

Footnote 2. — Rev. Prof. Giovanni De Benedetti, vol. vii, Nos. 25-26, Dec. 1946, p. 115.

I have, since that time, been able to secure a pair of *Amyrsidea ventralis* (Nit.), and after a very exhaustive study of them, in connection with the material on which my review was based (and additional new material), I have arrived at the conclusion that it is quite impossible to leave the many species of Menoponidae, parasitic on the Cracidae, in the genus *Amyrsidea*, and that a new genus must be erected for their reception.

The species of Mallophaga found on the genus *Odontophorus* (*Amyrsidea praegracilis*), included in my review with those from the Cracidae, certainly is not congeneric with the many species found on the Cracidae, nor is it an *Amyrsidea*, and it will be discussed later.

### Genus *Amyrsidea* Ewing

Plate I, figs. 1, 2, 3, and 4; Plate II, fig. 1.

The genus may be characterized as follows. — Small Menoponidae with slender bodies, relatively small, narrow head, strongly developed prothorax and long abdomen of nine segments, almost parallel-sided.

Chaetotaxy of the body abundant and coarse, but comparatively short. There is no pre-ocular slit, merely an overlapping of the dorsal integument of the head, with a very slight notch, and with the dorsal integument extending unbroken to the temples, completely covering the antennary fossae, the latter entirely open on the ventral side, the antennae being somewhat protected by the fringe of setae set along the inner edge of the fossae (see fig.). The antennae are of the usual Menoponidae type. There is no gular plate, but a large clear area in the dorsal integument covering this area, and with the usual four strong setae on each side of the gular region.

The prothorax is short and wide, almost as wide as the head in the male (slightly narrower in female), with nearly straight sides and convex posterior margin. Pterothorax also short and wide, with convex divergent sides and transverse posterior margin, and with no trace of meso-metathoracic suture.

Abdominal segments of uniform width in both sexes, only the 9th. being slightly longer. Tergites and sternites apparently entire (not clearly visible in my specimens). Pleurites very narrow dorsally but much wider ventrally, decreasing in width from III backward to VIII, but not deeply colored. There is no trace of the prominent spinous projections at the inner, posterior corner of the pleurites, on ventral side of abdomen, which are present in all species found on the Cracidae. Tergites with a closely set row of coarse setae along posterior margin, and a second row, less closely set, across the middle; sternites with a shorter row (six only) of finer, shorter setae across posterior margin (inside of margin), and another row, also of six, across median portion of segment.

The patch of setae on 3rd. femora consists of short, coarse setae along posterior side of patch, with a double row of shorter, finer setae above, set at an angle to the posterior row. The same type of brush is present on sternites III and IV, with a trace on V. In the female there are four thick, spine-like setae on each side of posterior margin of apical, abdominal segment, with two long hairs slightly in front of them.

There is a slight sexual dimorphism in the shape of the head, that of the male being narrower at the temples, but no other differences other than size, between the sexes.

The male genitalia is typical of many of the Menoponidae in the pattern of the paramers and the endomerall sac and plates, but the structure which is extruded during copulation, is of a very peculiar and unique type (see fig.).

Ewing mentions the presence of three heavy spines at distal end of 3rd. tibiae as being of generic significance. This is doubtful, as shown by the accompanying figures of the posterior half of the 3rd. tibiae of *A. ventralis* (Nit.) *A. praegracilis* Carriker, and of *Cracimenopon mituensis* (new genus and species described, below). It will be seen that all three possess a series of spines on the tibiae, but all are different, although those of *praegracilis* (from *Odontophorus*) are much nearer to *Cracimenopon* than to *Amyrsidea ventralis*. The above description is, in reality, a diagnosis of *Amyrsidea ventralis* (Nit) and not strictly a generic characterization, since undoubtedly characters are mentioned which are specific, rather than generic.

The species parasitic on the Cracidae, previously described under *Amyrsidea*, are very different from the above diagnosis of that genus, and a new genus is here proposed for their reception.

genus *Cracimenopon* new genus.

Genotype — *Cracimenopon mituensis* new species, from *Mitu mitu* (Linné).

