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

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CONTENTS

SYNOPSIS

In this part the genus *Myrsidea* as a whole and the characters of taxonomic importance for the separation of species and species groups are discussed. Previous attempts to subdivide the genus are considered. The species parasitic on the avian subfamily Turdinae are revised, fifteen known species being re-described and five new species described. There is a key to the species groups and a list of hosts and parasites.

INTRODUCTION

Myrsidea comprises a large number of species parasitic on the Passeriformes, Ramphastidae, Capitonidae and Trogonidae. Although the species are diverse and show many distinguishing characters, this genus has suffered as badly as any of the genera of Mallophaga from inadequate descriptions so that many of the species, even those in recent publications, are unrecognizable. For this reason it is impossible to revise the known species or to describe new ones without examining the types. I have been fortunate through the kind assistance of many individuals and institutions in being able to see the majority of types still in existence and specimens from the type hosts of many of the species of which the types are lost or never existed.

MYRSIDEA Waterston, 1915

Myrsidea Waterston, 1915 : 12. Type-species : *M. victrix* Waterston.
Acolpocephalum Ewing, 1927 : 88. Type-species : *A. brevipes* Ewing.
Australmenopon Conci, 1942 : 30. Type-species : *Menopon cinerea* Thompson. **syn. n**
Allomyrsidea Conci, 1942 : 31. Type-species : *Myrsidea struthidea* Thompson.
Corvomenopon Conci, 1942 : 31. Type-species : *Menopon robsoni* Cummings.
Ramphasticola Carriker, 1949 : 305. Type-species : *R. hirsuta* Carriker.
Alcediniphilus Ansari, 1951 : 189 (s.g.). Type species : *Myrsidea* (*Alcediniphilus*) *kuluensis* Ansari. **syn. n.**
Myrsidella Eichler, 1951 : 49. Type-species : *Myrsidea consimilis* (Piaget), *sens.* Eichler.
Densidea Zlotorzycka, 1964 : 171. Type-species : *Myrsidea rustica* (Giebel). **syn. n.**
Vulgidea Zlotorzycka, 1964 : 172. Type-species : *Myrsidea cucullaris* (Nitzsch). **syn. n.**
Liquidea Zlotorzycka, 1964 : 173. Type-species : *L. proterva* Zlotorzycka. **syn. n.**
Lanimenopon Zlotorzycka, 1964 : 177. Type-species : *L. abhorrens* Zlotorzycka. **syn. n.**
Eichlerinopon Zlotorzycka, 1964 : 179. Type-species : *E. celeripes* Zlotorzycka. **syn. n.**
Neomyrsidella Zlotorzycka, 1964 : 182. Type-species : *N. usitata* Zlotorzycka. **syn. n.**

Menoponidae without notch or slit in the dorso-lateral margins of the head ; without sclerotized processes ("oral spines") arising near base of maxillary palpi ; head sensilli 3–5 (Clay, 1961 : 575) apparently absent ; outer mid-dorsal head setae and posterior dorsal setae (e) absent (Clay, 1962, fig. 4. d.e.) ; gular plate characteristic (Text-fig. 1). Pronotum without the two dorsal setae lying on or near the transverse carina (Clay, 1962, fig. 4, dps. 1 and 2) ; posterior margin of pronotum with six or more long setae ; prosternal plate well developed with two anterior setae. Mesothorax with notum, pleura and sternum fused to form a strongly sclerotized ring round the body (Pl. I, fig. 6) ; mesonotum well defined with only two anterior setae (Clay, 1961 : 573, fig. 3 and Text-fig. 3, a.) ; mesosterum heavily sclerotized, with 2 + 2 setae. Femur III without combs of spine-like setae but with thick or sparse brushes of setae.

Other characters which may prove of generic value are the greater length and thickness of the posterior pair of gular setae compared to the rest; the small size of

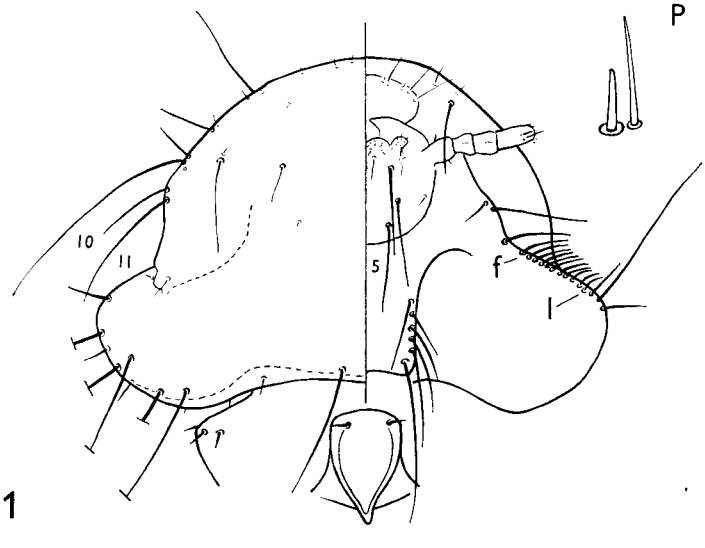


FIG. 1. *Myrsidea thoracica*. ♂ head and prosternal plate. f, first seta and l, last seta of latero-ventral head fringe ; P, dorsal pair of setae on last segment of maxillary palp.

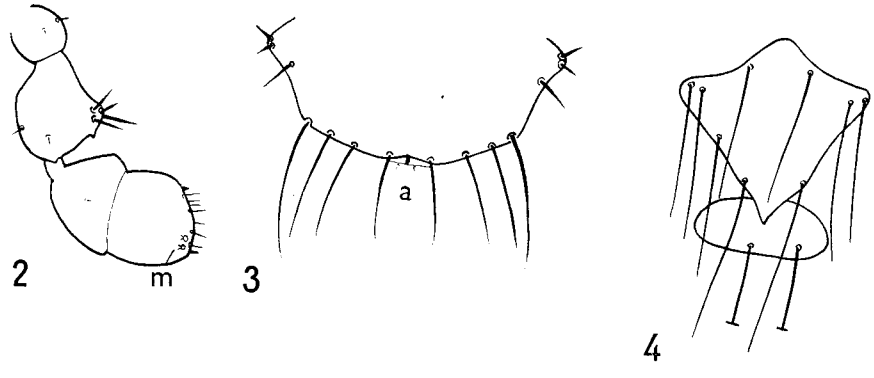
the outer occipital setae compared to the long stout inner pair and the empodium (Kéler, 1952 : 575, fig. 3). This last structure, found on tibia II and III is fan-shaped (Text-fig. 8). It is possible that the form of the empodium may form a generic character in the Menoponidae ; unfortunately it is a delicate structure and is usually shrivelled in mounted specimens. The euplantula (Kéler, 1952 : 576, fig. 6) found on the first tarsal segment with two hyaline spine-like setae is similar to that figured by Kéler and probably shows little difference throughout the Menoponidae. While the aster of spine-like setae or group of long setae at each postero-lateral corner of sternite II is found in most species this may be entirely absent, being replaced by evenly spaced stout setae on the posterior margin as in some species of *Menacanthus*, for instance. *Myrsidea* is a most distinctive genus, the strongly sclerotized ring-like mesothorax and the presence of only two anterior mesothoracic setae being unusual characters in the Menoponidae ; these two features together with the characters of the lateral margin and setae of the head separate it from all other genera. Until more is known about which of the characters of this genus are likely to be of phylogenetic importance it is perhaps wiser not to postulate its possible affinities.

In the majority of species the females show some modifications of the abdominal terga and less commonly of the meso- or metanotum ; these range from slight convexity of the posterior margin of two or three of the anterior tergites of the abdomen as in *M. incerta* (Text-fig. 30) to the extreme cases as in *M. buxtoni* Waterston in which tergite I is absent and II reduced to a small sclerite each side of the body. Thus, in some groups the females are markedly different, while the males can only be separated with difficulty or not at all. There is no obvious explanation why *Myrsidea* should have this tendency in the female to modification of the metanotum and abdominal terga, unknown to this extent anywhere else among the Menoponidae. It would seem to have little functional advantage as far as the environment is concerned as the two sexes are found on the same feathers and species in which the females have the abdomen little or greatly modified may be found on the same host (*M. obovata* (Piaget) and *M. sjoestedti* (Kellogg) on *Corvus albus*). It might however prevent cross breeding between closely related forms in a genus in which secondary infestations may have been common, and thus prevent wasteful hybridization (Clay, 1949 : 290).

These modifications of the female abdomen appear to be of little phylogenetic importance (Clay & Hopkins, 1960 : 48) and other characters must be found by which related species can be grouped. As discussed elsewhere (Clay, 1962 : 194 and 1951 : 173) it seems reasonable to consider the characters common to populations from related hosts as ones of possible phylogenetic value, especially if these are characters which do not appear to be directly adaptive to the environment. Species of *Myrsidea* grouped together on the characters of the male genital sclerite are frequently found to be parasitic on a group of related hosts. For instance, all the species from the Hirundinidae have a characteristic sclerite (Pl. I, fig. 2) and also resemble each other in the shape of the head, the division of the mesonotum and the presence of two long, one medium and one short setae on pleurite VIII. However, in the female these characters are not always sufficient to distinguish the species from those occurring on

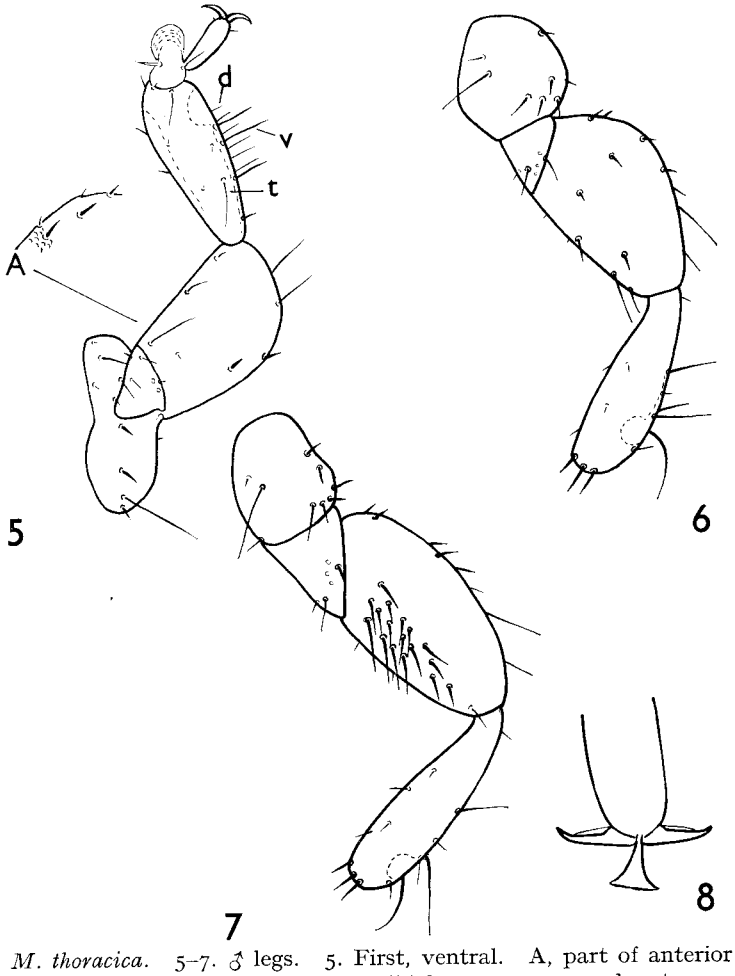
other host families. Many of the species on the Corvidae have a characteristic male genital sclerite (Pl. I, fig. 3) and this is frequently associated in both sexes with eight or more setae on the posterior pronotal margin, with at least one long seta on the metapleurite, with two long and one short setae on pleurite VIII and at least one long seta on pleurite VII. Some species from the Corvidae with the typical genital sclerite do not have the other characters so that females may not be identifiable as belonging to the group. Males from the Laniidae have the genital sclerite and the eight or more long pronotal marginal setae as in the species parasitic on some of the Corvidae. Examples of other groups identifiable by the male sclerite are the *thoracica* group (see below) and the species from the Icteridae. Thus, while most species are more easily identified in the females, the males may show the characters necessary for phylogenetic grouping. Males and females of a species may have few characters in common and only one sex may be identifiable, it is therefore unsatisfactory to describe new species based on only one sex.

Attempts have been made to subdivide the genus : *Acolpocephalum* was erected for a nymph of *Myrsidea*. *Australmenopon* was erroneously placed in *Austromenopon* by Hopkins & Clay (1952 : 44) who had seen only the original descriptions and figures of *Menopon cinerea* ; however a single male of this or a similar species from *Corcorax* shows that it has the characters of *Myrsidea* listed above and can be included in that genus. *Allomyrsidea* was based on the original description of *M. struthidea*, the male genitalia of which are unlike any other, but this character alone is rarely useful for generic separation. *Corvomenopon* was based on the female of a single species, *M. robsoni*, the characters used for separation being the modifications of the thorax and the dorsal chaetotaxy. However, as already shown these secondary sexual characters are not satisfactory for generic separation and result in genera in which the males are not generically identifiable. *Myrsidella* was based on a single female from *Corvus cornix* identified by Eichler as *M. consimilis* (Piaget), but which from the figure of part of sternite II was probably *M. isostoma* (Nitzsch) from *Corvus frugilegus*. This species has a group of elongated setae instead of a typical aster of



FIGS. 2–4. 2. *M. abidae*. ♂ antenna. m, the two mushroom-like sensillae. 3. *M. carrikeri*. ♂ pronotum. a, minute anterior mesothoracic setae. 4. *M. sultanpurensis*. ♀ metasternal plate and sternite I.

spine-like setae at each postero-lateral corner of sternite II ; otherwise it has the characters typical of the corvine-infesting *Myrsidea* and there seems to be no advantage in separating it generically. *Ramphasticola* Carriker was erected for a group of species from the Ramphastidae in which the mesothorax of the females is greatly enlarged ; in the males it is normal ; the chaetotaxy of sternite II and the female mesothorax are similar to some of the species from the Corvidae. This is another group based on the secondary sexual characters of the females and its generic recognition seems unnecessary. It is difficult to know what to say about the erection of six new genera for species of European *Myrsidea* (see Zlotorzycka, 1964) except it is unfortunate that the author published these when knowing so little about the characters of so few species of the genus and having so few specimens, the hosts of which in some cases are obviously incorrect (see note p. 388).



FIGS. 5–8. *M. thoracica*. 5–7. ♂ legs. 5. First, ventral. A, part of anterior margin of femur, dorsal ; d, first outer dorso-lateral tibial seta ; v, second outer ventro-lateral tibial seta ; t, postero-ventral tibial seta. 6. Second and 7. third leg, ventral, tarsus omitted. 8. Empodium of third leg of nymph from *Turdus merula*.

CHARACTERS OF TAXONOMIC IMPORTANCE

The following characters have been found useful in separating species : 1. Shape of head ; this is liable to distortion in mounting, especially the shape of the anterior margin. 2. Degree of reduction of hypopharynx. 3. Head setae : number in latero-ventral fringe and on temples ; length of labial seta 5 (Text-fig. 1) ; ratio of length of seta 10 to 11* ; number of gular setae*. 4. Shape of prosternal plate. 5. Number of long setae on posterior margin of the pronotum. 6. Presence or absence of a median division in the mesonotum. 7. Length and number of meta-pleural setae*. 8. Shape of metasternal plate and the number of metasternal setae*. 9. Number of outer lateral ventral and dorsal* setae of first tibia (Text-fig. 5). 10. Number of setae in femoral brush*. 11. Length* and thickness* of post-spiracular setae. 12. Number and length of metanotal and abdominal tergo-central setae, especially those of VII–VIII*, and of pleurite VIII*. 13. Presence or absence of setae on sternite I. 14. Form of sternite II and thickness, number* and lengths* of the setae at the postero-lateral corners. 15. Presence or absence of anterior setae on pleurites and centrally on tergites and on sternites III–VII (♀) and III–VIII (♂). 16. Form of thorax and abdominal terga in female. 17. Form of spermatheca and sculpturing of genital chamber. 18. Number* and form of setae on vulval margin and in anal fringe. 19. Number of internal anal setae of male. 20. The male genitalia : these may differ in the shape of the endomeral plate and parameres, but both these structures are constant in large groups of species and the most useful character, as already emphasised (Clay & Hopkins, 1960 : 50), is the form of the sclerite in the genital sac.

These characters are the minimum which should be given in the description of new species ; there are probably others which may prove useful and in addition there are the more obvious ones found in the occasional species such as groups of setae in unusual positions, as on the thoracic nota of *M. robsoni* or the presence of irregular pigmented patches between some of the tergites in *M. ishizawai*.

VARIATION

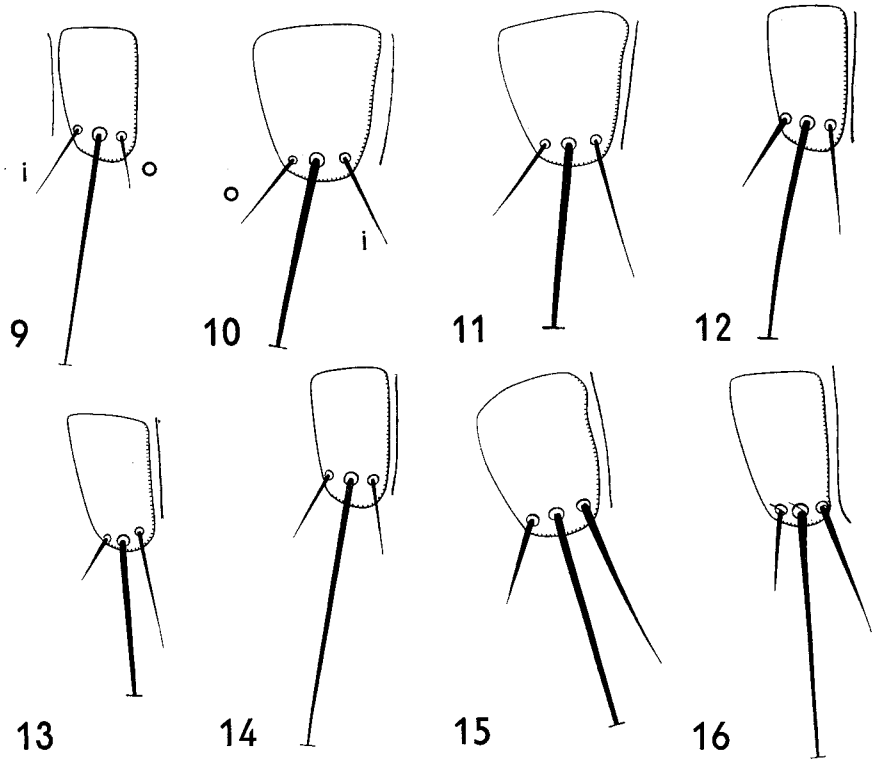
Many of the characters listed above (marked with *) show variation and cannot be used alone to distinguish species, if only a few specimens are available. As in other species of Menoponidae, size and range of the number of setae may be constant for a number of specimens, with the occasional one being quite atypical : in species of *Myrsidea* for instance, where the number of tergo-central setae of VII or VIII is usually 2 + 2, one specimen may have 2 + 4, or where the total number is 7 or more, one specimen may have 2 + 2 ; this makes identication of some of the males difficult. The three anterior spine-like setae usually found each side of the pronotum show variation in length in the *Myrsidea* species from the Turdinae : for example the most posterior of these varies in the male from 0·024–0·032 mm. (*thoracica*), 0·018–0·024 (*incerta*), 0·024–0·040 (*carrikeri*) 0·036–0·050 (*antiqua*), 0·040–0·052 (*elegans*) and in

* These numbers and measurements may show some variation, so that differences must be outside the range of variation of the species being compared.

the female : 0·024–0·032 (*incerta*), 0·028–0·048 (*simplex*) ; in one female of *simplex* this seta on one side measures 0·028 and on the other 0·036 mm. The lengths of the setae in the aster, which have been used for generic separation (see p. 389, for *rustica*) also show variation : in females of *thoracica* from *Turdus merula* 39 inner setae of the aster vary from 0·048–0·080, mean 0·059, S.D. = 0·0086 mm. and in the male 18 vary from 0·048–0·060, mean 0·056, S.D. = 0·0042 mm. (see also below p. 346 under measurements). Although in some species the lengths of these setae may be of specific value, small differences based on few specimens cannot be used for specific separation. Other examples of variation are given in the descriptions of the species.

