

CONTRIBUTIONS TOWARDS A REVISION OF *MYRSIDEA* (MENOPONIDAE : MALLOPHAGA) III.

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SYNOPSIS

This part deals with the species of *Myrsidea* Waterston parasitic on the New World Avian family, Icteridae, and includes the re-description of the known species and the descriptions of six new species; a key to the species and a host-parasite list is included. In addition two New World species from non-Icterid but unknown hosts, are re-described from type material. A note is included on *Myrsidea luroris* (Carriker).

MYRSIDEA PARASITIC ON THE ICTERIDAE

COMPARATIVELY little material of *Myrsidea* is available from the Icteridae, a family comprising 95 species in 35 genera (according to Osgood in Hellmayr, 1937). However, it was decided to study the species of *Myrsidea* parasitic on this family as some of the described S. American *Myrsidea* obviously originated from these birds in spite of the recorded hosts and Icterids had erroneously been given as type hosts for two species.

Through the kind co-operation of various individuals and institutions it has been possible to examine the type material of all the described species. As discussed in part I (Clay, 1966 : 331) the characters for species differentiation in *Myrsidea* are most marked in the female, while the characters of the male genital sclerite are usually the most useful for phylogenetic grouping. This is so in the Icterid-infesting species, all the males having very similar genital sclerites with the exception of *comosa*, of which the sclerite though quite distinctive, is also of the same general type. The bursa copulatrix (see below, p. 207) is also similar in all the species examined. Possible relationships within the group may be shown by the male genital sclerite and the form of the female sternites.

Taxonomic Characters of the Icteridae-infesting Species

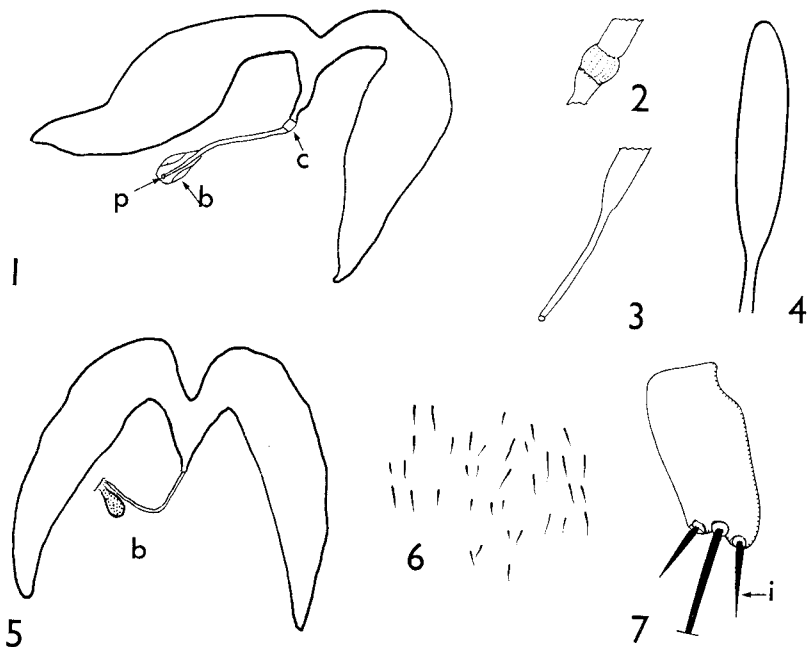
Apart from the combination of the form of the male genital sclerite and the female bursa, there is no other character or group of characters by which a specimen

can be identified as a parasite of the Icteridae. Certain characters are found in all the species dealt with here (except when otherwise stated) and these are listed below to save repetition in the specific descriptions; the generic characters of *Myrsidea* as given in Clay, 1966 : 330-332 are not repeated.

1. Head of the same general shape (Pl. 2, fig. 4); differences shown by the measurements (Tables VII-VIII). Number and position of head setae as in *thoracica* (Clay, 1966, fig. 1). Antenna as in Clay, 1966 : 338 and fig. 2.

2. Thorax. Pronotum with three spiniform setae near each antero-lateral corner and 3 + 3 long stout setae on the posterior margin; in some specimens of *comosa* there is also a short spiniform seta on one or both of the lateral margins. Mesonotum undivided. Metanotum posteriorly with one long stout seta each end (not included in setal counts) and a varying number of submarginal setae (the central setae); metapleural setae all short and spiniform. First tibia with 3 outer ventro-lateral setae and 4 outer dorso-lateral (Clay, 1966, fig. 5, v and d), except in *magnidens* which has a greater number of the dorsal setae.

3. Abdomen. The sternites are usually more heavily pigmented than the tergites making it difficult in mounted specimens, unless dissected, to see the outlines of the modified female terga. Any of the ♀ sternites IV-VI may be narrowed and arched medianly. Spiracles on the tergites. Edge of vulva strongly serrate;



FIGS. 1-7. 1-3. *Myrsidea fuscomarginata*. 1, Spermatheca. 2, Calyx. 3, Proximal opening of spermathecal tube. 4, *M. comosa*. Spermatophore. 5, *M. aitkeni* Clay, 1966. Spermatheca. 6, *M. comosa*. Microtrichia on wall of genital chamber. 7, *M. fuscomarginata*. ♀ pleurite VIII. b, bursa copulatrix; c, calyx; p, proximal opening of spermathecal tube; i, inner seta.

microtrichia on surface of genital chamber as in *M. abidae* (Clay, 1966, fig. 23) except in *comosa* (Text-fig. 6). The spermatheca (Text-fig. 1) is a large bilobed sac from which runs a tube, often long; near the sac the tube has a swollen modified portion (Text-fig. 2), this may be called the calyx as it appears to be similar in position and perhaps function to the calyx of the spermatheca of the Philopteridae (Cummings, 1917 : 649). The proximal opening of the spermathecal tube appears to be in a thin-walled structure, liable to distortion in mounted specimens, but which is always similar to that shown in Pl. 1, fig. 4. This structure (Valves of Blagoveshtschensky, 1956 : 21, fig. 6) is here called the bursa copulatrix, although until more is known of its morphology and function it is not possible to say whether it is a true bursa copulatrix. The pear-shaped structure referred to as the spermatheca in Clay, 1966 (Pl. 1, fig. 4) is in position and function probably the same as the structure in the Icterid-infesting species here referred to as the bursa; the true spermatheca of *Myrsidea aitkeni* is shown in Text-fig. 5. In mounted or dissected specimens with this type of bursa it is not possible to see the exact relationship of the spermathecal tube to the bursa; in some specimens the bursa may appear oval or round (Pl. 1, fig. 5). Pl. 1, fig. 5 in Clay, 1966 represents the calyx.

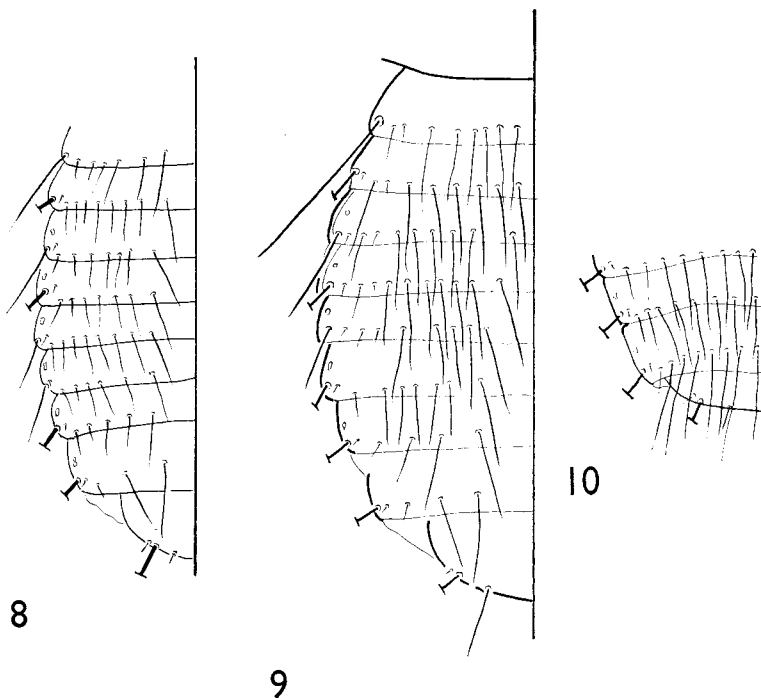
Probably all *Myrsidea* have spermatophores, these are conspicuous, bottle-shaped structures often seen in the male abdomen. Pl. 1, fig. 1 shows a spermatophore in the ductus ejaculatorius of *Myrsidea isostoma* (Nitzsch), fig. 2 shows one in the extruded genital sac of *M. aitkeni* Clay and fig. 3 in the abdomen of *M. aquilonia*; these are respectively a Corvidae-, Turdidæ- and Icteridæ-infesting species. The spermatophore of *M. comosa* (Text-fig. 4) is narrower than those seen in other Icterid-infesting species. It is probable that the contents of the spermatophore pass into the spermathecal tube via the bursa and the spermatophore then disintegrates; in only one female, amongst specimens from Icterid hosts, has a spermatophore been seen. The bursa may be designed to hold the neck of the spermatophore and the male genital sclerite to act as a guide for it. Dr. von Kéler (in press) has described and discussed similar spermatophores in the Boopidae. The form of the spermatophore may prove to be of taxonomic value, for instance, spermatophores with very long, attenuated necks have been seen in species of *Austromenopon* from both the Charadriiformes and Procellariiformes.

The male genitalia are of the typical *Myrsidea* type; there are differences in the shape of the posterior inwardly projecting arm of the basal plate: in *psittaci* and *comosa* this is angulated, in other species curved or almost straight (Pl. 2, figs. 5-7, a.). As in other *Myrsidea*, the form of the genital sclerite provides useful taxonomic characters. In the Icterid-infesting species, this sclerite comprises a flattened plate with a ventral and dorsal arm each side (Text-fig. 15, v, d), the latter arm is toothed distally. In mounted specimens the ventral arms are usually pressed out laterally and their true shape distorted (cf. Text-figs. 25 and 26), the shape cannot therefore be used as a taxonomic character; there is also some minor individual variation in the length and breadth of the plate. Specific differences are shown in the general shape and length of the plate posterior to the dorsal arms and in the form of the dorsal arms. The genitalia of *comosa* are rather different (see below).

4. Chaetotaxy of the Abdomen. Post-spiracular setae III and V are always

shorter and finer than II and IV; last tergum has $1 + 1$ inner posterior setae (Text-fig. 12, p); sternum I without setae. Sternite II with 2-6 spiniform setae in the aster at each postero-lateral corner; in Clay, 1966 : 340 it was said that the fine tips of these setae were liable to break off, a photograph taken with the Stereoscan Electron Microscope (Pl. 1, fig. 8) shows the tip of a seta and the place where the break probably takes place. Sternites III-VII in the male with a continuous row of marginal setae; arrangement of these setae in the female varies and is given in the specific descriptions. Anal corona as in Text-fig. 11; male with 4, occasionally 5 fine setae on posterior margin of abdomen and 8 minute internal setae.

The following characters are useful for distinguishing the species: 1. Degree of development of the hypopharyngeal sclerites. 2. Relative lengths of the peg-like and adjacent seta which form the pair of sensory setae on the last segment of the maxillary palp (Pl. 1, figs. 6-7). 3. Relative lengths of head setae 10 and 11¹ (Clay, 1966, fig. 1). 4. Modifications of the terga in the female. 5. Shape and length of the female sterna. In the descriptions these sternal characters are shown by the sternal ratio, that is the length in the mid-line of sterna III-VI expressed as a ratio of sternite II; to facilitate measurements, that of II is of the sternite and those of III-VI of the sterna. These ratios are somewhat approximate as they are taken from one specimen only and there is obviously variation between specimens



FIGS. 8-10. Terga of ♂ abdomen. 8, *M. mirabilis*. 9, *M. balteri*. 10, *M. psittaci*.

¹ 10 (anterior) and 11 (posterior) are the last two marginal setae anterior to the preocular notch (see Pl. 3, fig. 3).

and sometimes slight distortion of the abdomen, but the ratios give a general indication of the relative sizes of the sterna. 5. Male genitalia. 6. Length and thickness of post-spiracular seta VI. 7. Numbers and lengths of the tergal setae. 8. Presence or absence of anterior median setae on tergites and sternites and of anterior setae on the pleurites.

Species Descriptions

In the following descriptions one alteration has been made in the terms used: latero-ventral head fringe (Clay, 1966, fig. 1, f-1) is changed to subocular comb row or shortened to subocular setae; this will conform with the usage in the revisionary papers by Price *et alii* (e.g. Price & Beer, 1965 : 665). The remarks on measurements and text-figures in Clay, 1966 : 340 apply here, and on the numbers of setae (: 339) but it can be repeated that in the counts of the abdominal setae, the marginal setae of tergite I are divided into the post-spiracular seta each side and the tergo-central setae and on tergites II-VIII into the post-spiracular setae each side with the small, usually spine-like seta associated with it and the tergo-central setae. Text-figures of ♀ abdomens are not drawn to the same scale (see Table VII). \bar{X} = mean; number of specimens in brackets. The following abbreviations for collections are used: B.M.—British Museum (Natural History); E.C.—Emerson collection; U.S.N.M.—United States National Museum, the Carriker collection is now in this Museum.

Myrsidea diffusa (Kellogg, 1899).

(Text-figs. 11-13)

Type host: *Cacicus h. holosericeus* (Lichtenstein).

Colpocephalum diffusum Kellogg, 1899 : 40, pl. 4, figs. 3, 4. Hosts: *Amblycercus holosericeus*, various passerines, *Piaya cayana* and *Ardea virescens*.

Through the kindness of the authorities of the College of Agriculture, University of California it has been possible to examine the type material of this species; among the original material from the hosts listed by Kellogg is a slide with 1 ♂, 1 ♀ and 2 nymphs from *Amblycercus holosericeus*, Panama, which is marked "fig'd", denoting that the original figures were probably based on specimens on this slide. These specimens are the same as others in the Carriker collection from the same host. The female on Kellogg's slide will therefore be designated as lectotype, thus fixing the type host as *A. holosericeus* = *Cacicus holosericeus*. The generic arrangement of the species of this avian family is according to Dr. Blake (see Acknowledgment).

♀ and ♂. Hypopharynx fully developed (as in Pl. 2, fig. 1). Peg-like seta of maxillary palp (as in Pl. 1, fig. 6) relatively shorter than the adjacent seta compared to those of *M. thoracica* (fig. 1, p. in Clay, 1966). Head seta 10 short, ♀ 44 μ; ♂ 36-40 μ; ratio 10/11 : ♀ (1), 0.39; ♂ 0.27-0.30. Subocular setae 9-10 each side; gular setae 4-5 each side. Central setae of metanotum: ♀, 4 + 5; ♂, 4 + 4; metasternal setae 3-4 each side; metapleural setae 3 + 3. Setae of femoral brush (Clay, 1966, fig. 7): lectotype ♀, 14 + 14; paratype ♂, 13 + 13; ♀ from *A. holosericeus flavirostris*: 16 + 16; ♂, 18 + 16, 14 + 14. ♀ sterna V-VI narrowed and arched

medianly (Text-fig. 11), sternal ratio II-VI (see above p. 208): 100 : 83 : 42 : 20 : 18; pigmentation of sternite III somewhat dumb-bell-shaped as in Pl. 4, fig. 1. ♂ genital sclerite (Text-fig. 13).

Abdominal Chaetotaxy (Text-figs. 11-12). Post-spiracular seta VI markedly shorter and finer than VII. Tergocentral setae: ♀ (1), I, 12; II-III, 10; IV, 12; V, 13; VI, 12; VII, 11; VIII, 6. ♂ (1) I, 11; II, 14; III, 13; IV, 16; V, 13; VI, 12; VII, 9; VIII, 5. Marginal setae of sternites: ♀ (1), II, 20; III, 24; IV, 19; V, 20; VI, 16; VII, 14; VIII-IX, 14; vulval, 8. ♂ (1), II, 17; III, 25; IV-V, 21; VI, 18; VII, 15; VIII, 7; IX, 11. Anterior setae of sternite II: ♀, ♂, 6. Lateral anterior sternal setae: ♀, III, 1 + 2; IV-V, 2 + 3; VI-VII, 2 + 1; ♂, III, 2 + 1; IV, 3 + 3; V, 2 + 3; VI-VII, 3 + 3; VIII, 0 + 0. Pleural setae: ♂, I, 5 + 5; II, 5 + 6; III, 9 + 5; IV, 6 + 7; V, 5 + 6; VI, 5 + 5; VII, 3 + 4.

Material examined. Syntypes: 1 ♂, 1 ♀, 2 nymphs on slide No. 417B from *Cacicus holosericeus*, PANAMA. 2 ♂, 1 ♀ from *C. holosericeus flavirostris* (Chapman), COLUMBIA: Acandi, Choco, 27.xii.1949 (*M. A. Carriker*, No. 16715).

LECTOTYPE of *M. diffusa* (Kellogg) by present designation: ♀ on slide No. 417 b, marked type and "fig'd", in the Division of Entomology, University of California with the data as given above.

