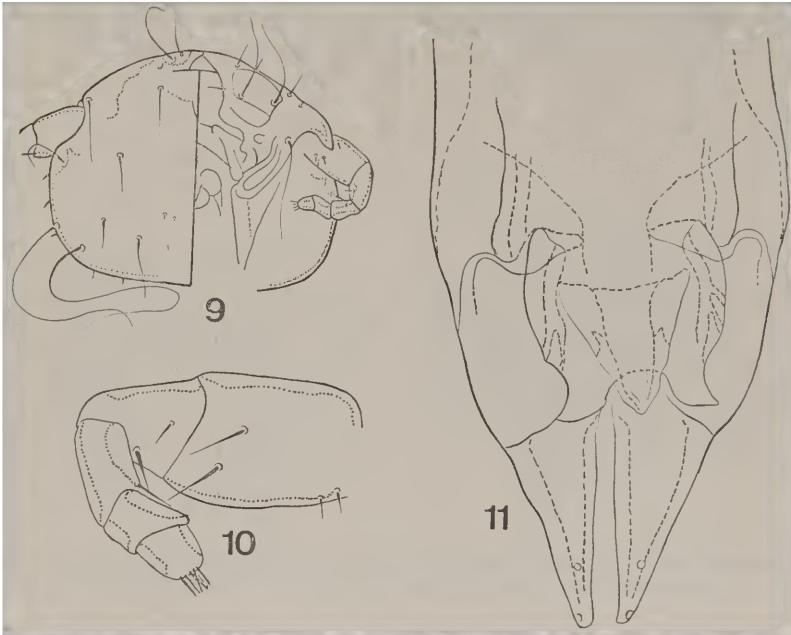
Only tergal plates of segment I of the abdomen clearly outlined. Each side of abdomen with 3 tergoventral setae, on segments I to VI; one tergolateral on segment III, and 2 on segments IV to VI; latero-posterior corners of segment II with 1, segments III to VI with 2 or 3 setae (on one side there is one long and one short seta on segment II); spine-like setae of the first three sternites few in number, and those of sternite III irregularly intercalated with normal setae of mid-length; sternal face of terminal segment with only 5 setae.

Male genitalia (fig. 11) relatively large and strongly sclerotized; length of basal apodeme over twice its width, with the anterior extremity reaching segment II; lateral margins of basal apodeme slightly divergent and bordered by dark bands; parameres wide in the base and tapering toward the apex; endomerale plate as wide as long, posterior margin with a median concavity and with the lateral posterior corners turned outwards; the penial complex conical and a little shorter than the endomerale plate.

Measurements of the type in mm: Total length — 1.440; head length — .470; head width — .570. Those are the only measurements which may be recorded with a relative accuracy.

Holotype male, from type-host, L. Harrison Coll., British Museum (N. History).

The name of the species is in honour of Dr. P. E. Vanzolini.



*Psittoecus vanzolinii*: fig. 9, male head; fig. 10, male antenna; fig. 11, male genitalia.

***Psittoecus mollisoni*, sp. n.**

(Figs. 12 to 15, 17)

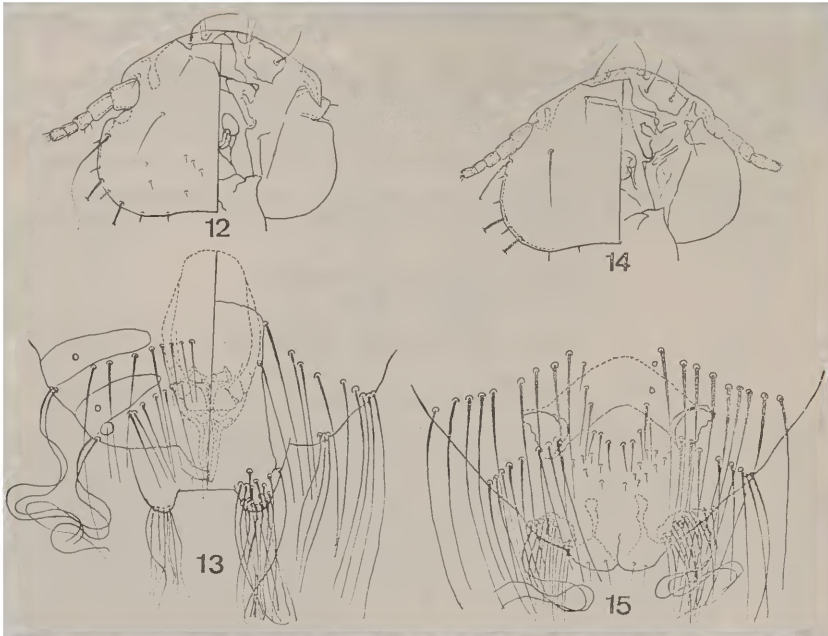
Type-host: *Calyptorhynchus funereus* (Shaw)