**Diagnosis.** — Menoponidae from medium to fairly large size, with large head, roughly the shape of an equilateral triangle, with front broadly rounded, temples rounded and expanded laterally and occipital margin deeply concave. The structure of the head is entirely different from that of *Amyrsidea* Ewing. (as a glance at the accompanying figures will show).

There is a deep, preocular slit and a pronounced ocular emargination, with the ventral integument of the sides of the temples extending far beyond the dorsal, posterior to the pre-ocular slit, and with the dorsal integument apparently fused with the ventral back of the ocular slit (see figure of *C. mituensis*).

There is also a peculiar quadrangular plate lying over the mandibles and anterior portion of the pharyngeal sclerite (absent in *Amyrsidea*), which has three fair-sized setae along each side, one over mandibles and two in posterior corner. Apparently the pharyngeal glands, which lie in front of the sclerite, and over the mandibles, are attached to this plate (see figure 5a., p. 484, Report of 1950).

The prothorax is short, the width more than twice the length, with the whole margin, posterior to the lateral angles, uniformly circular (see fig.). Pterothorax longer and wider than prothorax, with straight divergent sides and posterior margin ranging from transverse to strongly convex. Abdomen comparatively short, somewhat oval in shape (especially in the male), but sometimes with nearly straight, parallel sides from segment I to VII female.

There is a strong sexual dimorphism in some species of the genus, just as in *Myrsidea*, where the females have the metathorax strongly produced backward,

and the first three or four abdominal tergites arched backward, and sometimes fused into a single plate, almost devoid of setae, except at the sides, where the inter-segmentary sutures are visible.

This character is present to a varying degree in the species from the avian genera *Crax*, *Mitu* and *Pauxi*. (see Stud. in Neotr. Mall. (X), part. 2, p. 494). The species found on *Penelope*, *Chamaepetes* and *Ortalis* are not thus sexually dimorphic.

The tergites and sternites are entire (unless deformed as described above); the pleurites are very narrow dorsally, but wider ventrally and of varying width, but in all species, especially in females, the inner, posterior corner of pleurites I to V is produced into a strong, usually curving, spinous process. This process is always more strongly developed on pleurite I of the female, and in some species it is very rugose and almost straight (see fig. of *mituensis*). They diminish in size posteriorly, and in some species are quite small, and almost obsolete in the males.

Incrassations may or may not be present on the pleurites, and in some species they are present in the male and absent in the female. The chaetotaxy is abundant, the setae being mostly longer and of finer texture than in *Amyrsidea*. There is a closely-set row of long setae across the posterior margin of the tergites (except as noted above), but none across the median portion of these sclerites, as in *Amyrsidea*. There is a submarginal row of shorter setae along posterior margin of the sternites, and a sparse scattering of short setae over their surface. The patches of setae on 3rd. femora and sternites are of finer texture than in *Amyrsidea*, and of uniform length and thickness. These patches are well developed on sternites III to VI (inclusive), with sometimes an obsolete patch on II and VII, while in *Amyrsidea* they are well developed only on III and IV, with 5 or 6 scattered setae on V.

*Cracimenopon mituensis* new species.

Plate I, Fig. 6, Plate III, figs. 1-4.

Types, male and female adults, from *Mitu mitu* (Linné) collected by the author at Chiniñiri, Rio Kaka, Bolivia, August 24, 1934 (in coll. of the author).

**Diagnosis.** — The above characterization of the genus *Cracimenopon*, together with the figures presented, describe this species sufficiently well. It falls into Section I of my 1950 report (p. 494), and is closely related to *C. simplex paucis* (Carriker) in the structure of the thorax and abdominal tergites, with same type of sexual dimorphism.

The shape of pleurite I and its spine are also similar, as well as the male genitalia. As may be noted from the figures of the male genitalia of *C. simplex paucis* and *C. mituensis*, they differ considerably in detail, that of *mituensis* lacking the transverse bar connecting the bases of the paramers, while the internal sclerite differs considerably.

The measurements for the head in both sexes are very close to those of *paucis*, as well as for the thorax, but those for the abdomen differ considerably in both sexes, being longer and narrower in the male and shorter and narrower in the female.