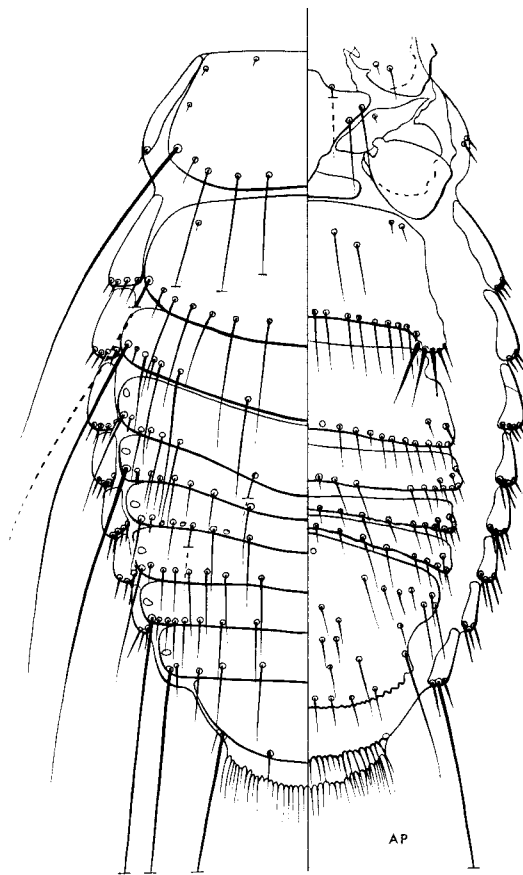


FIG. 11. *M. diffusa*. ♀

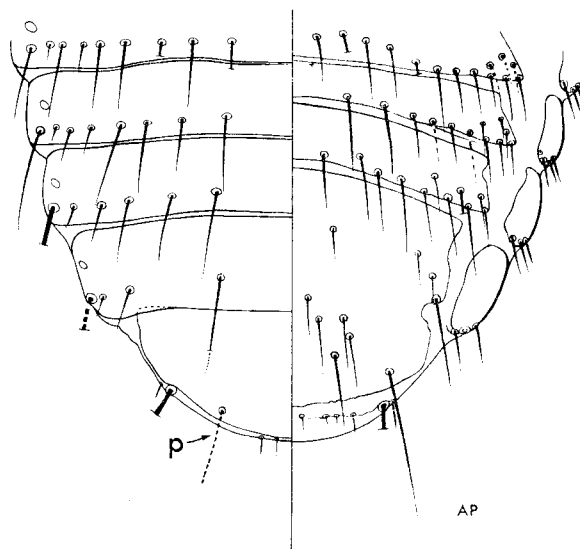


FIG. 12. *M. diffusa*. ♂ terminal segments of abdomen. p, inner posterior seta.

***Myrsidea picta* Carriker, 1955**

(Pl. 1, fig. 6; Pl. 4, fig. 1. Text-figs. 15, 17-18)

Type host: *Cacicus c. cela* (Linn.).

Myrsidea picta Carriker, 1955 : 40, figs. 5-6. Host: *Cacicus c. cela*.

This species is distinguished from *diffusa* by the presence of an anterior short, fine seta each side of sternite III; in the female by the modifications of the anterior terga and in the male by the more numerous tergal setae and the genital sclerite. Characters given under *diffusa* which do not differ are not repeated.

♀ and ♂. Gular setae 4-6 each side, total: ♀, 10-12, \bar{X} (8) 10.7; ♂, 8-11, \bar{X} (9) 9.8. Central setae of metanotum: ♀, 13-16, \bar{X} (8) 15.1; ♂, 11-15, \bar{X} (9) 13.2; metapleural setae: ♀, 4 + 4; ♂, 3 + 3 (2 specimens with 2 + 3). Setae of femoral brush: ♀, 12-19, \bar{X} (16) 15.3; ♂, 13-17, \bar{X} (16) 14.2 and one (? abnormal) specimen with 8 + 8. ♀ terga II and III have unpigmented areas as shown in Text-fig. 18. ♀ sternites V-VI, (Pl. 4, fig. 1) narrowed and arched centrally, sternal ratio II-VI : 100 : 51 : 34 : : 17 : 17. ♂ genital sclerite (Text-fig. 15).

Abdominal Chaetotaxy (Text-fig. 17; Tables I-VI). Post-spiracular seta VI markedly shorter and finer than VII, relatively a little longer in ♂. In both sexes sternite III usually has a short fine anterior seta each side, this is not included in the count of the lateral anterior setae. Length of inner posterior setae of last ♂ tergum as in *diffusa*. ♀ sternites III and IV with lateral gap in row of marginal setae each side of the central group; V and VI with a continuous marginal row.

Material examined. From *Cacicus cela cela*, VENEZUELA: San Felipe, Yaracuay, 1 ♀ (topotype) 18.v.1938 (*P. J. Anduze*), E. C.; San Felix, Rio Orinoco, 2 ♂, 14.ii.

1910 (*M. A. Carriker*), U.S.N.M. WEST INDIES, TRINIDAD: Biche, 2 ♂, 2 ♀, 24.i.1957 (*W. G. Downs*, TRVL. 543), U.S.N.M.; Caiqual, 1 ♂, 1 ♀, 24.ii.1959 (*T. H. G. Aitken*, 2265), U.S.N.M.; Brazil Village, 6 ♂, 5 ♀, 25.ii.1966 (*Aitken*, TRVL 11388), (B.M.); 1 ♂ from *Cacicus cela vitellinus* (Lawrence), COLOMBIA: El Conejo, 23.iii.1945 (*M. A. Carriker*), U.S.N.M.

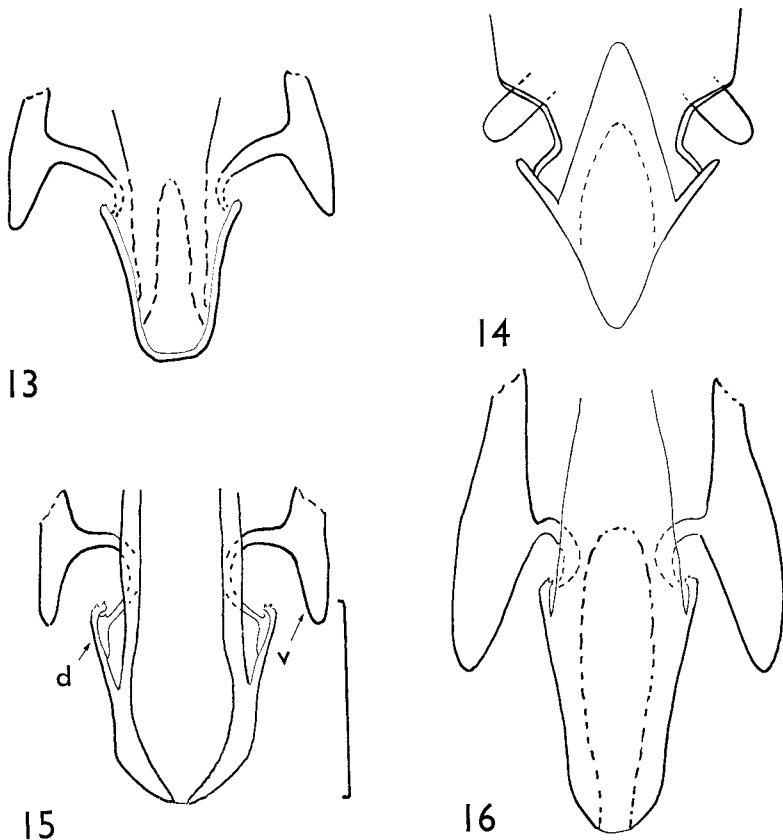
***Myrsidea magnidens* Stafford, 1943**

(Pl. 3, fig. 1. Text-figs. 14, 19-20)

Type host: *Pitangus sulphuratus rufipennis* (Lafresnaye). ? Error.

Myrsidea magnidens Stafford, 1943 : 41, figs. 10-17. Host as above.

Through the kindness of Professor E. W. Stafford it has been possible to examine the holotype and allotype of this species. The characters of the male genital sclerite and the female bursa make it probable that these specimens originated from one of the Icteridae. The condition of the two type specimens make it difficult to see the



FIGS. 13-16. ♂ genital sclerite. 13, *Myrsidea diffusa*. 14, *M. magnidens* (approximate reconstruction). 15, *M. picta*. 16, *M. balteri*. Line = 24 μ .

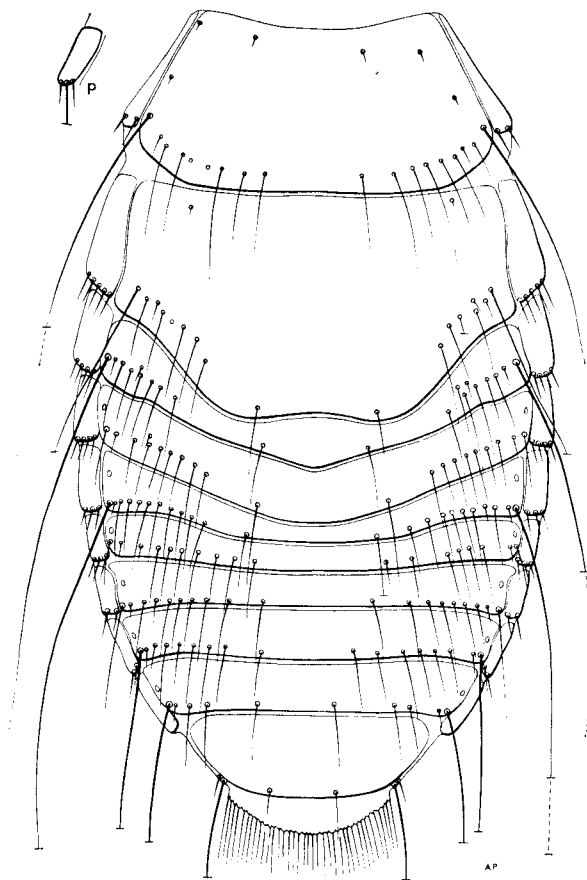


FIG. 17. *Myrsidea picta*. ♀ dorsal. p, pleurite VIII.

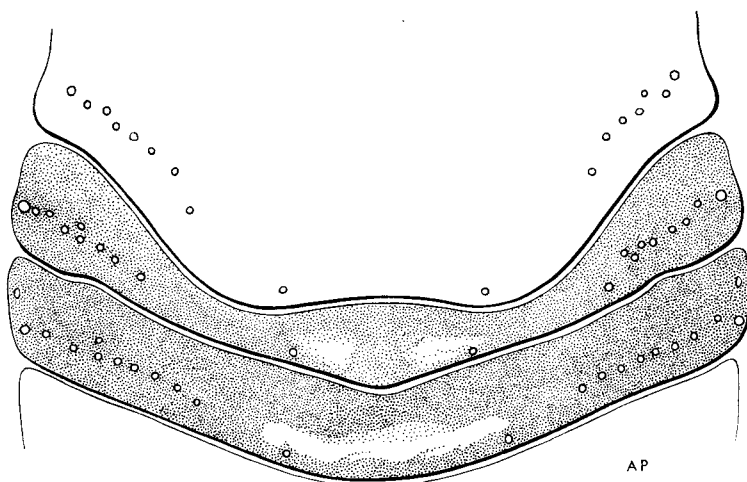


FIG. 18. *Myrsidea picta*. ♀ terga I-III.

outline of the sclerotized plates and the central area of the thoracic sterna is largely obscured in the female. The chaetotaxy on the other hand, is in good condition, few of the setae being lost or broken. This species is distinguished in both sexes by the greater number of outer dorso-lateral setae on the first tibia, in the female by the form of the anterior terga and abdominal chaetotaxy and in the male by the continuous marginal row of long setae on tergites I–VIII and the presence of anterior median setae on sternites V–VII.

♀ and ♂. Hypopharynx fully developed. Length of peg-like seta on maxillary palp not recorded. Head seta 10 rather long, probably a little over half the length of 11; subocular setae 12–13; gular setae 4 + 5. Central setae of metanotum: ♀, 19; ♂, ? 18; metasternal setae: ♂, 5 + 3; metapleural setae: ♀, 3 + 2; ♂, 3 + 3. Outer dorso-lateral setae of 1st tibia: ♀, 11 + 12, ♂, 11 + 10; Setae of femoral brush: ♀, ? + 33; ♂, 32 + ?. None of the ♀ sterna greatly narrowed or arched. Only the broad part of the bursa can be seen, this resembles that shown in Pl. I, fig. 4. The mesosomal plate of the single ♂ appears asymmetrical but this may be an artefact.

Abdominal Chaetotaxy (Text-figs. 19–20 and Table II). Post-spiracular seta VI shorter and finer than VII. Tergocentral setae: ♀, I, 3, 1 + 1, 2; II, 3, 1 + 1, 4; III, 4, 1 + 1, 6; IV, 26; V, 28; VI, 13 + 13; VII, 10, 1 + 1, 13; VIII, 5, 1 + 1, 5. In addition to the seta near each post-spiracular seta, the ♀ tergites have anterior lateral setae as follows: I, II, III, V, 1 + 1;

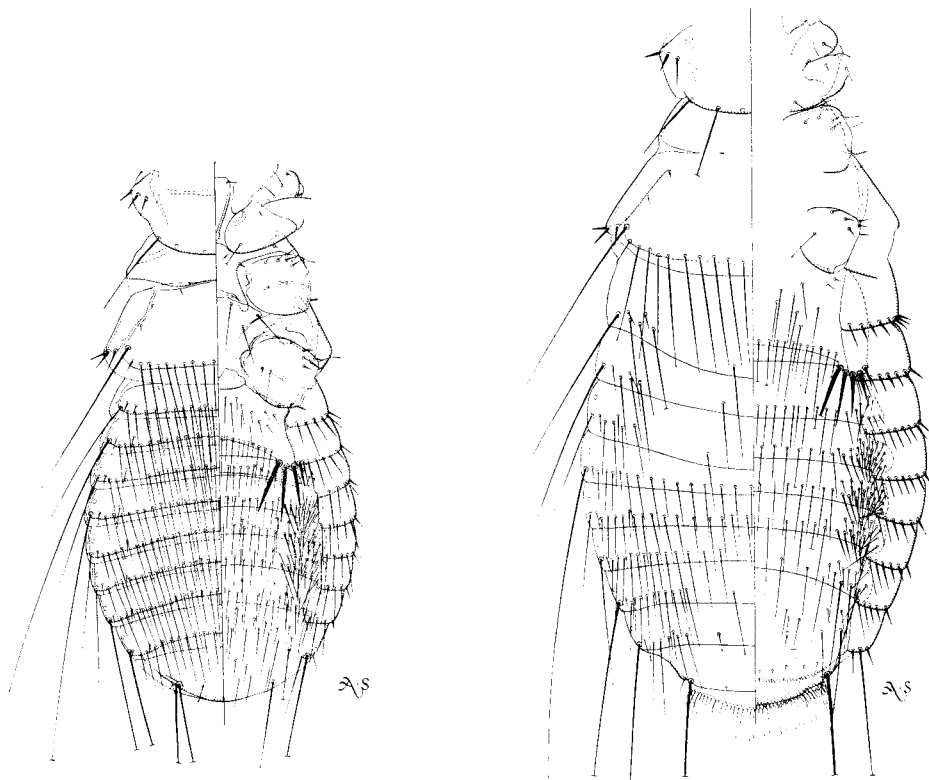


FIG. 19. *Myrsidea magnidens*. ♂.

FIG. 20. *Myrsidea magnidens*. ♀.

IV, 0 + 1; VI, 0 + 2; VII, 0 + 0; VIII, 1 + 0. Tergocentral setae: ♂ in Table II; tergites I–VIII have one or two anterior lateral setae each side in addition to the short seta near the post-spiracular seta. Sternal setae as in Text-figures 19–20; anterior median sternal setae in ♂: III, 6; IV, 7; V, 10; VI, 10; VII, 11. Inner pleural seta of VIII in ♀ slightly longer than outer; in ♂, inner considerably longer than outer.

Material examined. Holotype ♂ and allotype ♀. VENEZUELA: La Calimana, 12.ii.1938 from *Pitangus sulfuratus rufipennis*.

Myrsidea mirabilis (Carriker, 1903)

(Pl. 4, fig. 2. Text-figs. 8, 21–22)

Type host: *Psarocolius wagleri ridgwayi* (van Rossem).

Colpocephalum mirabile Carriker, 1903: 175, pl. 6, fig. 5. Host: *Zarhynchus wagleri* = *Psarocolius wagleri*.

Myrsidea gymnostinops Eichler, 1951: 51, fig. 6. Host: *Gymnostinops montezuma* = *Psarocolius bifasciatus* Bonaparte, **syn. nov.**

The males of this and the three following species *tropicalis*, *downsi* and *laciniata*, resemble each other in the form of the genital sclerite and the presence, on sternite III at least, of anterior median setae. Characters found throughout this group will be given under *mirabilis* only and the differences between this species and the following three will be given under the individual species. *Myrsidea luroris* (Carriker) recorded from the type host of *mirabilis* is discussed below, p. 233.

♀ and ♂. Hypopharynx fully developed. Peg-like seta of maxillary palp as in *diffusa*, Head seta 10 short compared with 11: 28–42 μ . Subocular setae 8–9; gular setae 4–5 each side. Central setae of metanotum: 2 + 2; metasternal setae 4–5 each side; metapleural setae 3–4 each side. Setae of femoral brush: ♀, 15–18, \bar{X} (6) 16.3; ♂, 12–14, \bar{X} (7) 12.1. ♀ metanotum enlarged; ♀ sterna IV–VI narrow and arched (Pl. 4, fig. 2); sternal ratio II–VI, 100 : 53 : 29 : 29 : 29. ♂ genital sclerite Text-fig. 22.

Abdominal Chaetotaxy (Text-figs. 8, 21, Tables I–VI). Post-spiracular setae III, V and VI of ♀ markedly shorter than the rest, somewhat longer in ♂; VII somewhat shorter and finer than VIII in both sexes. ♀ terga I–III with lateral anterior setae (included in count of tergo-centrals). ♂ tergo-central setae of II–VIII with central gap, the seta each side of gap being longer than the remainder. ♀ sternite III with anterior median setae as follows: one specimen with 3, 7 with 1 and 3 with none; ♀ sterna III–VI with 4–5 rather widely spaced central marginal setae. Lengths of post-spiracular seta VI and of inner posterior seta of last ♂ tergum given below under *tropicalis*.

