NEW AND LITTLE KNOWN MALLOPHAGA FROM VENEZUELAN BIRDS (PART I)

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This is the second of a series of papers (1) dealing with Mallophaga of Venezuelan Birds, which will be published by the Sociedad de Ciencias Naturales La Salle, of Caracas.

The present paper, and those to follow, will form a report on the combined collections of the Museo de Historia Natural La Salle and that portion of the Carriker collection made personally by him in Venezuela in 1909-10 and in 1922. All species new to science will be described and figured.

The types from the Carriker collection will eventually be deposited in the U.S. National Museum at Washington, while those from the M. H. N. La Salle collection will be returned to that Institution. Paratypes of all new species will be exchanged whenever there is material available.

In these papers all descriptions, measurements and drawings will be the work of the senior author, while the junior author will be responsible for the systematics of the hosts involved, the proofreading and the format of the publication. All measurements are in millimeters.

In these studies much material in collection of the senior author from countries adjoining Venezuela will be used for comparison, and Mallophaga taken from species of birds collected outside of Venezuela, but wich are known to be residents of that country, will be included, and considered as Mallophaga of Venezuela.

In the present paper a most interesting and complicated group will be studied, namely, the Mallophaga from the avian genus *Ramphastos* (Toucans). Another interesting group treated is from the genera *Chauna* and *Anhima* (Horned Screamers), also numerous miscellaneous species.

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(1) The first paper, by the present authors, entitled "Lista preliminar de Mallophaga de Venezuela", appeared in Mem. S. C. N. La Salle, Tomo XVIII, Nº 51, pp. 184-208. 1958.

The authors wish to express their appreciation of the generousity of the Sociedad de Ciencias Naturales La Salle for making possible the publication of these papers, which it is hoped, will be of value to future students of Mallophaga, not only in Venezuela, but wherever such studies are being carried out. It is a most fascinating group of insects, well worthy of more attention by Entomologists.

THE LICE OF THE LARGE TOUCANS (genus *Ramphastos*)

A single form of the suborder ISCHNOCERA is presently from these hosts, the genus *Austrophilopterus*, which has been taken on many species. On the other hand the suborder AMBLYCERA is well represented, with the genera *Myrsidea*, *Menacanthus* and *Ramphasticola* having been taken on many species of the genus *Ramphastos*.

All of these genera show some unusual anatomical characters, *Austrophilopterus* bearing two pairs of heavy, dorsal spines on the posterior margin of the anterior plate of the head, together with an unusual type of male genitalia. The genotype of *Myrsidea*, *M. victrix* Waterston, is characterized by a pair of asters of heavy spines on the first abdominal sternite, and by strong sexual dimorphism. *Menacanthus* has been taken on eight species of *Ramphastos*, but they are, apparently, all conspecific, forming a very homogeneous group of closely related subspecies. This group is easily recognized by the peculiar, very long, slender male genitalia.

Ramphasticola, erected by the author in 1949, for a new species taken on *Ramphastos swainsoni*, possesses many unusual anatomical characters, especially the structure of the thorax and abdomen and the abdominal chaetotaxy, also, the most striking character is the exceedingly bizarre sexual dimorphism. This genus was placed under the synonomy of *Myrsidea* by Hopkins and Clay in the 1952 Checklist of Mallophaga, but for no good reasons, as will be shown on succeeding pages.

Dr. Eichler has recently described another species closely related to *Myrsidea victrix*, and a second form of *Ramphasticola*, both from Venezuelan species of *Ramphastos* (*R. cuvieri*).

Suborder *AMBLYCERA* Kellogg

Family *MENOPONIDAE*

Genus *MYRSIDEA* WATERSTON, 1915

Ent. mon. Mag., 51, 12. Genotype: *Myrsidea victrix* Waterston.

At the present time this is one of the largest of the Mallophagan genera, and, in my opinion, is in need of some revision, although I do not wish to attempt such a task with the material at my disposal.

M. victrix, the genotype belongs to that portion of the genus in which there is strong sexual dimorphism and large size, especially of the female. This

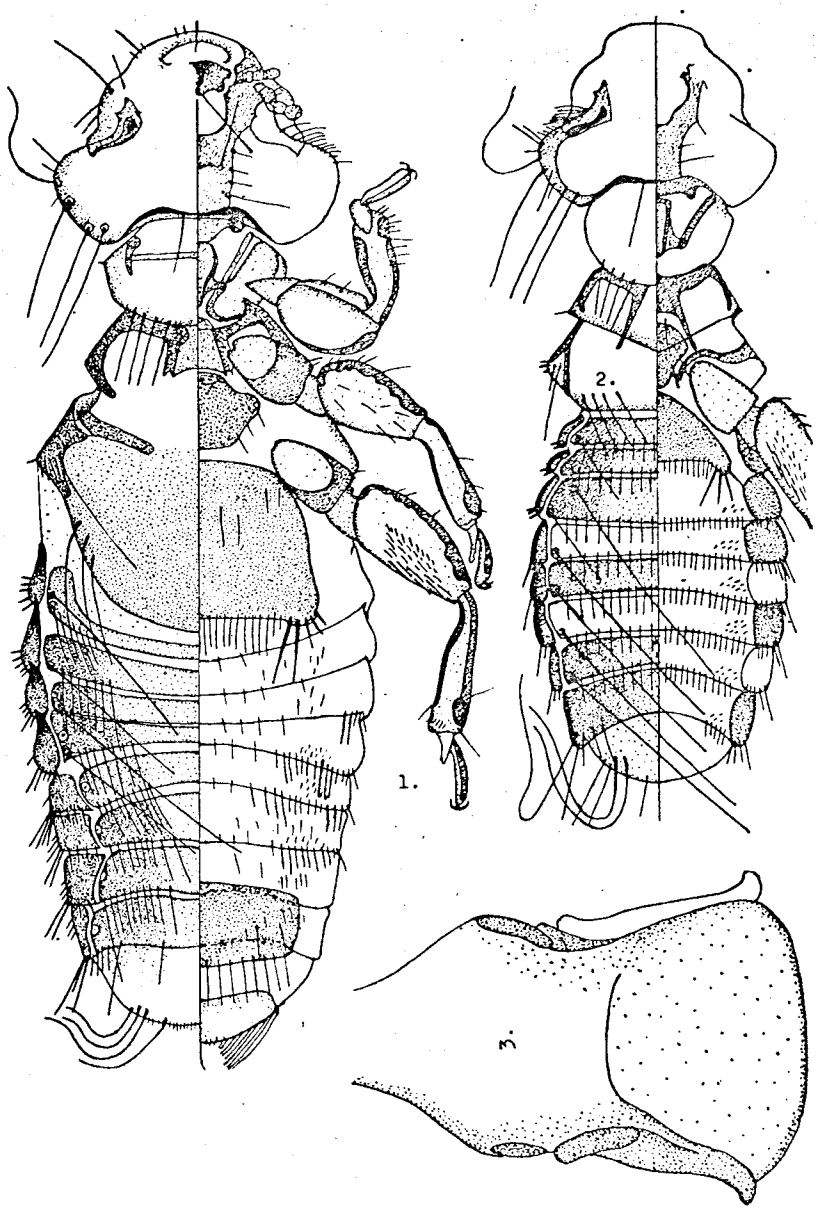


Plate I

Fig. 1—*Myrsidea extranea* Carriker, ♀
Fig. 2—*Myrsidea extranea* Carriker, (♂ allotype, described)
Fig. 3—*Myrsidea extranea* Carriker, (♂ genitalia)

type of *Myrsidea* is found on the Toucans of the genus *Ramphastos*, on some of the larger Icteridae and some of the Caprimulgidae. The great mass of species which comprise the genus are mainly from the Passeriformes, although they are often present in other groups, and these are much smaller in size, and with no sexual dimorphism whatever, or if present, very little.

Dr. Waterston himself, when he erected the genus, was of the opinion that the smaller species of the Passeriformes should be generically separated, but apparently nobody has had the temerity to attempt that herculean labor.

In the present paper I shall be dealing only with the sexually dimorphic group found on the Toucans.

Myrsidea extranea (Carriker), 1903

(Figs. 1, 2 and 3)

Colpocephalum extraneum Carriker, Univ. Neb. Stud. III, p. 173; pl. 6, fig. 3 (Host: *Nyctidromus albicollis*. Error = *Ramphastos swainsoni* Gould).

The species was described from a single female, supposedly from *Nyctidromus*, but it was proved beyond doubt that its true host was *Ramphastos swainsoni*, the only species of that Toucan collected in the locality from which it came.

The original description and figure are good, as far as they go, but a new figure of the female and of the male, then unknown, are here presented.

Since the differences between the females of this group are to be found largely in the abdominal sclerites and chaetotaxy, a brief resume is here given covering the outstanding features.

The pterothorax extends posteriorly from the postero-lateral angles in the form of a more or less circular "apron", somewhat as in the genus *Strongylocotes*, the sides curving inward from the angles, then backward, uniformly circular to the base of the asters of spines. The lateral margins of the pterothorax are deeply incised at the meso-metathoracic suture, which is clearly visible and widely hyaline.

The first three abdominal tergites have been bent backward medially, the first curving around the posterior margin of the pterothorax and is very narrow medially, often not visible. II and III are wider medially than I and less curving. Pleurite I and the outer, anterior portion of its tergite are connected with the pterothorax by a hyaline cortex, reaching to the postero-lateral angles. Tergite IV is transverse, but very narrow medially, while VII and VIII are transverse and the widest of the tergites.

There are 4 short setae inside of posterolateral angles, followed by a very long one, and with 3 more long ones along each side of the pterothoracic "aporn" (see figure for remaining chaetotaxy and other structures).

This species and its races are easily distinguished from *M. victrix* and its subspecies by the characters given above. (See also note under *M. victrix*)

DESCRIPTION OF THE MALE ALLOTYPE

Allotype of *Myrsidea extranea* (Carriker), ♂ adult, from *Ramphastos swainsoni* Gould, collected by the author at Guapiles, Costa Rica, March, 1903 (in coll. author).

DIAGNOSIS.—Very much smaller than the female, with head and prothorax the same but pterothorax and abdomen very different.

The meso-metathoracic suture is more prominent, while the posterior margin of the mesothorax extends laterally far beyond the sides of the metathorax, forming a sharply cut, exposed, right angle (see fig. 2). The posterior margin of the metathorax is strongly convex, extending over anterior third of 1st sternite bearing the asters of spines.

There are 4 spines in the postero-lateral angles and a long setae inside of them, as in the female, with 3 long, strong setae on each side in a transverse line midway between the lateral angles and the posterior margin.

Tergites I and II are curved backward slightly, III is transverse, with IV-VIII curved forward medially, the curve progressively greater from IV to VIII. A closely set, continuous row of rather long, submarginal setae along posterior margin of tergites I to VII, which are continuous across abdomen; 3 setae on each side of VIII; a very long, strong setae set in postero-lateral corner of tergites I to IV, as in the female. A similiar, but shorter row of setae on posterior margin of sternites, with the usual patches of short setae at each end of sternites IV-VI.

The male of *extranea* may be distinguished from the male of *victrix* by the presence of the pronounced meso-metathoracic suture and the strongly protruding postero-lateral angles of the mesothorax. Also, by the shape and chaetotaxy of the posterior portion of the pterothorax, whose margin is merely flatly convex in *victrix*, with a row of 9 long, slightly submarginal setae on each side, very similiar to the female.

There is very little difference in the male genitalia between the two species. The following specimens are in the collection of the author, all taken on *Ramphastos swainsoni*, and *R. citreolaemus*:

Holotype ♀, Pozo Azul, Costa Rica. 4 ♂♂ and 5 ♀♀, from *R. citreolaemus*, taken at La Raya, Río Cauca, Colombia.

♂ allotype, ♂ paratype; 2 ♀ ♀, Guapiles, Costa Rica.

1 ♀, La Raya, Río Cauca, Colombia.

2 ♀ ♀, Puerto Munchimbo, Río San Juan, Colombia.

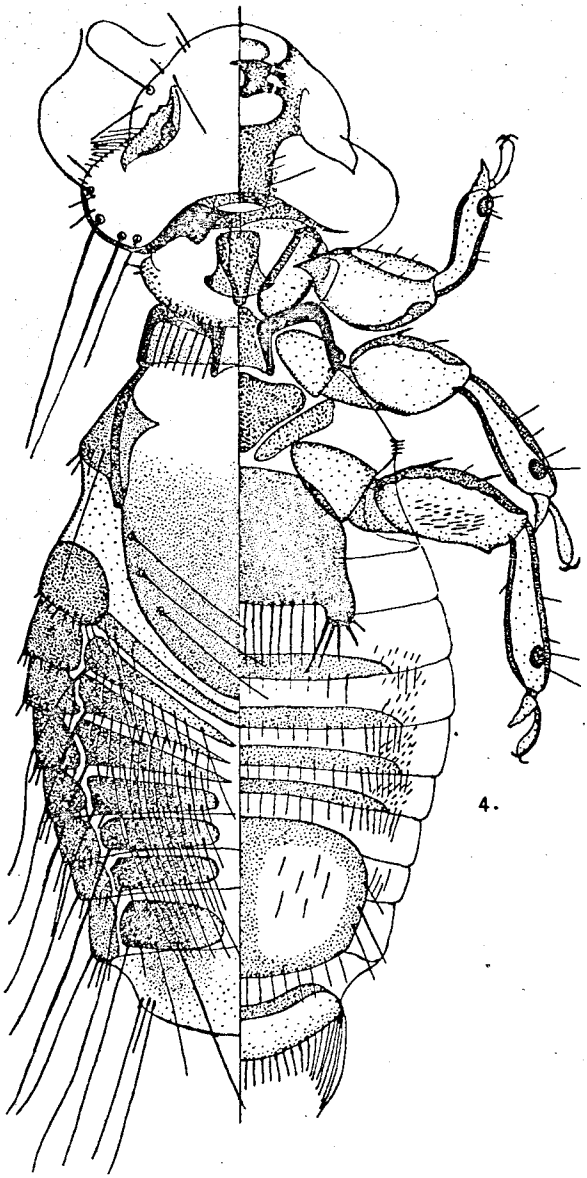


Plate II

Fig. 4—*Myrsidea peruviana* Eichler ♀

Measurements of the ♀ holotype and ♂ allotype of *M. extranea*:

	♂		♀	
	length	width	length	width
Body	1.58	——	2.22	——
Head: frons	——	.38	——	.44
Head: temples	.392	.542	.462	.643
Head: occiput	.347	——	.404	——
Prothorax	.206	.347	.26	.42
Pterothorax	.347	.477	.519	.727
Abdomen	.77	.553	1.20	.81
Basal plate	——	.14		
Parameres	.14	.205		
Endomeral sac	.152	.13		

Note.—The 9 specimens listed above from *Ramphastos citreolaemus* are so exceedingly close to the typical series that any small differences which may exist between, the two are too small to merit any recognition.

Myrsidea peruviana Eichler, 1951

(FIGS. 4, 5 AND 6)

Myrsidea extranea peruviana, Zool. Anzeiger, Bd. 146, Heft 1/2, p. 50, fig. 5 (Host: *Ramphastos cuvieri inca* = *R.cuvieri cuvieri* Wagler) [1].

Eichler's description of this species is very short and quite useless, as usual, but he fortunately published with it a quite good microphotograph of the female, the male being unknown.

The female of *peruviana* differs from *extranea* in noticeably larger size, in *all* measurements except length of prothorax, which is the same. The shape of the abdominal tergites is very different. Tergites VI-VIII in *peruviana* are transverse, while I-V are bent sharply backwards, ending in a slender point near the median line of the abdomen, with I-III bent more sharply than IV and V. The asters of spines contain 5 each, the inner one much the longer, while in *extranea* there are 7, the inner 5 being long and almost equal; the pleurites are narrower in *peruviana* and less uniform in width.

The fine setae at apex of abdomen are longer and denser in *extranea;* the marginal and submarginal carinae of the pterothorax are much wider in *peruviana* and differ somewhat in their location.

DESCRIPTION OF MALE ALLOTYPE

Allotype, ♂ adult, from *Ramphastos c.cuvieri* Wagler, collected at Atures, Terr. Amazonas, Venezuela, 1955 (No. 1177 coll. M.H.N. La Salle).

(1) The range of **Ramphastos c.cuvieri,** as given by Peters, extends from southern Venezuela to N.Bolivia, which includes locality given by Eichler for host of this parasite.

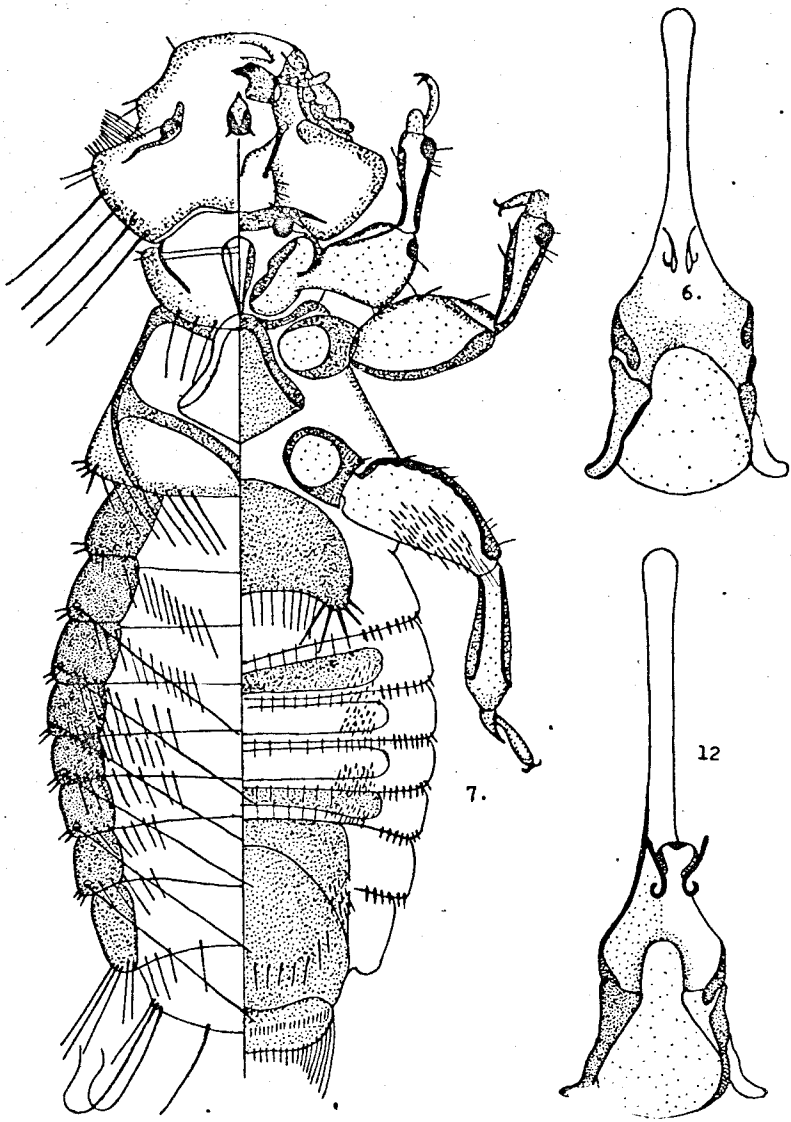


Plate III

Fig. 6—*Myrsidea peruviana* (♂ genitalia)
Fig. 7—*Myrsidea victrix* Waterston ♀
Fig. 12—*Myrsidea victrix waterstoni* n. subsp. (♂ genitalia)

DIAGNOSIS.—Very much larger than male of *M. extranea* in all measurements. The preantennary portion of the head is very differently shaped (see figs.) while the occiput is much less emarginate; the mesothorax is much shorter, with posterior margin transverse, while in *extranea* this margin is sharply angulated medially at the center of the metasternum; the posterior margin of the metathorax also differs, being uniformly convex, with 5 setae on each side, while in *extranea* the sides converge in a straight line from the posterolateral angle to the 1st.abdominal pleurite, then continue transversely across abdomen, with 4 deeply submarginal setae on each side; the tergites of abdomen are *all* curved forward medially, very slightly in I, then progressively greater to VIII. Very little difference between the male genitalia, the basal plate and endomeral sac being longer and wider in *peruviana*, but parameres the same.