Material examined: 3 ♂ and 1 ♀ collected by B. C. Mollison, on type-host, from Maydema, Tasmania, on 15. VII. 1960.

This species is characterized by the quite clearly defined abdominal tergal plates and the lateroposterior corners of the terminal segment of the male apically projected as conspicuous tubercles.

Head (figs. 12) with the preantennal region shorter and more flattened than in *P. waterstoni*; o.s. nearly as long as m.t.s. 3 and m.t.s. 5; pt.s. very short; no sexual dimorphism of antennae, but segment I of male slithly stronger than in female.

Abdomen with tergal plates clearly outlined up to the lateral margin of abdomen; tergite VIII of female entire. One tergotlateral seta on either side of segment II and two on segments III to VI; setae of the lateroposterior corners beginning on segment I. Female genital plate and posterior region of ventral surface as in fig. 15. Terminal segment



*Psittoecus mollisoni*: fig. 12, male head; fig. 13, male posterior extremity; fig. 14, female head; fig. 15, female posterior extremity (ventral).

of male with lateroposterior corners projecting apically as two tubercles, having numerous setae on the ventral surface.

Male genitalia as in fig. 17. The curvature of the parameres is not so conspicuous as in *P. waterstoni*.

#### Measurements of types in mm.

(Measurements of a paratype ♂ in brackets)

	♂		♀	
	length	width	length	width
Head	.530 ( .540)	.670 (.710)	.550	.730
Prothorax	.100 ( .100)	.320 (.370)	.090	.370
Pterothorax	.150 ( .150)	.490 (.520)	.170	.560
Abdomen	.890* ( .930)	.890 (.900)	1.230	1.060
Total	1.670 (1.730)	—	2.040	—

Discussion: By the intensity of the sclerotization of the tergal plates of abdomen and shape of the terminal segment of male abdomen, this species is completely different from the other of the genus, known up to now. The chaetotaxy is practically the same as in *P. waterstoni*

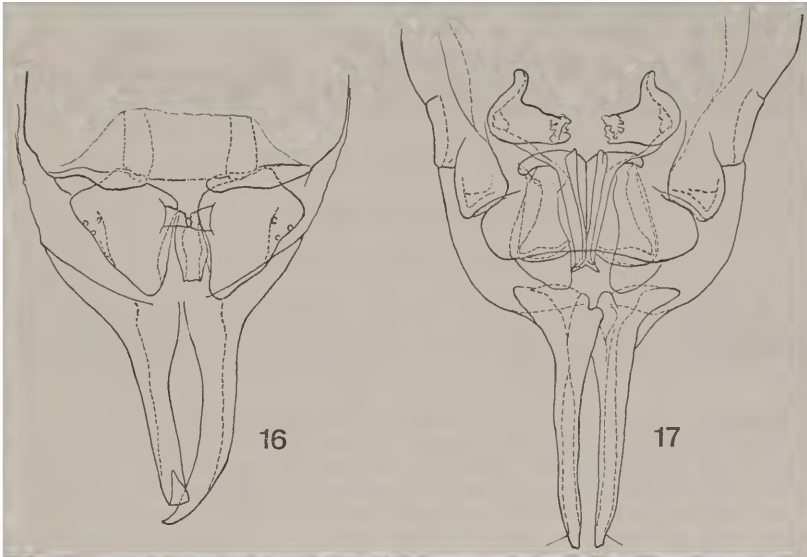
\* Up to the extremity of tubercles.



and as in the new species to be described. The shape of the male genitalia, however, chiefly the structure of the endomerual complex, is entirely different in the three species.