Material examined. Paratypes of *mirabilis*, 1 ♂, 1 ♀ (headless), COSTA RICA: Juan Vinas, iii.1902 (*M. A. Carriker*); seen through the kindness of the late Mr. M. A. Carriker. HONDURAS (skin, no other data), 5 ♂, 1 ♀. PANAMA: Summit, 1 ♂, 1 ♀, 5.iv.1934 (*F. C. Bishop*). COLOMBIA: Acandi Choco (8° 32' N, 77° 20' W), 13 ♂, 9 ♀, 19.i.1949, 3.i.1950, 4.i.1950 (*M. A. Carriker*). All specimens from *Psarocolius wagleri*.

Syntypes of *gymnostinops*, 3 ♂, 3 ♀, COSTA RICA: seen through the kindness of Professor W. Eichler. COSTA RICA: Guapilies, 2 ♂, 2 ♀, 27.ii.1966 (*W. L. Brown*). MEXICO (skin, no further data), 1 ♂, 1 ♀. All from *Psarocolius bifasciatus*. These

specimens average somewhat larger than those from *P. wagleri*, as would be expected from the relative sizes of the two host species; in other characters they agree with *mirabilis* from the type host.

The following specimens from *Psarocolius wagleri* are near the *mirabilis* group but are not typical: COLOMBIA: Ventanas, Antioquia, 1 ♂, 2 ♀, 17.vi.1948 (M. A. Carriker, 13969). Further specimens from *Psarocolius wagleri* as follows: COLOMBIA: La Guayacana, Narino, 3 ♂, 8 ♀, 25.vii.1957 (M. A. Carriker, 26702) can be included in the following species, *M. tropicalis*.

***Myrsidea tropicalis* sp. n.**

(Pl. 1, fig. 4; Pl. 4, fig. 3. Text-fig. 27)

Type host: *Psarocolius angustifrons alfredi* (Des Murs).

This species resembles female *mirabilis* in the enlarged metanotum, the 2 + 2 metanotal setae and the general characters of terga III-IV. It can be distinguished

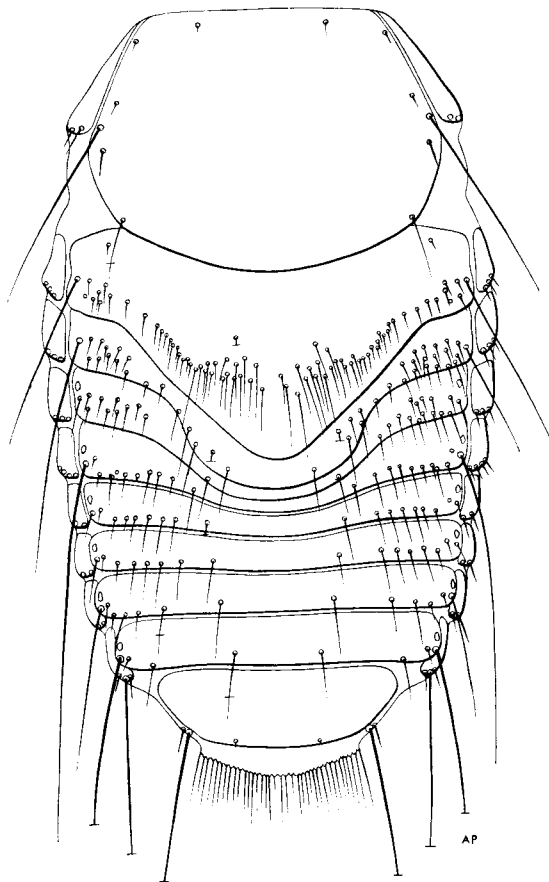
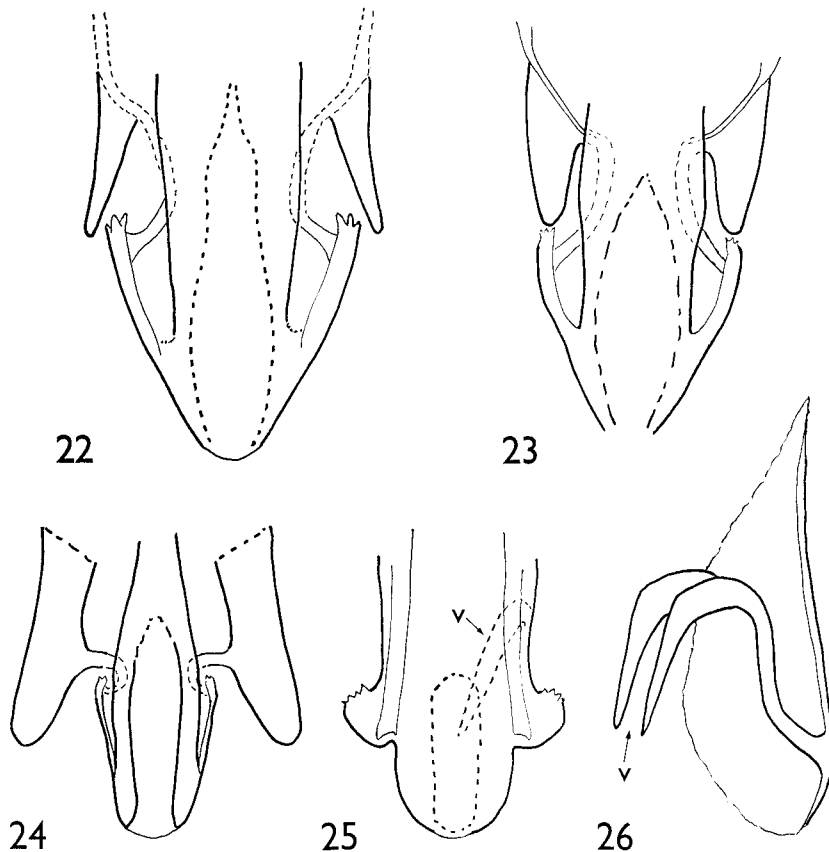


FIG. 21. *Myrsidea mirabilis*. ♀ dorsal.

by the pigmentation of sternite III; by the setae of tergum I being on the average fewer in number, shorter and spine-like, with only two long central setae; setae of tergum II between the lateral cluster and the two long central setae are shorter; sternite II has more setae which more often extend down the lateral edges each side. Post-spiracular seta VII in both sexes approximately the same as VIII, not shorter and finer as in *mirabilis*. In the male, sternites II, IV, V, VI average a greater number of anterior setae, post-spiracular seta VI is usually longer but there is some variation and the inner posterior setae of the last tergum average shorter. It is probable therefore that some of the males of this species will not be separable from those of *mirabilis*.

♀ and ♂. Gular setae: range 5-6 each side; \bar{X} of total, ♀ (11) 10.5; ♂ (9) 10.3. Metapleural setae of ♀ average more than in *mirabilis*, range 4-6 each side, \bar{X} of 20 sides 4.7. Setae of femoral brush: ♀, range 17-19, \bar{X} (12) 18.3; ♂, range 13-16, \bar{X} (8) 14.1. ♀ sterna IV-VI narrowed and arched as in *mirabilis*; pigmented part of sternite III appears as a narrow posterior strip medianly in ♀, (Pl. 4, fig. 3), in ♂ pigmented part of sternite III also indented centrally



FIGS. 22-26. ♂ genital sclerite. 22, *Myrsidea mirabilis*. 23, *M. downsi*. 24, *M. fuscomarginata* (from *Agelaius phoeniceus*). 25-26, *M. psittaci* (from *Scaphidura oryzivora*). 25, Dorsal view. 26, Lateral view. v, ventral arms. Magnification as in figs. 13-16.

but to a lesser extent and is not always different from the condition in the male of *mirabilis*. ♂ genital sclerite as in *mirabilis*.

Abdominal Chaetotaxy (Text-fig. 27 and Tables I-VI). Post-spiracular setae similar to those of *mirabilis*, but VI averages longer: ♂ *mirabilis*, 0.092-0.150, \bar{X} (13) 0.113 mm; *tropicalis*, 0.104-0.162, \bar{X} (11) 0.135 mm. Inner posterior setae of last tergum in ♂: *mirabilis*, 19-28 μ , \bar{X} (14) 23.3 μ ; *tropicalis*, 10-18 μ , \bar{X} (12) 13.8 μ . Central marginal sternal setae of ♀ III-VI tend to be rather more numerous than in *mirabilis* and less widely spaced.

Material examined. From *Psarocolius angustifrons alfredi* (Des Murs), PERU: Tamborapa, 5 ♂, 10 ♀, 12.vii.1933; BOLIVIA: Rio Beni, 1 ♂, 2 ♀, 31.viii.1934. From *P. angustifrons sincipitalis* (Cabanis), COLOMBIA: Huila, 2 ♂, 2 ♀, 8.v.1952. From *P. a. angustifrons* (Spix), COLOMBIA: Caqueta, 1 ♂, 4 ♀, 6.vi.1952. From *P. a. salmoni* (Sclater), COLOMBIA: Rio Samana, 3 ♂, 1 ♀, 13 and 15.v.1951. All specimens collected by M. A. Carriker.

3 ♂, 8 ♀ from *Psarocolius wagleri*, COLOMBIA: La Guayacana, Narino, 25.vii.1957 (M. A. Carriker) appear to belong to this species.

Holotype ♀ in U.S. National Museum, Washington, from *Psarocolius angustifrons alfredi* (6961) from PERU: Tamborapa, 12.vii.1933.

Paratypes 4 ♂, 8 ♀ from the same host individual.

Myrsidea downsi sp. n.

(Pl. 3, fig. 4. Text-figs. 23, 28)

Type host: *Psarocolius decumanus insularis* (Dalmás).

This species is distinguished in both sexes from *mirabilis*, *tropicalis* and *laciniata* by the greater number of central metanotal setae; in the female by the large size of tergum I with the posterior margin W-shaped; in the male from *laciniata* by the usually shorter inner posterior setae of the last tergum and from *mirabilis* and *tropicalis* by the fewer anterior sternal setae. The ♂ genital sclerite (Text-fig. 23) is probably always shorter than that of *mirabilis*, but comparison is difficult as the posterior margin of the dorsal plate in these species is not clearly delineated. Characters in which this species resembles *mirabilis* are not repeated here.

♀ and ♂. Gular setae 4-5 each side, 1 ♂ with 5 + 6. Central setae of metanotum: ♀, 19-23, \bar{X} (4) 20.3; ♂, 8-13, \bar{X} (9) 10.3; metasternal setae 3-5; metapleural setae: ♀, 4-5 each side, ♂, 3-4. Setae of femoral brush: ♀, 11-16, \bar{X} (8) 14.1; ♂, 10-14, \bar{X} (18) 12.1. ♀ subgenital plate with lateral indentation marking the end of sternite VII deeper than in the previous two species and resembles that of *laciniata* (Pl. 4, fig. 4. s.).

Abdominal Chaetotaxy (Text-fig. 28 and Tables I-VI). Post-spiracular setae VII somewhat shorter and finer than VIII but not so marked as in *mirabilis*. In both sexes sternite III has few anterior lateral setae: ♀, 0-1 and ♂, 1-2 each side; in table VI the median anterior setae are included with the laterals but sterna IV-VI have few median setae: 0-3. Lengths of setae of pleurite VIII as in *mirabilis*; inner posterior setae of last ♂ tergum: 20-34 μ , \bar{X} (10) 25.7 μ .

Material examined. TRINIDAD: Sangre Grande, 7 ♂, 4 ♀, 10.i.1961 (T. Clay, 6, 12). SURINAME: Paramaribo, 2 ♂, 1 ♀, 6.xii.1953 (F. Haverschmidt). BRAZIL: skin, no further data, 2 ♂, 2 ♀. COLOMBIA: Plato, 2 ♂, 24.i.1947 (M. A. Carriker,

9549); El Real, Antioquia, 1 ♂, 2 ♀, 5.iii.1948 (*M. A. Carriker*, 12703). PERU: Puerto Gessup, 1 ♂, 2.ii.1930 (*M. A. Carriker*, 990). All specimens from *Psarocolius decumanus*. The description is based on the Trinidad and Suriname specimens.

Holotype ♀ (slide No. 701) in British Museum (Natural History) from *Psarocolius decumanus insularis*, TRINIDAD: 10.i.1961 (*T. Clay*, No. 12).

Paratypes 7 ♂, 3 ♀ from the same host species, TRINIDAD (*T. Clay*, Nos. 6, 12).

The following specimens in poor condition from the same host species probably also belong to this species: TRINIDAD: Sta. Emilia, 5 ♂, 5 ♀, 4.viii.1910 (*M. A.*

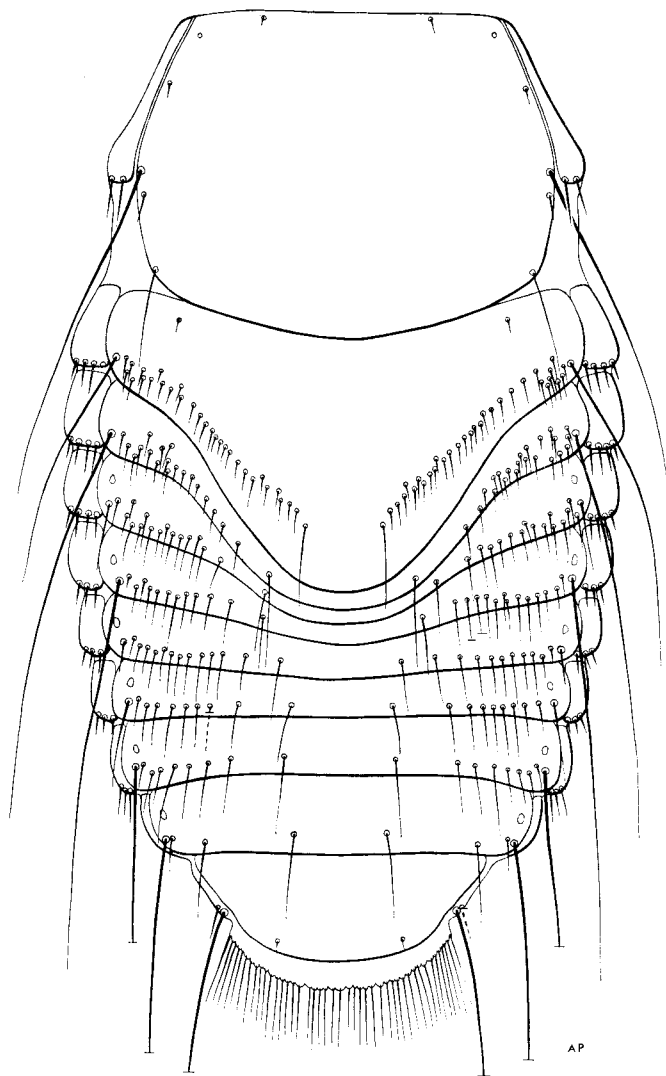


FIG. 27. *Myrsidea tropicalis*. ♀ dorsal.

Carriker). BOLIVIA: Chatatona, 3 ♂, 2 ♀, 28.ix.1934 (*M. A. Carriker*, 10260 ; Sta. Ana, 1 ♀ (*M. A. Carriker*, 9225).

This species is named in honour of Dr. Wilbur D. Downs, former Director of the Trinidad Regional Virus Laboratory.

***Myrsidea laciniata* sp. n.**

(Pl. 4, fig. 4. Text-fig. 29)

Type host: *Cacicus u. uropygialis* (Lafresnaye).

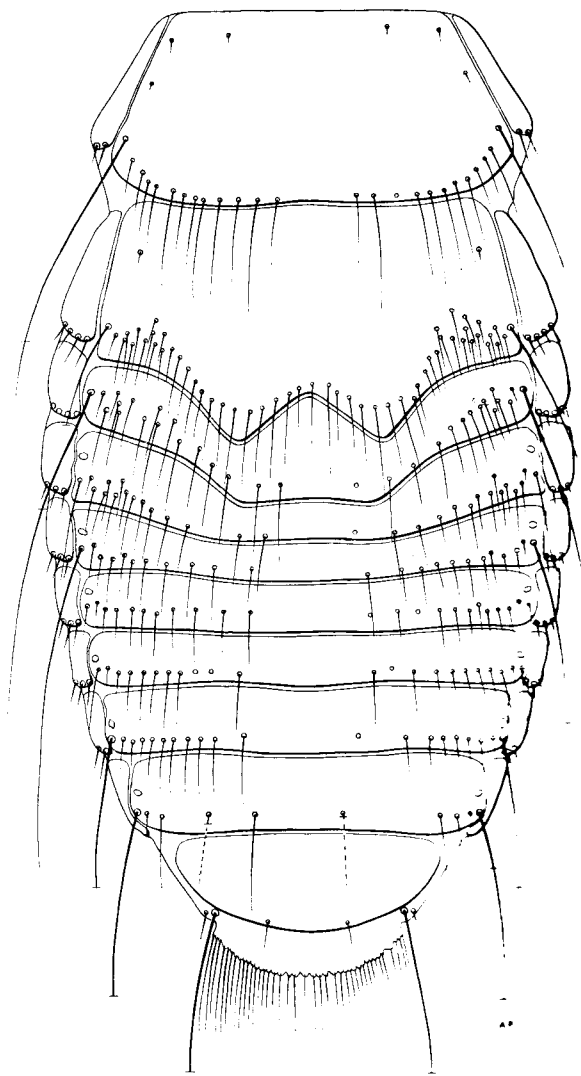


FIG. 28. *Myrsidea downsi*. ♀ dorsal.

This species is distinguished in the female from all others parasitic on the Icteridae by the partial fusion of terga II-VI. In the male it can be separated from the previous three species by the greater length of the inner posterior setae of the last tergum and from *mirabilis* and *tropicalis* by the fewer anterior sternal setae. The characters similar to those of *mirabilis* are given under that species.