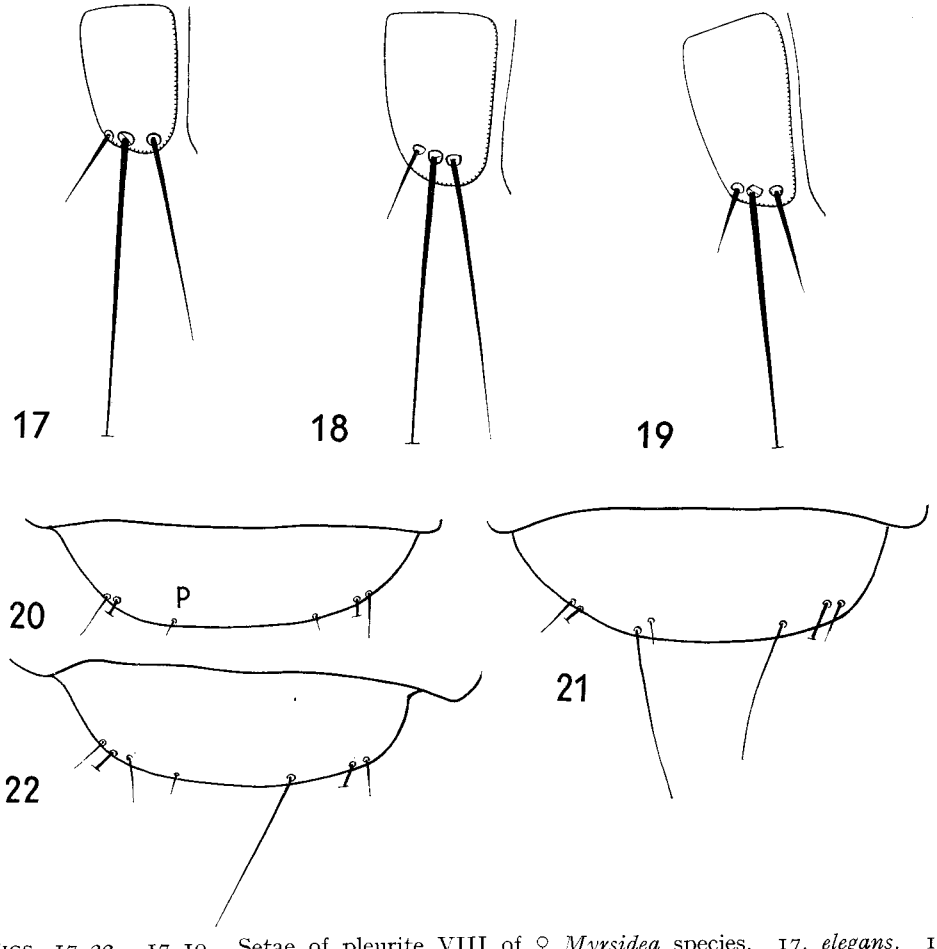
THE SPECIES, SUBSPECIES AND LOCAL POPULATION

These categories have been discussed elsewhere, in the Philopteridae (Clay, 1958 : 132) and in the Menoponidae (Clay, 1962 : 197), but recent publications (Carriker, 1963 : 293 and Zlotorzycka, 1964 : 167–168) suggest that certain points need re-emphasis. The Mallophaga, being obligate parasites which normally do not leave the host except to pass to another of the same species during its breeding period, have



FIGS. 9–16. Setae of pleurite VIII of ♀ *Myrsidea* species. 9. *incerta*. 10. *devastator*. 11. *indigenella*. 12. *regius*. 13. *rohi*. 14. *varia*. 15. *carrikeri*. 16. *antiqua*. i, inner seta, next to sternite ; o, outer seta.

naturally formed a number of isolated populations. This has encouraged a superficial taxonomy in which populations from different hosts have been automatically named as distinct taxa on character differences which are variable or non-existent. Some of these may prove to be valid taxa but are quite unrecognizable on the published data. When a taxon is recognized on slight differences in absolute measurements, shape of head or abdomen or number of setae based on a single specimen this need not be taken seriously, but there are populations which can be shown to differ statistically by even the crudest methods. To quote Mayr (1951 : 93) : " In the past, certain authors have tried to name every population [of birds] that differs in average characters. That this policy is nonsense has been made clear by the population geneticists who have shown that no two populations of sexually reproducing animals are exactly alike in the frequencies of polymorph genes and the means of multi-



FIGS. 17–22. 17–19. Setae of pleurite VIII of ♀ *Myrsidea* species. 17. *elegans*. 18. *ishizawai*. 19. *sultanpurensis*. 20–22. *Myrsidea regius*. ♀, Last tergum to show variation in chaetotaxy. p, inner posterior seta.

factorial characters." An example may be taken from the insects : Hinton (1940) showed that in some species of Elmidae (Coleoptera) mean size of certain structures differed in populations from different altitudes ; differences in mean size in populations from different hosts is of course common throughout the Mallophaga (Clay, 1962 : 198). At present it is not possible to say whether the differences are genetic or environmental as discussed by Hinton for the Elmidae (1940 : 220), but it is certain that the systematics of the group will not be clarified by giving names to all such populations. Detailed quantitative analysis as shown in Kim, Brown & Cook (1962 : 134) suggest that it may be possible to identify most individuals of such populations but this must be based on large series from a number of different hosts and all the material must be subjected to the same treatment: Kim *et al.* (1963 : 144) showed that there were differences between populations of lice from different host animals of the same species, location and sex and as a result state : " a large number of specimens from one or two host animals will not furnish a firm foundation for inference concerning ectoparasite population differences ". The results of such detailed analysis are of the greatest interest in the study of evolution and host-parasite relationships, but do not warrant the proliferation of names which would result from recognizing taxonomically such populations. It is therefore again strongly recommended when populations differ only in the mean of numbers of setae or measurements or in proportions of certain structures, especially when these follow the character gradients correlated with the size of the host (Clay, 1962 : 200), that they should be included in one taxon, the name of which is followed by *sensu lato* to indicate that it contains one or more local populations.

MYRSIDEA FROM THE TURDINAE

Specimens of *Myrsidea* have been seen from the following genera of Turdinae (as in Mayr & Paynter, 1964) : *Stizorhina* (one species), *Cercomela* (*C. sordida* formerly *Pinarochroa*), *Myrmecocichla* (one species), *Myiophoneus* (one species), *Zoothera* (five species) *Catharus* (six species) and *Turdus* (17 species). If the species of Mallophaga are grouped according to the form of the male genital sclerite (see above), then those from *Stizhorhina fraseri*, *Turdus*, *Catharus* and *Zoothera gurneyi* form one group ; those from *Zoothera dauma* and *Myiophoneus caeruleus* another, females only are known from *Zoothera monticola*, *marginata* and *mollisima* ; the species from *Cercomela sordida* and *Myrmecocichla formicivora* differ from each other and from the previous groups in the character of the male sclerite. The specimens from these last two hosts, from *Turdus albicollis* and the females from the three species of *Zoothera* (see above) are inadequate for description.

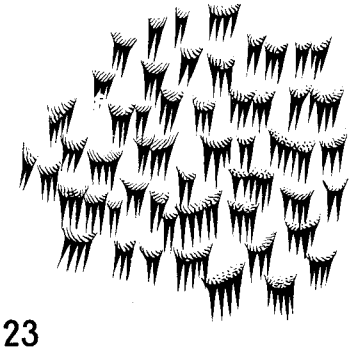
Species of *Myrsidea* are known from only a small proportion of the species of the Turdinae and as there is difficulty in assessing affinities in this genus and as the possibility must be accepted that there is some geographical as well as host distribution (Clay, 1964), it is probably wiser not to attempt any deductions of host relationships. One point of interest is that there are only two species of *Myrsidea* on seven species of Old World *Turdus* (see p. 385), six of these being parasitized by one species, while in

the New World six species of *Catharus* have five species of *Myrsidea* and eight species of *Turdus* have 10, two of the host species (*T. fumigatus* and *T. grayi*) being parasitized by different species in different parts of their range. It is difficult to explain the presence of *M. antiqua* on *Turdus fumigatus* in Trinidad.

TAXONOMIC CHARACTERS OF THE TURDINAE-INFESTING SPECIES

The characters listed below have been found in all the species of *Myrsidea* from the Turdinae examined and will not be repeated in the descriptions of the species and species group. These characters are not of course restricted to the species parasitic on this group of birds, but may be found throughout the genus.

1. Antenna as in Text-fig. 2 ; the two mushroom-like sensillae (m.) are close together near the posterior end of the anterior margin (the position of these may prove to be of taxonomic value in the Menoponidae). The antennal segments, especially the last, are liable to distortion in mounted specimens and the differences used in the key by Ansari (1956 : 164) are caused by this. Maxillary palp with the pair of setae on the dorsal surface of the last segment as in Text-fig. 1, P. The relative lengths and form of these two setae may be of taxonomic value in some genera (see *Numidicola*).



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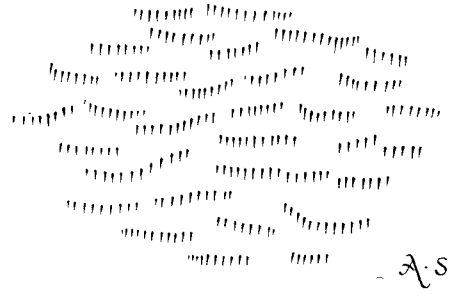

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FIGS. 23–24. Comb-like projections from surface of genital chamber. 23. *Myrsidea antiqua*. 24. *M. abidae*.

2. Thorax as in Text-figs. 3, 27. Pronotum with three anterior lateral spine-like setae each side showing individual variation in length (see above under Variation, p. 334) ; posterior margin with 6 or 8 long stout setae. Mesonotum undivided. Posterior margin of metanotum with one long stout seta each end (not included in setal counts) and a varying number of central setae. Each metapleurite with 2–7 short to medium spine-like setae, never with one or more long stout setae. First tibia with 3 outer ventro-lateral setae (Text-fig. 5, v), a varying number of outer dorso-lateral setae (Text-fig. 5, d) and with the postero-ventral tibial seta long (Text-fig. 5, t).

3. Tergite I has a small anterior seta each side not included in the setal counts. On tergites II–VIII there is a seta (the associated post-spiracular seta) which is

usually spine-like and shorter than any other of the tergal setae and lies near the post-spiracular seta anterior to the line of the tergocentral setae. On tergite I there may or may not be (in the same species and on different sides of one specimen) a lateral seta differentiated from the rest of the marginal setae in size and position ; therefore in the counts of the tergocentral setae of I all the marginal setae except the post-spiracular are included, but in those of II–VIII the seta associated with the post-spiracular seta each side is not. The last apparent tergum (IX–XI), referred to as IX, has in both sexes one short fine seta and one long stout seta each side and 1 + 1*, occasionally 1 + 2, inner posterior setae of varying lengths (Text-fig. 20, p).

4. Sternite II always has two short lateral anterior setae (Text-fig. 26, a) each side, usually close together but occasionally separated ; these are not included in the counts of the anterior setae. Sternite II has a well marked aster of stout spine-like setae each side, the number of setae varying from 2–6. In most species the range is 3–5 as in *thoracica* females from *Turdus merula,* in which 52 asters have a mean of 3·98 spines ; in *sultanpurensis* females there are rather more, range : 4–6, mean (18) 5·5. Sternites III–VII have a line of marginal setae and none to many anterior lateral setae, which on some segments form a definite brush. The marginal setae of the brush may be distinguished from the central setae by being more spine-like and sometimes separated by a definite gap. In other cases the marginal line of setae may be continuous and the differences between the setae so slight that the division is a matter of opinion. For this reason in the Tables III–VI, " Marginal Setae " include all the setae along the posterior margin of the sternite and " Lateral Anterior Setae " include the rest of the setae in the brush. In examples of setal number and arrangements given in the text the following formula is used : a + m (a) + c + a + m (a), where (a) denotes the anterior setae in the brush, (m) the marginal setae of the brush and (c) the central sternal setae. In the female there is a single plate from the anterior margin of VII to the edge of the vulva, with the line of setae of VII clearly visible, the rest of the setae between these and the vulval setae are given as a single count under VIII–IX ; sternites III, IV or V to VI and the anterior margin of VII may be strongly arched giving a characteristic appearance to the abdomen ; there is a long stout seta each side of the anal sclerite ; ventral anal fringe with short seta centrally (Text-fig. 26). Comb-like projections of the inner surface of the genital chamber as in Text-fig. 24, with the exception of one species (*M. antiqua,* Text-fig. 23). In the male there is a single plate from sternite VIII to the end, with the line of setae of VIII clearly visible ; the setae on the plate below this are given as a single count ; posterior to the plate there is a long stout seta each side and the posterior margin of the abdomen has three or four terminal setae and 8–10 minute setae along the internal opening of the anus.

5. Pleural setae of I–VII show considerable intraspecific variation in number and length ; those of I–II at least, being short and spine-like ; pleurite VIII normally with three setae, but some specimens may have four on one or both sides. When there are three, the central one is always long and stout and the inner is usually longer than the outer (Text-fig. 9) although in some species the ranges of the two

* X + X setae throughout the paper denotes the setae on the two sides of the body.

overlap (e.g. *regius*) ; there is some intraspecific variation in the lengths of these two setae but the differences between some species are constant both in absolute length and in the ratio between the lengths of the outer and inner setae ; in the available material of some species only one or two setae are measurable and although little can be based on this, the measurements are included in Tables VII and VIII.

MEASUREMENTS

These are included as an assistance to identification, not as an intrinsic character of the species, as no detailed statistical analyses have been made. Such analyses are not possible in most cases owing to the paucity of material and are not necessary at this stage of the taxonomy of the genus in view of the conviction that populations which are only separable statistically should not be recognized as discrete taxa.

All measurements are given in millimetres and the number of structures measured in brackets. Total length : anterior margin of head to end of last tergum (mid-line), omitting anal fringe in female. Length of abdomen : anterior margin of tergite I to end of last tergum. The frequent distortion in mounted Menoponidae makes the measurements of metathoracic and abdominal width useless as the metapleurite and pleurites may or may not be included, therefore the metanotum and tergum V have been measured. Phase contrast has been used in the measurement of setae which enables the fine tips to be seen. The spine-like setae of the asters of sternite II may have these fine tips broken off, making a difference in measurements in the region of 0·008 mm.

Note :— In the Text-figures, setae shown by dotted lines were broken or missing in the specimen drawn and have been taken from the other side or from another specimen. Text-figs. 25–40 and 42–47 are drawn to the same scale.

Key to Species Groups

1 Hypopharynx reduced; sternite I with setae . . . ***sultanpurensis*** (p. 382)
– Hypopharynx fully developed; sternite I without setae 2
2 Number of outer dorsolateral setae of first tibia over 14; post-spiracular seta III long; ♂ genital sclerite as in Text-fig. 72 . . . . ***ishizawai*** (p. 378)
– Number of outer dorsolateral setae of first tibia under 10; post-spiracular seta III markedly shorter than II; ♂ genital sclerite otherwise 3
3 Long setae on posterior margin of pronotum normally 4 + 4; ♀ tergite I with median anterior emargination . . . . . ***carrikeri*** (p. 369)
– Long setae on posterior margin of pronotum normally 3 + 3; ♀ tergite I without median anterior emargination . . . . . ***thoracica*** (p. 340)

The *THORACICA* Species Group

1. Number and position of head setae as in Text-fig. 1 ; there is individual variation in the lengths of setae 10 and 11, but the small number of setae measured show that in the majority of species 10 is a little under or over half to two-thirds the length of 11 (ratio 10/11 : 0·47–0·77). In *M. emersoni* sp. n., 10 is relatively longer (10/11 : 0·80–0·94) and in *simplex* shorter (10/11 : 0·38–0·42). These setae were not measured in *M. rohi, destructor, indigenella* and *varia.* The shape of the head is similar in *thoracica, emersoni, keniensis, devastator, indigenella, regius, varia* and *montana* (Pl. II, fig. 7 ; Text-fig. 1) ; similar in *incerta, pricei, simplex* and *destructor* (Pl. II, fig. 5) ; *abidae* as in Pl. II, fig. 4 ; *rohi* as Pl. II, fig. 6.

2. Gular setae 3–7 each side showing variation both between individuals and on the two sides of the head ; total setae average 9–12.

3. Hypopharynx fully developed.

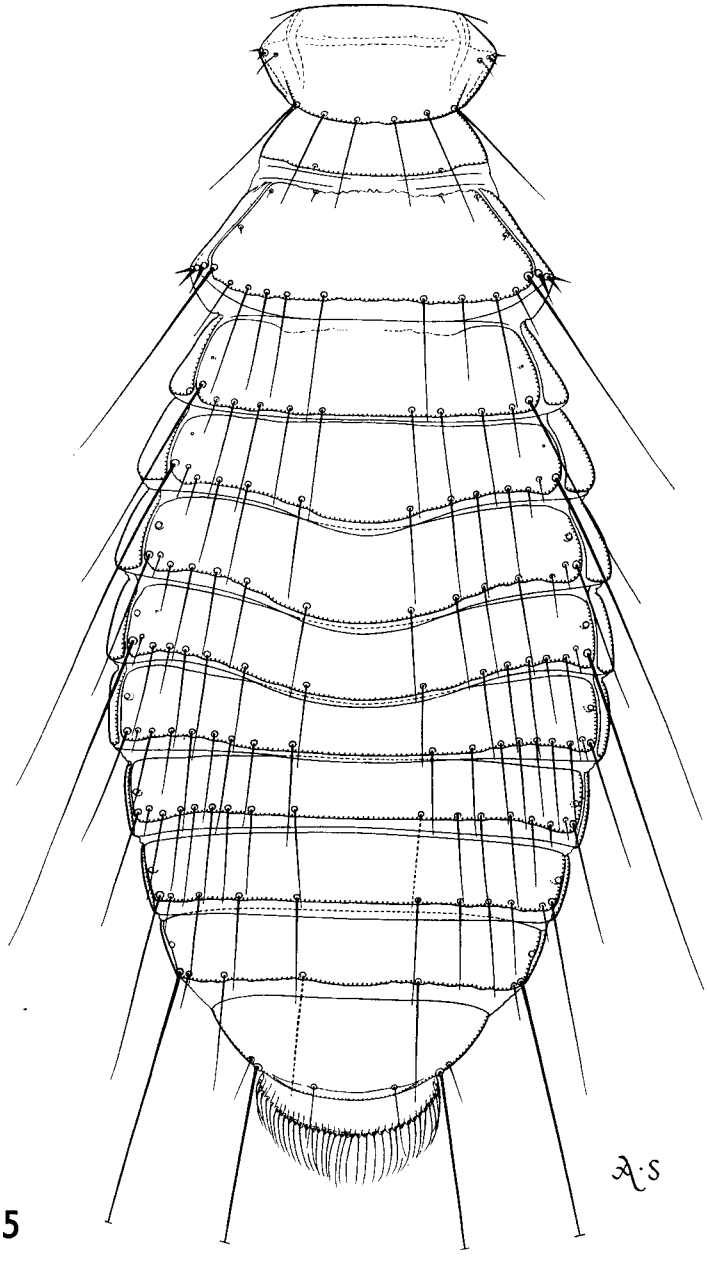

FIG. 25. *Myrsidea thoracica*. ♀ dorsal.

4. Pronotum normally with 3 + 3 long posterior marginal setae, occasional specimens with 2 + 4 or 3 + 1.
5. Metasternal plate normally with 3–4 setae each side, occasionally 2 or 5 on one side.
6. First tibia with under 10 outer dorso-lateral setae (Text-fig. 5, d).
7. Post-spiracular setae III, V, VI considerably shorter and finer than II.
8. Sternite I without setae.
9. Male internal opening of anus with 8 minute setae.
10. Spermatheca pear-shaped or spherical with thickened rim (Pl. I, fig. 4). In *thoracica* (from *Turdus merula*) it is joined to the genital chamber by a long hyaline tube with a terminal sclerotized portion (Pl. I, fig. 5).
11. Male genitalia with form of endomeral plate and parameres constant (Pl. I, fig. 1); apparent differences in shape of parameres probably due to distortion during preparation of the specimen. Male genital sclerite characteristic with a broad flattened plate tapering to a rounded, flattened, or bulbous end. The terminal part of the sclerite is divided into two by a lateral arm each side, the posterior section varying considerably in length in different species. In mounted specimens the arms are found in all positions and it is not possible to say what is their true size and shape; the shape as shown in the figures is of no significance and cannot be used for specific determination.

Myrsidea thoracica (Giebel, 1874)

(Pl. I, figs. 1, 5, 6; Text-figs. 1, 5–8, 25–27, 64)

Type host: *Turdus v. viscivorus* Linn.

Menopon thoracicum Giebel, 1874 : 287. Host: *Turdus viscivorus*.

This species, the first *Myrsidea* to be described from one of the Turdinae, resembles *incerta* and *emersoni* in the female in having tergum I unmodified, but differs in the form of tergum II (Text-fig. 25). The male is distinguished by the details of the abdominal chaetotaxy and genital sclerite (Text-fig. 64).

♀ and ♂ (from *Turdus viscivorus*). Setae of latero-ventral fringe: 11–12. Range of central marginal setae of metanotum: ♀, 8–10, mean (5) 8·8; ♂, 6–9, mean (7) 7·4. Outer dorsal setae of first tibia: ♀, 5–7, mean (10) 6·1; ♂, 5–7, mean (14) 6·0. Setae of femoral brush: ♀, 17–24, mean (10) 20·6; ♂, 13–22, mean (14) 17·2. Female abdominal sternites not markedly arched (Text-fig. 26).

Abdominal Chaetotaxy. In the female, post-spiracular seta VII is shorter and finer than VIII. There is some individual variation in the lengths of the post-spiracular setae III and V–VII; Text-fig. 25 was drawn from a female in which these setae are unusually short. Range of the lengths (in mm.) of six of these setae in ♀: III, 0·20–0·27; V, 0·16–0·20; VI, 0·16–0·23; VII, 0·24–0·31. Tergocentral setae: ♀, Text-fig. 25 and Table I; the outer tergocentral setae on VIII are usually approximately the same length as the inner, in one female out of four this seta on one side is appreciably shorter, being about two-thirds the length of the inner. ♂ setae Table II. Sternal setae: ♀ (Text-fig. 26), II, 7–11 anterior, mean (5) 8·6; 15–18 marginal, mean 16·8; III–IX, Tables III–IV. ♂ (Text-fig. 27), II, 5–8 anterior, mean (7) 6·3; 10–14 marginal, mean (7) 12·1; III–IX, Tables V–VI. In both sexes 3–4 setae in aster; sternite III sometimes with 1–2 anterior median setae.

In addition to these specimens from the type host (*Turdus viscivorus*), others conspecific with *M. thoracica* have been seen from the following hosts: *Turdus boulboul*, *T. merula*, *T. chrysolaus*, *T. obscurus* and *T. ruficollis*. All these agree with

* Numbers in brackets denote number of specimens.

typical *thoracica* in the characters of the female tergites and male genital sclerite. Females from *Turdus merula* have the longer post-spiracular setae on VII (0·34–0·40) as in the specimens from *T. boulboul* (see below) and the relative lengths of the tergo-central setae of VIII vary as in specimens from the type host, but the outer seta is usually shorter than the inner and may be only a third of the length of the latter. They average rather smaller than those from the type host, range of head breadth : 0·52–0·54, mean (14) 0·53 ; in the males there appear to be no significant differences.