Holotype ♂, allotype ♀ and 2 paratypes ♂, from the type-host with the above data, deposited in the British Museum (Natural History).

The species is named in honour of the collector, B.C. Mollison.



*Psittoecus eos*: fig. 16, male genitalia. *Psittoecus mollisoni*: fig. 17, male genitalia.

***Psittoecus hoogstraali*, sp. n.**

(Figs. 18 to 21)

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

Material examined: 5 males and 4 females, collected by H. Hoogstraal, on the type-host from San Pedro, Culion, Calamian Group, Philippines, on March 27, 1947.

As in the other species of the genus, *P. hoogstraali* is very clear and poorly pigmented, with the exception of the mandibles, thoracic bars, and male genitalia. Even so, the carinae of the head are perfectly outlined: the median region of the tergal plate, chiefly the anterior ones, and the genital plate of the female are also clearly outlined and somewhat darker than the integument.

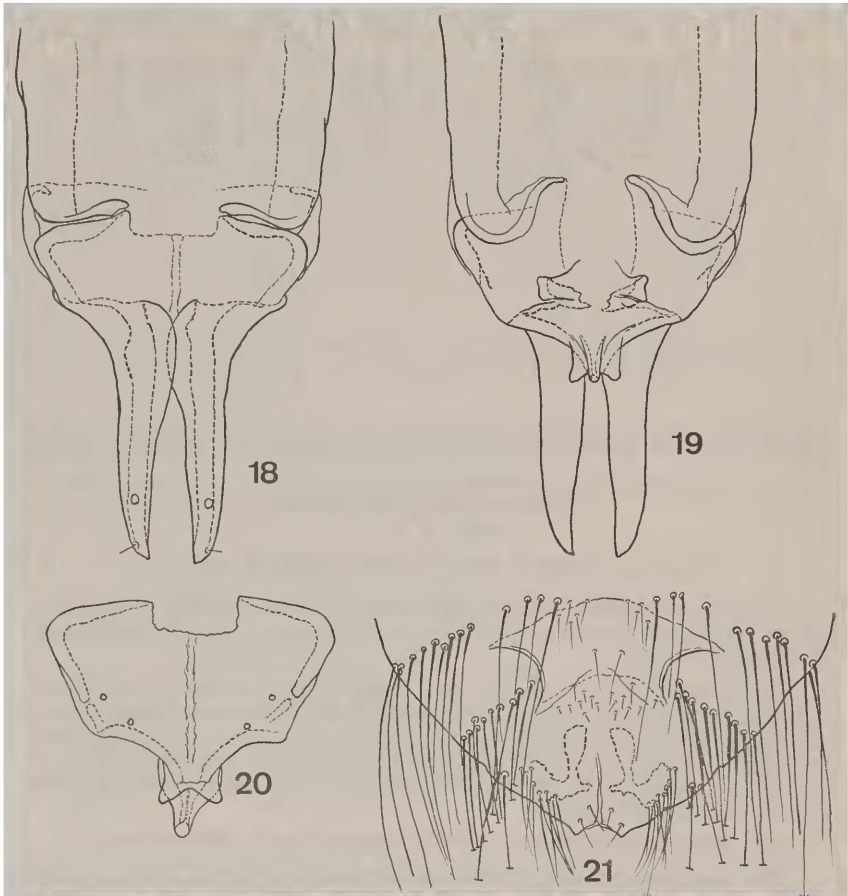
The chaetotaxy is very much the same as in *P. waterstoni*.