♀ and ♂. Central setae of metanotum: ♀, 14-15, \bar{X} (6) 14.5; ♂, 4-6; metasternal setae: 3 + 3; metapleural setae: ♀, 4-5 each side, ♂, 3 + 3. Setae of femoral brush: ♀, 11-17, \bar{X} (13) 14; ♂, 11-16, \bar{X} (5) 13.6. ♀ anterior terga with unpigmented areas and II-VI showing partial fusion (Text-fig. 29). ♀ subgenital plate as in *downsi*. (Pl. 4, fig. 4).

Abdominal Chaetotaxy (Text-fig. 29). Tergocentral setae: ♂, I, 13; II, 16; III, 12; IV, 15; V, 12; VI, 14; VII, 9; VIII, 6. Marginal setae of sternites: ♀ (5), II, 18-24, \bar{X} 19.8; III, 18-26, \bar{X} 20; IV, 17-20, \bar{X} 17.4; V, 18-20, \bar{X} 18.6; VI, 14-19, \bar{X} 15.8; VII, 12-14, \bar{X} 13.6; VIII-IX, 14-20, \bar{X} 17.2; vulval, 12-15, \bar{X} 13.2; the marginal setae of III, IV and sometimes V and

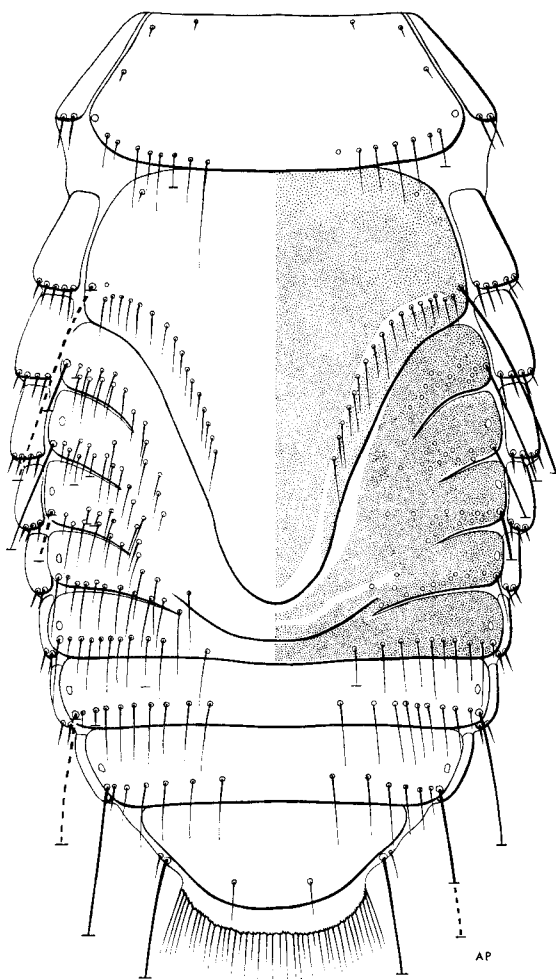


FIG. 29. *Myrsidea laciniata*. ♀ dorsal.

VI are in three well marked groups, a central one of a few setae and two lateral groups; in some specimens there may be a seta between the groups on one or both sides. ♂ (1) marginal setae of sternites: II, 14; III, 22; IV, 23; V-VI, 21; VII, 15; VIII, 6; IX, 10. Anterior setae of II: ♀ (4), 6-7, ♂ (1), 7. Lateral anterior sternal setae: ♀ (10 sides), III, 0; IV, 1-4, \bar{X} 1.67; V, 2-4, \bar{X} 2.8; VI, 1-5, \bar{X} 2.8; VII, 1-3, \bar{X} 1.7; sternum III has 1-6 anterior median setae. Lateral anterior sternal setae: ♂ (1), III, 0 + 0; IV, 2 + 2; V-VI, 4 + 4; VII, 2 + 2; VIII, 0 + 1; anterior median setae: III, 2-6; IV, 0-2; V, 0-2. Lengths of setae of pleurite VIII as in *mirabilis*; length of inner posterior setae of last ♂ tergum: 37-42 μ , \bar{X} (4) 40.7 μ .

Material examined. 3♂, 10♀ from *Cacicus u. uropygialis*, PERU: Enenas, 11.iii.1930 (*Carriker*, No. 1346); Tamborapa, 23.vii.1933 (*Carriker* No. 7121) and Chaupe, 23.vii.1933 (*Carriker* No. 7121).

Holotype ♀ in the U.S. National Museum from the type host, Enenas, Peru, 11.iii.1930.

Paratypes. 3♂, 7♀ from the same host species with data as given above.

Myrsidea balteri sp. n.

(Pl. 4, fig. 5. Text-figs. 9, 16, 30)

Type host: *Quiscalus mexicanus mexicanus* (Gmelin).

This species resembles *fuscomarginata* and *aquilonia* in having the peg-like seta of the maxillary palp and head seta 10 longer than in the preceding species and in the female by the unmodified tergum I and only sternite VI being arched and narrowed medianly. It is distinguished in the female by the modifications of terga II-IV and in the male by the proportions of the genital sclerite.

♀ and ♂. Hypopharynx fully developed. Peg-like seta of maxillary palp similar to that of *fuscomarginata*. Head seta 10 : 72-85 μ , subocular setae: ♀, 10-11; ♂, 9-11. Central setae of metanotum: 3-7 each side; total, ♀, 9-11, \bar{X} (5) 10; ♂, 10-12, \bar{X} (4) 10.8. Metapleural setae 3-4 each side. Setae of femoral brush: ♀, 13-18, \bar{X} (14) 15.6; ♂, 12-14, \bar{X} (6) 13.3. Only sternite VI arched and narrowed centrally (Pl. 4, fig. 5), sternal ratio II-VI : 100 : 83 : 61 : 52 : 23. ♂ genital sternite in Text-fig. 16.

Abdominal Chaetotaxy (Text-figs. 9, 30, Tables I-VI). Post-spiracular seta VI long and similar to VII. ♀ arrangement of sternal setae on III-VI similar to that of *diffusa*.

Material examined. From *Quiscalus mexicanus*.² U.S.A., FLORIDA: Pass-a-Grille, ("Boat-tailed Grackle"), 1♂, 1♀, 29.ii.1929 (*W. G. Fargo*), U.S.N.M. GEORGIA: Savannah ("Boat-tailed"), 3♂, 4♀, 10.viii.32 and 1934 (*I. R. Tomkins*), U.S.N.M. MISSISSIPPI: Pascagoula (*major*), 2♂, 4♀, 26.x.1941 (*G. G. Rohwer*), U.S.N.M. LOUISIANA: Chef Menteur (*major*), 3♂, 1♀, 15.x.1933, Cornell University; Phoenix ("Boat-tailed"), 1♂, 19.ii.1933 (*F. M. Carroll*), U.S.N.M. TEXAS: Galveston ("Boat-tailed"), 6♂, 3♀, 5.xi.1947 (*K. C. Emerson*), K.C.E. MEXICO: Victoria, Tamaulipas ("Great-tailed Grackle"), 3♂, 6♀, 23.iv.1931 (*R. A. Roberts*),

² As *Quiscalus major* is sometimes considered as a subspecies of *Q. mexicanus* and sometimes as a full species, it is not always clear from the labels from which host the Mallophaga came; therefore all are recorded under *mexicanus* with the subspecific or vernacular name (in brackets), taken from the slide labels.

U.S.N.M.; Tlacotalpan, (*assimilis*), 1 ♂, 2 ♀, 9.ii.1940 (*M. A. Carriker*), U.S.N.M.; no further locality (skin), (*macrurus*), 4 ♂ (*R. Meinertzhagen*), B.M. HONDURAS: Roatan Is. (skin), (*macrurus*), 1 ♂, 3 ♀, 1886 (*R. S. Balter*), B.M. COLUMBIA: Bolivar (*assimilis*), 4 ♂, 5 ♀, 8.i.1950 (*M. A. Carriker*), U.S.N.M.

Holotype ♀ in the British Museum (Natural History), slide No. 700, from *Quiscalus mexicanus* (Gmelin), HONDURAS: Roatan Is.

Paratypes: 1 ♂, 4 ♀ from type host individual and 3 ♂, 6 ♀ from MEXICO: Victoria, Tamaulipas, as above.

This species is named in honour of Mr. R. S. Balter, who collected some of the type material from a B.M. (N.H.) skin.

***Myrsidea fuscomarginata* (Osborn, 1896)**

(Pl. 1, figs. 7-8; Pl. 2, figs. 1, 5. Text-figs. 1-3, 7, 24, 31)

Type host: *Turdus minor*. Error.

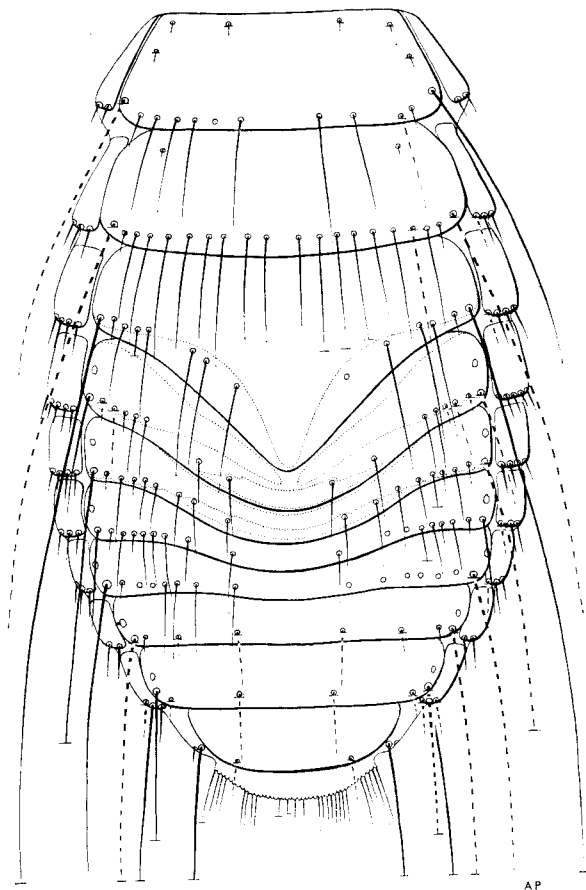


FIG. 30. *Myrsidea balteri*. ♀ dorsal.

Menopon fuscomarginatum Osborn, 1896 : 245. Host: *Turdus minor*.

Through the kindness of Dr. P. J. Darlington it has been possible to examine the type series in the Museum of Comparative Zoology (Cambridge, Mass.), as listed by Emerson, 1960 : 160. The characters of the male genitalia confirm the placing by Stafford (1943 : 40) of this species with others from the Icteridae, but it is not a synonym of *diffusa* as suggested by him. There are a number of Icterid hosts parasitized by forms similar to the *fuscomarginata* types, differing slightly from these and from each other; available specimens from *Agelaius phoeniceus* (Linn.) seem to agree most closely with the original specimens and it is possible that these were stragglers from one of the subspecies of this host. Part of the following description (in square brackets) is based on specimens from *A. phoeniceus*.

This species and *M. aquilonia* resemble each other in the characters of the peg-

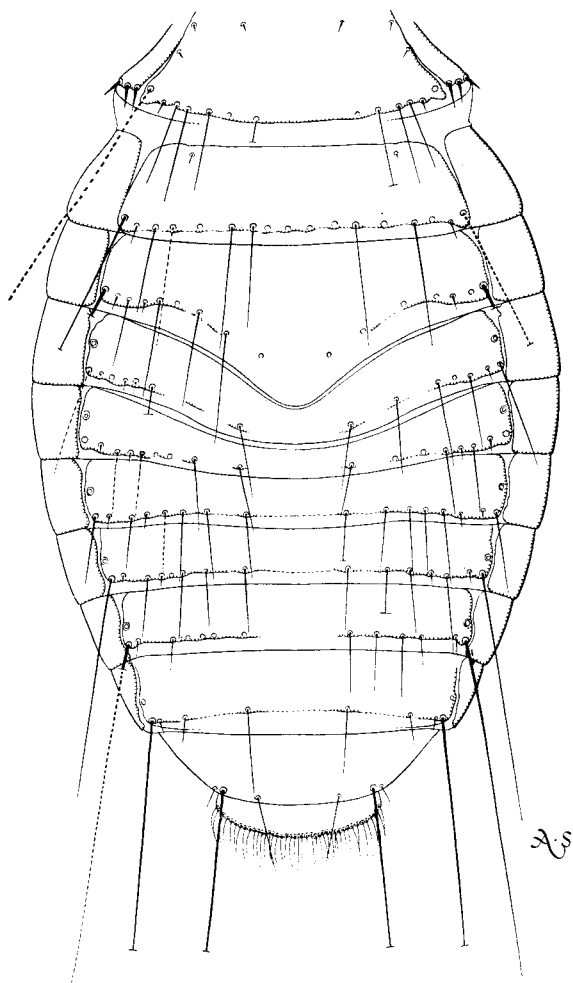


FIG. 31. *Myrsidea fuscomarginata*. ♀ dorsal.

like seta of the maxillary palp, head seta 10, ♀ sterna, the unmodified ♀ tergum I, post-spiracular seta VI and the ♂ genital sclerite. The differences between the two species are given below under *aquilonia*.

♀ and ♂. Hypopharynx fully developed. Peg-like seta of maxillary palp longer than in *diffusa* (Pl. 1, fig. 7); head seta 10 longer [70–80 μ]; subocular setae: 9–11 (\bar{X} (8), 10); gular setae 4–5. Central setae of metanotum: ♀, 6 + 5, [4–6 each side, \bar{X} of total (4) 9.7]; ♂, 5 + 5 [4–5 each side (2)]; metasternal setae [3 + 3]; metapleural setae [2–4 each side]. Setae of femoral brush ♀ [13–16, \bar{X} (10) 14.2]; ♂, [11–14, \bar{X} (10) 12.6]. ♀ sterna III–V similar and only VI narrowed medianly and arched, sternal ratio II–VI [100 : 79 : 65 : 57 : 33]. ♂ genital sclerite as in Text-fig. 24.

Abdominal Chaetotaxy (Text-figs. 7, 31 and Tables I–VI). Post-spiracular seta VI relatively longer than in previous species, but shorter than VII. The inner of the three setae of pleurite VIII is usually longer, not of approximately the same length as in previous species. ♀ sterna III–VI without marked gap between central and lateral marginal setae.

Material examined. Lectotype ♂, paratypes 2 ♂, 3 ♀ from “*Turdus minor*”. 9 ♂, 15 ♀ from *Agelaius phoeniceus* (Linn.) as follows: U.S.A.: Georgia, Prairie, 1 ♀, 15.vi.1929 (*F. Harper*), E.C.; Mississippi, Tibbee, 2 ♀, 22.ii.1936 (*T. Brackin*), E.C.; Mississippi, Handsboror, 2 ♀, 15.x.1941 (*G. G. Rohwer*), U.S.N.M.; Texas, Galveston, 5 ♂, 4 ♀, 5.xi.1947 (*K. C. Emerson*), E.C.; Louisiana, New Orleans, 4 ♂, 6 ♀, iv.1938 (*R. Meinertzhagen*, 11204), B.M.

3 ♀ from *Molothrus* (= *Tangavius*) *aeneus* (Wagler) agree with the above description except that the sitophore sclerite is somewhat reduced and post-spiracular setae III and V are longer than shown in Text-fig. 31. Data for these specimens: TEXAS: Nacogdoches, 30.xii.1952 (Paramlee), E.C.

Specimens from *Quiscalus quiscula* (Linn.) also show the reduced sitophore sclerite and the tergal setae of the males average more. Specimens examined: KANSAS: Linn. Co., 3 ♀, 9.xi.1949 (*V. I. Miles*), B.M. S. CAROLINA: Charleston, 3 ♂, 3 ♀, 5.i.1933 (*H. S. Peters*), U.S.N.M. FLORIDA: Alachua Co., 3 ♂, 1 ♀, 6, 7, iii.1954 (*F. W. Mead*), K.C.: Tarpon Springs, 1 ♀, 29.i.1929 (*W. G. Fargo*), U.S.N.M. MISSISSIPPI: Greenville, 6 ♂, 6 ♀, 28.xi.1937 (*O. Ballard*), Cornell University.

Specimens from *Holoquiscalus niger* and *H. lugubris* belong to the *fuscomarginata* group, but those from the two hosts show some differences from each other and from those parasitic on *A. phoeniceus*; the sitophore sclerite is not reduced. Data of the specimens: From *Holoquiscalus niger brachypterus* (Cassin), Porto Rico: Mayaguez, 3 ♂, 2 ♀, 9, 11.v.1936 (*H. L. Dozier*), U.S.N.M. From *H. l. lugubris* (Swainson), TRINIDAD: Port-of-Spain, 2 ♀, 1.ii.1956 (*W. G. Downs*, TRVL. 97), U.S.N.M.

It is apparent that until the full distribution and variation within the *fuscomarginata* groups of populations are known, little is gained by separating taxonomically the specimens showing slight differences.

Myrsidea aquilonia sp. n.

(Pl. 1, fig. 3; Pl. 2, figs. 2, 4. Text-fig. 32)

Type host: *Euphagus carolinus* (P.L.S. Muller).

This species is similar to *fuscomarginata*, from which it can be distinguished in

the female by the characters of the anterior terga; the males may not be distinguishable, although in the available material post-spiracular seta VI appears to be longer than that of *fuscmarginata*. The reduction of the sitophore sclerite of the hypopharynx is also found in some of the populations discussed under *fuscmarginata*.

♀ and ♂. Sitophore sclerite reduced (Pl. 2, fig. 2). Head seta 10 : 72-97 μ . Metapleural setae: 3-4, \bar{X} (20) 3.1. ♀ sterna similar to those of *fuscmarginata*, with only VI narrow and arched; sternal ratio II-VI, 100 : 67 : 67 : 62 : 47. Measurements and number of abdominal setae fall within the range of those of *fuscmarginata*.