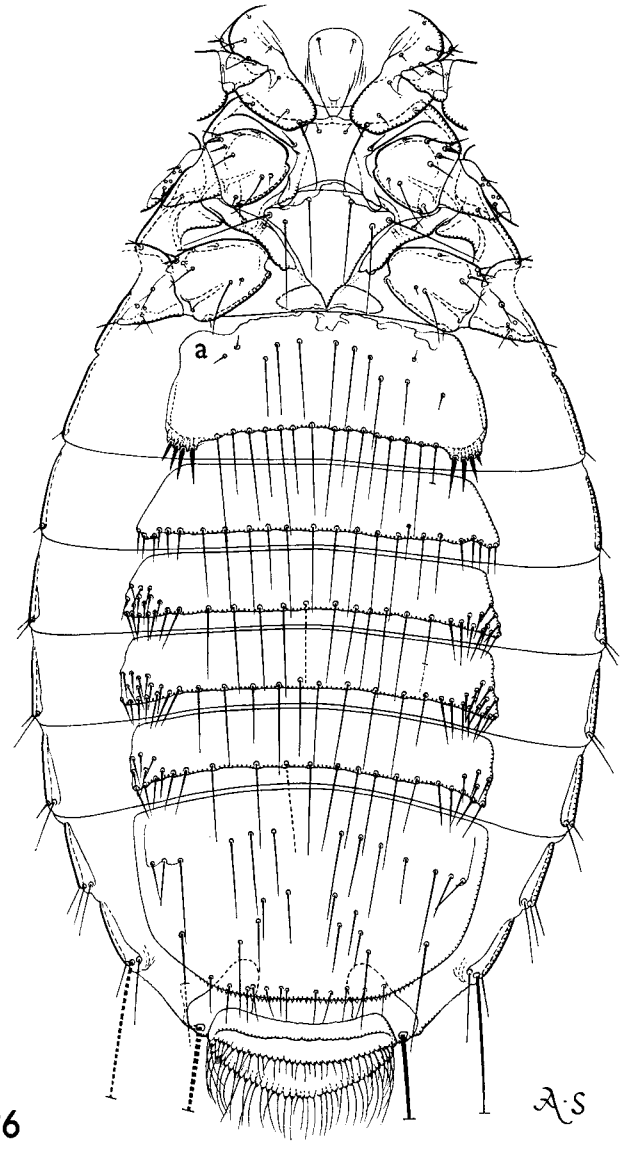

FIG. 26. *Myrsidea thoracica*. ♀, ventral. a, anterior lateral setae of sternite II.

The host is rather smaller, wing length : 126 mm. compared to 151 mm. in *T. viscivorus*. Six males and seven females from *Turdus obscurus* average somewhat smaller than those from the type host, range of head breadth : ♀, 0·49–0·51, mean (7) 0·50 and ♂, 0·45–0·46, mean (6) 0·455 ; the size of the host is smaller, wing length : 122 mm. There is only one measurable post-spiracular seta VII among the females and this falls within the range of typical *thoracica*. Five females from *T. chrysolaus* are similar to those from *T. obscurus* in breadth of head : 0·49–0·51, mean (3) 0·50 ; host wing length : 125 mm. ; length of post-spiracular seta VII is within the typical range. Two females (head breadth : 0·54) from *T. ruficollis* do not appear separable from specimens from the type host. There is no advantage in separating these populations taxonomically and all should be included in *M. thoracica*.

One male and eight females from *T. boulboul* present a rather different problem as they show a number of small character differences from the available specimens from *T. viscivorus*. These include a larger number of abdominal setae on some segments : tergites I–VII (♀), for instance, although the breadth of these is similar in the specimens from *T. viscivorus* and *boulboul*, those from the type host have a total of 73–82 tergocentral setae, mean (4) 76·5 and those from *boulboul* 82–95, mean (4) 89·2 ; the tergocentral setae of VI in the former total 11–13, mean (5) 12 and the latter 13–16, mean (8) 14·7. The setae in the brush on the third femur (♀) number in specimens from the type host 17–24, mean (10 femora) 20·6 and in those from *T. boulboul* : 24–32, mean (16) 28·4, the number of setae of only one femur in these eight specimens overlap with the typical population ; the length of the third femur although showing some overlap averages smaller in specimens from the type host : 0·25–0·27 mm., mean (10) 0·26 and those from *T. boulboul* : 0·27–0·30 mm., mean 0·28. In only one female from *T. boulboul* are the post-spiracular setae measurable and of these only III (0·27 mm.) is within the range of the typical population ; V is 0·256, VI, 0·260 and VII 0·389. The lengths of the longest spine in the female aster overlap but those from the type host average less: 0·056–0·076, mean (9 spines) 0·069 and in those from *T. boulboul* : 0·070–0·094, mean (9) 0·085. On the available material, size as shown by length and breadth of head, breadth of prothorax, metanotum and tergite IV and total length and length of abdomen (these last two are unreliable measurements) appear to be similar in specimens from the two hosts. The size of the two hosts based on wing length measurements are similar, although the wings of *T. boulboul* appear to average slightly less. However, even in the small numbers available from *T. boulboul* the characters show some overlap with those of specimens from the type and other hosts and as our present knowledge of *thoracica* sens. lat. is based on a small number of populations represented by few individuals, the single male and eight females from *T. boulboul* are included in *thoracica* sens. lat. with the other specimens discussed above.

Material examined. From *Turdus v. viscivorus* Linn., 7 ♂, 5 ♀, 5 nymphs. BRITISH ISLES: Somerset, 1 ♂, 1 ♀, v.1934 (*R. Meinertzhagen*, no. 916) ; Yorkshire, 1 ♂, 1 ♀, 5.iii.1956 ; Scotland, Arran, 2 ♂, 2 ♀, 24.viii.1925 (*J. Waterston*) ; Co. Mayo, 3 ♂, 1 ♀, 5 nymphs, i.1947 (*R. Meinertzhagen*, no. 16407).

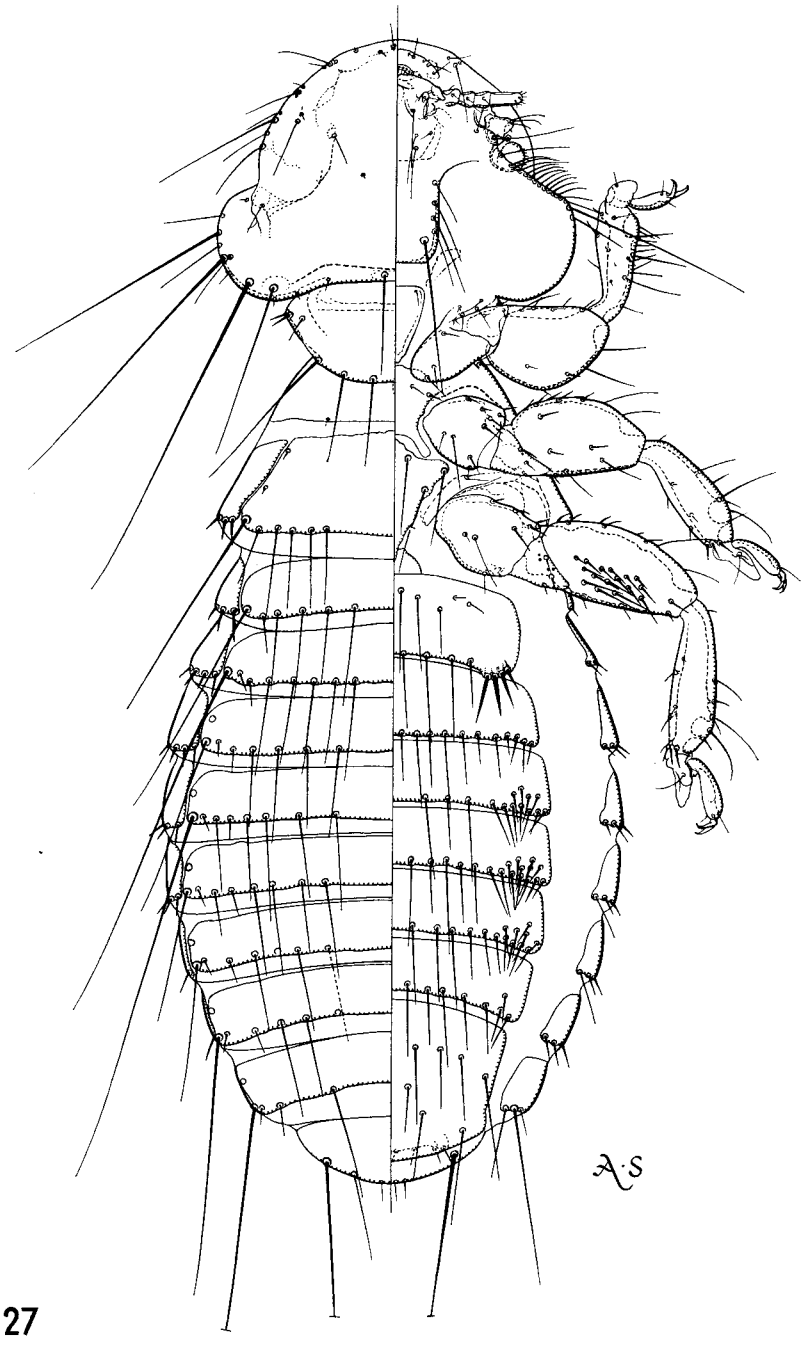

FIG. 27. *Myrsidea thoracica*. ♂, dorsal and ventral.

From *Turdus m. merula* Linn., 24 ♂, 33 ♀, BRITISH ISLES : various localities, B.M. (N.H.).

From *Turdus c. chrysolaus* Temminck, FORMOSA : Chao Chou, 5 ♀, 6.iv.1960 (*R. E. Kuntz*), E.C.

From *Turdus obscurus* Gmelin, 6 ♂, 7 ♀. MALAYA : Mt. Brinchang, 5 ♂, 3 ♀, 16.iii.1963. FORMOSA : Lin-tou, 1 ♂, 5 ♀, 22.iv.1961 (*R. E. Kuntz*), E.C.

From *Turdus ruficollis atrogularis* Jarocki, INDIA : Rajputana, 2 ♀, i.1936 (*R. Meinhertzhagen*, no. 4763), B.M. (N.H.).

From *Turdus boulboul* (Latham), NEPAL, 1 ♂, 8 ♀, x.1935 (*R. Meinertzhagen*, no. 4540), B.M. (N.H.).

Measurements

Specimens from Type Host

	♀				♂			
	Length	Breadth			Length	Breadth		
			Range	Mean (5)			Range	Mean (8)
Head 1		0·39	..	..		0·36	..	..
Head	0·36				0·33			
Head 2		0·56	0·53–0·56	0·55		0·49	0·47–0·50	0·49
Prothorax		0·34	..	..	..	0·29	..	..
Metanotum		0·48	..	..	..	0·38	..	..
Abdomen	1·11	0·64	..	..	0·79	0·53	..	..
Total	1·96	..	..	..	1·54	..	..	..

Lengths of spines in aster ♂ : 1st (outer) 0·024–0·032 (11) ; 2nd 0·040–0·054 (11) ; 3rd 0·044–0·060 (10) ; 4th (inner) 0·058–0·080 (10), mean 0·065.

Specimens from *Turdus merula*

	♀		♂	
	Range	Mean	Range	Mean
Number of spines in aster	3–5 (52)	4	3–4 (16)	3·8
Length of inner spine	0·048–0·080 (39)	0·059	0·048–0·060 (18)	0·056

Myrsidea emersoni sp. n.

(Text-figs. 28, 65)

Type host : *Turdus migratorius* Linn.

This species is similar to *thoracica* from which it is distinguished in the female by the form of the abdominal terga and in the male by the genital sclerite which is swollen distally.

♀ and ♂. As in the description and figures of *thoracica* with the differences shown in Text-figs. 28 and 65 and as follows : head seta 10 is longer : ♀, 0·090–0·094 mm. compared with 0·064–0·072 in *thoracica*, ratio of 10/11 : 0·82–0·94 in *emersoni* compared with 0·57–0·67 in *thoracica*. The ranges of the number of setae in the brush of the third femur overlap but the new species has a

higher average (♀, range 21–28, mean (8) : 25·1 ; ♂, range 18–25, mean (9) : 21·7). The ranges of the numbers of the tergal and sternal setae overlap but more material may show differences in the means ; the post-spiracular setae as in *thoracica*, but in the female VII is long as in the population from *Turdus merula*. As in *thoracica* there may be a few anterior median sternal setae : 5 ♀, III, 1–3 ; 5 ♂, III, 1–3 ; VI, 1 ; VIII, 1. In the female the two posterior setae on tergum IX are short and fine (as in Text-fig. 28) and in the male the central tergocentral setae of VIII are longer than in *thoracica* ; in the latter these setae reach to or just beyond the end of the abdomen and in *M. emersoni* the part beyond the end of the abdomen is at least as long as the part from the setal base to the end of the abdomen. Measurements of the two species are similar except that the head breadth of the five males of *emersoni* averages somewhat larger (range, 0·50–0·52 mm., mean : 0·51).

Material examined. 5 ♂, 5 ♀ from *Turdus migratorius*, U.S.A. as follows : ALASKA : Juneau, 3 ♂, 2 ♀, 6.viii.1950, (*R. B. Williams*, 50–10847). MARYLAND, Beltsville,

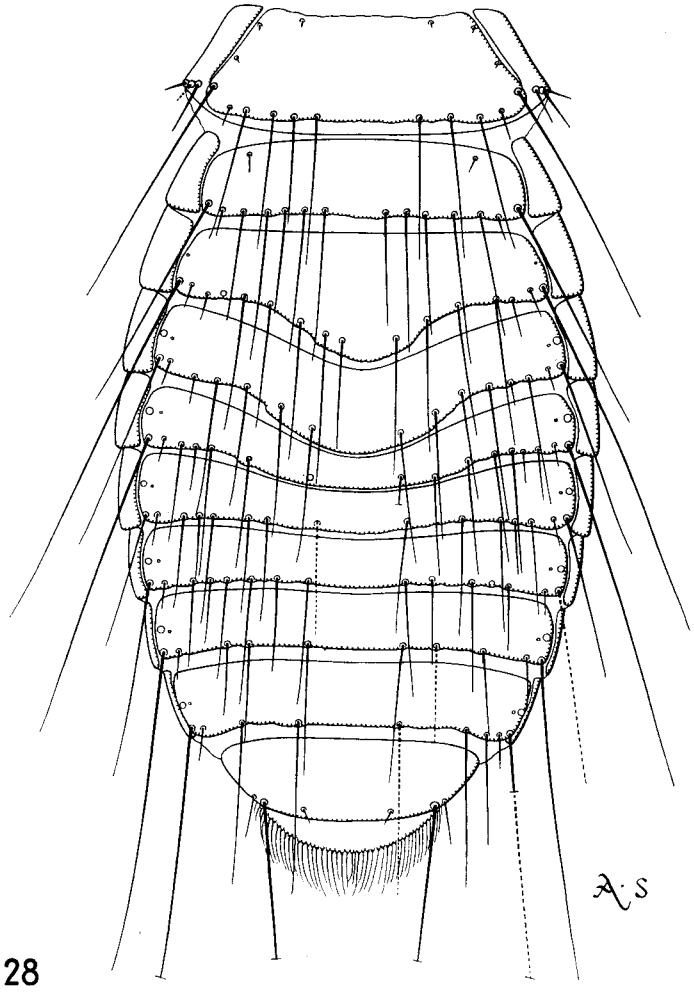

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FIG. 28. *Myrsidea emersoni*. ♀ dorsal. Holotype.

1 ♂, 3 ♀, 28.vii.1947 (*F. R. Smith*, 53–7683) ; Silver Spring, 1 ♂, 18.v.1942 (*F. C. Bishop*, 31649, 42–5786).

Holotype ♀ and allotype ♂ in U.S. National Museum (slide 46, B) from *Turdus migratorius*, MARYLAND, Beltsville, 28.vii.1947 (*F. R. Smith*, 53–7683).

Paratypes 4 ♂, 4 ♀ with the data as given under material examined.

This species is named in honour of Dr. K. C. Emerson to whom I am indebted for the loan of much material.

Myrsidea keniensis sp. n.

(Text-fig. 29)

Type host : *Turdus abyssinicus abyssinicus* Gmelin.

This species is distinguished in the female by the form of the anterior tergites (Text-fig. 29). No constant characters have been found for separating the three available males from those of *thoracica*.

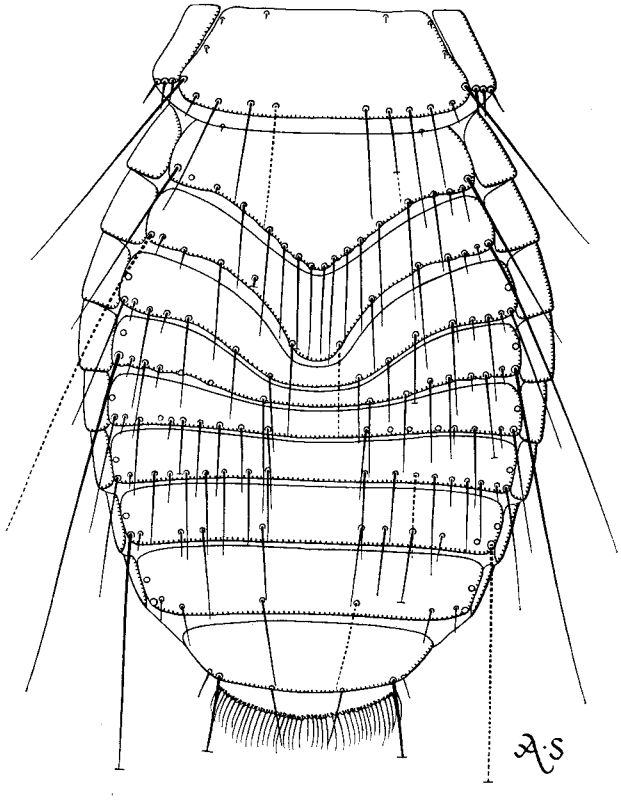

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FIG. 29. *Myrsidea keniensis*. ♀, dorsal. Holotype.

♀ and ♂. Setae of latero-ventral head fringe : 10–11, mean of 10 sides : 10·2. Central setae of metanotum : 2 ♀, 4 + 5, 6 + ?4 ; 3 ♂, 2–4 each side. Outer dorsal setae of first tibia : 5 + 5. Setae of femoral brush : 2 ♀, 21 + 17, 22 + 23 ; ♂, range in six legs : 15–21, mean 17·3. Female sternites V–VI slightly arched. Male genital sclerite appears indistinguishable from that of *thoracica*.

Abdominal Chaetotaxy. Tergocentral setae : see Tables I–II. In the female, sternite II has 5 anterior setae, 12–13 marginal setae and 4 + 4 in the aster. In the male, II has 5–7 anterior setae, 11 marginal setae and 4 + 4 spines ; range of longest spine (4) in each aster : 0·082–0·096 mm. Sternal setae of III–IX as follows : ♀, III, 5 (2) + 12 + 5 (1) ; IV. 12 (6) + 9 + 10 (3) ; V, 16 (8) + 9 + 12 (5) ; VI, 10 (5) + 8 + 10 (4) ; VII, 3 + 2 + 3 + 3 ; VIII–IX, 5 + 5 ; vulval setae, 14–15 : ♂, III, 4 (1) + 12 + 5 (1) ; IV, 12 (6) + 9 + 14 (7) ; V, 14 (8) + 9 + 14 (8) ; VI, 12 (6) + 8 + 11 (5) ; VII, 4 + 8 + (1) ; VIII, 3 + 3 ; IX, 7 + 5.

Material examined. 3 ♂, 2 ♀ from *Turdus a. abyssinicus* (= *Turdus olivaceus abyssinicus*), KENYA, i.1936 (*R. Meinhertzhagen*, no. 6149), B.M. (N.H.).

Holotype ♀ (slide no. 6149a), allotype ♂ (slide no. 6149b).

Paratypes : 1 ♀, 2 ♂ from the type host with the above data.

Measurements

	♀		♂	
	Length	Breadth	Length	Breadth
Head 1	0·34–0·35	0·37–0·38	0·33–0·34	0·34
Head 2		0·53–0·55		0·47–0·48
Prothorax	..	0·31–0·32	..	0·29–0·30
Metanotum	..	0·43–0·44	..	0·35–0·37
Abdomen	0·79–0·87	0·59–0·61	0·72–0·74	0·49
Total	1·51–1·63	..	1·38–1·42	..

Myrsidea incerta (Kellogg, 1896)

(Pl. II, fig. 5 ; Text-figs. 9, 30, 48, 66)

Type host : *Catharus ustulatus* (Nuttall).

Menopon incertum Kellogg, 1896 : 533, pl. 73, f. 2. Host : *Spinus tristis* and *Turdus ustulatus* from Palo Alto, California.

Myrsidea scabiei Ansari, 1956 : 167, fig. 4. Host : *Hylocichla ustulata*. **syn. n.**

The description of this species was based on specimens taken from the two hosts given above. In the collection of the Division of Entomology, University of California, there are two slides labelled types of *Menopon incertum* from *Spinus tristis* and *Turdus ustulatus* respectively. The slide labelled *Turdus ustulatus* is marked "fig'd", meaning that one of the specimens was figured in the original description ; further there are no males among the specimens from *Spinus*, but two males in those from *Turdus*. For these reasons a female on the *Turdus* slide is selected as lectotype thus fixing the type host of *Myrsidea incerta* as *Catharus ustulatus*.

The specimens are in poor condition, having lost many of the setae and two are headless, the figure of the female (Text-fig. 30) has, therefore, been made from a

specimen from the type host from British Colombia. The description (including variation) is based on the type series of *incerta* and *scabiei* and on other specimens from the type host. This species is distinguished in the female from all others considered here by the slight modification of the abdominal terga, the posterior margins of I and II being only slightly convex (Text-fig. 30). The male is distinguished by the genital sclerite (Text-fig. 66) and the tergal chaetotaxy (Text-fig. 48).

♀ and ♂. Setae of latero-ventral head fringe : 9–11, mean (17) 10·2. Central setae of metanotum : ♀, 3 + 3, 4 + 4, or 4 + 5 ; ♂, 3 + 3 or 3 + 4. Outer dorsal setae of first tibia : 27 ♀, 10 ♂, 4. Setae of femoral brush : ♀, 13 – 17, mean (26 legs) 15·2 ; ♂, 12–16, mean (8) 13·4. Abdomen with sclerites well pigmented ; female abdominal sternites III–VI slightly arched.