Measurements of the types:

|                | M A L E |       | FEMALE |       |
|----------------|---------|-------|--------|-------|
|                | length  | width | length | width |
| Body           | 1.74    | —     | 1.96   | —     |
| Head           | frons   | .40   | —      | .445  |
|                | temples | .423  | .423   | .66   |
|                | occiput | .37   | .38    | —     |
| Prothorax      | .217    | .41   | .24    | .49   |
| Pterothorax    | .50     | .49   | .39    | .70   |
| Abdomen        | 1.00    | .63   | 1.17   | .75   |
| Basal plate    | .14     | .13   |        |       |
| Paramers       | .17     | .163  |        |       |
| Endomerale sac | .15     | .13   |        |       |

*Amyrsidea praegracilis* Carriker versus *A. ventralis* (Nitzsch)

When *A. praegracilis* was described attention was called to the outstanding differences between it and all other species of Menoponidae (excluding *Menacanthus*) found on the Cracidae. I have since secured a large series of *praegracilis* from *Odontophorus hyperythrus* and *O. guianensis marmoratus* which have been used in the present study, together with the old material.

I am now convinced that in *Amyrsidea praegracilis* we are dealing with a type of Menoponidae confined strictly to the avian genus *Odontophorus*, and that it has very little in common with the new genus *Cracimenopon*, being more closely related to *Menacanthus*. This belief is further strengthened by the character of the other Mallophagan parasites found on this genus of birds, viz. The genus *Eiconolipeurus* Carriker (relegated to the synonymy of *Oxylipurus* by Hopkins and Clay) and the two species of *Menacanthus* common to *Odontophorus*. The type of the Ischnoceran parasite differs so radically in many ways from the *Oxylipurus* group found on the Cracidae, that I believe it should be entitled to at least subgeneric rank.

Considering the two species of *Menacanthus* found on *Odontophorus* we find that they are closely related, possibly being conspecific. With the exception of two characters they resemble so closely *Amyrsidea praegracilis* that if the head spines were to be removed and the abdomen made more slender, it would be very difficult to separate them from the *praegracilis* group. They have a similarly shaped head, the same type of pharyngeal sclerite and the same type of male genitalia (with long basal plate) and the same chaetotaxy of the apical abdominal segment in the female, as well as the shape of the thorax and the body chaetotaxy in general, and especially the heavy spines at the tips of the 2nd. and 3rd. tibiae are exactly as in *Amyrsidea praegracilis*. The most striking example of this similarity is with *Menacanthus falcatus longispinus* Carriker, from *Odontophorus capucira* (Brazil).

If the genus *Menacanthus* can be separated from other species of the Menoponidae solely on the presence of a pair of heavy spines on the head, why quibble over the separation of other groups which possess other characters as much, or possibly more distinctive and of more generic significance? I certainly am not in favor of erecting genera for every slightly aberrant species, as has been done

by some workers on Mallophaga, but neither am I in favor of uniting a heterogeneous lot of species into one huge genus, impossible of being characterized, when it is possible to separate from this mass groups of clearly homogenous species, especially when they are parasitic only on one avian family or even genus.

The contention has been made that by doing this the phylogenetic relationships between the smaller genera are lost, but I disagree with this contention. By the use of smaller genera when they can be clearly defined, and when they are confined strictly to one avian family, not only simplifies the work of the systematist, but, in my opinion, throws more light on the relationship of their hosts. No ornithologist would hesitate to admit that there is no very close relationship between the Cracidae and the genus *Odontophorus* (family Phasianidae,) and their Mallophagan parasites confirm this statement, nor are the Old World Pheasants any more closely related to the New World Cracidae.

*Amyrsidea ventralis* (Nit.) is parasitic on the Argus Pheasant, an Asian species, but up to the present no other species has been taken on any Pheasant which is actually congeneric with it. It may possibly be, as Col. Emerson tells me, an abnormal species, possibly a relict, and it may also be that no other species congeneric with it will ever be found. Col. Emerson also tells me that he has other species of Old World Menoponidae which differ from each other generically and do not fit into any existing genus.