Material examined. 4 ♂, 9 ♀ from *Euphagus carolinus* (P. L. S. Muller) as follows: U.S.A.: State College, Mississippi, 4 ♂, 7 ♀, 22.i.1939 (E. W. Stafford), E.C.; Cornell University, 2 ♀ (E.W.S.), no other data.

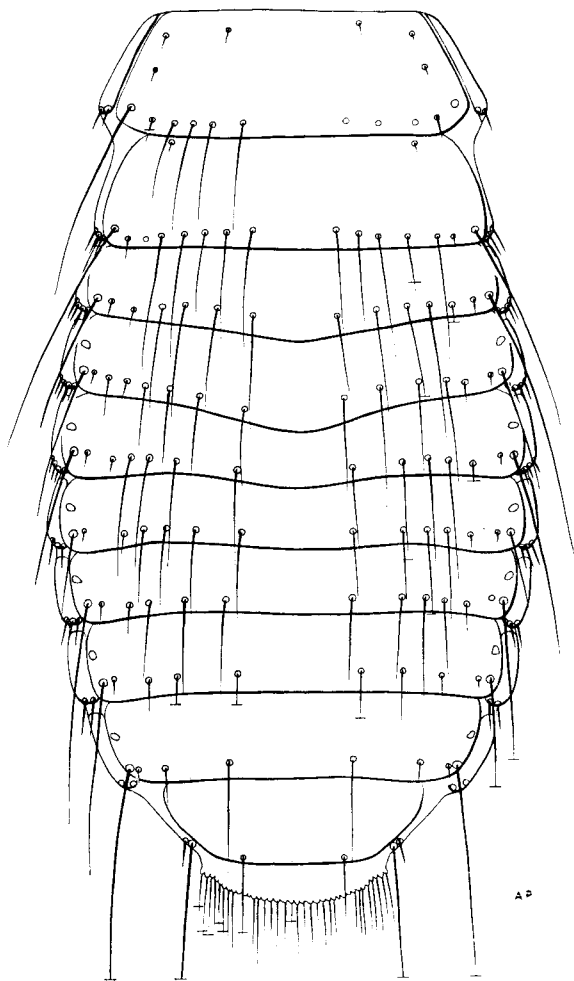


FIG. 32. *Myrsidea aquilonia*. ♂ dorsal.

Holotype ♀ in Emerson Collection from *Euphagus carolinus*, State College, Mississippi as above.

Paratypes. 4 ♂, 8 ♀ with data as given above.

***Myrsidea psittaci* Carriker, 1955**

(Pl. 2, figs. 3, 6; Pl. 4, fig. 6. Text-figs. 10, 25-26, 33)

Type host: *Amazona o. ochrocephala*. Error. Possibly *Scaphidura oryzivora* (Gmelin).

Myrsidea psittaci Carriker, 1955 : 38, figs. 3, 4. Host: *Amazona o. ochrocephala*.

This species was based on 1 ♂, 1 ♀ of the 5 ♂, 8 ♀ recorded by Stafford (1943 : 40) as *Myrsidea diffusa* (Kellogg) from *Amazona ochrocephala* in Venezuela. Through the kindness of Dr. K. C. Emerson it has been possible to examine 3 ♂, 6 ♀ from the Stafford series, and although tergite III of the females is not quite as figured by Carriker (1955, fig. 3) there seems little doubt that these specimens are topotypes of *psittaci*. Carriker considered that the parrot recorded by Stafford was the true host, but the specimens have the bursa and ♂ genital sclerite typical of the Icterid-

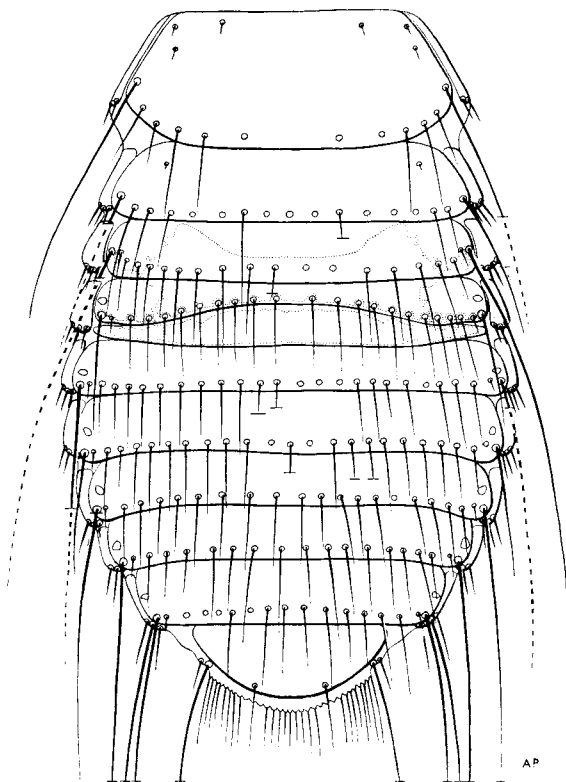


FIG. 33. *Myrsidea psittaci*. ♀ dorsal.

infesting species. Further, there appears to be no significant differences between the Stafford specimens and those from *Scaphidura* (= *Psomocolax*) *oryzivora*, an Icterid also found in Venezuela; it seems possible therefore that the original specimens had straggled from this host.

This species resembles *M. comosa* n. sp. and differs from other known species from the Icteridae by the greatly reduced sitophore sclerite of the hypopharynx, the presence of one or more anterior seta on at least one pleurite and the basal apodeme of the ♂ genitalia. It differs from *comosa* in the ♀ by the form of the metanotum and anterior terga; in the ♂ by the characters of the genital sclerite and in both sexes by the smaller number of anterior pleural setae.

♀ and ♂. Sitophore sclerite of hypopharynx absent in its usual form (Pl. 2, fig. 3); epipharyngeal crest greatly reduced. Peg-like seta of maxillary palp similar in length to that of *fuscmarginata*. Head seta 10, medium (56–64 μ); subocular setae: ♀, 10; ♂, 9–10; gular setae 4–5 each side. Central setae of metanotum see below; metasternal setae 4–5 each side; metapleural setae 3–4 each side. Setae of femoral brush see below. ♀ sterna III–VI similar and not greatly arched or narrowed medianly (Pl. 4, fig. 6). Posterior arm of basal apodeme of ♂ genitalia as Pl. 2, fig. 6; genital sclerite in Text-figs. 25–26.

Abdominal Chaetotaxy (Text-figs. 10, 33 and Tables I–VI). Post-spiracular seta VI long and stout. The sternites in both sexes do not have a definite row of anterior median setae but may, especially in the males, have one or two setae somewhat removed centrally from the lateral brushes. Marginal sternal setae of ♀ III–VI not divided into definite central and lateral groups. Pleurite IV has from 0–1 anterior seta; V–VII, 1–2 (0–2 in ♂) and VIII, 0–1.

Material examined. 3 ♂, 6 ♀ topotypes of *M. psittaci* from *Amazona ochrocephala*, VENEZUELA: Oramas, 25.iii.1938. E.C. From *Scaphidura oryzivora*, COLOMBIA: Regeneracion, Bol., 14 ♀, 20.ii.1948 (*M. A. Carriker*, 12633), U.S.N.M.; Casarcara, Magdalena, 1 ♂, 2 ♀, 18.v.1942 (*M. A. Carriker*, 2754), U.S.N.M.; Chirua, 2 ♂, 2 ♀, 10.iii.1914 (*M. A. Carriker*, 14310), U.S.N.M.; Nuqui, Choco, 1 ♀, 17.ii.1951 (*M. A. Carriker*, 19635), U.S.N.M.; BOLIVIA: Chatarona, 3 ♂, 7 ♀, 21.ix.1934 (*M. A. Carriker*, 10136), U.S.N.M.

Specimens from *Agelaius icterocephalus* are smaller, head seta 10 is shorter (40–48 μ), some of the setal counts are less, see below for those of the central setae of the metanotum and third femur; the number of tergocentral and lateral anterior sternal setae average less, but the range falls near or within that of the *psittaci* topotypes and the specimens from *Scaphidura*. The range and mean of the total number of anterior pleural setae of the abdomen in the ♀ typotypes: 7–12, \bar{X} (5) 9.8; in specimens from *Scaphidura*, 6–12, \bar{X} (6) 9.5; those from *A. icterocephalus*, 1–6, \bar{X} (6) 3.8 and for the males: 9(1); 7–11, \bar{X} (3) 9; 1–7, \bar{X} (13) 3.4. It is possible that other populations belonging to the *psittaci* group will be found, perhaps with intermediate measurements and counts, and as there is overlap even in the small amount of material examined it seems more satisfactory to retain the *Agelaius*-infesting population as *psittaci* sens. lat.

Material examined from *Agelaius icterocephalus* (Linn.), TRINIDAD: San Juan, 1 ♀, 19.x.1959 (*T. H. G. Aitken*, TRVL 3313), Biche, 9 ♂, 13 ♀, 17.vi.1966 (*Aitken*, TRVL 4530); La Paille, 3 ♂, 3 ♀, 9.xi.1960 (*Aitken*, TRVL 5091); N. Trinidad, 4 ♂, 1 ♀, 18.i.1961 (*T. Clay*, No. 55).

	♀				♂			
	Metanotal Setae		Femoral Brush		Metanotal Setae		Femoral Brush	
	Range	Mean	Range	Mean	Range	Mean	Range	Mean
A.	10-13	11.2 (5)	16-17	16.8 (8)	10-11	10.7 (3)	12-16	14.2 (4)
B.	10-14	12 (5)	15-21	16.9 (14)	10-12	11 (2)	14-16	14.7 (4)
C.	5-10	7.3 (11)	12-14	12.8 (10)	7-9	8.3 (13)	10-13	11.1 (10)

A. Stafford's specimens of *psittaci*; B. From *Scaphidura oryzivora*;

C. From *Agelaius icterocephalus*.

Myrsidea comosa sp. n.

(Pl. 2, fig. 7; Pl. 3, figs. 5-6. Text-figs. 4, 6, 34, 35, 37)

Type host: *Macroagelaius subalaris subalaris* (Boissoneau).

This species is at once distinguished from any other known species parasitic on the Icteridae by the many anterior setae on pleurites II-VIII in both sexes and in the male by the anterior median and lateral setae on tergites II-VIII and the genital sclerite. Of the known species, it resembles most nearly *psittaci*, as shown above under that species.

♀ and ♂. Hypopharynx fully reduced as in *psittaci*; peg-like seta of maxillary palp as in *psittaci*. Head seta 10 short (44-54 μ); subocular setae 9-10; gular setae: 5-6 each side, total 10-12, \bar{X} (6) : 10.8. There is an additional short seta present on both the lateral margins of the prothorax on two of the males and one of the females and on one side of one female. The outer long seta of the metanotum usually has a short or sometimes spine-like seta on its inner side, both being some way anterior to the rest of the marginal setae, this shorter seta is included in the counts of the central setae to conform with the other species. Central setae of metanotum: ♀, 6-8 each side, total 13-15, \bar{X} (4) 14; ♂, 5-7 each side, total 12; metapleural setae 3-4; metasternal setae: ♀, 5 + 5, ♂ (2), 4 + 4, 5 + 4. Setae of femoral brush: ♀, 15-19, \bar{X} (7) 17.1; ♂, 15-18, \bar{X} (4) 16.7. None of the ♀ sternites greatly narrowed or arched (Pl. 3, fig. 6), sternal ratio II-VI, 100 : 88 : 83 : 83 : 88. Microtrichia of genital chamber longer than in other species and not arranged in combs (cf. Clay, 1966, fig. 24 and Text-fig. 6). It has been possible to see the bursa copulatrix in only one specimen; it is inconspicuous, thin-walled and distorted, but appears to be of the same general type as that of the previous species. The male genitalia resemble those of *psittaci* in having the inwardly projecting posterior arm of the basal apodeme angulated (Pl. 2, fig. 7 a.), the thorn-like projection at the tip of the paramere is larger than in *psittaci* and the parameres are longer. The genital sclerite differs from all other known species in being larger and having long narrow posterior arms; what may be the ventral arms, are narrow, seem to be flattened and to lie on the ventral surface of the plate (Text-fig. 35).

Abdominal Chaetotaxy. (Pl. 3, fig. 5; Text-figs. 34, 37 and Tables I-VI). Post-spiracular seta VI long, shorter than VII but similar in thickness. Anterior lateral setae of ♀ tergites (excluding post-spiracular setae and the short spine-like seta associated with it): I (4), 0; II, 1-3 each side; III, 3-6; IV, 5-8; V, 4-6; VI, 2-7; VII, 2-5; VIII, 0-1. Anterior lateral and median setae of ♂ tergites (excluding setae as in ♀): I (2), 0; II, 9-10 (total anterior setae for segment); III, 26-28; IV, 30-35; V, 31-34; VI, 33-35; VII, 35-37; VIII, 25-26. Sternal setae: in both sexes sternites III-VIII with anterior median setae, in the tables these are included with the lateral brushes as they cannot always be separated; in ♀, marginal setae are continuous with those of the lateral brushes. Anterior setae of pleurites: ♀ see Text-fig. 37; on one side of 1 ♂: II, 8; III-IV, 20; V, 21; VI, 19; VII, 20; VIII, 11. In most specimens either the inner or outer marginal setae of pleurite VIII is missing, where they are both present, the inner is the longer one.

Material examined. From *Macroagelaius s. subalaris* (Boissonneau), COLOMBIA: Fusagasuga, 1 ♂, 3 ♀, v. 1890 (skin, T. Clay), B.M.; Las Vegas, Santander, 1 ♂, 1 ♀, 29.viii.1949 (M. A. Carriker), U.S.N.M. From *Macroagelaius subalaris im-thurni* (Sclater), BRITISH GUIANA, Roraima, 2 ♂, x. 1883 (skin, T. Clay), B.M.

Holotype ♀ in British Museum (Natural History), slide No. 702, from *Macroagelaius s. subalaris*, COLOMBIA: Fusagasuga (as above).

Paratypes: 2 ♂, 3 ♀ from *M. s. subalaris*, COLOMBIA with above data.

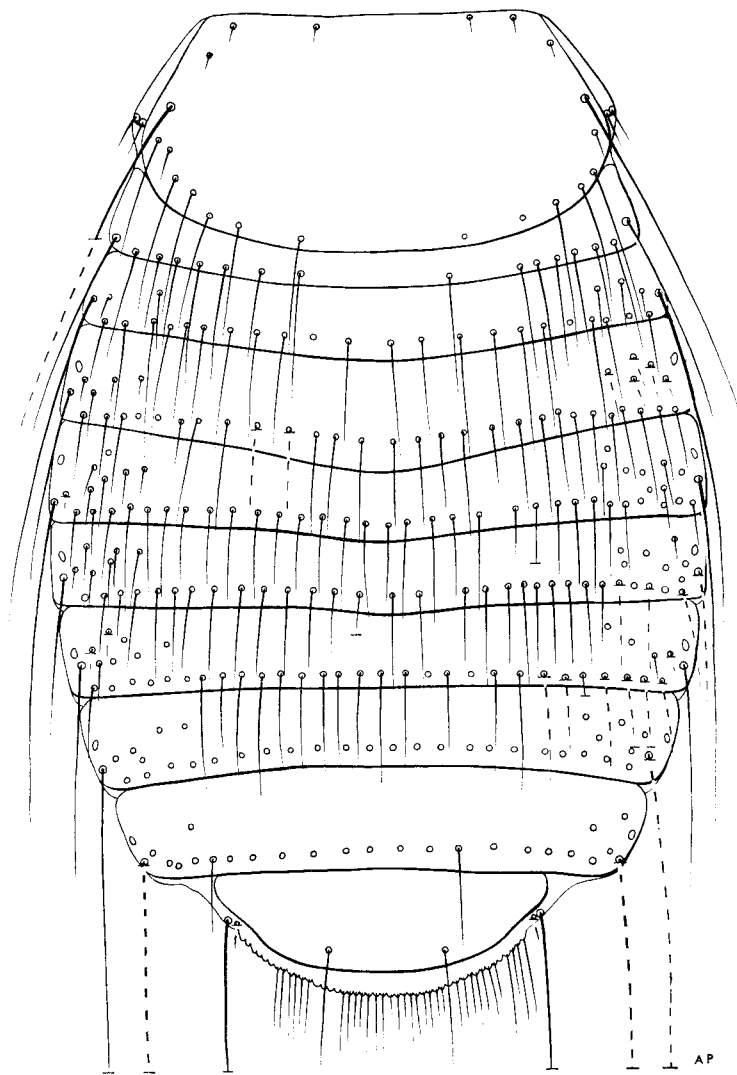
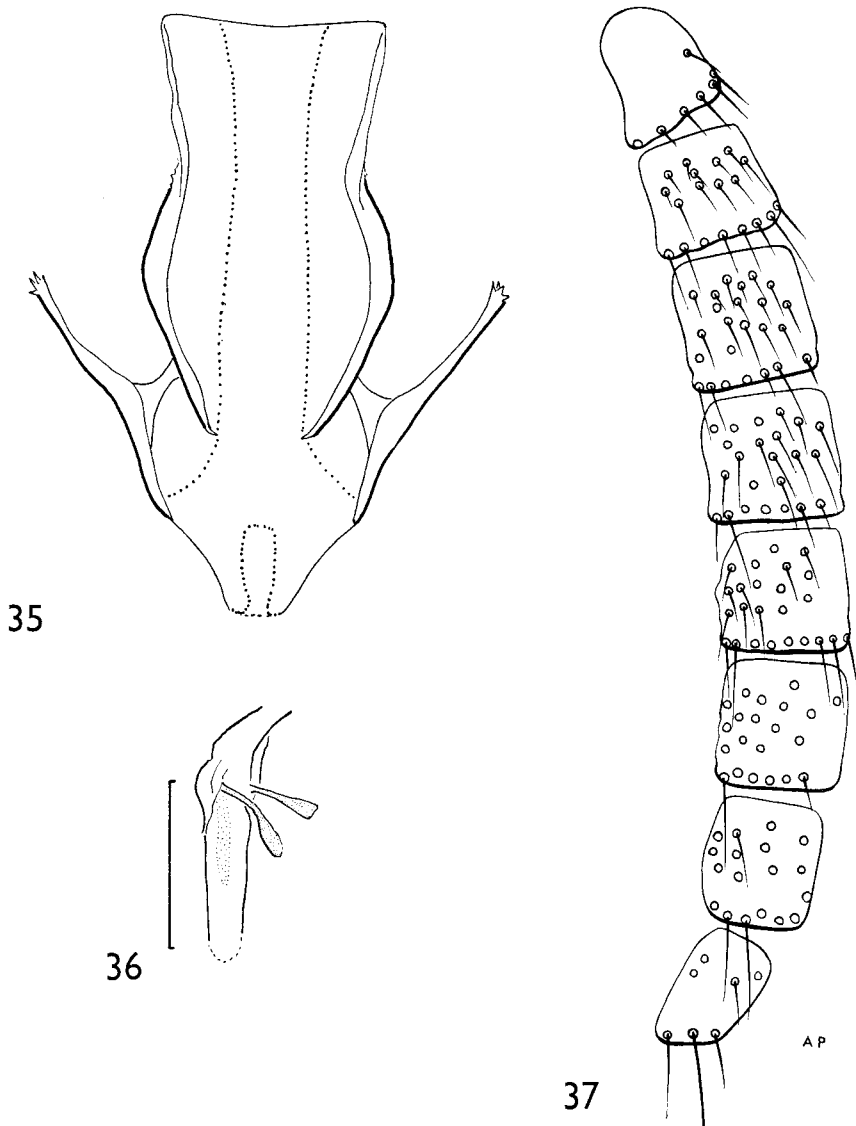


FIG. 34. *Myrsidea comosa*. ♀ dorsal.