The most conspicuous differences between this species and the other of the genus are in the male genitalia. The basal apodeme is a little over than 1.5 its width; its lateral edges are roughly parallel and partially margined by dark bands; in its anterior 2/5 the plate is uniformly dark. The mesosome is, in dorsal view, a six-sided piece

(fig. 20) with the corners rounded, wide anteriorly, and becoming narrower posterad; in some specimens, perhaps due to compression of the cover slide, the lateral margin disappear and the piece becomes nearly semi-circular; two projections similar to those found in the genitalia of *P. eos* are present, internally, in the mesosome of this species. The parameres are wide at the base and taper posterad; they are slightly curved ventrodorsally.

The posterior margin of the terminal segment of the male abdomen is somewhat concave at the midline.

In the genital region of the female there are also some small differences from the other species, not only in the genital plate, longer than in the preceding species, as in the chaetotaxy.



*Psittoecus hoogstraali*: fig. 18, male genitalia (dorsal); fig. 19, male genitalia (ventral); fig. 20, mesosome of a paratype; fig. 21, female posterior extremity (ventral).

## Measurements of types in mm

	♂		♀	
	Length	Width	Length	Width
Total	1.590	—	1.890	—
Head	.490	.620	.550	.720
Prothorax	.160	.330	.140	.340
Pterothorax	.160	.470	.150	.560
Abdomen	.770	.780	1.090	.940

Holotype male, allotype female, and paratypes 3 males and 2 females, collected on the type-host, in the Field Museum of Natural History; 1 male and 1 female, with the same data, in the Museu de Zoologia da Universidade de São Paulo.

This species is named in honour of Dr. H. Hoogstraal.

## SPECIES INQUIRENDA

*Psittoecus labidion* (Neumann, 1891)

*Docophorus labidion* Neumann, 1891: 84, figs. 1 and 1a. (No host).  
*Philopterus labidion*; Harrison, 1916: 96 (Host: *Ecletus polychlorus*).  
*Psittoecus labidion*; Hopkins & Clay, 1952: 306 (Host: *Ecletus polychlorus*  
 = *Lorius roratus pectoralis* (P. L. S. Müller)).

This species was correctly transferred to the genus *Psittoecus* by Hopkins & Clay, as the original description and drawings leave few doubts as to its generic position. However, the possibility of its being specifically recognized is quite doubtful, not only by the insufficiency of the original description, as because Neumann did not know the host of his species. Furthermore, he wrote that the only specimen he was dealing with was a "jeune femelle", which makes it still more difficult to recognize the species. The loss of the great majority of the material worked by Neumann, including the specimen of *P. labidion*, renders impossible the comparison of *labidion* with more recently obtained specimens. I am not able to understand why Harrison (1916) recorded *Ecletus polychlorus* as host of *P. labidion*. Hopkins & Clay (1952) follow Harrison modernizing the host name to *Lorius roratus pectoralis*. As a matter of fact, however, the host of the only specimen described and figured by Neumann is unknown.

*Forficuloecus* Conci, 1941

*Forficuloecus* Conci, 1941: 126.

In 1941, Conci erected the genus *Forficuloecus* to receive the species of *Philopterus* (= *Docophorus*) belonging to the "Forficuloidea" type of Piaget. In the following year (Conci, 1942) considered *Forficuloecus* a synonym of *Echinophilopterus* on the verification that Ewing had already created, in 1927, the genus *Echinophilopterus* to receive two new species and some of the species included in Piaget's *forficulatus* (?) group. Hopkins & Clay (1952) followed Conci's synonymy in their Catalogue. The type-species of *Forficuloecus* is *Docophorus forficula* Piaget, 1871; *Echinophilopterus chapini* Ewing, 1927, is the type-species of

*Echinophlopterus*. Erecting his genus Ewing had said that "The writer was at first inclined to make *forficula* Piaget the type of this genus but changed his mind when it was observed that Piaget does not mention the group of spines on the ventral surface of the abdomen nor give any definite type host species of this louse". In fact, as we shall soon see, *Docophorus forficula* is a compound species.

Although the absence of spine-like setae on the first abdominal sternites has no significance for the separation of this group of species, I believe that a combination of other characters presented by two species (*forficula* included) must lead to consider *Forficuloecus* as a good genus.