For the present he has literally "dumped" them into *Amyrsidea*, which actually is only a dumping ground as it now stands, awaiting the time when sufficient new material shall be secured for a sensible revision of the group. So, why should this parasite from an asiatic host, be considered congeneric with one on *Odontophorus*, even though the two groups of hosts have now been placed in the same family (Phasianidae), just because there is a slight superficial resemblance between them. Such treatment is neither logical nor scientific. The Amblycera are supposed to be the most primitive of the Mallophaga surviving to-day and undoubtably many descendants of the original type have dissappeared. There have also undoubtably been cases of parallel development, thus obscuring true relationships, but in many cases present forms give conclusive proof of close avian relationships, or lack of such relationships, and which are corroborated by the systematics of Ornithology.

It is a well known fact that evolution of the Mallophaga has been very slow indeed, due to unchanging environment and food, so that when we have such outstanding characters as two totally different types of phyrugel sclerites, quite different male genitalia (one with almost no basal plate and the other with a long slender one), and with a totally different type of chaetotaxy on the apical abdominal segment in the female, all, in one group of species, it seems to me that it is not only good, common sense, but good systematics to separate generically such a group, and this I propose to do in the case of the *Amyrsidea prae-gracilis* group, which differs as much, perhaps more, from the genotype of *Amyrsidea* as it does from *Menacanthus falcatus* Carriker, or *Cracimenopon* Carriker.

Genus *Desumenopon* new genus.Genotype. — *Amyrsidia praegracilis* Carriker.

**Diagnosis.** — Medium sized, slender bodied Menoponidae, with abundant and coarse chaetotaxy, including many short spines, and parasitic on the avian genus *Odontophorus*.

Head small, narrow, front circular; temples small, rounded, and extending but little beyond the sides of the large prothorax. Ocular slit present; antennae large, with three fourths of apical segment extending back of ocular slit. Ventral integument covering the antennary fossae extending laterally to the entrance of the ocular slit; pharyngeal sclerite in the form of an inverted T, as in *Menacanthus*; gular plate present and extending beyond occipital margin of head.

Pterothorax entire; pronotum small, transverse in form and without setae; meso and metanotum well developed and set with numerous strong, long setae (about 12 on mesonotum and 16 on metanotum). Abdomen a slender oval, same shape in both sexes, including apical segment, which is broad and circular on posterior margin. Chaetotaxy of last abdominal segment in female complicated, and very similar to that of *Cracimenopon*; tergites and sternites entire, uniformly colored; pleurites scarcely visible dorsally, fairly wide ventrally, but poorly chitinized, and with no trace of spines or other development of inner, posterior angle, but bearing numerous short, stiff setae on their faces, as well as longer, coarser hairs along their posterior margin. Legs short and stout, with numerous stiff bristles; five stout spines on apical portion of 2nd. and 3rd. tibiae.

Male genitalia with long, slender basal plate, enlarged distally; paramers slender, with strongly outcurving tips (similar to genitalia of *Menacanthus falcatulus* from same host). Patches of setae on 3rd. femora and abdominal sternites sparse, coarse, and the setae set parallel to each other. The genus will contain, in addition to the genotype, *Amyrsidia praegracilis gujanensis* Carriker, 1950, *A.p.cumbrensis* Carriker, 1950 and a new subspecies described below.

Differs from *Amyrsidia* in type of pharyngeal sclerite; presence of a well-developed gular plate; presence of pre-ocular slit; greater extension laterally of ventral covering to antennary fossae; chaetotaxy of apical abdominal segments in both sexes, and in the male genitalia.

*Desumenopon praegracilis hyperythrus* new subsp.

Plate I, fig. 5; Plate II, figs. 2-6.

Types, male and female adults, from *Odontophorus hyperythrus* Gould, collected by the author at La Candela, Dept. Huila, Colombia, May 12, 1952 (in U. S. Nat. Mus.).

**Diagnosis.** — Superficially resembles closely the other three subspecies of *praegracilis*, this being an exceedingly compact, homogenous group which has remained almost unchanged during the evolution of the numerous species of *Odontophorus*, their hosts.