Measurements of ♂ allotype and ♀ from same host:

	♂		♀	
	length	width	length	width
Body	1.85	—	2.21	—
Head — frons	—	.43	—	.456
Head — temples	.44	.60	.477	.68
Head — occiput	.412	—	.43	—
Prothorax	.25	.434	.28	.456
Pterothorax	.425	.60	.94	.78
Abdomen	.93	.67	1.21	.95
Basal plate	.38	.18		
Parameres	.14	.23		
Endomeral sac	.14	.163		

Species represented by the ♂ allotype and 8 ♂♂ paratypes; and 4 ♀♀.

From *Ramphastos t.tucanus*, 5 ♂♂, 3 ♀♀ and 4 nymphs, Campo Cecilia Magdalena, Río Caura, Venezuela (coll. M.H.N. La Salle).

The differences between the series from *R.t.tucanus* and *R.c.cuvieri* are much too small to be worthy of subspecific recognition.

Myrsidea victrix Waterston, 1915

(FIGS. 7, 8 AND 9)

Ent. mon. Mag., 51, 13; pl. I, figs. 2b and 2c. (Host: "Black and yellow-billed Toucan" = *Ramphastos swainsoni* (error) = *R.ambiguus brevis* d'Schauense.

The host of this parasite was collected by Dr. Balfour in the Atrato Valley of Colombia, but the host was evidently discarded, since an inquiry by the author to the Curator of Birds of the British Museum, revealed the fact that the specimen in question could not be located in their collections.

In the 1952 List of Mallophaga this host was interpreted as being *Ramphastos swainsoni* Gould, which seems to have been universally accepted without adequate examination of the bills of the various species of *Ramphastos* involved.

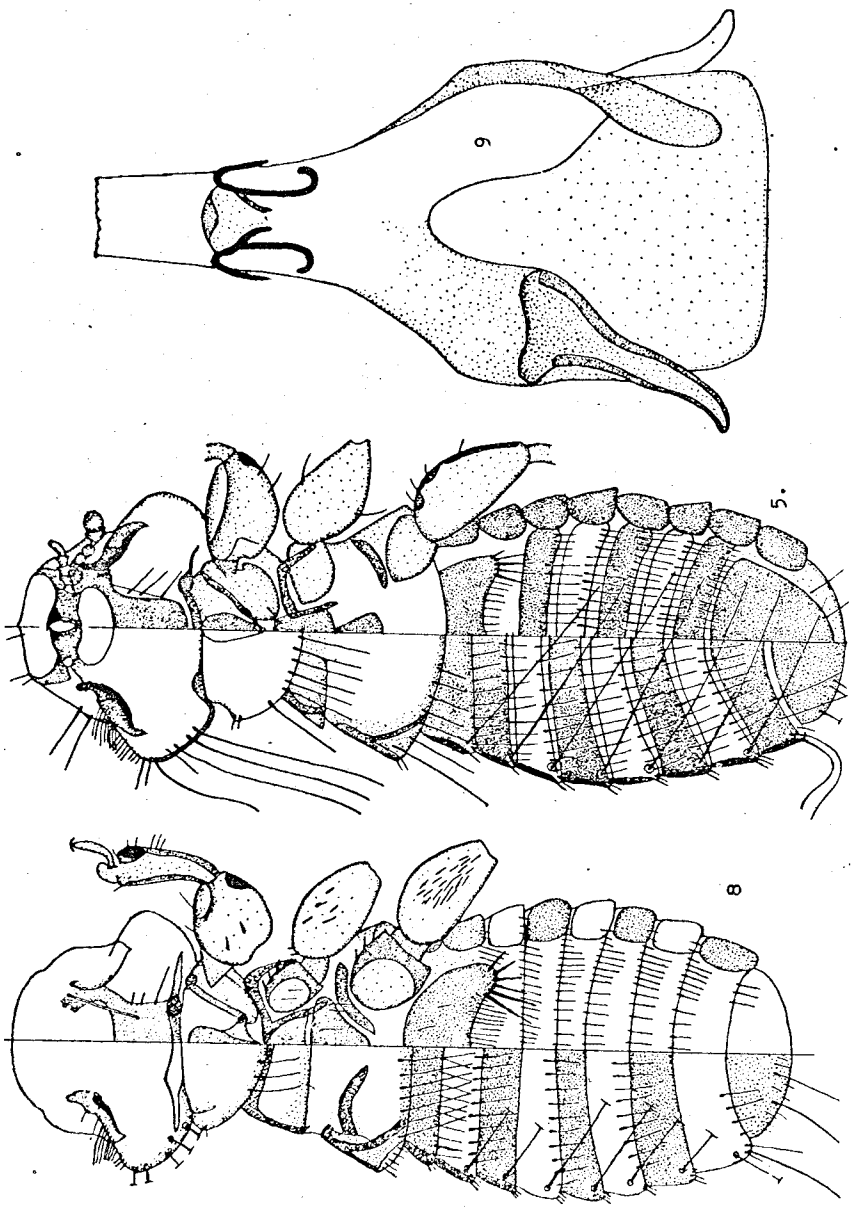


Plate IV

Fig. 5—*Myrsidea peruviana* Eichler ♂ (allotype described)
Fig. 8—*Myrsidea v.victrix* Waterston (♂ paratype)
Fig. 9—*Myrsidea v.victrix* Waterston (♂ genitalia)

The presente work on the Mallophaga of the genus *Ramphastos* involved the study of a considerable number of specimens and species, so that it became very important to determine conclusively the identity of Dr. Balfour's "Black and yellow-billed Toucan".

Miss. Clay very kindly sent the senior author a pair of Waterston's material of *Myrsidea victrix*, and when these were compared with his specimens of *victrix* from *Ramphastos swainsoni* they were found to be quite different. After comparing these paratypes of *victrix* with specimens of the various species of *Ramphastos* known to inhabit western Colombia, it was found that they resembled very closely 1 ♂ and 4 ♀♀ from *R.ambiguus brevis*, collected at Nuquí, on the Pacific coast of the Chocó a bird which ranges from Darien, Panama to southern Colombia on the Pacific lowlands.

In the Museum of the University of Popayán there is a series of five fine skins of *Ramphastos swainsoni* and four of *R.ambiguus brevis*. A casual examination of the bills of the two species cleared up all doubts in the matter. The color of the bills is the following:

R.swainsoni: Upper mandible yellow; basal half of sides of lower mandible grayish pink, with distal portion, *only*, black (In freshly killed birds the grayish pink of lower mandible is dull blood-red, fading gradually in old skins). *R. ambiguus brevis*: Ridge uf upper mandible entirely yellow; lower mandible *entirely* black. It is, therefore, very evident that the true host of *Myrsidea victrix* and *Menacanthus balfouri* Waterston is *Ramphastos ambiguus brevis* de Schauense, and not *R.swainsoni* Gould.

Myrsidea victrix, and its races, are apparently found on most, if not all, the species of *Ramphastos*, much more abundantly than *M.extranea* and its subspecies. More careful collecting will very likely prove both species to be more abundant than at present supposed. In the collection of the senior author are specimens of *victrix* from eight species of *Ramphastos*, ranging from northern Mexico to Peru and Bolivia. In some cases it was found that two, or even three, species of *Ramphastos* were parasitized by the same subspecies of *victrix*, a proof that is is a very stable species, or that the present taxonomic relationships between the species of *Ramphastos* is in need of reajustment.

As explained under *M.extranea*, the female of *victrix* differs from the female of that species chiefly in the structure of the pterothorax, the abdominal sclerites and their chaetotaxy. In *victrix* the sides of the pterothorax are straight and divergent, and the posterior margin flatly convex, with numerous long marginal setae (Waterston give 12 for ♂, while I count 7 on each side; in the ♀ paratype they are covered, but on females from *R.ambiguus* there are 11 on each side, exclusive of the angle.

The male is much smaller than the female, but very similiar to the male of *extranea* in general appearance, except for the thoracic structure, which was explained under *extranea*.

The measurements which follow were made from the paratypes, some agreeing exactly with Waterston's figures, others greater, especially the width of the head and thoracic segments. Apparently there is considerable variation in measurements in a series from the same bird.

Measurements of ♂ and ♀ paratypes of *M.victrix*:

		♂		♀	
		length	width	length	width
Body		1.78	—	.244	—
Head	frons	—	.303	—	.456
	temples	.423	.586	.465	.655
	occiput	.39	—	.402	—
Prothorax		.195	.423	.23	.43
Pterothorax		.37	.564	.456	.72
Abdomen		1.10	.685	1.28	.868
Basal plate		.43	.163		
Parameres		.11	.228		
Endomeral sac		.14	.163		

Myrsidea victrix waterstoni n. subsp.

(FIGS. 10, 11 AND 12)

Types, ♂ and ♀ adults, from *Ramphastos swainsoni* Gould, collected by the senior author at La Guayacana, Nariño, Colombia, May 6,1958 (in coll. of senior author).

DIAGNOSIS.—Considerably smaller than *victrix*, especially the male; prothorax smaller; pterothorax with sides undulating (not straight); pleurites much narrower; tergites much shorter transversely, falling far short of the median line of abdomen, with all excepting I and VIII tapering to a narrow, rounded point; tergites II-V are bent backwards, but not sharply, and progressively less posteriorly.

Sternites II-V curve forward medially, VI is transverse, and with a large sternite covering VIII and median portion of VII, the anterior margin being in the shape of a cone, with median point reaching to posterior margin of VI.

The coccyx of all three pairs of legs are differently shaped. The male differs rom the nominate form very little, except in smaller size.

Myrsidea victrix ceciliae n. subsp.

(FIGS. 13 AND 14)

Types, ♂ and ♀ adults, from *Ramphastos v. vitellinus* Lichtenstein, collected by the senior author at Río Mocho, Río Caura, Venezuela, Nov. 3,1909 (in coll. of senior author).

DIAGNOSIS.—Female. Closely related to the nominate race in measurements and general appearance, but differs in the structure of the thoracic sternal plates and carinae, the abdominal tergites and chiefly in the chaetotaxy of the pterothorax and abdomen.

In *victrix* there are long strong setae, closely set, on the posterior margin of the pterothorax which extend almost to base of the asters of spines. Foreign matter

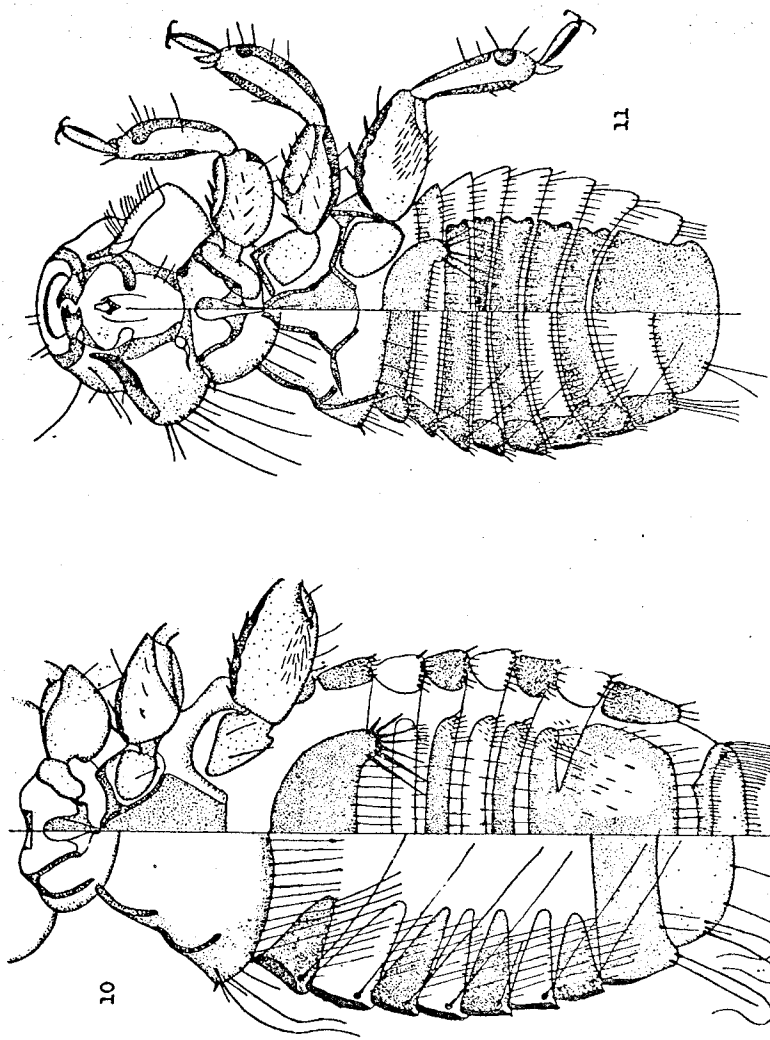


Plate. V

Fig. 10—*Myrsidea victrix watersloni* ♀ (n. subsp.)
Fig. 11—*Myrsidea victrix watersloni* ♂ (n. subsp.)

prevented an actual count of their number, but there are not less than 8 on each side. In the present race there is one very long setae just within the coxal carinae and three shorter ones on each side, set submarginally, which reach to middle of abdominal sternite I.

Unfortunately the tergites in the female paratype of *victrix* which was studied are not clearly visible, but the rows of long setae, set along their posterior margins, indicate their position clearly. The tergites are bent sharply backward on segments I-V, with VI-VIII transverse, somewhat as in the figure of *ceciliae*, but at a sharper angle (this agrees with Waterston's description).

The principal difference is in the setae of the tergites, which in the present race are much shorter, much fewer in number and set farther apart. On the other hand the sternal setae are practically the same as in *victrix*.

The subspecies is represented by the ♀ holotype, ♂ allotype and 2 ♀♀ paratypes. Also 3 ♀♀ from type host collected at Campo Cecilia Magdalena, Río Caura, in collection of M.H.N. La Salle.

Three adult ♀♀ from *Ramphastos citreolaemus*, collected by the senior author on the Río Cauca, Colombia, cannot be separated from the holotype.

The male may be separated from the male of the nominate form only by the chaetotaxy of the posterior margin of the pterothorax, where there are but 3 medium length setae, set deeply submarginal, on each side, with 2 spines and 1 long seta in the lateral angles. The sides of the pterothorax are also slightly convex, while in *victrix* they are concave, with an emargination at the meso-metathoracic suture. Measurements follow the next subspecies.

Myrsidea victrix brevicarinatus n. subsp.

Types, ♂ and ♀ adult, from *Ramphastos sulphuratus brevicarinatus* Gould, collected by Dr. J. Van Tyne, at Barro Colorado, Panama Canal, March 1,1926 (in coll. of senior author).

DIAGNOSIS.—Most closely related to *M.v.ceciliae*, described above, agreeing with that race in having but three long setae on each side of posterior portion of pterothorax (not counting those of the angles).

The measurements of both sexes are very close to those of *ceciliae*, some being slightly greater, others less, but none with differences of more than .02 mm.

Female.—The tergal setae are decidedly longer than in *ceciliae*, while the patches of setae at lateral ends of sternites are fewer and shorter; both fringes of fine setae at tip of abdomen are longer in *brevicarinatus*. The shape and position of the tergites and sternites seem to be about the same in the two races.

Male.—The chaetotaxy of the abdomen is much finer in texture than in *ceciliae*, especially the very long hairs at postero-lateral corners of the tergites, and all are somewhat longer. The parameres are much narrower basally and with tips thicker and more bluntly rounded; the thickening bands running back through the lateral portions of the endomeral sac are shorter and wider distally. The difference in measurements seem to be worthy of notice, and are as follows: basal

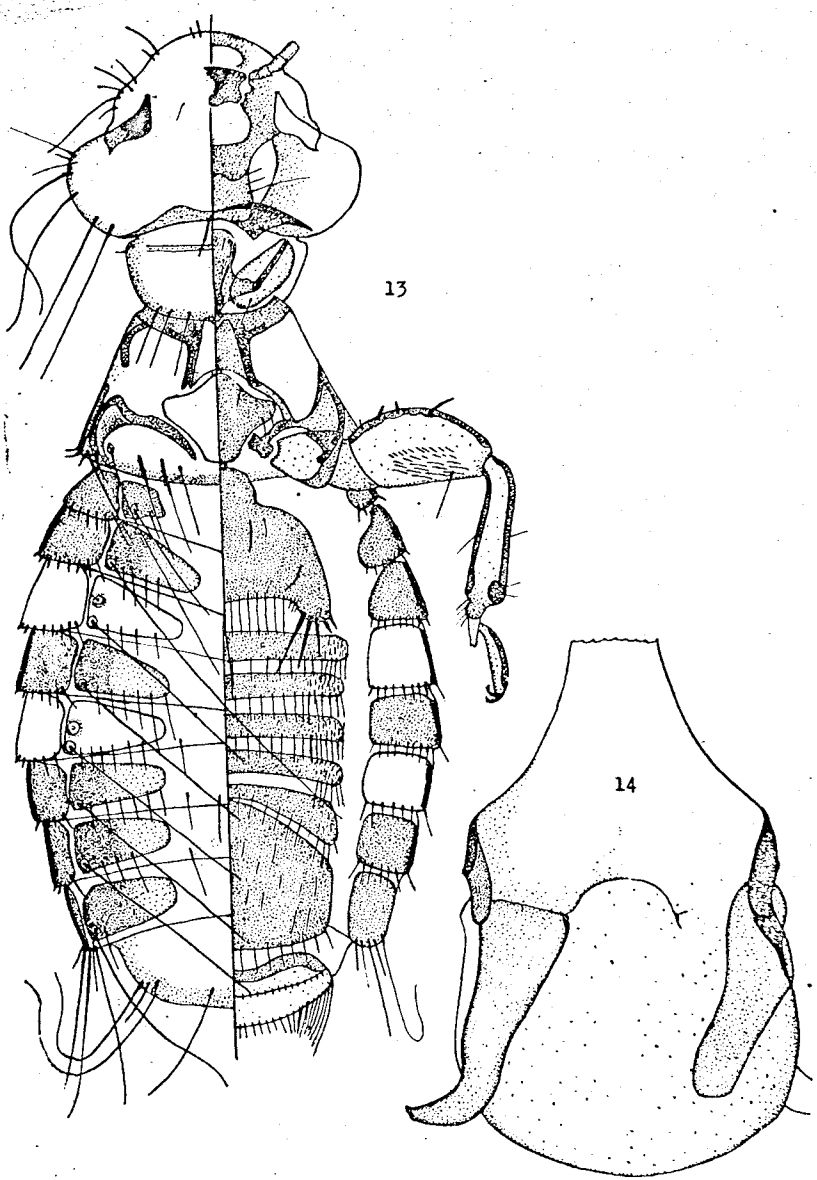


Plate VI

Fig. 13—*Myrsidea victrix ceciliae* ♀ (n. subsp.)