The genus is very close to *Echinophlopterus*, but its preantennal region is always long; the setae of the temporal margin are distributed as follows: o.s. short and on the eye, m.t.s. 1 short and somewhat distant from the eye; m.t.s. 2 short, m.t.s. 3 and m.t.s. 4 or only m.t.s. 4 long, m.t.s. 5 and m.t.s. 6 short. Posterior margin of pterothorax having, on each side, 7 to 8, setae, so that the bare median region is small. One or two pairs of setae on the sternal surface of the thorax. Setae of the lateroposterior angles of abdominal segments beginning on the 3th or 4th segments. Spine-like setae of ventral surface of abdomen absent. Male genitalia much more complex than in *Echinophlopterus*; parameres short and stout, with distal extremity ending in point or truncate; endomerale plate(?) as wide as the base of the parameres; penial complex funnel-shaped, but quite different from *Echinophlopterus*; between the internal margins of the parameres, posteriorly to the endomerale plate, there is a conical structure, rather sclerotized, chiefly at the sides, with the apex turned backward (hypomere?).

The female genital region is also different from the two types found in *Echinophlopterus*.

Type-species: *Docophorus forficula* Piaget, 1871

***Forficuloecus forficula* (Piaget, 1871)**

(Figs. 22 to 24)

Type host: *Platycercus eximius* (Schaw)

*Docophorus forficula* Piaget, 1871: 117, pl. 8, figs. 3; (?) Piaget, 1880: 32, pl. II, figs. 1, 1a. 1b; Kellogg, 1908: 14.

*Philopterus forficula*; Harrison, 1916: 94.

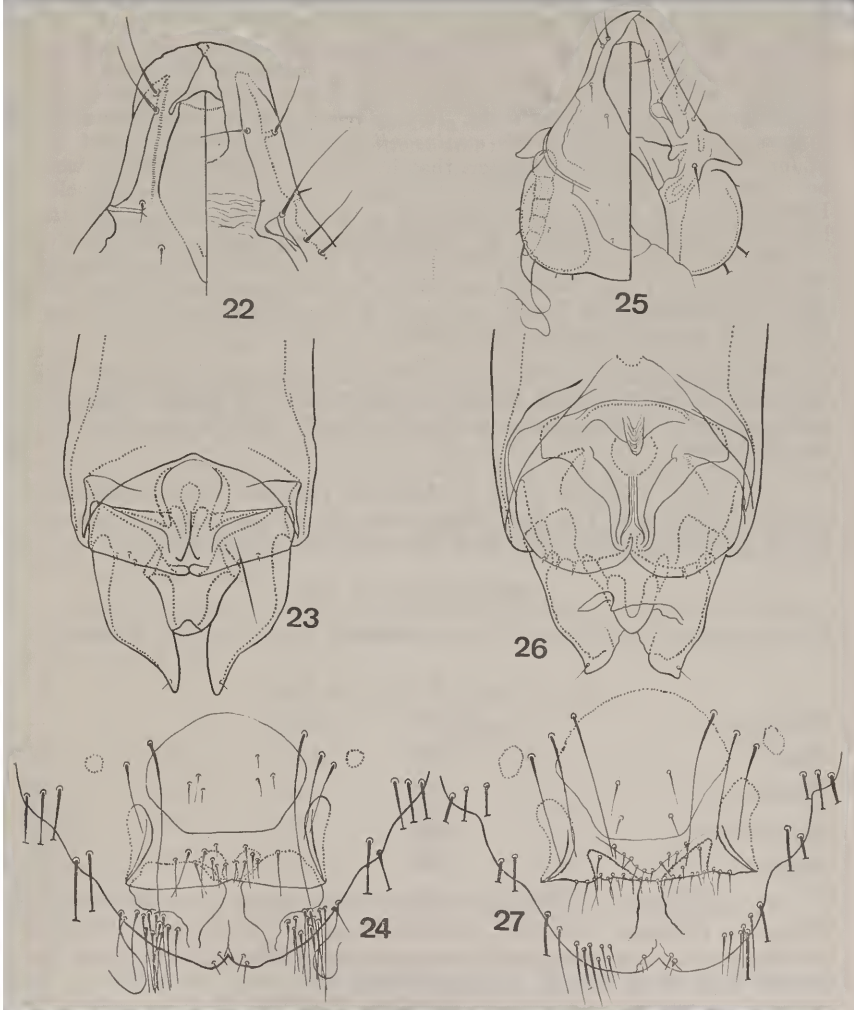
*Forficuloecus forficula*; Conci, 1941: 126.