In body length the male is close to that of *D.p.gujanensis*, but the female is larger, larger even than the female of *cumbrensis* (1.99 against 1.90). The head is much narrower, in both sexes, than any of the known races (male, 37 against

.44, .412 and .415), while it is even narrower (in proportion) at the frons. The head length is slightly less than in *praegracilis* and *gujanensis*, and equal to that of *cumbrensis*; the prothorax is longer but much narrower than in all of the others, and the pterothorax also differs in size and proportions (see table of measurements: Rev. Acad. Colomb. Sci., 1950, p. 510).

The basal plate is the same length as in *praegracilis* but much shorter than in the other two races, while the endomeral sac is about as in *gujanensis*. The shape of the basal plate is quite different, narrowing abruptly to the more slender stem, then with sides extending parallel to the circular knob at the distal end. The paramers are less thickened basally; the endomeral rods differ in structure, as well as the internal, movable sclerite. The gular plate of the head is very long, extending considerably beyond the occipital margin and tapers noticeably towards posterior end, not being parallel-sided or wider posteriorly as in the other races.

In addition to the holotype, and allotype there is a large series of paratypes of both sexes.

Measurements of the types:

|               | M A L E |       | FEMALE |       |
|---------------|---------|-------|--------|-------|
|               | length  | width | length | width |
| Body          | 1.72    | —     | 1.99   | —     |
| Head {        | —       | .27   | —      | .303  |
|               | .315    | .37   | .35    | .417  |
|               | .27     | —     | .282   | —     |
| Prothorax     | .206    | .337  | .217   | .365  |
| Pterothorax   | .202    | .434  | .206   | .50   |
| Abdomen       | 1.11    | .51   | 1.35   | .715  |
| Basal plate   | .37     | .08   |        |       |
| Paramers      | .117    | .087  |        |       |
| Endomeral sac | .11     | .092  |        |       |

## DESCRIPTION OF PLATES

## PLATE I

- Fig. 1 - *Amyrsidea ventralis* (Nit), male genitalia.  
 Fig. 2 - " " " pharyngeal sclerite.  
 Fig. 3 - " " " head, prothorax and tip of abdomen of male.  
 Fig. 4 - " " " distal end of 3rd. tibia.  
 Fig. 5 - " *praegracilis* Carriker, distal end of 3rd. tibia.  
 Fig. 6 - *Cracimenopon mituensis* n.sp., " " " " "

## PLATE II

- Fig. 1 - *Amyrsidea ventralis* (Nit.) female.  
 Fig. 2 - *Desumenopon praegracilis hyperythrus* n.subsp., head and prothorax.  
 Fig. 3 - " " " tip of male abdomen. (male.  
 Fig. 4 - " " " " " female "  
 Fig. 5 - " " " pharyngeal sclerite.  
 Fig. 6 - " " " male genitalia.

## PLATE III

- Fig. 1 - *Cracimenopon mituensis* new sp., head, prothorax and tip of abdomen.  
 Fig. 2 - " " " " tip of abdomen of female. (male.  
 Fig. 3 - " " " " pleurite I of female.  
 Fig. 4 - " " " " male genitalia.