Fig. 14—*Myrsidea victrix ceciliae* (♂ genitalia)

plate, .456 x .164 against .50 x .17; parameres, .117 x .217 against .10 x .24; endomeral sac, .163 x .174 against .157 x .18.

At best it is not an outstanding race, but seems worthy of recognition.

Measurements of types of *M.victrix ceciliae* and *M.v.brevicarinatus*:

	♂		♀		♂		♀	
	length	width	length	width	length	width	length	width
Body	1.75	——	2.25	——	1.71	——	2.19	——
Head frons	——	.412	——	.458	——	.42	——	.45
Head temples	.42	.586	.48	.67	.425	.60	.456	.67
Head occiput	.39	——	.423	——	.38	——	.412	——
Prothorax	.217	.37	.25	.412	.217	.39	.24	.423
Pterothorax	.37	.53	.40	.65	.326	.535	.412	.65
Abdomen	.865	.685	1.33	.955	.89	.695	1.26	.933
Basal plate	.50	.17			.456	.164		
Parameres	.10	.24			.117	.217		
Endomeral sac	.157	.18			.163	.174		

The race is represented by the ♀ holotype, ♂ allotype and 1 paratype ♀, as well as the following taken on the type host, collected by the senior author:

4 ♂ ♂ from Guacimo, Costa Rica, April, 1913; 1 ♂ at Acandí, Chocó, Colombia, Dec. 30,1949. Although there are no specimens of the parasite from Venezuela, its host is a common bird in portions of that country.

A single ♀ from *R.p.piscivorus*, collected by the senior author at Tres Zapotes, Veracruz, Mexico, cannot be separated from the above series.

Myrsidea victrix abbreviata Eichler, 1951

Myrsidea abbreviata Eichler, Zool. Anz., Bd. 146, Heft. 1/2, 1951, p. 50. (Host: *Ramphastos discolorus* Linné, Bez Joinville, St. Catharina, Brazil).

In the Carriker collection are 4 ♂ ♂ and 12 ♀ ♀ of what is apparently this race of *victrix*, described by Eichler as a distinct species. They are certainly conspecific with *M.victrix* Waterston. The specimens were collected on the type host by Plaumann, in August, 1938 and were sent to me by Dr. Hopkins some time ago.

This race belongs in the same group with *M.v.ceciliae* and *brevicarinatus*, described above which have but 3 long setae on each side of the posterior margin of the pterothorax. The present race differs from the above mentioned races in having 4 setae on the pterothorax instead of 3, and in having *all* of the tergites transverse, none, apparently being bent backward by the metathorax. Except for their outer ends (next to pleaurites) they are poorly chitinized and the outline of their inner ends is indistinguishable. Their chaetotaxy is very short, probably the shortest of all of the races of *victrix*, even the long setae at the postero-lateral corners of the tergites being much shorter than usual.

The males may be distinguished from their near relatives by the 4 setae on the posterior margin of the pterothorax (on each side), and by the very short setae of the tergites. The host of this species is not known from Venezuela, but it was thought best to include it in this paper.

Genus *RAMPHASTICOLA* Carriker, 1949

Rev. Brasil. Biol., 9 (3), Oct. 1949. Genotype = *Ramphasticola hirsuta* Carriker. The original description of this genus and its genotype are entirely correct, as well as the figures given, which are reproduced on a larger scale in the present report.

The original description was based on a single ♀ and 2 ♂ ♂ one of which now proves to be a different subspecies of *hirsuta* (*niethammerie* Eichler), later described by him.

Since the genus was described two new species of it have been discovered which are described in the present paper, and which necessitates some additions to the original descriptions, as follows: Line six of description should read as follows: There is a varying amount of sexual dimorphism, more in the thoracic segments than in the abdomen, although the abdominal chaetotaxy is also strongly dimorphic. The thoracic dimorphism varies from the type shown in *R.hirsuta* and its races to the most fantastic structures in the two species described in the present review (viz.—*aenigma* and *mirabile*).

Ramphasticola hirsuta hirsuta Carriker, 1949

(Fig. 15)

Rev. Brasil. Biol., 9 (3), Oct. 1949, p. 305; figs. 9-11 (Host: *Ramphastos swainsoni* Gould).

The original description and figures are very complete and need no further comment except to note that the ♂ from *Ramphastos monilis cuvieri* now proves to be a race of *hirsuta* later described by Dr. Eichler, and treated on a succeeding page.

Since the species was described additional material from the type host has been secured by the senior author, consisting of 3 ♂ ♂ and 3 ♀ ♀ from the type host, collected at Río Jurubidá, Chocó, Colombia, and 2 ♂ ♂ from same host taken at La Raya, Río Cauca. A pair of the above series has been sent to the British Museum.

This additional material agrees in all respects with the types. The host of this parasite is not found in Venezuela, but since some of its races are known from Venezuelan species of *Ramphastos*, it has seemed best to include it here.

Ramphasticola hirsuta ambiguua n. subsp.

(Fig. 16)

Type, ♀ adult, from *Ramphastos a.ambiguus* Swainson, collected by the senior author at Belén, Dept. Huila, Colombia, March 21, 1952 (in U.S. Nat. Mus.).

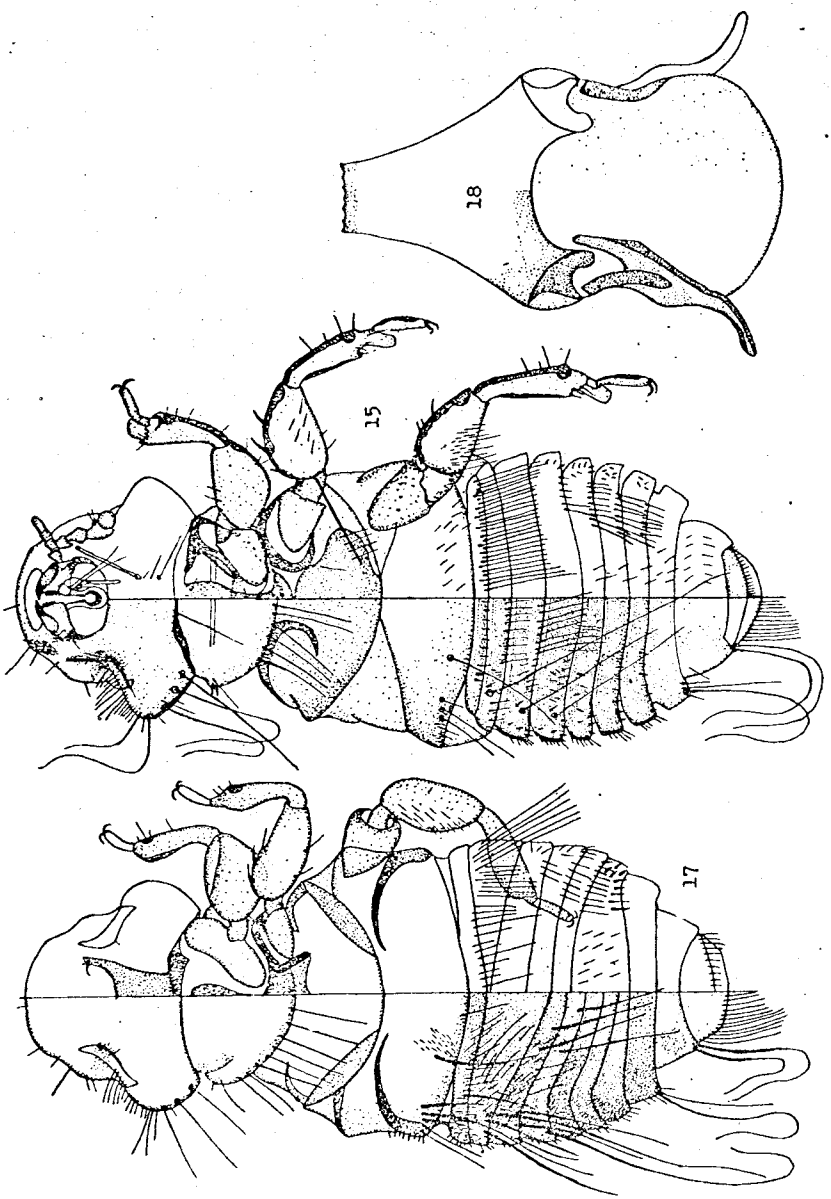


Plate VII

Fig. 15—*Ramphasticola hirsuta* Carriker ♀
Fig. 17—*Ramphasticola hirsuta tucana* ♀ (n. subsp.)
Fig. 18—*Ramphasticola hirsuta tucana* (♂ genitalia)

DIAGNOSIS.—Clearly conspecific with *hirsuta*, but is a very clearly defined subspecies of it, differing in all thoracic segments and in the abdominal chaetotaxy.

The preantennal portion of the head is narrower, with sides strongly divergent and frons more circular; the prothorax is more circular, as well as the mesothorax, but metathorax is very similar to that of *hirsuta*, with more abundant short setae across the posterior half of segment.

The tergites are weakly chitinized, are set closely together and are of the same shape as in *hirsuta*, IV-VII curving slightly backward medially. The pleurites are fairly wide, poorly chitinized and closely fused with the ends of the tergites. Sternites not clearly visible. There are numerous, rather long, spiny setae along posterior margins of pleurites, much longer than in *hirsuta;* there are numerous long, coarse setae along outer half of posterior margin of tergites I to IV, much more abundant than in *hirsuta*, and the same 3 long setae at postero-lateral corner of tergites II-IV, with a shorter one on V.

The chaetotaxy of the sternites is very similiar to that of *hirsuta*, except that the long setae of sternite I are set in a thick cluster on each side, and these connected by a single row as in *hirsuta*.

The species is represented by the ♀ holotype and 2 ♀ ♀ paratypes, not in the best condition. Measurements follow with those of next subspecies.

The host of this parasite is a common bird in portions of Venezuela:

Ramphasticola hirsuta tucana n. subsp.

(FIGS. 17 AND 18)

Types, ♂ and ♀ adults, from *Ramphastos t.tucanus* Linné, collected at Campamento Cecilia Magdalena, Río Caura, Venezuela, May, 1957 (in coll. M.H.N. La Salle).

DIAGNOSIS.—Differs from *R.h.hirsuta* chiefly in the chaetotaxy of the abdomen, which is as follows. A patch of 4 long and several short setae on dorsal surface of antero-lateral portion of abdominal segment I; 3 long, submarginal setae on sides of III and 1 on IV; a large patch of long, very thick setae on lateral portion of sternites III-VII, longest and most abundant on III; 3 long and 4 short setae on postero-lateral portion of tergite I; 1 very long, submarginal seta on posterior margin of tergites II-IV; a patch of very long, closeley set setae covering sides of sternite I and extending in a single row, close set, across entire anterior portion of the sternite; a series of about 6 shorter setae on each side of tergites III-VI. There are also more spines on lateral portion of the tergites.

The male sex is very similiar to that of *hirsuta*, in general appearance, but with the genitalia differing as follows: basal plate much longer and slightly narrower at base (.29 x.093 against .17 x.105); parameres are longer (.10 against .87), and the endomeral sac is longer (.125 against .87). The measurements of the body are close to those of *hirsuta*, excepting a wider pterothorax in ♂ and slightly narrower in ♀; abdominal segment I of ♂ is longer.

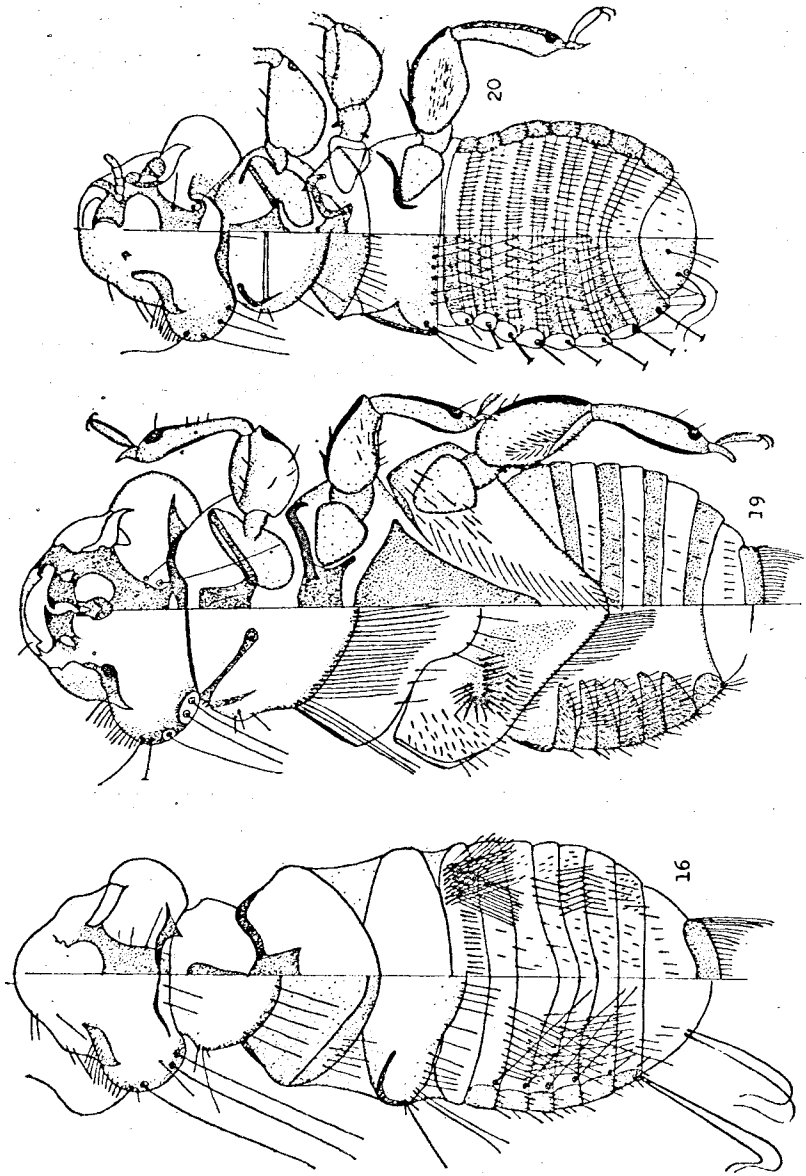


Plate VIII

Fig. 16—*Ramphasticola hirsuta ambiguua* ♀ (n. subsp.)
Fig. 19—*Ramphasticola aenigma* ♀ (n. species)
Fig. 20—*Ramphasticola aenigma* ♂ (n. species)

Measurements of the ♀ holotype of *R.h.ambiguua* and the ♂ and ♀ types of *R.h.tucana*.

		♀		♂		♀	
		length	width	length	width	length	width
Body		1.58	—	1.32	—	.155	—
Head	frons	—	.35	—	.333	—	.36
	temples	.39	.52	.36	.478	.39	.52
	occiput	.358	—	.33	—	.353	—
Prothorax		.25	.347	.223	.325	.223	.40
Mesothorax		.303	.456	.152	.39	.29	.49
Metathorax		.15	.58	.20	.433	.223	.65
Abdomen		.71	.62	.55	.49	.62	.684
Basal plate				.29	.093	(base)	
Parameres				.10	.173	(tips)	
Endomeral sac				.125	.122		

Ramphasticola hirsuta niethammeri Eichler, 1954

Ramphasticola niethammeri Eichler, Beitræge zur Fauna Perus., Bd. IV, p. 40 (VEB Gustav Fischer Verlag, Jena) (Host: *Ramphastos tucanus cuvieri* = *R. c. cuvieri* Wagler).

No figure or the species was given and the description is extremely vague. He says: The species differs from the only hitherto known species of the genus, *R. hirsuta* Carriker, by the considerably longer abdominal chaetotaxy, also other short remarks regarding the last abdominal segment.

The following specimens of *Ramphasticola* from *R. c. cuvieri* are in the Carriker collection. They are all the same thing and should, apparently, be considered as *R. h. niethammeri* Eichler.

Sapasoa, Perú, 1 ♂; Huacamayo, Perú, 1 ♀; Huanay, Río Bopi, Bolivia, 1 ♀; and Santa Elena, Gran Sabana, Venezuela, 2 ♂ ♂.

A careful comparison of the 2 ♀ ♀ listed above with the ♀ holotype of *hirsuta*, fails to bear out fully Eichler's characters of *niethammeri*, especially of the longer abdominal chaetotaxy of the abdomen, but my 2 ♀ ♀ are not in the best condition for comparison. The males, however, show some difference in the length of the abdominal chaetotaxy. The tergal setae are longer and coarser in the males from *R. cuvieri*, but the differences in the measurements are very slight, or none at all. The genitalia are the same:

Length of ♂ *niethammeri*, 1.39 against 1.36; head .37 x .48 against .345 x .467; prothorax, .195 x .347 against .195 x .314; pterothorax, .30 x 456 against .293 x .412; abdomen, .65 x .54 against .625 x .51.

At best, *R. niethammeri* Eichler seems to be merely a rather poorly defined race of *R. hirsuta*, and may be so considered until such a time as additional material in good condition is available for study.