Abdominal Chaetotaxy. Post-spiracular setae VII varies somewhat in length and may be the same as III or somewhat longer, but is always markedly shorter and finer than VIII. Range of tergocentral setae : ♀, see Table I ; ♂, owing to the poor condition of specimens it is not possible to give an accurate count of the variation, but it appears to be as follows : I, 2–4, each side of abdomen ; II, 2–5 ; III–IV, 3–5 ; V–VI, 2–4 ; mean of total for each tergite : I (4) 6·5 ; II (4) 7·5 ; III (4) 7·8 ; IV (3) 8·5 ; V (5) 6·8 ; VI (4) 5·75. VII–VIII in all available males have

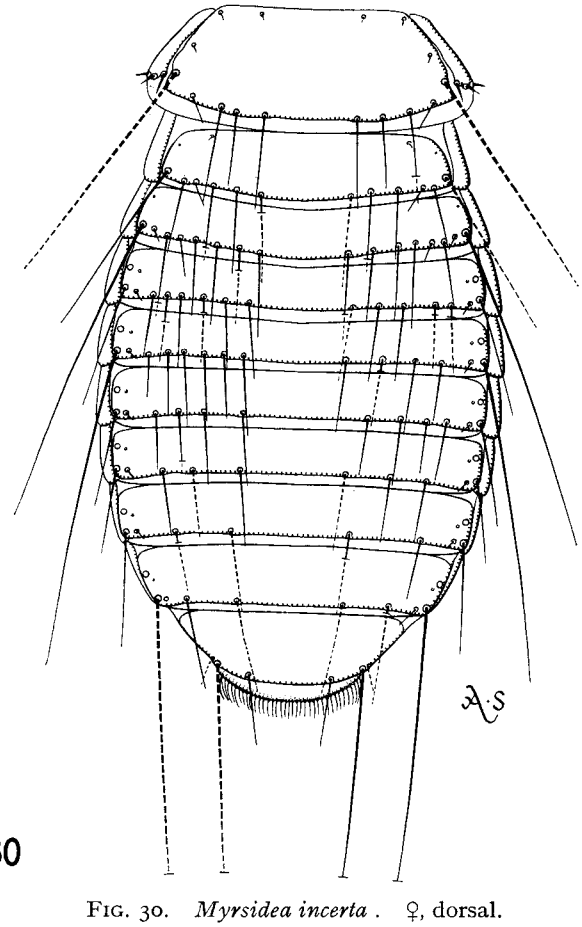

FIG. 30. *Myrsidea incerta* . ♀, dorsal.

2 + 2 with lengths as shown in Text-fig. 48. In most specimens the first tergocentral setae each side is short and rather spine-like. Sternal setae : ♀, II, 4–6 anterior ; 11–14 marginal ; setae in aster normally 4 + 4 but range in 19 specimens : 3–5. III–IX see Tables III–IV. ♂, II, 4–5 anterior ; 10–12 marginal ; aster : 3 + 4 (4), 3 + 3 (2). III, 0–3 lateral anterior setae each side ; 8–10 marginal setae. IV, 2–4 lateral anterior ; 11–14 marginal. V, 3–6 ; 12–14. VI, 2–4 ; 10–14. VII, 0–1 ; 6–11. VIII, 4–6. IX, 4–6.

Material examined. 6 ♂, 17 ♀ from *Catharus ustulatus*, U.S.A. : California, Palo Alto, 3 ♂, 7 ♀ syntypes of *incerta* (*V. L. Kellogg*), Division of Entomology, University of California (2 ♂, 6 ♀) and U.S. National Museum (1 ♂, 1 ♀). U.S.A. : various localities, 1 ♂, 5 ♀, U.S. National Museum and E.C. CANADA : British Columbia, Mandarte Is., 1 ♀ (*G. J. Spencer*). MEXICO : Tres Zapotes, 2 ♂, 4 ♀, types of *M. scabiei* (*M. A. Carriker*, no. 15), C.C. These last specimens are on two slides, one with 1 ♂, 2 ♀ has pencil tick denoting male holotype and female allotype. As the latter cannot be identified the two females on this slide must be considered as paratypes.

From *Turdus minimus bicknelli* (Ridgway), U.S.A. : Elmhurst, New York, 1 ♀, 21.v.1934 (*M. V. Beals*).

LECTOTYPE of *M. incerta* (Kellogg) by present designation : ♀ on slide marked " fig 'd " in the University of California with data as given above.

Measurements

	♀ Lectotype		♂ Paralectotype	
	Length	Breadth	Length	Breadth
Head 1	0·30	0·34	0·30	0·32
Head 2		0·45		0·42
Prothorax	..	0·28	..	0·28
Metanotum	..	0·37	..	0·32
Abdomen	0·77	0·50	0·66	0·44
Total	1·42	..	1·27	..

Range head length	0·29–0·32, mean (10) : 0·30	0·27–0·30, mean : 0·29
Range head breadth 1:	0·32–0·35, mean (11) : 0·33	0·29–0·32, mean : 0·31
Range head breadth 2:	0·43–0·46, mean (11) : 0·45	0·39–0·42, mean : 0·41

***Myrsidea pricei* sp. n.**

(Text-figs. 31, 49)

Type host : *Catharus guttatus* (Pallas).

This species resembles *M. incerta*, from which it is distinguished in the female by the shape of the first two abdominal terga (Text-fig. 31) and in the male by the lengths of the outer tergocentral setae of VII–VIII (Text-fig. 49). Both male and female average somewhat larger and the number of setae in certain groups average more.

♀ and ♂. As described for *incerta* with the following differences : In the small number of specimens available, both sexes average larger ; range of head length of female : 0·320–0·340,

mean (6) 0·325 ; head breadth 1 : 0·350-0·370, mean 0·360 ; head breadth 2 : 0·460–0·490, mean 0·470. In the male head length : 0·290–0·310, mean (4) 0·300 ; head breadth 1 : 0·320–0·330, mean 0·325 ; head breadth 2 : 0·410–0·440, mean 0·422. Central setae of metanotum ♀, 8–10 mean (6) 9·3 ; ♂, 4–9, mean (4) 7. Number of setae in third femoral brush : ♀, 15–20, mean (18) 16·2 ; ♂, 14–17, mean (8) 15·25. Male genital sclerite similar to that of *incerta*, possibly more swollen posteriorly, but it is difficult to be certain on the available material.

Abdominal Chaetotaxy. Tergocentral setae : see Tables I and II. The outer tergocentral setae each side of VII and VIII in the male are about half the length of those in *incerta* and the setae of pleurite VIII are longer (see Tables VII and VIII). Sternal setae as in *incerta*.

Material examined. 6 ♂, 14 ♀, 2 nymphs in the U.S. National Museum from *Catharus guttatus*, U.S.A. as follows : NEW YORK : Elmhurst, 1 ♂, 3 ♀, 18.x.1930 ; 1 ♀, 31.x.1930 ; 2 ♀, 27.xi.1930 ; 1 ♂, 1 ♀, 19.x.1936 ; 1 ♂, 1 ♀, 17.x.1937 ; 1 ♂, 21.x.1937 (*M. V. Beals*). MINNESOTA : Cass Lake, 1 nymph, 13.v.1930 (*O. L. Austin*). N. CAROLINA : Graingers, 2 ♂, 3 ♀, 1 nymph, 1.iv.1933 (*Peters & Lunz*). GEORGIA : Valdosta, 3 ♀, 22.xi.1935 (*B. V. Travis*).

Holotype ♀ and allotype ♂ in U.S. National Museum, Washington (slide no. 26819, 37–2682) from *Catharus guttatus* from U.S.A. : New York, Elmhurst, 19.x.1936 (*M. V. Beals*).

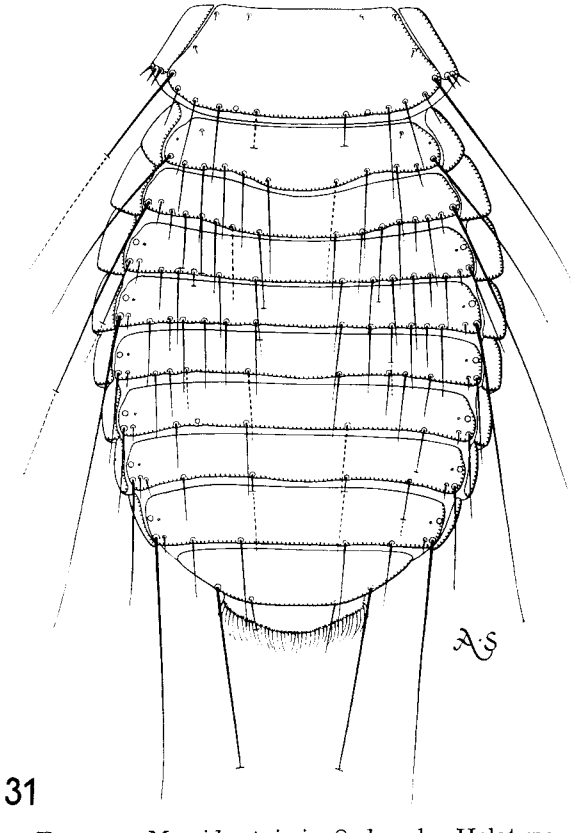

FIG. 31. *Myrsidea pricei*. ♀, dorsal. Holotype.

Paratypes : 5 ♂, 13 ♀ with data as given above under material examined.

This species is named in honour of Professor Roger D. Price, who together with his collaborators, is producing important revisions of Mallophagan genera.

Myrsidea destructor Ansari, 1956

(Text-figs. 32, 50, 67)

Type host : *Catharus m. mexicanus* (Bonaparte).

Myrsidea destructor Ansari, 1956 : 166, fig. 2. Host : *Catherus m. mexicanus* [sic].

This is one of the smaller forms and is distinguished in the female by the characters of the anterior abdominal tergites (Text-fig. 32). The differences between the male and that of *devastator*, which in the characters of the tergal chaetotaxy and genitalia it resembles most nearly, are given under that species.

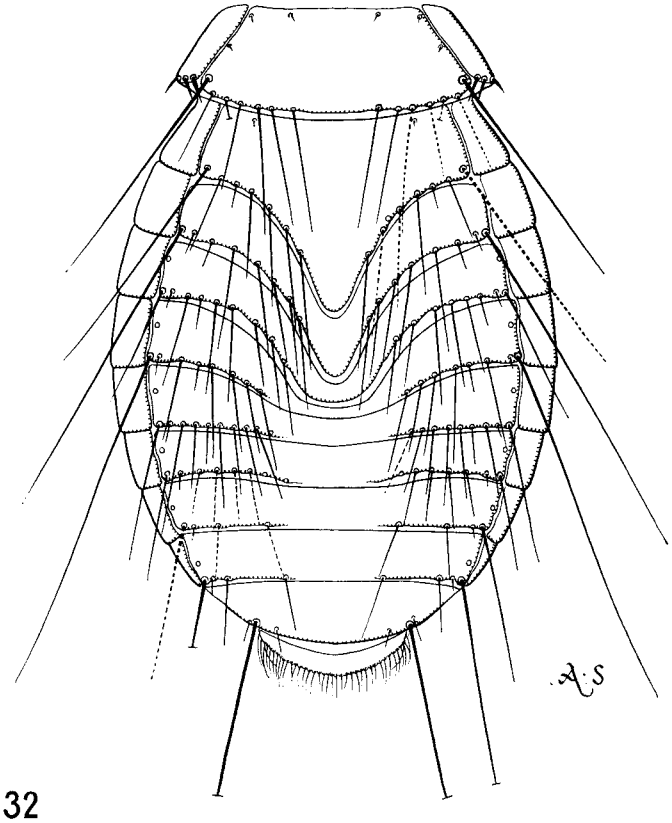

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FIG. 32. *Myrsidea destructor*. ♀, dorsal. Allotype.

♀ and ♂. Setae of latero-ventral head fringe: 9–10. Central marginal setae of metanotum 6 + 6 (♀), 4 + 4 and 4 + 5 (♂). Outer dorsal setae of first tibia in all specimens 4. Setae of third femoral brush: 14 + 14 (♀), 13 + 13 (2 ♂). Female abdominal sternites V–VI strongly arched. Male genital sclerite in both males is distorted but appears to be slightly swollen distally (Text-fig. 67).

Abdominal Chaetotaxy. Post-spiracular setae VII in female shorter and finer than VIII but longer than VI, in male VII is longer and stouter than in female, but not as long and stout as VIII. Tergocentral setae of single female as in Text-fig. 32; in two males: I, 12; 11. II, 11; 10. III, 10; 9. IV, 10; 12. V, 9; 10. VI, 10; 10. VII, 4; 4. VIII, 4; 4; Text-fig. 50 for lengths of posterior setae. Sternal setae in single female: II, 3 + 3 anterior, 16 marginal and 4 + 4 in aster; III, 5 (1) + 12 + 5 (1) = 20 marginal; IV, 8 (2) + 9 + 9 (4) = 20 marginal; V, ?9 (?3) + 9 + 9 (3) = ?21; VI, 8 (3) + 8 + 8 (4) = 17; VII, 2 (0) + ?2 + 2 + ?3 (1) = ?8 marginal; the specimen is not in sufficiently good condition to see the posterior setae. Sternal setae of male paratype: II, 5 anterior, 13 marginal and 4 + 4 in aster; III, 5 (0) + 11 + 6 (2) = 20 marginal; IV, 10 (4) + 10 + 8 (4) = 20; V, 10 (4) + 8 + 9 (4) = 19; VI, 8 (3) + 9 + 8 (3) = 19; VII, 3 (0) + ?2 + 4 + 3 (1) = ?8; VIII, 6; IX to end, 8.

Material examined. Holotype male and allotype female from *Catharus m. mexicanus*. MEXICO: Vol. San Martin, 16.iv.1940 (*M. A. Carriker* no. 754), M.C. 1 ♂ paratype on slide with same data (and " paratype " written in ink).

Measurements

	♀		♂	
	Length	Breadth	Length	Breadth
Head 1	0·30	0·33	0·27	0·30
Head 2		0·42		0·39
Prothorax	..	0·25	..	0·24
Metanotum	..	0·33	..	0·31
Abdomen	0·72	0·50	0·50	0·42
Total	1·35	..	1·08	..

Myrsidea devastator Ansari, 1956

(Text-figs. 10, 33, 52, 68)

Type host: *Turdus s. serranus* Tschudi.

Myrsidea devastator Ansari, 1956: 167, fig. 3. Host: *Turdus s. serranus*.

This species is distinguished in the female by the form of the anterior terga and the large number of setae on terga I–II (Text-fig. 33). The male resembles *M. destructor* in the sparse setae of terga VII–VIII, but is larger.

♀ and ♂. Setae of latero-ventral head fringe: 10–11. The long lateral seta of the metanotum is missing on both sides in one female and on one side in one male; central setae: ♀, 18–21; ♂, 10–13. Outer dorsal setae of first tibia 4. Setae of femoral brush: ♀, 22–26, mean (14) 24·3; ♂, 19 (3). In the holotype male the second and third legs are deformed and have abnormal chaetotaxy. Female abdominal sternites V–VI strongly arched. Male genital sclerite swollen distally (Text-fig. 68).

Abdominal Chaetotaxy. In the female, post-spiracular seta VII is shorter and finer than VIII, in the male it is similar to VIII. Tergite I–II in female with numerous long setae each side, some of which are anterior to the marginal row ; on I some of the more lateral ones are stout and somewhat spine-like. Tergocentral setae : ♀, Table I ; on VII–VIII the outer seta of the two is longer than the inner and in some specimens the two central setae on the posterior margin of IX are shorter than shown in Text-fig. 33 and vary in length on the two sides. 2 ♂, I, 14–18 ; II, 15–16 ; III, 12–14 ; IV, 13 ; V, 11–13 ; VI, 9 ; posterior segments Text-fig. 52. Sternal setae : ♀, II, 12–15 anterior, 21–22 marginal, setae in aster usually 4 + 4, range 2–4 ; ♂, 5–8 anterior, 15–17 marginal, 3–4 in aster. In both sexes the innermost seta in aster is long (see measurements). Female: III, 6 (0) + 7 + 8 (1) ; IV, 18 (10) + 5 + 19 (12) ; V, 17 (10) + 9 + 17 (9) ; VI, 13 (7) + 8 + 13 (7) ; VII, 4 (1) + 3 + 3 + 4 (1) ; VIII–IX, 9 + 8 ; vulva, 15. ♂, III, 5 (0) + 9 + 5 (0) ; IV, 14 (7) + 6 + 12 (6) ; V, 14 (7) + 7 + 16 (9) ; VI, 12 (5) + 6 + 13 (6) ; VII, 7 (2) + 5 + 5 (2) ; VIII, 2 + 3 ; IX, 5 + 4. On sternites II–V there is a definite gap between the central and lateral marginal setae, also sometimes on VI–VII. Pleural setae VIII usually 3 + 3 but two of the ten females have 4 + 3.

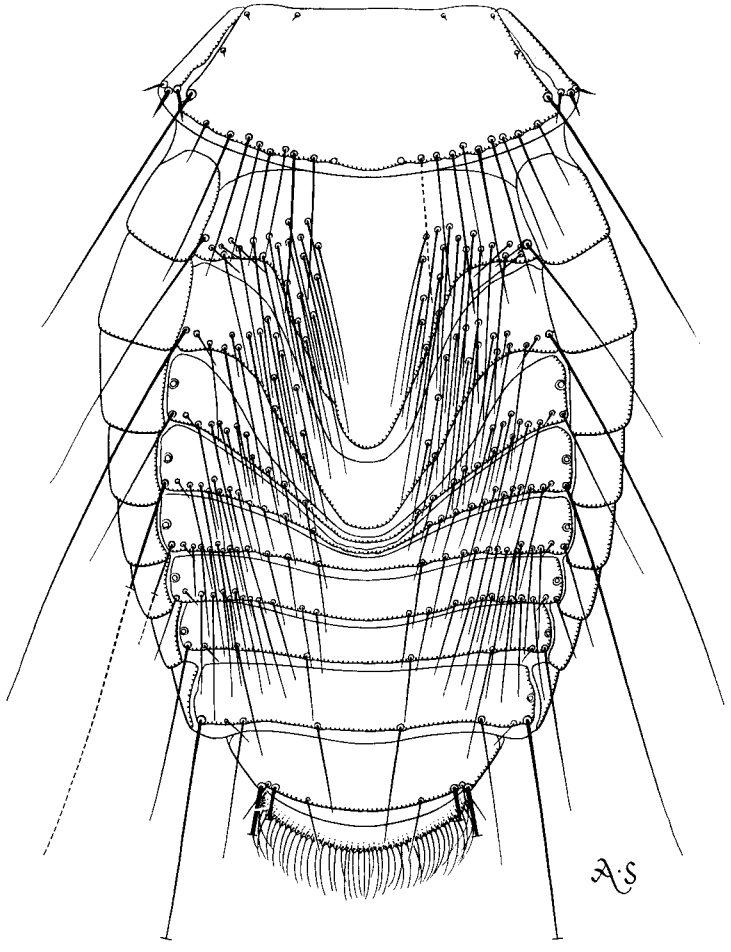

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FIG. 33. *Myrsidea devastator.* ♀, dorsal. Allotype.

Material examined. 2 ♂, 11 ♀ (C.C.) from the type host, *Turdus s. serranus*, from the type locality, PERU : Palambla, as follows : ♂ holotype, 2 ♀ paratypes (allotype ♀ not marked) on type slide, 23.vi.1933 (*M. A. Carriker*, no. 6719) ; 2 ♀ paratypes, 23.vi.1933 (*M. A. Carriker*, no. 6718) ; 1 ♂, 6 ♀ on slides with data as that of holotype but not seen by Ansari. Utcubamba, 1 ♀, 24.iv.1932 (*M. A. Carriker*, no. 4807), C.C.

Measurements

♀

	Length		Breadth	
	Paratype	Range	Paratype	Range
Head 1		(6)	0·38	0·37–0·39
Head	0·34	0·32–0·35		
Head 2			0·54	0·51–0·54
Prothorax	..	..	0·32	0·30–0·33
Metanotum	..	..	0·51	0·47–0·53
Abdomen	0·92	0·85–0·95	0·57	0·56–0·60
Total	1·72	1·60–1·73	..	..

Aster (7), Sternite II.

Outer	0·034–0·042.	Mean 0·038
Inner	0·092–0·116.	Mean 0·101.

♂

	Length		Breadth	
	Holotype	Topotype	Holotype	Topotype
Head 1			0·34	0·35
Head	0·31	0·32		
Head 2			0·46	0·48
Prothorax	..	..	0·28	0·28
Metanotum	..	..	0·36	0·38
Abdomen	0·73	0·73	0·47	0·50
Total	1·42	1·42	..	..

Myrsidea indigenella Ansari, 1956

(Text-figs. 11, 34, 54, 69)

Type host : *Turdus maranonicus* Taczanowski.

Myrsidea indigenella Ansari, 1956 : 165, fig. 1. Host : *Turdus maranonicus*.

This species is distinguished in the female by the characters of the anterior abdominal terga (Text-fig. 34) and in the male from the two previous species by the greater number of tergocentral setae on VII and if constant, by 5 not 4 outer dorsal tibial setae.

♀ and ♂. The single female has abnormal setae on one side of the prothorax (3 + 1), metanotum and metasternal plate (2 + 3). It has not been possible to find the measurements of the head of the male holotype as given in Ansari (1956 : 165) and hence the cephalic index as given in the first couplet of the key to the species (: 164) ; specimens of other species show similar proportions and are not separable on this character. Setae of latero-ventral fringe 11 + 11. Female metanotum lacks the long seta on one side ; central setae : 2 + 4 ; male 4 + 5. Outer dorsal setae of first tibiae in single female probably 5 + 6 and in the male 5 on at least one side. Setae of femoral brush : 22 + 23 (♀) ; 19 + 20 (♂). Female abdominal sternites IV–VI arched. The genital sclerite (Text-fig. 69) in the single male is distorted but the terminal portion is long and apparently not swollen distally.