KEY TO THE SPECIES OF *Myrsidea* PARASITIC ON THE ICTERIDAE

- | | | |
|---|---|---|
| 1 | Sitophore sclerite of hypopharynx undeveloped (Pl. 2, fig. 3); inwardly projecting posterior arm of ♂ basal plate angulated (Pl. 2, fig. 6) [P. sp. seta VI long and stout] | 2 |
| - | Sitophore sclerite of hypopharynx developed (Pl. 2, figs. 1-2); inwardly projecting posterior arm of ♂ basal plate rounded (Pl. 2, fig. 5) | 3 |



FIGS. 35-37. 35-36, ♂ genital sclerites. 35, *Myrsidea comosa* (length: 0.14 mm); posterior outline doubtful. 36, *M. bonariensis*. Reconstruction of distal end from distorted specimen, outline of posterior margin doubtful, line = 3 μ . 37, *M. comosa*. ♀ pleurites.

2	(1)	Some tergites with over 6 anterior setae; pleurite IV with over 10 anterior setae; ♂ genital sclerite characteristic (Text-fig. 35)	<i>comosa</i>
—		Tergites without anterior setae; pleurite IV with less than 5 anterior setae; ♂ genital sclerite not as above (Text-fig. 25)	<i>psittaci</i>
3	(1)	Tibia I with over 8 outer dorso-lateral setae. [Metanotum with continuous row of over 16 marginal setae and tergite VIII with over 10 tergocentral setae]	<i>magnidens</i>
—		Tibia I with under 6 outer dorso-lateral setae	4
4	(3)	Females	5
—		Males	13
5	(4)	Tergum I normal, with straight posterior margin; only sternite VI significantly narrowed and arched medianly (Pl. 4, fig. 5)	6
—		Tergum I modified without straight posterior margin; more than one sternite narrowed and arched medianly	8
6	(5)	Tergum V narrowed medianly and with strongly convex posterior margin (Text-fig. 30)	<i>balteri</i>
—		Tergum V not narrowed medianly and without convex posterior margin	7
7	(6)	Tergum II longer than I; tergum III narrowed medianly (Text-fig. 31)	<i>fuscmarginata</i>
—		Tergum II shorter than I; tergum III not narrowed medianly (Text-fig. 32)	<i>aquilonia</i>
8	(5)	Tergum I not greatly enlarged, with gently rounded posterior margin; tergum II broadened medianly (Text-fig. 11)	<i>diffusa</i>
—		Tergum I greatly enlarged and medianly prolonged posteriorly; tergum II not as in <i>diffusa</i>	9
9	(8)	Terga II-IV fused together medianly (Text-fig. 29)	<i>laciniata</i>
—		Terga II-IV not fused together medianly	10
10	(9)	Tergum I with posterior margin flattened or slightly concave without continuous row of submarginal setae (Text-fig. 17)	<i>picta</i>
—		Tergum I otherwise	11
11	(10)	Posterior margin of tergum I W-shaped and of II, flattened centrally (Text-fig. 28)	<i>downsi</i>
—		Posterior margin of tergum I and II rounded	12
12	(11)	Submarginal setae of tergum I mostly short, with 1 central pair of longer setae (Text-fig. 27)	<i>tropicalis</i>
—		Submarginal setae of tergum I more numerous and longer (Text-fig. 21)	<i>mirabilis</i>
13	(4)	At least one sternite of III-VI, with anterior median setae; genital sclerite characteristic (Text-figs. 22-23)	14
—		Sternites III-VI without median anterior setae; genital sclerite not as above	16
14	(13)	Central setae of metanotum less than 7 (4-6)	15
—		Central setae of metanotum over 7 (\bar{X} , 10.3)	<i>downsi</i>
15	(14)	Inner dorsal setae of last tergum over 35 μ	<i>laciniata</i>
—		Inner dorsal setae of last tergum under 30 μ	<i>mirabilis & tropicalis</i>
16	(13)	Tergal setae numerous, minimum total on tergites I-VIII : 145; VII : 17-20; VIII : 12-17 (6 ♂)	<i>picta</i>
—		Tergal setae less numerous, maximum total on tergites I-VIII : 97-108; VII : 8-10; VIII : 4-6	17
17	(16)	Head seta 10 under 50 μ ; post-spiracular seta VI short, approximately = III; genital sclerite Text-fig. 13	<i>diffusa</i>
—		Head seta 10 over 70 μ ; post-spiracular seta VI long, at least twice III; genital sclerite (Text-figs. 16, 24)	18
18	(17)	Genital sclerite as in Text-fig. 16	<i>balteri</i>
—		Genital sclerite as in Text-fig. 24	<i>fuscmarginata & aquilonia</i>

HOST—PARASITE LIST

*Type host

Host	Myrsidea Species	Page No.
<i>Psarocolius</i>		
* <i>P. decumanus</i>	<i>M. downsi</i> sp. n.	218
* <i>P. angustifrons</i>	<i>M. tropicalis</i> sp. n.	216
* <i>P. wagleri</i>	<i>M. mirabilis</i> (Carriker, 1903)	214
<i>P. bifasciatus</i>	<i>M. mirabilis</i> (Carriker, 1903)	214
<i>Cacicus</i>		
* <i>C. cela</i>	<i>M. picta</i> Carriker, 1955	211
* <i>C. uropygialis</i>	<i>M. laciniata</i> sp. n.	220
* <i>C. holosericeus</i>	<i>M. diffusa</i> (Kellogg, 1899)	209
<i>Molothrus</i>		
<i>M. aeneus</i>	<i>M. fuscomarginata</i> (Osborn, 1896), sens. lat.	223
<i>Scaphidura</i>		
<i>S. oryzivora</i>	<i>M. psittaci</i> Carriker, 1955	227
<i>Macroagelaius</i>		
* <i>M. subalaris</i>	<i>M. comosa</i> sp. n.	229
<i>Quiscalus</i>		
* <i>Q. mexicanus</i>	<i>M. balteri</i> sp. n.	222
<i>Q. major</i>	<i>M. balteri</i> sp. n.	222
<i>Q. quiscula</i>	<i>M. fuscomarginata</i> (Osborn, 1896), sens. lat.	223
<i>Q. niger</i>	<i>M. fuscomarginata</i> , sens. lat.	223
<i>Q. lugubris</i>	<i>M. fuscomarginata</i> , sens. lat.	223
<i>Euphagus</i>		
* <i>E. carolinus</i>	<i>M. aquilonia</i> sp. n.	225
<i>Agelaius</i>		
<i>A. phoeniceus</i>	<i>M. fuscomarginata</i> (Osborn, 1896)	223
<i>A. icterocephalus</i>	<i>M. psittaci</i> Carriker, 1955, sens. lat.	227
Host unknown	<i>M. magnidens</i> Stafford, 1943	212

THREE NEW WORLD SPECIES OF *Myrsidea*1. *Myrsidea luroris* (Carriker, 1903).

Colpocephalum luroris Carriker, 1903 : 174, fig. Host: *Zarhynchus wagleri*. Error.

Through the kindness of the late Mr. M. A. Carriker it has been possible to examine the single specimen on which the description of *luroris* was based. This is a female in poor condition with most of the setae missing or broken; it appears to belong to the group parasitic on the Hirundinidae, agreeing in the shape of the head, the medianly divided mesonotum and the presence of 4 marginal setae on pleurite VIII. In size and in those characters which can be compared this specimen resembles *dissimilis* (Kellogg). It is possible that the specimen came from the *Stelgidopteryx ruficollis* collected at the same place and in the same month and year, no day is given so there is a possibility that they were collected on the same day. 1 ♂, 1 ♀ specimens from this host were described as *palloris*, but this may prove to be inseparable from *dissimilis* when more material is available for study.

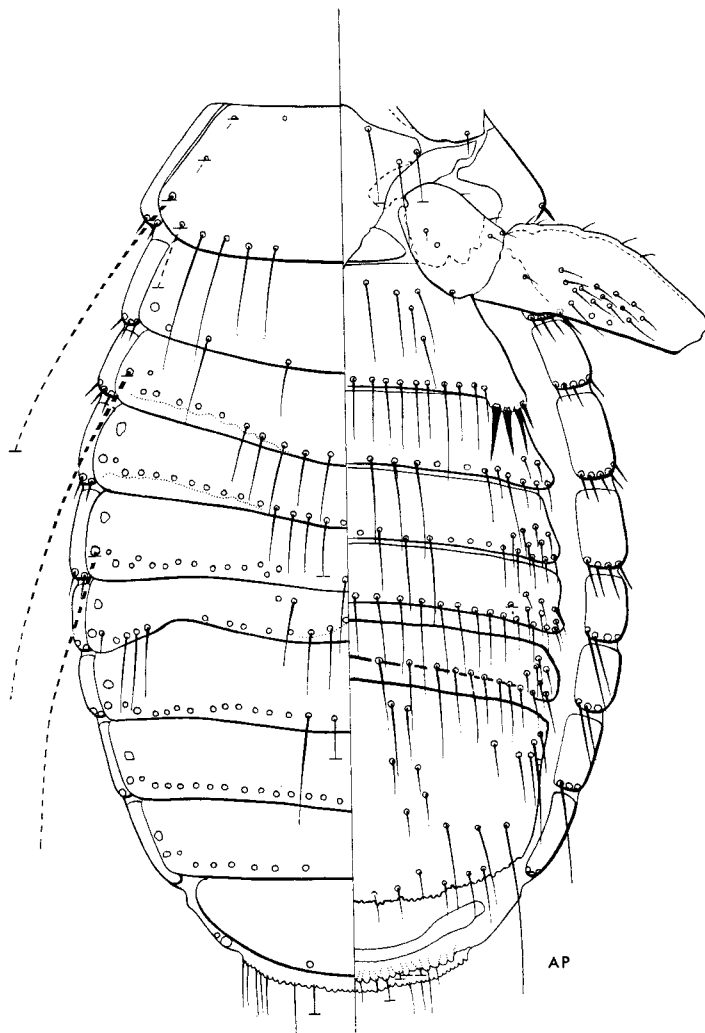
2. *Myrsidea bonariensis* Malcomson, 1929.

(Pl. 1, fig. 5; Pl. 3, fig. 2. Text-figs. 36, 38, 39)

Type host: Probably a member of the *Thraupidae*.

Myrsidea bonariensis Malcomson, 1929 : 728, fig. 1. Host: *Molothrus bonariensis* (Cabaris).
 Error.

This species was based on a male and a female taken from a skin of *Molothrus bonariensis*. Through the kindness of Dr. Lewis J. Stannard of the Illinois Natural History Survey, it has been possible to examine these types.

FIG. 38. *Myrsidea bonariensis*. ♀.

♀ and ♂. Head as in Pl. 3, fig. 2. Hypopharynx fully developed. Many of the head setae are broken or missing; seta 10 is probably markedly shorter than 11, but only 10 ($30\ \mu$) is measurable in the ♀, and only 11 ($96\ \mu$) in ♂. Setae of subocular comb row: ♀, 10 + 10, ♂, 9 + 10; gular setae: 5 + 4. Pronotum with 3 + 3 long setae on posterior margin. Central setae of metanotum: ♀, 5 + 5; ♂, 6 + 5; metasternal setae: 3 + 3; metapleural setae 3 + 3, short and spine-like. Outer dorso-lateral setae of first tibia: 4 + 4. Setae of femoral brush: ♀, 17 + 16; ♂, ? + 17. Sterna VII–IX of the female are deformed on the right side; the shape of tergum V is also probably due to deformation. Microtrichia of genital chamber as in *abidae* (Clay, 1966, fig. 23); bursa copulatrix ovate with thickened rim (Pl. 1, fig. 5). The genital sclerite in the single male is distorted and lying on its side, but is of the same type as found in the *thoracica* group (Text-fig. 36).

Abdominal Chaetotaxy. In the ♀ all the post-spiracular setae are missing except for II and IV and in the male except for I and III. Setae as shown in text-figs. 38, 39; spine-like setae of asters on sternite II: ♀, 4 + 4; ♂, 4 + 3; vulval setae 12; ♂ with 4 terminal setae and 8 internal anal setae.

Material examined. Holotype ♀, allotype ♂.

Discussion. It seems most probable that the type specimens of *bonariensis* did

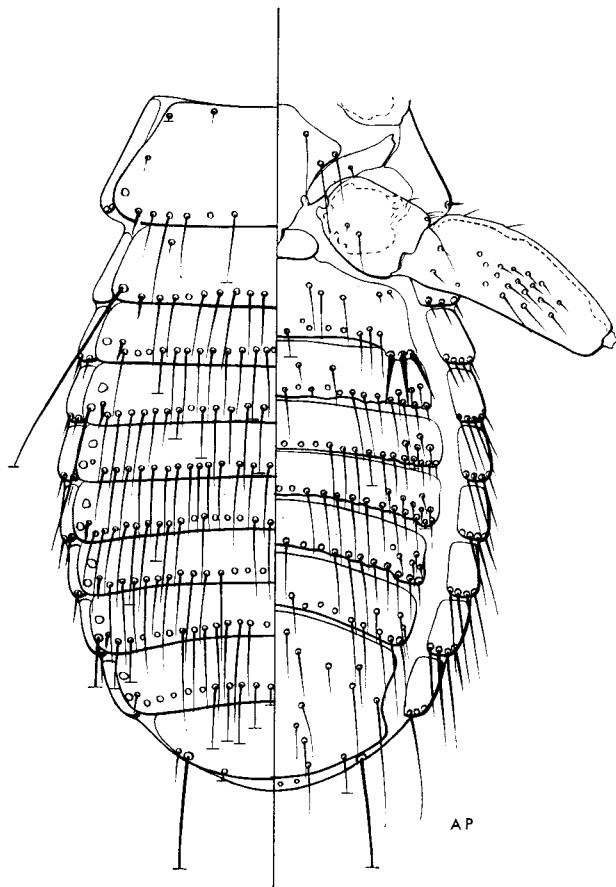


FIG. 39. *Myrsidea bonariensis*. ♂.

not originate from *Molothrus*, not only are specimens from this host different, but the bursa copulatrix and ♂ genital sclerite of *bonariensis* are unlike these structures in any of the known *Myrsidea* from the Icteridae. New World bird families parasitized by species of *Myrsidea* having a bursa copulatrix similar to that of *bonariensis* are rather numerous and include the Turdididae, Fringillidae, Parulidae, Mimidae, Thraupidae and Tyrannidae. The host of *bonariensis* was given as '*Molothrus bonariensis* (Cabanis), the Argentine cowbird. The skin bears no data'. *Molothrus bonariensis* (Cabanis) is a synonym of *M. bonariensis* (Gmelin) and it can be assumed that the specimen came from the Argentine; if the two types are stragglers therefore, presumably they also came from the Argentine. Specimens of *Myrsidea* from *Calopsiza* (= *Tangara*) *mexicana*, *C. gyrola* and *Tanagra violacea* collected in Trinidad by Dr. W. G. Downs and Dr. T. H. G. Aitken, all appear to be conspecific and to be sufficiently similar to the types of *bonariensis* to be included in that species, if it is presumed that tergite V of the type female is deformed. It seems therefore probable that the true host of *bonariensis* is one of the Argentine Thraupidae.

MEASUREMENTS

	♀		♂	
	Length	Breadth	Length	Breadth
1				
Head	0.30	0.34	0.28	0.31
2				
Prothorax		0.45		0.41
Metanotum		0.31		0.28
Abdomen		0.42		0.34
Total	0.77	0.57	0.59	0.44
	1.39		1.21	

3. *Myrsidea imbricata* (Neumann, 1891).

(Pl. 3, fig. 3. Text-figs. 40, 41)

Type host: *Chlorolampis elegans* (?). Probably error.

Menopon imbricatum Neumann, 1891 : 91, fig. 7. Host: *Chlorolampis elegans* (?).

This species was described from a single female said to have been taken from '*Chlorolampis elegans* (?)'. In the Laboratoire de Parasitologie, École Nationale Vétérinaire de Toulouse there is a female *Myrsidea* on a slide labelled '*Menopon imbricatum* Nn. Sur l'Oiseau-mouche. *Chlorolampis* sp. *elegans* (?). Antilles'; through the kindness of Professor Brizard it has been possible to examine this specimen. The figure given by Neumann, together with the labels on the slide, leave no doubt that this is the type of *imbricatum*.