Ramphasticola aenigma n. sp.

(FIGS. 19, 20 AND 21)

Types, ♂ and ♀ adults, from *Ramphastos t. tucanus* Linné, collected at Campamento Cecilia Magdalena, Río Caura, Venezuela, May, 1957. (Nº 2540, coll. M. H. N. La Salle).

DIAGNOSIS.—This species, and the following one, represent a decidedly different type of the genus, with their fantastically constructed and sexually dimorphic thoracic segments, but they may be, I think, retained in the genus *Ramphasticola*.

The shape of the preantennary portion of the head is similiar to that of *R. hirsuta*, but the temples are more expanded laterally and circular; the occipital margin is less emarginate; there is a well-developed sternal, occipital sclerite, absent in *hirsuta*, bearing one very long setae and 1 short on each side.

The prothorax is huge, as long as the head but narrower, and extends dorsally backwards to the posterior edge of the mesosternum, with posterior margin bearing about 22 long setae on each side. The mesothorax is of medium length at the sides, but the median portion extends far backwards within the metathorax, with the circular extension bearing 4 setae on each side.

The metathorax is wider than the mesothorax and separated from it on each side for some distance (see fig.); the posterior margin is conical, extending backwards over the abdomen to middle of segment IV, and ending in a rounded point; a dense row of setae along its posterior margin, from the lateral, rounded angles to tip, short and sparse on the exposed portion of the sides of segment but gradually increasing posteriorly in length and density to the tip; short setae are scattered over the lateral portions and with a semi-circular row of short, spine-like setae in the middle of each side, followed posteriorly by two short, transverse rows of small setae.

The abdomen is of same shape as that of *hirsuta*, but the tergites are more strongly pigmented in segments II-VIII, with a row of short setae along their posterior margins; sternites are well developed, with numerous short, scattered setae.

(Note.—Many abdominal setae have been lost in the mounting of this material. The long setae at postero-lateral angles of the tergites are all missing, and not even their points of attachment are visible in the females, but they are visible in the males and have been indicated in the figure, but their actual length is unknown).

Male.—May be distiguished from the male of *hirsuta* by the shape of the head, which is the same as in the female, and by the much larger prothorax. The pterothorax is very similiar to that of *hirsuta*, with the V-shaped open space on each side at the meso-metathoracis suture. The abdominal chaetotaxy is also similiar to that of *hirsuta*.

The genitalia, however, are quite different, the basal plate being narrower and its long stem shorter; parameres also differ in shape, as well as the basal portion of the endomeral sac. (see figs.)

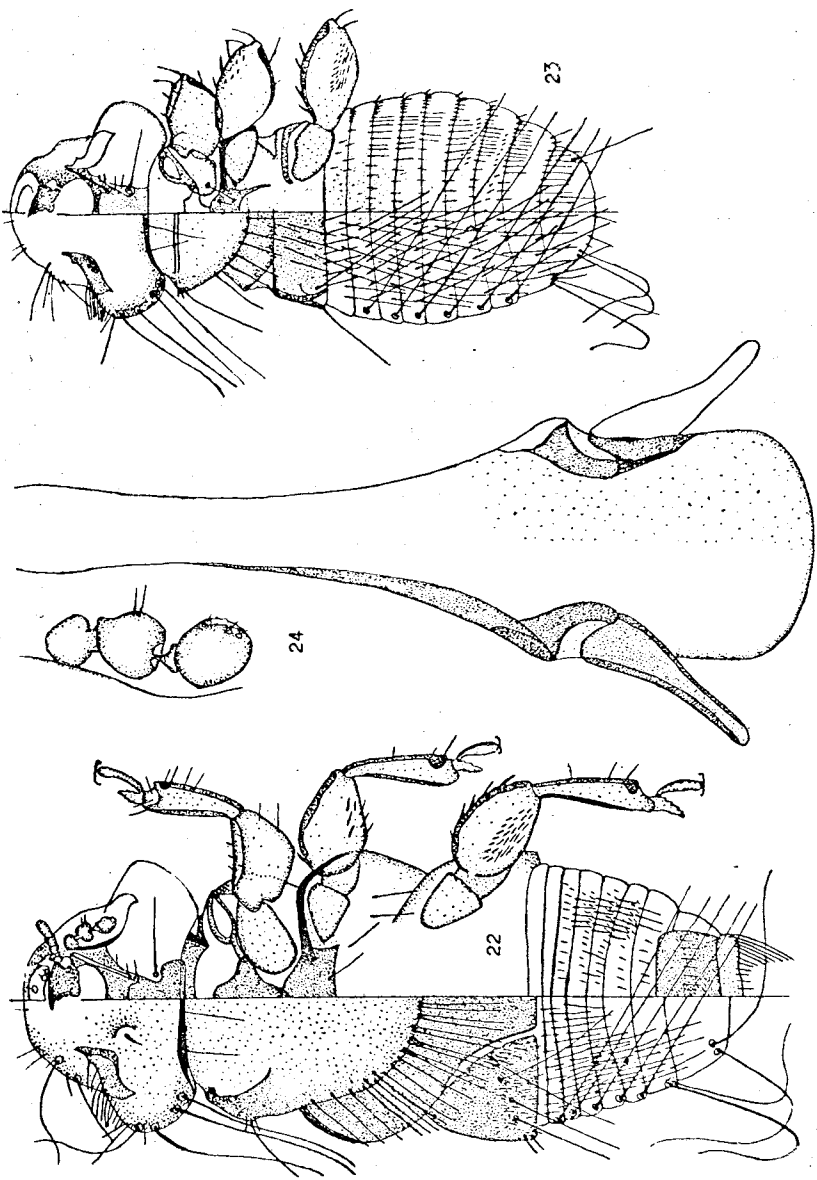


Plate IX

Fig. 22—*Ramphasticola mirabile* ♀ (n. species)
Fig. 23—*Ramphasticola mirabile* ♂ (n. species)
Fig. 24—*Ramphasticola mirabile* (♂ genitalia and antennae)

The species is represented by the ♀ holotype, the ♂ allotype, with 2 ♀ ♀ and 4 ♂ ♂ paratypes. Measurements follow the next species.

Ramphasticola mirabile n. sp.

(FIGS. 22, 23 AND 24)

Types, ♂ and ♀ adults, from *Ramphastos c. cuvieri* Wagler, collected by the senior author at Chiñiri, Río Bopi, Bolivia, August 28, 1934 (in coll. of senior author).

DIAGNOSIS.—Basically, the thoracic structure is similiar to that of *R. aenigma*, but the various segments and their chaetotaxy are amazingly different. Female.—Head as in *aenigma*, excepting the pre-antennary portion is more uniformly circular. The prothorax is very much larger, especially longer, extending backward to the anterior ends of the 3rd. pair of coxae; lateral angles but slightly indicated and are set with 2 spines and 1 long seta; the posterior half is circular in shape and imbedded within the mesothorax, with the imbedded portion bearing numerous, very long, marginal setae, those in median portion set in pairs (5 pairs on each side).

The mesothorax reaches from the middle of the prothorax backwards to the 1st. abdominal segment, with its posterior half narrowed and inserted between the two halves of the metathorax, wich seems to have been reduced to a triangular sclerite on each side (see fig.) of basal portion of mesothorax. There are no setae on mesothorax, but the metathorax bears 4 long setae, running diagonally forward from the postero-lateral angle to inner edge of sclerite.

The abdomen is very small, and with slight pigmentation. The different sclerites are not clearly discernable and no attempt has been made to show them in the figure. There is 1 extremely long, thick seta set in the postero-lateral portion of tergites II-VI, and 2 in VII and VIII. The remainder of the chaetotaxy may be seen from the figure.

The thoracic sternites are large and of distinctive shape (see fig.). The male is very similiar to that of *aenigma*, but with slightly smaller prothorax and shorter meso-metathorax; the posterior margin of mesothorax is not visible but the anterior margin may be clearly seen and is transverse.

The setae of the abdominal tergites are much longer than in *aenigma*, and the single, thickened setae at postero-lateral angle of tergites II-VII are unusually long (see fig.); chaetotaxy of sternites less abundant.

Note.—Although the host of these parasites was collected in Bolivia, the species is common in southern Venezuela, and this is the fourth species of *Amblycera* recorded from it.

The species is represented by the ♀ holotype, ♂ allotype; 2 ♂ ♂ and 4 ♀ ♀ paratypes.

Measurements of the types of. *R. aenigma* and *R. mirabile*:

	♂		♀		♂		♀	
	length	width	length	width	length	width	length	width
Body	1.43	——	1.67	——	1.32	——	1.60	——
Head: frons	——	.347	——	.40	——	.326	——	.41
Head: temples	.358	.51	.39	.61	.347	.485	.39	.63
Head: occiput	.347	——	.42	——	.306	——	.358	——
Prothorax	.27	.39	.40	.50	.25	.347	.553	.56
Mesothorax	.15	.42	.434	.62	.13	.369	.54	.66
Metathorax	.205	.48	.434	.74	.16	.434	.293	.65
Abdomen	.586	.53	.54	.65	.605	.53	.50	.55
Basal plate	.26	.108			.28	.12		
Parameres	.10	.16 (tips)			.098	.20 (tips)		
Endomeral sac	.12	.12			.105	.13		

Genus *MENACANTHUS* NEUMANN, 1912

Menacanthus balfouri Waterston, 1915

(FIGS. 25 AND 26)

Ent. mon. Mag., Ser. 3, vol. I, p. 15; figs. 1 and 2[a]. (Host: "Black and yellow-billed Toucan", Río Atrato, Colombia = *Ramphastos ambiguus brevis* de Schauensee). (1).

The type of this species came from the same individual host as that of *Myrsidea victrix* Waterston, reviewed on previous page, where it was shown that their host was *Ramphastos ambiguus brevis*, and not *R. swainsoni*, as given in the 1952 List of Mallophaga. A comparison of specimens from *R. ambiguus brevis* with Waterston's description and figures of the species, and with specimens from *R. swainsoni*, further corroborates the correctness of the identity of their host, as given above. A single ♀ taken on *Ramphastos a. ambiguus*, from Chaupe, Peru, is inseparable from females from *R. ambiguus brevis*.

The measurements given by Waterston are very close to males from *R. a. brevis*, and run as follows:

Body (type), 1.88 against 1.84; head, .31 x .58 against .347 x .597; prothorax, .23 x .43 against .24 x .445; pterothorax, .19 (?) x .49 against .25 x .54; abdomen, 1.15 x .79 against 1.07 x .80. This shows that only difference worthy of note is in the pterothorax, and Waterston, himself, admits that the posterior margin of that segment was obscured by food-matter.

Waterston's figure of the head shows a slightly pointed frons, with a slight depression on each side, which agrees only with specimens from *Ramphastos ambiguus brevis* (see figs.).

(1) See explanation of the identity of the host under **Myrsidea victrix.**

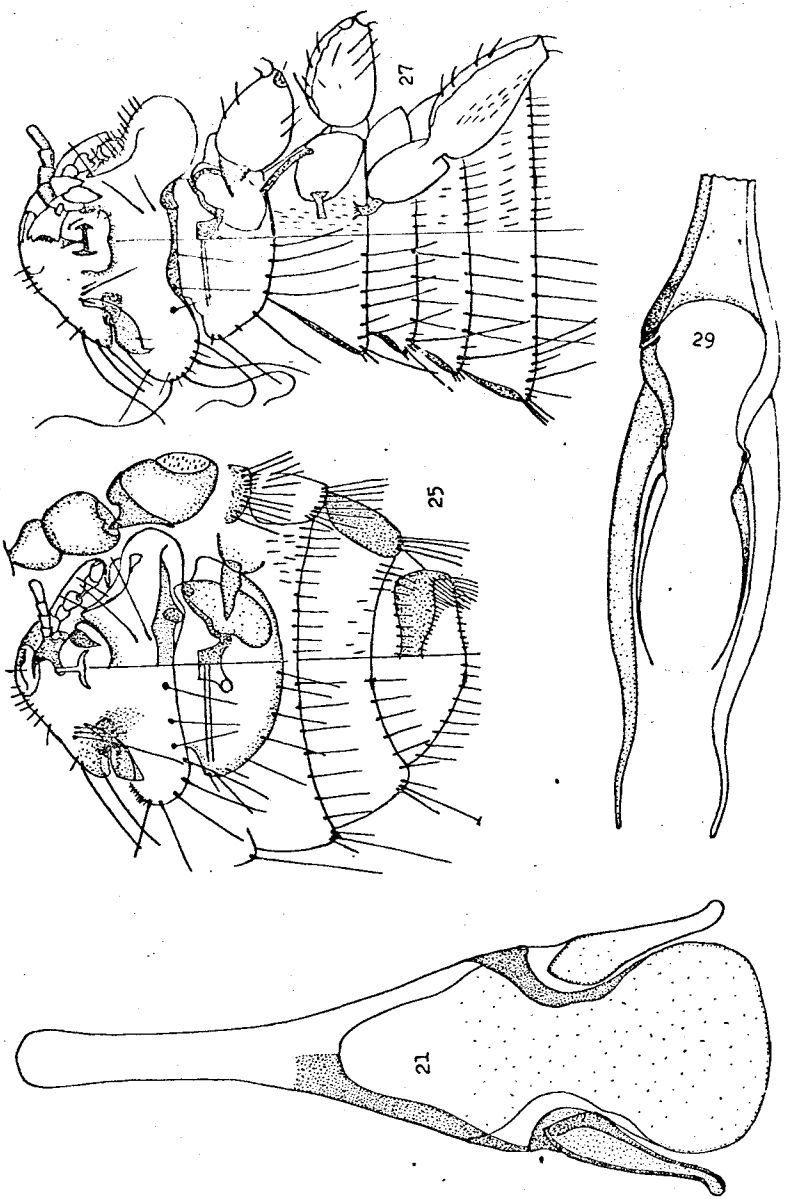


Plate X

Fig. 21—*Ramphasticola aenigma* (♂ genitalia)
Fig. 25—*Menacanthus b.balfouri* Waterston ♀ (Head, thorax, antennae and tip of abdomen)
Fig. 27—*Menacanthus balfouri waterstoni* ♂ (n. subsp.)
Fig. 29—*Menacanthus balfouri waterstoni* (♂ genitalia)

The male genitalia also agrees very closely with Waterston's figure, much more closely than do any of the male genitalia from other hosts.

M. balfouri, and its races, is represented in the collection from six species of *Ramphastos*, four of which are found in Venezuela. It will doubtless be taken eventually on all species of *Ramphastos*, although it was not present in the material from *R. t. tucanus*, collected on the Río Caura of Venezuela.

The male sex of the species is easily recognized by the peculiar genitalia, but the females would be difficult to identify unless their host were known.

Menacanthus balfouri waterstoni n. subsp.

(FIGS. 27, 28 AND 29)

Types, ♂ and ♀ adults, from *Ramphastos swainsoni* Gould collected by the senior author at Bellavista, Santander N., Colombia, July 8,1943 (in coll. of senior author).

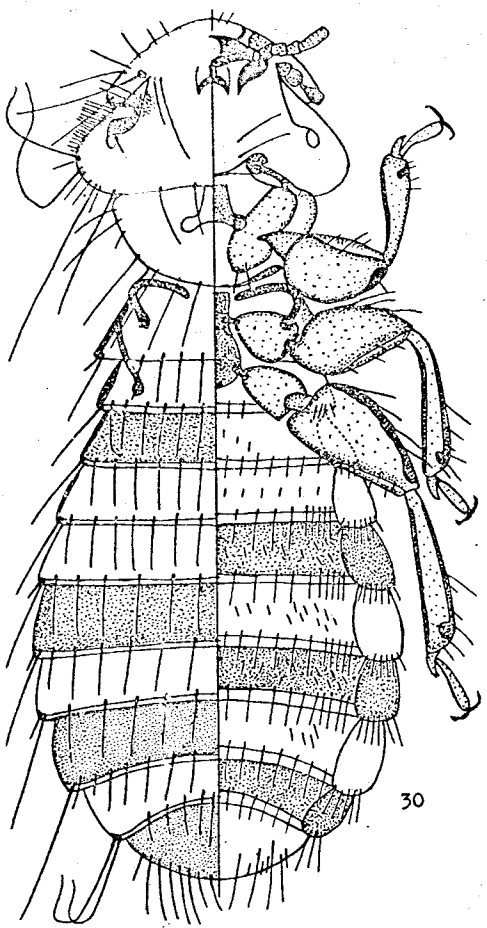
DIAGNOSIS.—Very little difference in measurements between this race and the nominate form, none greater than might be attributed to individual variation. The principal distinguishing characters are the shape of the head, the preantennary portion being more circular, especially the frons, with the sides slightly convex, while in *balfouri* it is decidedly conical, with rounded tip; the occipital margin is more concave, with the transverse sclerite to which is attached the prothorax, of different shape. The lateral margins of the pterothorax are straighter and more divergent.

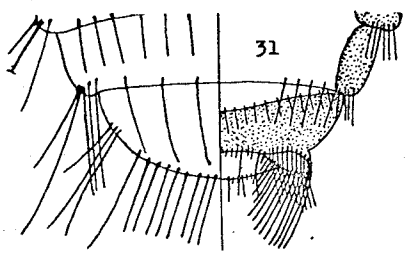
In the male genitalia the basal plate is thicker, especially the basal portion, and the parameres are thicker basally; endomeral sac is shorter, with slightly different lateral carinae.

The subspecies is represented by the ♂ holotype, ♀ allotype and 5 ♂ ♂ paratypes; also 8 ♀ ♀ from the type host collected by the author at Acandí, Chocó, Colombia, Dec. 30,1949. The host of this race is not known from Venezuela but it seems pertinent to include it here on account of the confusion arising regarding the identity of the host of *balfouri*.

Measurements of *M.b.balfouri* and *M.balfouri waterstoni*:

	♂		♀		♂		♀	
	length	width	length	width	length	width	length	width
Body	1.82	——	2.00	——	1.86	——	2.11	——
Head: frons	——	.477	——	.467	——	.48	——	.50
Head: temples	.38	.61	.40	.61	.40	.636	.42	.675
Head: occiput	.347	——	.37	——	.36	——	.375	——
Prothorax	.24	.445	.25	.495	.24	.445	.25	.51
Pterothorax	.24	.521	.24	.575	.24	.53	.25	.62
Abdomen	1.13	.81	1.33	.91	1.16	.825	1.36	.945
Basal plate	.36	.063			.48	.075		
Parameres	.23	.061			.26	.065		
Endomeral sac	.123	.058			.13	.065		





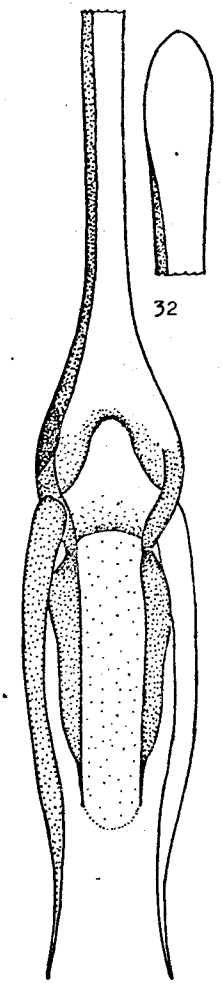


Plate XI

Fig. 30 *Menacanthus balfouri cuvieri* ♂ (n. subsp.)
Fig. 31 *Menacanthus balfouri cuvieri* ♀ (tip of abdomen)
Fig. 32 *Menacanthus balfouri cuvieri* (♂ genitalia)

Menacanthus balfouri cuvieri n. subsp.