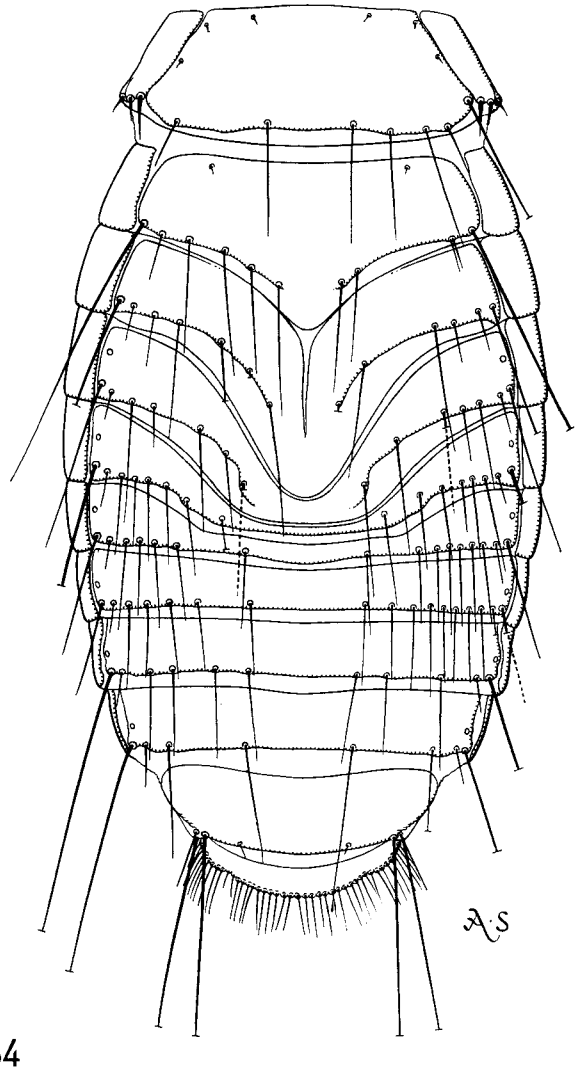

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FIG. 34. *Myrsidea indigenella*. ♀, dorsal. Allotype.

Abdominal Chaetotaxy. Tergal setae in single female as in Text-fig. 34. In male tergocentral setae: I, 12; II, 10; III, 14; IV, 13; V, 13; VI, 12; VII, 9; VIII, 4. Terminal segments as in Text-fig. 54. Sternal setae in female: II, ?4 anterior, 16 marginal and 4 + 3 in the aster; III, 8 (3) + 9 + 5 (1) = 18 marginal; IV, 14 (7) + 9 + ?; V, 15 (8) + 9 + 15 (8) = 23; VI, 10 (4) + 9 + 8 (3) = 20; VII, 4 (1) + 2 + 3 (1) = 7; VIII–IX, ? + 5; vulva, 6 + 7. In the male: II, 8 anterior, 16 marginal, 4 + 4 spines; III, 6 (1) + 12 + 5 (1) = 21 marginal; IV, 11 (5) + 9 + 12 (6) = 21; V, 11 (6) + 10 + 13 (7) = 21; VI, 10 (5) + 7 + 11 (5) = 18; VII, 5 (1) + 7 + 2 (0); VIII 5 + 5; IX, 8. There is no trace in the single male of the long seta usually found each side of the ventral posterior margin.

Material examined. Holotype ♂, allotype ♀ from *Turdus maranonicus* from PERU: Tamborapa, 12.vii.1933 (*M. A. Carriker*, no. 6950), C.C. This slide is labelled "Holotype, Allotype" but without specific name.

Measurements

	♀		♂	
	Length	Breadth	Length	Breadth
Head 1	0·35	0·38	0·33	0·34
Head 2		0·53		0·46
Prothorax	..	0·30	..	0·29
Metanotum	..	0·45	..	0·38
Abdomen	0·90	0·57	0·75	0·050
Total	1·66	..	1·44	..

Myrsidea abidae Ansari, 1956

Pl. II, fig. 4; Text-figs. 2, 24, 35, 51, 70)

Type host: *Turdus fumigatus aquilonalis* (Cherrie).

Myrsidea abidae Ansari, 1956: 171, fig. 7. Host: *Turdus fumigatus aquilonalis*.

This species is distinguished in the female by the form of the abdominal terga (Text-fig. 35) and in the male by a combination of the characters of the tergocentral chaetotaxy and genital sclerite.

♀ and ♂. Setae of latero-ventral head fringe: ♀, 11–12; ♂, 10–11. Central marginal setae of metanotum: ♀, 12–13; ♂, 8–10. Outer dorsal setae of first tibia 5–6. Setae of femoral brush: ♀, 23–24; ♂, 17–18. Female abdominal sternites VI–VII arched. Male genital sclerite (Text-fig. 70) with long terminal portion not swollen distally.

Abdominal Chaetotaxy. Tergocentral setae of female allotype and paratype: I, 11; 9. II, 11; 12. III, 17; 16. IV, 21; 16. V, 19; 22. VI, 19; 16. VII, 14; 11. VIII, 4; 4. Of male lectotype and paratype: I, 14; 10. II, 15; 12. III, 17; 15. IV, 18; 15. V, 18; 15. VI, 18; 14. VII, 14; 11. VIII, 7; 4. Including 5 specimens from British Guiana, the range of tergocentral setae in the male on VII is 9–14, mean (7) 11·6 and on VIII is 4–7, mean (6) 4·8. Posterior segments as in Text-fig. 51. Size of central gap in line of tergocentral setae varies between the two specimens and on different segments. Sternal setae: ♀, II (including British Guiana specimens), 5–10 anterior, 14–20 marginal and 4–5 in aster; III–IX

in Tables III and IV. ♂, II, 8 anterior, 17 marginal and 4 + 4 in aster; III–IX in Tables V and VI. The division between the marginal setae of the brush and the central setae is not always well marked.

Material examined. 2 ♂, 2 ♀, 3 nymphs on type slide (ticked by Ansari) from *Turdus fumigatus aquilonalis*, VENEZUELA: La Punta, 7.iv.1910 (*M. A. Carriker*, no 6946), C.C. From *Turdus f. fumigatus* Lichtenstein, from BRITISH GUIANA, Kanuku Mts., Rupununi, 6 ♂, 5 ♀, 21 and 24.ii.1961 (*T. Clay*, nos. 152, 169), B.M. (N.H.).

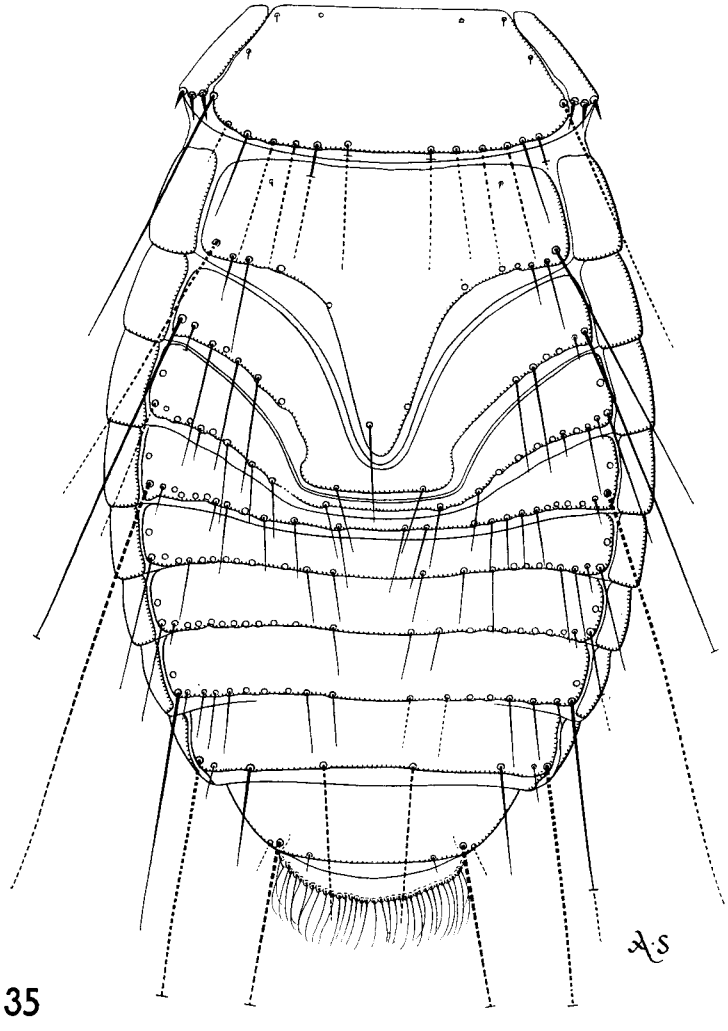

FIG. 35. *Myrsidea abidae*. ♀, dorsal. Allotype.

LECTOTYPE by present designation: ♂ selected from two on type slide. *Allotype*: ♀ as designated by Ansari: 172: " female, central row ".

Measurements

	♀		♂	
	Length	Breadth	Length	Breadth
Head 1	0·29	0·39	0·31	0·33
Head 2		0·54		0·46
Prothorax	..	0·33	..	0·29
Metanotum	..	0·43	..	0·42
Abdomen	0·95	0·65	0·71	0·49
Total	1·74	..	1·37	..

Myrsidea regius Ansari, 1956

(Text-figs. 12, 20–22, 36, 53, 71)

Type host: *Turdus fumigatus obsoletus* Lawrence.

Myrsidea regius Ansari, 1956: 174, fig. 9. Host: *Turdus fumigatus obsoletus*.

This species is distinguished from *abidae* in the female by the characters of the anterior abdominal terga (Text-fig. 36) and in the male by the details of the genital sclerite and usually by the length of the two central setae on tergite VIII.

♀ and ♂. Setae of latero-ventral head fringe: 11–12. Central marginal setae of metanotum: ♀, 6–7 each side; mean of total (including Trinidad specimens) (6) 12·7. ♂, 5–6 each side (4–6 including Trinidad specimens); mean of total (6) 10·7. Outer dorsal setae of first tibia: 5–6. Setae of femoral brush: ♀, 20–22, mean (8) 20·9; ♂, 18–20, mean (6) 19·2. Female abdominal sternites V and VI arched. Male genital sclerite (Text-fig. 71) with long terminal part somewhat tapering distally.

Abdominal Chaetotaxy. Tergocentral setae, ♀ (five specimens including one from Trinidad), I, 11–12, mean 11·6; II, 11–14, mean 12; III, 13–18, mean 16·4; IV, 16–20, mean 18·2; V, 15–21, mean 18·6; VI, 17–20, mean 18·8; VII, 17–18, mean 17·2 in 4 Costa Rica specimens, 14–18, mean 16·5 in 4 Trinidad specimens; VIII, 10–13, mean (8) 11·1. The inner posterior setae on the last tergum vary in size and number (Text-figs. 20–22). One of the topotype males shows a greater number of tergocentral setae, especially on segments IV–V on which the central gap is eliminated, and on some sternal segments; the chaetotaxy of this specimen is given separately from the holotype, paratype and 4 Trinidad specimens, in case it should prove to be a straggler from another host. Tergocentral setae: 6 ♂, I, 9–11, mean 10·2; II, 11–12, mean 11·5; III, 12–16, mean 14·0; IV, 12–17, mean 14·5; V, 12–16, mean 15·2; VI, 14–18, mean 15·7; VII, 11–16, mean 13·5; VIII, 6–10, mean 8·7. Topotype male I, 16; II, 15; III, 20: IV, 26; V, 26; VI, 23; VII, 20; VIII, 11. This specimen also differs from the holotype in having the central setae of VIII much shorter and similar to those of *abidae*, although one of the Trinidad males approaches it in this character; however, in all the Trinidad specimens these setae reach beyond the end of the abdomen. Except for the holotype all the rest of the specimens from the type locality have these setae broken. Before deciding on the status of this single specimen further material is required to assess the amount of variation of these characters. Sternal setae: ♀, II, 10 anterior, 16 marginal and 5 + 5 in the aster (range 4–5); III–XI see Tables III and IV. ♂, II, 11 anterior, 15 marginal and 4 + 4 spines; III–XI see Tables V and VI. Abnormal

topotype male : II, 22 anterior, 18 marginal and 4 + 4 spines ; III, 10 (5) + 17 + 11 (5) = 28 marginal ; IV, 14 (7) + 15 + 15 (8) = 29 ; V, 15 (6) + 13 + 19 (11) = 30 ; VI, 14 (7) + 12 + 16 (8) ; VII, 6 (1) + 5 + 4 + 5 (1) = 18 ; VIII, 12 ; IX, 14. Pleural setae of VIII may be 3 + 3, 3 + 4 or 4 + 4 (♀) and 3 + 3 or 3 + 4 (♂).

Material examined. 4 ♂, 5 ♀ from the type host individual *Turdus fumigatus obsoletus*, COSTA RICA : Juan Vinas, 12.v.1907 (*M. A. Carriker*, no. 3321), C.C. as follows : holotype ♂, allotype ♀ ; paratypes 1 ♂, 1 ♀ ; topotypes 2 ♂, 3 ♀ (not seen by Ansari). From the same host, COSTA RICA : Quapiles, 4 ♀, iii.1903 (*M. A. Carriker*), C.C. From *Turdus fumigatus aquilonalis* (Cherrie), TRINIDAD : Cumuto, 7 ♂, 9 ♀, 3.v.1960 (*T. H. G. Aitken*, TRVL, 4321), B.M. (N.H.) and TRVL. 3 ♀ from a *Turdus n. nudigenis*, TRINIDAD : Aripo Valley, 14.i.1961 (*T. Clay*, no. 29) belong to this species.

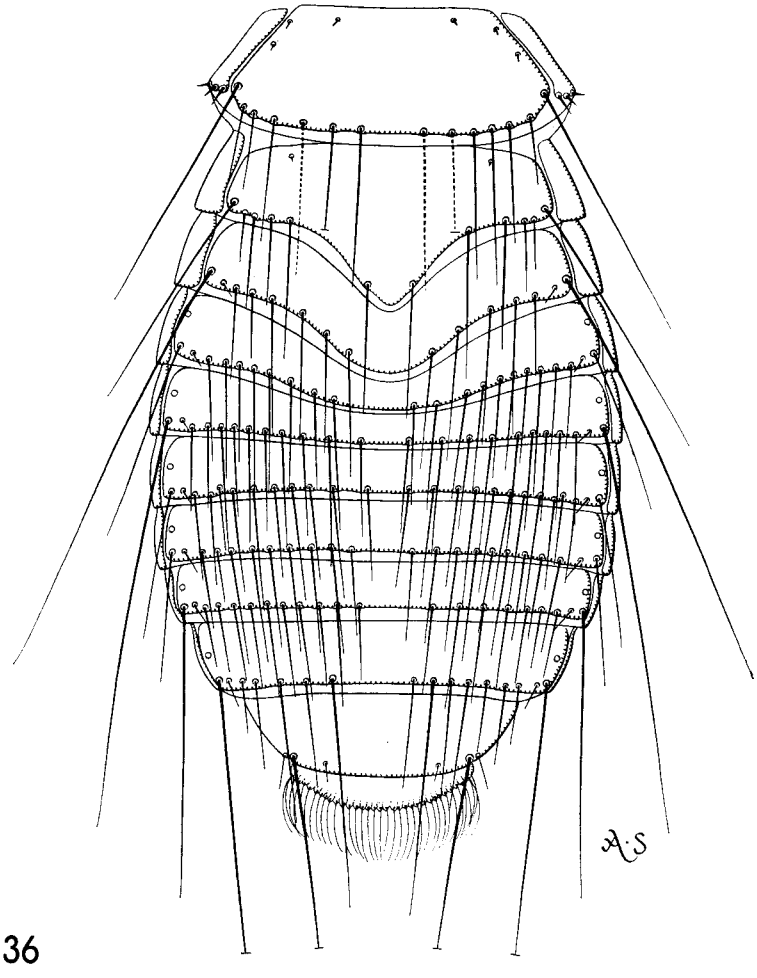

FIG. 36. *Myrsidea regius*. ♀, dorsal. Allotype.

Measurements

		♀ Length Range (8)	♀ Length Mean	♀ Breadth	♀ Breadth Range (8)	♀ Breadth Mean
Head 1	0·34	0·33–0·35	33·9	0·38		
Head 2				0·53	0·51–0·55	0·53
Prothorax	..	..	..	0·33	..	..
Metanotum	..	..	..	0·44	..	..
Abdomen	0·90	..	..	0·59	..	..
Total	1·64	..	..	..	..	..

		♂ Length Range (7)	♂ Length Mean	♂ Breadth	♂ Breadth Range (7)	♂ Breadth Mean
Head 1	0·31	0·30–0·32	0·31	0·34		
Head 2				0·48	0·45–0·48	0·47
Prothorax	..	..	..	0·29	..	..
Metanotum	..	..	..	0·35	..	..
Abdomen	0·65	..	..	0·48	..	..
Total	1·32	..	..	..	..	..

Myrsidea varia Ansari, 1956

(Pl. II, fig. 7 ; Text-figs. 14, 37, 55, 73)

Type host : *Turdus ignobilis debilis* Hellmayr.

Myrsidea varia Ansari, 1956 : 172, fig. 8. Host : *Turdus ignobilis debilis.*

This and the next two species (*simplex* and *rohi*) are placed together as in all three the male genital sclerite has the posterior portion short and enlarged distally. It is distinguished in both sexes by the greater number of outer lateral dorsal setae on the first tibia ; in the female by the form of the anterior terga ; in the male by the details of the genital sclerite, the greater length of the inner tergo-central seta on VIII and from *rohi* also by its larger size.

♀ and ♂. Setae of latero-ventral head fringe : ♀, 11 ; ♂, 10–11. Central marginal setae of metanotum : ♀, 5 + 6 ; ♂, 4–5 each side. Outer dorsal setae of first tibia : ♀, 6 + 6 ; ♂, 6 + 5. Setae of femoral brush : ♀, 22 + 21 ; 3 ♂, 16–18. Female abdominal sternites VI–VII arched. Male genital sclerite (Text-fig. 73), with posterior part shortened and greatly enlarged.

Abdominal Chaetotaxy. Post-spiracular seta VII is missing in the single female, in the male it is long and similar to VIII. Tergo-central setae : ♀, Text-fig. 37 ; 3 ♂, I, 10–14, mean 11·7 ; II, 8–11, mean 9·7 ; III, 10–12, mean 11·3 ; IV, 11–14, mean 12·3 ; V, 11–12, mean 11·7 : VI, 9–12, mean 11 ; VII, 7–8, mean 7·3 ; VIII in all specimens 2 + 2 ; the central seta each side is usually longer and stouter than the one next to it. Lengths of setae of posterior segments as in

Text-fig. 55. Sternal setae : ♀, II, 8 anterior, 16 marginal and 4 + 4 in aster ; III, 6 (1) + 12 + 5 (1) = 21 marginal , IV, 14 (7) + 10 + 15 (8) = 24 ; V, 13 (6) + 7 + 15 (8) = 21; VI, 9 (4) + 7 or 8 + 9 (4) = 17 or 18 ; VII, 4 (1) + 2 + 2 + 3 = 10 ; VIII–IX, 5 + ? ; vulva, 13. ♂, II, 6–8 anterior, 12–16 marginal and 3–4 setae in aster ; III–IX see Tables V and VI.

Material examined. Holotype male, allotype female and two male paratypes from *Turdus ignobilis debilis*, PERU : Huacamayo, 26.vii.1931 (*M. A. Carriker*, no. 4200), C.C.

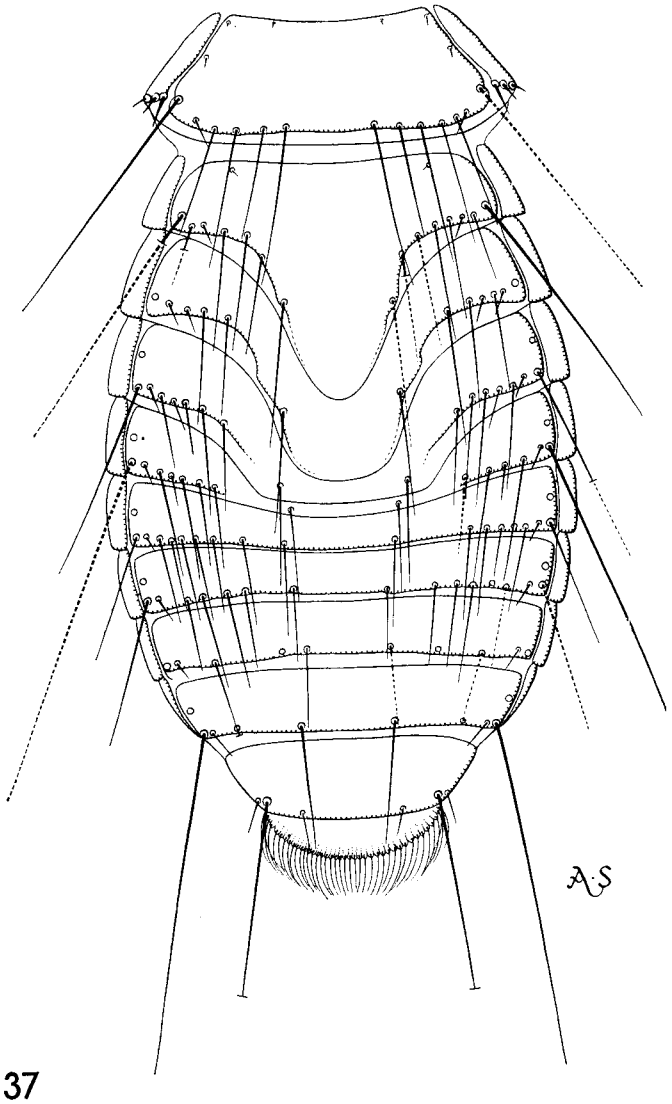

FIG. 37. *Myrsidea varia*. ♀, dorsal. Allotype.

Measurements

	♀		♂	
	Length	Breadth	Length	Breadth
Head 1	0·34	0·37	0·32	0·34
Head 2		0·51		0·46
Prothorax	..	0·30	..	0·28
Metanotum	..	0·44	..	0·36
Abdomen	0·88	0·57	0·70	0·45
Total	1·64	..	1·37	..

Myrsidea rohi Ansari, 1956

(Plate II, fig. 6 ; Text-figs. 13, 38, 56, 74)

Type host : *Catharus g. gracilirostris* Salvin.

Myrsidea rohi Ansari, 1956 : 170, fig. 6. Host : *Catharus g. gracilirostris.*

This species is distinguished in the female by the great enlargement of the first abdominal tergum (Text-fig. 38) ; in the male from that of *simplex* by the details of the genital sclerite and from *varia* by the smaller size, details of the posterior chaetotaxy of the abdomen, the smaller number of setae in the femoral brushes and the genital sclerite.

♀ and ♂. Setae of latero-ventral head fringe : ♀, 8–9 ; ♂, 9–10. Central marginal setae of metanotum : ♀, 14–17 ; ♂, 8–10. Outer dorsal setae of first tibia : 4. Setae of femoral brush : ♀, 11–12 ; ♂, 10–12. Female abdominal sternites V–VI arched. Male genital sclerite (Text-fig. 74) similar to that of *varia* but smaller.