*Echinophlopterus forficula*; Conci, 1942: 40; Hopkins & Clay, 1952: 128.

The male mounted on the slide n. 582, belonging to the Piaget Collection (British Museum), collected on *Platycercus eximius* is here elected as lectotype of the species.

*F. forficula* is, without any doubt, a compound species, as one can see not only by the original description (1871) and the re-description (1880), as by examination of the specimens collected on every host recorded by Piaget, which are the following: *Platycercus Baueri* (now *Platycercus zonarius* subsp.), *P. scapulatus* (now *Alisterus scapularis* subsp.), *P. Pennantii* (now *Platycercus elegans* subsp.), *P. Barribandi* (now *Polytelis swainsonii* (Desmarest), and *Platycercus eximius* (now *Platycercus eximius* subsp.)

With the exception of the only female specimen belonging to the Piaget Collection, found on *Polytelis swainsonii* and labelled as *forficula*, which must be included in *Echinophilopterus*, all other specimens are in fact *Forficuloecus*. Even among these there are some small differences, but it is not possible to say whether such differences are real or due to curatorial processes. Only a study of fresh material collected on those hosts may clear up the situation.



*Forficuloecus forficula*: fig. 22, preantennal region of female; fig. 23, male genitalia (ventral); fig. 24, female posterior extremity (ventral). *Forficuloecus meinertzhageni*: fig. 25, male head; fig. 26, male genitalia (ventral); fig. 27, female posterior extremity (ventral).

If the descriptions referred to above (1871 and 1880) are compared, it can be verified that even contradictions exist between them, since in 1871 Piaget records two long setae on the tempora, but in 1880 only one. Piaget does not mention the presence of spine-like setae on the ventral surface of the abdomen of *forficula* neither in 1871 nor in 1880. However, at the pages 33-34 and 73, of the work of 1880, treating of *protrusus*, and of *forficuloides*, Piaget says textually: "A la face ventrale, comme chez le *forficula*, les trois premières segments portent une série d'épines fortes et courtes" and "A la face ventrale sur les 2e. 3e. et 4e. anneaux les épines caractéristiques de *forficula*". The fact of referring twice to the spine-like setae on the abdomen of *forficula*, might be a suggestion that Piaget would like to establish such character as typical of *forficula*. If this possibility is accepted as true, a specimen found on *Polytelis swainsonii* has to be selected as lectotype of *forficula*. It happens, however, that in such a case, the lectotype would be inconsistent with the original description, which would be senseless. Furthermore, in 1880, Piaget described a new species, *angustoclypeatus*, based on material collected on *Platycercus barrabandi* (now *Polytelis swainsonii*), which is the same referred to in 1871, collected on *Platycercus Barribandi* (*sic*) and labelled as *forficula*. So, *angustoclypeatus* would have to be considered a junior synonym of *forficula*, and a new name had to be given to the true *forficula*.

The specimens from *Platycercus eximius* agree quite reasonably with the original description of Piaget, so that I have no doubt in selecting as Lectotype of *Forficuloecus forficula* (Piaget, 1871) a specimen found on that host.

A female specimen from *Platycercus pennanti* (now *Platycercus elegans* subsp.) has two long setae (m.t.s. 3 and m.t.s. 4) on one side of the temporal margin, and only one (m.t.s. 4) on the other.