(FIGS. 30, 31 AND 32)

Types, ♂ and ♀ adults, from *Ramphastos c.cuvieri* Wagler, collected by the senior author at Huacamayo, Perú, July 23,1931 (in coll. of senior author).

DIAGNOSIS.—Larger than *balfouri* in most all measurements. The preantennary portion of the head similar to that of *waterstoni*, but more uniformly circular; preocular slit long and narrow, with anterior margin of temples perfectly straight, not curving or undulating as in the other races; pterothorax wider, especially in the female; chaetotaxy of the pleurites shorter; the genital sternite of the female is larger, with much longer setae on posterior margin, as well as those of the tergites.

The principal distinguishing character of the race is in the male genitalia, which has a thicker basal plate, with wider lateral carinae and a very differently shaped thickening on each side of basal portion; the parameres are similiar to those of *waterstoni*, excepting that their tips are not recurved and are more slender; the attachment of the endomeral sac with the lateral carinae of the basal plate also differs, as well as the shape of the sac itselt and its lateral supporting carinae, which are very wide (see fig.).

The race is represented by the ♂ holotype, ♀ allotype and 2 ♂ ♂ and 3 ♀ ♀ paratypes. The measurements follow the next subspecies. Common in south Venezuela.

Menacanthus balfouri caucae n. subsp.

(FIGS. 33 AND 34)

Type, ♂ adult, from *Ramphastos citreolaemus* Gould, collected by the senior author at La Raya, Río Cauca, Colombia, Jan. 22, 1948. (in coll. U.S.N.M.)

DIAGNOSIS.—Nearest to the nominate form in the shape of the head, but differs from it as follows: Ventral head-spines much thicker and longer, with tips less acute; palpi longer but antennae similiar (see fig. of genitalia and antennae); occipital transverse carina of *balfouri* lacking.

The measurements are very close to those of *balfouri*, the only differences of any importance being a longer abdomen and longer and wider genitalia, which differs decidedly from that of the other races now known. The form is represented only by the ♂ holotype.

Ramphastos citreolaemus, the host of this race, is not an uncommon bird in some parts of Venezuela, but this parasite has not as yet been taken on a venezuelan bird.

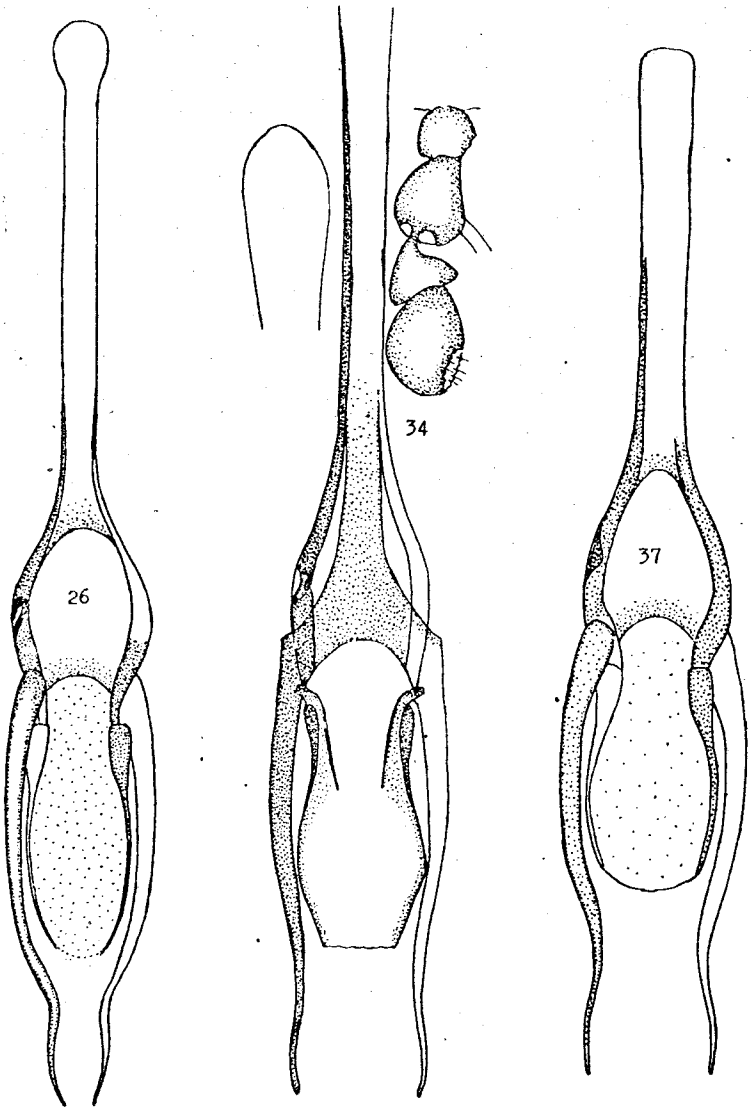


Plate XII

Fig. 26—*Menacanthus balfouri balfouri* Waterston (♂ genitalia)
Fig. 34—*Menacanthus balfouri caucae* n. subsp. (♂ genitalia)
Fig. 37—*Menacanthus balfouri prolongus* n. subsp. (♂ genitalia)

Measurements of the types of *M.b.cuvieri* and *M.b.caucae*:

		♂		♀		♂	
		length	width	length	width	length	width
Body		2.15	—	2.30	—	1.86	—
Head	frons	—	.477	—	.52	—	.49
	temples	.40	.61	.43	.675	.38	.64
	occiput	.37	—	.39	—	.347	—
Prothorax		.27	.458	.26	.52	.25	.475
Pterothorax		.26	.54	.25	.62	.23	.53
Abdomen		1.20	.835	1.49	1.00	1.40	.803
Basal plate		.41	.08			.50	.076
Parameres		.26	.073			.24	.087
Endomeral sac		.15	.066			.14	.07

Menacanthus balfouri prolongus n. subsp.

(FIGS. 35, 36 AND 37)

Types, ♂ and ♀ adults, from *Ramphastos sulphuratus brevicarinatus* Gould, collected by the senior author at Guacimo, Costa Rica, Nov. 16,1903 (in coll. of senior author).

DIAGNOSIS.—Very close to *waterstoni*, being, in fact, difficult of separation. The same close resemblance was found to exist between the races of *Myrsidea victrix* found on these two hosts, viz: *R.swainsoni* and *R.s.brevicarinatus*.

The measurements offer very little criteria, some being the same, a few less in *prolongus* and the larger portion slightly greater, differences which in most cases would be classed as individual variation.

However, in *M.balfouri* we are dealing with one of those very stable species, persisting with very slight changes over the eons of time required for the evolution of their hosts. In such cases great care must be exercised to observe all differences, however small, and it is permissable to erect subspecies on smaller differences than would ordinarily be employed.

There is a difference in the shape of the head, that of *prolongus* being shorter, with preantennary margin uniformly and more flatly convex; the temples are wider longitudinally, with ventral head-spines longer and more curving. The apical abdominal segment in the female is smaller and the penultimate is narrower longitudinally in *prolungus*, with distinct chaetotaxy (see fig.).

The basal plate is oval in basal portion instead of pear-shaped, and with the small, deeply pigmented sclerite on each side quite different. The parameres are wider across their bases, and with basal half thicker; the endomeral sac is much wider, shorter and its attachment to the lateral carinae of the basal plate also different.

The race is represented by the ♂ holotype, ♀ allotype and 1 ♀ paratype; also the following from the type host: 8 ♀♀ from Acandí, Chocó; 2 ♀♀ from

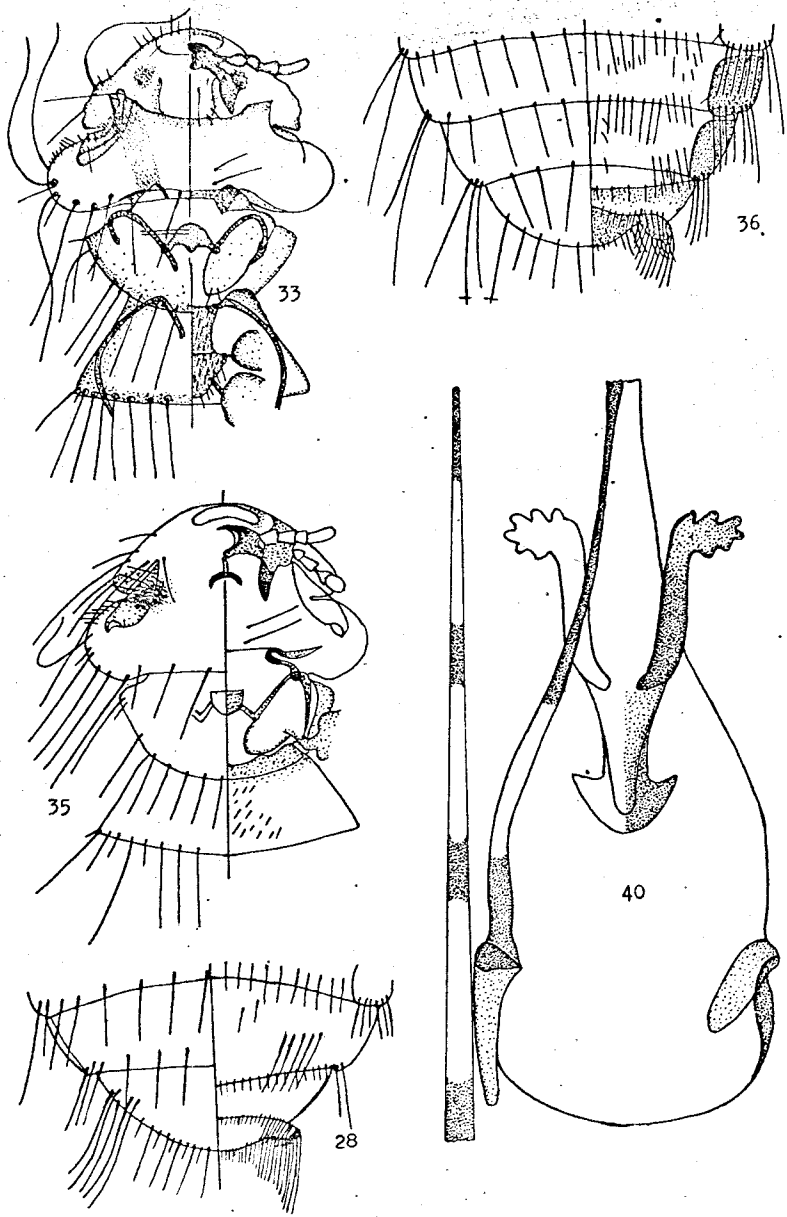


Plate XIII

Fig. 28—*Menacanthus balfouri waterstoni* ♀ (tip of abdomen)
Fig. 33—*Menacanthus balfouri caucae* ♂ n. subsp. (Head and thorax)
Fig. 35—*Menacanthus balfouri prolongus* ♀ n. subsp. (Head and thorax)
Fig. 36—*Menacanthus balfouri prolongus* ♀ (tip of abdomen)
Fig. 40—*Dicteisia abdominalis* n.sp. (♂ genitalia)

Camp Costa Rica, Magdalena; and 2 ♀♀ from Fonseca, Magdalena, Colombia, all colected by the senior author.

Measurements of *M.b.prolongus*: (holotype and allotype).

		♂		♀	
		length	width	length	width
Body		1.82	—	2.04	—
Head	frons	—	.465	—	.465
	temples	.38	.62	.40	.65
	occiput	.347	.—	.38	—
Prothorax		.23	.434	.285	.49
Pterothorax		.24	.52	.282	.586
Abdomen		1.11	.80	1.30	.89
Basal plate		.43	.08		
Parameres		.24	.077 (at base)		
Endomeral sac		.117	.07		

Note.—In the collection of the senior author are specimens of *Menacanthus balfouri* from *Ramphastos s.sulphuratus*, Veracruz, Mexico and from *R.discolorus*, Brazil. Both of these lots represent undescribed subspecies of *balfouri*, that from *R.s.sulphuratus* being very different. However these two forms will not be treated here, since neither host is found in Venezeula.

Genus *DICTEISIA* KELER, 1938

Arb. morph. tax. Ent. Berlin-Dahlem, 5, p. 234. No type species designated, but since the two species *(tristis* and *pilosa)* placed in it, are clearly synonyms, the genus becomes monotypic, and *tristis* being the oldest name automatically becomes the genotype.

Menopon tristis Giebel, 1874, the genotype of *Dicteisia*, was not figured but the description (Insecta Epizoa, p. 297) certainly applies also to the insect described by Piaget in 1885 as *Colpocephalum pilosum*, and to the figure and description of *Dicteisia tristis* published by Keler in 1938.

A large number of specimens of this genus from *Chauna chavaria* and *Anhima cornuta* have been examined in which are represented three entirely distintic species, viz. *D.tristis* (Giebel), *D.gracile* Carriker and an undescribed form which Keler figured and described as *D.pilosa* (Piaget).

The three species are well represented from both hosts and the differences between specimens from the two hosts are so insignificant that they do not deserve nomenclatural recognition.

Taking this fact into consideration I am convinced that *D.pilosa* (Piaget) was actually taken from *Chauna chavaria*, as stated by Piaget, and not from *C.torquata*, as stated by Hopkins & Clay in the Checklist of Mallophaga, 1952, p. 116.

Keler's figure of *D.tristis* (1938), taken from *Chauna torquata*, as well as Piaget's figure of *D.pilosa*, agree in all respects with specimens of that species from *Chauna chavaria* and *Anhima cornuta*, which further substantiates my theory that Piaget gave the correct host for his species *pilosa*, but it is, nevertheless a synonym of *Menopon tristis* Giebel, because they are actually alike.

In the description of *D.gracile* (Rev. Brasil. Biol., 9, p. 304, 1949) a mis-statement was made regarding the descriptions and figures given by Keler (1938) for what he called *D.tristis* and *D.pilosa*. His figure of *tristis* is correct, but what he called *pilosa* Piaget is the figure of *D.abdominalis*, n. sp., which is described on the following pages.

Dicteisia tristis (GIEBEL), 1874

Menopon triste Giebel, Insecta Epizoa, p. 297 (Host: *Palamedia chavaria* = *Chauna chavaria*).

Menopon chavariae Giebel, 1874 (*nomen nudum*).

Colpocephalum pilosum Piaget, 1885, Pediculines Supplement; p. 128; pl. 14, fig. 1 (Host: *Chauna chavaria*).

Dicteisia tristis palamediae Eichler, 1954, Beitr. Fauna Perus, Bd. 4, p. 43 (Host: *Anhima cornuta*).

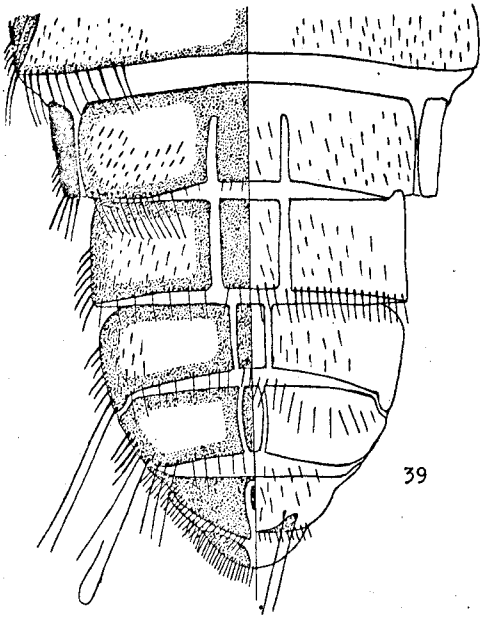
In the 1952 List of Mallophaga the host for *D.tristis* was changed from *Palamedia* (= *Chauna*) *chavaria* to *Chauna torquata*, and the host of *Colpocephalum pilosum* Piaget was changed from *Chauna chavaria* to *Chauna torquata* (Oken). No reason was given for these changes in the names of the hosts, from those given by the authors, and I fail to understand why such a change was made. In this paper ample proof is given of the fact that *C.pilosum* Piaget is a synonym of *M.triste* Giebel and that the species, unchanged, is found on *Chauna chavaria*, *C.torquata* and *Anhima cornuta*, specimens from all three hosts having been compared and found to be identical.

A pair of this species was taken on *Anhima cornuta* (Linné), collected at Flores Moradas, Venezuela, March 1,1956 (in coll. M.H.N. La Salle). This pair has been compared with a large series of *tristis* in the senior author's collection, taken on *Chauna chavaria*, collected in Colombia, as well as 2 ♂ ♂ and a ♀ from *Anhima cornuta*, also collected in Colombia, at Yumbo, near Cali, August 16,1918. No differences were found worthy of mention, even the male genitalia being exactly the same. Keler's specimens from *Chauna torquata* are also the same thing. It would serve no useful purpose to attempt the separation of this species into races from the various hosts.

Dicteisia gracilis CARRIKER, 1949

Rev. Brasil. Biol., 9, p. 304, fig. 8 (Host: *Chauna chavaria* (Linné).

Three females of this species were taken on *Anhima cornuta*, from the same individual host cited under *D.tristis*, from Flores Moradas, Edo. Guárico, Venezuela, in the collection of M.H.N. La Salle, two fine adults and one sligthly immature.