Abdominal Chaetotaxy. Post-spiracular seta VII in female shorter and finer than VIII, in male VII is somewhat longer than in female but still shorter and finer than VIII. Tergocentral setae : 2 ♀, I, 12 and 19. II, 15 and 18. III, 13 and 15. IV, 11 and 14. V, 11 and 12 + ?. VI, 9 and 13. VII, ? and 4 + 4. VIII, 2 + 2 and 2 + 2 ; tergites I–II have a few anterior setae each side (Text-fig. 38), these are included in the counts of the tergocentral setae. ♂, Table II ; there is a well marked central gap in the line of setae and the central seta each side is usually marked off from the rest by a definite gap (Text-fig. 56). Sternal setae : 2 ♀, II, 6 and 7 anterior ; 15 and 16 marginal ; 4 + 4 spines. III–XI as in Tables III and IV. ♂, II, 5 and 7 anterior (2) ; 10–12 marginal, mean (3) 11 ; spines 4 + 4 in all specimens. III–XI see Tables V and VI.

Material examined. 2 ♂, 1 ♀ on type slide from *Catharus g. gracilirostris*, Costa Rica : Vol. Irazu, iv.1902 (*M. A. Carriker*, no. 4), C.C.

The holotype is not marked but in the original description it is stated that it has 12 setae in the femoral brush and as only one of the males has this number (on one side), this specimen has been labelled holotype ; the single female is the allotype. 1 ♂, 1 ♀, 2 nymphs (1 headless) on a second slide with the same data were seen by Ansari and the male and female are his paratypes. The other male and female paratypes listed by Ansari have not been seen.

Measurements

	♀		♂			
	Length	Breadth	Length		Breadth	
				Range (3)		Range (3)
Head 1	0·27	0·29	0·26	0·25–0·26	0·28	
Head 2		0·39			0·36	0·36–0·37
Prothorax	..	0·25	..	..	0·23	..
Metanotum	..	0·37	..	..	0·32	..
Abdomen	0·68	0·50	0·60	..	0·39	..
Total	1·27	..	1·12	..	..	..

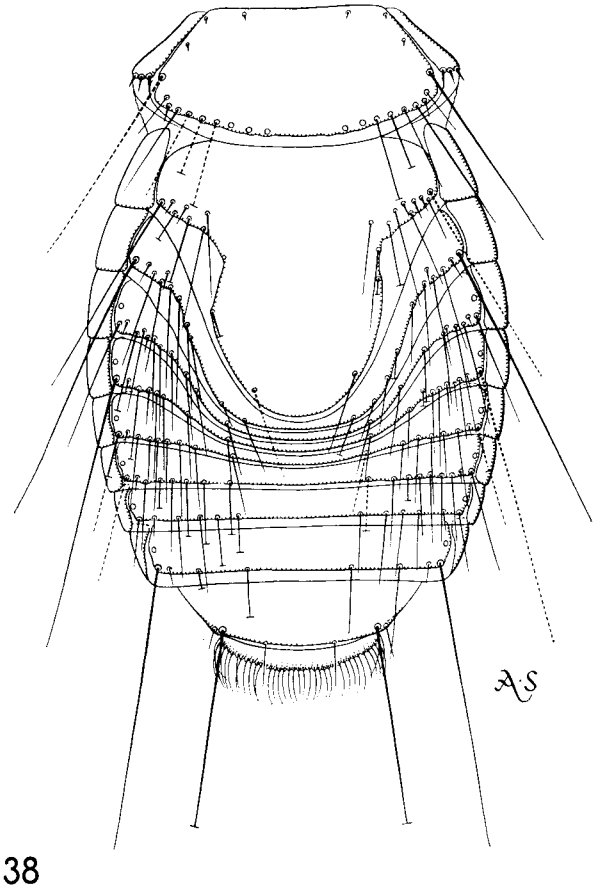

FIG. 38. *Myrsidea rohi*. ♀, dorsal. Paratype.

Myrsidea simplex Ansari, 1956

(Text-figs. 39, 57, 75)

Type host : *Catharus fuscater mentalis* Sclater & Salvin.

Myrsidea simplex Ansari, 1956 : 168, fig. 5. Host : *Catharus fuscater mentalis*.

This species is distinguished in the female by the pointed first tergite and form of terga II–IV (Text-fig. 39) and in the male from *varia* and *rohi* by the shape of the genital sclerite.

♀ and ♂. Setae of latero-ventral head fringe : 4 ♀, 9–11 ; ♂, 10 + 9. Central marginal setae of metanotum : ♀, 14–16, mean (4) 14·75 ; 1 ♂, 5 + 5. Outer dorsal setae of first tibia : 4.

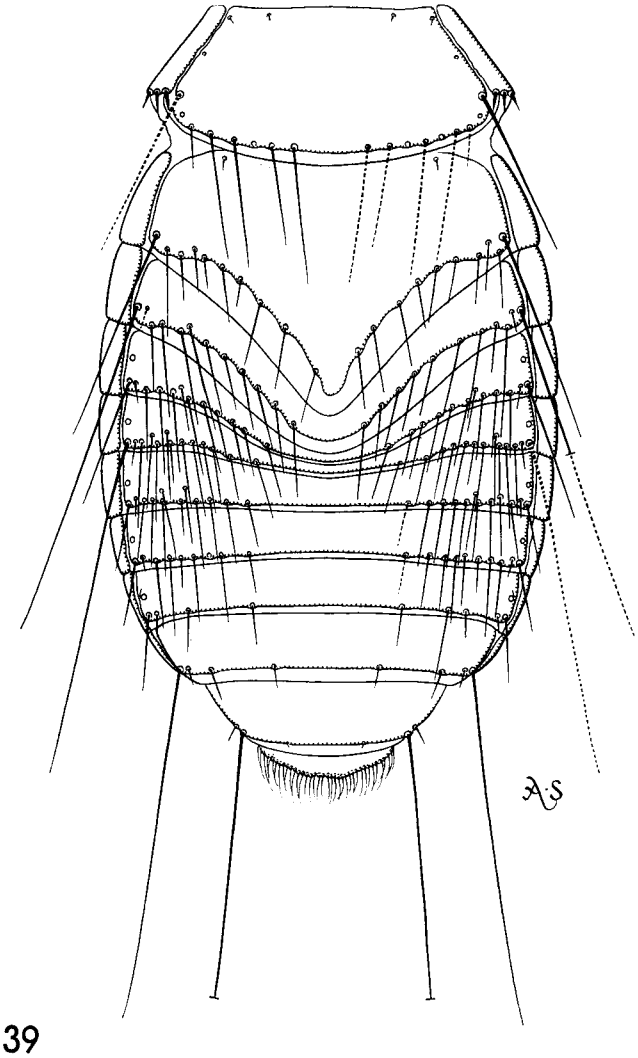

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FIG. 39. *Myrsidea simplex*. ♀, dorsal ; thorax from paratype, abdomen from allotype.

Setae of femoral brush: ♀, 11–14, mean (10 legs) 12·8; 1 ♂, 13 + 14. Female abdominal sternites II–VI strongly arched. Male genital sclerite widest at posterior margin (Text-fig. 75).

Abdominal Chaetotaxy. Post-spiracular seta VII in female as short and fine as VI, in the male it is somewhat longer and stouter, but short and finer than VIII. Tergocentral setae: 5 ♀, I, 14–18, mean 16·2; II, 15–19, mean 16·8; III, 18–20, mean, 19; IV, 19–23, mean 21; V, 18–23, mean 20·8; VI, 12–16, mean 14·2; VII, 4–7, mean 5·4; VIII always 2 + 2. On segments I–VI there may be 1–4 anterior setae each side, these have been included in the above counts. ♂, I, 4 + 4, II, 6 + 5; III, 7 + 6 or 7; IV, 5 + 5; V, 6 + 5; VI, 3 + 4; VII, 3 + 2; VIII, 2 + 2; there is a marked gap between the setae of the two sides and on IV–VIII the central setae are definitely separated from the rest (Text-fig. 57). Sternal setae: ♀, II, 5 anterior, 14–16 marginal and 4 + 4 in aster; III–XI, Tables III and IV; there is a marked gap between central setae and those of the brushes. ♂, II, 9 anterior, 15 marginal and 4 + 4 in aster; III, 3 (0) + 10 + 4 (0); IV, 10 (5) + 7 + 10 (4); V, 9 (3) + 8 + 9 (3); VI, 9 (3) + 8 + 8 (3); VII, 4 (1) + 7 + 4 (1); VIII, 4 + 4; IX–XI, ?8.

Material examined. Holotype male, allotype female and two female paratypes from *Catharus fuscater mentalis*, PERU: Oconeque, 3.vi.1931 (*M. A. Carriker*, no. 3301), C.C. There is also another slide 3301 with the same data in the Carriker collection (not seen by Ansari) with 1 ♂, 2 ♀. The two females are conspecific with *simplex*, but the male differs in the form of the genital sclerite and in having the post-spiracular seta VII long and stout; it is possibly a straggler from another host.

Measurements

		♀ Length Range (4)	♀ Length Mean	♀ Breadth	♀ Breadth Range (4)	♀ Breadth Mean
Head 1	0·30	0·290–0·300	0·297	0·34	0·33–0·34	0·333
Head 2				0·47	0·45–0·47	0·460
Prothorax	..	..	..	0·28	0·26–0·28	0·270
Metanotum	..	..	..	0·42	..	..
Abdomen	0·76	..	..	0·53	..	..
Total	1·50	..	..	..	..	..

	♂		
Head 1			0·31
Head 2		0·27	0·42
Prothorax		..	0·25
Metanotum		..	0·32
Abdomen		0·62	0·42
Total		1·22	..

Myrsidea montana sp. n.

(Pl. I, fig. 7: Text-figs. 40, 41, 58)

Type host: *Zoothera gurneyi otomitra* (Reichenow).

This species is distinguished in the female by the form of the anterior abdominal terga (Text-fig. 40) and the presence of anterior median setae on sternites III–VI; in the male by the elongated genital sclerite.

♀ and ♂. Setae of latero-ventral head fringe : 10–12, mean (10), 11·1 ; seta 10 usually over half length of 11 (ratio 10/11 ♀, 0·535–0·615 ; ♂, 0·575–0·695). Central marginal setae of metanotum 2 ♀, 6 + 8, 6 + 6 ; ♂, 3–5 each side, mean of total (8) : 7. Outer dorsal setae of first tibia ; 2 ♀, 6 + 6, 7 + 6 ; ♂ (16 legs), 5–6, mean 5·8. Setae of femoral brush : 2 ♀, ? + 19 ; 22 + 24 ; ♂ (14 legs), range 16–24, mean 19. In the female terga II and III are divided medianly by the prolongation of I, in the holotype (Text-fig. 41) a small part of the inner end of II appears to be separated by a distinct suture (a.), but this is not apparent in the other female. Sternites V–VI in female strongly arched. Male genital sclerite with part posterior to the arms elongated (Pl. I, fig. 7).

Abdominal Chaetotaxy. Tergocentral setae : ♀, Text-fig. 40 ; ♂, Table II. Sternal setae : 2 ♀, II, 4 anterior, 17–19 marginal and 4 + 4 and 4 + 5 in the aster, the inner seta in both sexes is long (see measurements) ; sternites III–IX : 1 ♀, III, 17 (12) + 17 + 16 (11) ; IV, 17 (11) + 16 + 18 (12) ; V, 16 (8) + 15 + 15 (8) ; VI, 9 (3) + 11 + 9 (4) ; VII, 3 (1) + 8 + 3 (2) ; VIII, 7 + 6 ; IX, 7 + 8 ; 2 ♀, 14 and 16 vulval setae. 10 ♂, II, 2 anterior, 12–16 marginal and 3 + 4 (1) and 4 + 4 (9) in the aster ; III–IX, Tables V and VI. Both females have anterior

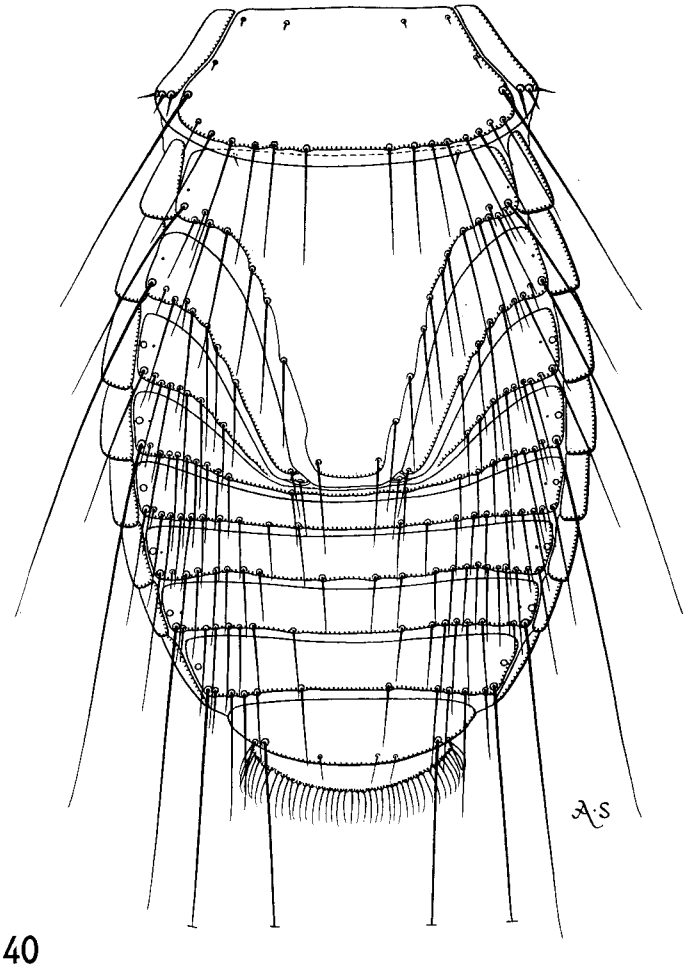

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FIG. 40. *Myrsidea montana*. ♀ dorsal. Holotype.

median setae, countable in only one specimen : sternite III, 18, IV, 16, V, 6 ; VI, 6. In the 10 males, one is damaged, 5 have no anterior setae ; 4 have the setae as follows : III, 2 : 1 : 4 : 0 ; IV, 3 : 2 : 0 : 1 ; V, 1 : 0 : 0 : 0. Pleural setae of a varying number of segments III–VII have 1–3 rather long inner setae reaching to or beyond the end of the next pleurite. Pleurite VIII : ♀, 4 + 4, 3 + 3, ♂, 3 + 3 setae.

Material examined. 10 ♂, 2 ♀ from *Zoothera gurneyi otomitra*, TANGANYIKA : Amani, vii.1935 (*R. E. Moreau*), B.M. (N.H.) No. 4313.

Holotype female and allotype male (slides 4313 a. and 4313 b.).

Paratypes : 9 ♂, 1 ♀ (slides no. 4313) from type host with data as given above.

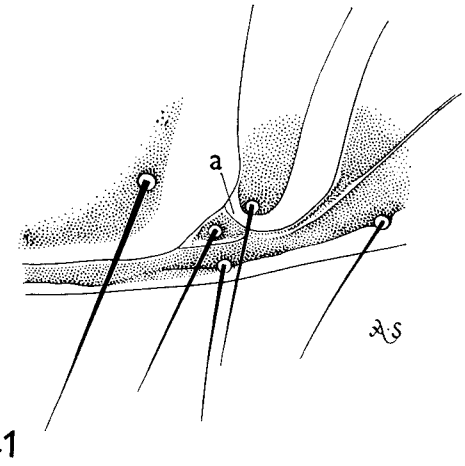

FIG. 41. *Myrsidea montana*. ♀, parts of tergites I–III enlarged. Holotype.

Measurements

	♀ Length	♀ Breadth	♂ Length	♂ Breadth Range	♂ Breadth Mean
Head 1	0·32	0·37	0·30 (0·32)		
Head 2		0·50	(0·43)	0·42–0·43	0·427 (6)
Prothorax	..	0·32	.. 0·28	..	..
Metanotum	..	0·43	.. 0·34	..	..
Abdomen	0·83	0·59	0·54 0·44	..	..
Total	1·55	..	1·19 ..	..	..
Inner spine of st. II	0·144–0·148 (3)		0·094–0·128, mean (16) 0·108 : S.D. 0·01		

THE *CARRIKERI* SPECIES GROUP

1–3. As in *thoracica* group. Shape of head similar within the group (Pl. II, fig. 3).
4. Pronotum normally with 4 + 4 long posterior marginal setae.
5–6. As *thoracica* group.
7. Post-spiracular setae VII long but noticeably shorter and finer than VIII.
8–11. As *thoracica* group.

The four species comprising this group may not form a natural assemblage but for convenience are placed together on the number of pronotal marginal setae and the deep emargination of the anterior margin of tergite I. *M. antiqua* is separated in the female from the other three species and from all other species discussed here by the form of the comb-like projections of the inner surface of the genital chamber (Text-fig. 23). The females are distinguished from each other by the shape and size of tergites I–III ; *aitkeni* sp. n. differs only slightly from *antiqua* in these characters but is easily distinguished by the internal thickening of the genital chamber. When it is possible to examine undistorted male genital sclerites, *antiqua*, *carrikeri* and *elegans* are separable on the characters of these structures ; those of *aitkeni* and *antiqua* appear to be indistinguishable, in fact it seems doubtful if males of these two species can be separated. In the material examined, *elegans* males have a greater number of tergocentral setae : totals on I–VII, 157–181 compared to 114–140 in *carrikeri*, 103–120 in *antiqua* and 97–126 in *aitkeni*. Thus, it is probable that a male with more than 150 setae on I–VII is *elegans*.

Myrsidea carrikeri (Eichler, 1943)

(Pl. II, fig. 3 ; Text-figs. 3, 15, 42, 59, 76)

Type host : *Turdus grayi casius* (Bonaparte).

Menopon thoracicum var. *majus* Carriker, 1903 : 187, *nec Menopon major* Piaget, 1880. Host : *Merula grayi*.
Menacanthus carrikeri Eichler, 1943 : 59 [*nom. nov.* for *Menopon majus*].
Myrsidea carrikeri (Eichler) ; Ansari, 1956 : 175, fig. 11.

The original description of *majus*, which amounted only to measurements of one female, was based on one female from *Merula grayi* and one from *Tanagra cana*. The female from the former host has been labelled type by the author ; this specimen will here be designated as lectotype, thus fixing the type host as *Turdus grayi casius*. In addition to the female lectotype the descriptions and figures given here are based on 6 ♂ and 4 ♀ from the type host from Costa Rica.

♀ and ♂. Setae of latero-ventral head fringe : 10–12, with one female with 13 on one side. Central setae of metanotum each side : ♀, 6–8, mean (5) 7·6 ; ♂, 5–7, mean (6) 6·1. Outer setae of first tibia 5–7. Setae of femoral brush : ♀, 21–28, mean (9 legs) 24·2 ; ♂, 17–22, mean (8 legs) 19·1. Female abdominal sternites not markedly arched. Male genital sclerite elongated and flattened distally (Text-fig. 76).

Abdominal Chaetotaxy. In the female, post-spiracular seta VII is somewhat shorter and finer than VIII but not markedly so. Tergocentral setae : Tables I and II ; in the female the inner seta each side of VIII is usually longer than the rest ; the inner posterior setae of the last tergum may be 1 + 1 short (2 ♀) as in Text-fig. 42, 1 long + 1 short (1 ♀), 2 + 1, all short (1 ♀). In the male the central gap in the line of setae on II–VII may be present or absent. Sternal setae : 5 ♀, II, 12–22 anterior mean 17·4 ; 18–21 marginal mean 19·6 ; 4–5 in aster ; III–XI, (Tables III and IV) ; ♂, II, 10–12 anterior (2), 16 marginal (2) and 3–5 in aster (6) ; III–XI, (Tables V and VI). Pleural setae of VIII, 3 + 3 (3 ♀), 3 + 4 (2 ♀) ; 3 + 3 (6 ♂).

Material examined. 1 ♀, labelled type of *Menopon thoracicum majus* Carriker from *Turdus grayi casius*, COSTA RICA : Juan Viñas, iii.1902 (*M. A. Carriker*, no. 14), C.C. From same host, COSTA RICA : Guapiles, 6 ♂, 4 ♀, iii.1903 (*M. A. Carriker*), C.C. ; 2 ♂, 1 ♀ of this lot seen by Ansari (1956 : 176).

LECTOTYPE of *Myrsidea carrikeri* by present designation : ♀ labelled *Menopon thoracicum majus* type with data as given above.

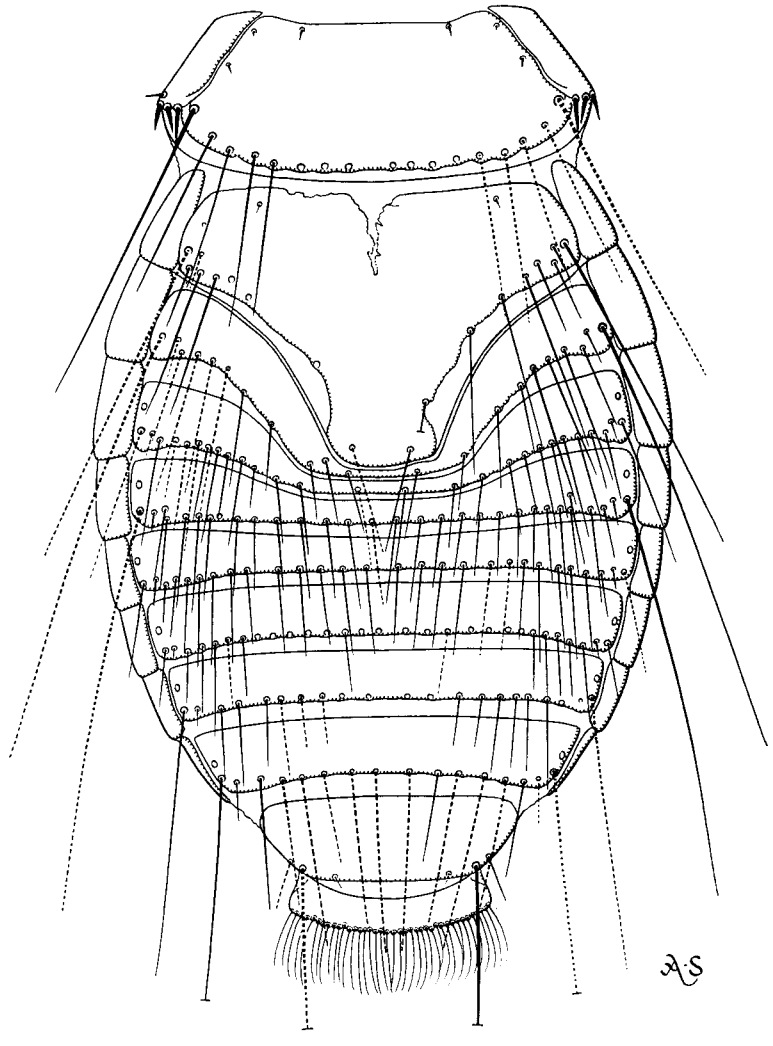

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FIG. 42. *Myrsidea carrikeri*. ♀, dorsal. Lectotype.