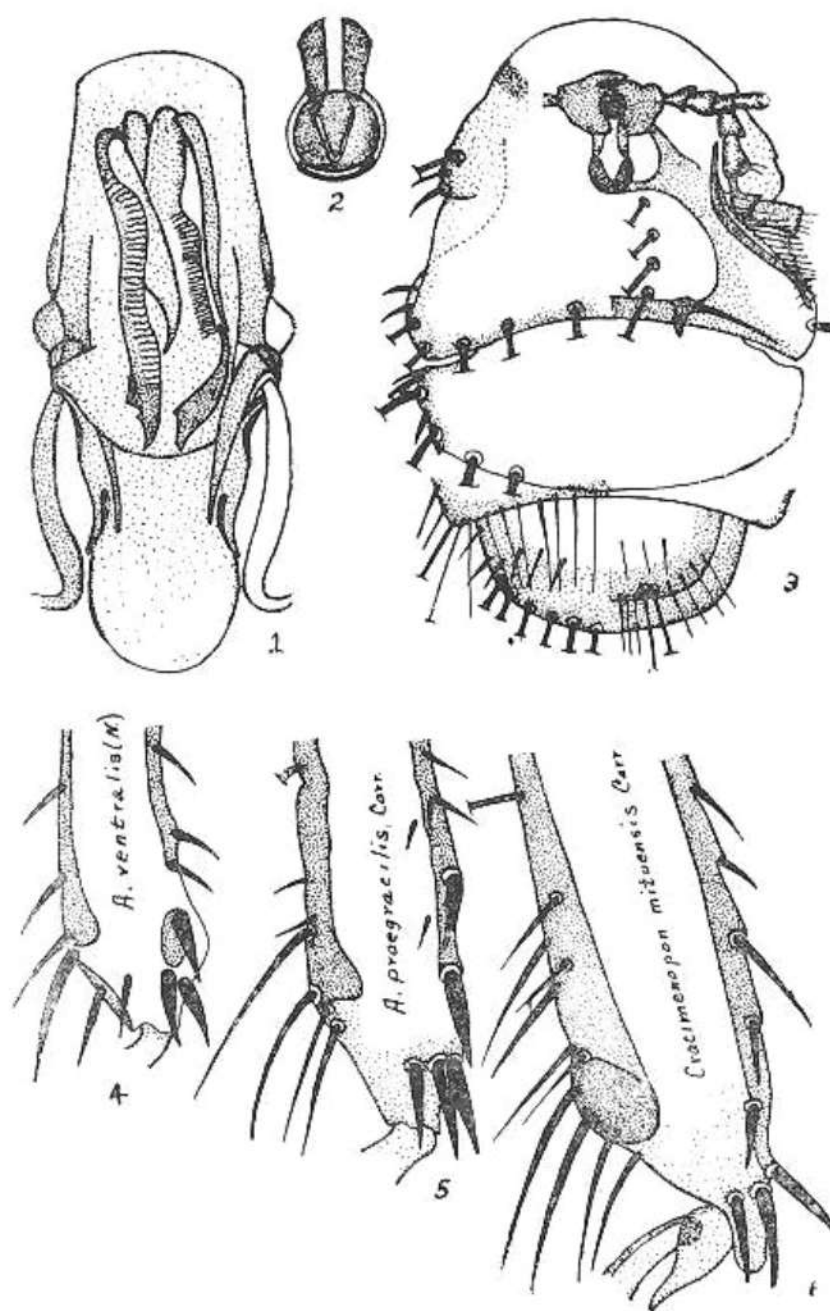


PLATE I

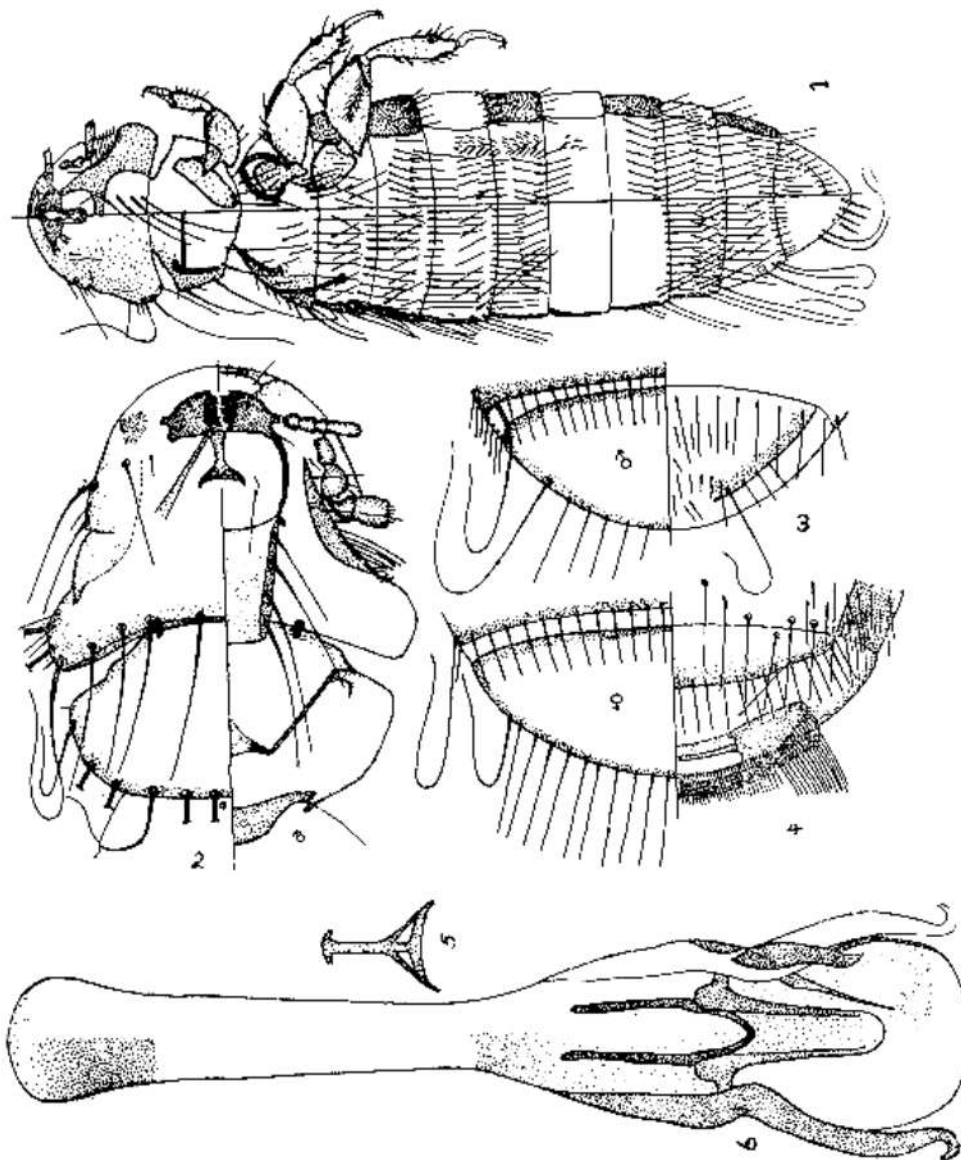


PLATE II

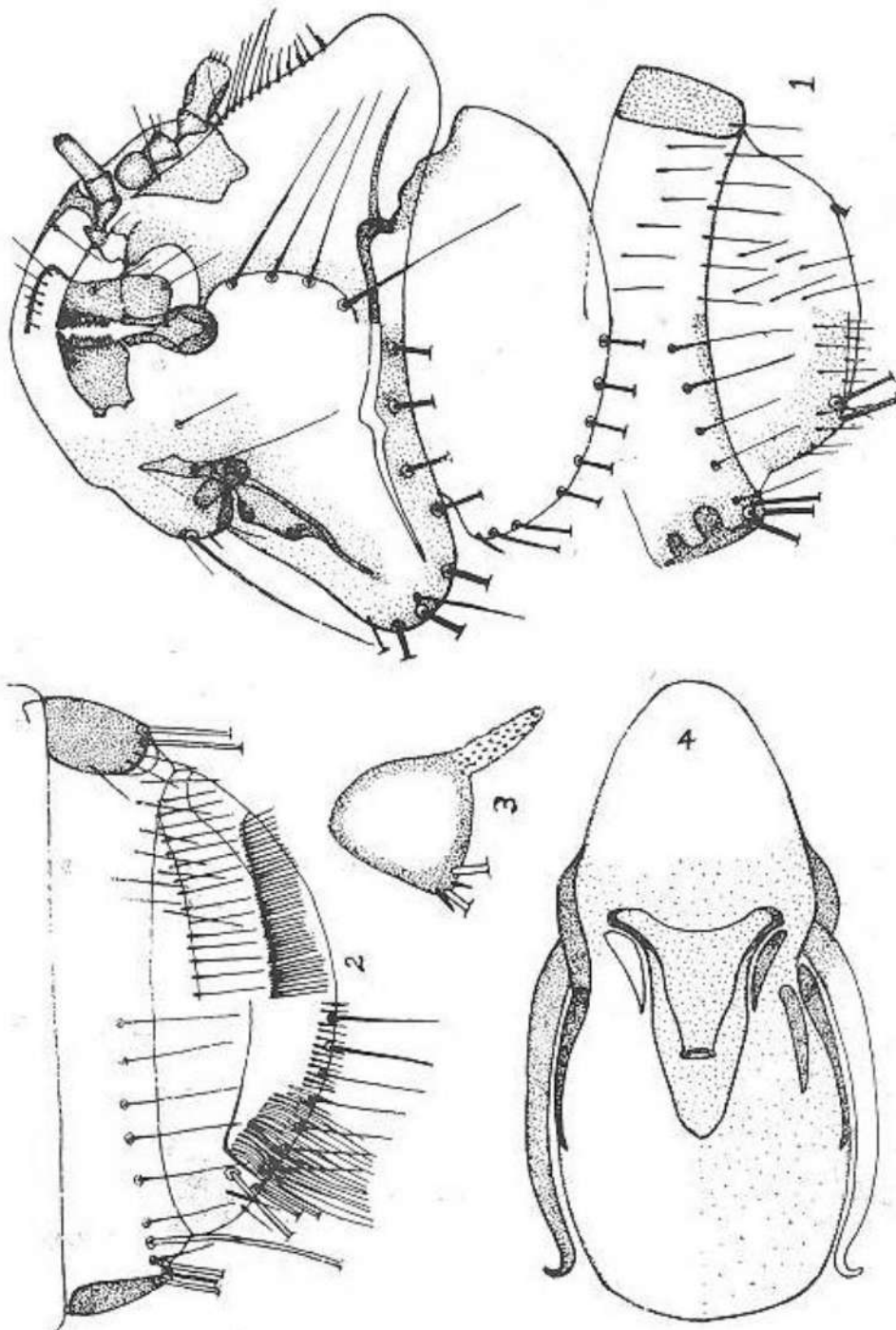


PLATE III

## New Names for Mallophaga whose specific names are preoccupied

*Paragoniocotes canipalliatu* nom. nov. for *P. mercenarius* Carriker, 1950, Rev. Brasil. Biol. vol. 10, p. 20 nec Carriker, 1947, Arthropoda 1, p. 100.

*Paragoniocotes sordidus* nom. nov. for *P. intermedius* Carriker, November, 1947, Arthropoda 1, p. 105, nec Guimaraes, July, 1947, Arq. Zool. S. Paulo. 5, p. 265

*Pseudolipeurus megagenitalis* nom. nov. for *P. macrogenitalis* Carriker, 1953, Rev. Brasil. Biol., October, 1953, p. 214, nec Monteiro de Barros, 1933, Thesis Fac. Med. S. Paulo, p. 43.