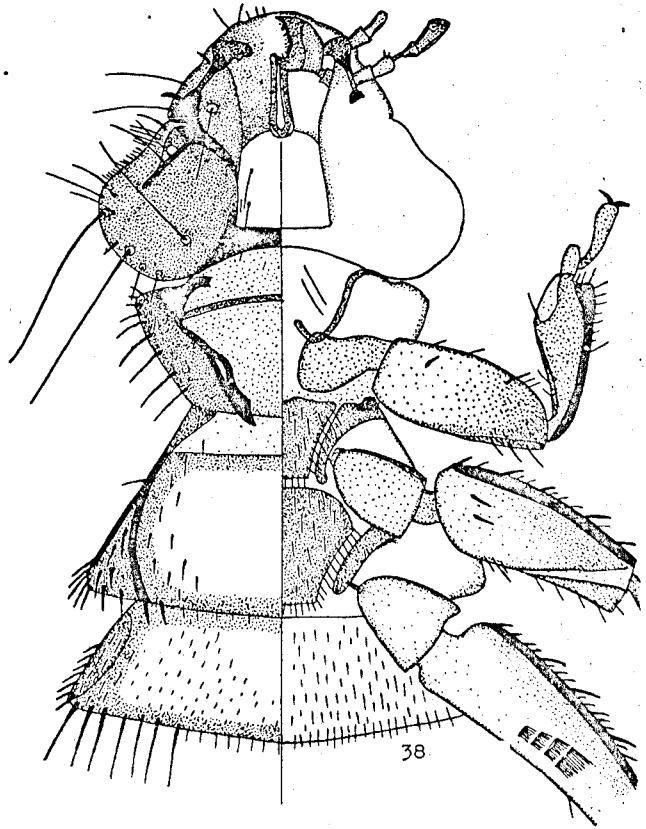


Plate XIV

Fig. 38—*Dicteisia abdominalis* n. sp. ♀ (Head, thorax and abdominal segment I)

Fig. 39—*Dicteisia abdominalis* ♀ (Abdominal segments III-X)

They agree in all respects with the type series. It is rather unusual that the male of this species has not yet been taken.

Dicteisia abdominalis n. sp.

(FIGS. 38, 39 AND 40)

Types, ♂ and ♀ adults, from *Anhima cornuta* (Linné), collected at Flores Moradas, Edo. Guárico, Venezuela, March 1st, 1956 (types in coll. M.H.N. La Salle).

DIAGNOSIS.—Female: Head triangular, with frons and temples rounded, the latter extending far beyond the occiput; a slight pre-ocular slit, inside of which is a pitchy-black spot of irregular shape, with a narrow black band extending posteriorly from it to middle of temples.

Prosternum extends far under pterothorax; mesosternal plate small, quadrangular; metasternum large, hexagonal, and both thickly set with setae.

Abdomen with 9 visible segments; tergal plates cover entire segment in I to V; two clear, median sutures etxend longitudinally from anterior side of tergite VI to tip of IX, joining in IX. Pleurites very narrow and black.

Chaetotaxy abundant and coarse; thorax with many strong spines along margins; abdomen with short spines along sides and with longer and thicker spines on lateral portion of posterior margins of tergites; fine, short setae scattered thickly on both dorsal and sternal surfaces of abdomen, those on dorsal side set in minute, clear pustules in the female.

The first four abdominal segments are of almost the same width; the fifth is narrower transversely with the sixth abruptly narrower than the fifth; the terminal segment is furnished with marginal and submarginal fringes of fine setae, set very closely together; setae on segments VI-X finer than on rest of abdomen.

Legs long, with segments nearly paralell-sided, with thick, dark brown marginal carinae on outer side; very fine setae on outer margin of 1st tibiae; spines on both sides of 2nd. and 3rd. femora and tibiae, heavier and more abundant on outer margin of femora.

Four combs of very fine setae on under side of 3rd. femora, and one comb of short setae on each side of posterior margin of sternites III and IV.

Male.—Differs from female chiefly in smaller size, more slender, symmetrical abdomen, with no abrupt narrowing at any point; in the presence of pitchy-black markings on lateral portions of tergites II-VIII, less prominent on II and VIII; terminal segment rounded apically, with 3 long, heavy spines set close together in median portion.

The chaetotaxy is similiar to that of the female, excepting all abdominal segments have a uniform type of chaetotaxy.

The male genitalia furnished with a long, very slender basal plate, widening at base to receive the short, narrow parameres and endomeral sac.

Species represented by the ♀ holotype, ♂ allotype; 9 ♂ ♂ and 2 ♀ ♀ paratypes. In the collection of the senior author is a large series of this species from *Chauna chavaria*, as well as 4 ♂ ♂ and 3 ♀ ♀ from *Anhima cornuta*.

Measurements of the types:

	♂		♀	
	length	width	length	width
Body	3.11	—	3.77	—
Head occiput	.548	—	.56	—
Head temples	.605	.82	.62	.89
Prothorax	.56	.648	.62	.705
Pterothorax	.476	.778	.52	.92
Abdomen	2.00	.878	2.46	1.17
Basal plate	1.00	.13 (base)		
Parameres	.107	.173		
Endomeral sac	.086	.132		

Genus *BOTHRIOMETOPUS* TASCHENBERG, 1882

Bothriometopus macrocnemis (BURMEISTER), 1838

Lipeurus macrocnemis, Handb. Ent. 2, p. 433 (Host: *Anhima cornuta* (Linné).

A single female of this species from the type host, collected at Flores Moradas, Venezuela, March 1,1956, coll. M.H.N. La Salle.

I have compared 6 ♀ ♀ and 2 ♂ ♂ of *Bothriometopus* from *Chauna chavaria* with 1 ♂ and 3 ♀ ♀ from *Anhima cornuta*, and fail to find any differences between them worthy of recognition. Even the genitalia show no differences.

At the very best, *B.similimus* (Giebel) can be no more than a very poorly defined subspecies of *B.macrocnemis* (Burmeister).

Family LAEMOBOTHRIIDAE

Genus *LAEMOBOTHRION* NITZSCH, 1818

Germar's Mag. Ent., 3; 301. Genotype: *L.maximum* Scopoli. (Syn. *L.giganteum* N.)

Laemobothrion semicirculus n. sp.

(FIG. 41)

Type, female adult, from *Falco c.columbarius* Linné, collected at Restinga, Margarita Id., Venezuela, Jan. 1956 (M.H.N. La Salle, Cat. de Parasitología Nº 1534).

DIAGNOSIS.—With the head more or less the same shape as all species known from the genus *Falco*, and an undescribed species from *Leucopternis semiplumbea*, with the head narrowing abruptly in front of the antennal fossae and with the frons circular.

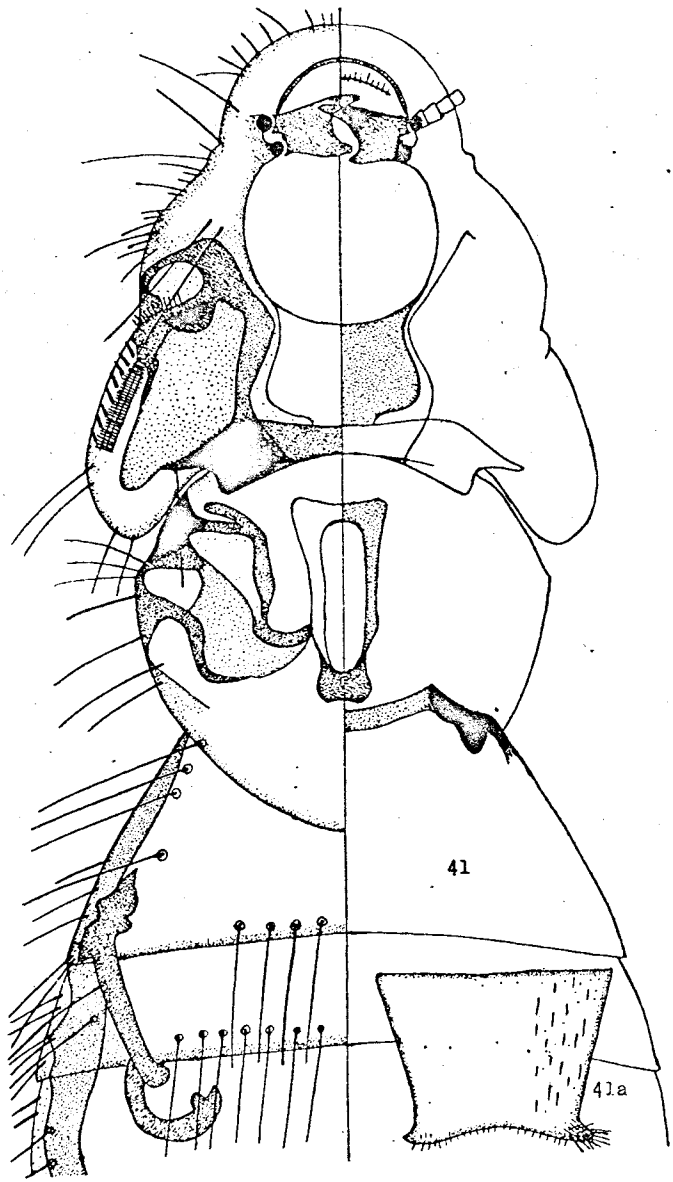


Plate XV

Fig. 41—*Laemobothrion semicirculus* ♀ (n. sp.)

A female neoparatype of *L. tinnunculus* in my collection, has the frons considerably more rounded than shown in the figure by Clay & Hopkins (The Early Literature on Mallophaga, pt. I, p. 229; Bull. Brit. Mus. (Nat. Hist.) Entomology, vol. I, No. 3, 1950), and without any angulation at the sides. This figure was drawn from a male, and it is possible that in the female the frons is more rounded. A slight sexual dimorphism in the shape of the frons is present in other species of the genus.

The antennary fossae are only moderately swollen and encircled by a pitchy band, narrow and paler around anterior side and wider and darker on inner and posterior portions, from whence it extends backwards submarginally to a point even with the occiput (see fig.).

The coxal carinae of pro and pterothorax are narrow and black, while there is a wide, submarginal, dark brown carinae along each side of the abdomen, narrowing posteriorly and terminating in the middle of the last segment.

The prosternum differs from both *intermedium* and *tinnunculi;* the genital sternite is similiar to that of *intermedium*, but different from that of *tinnunculi.*

The chaetotaxy of the head, thorax and first two abdominal segments is shown in the figure. In the remaining segments of the abdomen, not shown, the setae of the lateral margins is fairly abundant, irregularly placed and of uneven length. The setae of the posterior margins of the tergites is continuous across abdomen, rather sparsely set and about the length of each segment. The setae on posterior margin of the sternites are shorter, finer and more closely set; there are four setae of medium length in median portion of last abdominal segment and numerous setae of unequal length closely set around its posterior margin.

The species is represented by the ♀ holotype and 1 nymph paratype; also, a ♀ and 2 nymphs from the type host collected by the senior author at Colosó, Dept. Bolívar, Colombia, July 13,1948.

Measurements of the ♀ holotype:

		♀ length	♀ width
Body		7.40	—
Head	frons	—	.74
	temples	1.63	1.54
	occiput	1.26	—
Prothorax		1,17	1.26
Pterothorax		.825	1.58
Abdomen		4.66	2.26

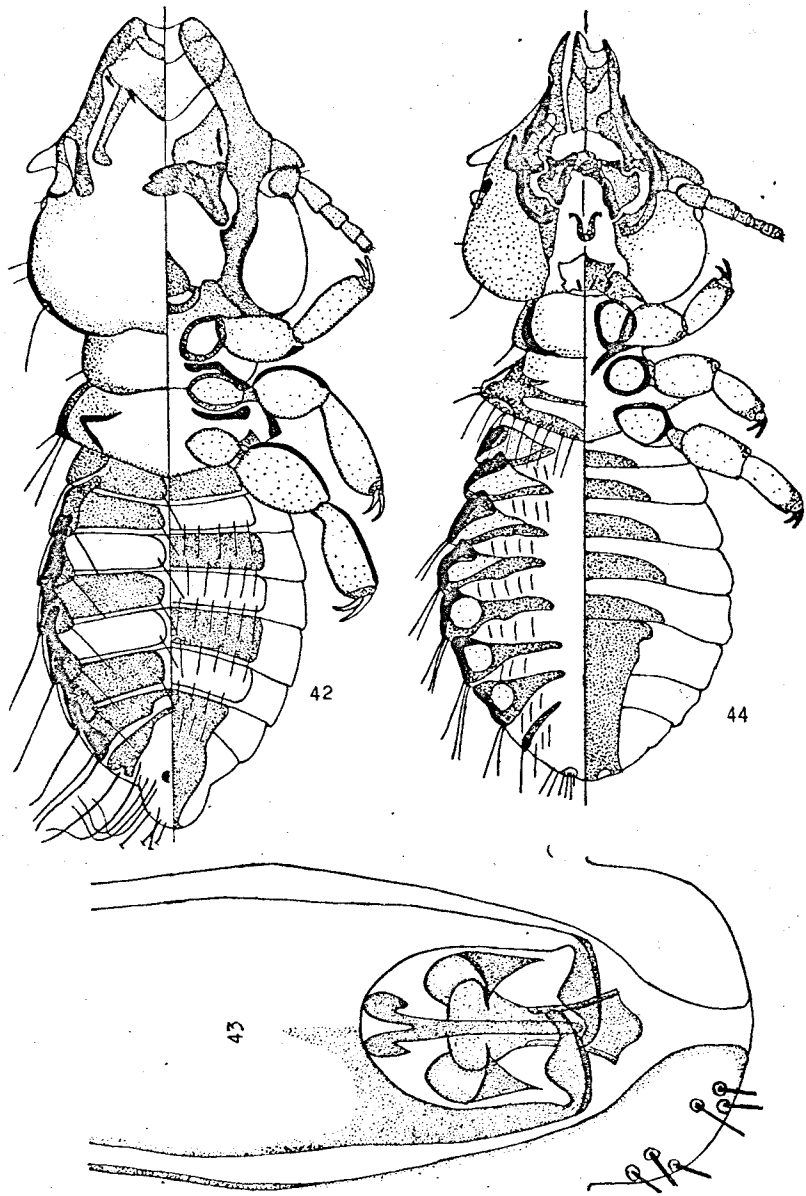


Plate XVI

Fig. 42 *Austrophilopterus ~~cancellosus~~ caurensis* ♂ (n. subspec.)
Fig. 43 *Austrophilopterus ~~cancellosus~~ caurensis* (♂ genitalia)
Fig. 44 *Bizarrifrons picturatus* ♂ (n. sp.)

Suborder ISCHNOCERA Kellogg

Family PHILOPTERIDAE

Genus *AUSTROPHILOPTERUS* Ewing, 1929

Manual External Parasites, 190. Genotype: *Philopterus cancellosus* Carriker.

Austrophilopterus cancellosus caurensis n. subsp.

(Figs. 42 and 43)

Types, ♂ and ♀ adults, from *Ramphastos t.tucanus*, collected at Campamento Cecilia Magdalena, Río Caura, Venezuela, May, 1957 (coll. M.H.N. La Salle).

DIAGNOSIS.—Closely related to *A.c.incae* Carriker, from *Ramphastos incae*, but differs from that race as fellows:

Generally smaller, with some measurements the same, others greater. Head of male wider at temples, that of female equal (♂=.705 x.62 against .70 x.59: ♀=.755 x.65 against .76 x.65); abdomen of both sexes smaller (♂=.89 x.59 against .96 x.65; ♀= 1.07 x.634 against 1.30 x.67).

The endomera is smaller and the penis longer; sides of head are less convex at clavi and less undulating anterior to the clavi; the pterothorax is slightly shorter, but wider, while segment VI of abdomen in the female is much wider and VIII wider at anterior end, with sides converging more sharply. In other words the abdomen is much less pointed distally.

The subspecies is represented by the female holotype, male allotype, 1 ♂ and 2 ♀ ♀ paratypes and 1 nymph. Male and female paratypes have been retained by the senior author.

Measurements of the types:

	♂		♀	
	length	width	length	width
Body	1.82	—	2.12	—
Head at frons	—	.13	—	.13
Head at clavi	—	.46	—	.476
Head temples	.705	.62	.755	.65
Prothorax	.245	.39	.26	.40
Pterothorax	.23	.495	.245	.55
Abdomen	.89	.59	1.07	.634
Basal plate	—	—		
Endomera	.085	.075		
Penis	.13	.035		

Genus *BIZARRIFRONS* Eichler, 1938

Zool. Anz., 124, p. 226; (Genotype = *Nirmus magus* Nitzsch, from *Ostinops decumanus*).

A small genus, thus far taken only on certain species of the avian family Icteridae, and is characterized chiefly by the peculiar asymmetrical preantennal region of the head, especially of the anterior plate and the premarginal and ventral carinae.

The genotype, *B.magus* (Nit.), 1866, has been placed consecutively in the genera *Nirmus, Docophorus, Degeeriella* and *Philopterus*. In 1869 Rudow described *Docophorus maculatus* from *Gymnostinops y.yuracares*, which probably belongs in this genus, although his description is worthless and no published figure of it exists.

In 1903 the senior author described a third species, *Nirmus francisi*, from *Zarhynchus wagleri ridgwayi*.

In 1938 Eichler erected the new genus *Bizarrifrons* for the above three species and described two new ones, *B. clayae* and *meinertzhageni*, from *Gymnostinops montezuma* and *Cassidix m.mexicanus*. He also placed five other known species in the new genus: viz.—*Nirmus illustris* Kell., *N.ornatissimus* Giebel, *N.picturatus* Osborn, *N.virgatus* Kell. and *N.xanthocephali* Osborn. All of these five species are typical *Brüelia*, while *illustris* Kell. is a pure synonym of *ornatissimus* Giebel.

There is no resemblance whatever between *Bizarrifrons* and *Bruelia* and it is hard to understand why Eichler should have placed the above species of *Bruelia* in *Bizarrifrons*. However, *Bizarrifrons* does greatly resemble the genus *Sturnidoecus*, excepting the asymmetrical anterior portion of the head. Both genera have the anterior plate and supporting ventral carinae extending far beyond the tips of the preantennal carinae, but this portion of the head is longer and more slender in *Bizarrifrons*. I have a specimen of *Sturnidoecus* from *Psomocholax o.oryzivorus* (Icteridae) which is, in most all respects a typical *Bizarrifrons*, excepting the normal anterior portion of the head, which is wider and shorter.

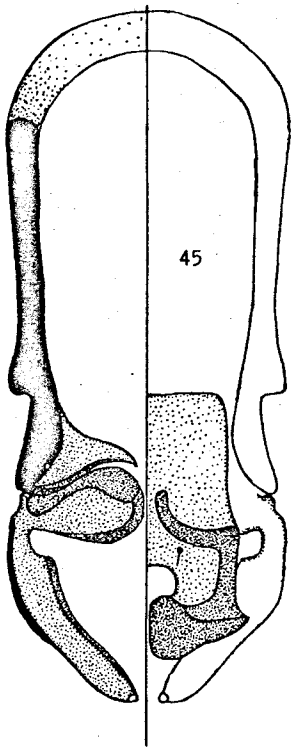
Generally speaking, *Bizarrifrons* may be easily distinguished from its nearest relative, *Sturnidoecus*, by the strongly asymmetrical preantennary portion of the head and by the male genitalia, which are very different, there being a well developed penis in *Sturnidoecus* which is entirely absent in *Bizarrifrons*.