Measurements

	♀				
		Length		Breadth	
		Range (5)	Mean	Range (5)	Mean
Head 1	0·35	0·34–0·36	0·35	0·39–0·41	0·406
Head 2				0·56–0·58	0·570
Prothorax	..	..	..	0·34–0·35	0·346
Metanotum	..	..	..	0·50–0·51	0·508
Abdomen	0·94	..	..	0·64–0·67	0·660
Total	1·79	..	..	..	..

	♂				
Head 1	0·33	0·30–0·33 (5)	0·32	0·34–0·36	0·350
Head 2				0·47–0·50	0·486
Prothorax	..	..	..	0·29–0·31	0·300
Metanotum	..	..	..	0·36–0·38	0·370
Abdomen	0·71	..	..	0·50 (1)	..
Total	1·43	..	..	..	..

Myrsidea antiqua Ansari, 1956

(Pl. I, fig. 4 ; Text-figs. 16, 23, 43, 60, 77)

Type host : *Turdus g. grayi* Bonaparte.

Myrsidea antiqua Ansari, 1956 : 174, fig. 10. Host : *Turdus g. grayi.*

In the original description the type material was said to have come from " *Turdus g. grayi* Bonaparte, Mexico (Tlacotalpan Costa Rica), Carriker 212a and 212b February 15, 1940." Amongst the material seen by Dr. Ansari are two slides with this wording on the label except for " Costa Rica ", presumably added to the text in error. In addition there is a third slide in the Carriker collection, not seen by Dr. Ansari, with the same data and number (212) ; the two specimens on this slide presumably came from the same host individual as the type material.

♀ and ♂. Setae of latero-ventral head fringe : ♀, 11–12 ; ♂, 11–13. Central marginal setae of metanotum : 3 ♀, 6–8 each side ; 4 ♂, 5–6. The available specimens have rather more metapleural setae than in the other species of this group : ♀, 3–7 each side, mean (23 sides)* 4·8 compared with *carrikeri* mean (8) 3·7 and *elegans* (1) 4 + 3 ; ♂, 3–6, mean (19)* 4·1 compared with *carrikeri* mean (6) 3·25 and *elegans* (10) 2·7. Outer dorsal setae of first tibia 5–6. Setae of femoral brush : ♀, 22–24, mean (5) 23·2 ; ♂, 19–22, mean (7) 20·7. The inclusion of 4 legs from the Trinidad specimens gives a range in the male of 17–22, mean (11) 20·2. Female abdominal sternite VI arched ; sculpturing of genital chamber unlike any other found in the species from Turdinae (Text-fig. 23). Male genital sclerite long and narrow (Text-fig. 77).

* Includes Trinidad specimens from *Turdus fumigatus.*

Abdominal Chaetotaxy. Post-spiracular seta VII as in *carrikeri*. Tergocentral setae: Tables I–II; if the Trinidad males are included, the range is as follows: I, 11–15; II, 13–17; III, 15–17; IV–V, 14–21; VI, 12–20; VII, 11–18; VIII, 5–10; there is little difference in the means. In the male the line of setae on I–VII may be continuous without a central gap; the two central setae on VIII vary somewhat in length between specimens and on the two sides of the same specimen; they usually reach beyond the end of the abdomen. Sternal setae: 3 ♀ II, anterior 9–12, mean 10·7; marginal 15–16, mean 15·7; 4 + 4 in aster; III–IX in Tables III–IV. The sternal setae may have a central gap on V, VI or VII. 4 ♂, II, anterior 8–10, mean 9·25; marginal 12–16, mean 13·75; 4 + 4 setae in aster; III–IX in Tables V–VI. The line of sternal setae is continuous and the marginal setae of the lateral brushes distinguished only by a difference in the setae, not always obvious on all segments; on VII the similar setae form a continuous line, with 1–2 anterior setae laterally; on VIII the line may or may not show a central gap.

Material examined. Holotype ♂; allotype ♀; paratypes 2 ♂, 1 ♀; topotypes 1 ♂, 1 ♀ from *Turdus g. grayi*, MEXICO: Tlacotalpam, 15.ii.1940 (*M. A. Carriker*,

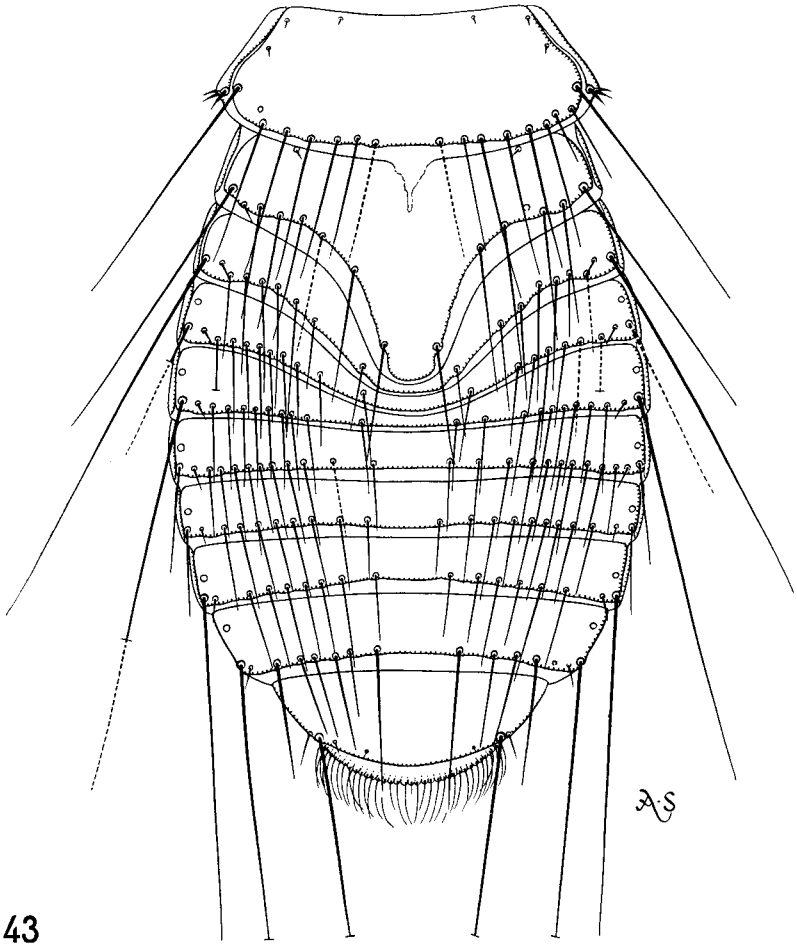

FIG. 43. *Myrsidea antiqua*. ♀, dorsal. Allotype.

no. 212), C.C. From *Turdus fumigatus aquilonalis* (Cherrie), TRINIDAD : Cumuto, 3 ♂, 8 ♀, 17.v.1960 (*T. H. G. Aitken*, TRVL 4380) ; Vega de Oropouche, 5 ♂, 1 ♀, 15.xii.1959 (*T. H. G. Aitken*, TRVL 3742 and 3737) ; Arima Valley, 1 ♂, 1 ♀, 10.iii.1961 (*T. Clay*, no. 192), B.M. (N.H.).

Measurements

(Including Trinidad Specimens)

	♀ Length Range	♀ Length Mean	♀ Breadth Range	♀ Breadth Mean
Head 1	0·33–0·36	0·35 (11)	0·39–0·41	0·40 (10)
Head 2			0·53–0·56	0·55 (10)
Prothorax	..	..	0·32–0·35	0·34 (11)
Metanotum	..	..	0·45–0·50	0·48 (10)
Abdomen	0·85–0·91 (4)	..	0·62–0·65 (3)	..
Total	1·62–1·74 (4)	..	..	..

	♂ Length Range	♂ Length Mean	♂ Breadth Range	♂ Breadth Mean
				(10)
Head 1	0·30–0·33	0·31 (10)	0·35–0·36	0·356
Head 2			0·47–0·50	0·483
Prothorax	..	..	0·29–0·31	0·308
Metanotum	..	..	0·36–0·39	0·374
Abdomen	0·70–0·76 (4)	..	0·50–0·53 (4)	..
Total	1·38–1·43 (4)	..	..	..

Myrsidea aitkeni sp. n.

(Text-fig. 44)

Type host : *Turdus n. nudigenis* Lafresnaye.

♀ and ♂. Number of setae of latero-ventral fringe, metanotum, first tibia and femoral brush fall within the range of those of *M. antiqua*. The metapleural setae average fewer : ♀, 3–5, mean (22 sides) 3·9 ; ♂, 2–5, mean (13) 3·5. The female genital chamber has the thickening normally found in the species from the Turdinae (Text-fig. 24) and differs from that in *antiqua*. The male genital sclerite appears similar to that of *antiqua*. The abdominal terga in the female differ slightly from those of *antiqua* (Text-fig. 44).

Abdominal Chaetotaxy. Post-spiracular VII as in other species of this group. The range of tergocentral setae in the female is so large that it cannot be used for specific separation : I, 11–14 ; II, 9–18, III, 9–28 ; IV, 13–28 ; V, 15–27 ; VI, 15–27 ; VII, 11–24 ; VIII, 8–14. Range and mean of tergocentral setae in male : I, 12–15, mean (5) 13 ; II, 11–15, mean 13·6 ; III, 15–21, mean 18·2 ; IV, 15–19, mean 17·6 ; V, 16–21, mean 17·8 ; VI, 15–19, mean 16·8 ; VII, 12–16, mean 14 ; VIII, 7–10, mean 8·2.

Material examined. 18 ♂, 24 ♀ from *Turdus n. nudigenis*, TRINIDAD : Cumuto, 26.iv.1960 (TRVL 4294, 4309), 3.v.1960 (TRVL 4320), 10.v.1960 (TRVL 4354), 17.v.1960 (4383) ; Caroni River, 4.i.1961 (5259) ; Sangre Grande, 5.xii.1958 (2118, 2123, 2127, 2128, 2130), (*T. H. G. Aitken*). 4 ♀ from a *Turdus fumigatus aquilonalis* (Cherrie), TRINIDAD : Arima Valley, 28.i.1959 (*T. H. G. Aitken*, 2285a) also belong to this species.

Holotype ♀, allotype ♂ on slide No. 686 from *Turdus n. nudigenis*, 26.iv.1964, TRVL4309 with data given above, B.M. (N.H.).

Paratypes: 17 ♂, 23 ♀ from *Turdus n. nudigenis* with above data. The males are included although at present indistinguishable from those of *antiqua*, as females of this latter species have not been found on *T. nudigenis*.

This species is named in honour of Dr. T. H. G. Aitken of the Trinidad Regional Virus Laboratory, Port of Spain, who has contributed so much towards the study of the ectoparasitic arthropods of Trinidad.

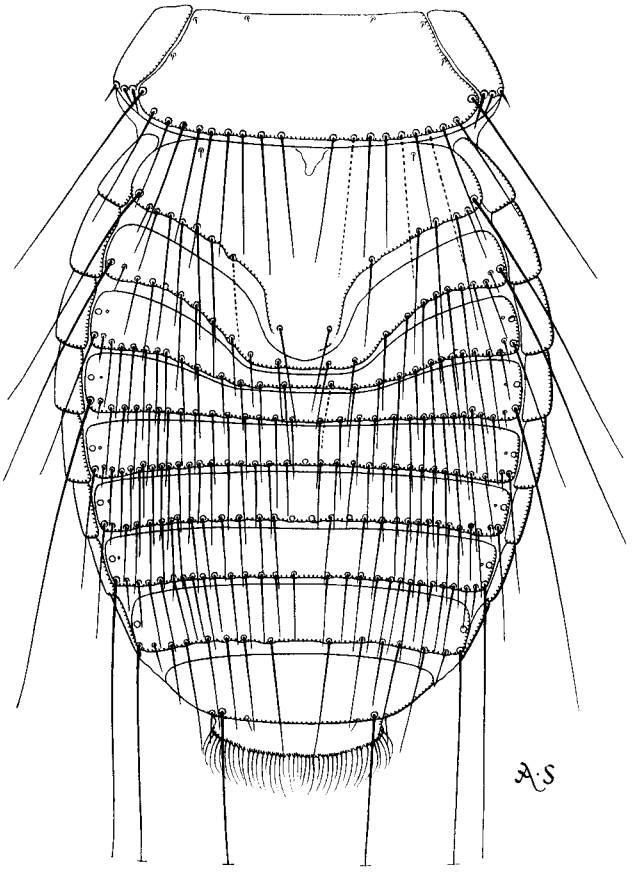

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FIG. 44. *Myrsidea aitkeni*. ♀, dorsal. Holotype.

Myrsidea elegans Ansari, 1956

(Text-figs. 17, 45, 61, 78)

Type host : *Turdus r. rufiventris* Vieillot.

Myrsidea elegans Ansari, 1956 : 176, fig. 12. Host : *Turdus r. rufiventris*.

The description of this species was based on four males ; in addition there are in the Carriker collection and not seen by Dr. Ansari, one male and one female with the data, including the number 16456, as given on the slide with the paratypes ; it can be assumed that these two specimens came from the same host individual as the paratypes.

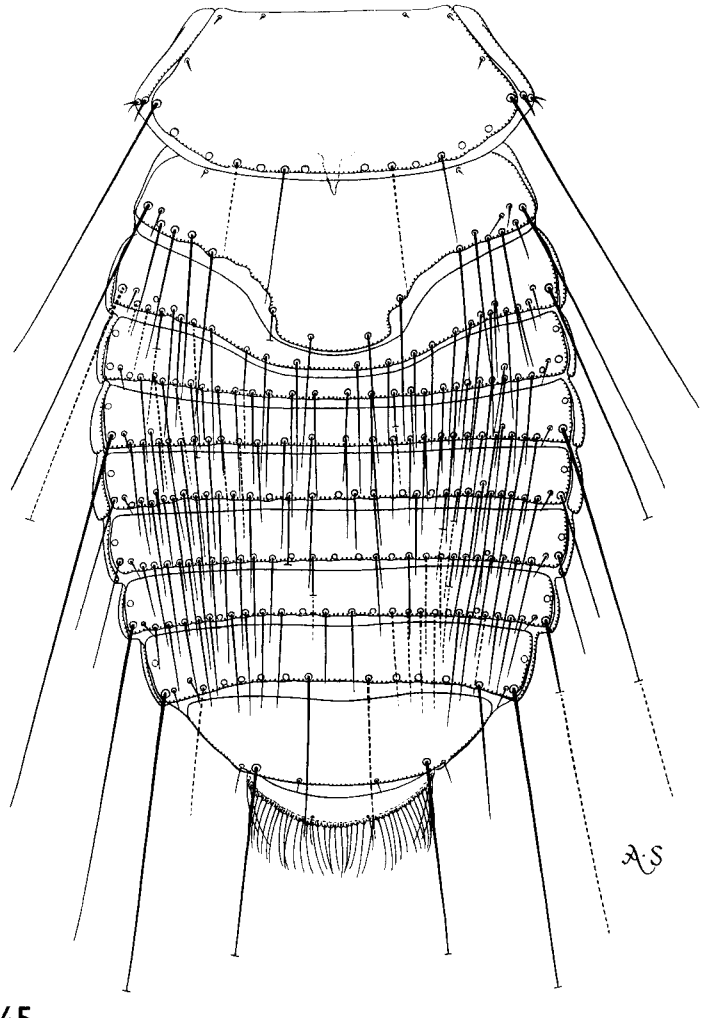

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FIG. 45. *Myrsidea elegans*. ♀, dorsal.

♀ and ♂. In the available material the number of gular setae averages somewhat higher than in the previous species; 10–12, mean (4) 10·75. Setae of latero-ventral head fringe: ♀, 11; ♂, 10–11, mean (5) 10·9. Central marginal setae of metanotum: ♀, 6 + 6; 5 ♂, 6–8 each side. Outer dorsal setae of first tibia: 5–6. Setae of femoral brush: ♀, 19 + 20 ♂, 19–21, mean (10) 19·8. Posterior abdominal sternites of female only weakly arched. Male genital sclerite similar to that of *carrikeri* but tapers to rounded distal end (Text-fig. 78).

Abdominal Chaetotaxy. Post-spiracular setae as in *carrikeri* but III is missing on both sides of the single female. Tergocentral setae of single female shown in Text-fig. 45; ♂, I, 18–22, mean (3) 19·60: II, 23–24, mean (4) 23·25; III, 22–27, mean (5) 24·80; IV, 27–28, mean 27·20 (5); V, 24–28, mean (5) 26·40; VI, 23–29, mean (5) 25·40; VII, 20–23, mean (5) 22·00; VIII, 5–6 + 5–6, mean (3) 11·66. On segments II–VIII there may be one or two anterior setae each end; these have been included in the above counts. On I–VII there is little or no gap in the line of setae. Sternal setae: ♀, II, 23 anterior, 20 marginal and 5 + 4 in aster: III, 11 (4) + 15 + 13 (8); IV, 16 (9) + 10 + 15 (8); V, 14 (7) + 15 + 16 (9); VI, 10 (4) + 10 + 11 (5); VII, 4 (1) + 5 + 6 + 5 (1); VIII–IX, 10 + 9; vulva 5 + 5. ♂, II, 8–10 (2) anterior, 17–18 (3) marginal and 4 + 4 in aster; III–XI, Tables V and VI.

Material examined. Syntypes: 2 ♂ from *Turdus r. rufiventris*, BOLIVIA: Samaipata, 28.x.1937 (*M. A. Carriker*, No. 16243); 2 ♂ from the same host and locality, 4.xi.1937 (*M. A. Carriker*, No. 16456), C.C. 1 ♂, 1 ♀ (not seen by Ansari) on slide numbered 16456 with the same data as above, C.C. On Slide No. 16243 with a pencil tick denoting holotype, are two males, one of which is damaged; the undamaged male is designated as lectotype below.

LECTOTYPE of *Myrsidea elegans* by present designation: ♂ on Slide No. 16243 with data as given above.

Measurements

	♀		♂		
	Length	Breadth	Length Range (2)	Breadth Range	Mean
Head 1	0·35	0·41	0·30–0·32	0·32	0·330 (3)
Head 2		0·58		0·48	0·490 (4)
Prothorax	..	0·34	..	0·27–0·30	0·285 (4)
Metanotum	..	0·50	..	0·36–0·37	0·365 (4)
Abdomen	0·91	0·66	0·66–0·73	0·53	.. ..
Total	1·71	..	1·31–1·45	..	.. ..

THE *ISHIZAWAI* SPECIES GROUP

1. Head as in *thoracica* group but the number of lateral fringe setae average more and there are 2–4 instead of one short straight seta between the end of the lateral fringe and the long ventral seta on each temple.
2. Number of gular setae average more.
3–5. As in *thoracica* group.
6. Outer dorso-lateral setae of first tibia over 14.
7. Post-spiracular setae III medium to long.
8–9. As *thoracica* group.

10. Spermatheca thin-walled and collapsed in mounted specimens.
11. Male genital sclerite characteristic (Text-fig. 72).

Myrsidea pullula (Piaget, 1890) based on a single male from *Oriolia berneieri* has a genital sclerite similar to that of *ishizawai*, but differs in characters 2 and 6.

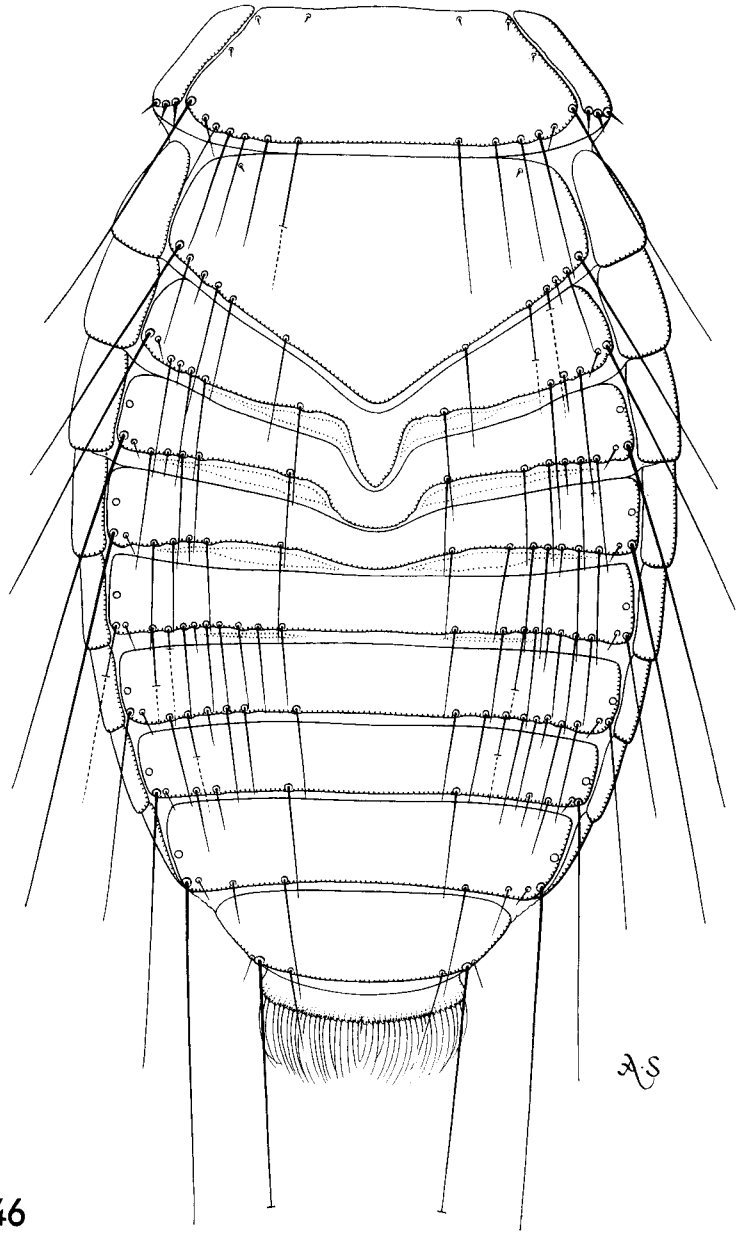

FIG. 46. *Myrsidea ishizawai*. ♀, dorsal. Lectotype.