## A correction and an apology.

*Strongylocotes tinami* (Rudow), 1870.

*Nirmus tinami* Rudow, Zeitschr. ges. Naturwiss., 35, p. 473 (Host: *Nothura boraquira* (Spix)).

*Nirmus ansatus*, l. c., p. 474 (Host: same as preceding).

Due to an unfortunate oversight Miss. Clay's paper<sup>1</sup> containing a redescription of this species from material taken on the type host, was not taken into account in my recent review of the genus *Strongylocotes*,<sup>2</sup> for which my apologies are due to Miss. Clay.

I am much pleased that she has finally been able to clear up this vexing problem, and definitely fix the identity of Rudow's species, also that she has vindicated my original opinion regarding it (Carriker, 1936, p. 93). The close resemblance of *S. tinami* to *S. lipogonus* (Nit.), from *Rhynchotus rufescens* is added proof to my contention that the Mallophagan parasites of the genera of Tinamous inhabiting the grasslands and paramos of South America (*Rhynchotus*, *Nothoprocta*, *Nothura* and *Tinamotis*) are very different from those on the forest-inhabiting genera. These two species are undoubtedly *Strongylocotes*, but in comparing them with the remaining known species of the genus it must be admitted that they are strongly aberrant.

Footnote 1. — Field Mus. Nat. Hist., Zoology, Vol. 24, N° 33, Nov. 26, 1943, p. 382.

Footnote 2. — Revista Brasileira de Biologia, December, 1953, p. 209.