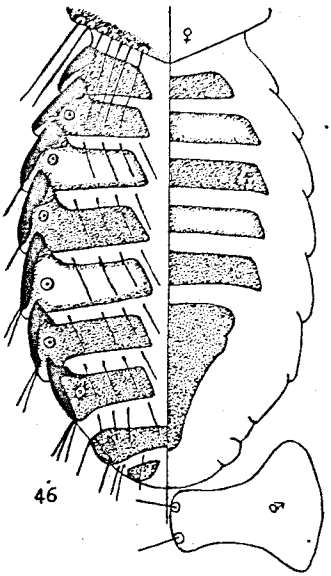
Bizarrifrons picturatus n. sp.

(Figs. 44 and 45)

Types, male and female adults, from *Cacicus c.cela* (Linné), the ♂ holotype collected by the senior author at Codazzi, Dept. Magdalena, Colombia, Mar. 12,1942, and the ♀ allotype at Campamento Cecilia Magdalena, Río Caura, Venezuela, May, 1957. (♂ holotype in coll. U.S.N.M. and ♀ allotype in coll. M.H.N. La Salle).

DIAGNOSIS.—Compared with a good series of *B.magus* and *B.francisi*, and with Eichler's description and figures of *clayae* and *meinertzhageni*. The species





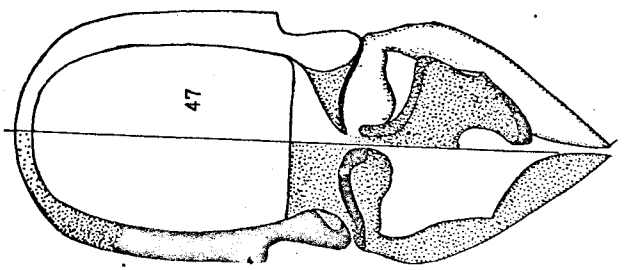


Plate XVII

Fig. 45—*Bizarrifrons picturatus* (♂ genitalia)
Fig. 46—*Bizarrifrons juruani* ♀ (n. sp.)
Fig. 47—*Bizarrifrons juruani* (♂ genitalia)

of this genus are very homogenous and differ one from another but slightly. Eichler gives figures illustrating the differences in the 1st. antennal segment and the *coni;* the black markings around the eye ("augenfleck") and the sclerites of the apical abdominal segments.

In *picturatus* the 1st. segment of the antennae is unusually long, with the *coni* also large but not extending beyond the outer end of the 1st. antennal segment. *B. clayae* is the only described species agreeing with this character, but in *clayae* the genital sclerite of the male is much narrower distally and has the anterior portion broad and rounded. The markings around the eye also differ from the other four species; the abdominal tergites of both *francisi* and *magus* are much wider and with their inner ends wide and truncate; the sternites are also wider.

In *picturatus* the abdominal tergites of the female are wider than those of the male, but their inner ends are not truncate, but bluntly pointed.

The species is represented by the ♂ holotype, ♀ allotype, 1 ♂ paratype and by 2 ♀ ♀ from *Cacicus cela vitellinus*, collected by the senior author at Unguía, Chocó, Colombia, and which are identical with the allotype of the species.

Measurements of the types:

	♂		♀	
	length	width	length	width
Body	1.69	——	1.82	——
Head frons	——	.16	——	.15
Head temples	.586	.542	.625	.575
Prothorax	.163	.337	.217	.345
Pterothorax	.195	.477	.235	.50
Abdomen	.825	.70	.976	.716
Basal plate	.24	.155		
Parameres	.11	.15		
Endomera	.13	.09		

Bizarrifrons juruani n. sp.

(FIGS. 46 AND 47)

Types, ♂ and ♀ adults, from *Cacicus haemorrhous* (Linné), collected by the senior author at La Pinta, Río Yuruan, Venezuela, April 8, 1910 (in coll. of the senior author).

DIAGNOSIS.—In most measurements it is smaller than *picturatus*, excepting width at frons in the male, which is the same, and in the abdomen of the female, which is practically the same (see tables of measurements).

The dark markings of the head are very similiar to those of *picturatus*, but those of the pterothorax differ.

In the male the tergites are much wider at inner ends, which are broadly rounded; the sternites are the same, excepting the large genital sclerite, which is differently shaped (see figs.).

The male genitalia are very different, with shorter basal plate, longer and much more pointed parameres and are narrower across their bases; the endomeral plate is of the same general type, but differs much in details.

The female differs from *picturatus*, aside from the measurements, in more deeply pigmented tergites, the pale portion being restricted to a narrow ring around spiracles; wider tergites and narrower sternites, and in the genital plate which is narrower in anterior portion and longer.

Note.—Dr. Eichler, in his 1938 paper, published very small and rather poor figures of the genitalia of *B. magus, francisi* and *meinertzageni*.

I have examined the genitalia of *magus* and *francisi* and find that there are very marked differences between them and between the two new species described above, while Eichler's figure of *meinertzhageni* is apparently quite different also. Certainly the genitalia are the best characters for the separation of the species of this genus, taken together with the abdominal sclerites. Species represented by ♂ holotype and ♀ allotype.

Measurements of the types:

	♂		♀	
	length	width	length	width
Body	1.54	——	1.80	——
Head frons	——	.16	——	.14
Head temples	.553	.50	.526	.521
Prothorax	.163	.304	.163	.326
Pterothorax	.206	.445	.228	.467
Abdomen	.74	.586	.99	.69
Basal plate	.195	.132		
Parameres	.14	.125		
Endomeral sac	.087	.098		

Genus *CUCULOECUS* Ewing, 1926

Proc. Ent. Soc. Washington, 28, p. 148. Genotype *Philopterus coccygi* (Osborn).

Cuculoecus piayae n. sp.

(Figs. 48 and 49)

Types, ♂ and ♀ adults, from *Piaya cayana mehleri* Bonaparte, collected by the senior author at El Difícil, Dept. Magdalena, Colombia, Dec. 31, 1946 (in coll. U. S. N. M.).

DIAGNOSIS.—Most closely related to *C. coccygi* (Osborn), from *Coccyzus americanus*. It differs from that species as follows.

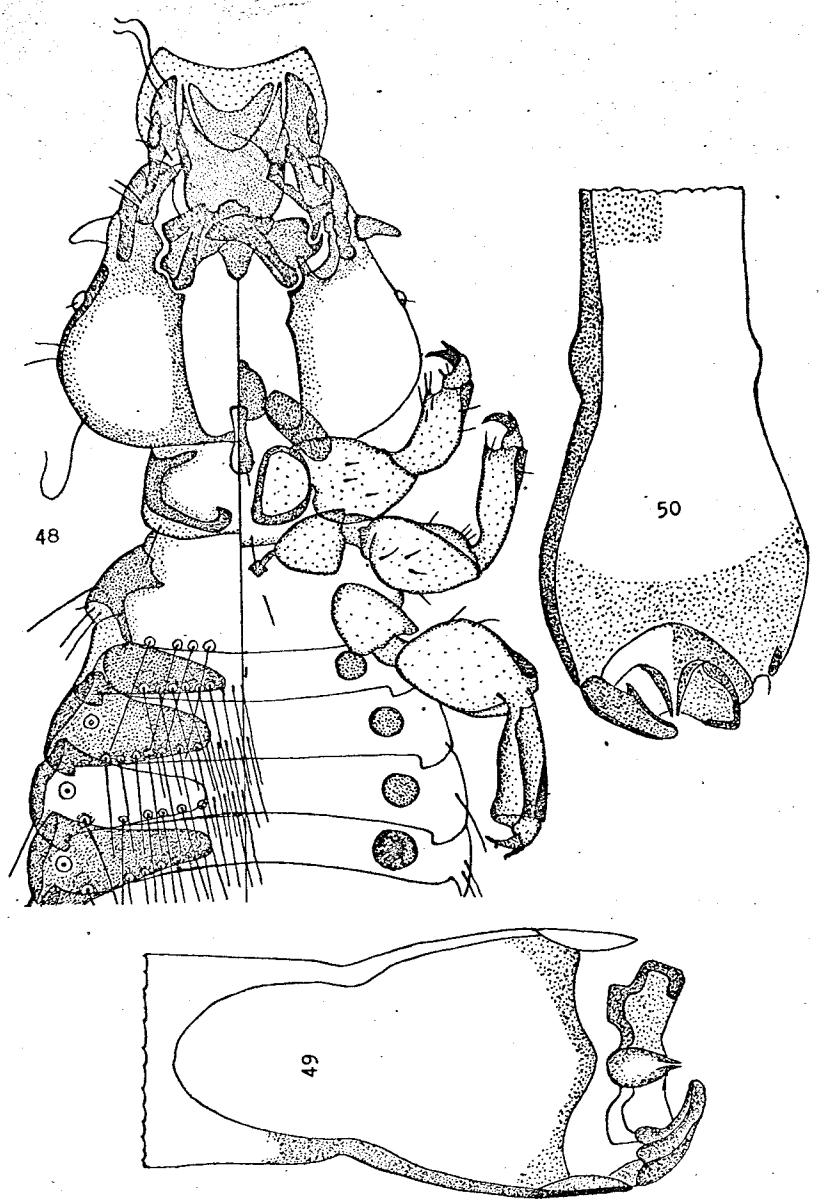


Plate XVIII

Fig. 48—*Cuculoecus piayae* ♂ (n. sp.)
Fig. 49—*Cuculoecus piayae* (♂ genitalia)
Fig. 50—*Cuculoecus piayae venezuelae* n. subsp. (♂ genitalia)

It is considerably larger in all measurements except those of the prothorax, which are almost the same; the head is longer and wider in both sexes. (♂ = .864 x .82 against .778 x .72; ♀ = .878 x .864 against .835 x .82).

There is a slight sexual dimorphism in both species, the head of the female being wider at the temples than in the male. The shape of the head differs from *coccygi*, the clypeus being narrower, with sides less divergent, while the anterior plate is narrower apically and wider basally; there are but two long, strong setae at the tip of the preantennary carinae instead of three, as in *coccygi*.

The portion of the head between the coni and clypeus is narrower, with sides less convex, so that the lateral margins of the head are almost straight between the temporal angle and clypeal suture, while in *coccygi* these margins are convex.

Thorax and abdomen are similiar, tergites I-VI falling short of median line of abdomen, leaving an elongated hyaline space between their inner ends; tergites VII and VIII are entire; pleurites very narrow and the small sternites lie under median portion of tergites. A series of pustulated setae along posterior margin of tergites, inside of spiracles, which extend across the hyaline area.

Basal plate rather long and thick, wider at base; parameres very short, movable, and usually seen folded across top of endomere; penis short and thick.

There is very little difference between the sexes, excepting in size, larger abdomen in female, and shape of apical segments of abdomen.

The New World species of this genus which I have seen are very closely related, forming a homogenous group, separated by small characters. The fact that the parasite from *Piaya cayana* closely resembles that from *Coccyzus americanus* (genera not closely related) bears out this statement.

Species represented by the ♂ holotype, ♀ allotype; 2 ♂♂ and 5 ♀♀ paratypes, and 2 ♀♀ from another individual of the type host.

Measurements of the types of *C. p. piayae* and specimens of *C. coccygi* (Osborn):

	♂		♀		♂		♀	
	length	width	length	width	length	width	length	width
Body	2.36	——	2.79	——	2.19	——	2.58	——
Head: frons	——	.433	——	.47	——	.375	——	.45
Head: temples	.864	.82	.878	.864	.778	.72	.835	.82
Prothorax	.30	.457	.337	.483	.30	.433	.305	.49
Pterothorax	.30	.70	.331	.77	.26	.605	.32	.73
Abdomen	1.14	1.00	1.48	1.21	1.08	.90	1.33	1.12
Basal plate	.346	.146			.40	.137		
Parameres	.064	.10			.045	.117		
Endomera	.055	.08			.05	.083		

Cuculoecus piayae venezuelae n. subsp.

(FIG. 50)

Types, ♂ and ♀ adults, from *Piaya c. cayana* (Linné), collected at Garganta del Infierno, Río Orinoco, Venezuela, May, 1957. (Nº 2477, coll. M. H. N. La Salle).

DIAGNOSIS.—Differs chiefly from the nominate race in its much smaller size and in the structure of the male genitalia (See tables of measurements and figures of male genitalia).

The sides of the head, from middle of temples to clypeal suture, are straight, not undulating as in *piayae*, while the head is proportionately longer and narrower; the abdomen is less elongated in both sexes, more circular in shape.

No measurements are given of the male genitalia, since they are very close to those of *piayae*, the differences being, not in measurements, but in shape of basal plate and decidedly different shaped endomera and penis.

The race is represented by the ♂ holotype, ♀ allotype and 3 ♂♂ and 13 ♀♀ paratypes.

Note.—It would have been preferable to have made this race the nominate form of the species, but the material is not in a condition permitting drawings to be made from it, so that it became necessary to use the Colombian material from *Piaya cayana mehleri*.

Measurements of the types:

	♂		♀	
	length	width	length	width
Body	2.01	——	2.57	——
Head frons	——	.35	——	.392
Head temples	.815	.74	.91	.825
Prothorax	.314	.434	.347	.477
Pterothorax	.26	.65	.303	.75
Abdomen	.93	.98	1.27	1.18

Genus *ARDEICOLA* CLAY, 1936

Proc. zool. Soc. Lond., 1936, p. 615. Genotype: *Esthiopterum ardeae* (Linné)

Ardeicola plataleae ajajae n. subsp.

(FIGS. 51, 52 AND 53)

Types, ♂ and ♀ adults, from *Ajaia ajaja* (Linné), collected by the senior author at La Gloria, Dept. Magdalena, Colombia, May 24, 1943 (in coll. U. S. Nat. Mus.).

The early history of *A.plataleae* Linné is rather confusing, but it has been clearly elucidated by Clay & Hopkins in the "Early Literature on Mallophaga".

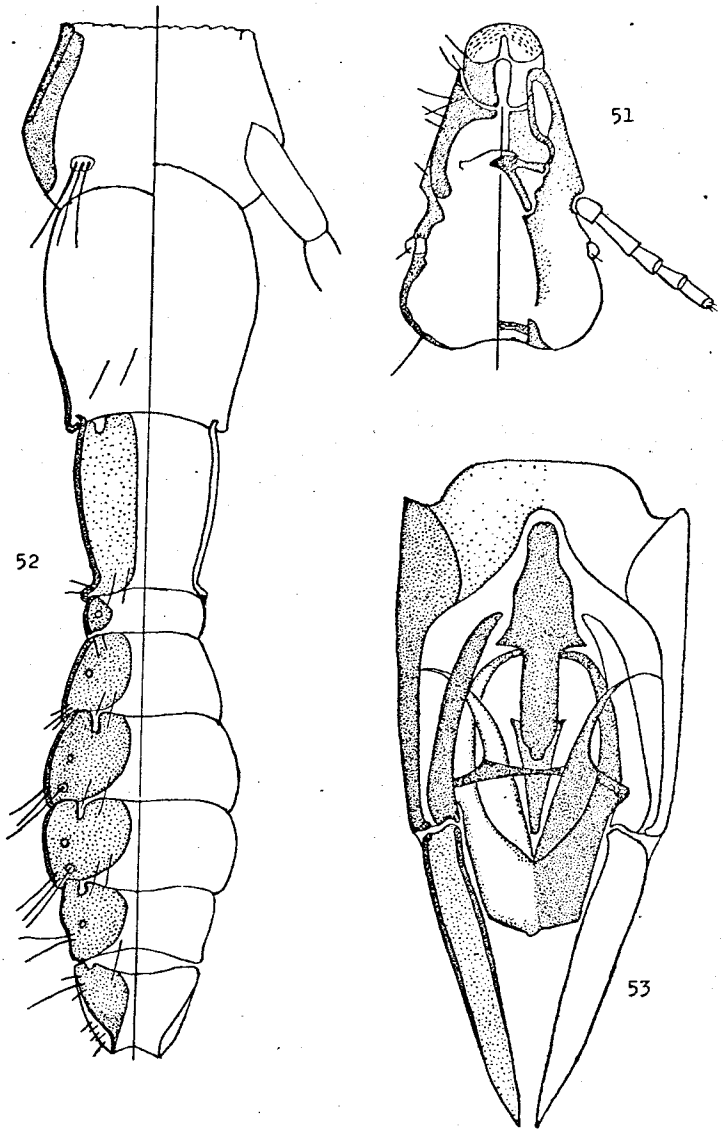


Plate XIX

Fig. 51—*Ardeicola platalcae ajajae* n. subsp. (Head of ♀)
Fig. 52—*Ardeicola platalcae ajajae* ♀ (Posterior half of pterothorax and abdomen)
Fig. 53—*Ardeicola platalcae ajajae* (♂ genitalia)

(Bull. Brit. Mus. Nat. Hist., Entom., vol. I, Nº 3, p. 245). Various figures are given but none which shows the peculiar sexual dimorphism of the abdomen.

The form of *Ardeicola* found on *Ajaia ajaja* is clearly conspecific with *plataleae* (Linné), but shows well marked subspecific differences.

DIAGNOSIS.—*A. ajajae* differs from *plataleae* in the measurements of both sexes. In the male it is longer in all measurements, while the thoracic segments and abdomen are narrower. In the female, *ajajae* is larger in all measurements except the width of the *frons*, which is slightly narrower. (.185 against .195).

The measurements of *plataleae* were taken from neoparatypes of the species kindly sent me by Miss. Clay. The female has the abdomen badly twisted and cannot be measured properly.

In *ajajae* the anterior plate is slightly longer, with the rugose area wider and with the rugosity coarser. There are slight differences in the cranial carinae. The male genitalia are larger in *all* measurements; the parameres are narrower basally, being almost paralell-sided and are almost straight, while there are differences in the endomera.

The new race is represented by the female holotype, male allotype; 5 ♂♂ and 15 ♀♀ paratypes, and 1 ♂ and 2 ♀♀ from the type host collected at Bebedero, Costa Rica by C. H. Lankester, May 10, 1906.

The species is represented in the La Salle collection by a single female, collected at El Yaque, Margarita Island, Venezuela, Nov. 5, 1953. Paratypes have been presented to M. H. N. La Salle.