#### Measurements in mm

	Length		Width	
	♂	♀	♂	♀
Total	1.470	2.000	—	—
Head	.600	.690	.580	.700
Prothorax	.110	.140	.310	.380
Pterothorax	.150	.180	.440	.600
Abdomen	.700	1.000	.720	.870

The illustrations and measurements were based on a couple belonging to the L. Harrison Collection, British Museum (N. History), collected on *Platycercus eximius* probably subsp. *eximius* (Shaw), from Lake Illawarra, New South Wales, Australia, 4-12.

Besides the material already cited, I have identified as *Forficuloecus forficula* 2 ♂ and 2 ♀ found on *Lathamus discolor* (White), from Canberra, A.C.T., Australia, K. Keith 20.XII.1961, belonging to the British Museum (N. History).

**Forficuloecus meinertzhageni, sp. n.**

(Figs. 25 to 29)

Type host: *Nestor meridionalis* subsp.

Material examined: Five males and 10 females collected on the type-host (skin — 16150, Meinertzhagen Collection), and 1 male and 1 female (L. Harrison Collection), from the same host species.

Male (fig. 28). Head (fig. 25) longer than wide; preantennal region tapering toward the apex and longer than the postantennal region. Dorsal anterior plate with the anterior margin only somewhat clear; lateral margins slightly divergent at the anterior half, then converging to the midline, ending posteriorly in a thin point, more sclerotized than the plate. Conus not much sclerotized and turning slightly on the antenna. Ocular seta, marginal temporal setae (m.t.s.) 1, 2, 5, and 6 short, m.t.s. 3 and 4 long.

Pterothorax with 7 to 8 setae disposed on the posterior margin on each side of the midline, but medianly the margin is bare. Two pair of sternal setae.

Abdomen oval, with tergites I to VII widely separated at the midline. Tergite VIII thinner than the preceding ones and apparently entire. Tergites I to VII with 3 to 5 tergo-central setae on either side, VIII with 4 to 5; tergites III to VI with one tergo-lateral seta on either side, longer than the tergo-central; terminal tergite with 6 to 9 setae, irregularly distributed, on either side of the midline. Sternal plates reduced to small faint spots on each side of the abdomen. Lateroposterior corners of segments IV to VII with 2 to 5 long setae. Genital plate reaching segment V.

Male genitalia as in fig. 27. Basal apodeme as wide as 3/7 of its length and having the posterior 2/3 of the lateral margin accompanied by conspicuous bands.

Female (fig. 26) similar to the male, but longer; VIII tergite entire; segment IX with a roughly triangular spot on each side. Female genitalia shown in fig. 27.

## Measurements of types in mm

	Length		Width	
	♂	♀	♂	♀
Total	1.540	2.120	—	—
Head	.580*	.700	.520	.620
Prothorax	.090	.100	.340	.390
Pterothorax	.150	.190	.470	.610
Abdomen	.710	1.130	.700	.890

Holotype male, allotype female, and paratypes 4 ♂ and 9 ♀, collected on the type-host, from New Zealand, and 1 ♂ and 1 ♀ (L. Harrison Collection — B. M. 1934-570) collected on the same species as the type host, in the British Museum (N. History).

\* Excluding hyaline portion.



*Forficuloecus meinertzhageni*: fig. 28, male; fig. 29, female. (16.150).

One male and one female found on *Nestor notabilis*, from Mingha Valley, Arthur's Pass, Canterbury, New Zealand (J. R. Jackson 26. VIII. 1957, British Museum (N. History), show small differences from the typical *F. meinertzhageni*. The shape of the anterior dorsal plate is somewhat different and the number of setae on each side of the terminal segment is larger (13 to 14), but due to the small number of specimens, I prefer to identify them as *F. meinertzhageni*, sp. n., without, however, considering them as paratypes.

Taxonomic discussion: This species is very close to *F. forficula* (Piaget, 1871), but *forficula* has only one pair of sternal setae on the thorax, tergite VIII is clearly interrupted on the midline, and the setae of the lateroposterior corner of the abdomen begin at segment III. However, the male and female genitalia are quite different, as can be seen by the comparison of figs. 23-24 and 24-27.



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