♀. Head as in Pl. 3, fig. 3. Hypopharynx fully developed. Many of the head setae are broken or missing, but from what remains their number and position appears to be as those of *thoracica*; subocular comb rows probably 11 + 12; head seta 10 measurable on one side, although the tip may be missing: 50 μ ; seta 11 is missing on one side, the broken remainder on the other shows it to be stouter than 10 and the portion which remains is longer than 10; gular setae 4 + 4. Anterior setae of prothorax missing except for one short spine-like seta on one side;

posterior margin of pronotum with $3 + 3$ setae. Central setae of metanotum: $5 + 5$; metasternal setae $4 + 3$; metapleural setae: $4 + 4$. Mesonotum without median division. First tibia missing on both sides; setae of femoral brush: $16 + 16$. Microtrichia of genital chamber as in *abidae*. Bursa copulatrix pear-shaped with thickened rim, similar to that shown in Clay, 1966, Pl. I, fig. 4.

Abdominal Chaetotaxy (Text-figs. 40, 41). All the post-spiracular setae, with the exception of one on VIII, are missing. The remaining portion of one of the inner posterior setae on the last tergum suggests that it may be fairly long and stout.

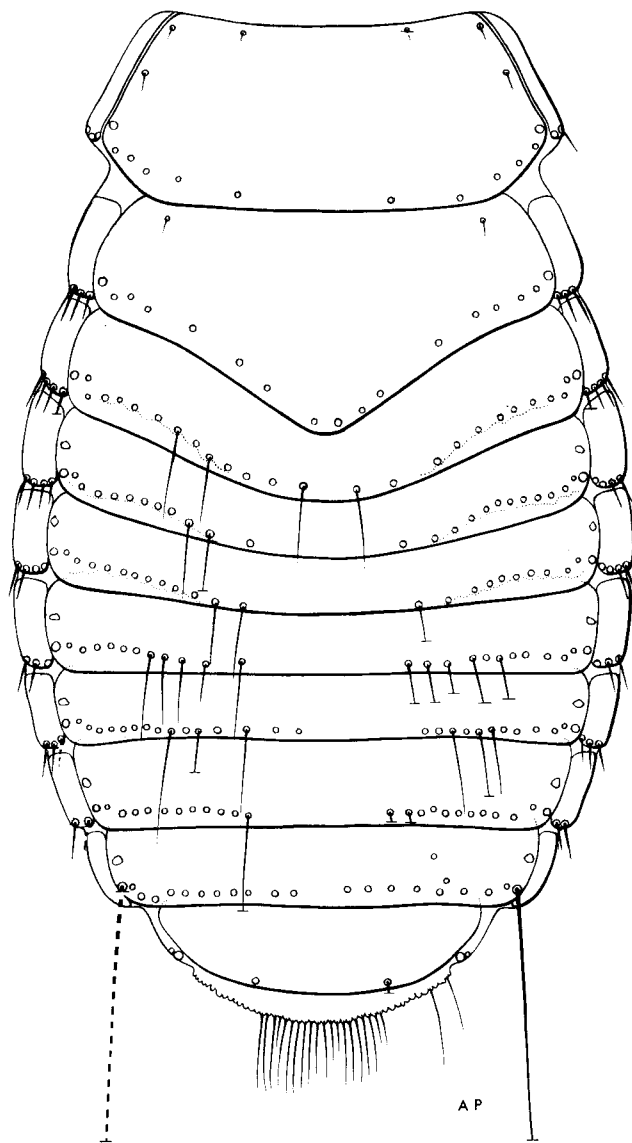


FIG. 40. *Myrsidea imbricata*. ♀ holotype, dorsal.

Discussion. It is probable that the humming bird given on the label was not the true host; no authenticated records of *Myrsidae* are known from the Trochilidae. Without males it is not possible to suggest to what group its true host belongs and the bursa is of the type found in hosts belonging to a number of S. American bird families (see above, p. 236). *M. imbricatum* is probably not the same as any other described species from S. American birds, examples or sufficiently good figures have been seen of all these with the exception of *M. argentina* (Kellogg), which was probably based on a nymph. To find its true host, *imbricatum* will have to be compared with specimens from all the passerine hosts which could have occurred on any of the islands of the Antilles before 1891.

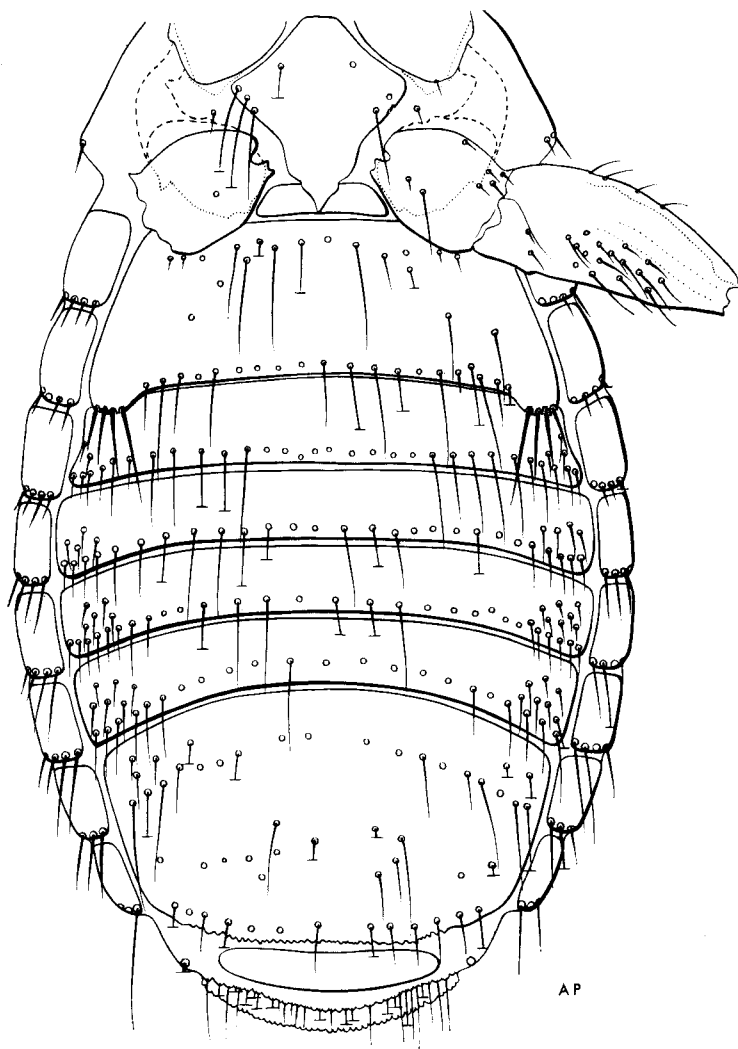


FIG. 41. *Myrsidea imbricata*. ♀ holotype, ventral.

MEASUREMENTS (mm.)

	Length	Breadth
1		0.37
Head	0.33	
2		0.50
Pronotum		0.33
Metanotum		0.51
Total	1.56	

ACKNOWLEDGMENTS

I am greatly indebted to a number of individuals and institutions for loans of type material, these have been acknowledged in the text. I am also grateful to the following for enabling me to see specimens of *Myrsidea* from the Icteridae: Dr. T. H. G. Aitken, Mr. R. S. Balter, the late Mr. M. A. Carriker, Mr. R. C. Dalglish, Dr. W. D. Downs, Dr. K. C. Emerson, Dr. F. Haverschmidt, Mr. Jerry A. Powell and the United States National Museum. Also to Arthur Smith (AS) and Alan Palmer (AP) for their figures.

I am indebted to Dr. Emmet R. Blake for advising me on the generic arrangement of the Icterid hosts on the lines likely to be used in a later volume of Peter's, Check-List of Birds of the World.

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TABLES I-VIII

Key to species of *Myrsidea* :

A. <i>diffusa</i> .	G. <i>laciniata</i> .
B. <i>picta</i> .	H. <i>balteri</i> .
C. <i>magnidens</i>	I. <i>fuscomarginata</i>
D. <i>mirabilis</i>	J. <i>psittaci</i>
E. <i>tropicalis</i> .	K. <i>comosa</i> .
F. <i>downsi</i> .	

D. based on specimens from Costa Rica, Panama and Honduras. Number of specimens in brackets. R = range; M = mean.

TABLE I

Tergocentral setae

♀

		B. (5)	D. (3)	E. (4)	F. (4)	H. (7)	I. (4)	J. (4)	K. (4)
I. .	R.	15-18	59-72	48-62	39-53	15-19	11-14	12-17	14-17
	M.	16.4	66.6	54.2	43.5	16.6	12.2	14.2	15.7
II. .	R.	14-17	37-41	32-42	22-31	10-13	11-15	14-17	22-26
	M.	16.1	39	37.5	25.2	11.7	12.3	15.2	24
III. .	R.	17-19	23-32	27-30	18-26	11-13	11-14	16-20	26-29
	M.	18	28.3	28.7	22.2	12.1	12.6	18	27.2
IV. .	R.	17-21	14-20	19-25	17-20	11-14	12-14	20-22	29-31
	M.	19.2	17.3	22	18.2	12.4	13.3	20.7	30
V. .	R.	14-21	14-17	14-22	16-20	10-14	11-14	18-22	25-30
	M.	17.6	15	16.7	18.2	12.3	12.3	20.2	27.7
VI. .	R.	13-18	10-14	12-17	15-18	9-12	6-12	17-18	26-30
	M.	15.8	12	14.7	16.5	10.7	9.6	17.8	28.2
VII. .	R.	13-17	7-9	9-14	14-18	4-6	4-9	14-16	23-29
	M.	14.2	8.3	11	15.5	4.9	5.4(9)	15	24.7
VIII. .	R.	6-8	4	4	6-8	4	4	11-13	17-18
	M.	7.2	4	4	6.7	4	4(8)	11.7	17.3

TABLE II

Tergocentral setae

♂

		B. (6)	C. (1)	D. (4)	E. (5)	F. (7)	H. (4)	I. (6)	J. (3)	K. (2)
I. .	R.	18-21	21	12-17	16-18	14-21	13-18	10-13	10-13	20-23
	M.	20		15	16.8	17.4	14.8	11.3		
II. .	R.	19-24	24	15-16	14-20	13-17	14-16	11-13	14-15	25
	M.	21.7		15.8	18.2	15.6	15	12.4		
III. .	R.	18-26	28	15-20	15-20	16-19	13-18	11-14	16-17	27-29
	M.	22.8		17.2	17.4	17.1	14.5	12.8		
IV. .	R.	20-25	29	13-16	15-19	14-18	14-16	11-14	17-20	29-33
	M.	23.1		14.7	16.4	16	15.3	12.7		
V. .	R.	20-25	32	13-17	15-17	14-16	13-16	11-13	19-20	30-31
	M.	22.5		15	16	15	13.8	12		
VI. .	R.	21-24	33	11-15	12-16	13-16	12-15	10-13	16-18	28-29
	M.	22.5		14	14.8	14.6	13	11.7		
VII. .	R.	17-20	31	9-14	12-15	11-17	8-10	6-9	15-17	26-27
	M.	19		11.5	13	13.6	9	7.5		
VIII. .	R.	12-17	19	4-9	5-9	7-11	4-6	4	12-15	19-21
	M.	13.5		7	7.8	8.7	5			

TABLE III

*Marginal setae of sterites**

		♀							
		B. (6)	D. (3)	E. (7)	F. (4)	H. (3)	I. (1)	J. (4)	K. (4)
II.	R.	20-24	24-34	26-30	20-28	18-22	19	13-17	14-15
	M.	21.2	26.7	27.6	23.5	19.6		15.5	14.5
III.	R.	9-12	15-20	16-22	16-20	24-26	25	20-24	24-31
	M.	10.8	17	18	17.7	25		22.2	27.2
IV.	R.	16-19	20-21	21-23	17-21	19-23	24	23-25	27-30
	M.	17.5	20.3	21.5	19.2	20.6		23.5	28.2
V.	R.	21-24	19-20	21-28	18-20	19-20	21	21-23	27-29
	M.	22	19.6	24.1	18.7	19.6		22.2	28.8
VI.	R.	19-22	15-18	20-22	17-18	15-16	16	18-20	22-26
	M.	20.5	17	21.1	17.8	15.6		18.7	24.2
VII.	R.	13-14	11-14	10-21	14-18	12-14	12	10-14	13-16
	M.	13.8	12.6	15.5	15.5	13		11.5	14.6
VIII-IX.	R.	11-15	12-21	16-24	15-17	11-12	12	21-23	30-40
	M.	13.8	16	19.2	16.2	11.3		22	34.6
Vu.	R.	8-16	12-14	12-19	13-15	11-14	10	9-11	18-21
	M.	12	12.6	14.8	14.2	12.3		10.2	19.2

* Includes marginal setae of brushes. Vu. marginal setae of vulva.

TABLE IV

Marginal setae of sternites

		♂							
		B. (6)	D. (5)	E. (4)	F. (7)	H. (3)	I. (1)	J. (3)	K. (2)
II.	R.	7-12	12-18	17-24	9-13	16-18	17	12-15	14-15
	M.	8.8	15.4	20.7	10.9	17.3		13.7	14.5
III.	R.	18-22	17-22	22-26	15-22	22	24	19-23	24-27
	M.	20.8	20	23.2	20.1			20.7	25.5
IV.	R.	20-27	22-23	24-26	20-24	21-22	23	22-23	23-26
	M.	22.5	22.7	24.7	22.1	21.3		22.7	24.5
V.	R.	20-23	21-24	25-26	21-23	20-22	22	20-23	27
	M.	22.3	22.6	25.2	22	21		21.3	
VI.	R.	20-22	21-23	22-25	21-23	16-19	19	19-20	25
	M.	21.2	22.2	23.7	21.7	18		19.5	
VII.	R.	14-18	16-19	18-20	16-20	14-16	13	14-15	18
	M.	16.8	17.2	19.2	18	14.7		14.5	
VIII.	R.	6-8	11-15	11-13	8-12	6	4	7	11
	M.	6.3	14.8	11.5	9.7				
IX.	R.	8-11	9-13	13-16	10-12	10-14	5	5-6	17
	M.	9.2	11.4	14.2	10.9	12		5.7	

TABLE V

♀

B. (12) D. (6) E. (7) F. (8) H. (6) I. (1) J. (8) K. (4)

Anterior sternal setae

II. .	R.	7-10	13-25	30-41	9-11	9-11	8	10-16	24-28
	M.	8.4	19	34.7	10	10		13.7	25.7

*Lateral anterior sternal setae**

†

III. .	R.	0-1	4-5	3-7	0-1	2-4	2 + 3	2-5	27-34
	M.	0.19	4.3	5	0.12	3.3		2.9	29
IV. .	R.	3-6	3-5	4-8	2-5	6-7	5 + 6	5-9	35-40
	M.	4.9	3.8	5.6	3.2	6.8		7.4	36.8
V. .	R.	2-6	3-4	4-8	2-5	5-6	6 + 6	8-11	37-46
	M.	4.2	3.6	6.2	3.6	5.3		8.7	41.6
VI. .	R.	1-5	2-5	4-8	2-5	2-4	2 + 4	4-8	37-39
	M.	3.2	3.3	6	3.4	3.5		6.6	38
VII. .	R.	1-2	1-4	2-5	1-4	0-1	1 + 1	5-7	33-35
	M.	1.7	3	3.1	2.5	0.5		5.5	34

* Lateral brushes not including marginal setae. † Number includes all anterior setae, lateral and median. Each side counted separately except for K.

TABLE VI

♂

B. (12) D. (5) E. (4) F. (7) H. (6) I. (1) J. (6) K. (1)

Anterior sternal setae

II. .	R.	7-12	12-18	17-24	9-13	7-9	7	11-12	28
	M.	8.8	15.4	20.7	10.9	8		11.3	

*Lateral anterior sternal setae**

			†	†	†				†
III. .	R.	0-4	9-23	13-22	6-11	2-4	4 + 2	0-2	22
	M.	1.4	16	19	8.7	3.2		0.83	
IV. .	R.	2-6	10-19	18-23	5-9	4-7	3 + 5	4-7	27-32(2)
	M.	4	14	19.5	7	5		5.7	
V. .	R.	2-6	9-16	16-20	7-12	2-5	5 + 5	6-8	35
	M.	4.1	13.2	18.2	8.8	4.2		6.7	
VI. .	R.	2-6	12-17	18-22	8-11	3-4	4 + 3	5-8	38
	M.	3.1	13.4	19.7	9.1	3.3		6.4	
VII. .	R.	2-4	8-14	14-15	6-12	1-2	1 + 1	4-5	34
	M.	3.1	11	14.7	10.3	1.2		4.2	

* † As for Table V.

TABLE VII

Measurements in mm.

♀											
Length	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.
Head . .	0.34	0.33	0.32	0.33	0.35	0.35	0.33	0.36	0.34	0.32	0.33
Total . .	1.67	1.74	1.55	1.70	1.98	1.93	1.81	1.75	1.80	1.59	1.90
Breadth											
Head 1 . .	0.36	0.36	0.38	0.36	0.39	0.39	0.36	0.37	0.36	0.37	0.39
Head 2 . .	0.51	0.52	0.52	0.54	0.57	0.55	0.54	0.50	0.52	0.53	0.55
Prothorax .	0.34	0.36	0.34	0.37	0.40	0.37	0.36	0.36	0.35	0.35	0.39
Metanotum .	0.47	0.53		0.55	0.58	0.57	0.55	0.52		0.48	0.54
♂											
Length											
Head . .	0.31	0.31	0.32	0.32	0.32	0.32	0.31	0.34	0.32	0.30	0.31
Total . .	1.42	1.53	1.29	1.45	1.57	1.50	1.49	1.39	1.41	1.35	1.68
Breadth											
Head 1 . .	0.33	0.34	0.33	0.34	0.36	0.36	0.34	0.34	0.32	0.34	0.37
Head 2 . .	0.46	0.49	0.46	0.49	0.51	0.49	0.49	0.50	0.46	0.48	0.51
Prothorax .	0.30	0.32	0.32	0.32	0.34	0.32	0.33	0.32	0.30	0.31	0.36
Metanotum .	0.37	0.40		0.39	0.47	0.42	0.40	0.43		0.38	0.40

TABLE VIII

Range (R) and mean (M) of head breadth in mm.