Measurements of *A. plataleae* and *A. ajajae*:

	♂		♀		♂		♀	
	length	width	length	width	length	width	length	width
Body	2.71	——	.320(?)	——	2.86	——	3.34	——
Head frons	——	.163	——	.195	——	.175	——	.185
Head temples	.63	.365	.65	.40	.67	.39	.69	.456
Prothorax	.185	.30	.215	.335	.217	.293	.25	.37
Pterothorax	.456	.38	.50	.477	.50	.347	.56	.60
Abdomen	1.56	.39(V)	1.84	.39(I)	1.63	.355(V)	2.02	.50(I)
Basal plate	.22	.12		.58(V)	.26	.155		.24(II)
Parameres	.12	.11(basally)			.155	.12		.44(V)
Endomera	.174	.087			.26	.12		

Genus *NEOPHILOPTERUS* Cummings, 1916

Proc. zool. Soc. Lond., 1916, p. 660. Genotype: *Docophorus tricolor* Nitzsch.

Neophilopterus jabiraui n. sp.

(Figs. 54, 55 and 56)

Types, ♂ and ♀ adults, from *Jabirau mycteria* (Lichtenstein), collected by Pablo Anduze at Gran Sabana, Venezuela. (types in coll. of M. A. C. Jr.)

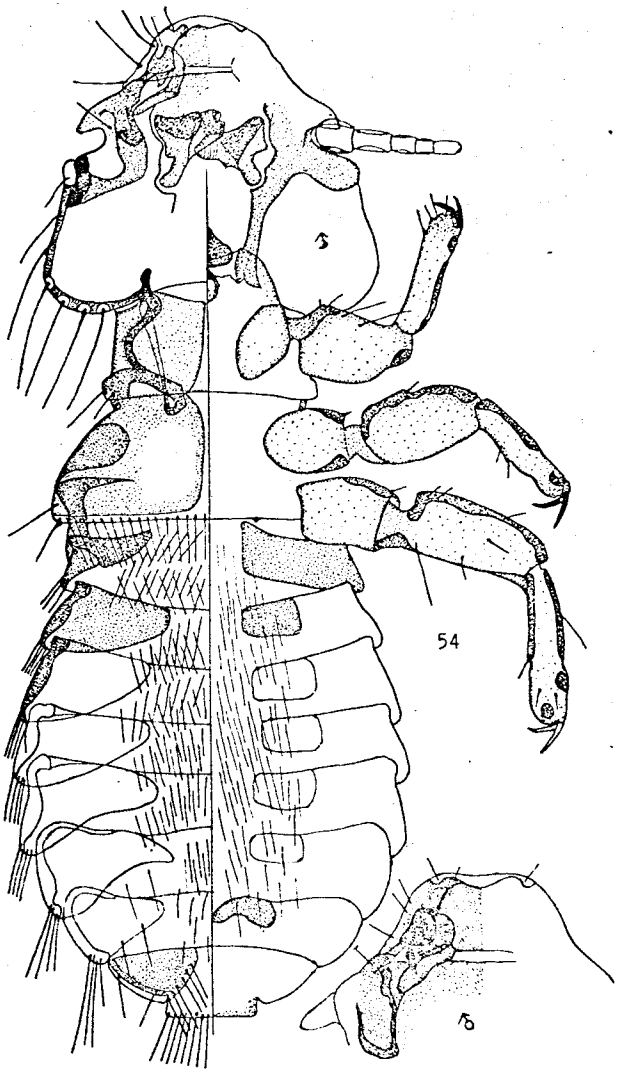


Plate XX

Fig. 54.—*Neophilopterus jabiraui* ♂ (n. sp.) (body, with an enlargement of preantennary head).

DIAGNOSIS.—During the study of this species comparison has been made with specimens of five of the ten authentic, known species of the genus, including *N. heteropygius*, from *Mycteria americana*.

There are but two species of the genus known from the Western Hemisphere, whose hosts are *Mycteria americana* and *Euxenura galeata*.

The genus is unusually homogenous, the known species differing but slightly one from another. The present new form is nearest to *N. incompletus* (Denny) from *Ciconia c. ciconia*, rather than to *heteropygius* or *subincompletus*, the two neotropical species.

It differs from *subincompletus* in having a much wider pterothorax, of decidedly different shape, while the abdominal sclerites differ in shape and coloring.

It differs from *incompletus* (Denny) in the shape of the abdominal tergites of both sexes; in much more strongly developed sternites; head narrower at the temples, and especially, in the male genitalia. The basal plate is much shorter and wider distally, while the endomera is shorter and differs in several details of structure, as shown by the figure given.

The species is represented by the ♂ holotype, ♀ allotype; 5 ♂♂ and 17 ♀♀ paratypes. 1 ♂ and 2 ♀♀ paratypes will be presented to the M. H. N. La Salle.

Measurements of the types:

	♂		♀	
	length	width	length	width
Body	3.28	——	3.64	——
Head temples	.92	1.00	1.07	1.14
Head occiput	.835	——	.95	——
Prothorax	.39	.65	.42	.75
Pterothorax	.36	.936	.40	1.06
Abdomen	1.48	1.195	2.16	1.43
Basal plate	.40	.265		
Parameres	.245	.20		
Endomera	.21	.086		

Family *HEPTAPSOGASTRIDAE* Carriker

Genus *STRONGYLOCOTES* Taschenberg, 1882

Nova Acta Leop.-Carol., 44; 54. Genotype: *Goniodes complanatus* Piaget.

Strongylocotes angulocapitis cordiceps (Carriker), 1936

Nirmocotes cordiceps Carriker, Proc. Acad. Nat. Sciences Philad., vol. 88, p. 83; pl. V. fig. 2. [Host: *Tinamus m. major* (Gmelin)].

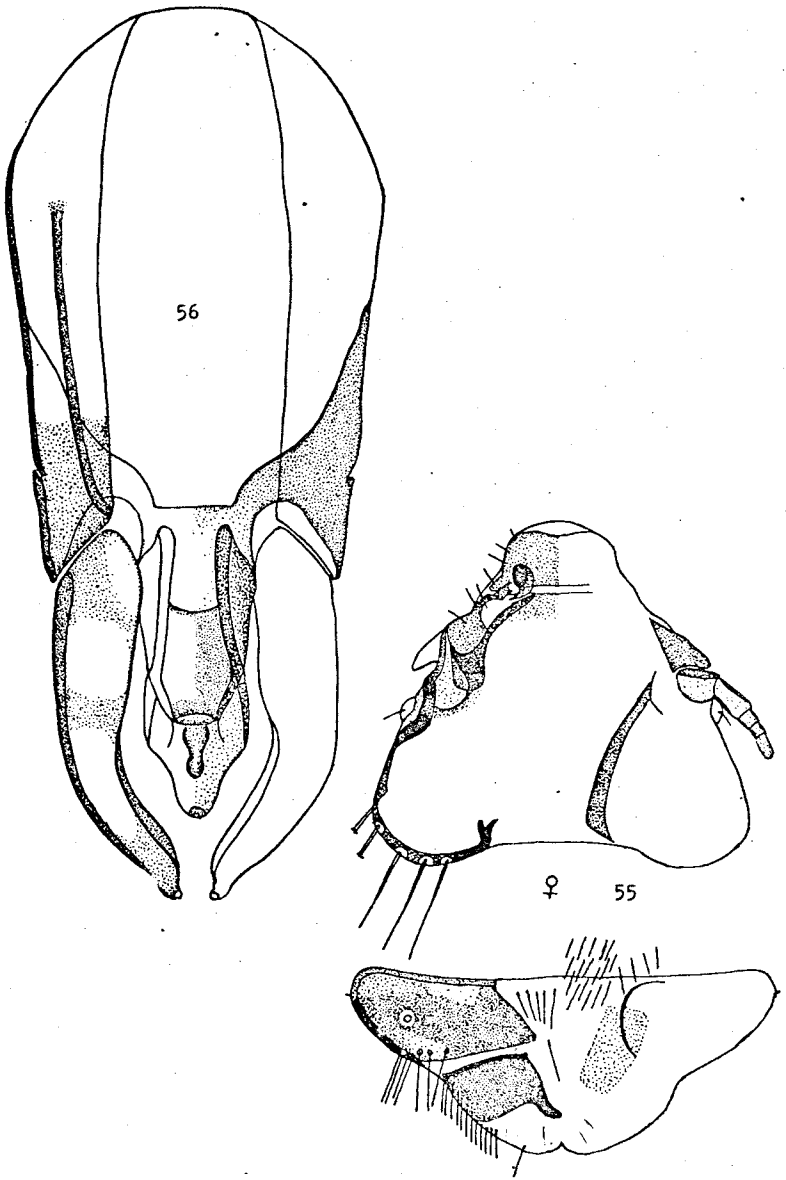


Plate XXI

Fig. 55—*Neophilopterus jabiraui* ♀ (Head and tip of abdomen)
Fig. 56—*Neophilopterus jabiraui* (♂. genitalia)

This species was described from a nymph in the collection of H. S. Peters. It was placed in the genus *Nirmocotes*, which genus later proved to be composed entirely of nymphs and juveniles of *Strongylocotes*.

The adults of *S. cordiceps* have not been described. In the collection of the M. H. N. La Salle are 3 ♂♂ and 4 ♀♀ adults of *Strongylocotes* from *Tinamus m. major*, collected at Campamento Cecilia Magdalena, Río Caura, Venezuela, May, 1957 (Nº 2652).

These are undoubtably the adults of *Nirmocotes cordiceps*, and they are clearly conspecific with *Strongylocotes angulocapitis*, and are most closely related to the nominate form, taken on *Tinamus major peruvianus*.

S. a. cordiceps differs from *angulocapitis* as follows:

The difference in measurements alone are sufficient for its separation, it being very much larger (length of ♀ = 4.11 against 3.28). The head measurements do not differ greatly, but the prothorax is longer and narrower (♀ = .437 x .576 against .325 x .607); mesothorax is shorter and wider; metathoracic apron longer and narrower, with the abdomen longer and wider.

The chaetotaxy of the apical abdominal segment of the female is longer and very much finer in texture. The lateral margins of the head, from temples to frons, are almost straight, not strongly constricted at antennae, while the temples are less angulated.

Measurements of male and female of *cordiceps* and of *angulocapitis*, corrected.

	♂		♀		angulocapitis ♀	
	length	width	length	width	length	width
Body	3.10	——	4.11	——	3.28	——
Head frons	——	.22	——	.26	——	.23
Head temples	.95	.864	.95	.82	.96	.80
Prothorax	.375	.576	.437	.576	.325	.607
Mesothorax	.433	.89	.462	.92	.61	.84
Metathoracic aporn	.39	.59	.302	.505	.28	.607
Abdomen	1.63	1.04	1.86	1.27	1.80	1.19
Parameres	.17	.10				
Endomera	.10	.046				

ADDITION TO LIST OF MALLOPHAGA RECENTLY PUBLISHED

Saemundssonia niethammeri Eichler, 1953

In Neithammer Bonn, zool. Beitrag, 4, p. 275 [Host: *Phaetusa simplex* (Gmelin)]. Campamento Cecilia Magdalena, May, 1957 (Nº 2532), M. H. N. La Salle, Type host.

SUMARIO

En este trabajo se estudian los malófagos nuevos o poco conocidos, colectados por Carriker en Venezuela, y otros colectados en el mismo país por Díaz-Ungría. Carriker hizo la identificación, dibujos, medidas y descripciones.

Las especies citadas en el trabajo son las siguientes:

Suborden AMBLYCERA.

Familia MENOPONIDAE.

Género *Myrsidea* Waterston, 1915.

1. *Myrsidea extranea* (Carriker), 1903.

En el trabajo se describe esta especie sobre ejemplares colectados por Carriker en *Ramphastos swainsoni* y *R. citreolaemus*.

2. *Myrsidea peruviana* Eichler, 1951.

Se describen ejemplares colectados en el río Caura, Campamento Cecilia Magdalena (colección M. H. N. La Salle) sobre *Ramphastos t. tucanus*.

3. *Myrsidea victrix* Waterston, 1915.

Se estudia la especie sobre ejemplares de Carriker.

4. *Myrsidea victrix waterstoni*, n. subsp.

Se describe sobre *Ramphastos swainsoni*, en ejemplares de Carriker.

5. *Myrsidea victrix ceciliae* n. subsp.

Se describe sobre ejemplares del río Caura (colección Carriker), hallados sobre *Ramphastos v. vitellinus*, y en ejemplares del Campamento Cecilia Magdalena, río Caura (Colección M. H. N. La Salle) sobre el mismo hospedador.

6. *Myrsidea victrix brevicarinatus* n. subsp.

Se describe sobre ejemplares de la colección Carriker, siendo el hospedador típico *Ramphastos sulphuratus brevicarinatus*. La especie no se ha hallado aún en Venezuela, pero se considera muy probable su existencia, dada la extensión de sus hospedadores.

7. *Myrsidea victrix abbreviata* Eichler, 1951.

Se expone la validez de la subespecie, que es del mismo grupo que las dos anteriores. En Venezuela no ha sido colectada hasta ahora.

Género *Ramphasticola* Carriker, 1949.

8. *Ramphasticola hirsuta hirsuta* Carriker, 1949.

No se ha hallado aún en Venezuela, pero se considera probable su existencia por razones de hospedador.

9. *Ramphasticola hirsuta ambiguua* n. subsp.

No ha sido aún señalada en Venezuela. El hospedador tipo es *Ramphastos a. ambiguus*, que es un ave muy común en Venezuela, por lo que probablemente se colecte el parásito tan pronto como se ponga interés en hallarlo.

10. *Ramphasticola hirsuta tucana* n. subsp.

Se describen ejemplares colectados en el río Caura, Campamento Cecilia Magdalena (colección M. H. N. La Salle) sobre *Ramphastos t. tucanus*.

11. *Ramphasticola hirsuta niethammeri* Eichler, 1954.

Se señalan ejemplares colectados en *Ramphastos tucanus cuvieri*, por Carriker. Los ejemplares venezolanos son de la Gran Sabana (Estado Bolívar).

12. *Ramphasticola aenigma* n. sp.

Se describen ejemplares colectados en el río Caura, Campamento Cecilia Magdalena (colección M. H. N. La Salle), sobre *Ramphastos t. tucanus*.

13. *Ramphasticola mirabile* n. sp.

Se describen ejemplares de la colección Carriker, colectados en Bolivia, sobre *Ramphastos c. cuvieri*, especie de tucán que es muy común en Venezuela.

Género *Menacanthus* Neumann, 1912.

14. *Menacanthus balfouri* Waterston, 1915.

El hospedador tipo es *Ramphastos ambiguus brevis*, de Colombia. La especie todavía no ha sido señalada en Venezuela.

15. *Menacanthus balfouri waterstoni* n. subsp.

Se describen ejemplares de la colección Carriker, colectados en Colombia sobre *Ramphastos swainsoni*.

16. *Menacanthus balfouri cuvieri* n. subsp.

Se describen ejemplares colectados por Carriker en Perú sobre *Ramphastos c. cuvieri*.

17. *Menacanthus balfouri caucae* n. subsp.

Se describen ejemplares de la colección Carriker, colectados sobre *Ramphastos citreolaemus* de Colombia.

18. *Menacanthus balfouri prolongus* n. subsp.

Se describen ejemplares de Carriker colectados en Costa Rica y Colombia sobre *Ramphastos sulphuratus brevicarinatus*.

Género *Dicteisia* Keler, 1938.

19. *Dicteisia tristis* (Giebel), 1874.

Se señala la especie sobre *Anhima cornuta* de Flores Moradas (Estado Guárico, Venezuela), en la colección M. H. N. La Salle.

20. *Dicteisia gracilis* Carriker, 1949.

Señalada sobre *Anhima cornuta* de Flores Moradas (colección M. H. N. La Salle).

21. *Dicteisia abdominalis* n. sp.

Se describe sobre *Anhima cornuta* de Flores Moradas (colección M. H. N. La Salle).

Género *Bothriometopus* Taschenberg, 1882.

22. *Bothriometopus macrocnemis* (Burmeister), 1838.

Sobre *Anhima cornuta* de Flores Moradas (colección M. H. N. La Salle).

Familia LAEMOBOTHRIIDAE.

Género *Laemobothrion* Nitzsch, 1818.

23. *Laemobothrion semicirculus* n. sp.

Se describen ejemplares colectados sobre *Falco c. columbarius* de La Restinga (Isla de Margarita), de la colección M. H. N. La Salle.

Suborden ISCHNOCERA.

Familia PHILOPTERIDAE.

Género *Austrophilopterus* Ewing, 1929.

24. *Austrophilopterus cancellosus caurensis* n. subsp.

Se describen ejemplares colectados sobre *Ramphastos t. tucanus*, del Río Caura, Campamento Cecilia Magdalena (colección M. H. N. La Salle).

Género *Bizarrifrons* Eichler, 1938.

25. *Bizarrifrons picturatus* n. sp.

Los ejemplares venezolanos fueron colectados sobre *Cacicus c. cela*, en el Campamento Cecilia Magdalena, río Caura (colección M. H. N. La Salle).

26. *Bizarrifrons juruani* n. sp.

Se describen ejemplares de la colección Carriker colectados por dicho autor sobre *Cacicus haemorrhous* en La Pinta, río Juruan (Venezuela).

Género *Cuculoecus* Ewing, 1926.

27. *Cuculoecus piayae* n. sp.

Se describe en ejemplares colectados por Carriker sobre *Piaya cayana mehleri*, de Colombia.

28. *Cuculoecus piayae venezuelae* n. subsp.

Se estudian ejemplares colectados sobre *Piaya c. cayana* en la Garganta del Infierno, del río Orinoco (colección M. H. N. La Salle).

Género *Ardeicola* Clay, 1936.

29. *Ardeicola plataleae ajajae* n. subsp.

Se describen ejemplares colectados sobre *Ajaia ajaja* en Colombia por Carriker. En la colección M. H. N. La Salle figuran ejemplares colectados en El Yaque (Isla de Margarita).

Género *Neophilopterus* Cummings, 1916.

30. *Neophilopterus jabiraui* n. sp.

Se describen ejemplares colectados sobre *Jabirau mycteria* en la Gran Sabana (Venezuela), colección Carriker.

Familia HEPTAPSOGASTRIDAE.

Género *Strongylocotes* Taschenberg, 1882.

31. *Strongylocotes angulocapitis cordiceps* (Carriker), 1936.

Se señalan ejemplares colectados sobre *Tinamus m. major* en el Campamento Cecilia Magdalena, río Caura (colección M. H. N. La Salle).

Como se ve, en el estudio se incluyen especies no colectadas en Venezuela. Esto se hace, unas veces porque el hospedador es muy común en nuestro país y se da como muy probable el hallazgo del malófago con tal de que se colecte la especie hospedadora. Otras veces, se estudian especies que son necesarias para mejor entender las subespecies o que tienen importancia para el desarrollo del género.

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NEW AND LITTLE KNOWN MALLOPHAGA FROM VENEZUELAN BIRDS

(Part I)

EDITORIAL SUCRE