♀								
	B. (10)	D. (10)	E. (10)	F. (4)	G. (7)	H. (8)	J. (5)	K. (4)
R.	0.52-0.55	0.51-0.55	0.54-0.58	0.55-0.58	0.51-0.56	0.54-0.56	0.52-0.54	0.51-0.55
M.	0.54	0.53	0.56	0.56	0.54	0.55	0.53	0.54
♂								
	B. (10)	D. (10)	E. (10)	F. (4)	G. (7)	H. (8)	J. (5)	K. (4)
R.	0.48-0.50	0.46-0.49	0.48-0.51	0.49-0.52	0.48-0.50	0.50-0.51	0.48-0.49	0.50-0.51
M.	0.490	0.470	0.500	0.500	0.490	0.503	0.483	0.507

PLATE 1

- FIG. 1. *Myrsidea isostoma* (Nitzsch). ♂ internal genitalia. s, spermatophore. (TC).
FIG. 2. *Myrsidea aitheni* Clay. Spermatophore in extruded genital sac. g. genital sclerite. (TC).
FIG. 3. *Myrsidea aquilonia*. Spermatophore in abdomen. (TC).
FIG. 4. *Myrsidea tropicalis*. Bursa copulatrix. (TC)
FIG. 5. *Myrsidea bonariensis*. Bursa (TC)
FIG. 6. *Myrsidea picta*. Dorsal pair of setae on last segment of maxillary palp. (TC).
FIG. 7. *Myrsidea fuscomarginata* (from *Agelaius phoeniceus*). As fig. 6.
FIG. 8. *Myrsidea fuscomarginata* (from *Agelaius phoeniceus*). Tip of longest seta in aster on sternite II, ♀. (Stereoscan, H. E. Hinton).

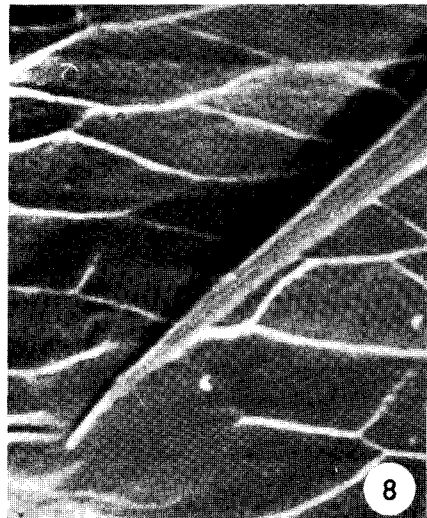
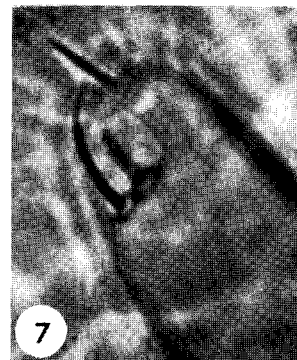
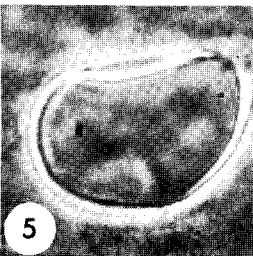
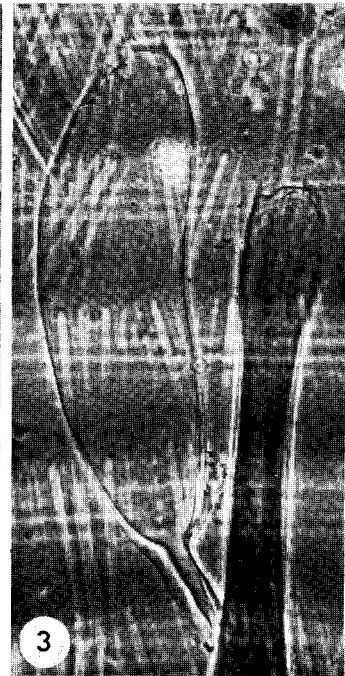
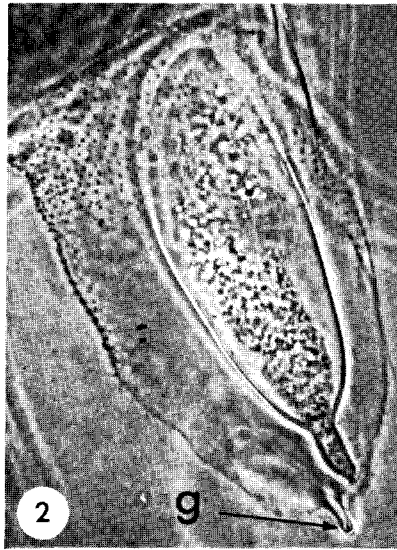
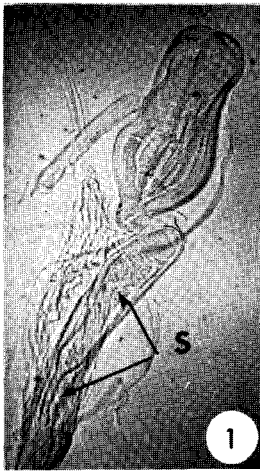


PLATE 2

- FIG. 1. *Myrsidea fuscomarginata* (from *Agelaius phoeniceus*). Hypopharynx. (TC).
FIG. 2. *Myrsidea aquilonia*. Hypopharynx. (TC).
FIG. 3. *Myrsidea psittaci*. Hypopharynx. (TC).
FIG. 4. *Myrsidea aquilonia*. ♂ head. (TC).
FIG. 5. *Myrsidea fuscomarginata* (from *Agelaius phoeniceus*). Distal part of ♂ genitalia.
a. inwardly projecting arm of basal plate.
FIG. 6. *Myrsidea psittaci* (from *Agelaius icterocephalus*). As fig. 5.
FIG. 7. *Myrsidea comosa*. As fig. 5.

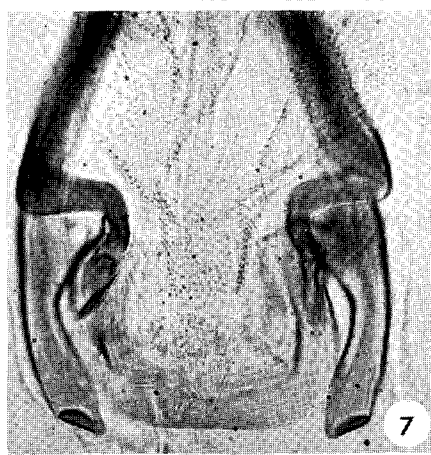
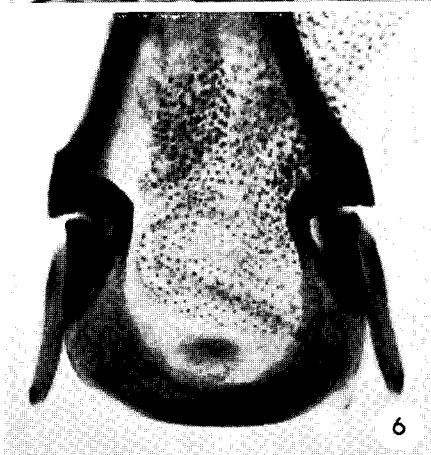
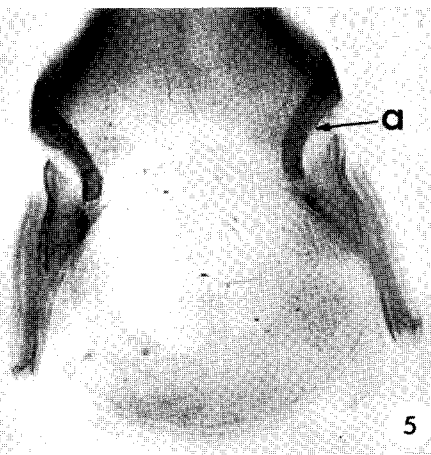
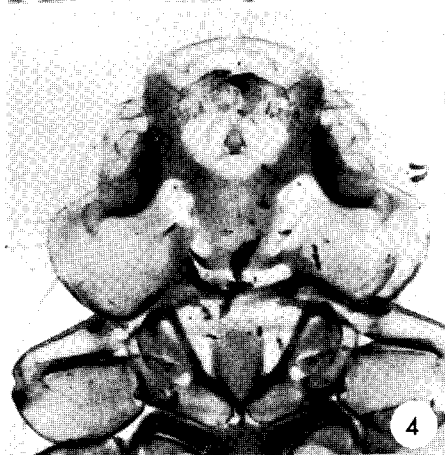


PLATE 3

- FIG. 1. *Myrsidea magnidens*. ♂ head, holotype. (TC).
FIG. 2. *Myrsidea bonariensis*. ♀ head, holotype.
FIG. 3. *Myrsidea imbricata*. ♀ head, holotype. Arrow points to position of head seta **II**.
(TC).
FIG. 4. *Myrsidea downsi*. ♂ abdomen, dorsal. (TC).
FIG. 5. *Myrsidea comosa*. ♂ abdomen, dorsal. (TC).
FIG. 6. *Myrsidea comosa*. ♀ abdomen, ventral. (TC).

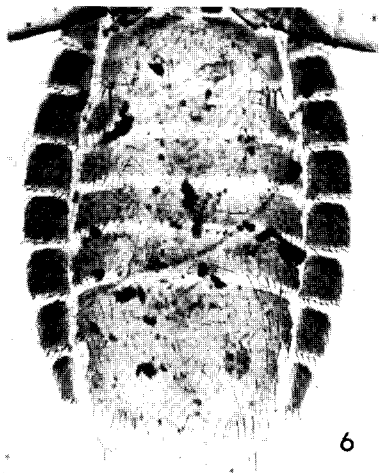
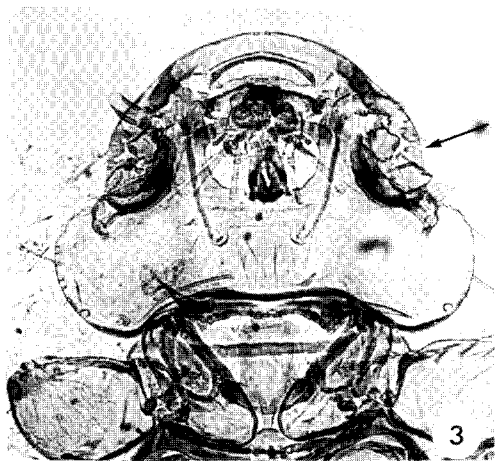
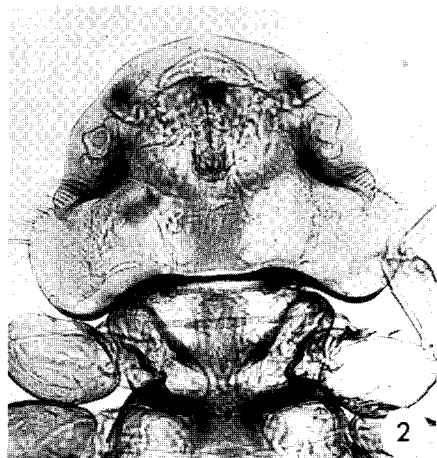
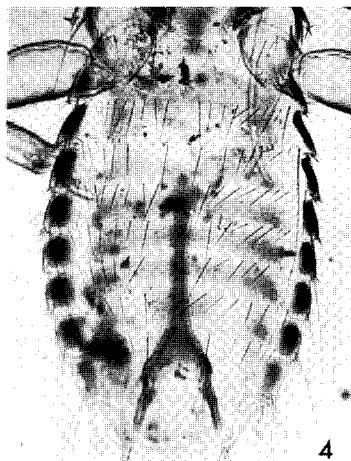
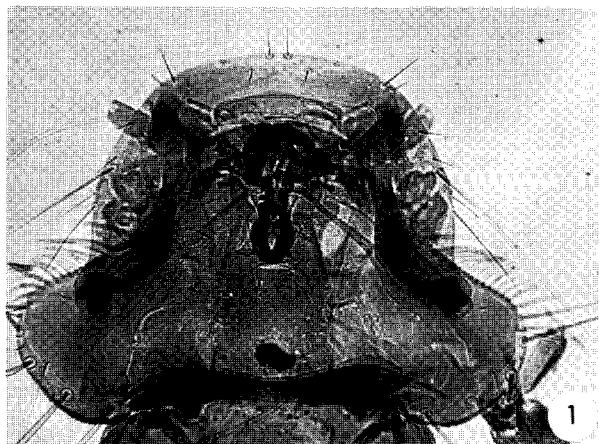
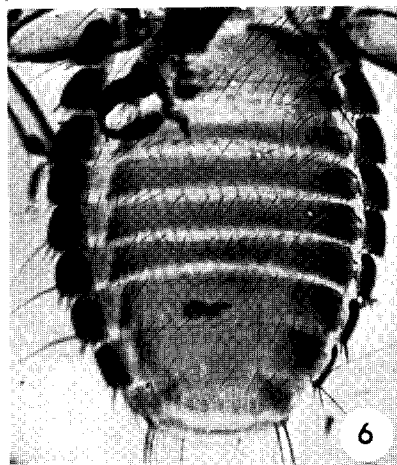
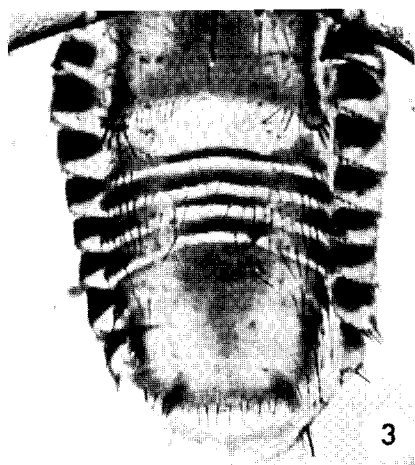
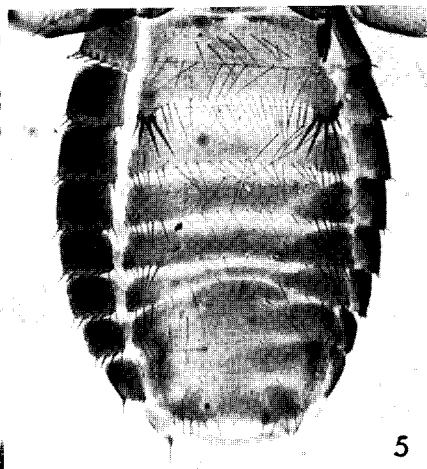
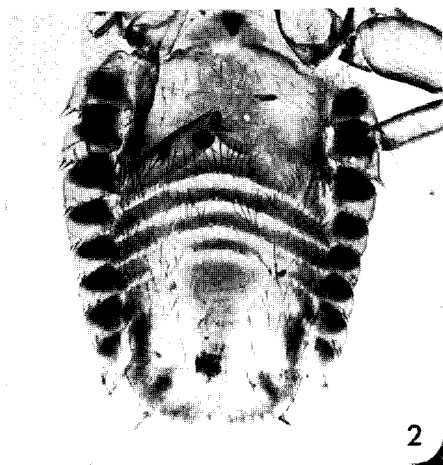
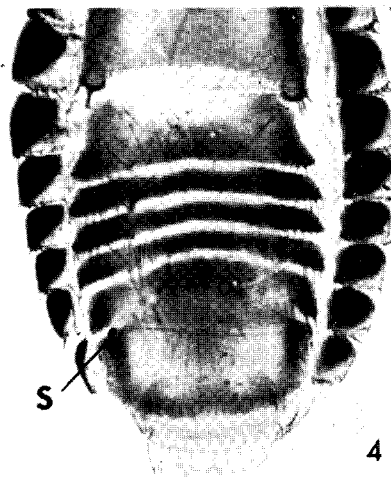
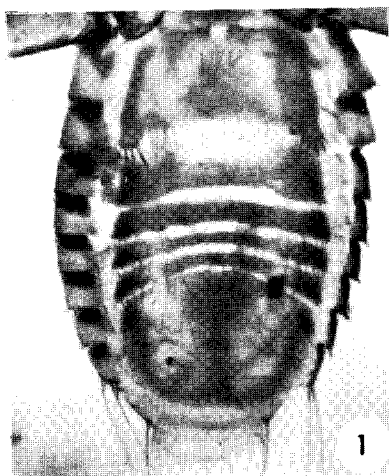


PLATE 4

Myrsidea spp. ♀ abdominal sterna.

- FIG. 1. *M. picta*. (TC).
FIG. 2. *M. mirabilis*. (TC).
FIG. 3. *M. tropicalis*. (TC).
FIG. 4. *M. laciniata*. s, indentation at posterior margin of sternum VII. (TC).
FIG. 5. *M. balteri*. (TC).
FIG. 6. *M. psittaci* (from *Scaphidura oryzivora*). (TC).



CONTRIBUTIONS TOWARDS
A REVISION OF *MYRSIDEA* WATERSTON. III
(MENOPONIDAE : MALLOPHAGA)

BY
THERESA CLAY
British Museum (Natural History)

Pp. 203-243; 4 Plates, 41 Text-figures

BULLETIN OF
THE BRITISH MUSEUM (NATURAL HISTORY)
ENTOMOLOGY Vol. 21 No. 4
LONDON: 1968

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Bull. Br. Mus. nat. Hist. (Ent.).*

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