Myrsidea ishizawai Uchida, 1926

(Pl. II, fig. 1 ; Text-figs. 18, 46, 62, 72)

Type host : *Zoothera dauma* (Latham).

Myrsidea ishizawai Uchida, 1926 : 8, fig. 2. Host : *Oreocinchla dauma aurea.*

This is the only species known in this species group and the differences between it and the *thoracica* group have been enumerated above. The following description is

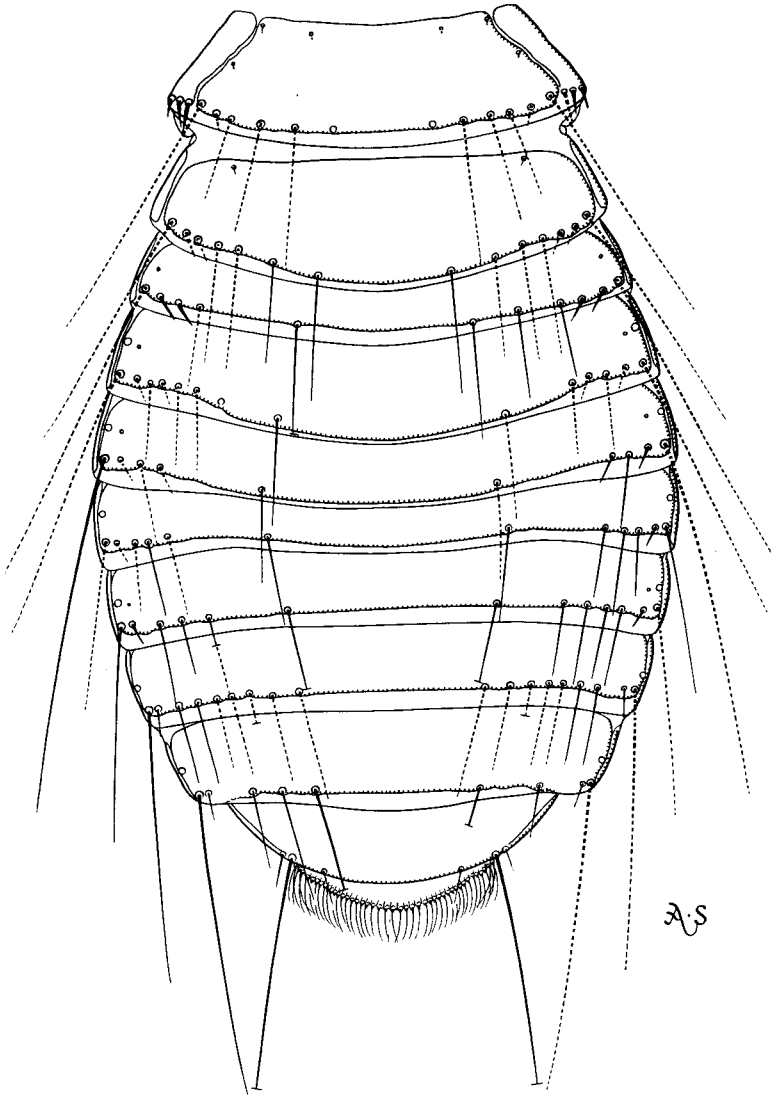

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FIG. 47. *Myrsidea sultanpurensis.* ♀, dorsal. Holotype.

compiled from two males and three females from Japan, including one male and two female syntypes.

♀ and ♂. Setae of latero-ventral head fringe : 13–14 each side ; gular setae : 6 + 6 (2 ♀), 7 + 7 (1 ♀) ; 5+6 (1 ♂), 6 + 6 (1 ♂). Central setae of metanotum : 3 ♀, 5–6 each side ; 2 ♂, 3–5 each side. Outer setae of first tibia ; 3 ♀, 17–21 ; 2 ♂, 16–20. Setae of femoral brush ; 3 ♀, 37–41 ; 2 ♂, 30–32. Female with abdominal sternites not markedly arched and with irregular pigmented patches present between the tergites of segments II–VI. Male genital sclerite of characteristic form (Text-fig. 72) and unlike those of the *thoracica* group.

Abdominal Chaetotaxy. This species differs from all others from the Turdinae in having post-spiracular III long and similar to those of II and IV ; V and VI are long but markedly shorter than IV (Text-fig. 46). Tergocentral setae : 3 ♀, I, 10 ; II, 9–13 ; III, 11–12 ; IV, 12–16 ; V, 15–17 ; VI, 12–15 ; VII, 6–7 ; VIII, 4 ; the two inner posterior setae of IX are long ; 2 ♂, I, 8–9 ; II, 8–11 ; III, 10 ; IV, 10–11 : V, 10–12 : VI, 6–10 ; VII, 4 ; VIII, 4. Marginal setae of sternal brushes separated from central sternal setae ; brushes III–V with numerous setae. Sternal setae : 1 ♀. II, 8 anterior, 22 marginal and 4 + 4 in the aster : III, 18 (12) + 15 + 14 (8) ; IV, 27 (18) + 11 + 27 (19) ; V, 29 (21) + 8 + 24 (17) ; VI, 13 (6) + 7 + 14 (7) ; VII, 3 (1) + 3 + 3 + 2 (0) ; VIII–IX, 6 + 5. The vulval setae of the three females range from 12–15. Range of setae in six brushes (including marginal setae) on each of the following sternites of the three females : III, 14–20 ; IV, 26–35 ; V, 24–33. 2 ♂, II, 6 and 7 anterior, 18 and 16 marginal and 4 + 4 in aster ; III, 16 (10) + 14 + 17 (12) and 12 (6) + 12 + 11 (5) ; IV, 26 (17) + 10 + 24 (15) and 21 (14) + 11 + 23 (15) ; V, 25 (17) + 10 + 27 (19) and 25 (18) + 9 + 22 (15) ; VI, 20 (13) + 9 + 19 (11) and 17 (10) + 8 + 18 (11). VII, 8 (5) + 8 + 6 (3) and 4 (1) + 6 + 2 (1); VIII, 2 (1) + 4 (1) + 4 (1) + 1 and 1 (0) + 4 (1) + 2 + 1 (0). IX, 4 + 4 and 4 + 5.

Material examined. Syntypes : 1 ♂, 2 ♀ from " Toratsugumi " = *Zoothera dauma*. JAPAN : Subashiri, Fuji, 14.v.1924. From the same host, JAPAN : Oyama, 1 ♂, 1 ♀, 23.iv.1956, B.M. (N.H.).

LECTOTYPE of *Myrsidea ishizawai* by present designation : ♀ slide with original label and data as given above.

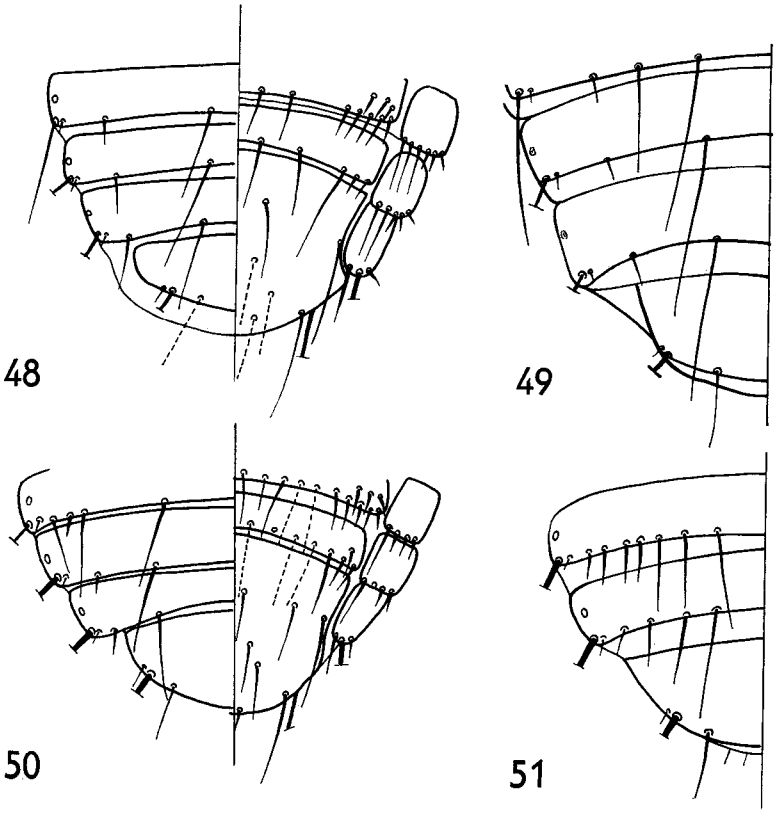
4 ♂, 4 ♀ from *Turdus d. dauma* from Assam agree with the type specimens in the form of the head, female abdominal tergites, male genitalia and number of outer tibial setae ; they differ in the post-spiracular setae being shorter and thinner ; in averaging fewer setae in the femoral brushes and on the abdominal tergites and sternites. For instance, the total numbers of tergocentral setae on segments I–VII in the three females from Japan are : 79, 85 and 86 mean 83 and in four females from Assam the numbers are 65, 67, 72, 76, mean 70 ; in the two males from Japan : 52 and 63, mean 57·5 and from Assam : 41, 51, 61, mean 51. In the female the number of setae in the sternal brushes of IV (including the marginal setae) ranges from 26–35, mean 30 in the Japanese specimens and from 20–27, mean 23·3 in the Assam specimens and on sternite V, 24–33, mean 28·5 in the Japanese specimens and 21–29, mean 27·6 in the Assam specimens. There seem to be no constant differences in size. These differences are based on a small number of specimens and no material has been seen from the other fourteen subspecies of *Zoothera dauma* listed in the *Checklist of Birds of the World*, 1964, some of which may show intermediate characters. It is considered therefore that these specimens from Assam should be included in *Myrsidea ishizawai* Uchida, sens. lat.

Material examined. From *Zoothera d. dauma* (Latham), ASSAM : Kohima, 4 ♂, 4 ♀, 28.i.1952 (*R. Meinertzhagen*, No. 19880) B.M. (N.H.).

Measurements

(Specimens from Japan)

	♀		♂	
	Length	Breadth	Length	Breadth
Head 1	0·38	0·41–0·43	0·36–0·37	0·39–0·40
Head 2		0·58–0·61		0·54
Prothorax	..	0·38–0·39	..	0·35
Metanotum	..	0·53–0·57	..	0·43–0·44
Abdomen	1·10–1·24	0·73–0·80	0·81–0·85	0·61–0·62
Total	1·99–2·17	..	1·59–1·64	..



FIGS. 48–51. Terminal segments of male abdomen of *Myrsidea* species. 48. *incerta*, dorsal and ventral. 49. *pricei*, dorsal. 50. *destructor*, dorsal and ventral. 51. *abidae*, dorsal.

The *SULTANPURESIS* Species Group

1. Number and position of head setae as in the *thoracica* group except for the extra ventral setae on the temples as in *ishizawai* ; seta 10 is usually less than half the length of 11. The outer occipital setae are somewhat longer than in the other groups.
2. Number of gular setae average more than in the *thoracica* group.
3. Hypopharynx reduced (to same degree as in Buckup, 1959 : 261, fig. 15).
4. As in *thoracica* group.
5. Metasternal plate with more setae, some of which are placed posteriorly (Text-fig. 4).
6. As in *thoracica* group.
7. Post-spiracular seta III long.
8. Sternite I with setae.
9. Male internal anal setae 10.

10–11. As in *ishizawai*.

Characters 1, 2, 7 and 10–11 above suggest that the affinities of this species lie with *ishizawai* ; for convenience it is separated on the reduction of the hypopharynx (probably not of phylogenetic value, see Clay, 1962 : 220), the presence of setae on sternite I and the small number of outer dorso-lateral setae on tibia I.

M. kuluensis Ansari was based on a male and female taken from a kingfisher. There seems little doubt that the types, although in poor condition and the male genital sclerite distorted, are *sultanpurensis* ; the specimens were collected within two days at the same locality as *sultanpurensis* and possibly came from the same host individual.

M. mikadokiji Uchida (1917 : 183) known only from the single male type may belong to this group ; it was taken from *Calophasis mikado*, a game bird, so that its true host is unknown. It differs from the male of *sultanpurensis* in having fewer gular setae (5 + 4) and probably slightly in the characters of the genital sclerite, but this is distorted. It is not possible to place this species without females and further males.

Myrsidea sultanpurensis Ansari, 1951

(Pl. II, fig. 2 ; Text-figs. 4, 47, 63)

Type host : *Myiophoneus caeruleus temminckii* Gray.

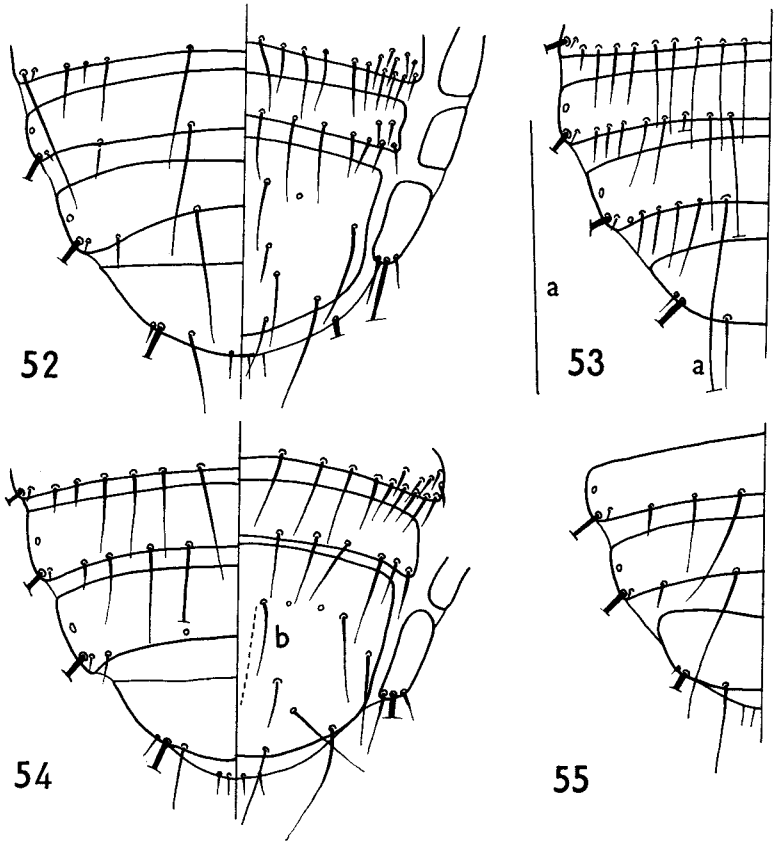
Myrsidea sultanpurensis Ansari, 1951 : 183, fig. 22. Host : *Myiophoneus caeruleus temminckii*.
Myrsidea (*Alcediniphilus*) *kuluensis* Ansari, 1951 : 190, fig. 25. Host : *Ceryle lugubris guttulata*.
[Error] **syn. nov.**

This is the only known species in the species group and it is at once distinguished from all previous species by the reduction of the hypopharynx and the presence of setae on abdominal sternite I. The following description is compiled from the holotype female, two female paratypes and ten males and seven females from the type host.

♀ and ♂. Setae of latero-ventral head fringe : ♀, 10–11 ; ♂, 8–11 ; seta 10 usually less than half length of 11 (range of ratio 10/11 : 0·33–0·50, mean (12) 0·40) ; gular setae : ♀, 11–18, mean (10) 15·7 ; ♂, 16–18, mean (8) 16·7. Central marginal setae of metanotum : ♀, 5–6 each side ; ♂, 4–5. Metasternal setae (Text-fig. 4) : ♀, 5–8 each side : ♂, 5–7. Outer setae of first tibia :

4–5. Setae of femoral brushes show rather a wide range : ♀, 17–28, mean (16) 20·7 ; ♂ 15–22, mean (16) 18·8. Female with abdominal sternites not markedly arched. In all available specimens the male genital sclerite is somewhat distorted but appears to be the same as that of *ishizawai*.

Abdominal Chaetotaxy. Post-spiracular seta III, although not so long as that of *ishizawai*, is longer than in the *thoracica* group ; V and VI are similar in length to those of *ishizawai*. Tergocentral setae : 3 ♀, I, 9–12 ; II, 7–11 ; III, 8–10 ; IV, 6–7 ; V, 5–8 ; VI, 6–10 ; VII, 7–14 ; VIII, 4–6 ; the two inner posterior setae of IX are short. 4 ♂, I, 6–8 ; II, 7–9 ; III, 8–10 ; IV, 8–10 ; V, 4–10 ; VI, 7–8 ; VII, 5–11 ; VIII, 4 ; lengths of posterior tergal setae as in *ishizawai*, except that the two inner posterior setae on IX are shorter, varying from a third to a half of those of *ishizawai*. Sternal setae : 3 ♀, I, 2–4, mean 3·1 ; setae of aster 5–6, mean (18 asters) 5·5 ; II, 13–15 anterior, 16–17 marginal ; III, anterior lateral 1–5, marginal plus those of brushes 23–27 ; IV, anterior 6–15, marginal 25–30 ; V, 7–14, 25–32 ; VI, 6–11, 24–28 ; VII, 0–3, 11–12 ; VIII–IX, 15–17 ; vulval setae : 13–21, one to five of the outer vulval setae may be stout and spine-like. Sternite I : 10 ♂, 2–5, mean 3·7 ; setae in aster : 4–6, mean 4·75. Sternal setae : 1 ♂, I, 4 ; II, 11 anterior, 15 marginal and 4 + 5 in aster ; III, 5 (0) + 14 + 6 (2) ;



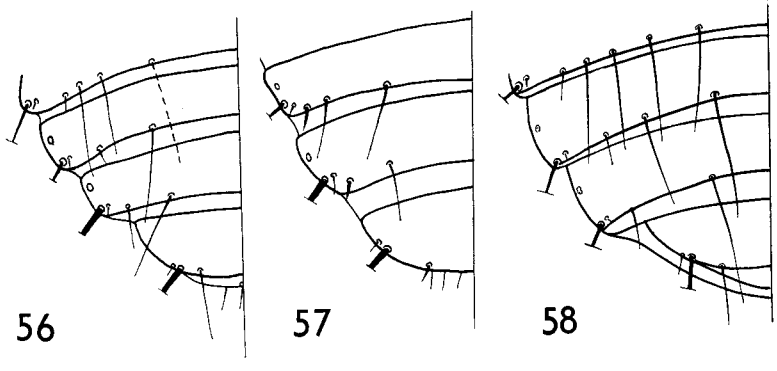
FIGS. 52–55. Terminal segments of male abdomen of *Myrsidea* species. 52. *devastator*, dorsal and ventral. 53. *regius*, dorsal. a, length of central tergocentral seta of VIII. 54. *indigenella*, dorsal and ventral. b, dotted line is length of this seta on other side of body. 55. *varia*, dorsal.

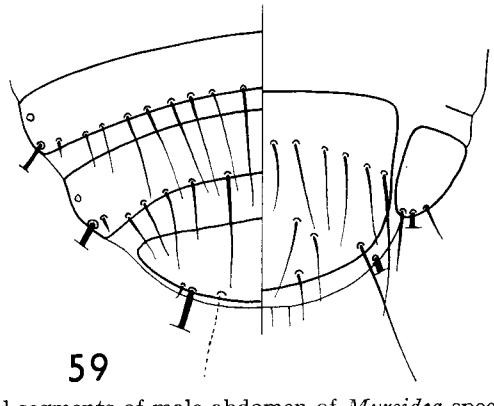
IV, 14 (7) + 10 + 14 (7); V, 14 (7) + 10 + 13 (6); VI, 11 (6) + 11 + 11 (6); VII, 4 (1) + 6 + 4 (2); VIII, 3 + 3; IX, 2 + 3 (other specimens range from 3–6 each side); internal anal setae 10, terminal setae 3.

Material examined. Holotype female and two paratype females from *Myiophoneus caeruleus temminckii*, PAKISTAN, Panjab, Kulu, 6.x.1939, B.M. (N.H.). From the same host, 10 ♂, 7 ♀, AFGHANISTAN, iv.1937 (*R. Meinhertzhagen*, nos. 9491, 9749), B.M. (N.H.). Holotype female and allotype male of *M. kuluensis* from *Ceryle lugubris guttulata*, PAKISTAN, Panjab, Kulu, 6.x.1939, B.M. (N.H.).

Measurements

	♀				♂			
	Length	Breadth	Range (8)	Mean	Length	Breadth	Range (8)	Mean
Head 1	0·36	0·43	0·40–0·43	0·42	0·33	0·39	0·37–0·40	0·38
Head 2		0·62	0·58–0·62	0·60		0·55	0·53–0·59	0·55
Prothorax	..	0·36	..	..	..	0·32	..	..
Metanotum	..	0·51	..	..	..	0·39	..	..
Abdomen	1·02	0·79	..	..	0·92	0·57	..	..
Total	1·82	..	..	..	1·64	..	..	..





FIGS. 56–59. Terminal segments of male abdomen of *Myrsidea* species. 56. *rohi*, dorsal. 57. *simplex*, dorsal. 58. *montana*, dorsal. 59. *carrikeri*, dorsal and ventral.

Myrsidea iliaci Eichler, 1951

Type host: *Turdus iliacus* Linn.

Myrsidea iliaci Eichler, 1951. *Zool. Anz.*, **146** : 52. Host : *Turdus musicus.*

This species is quite unrecognizable from the description and there is no figure. Dr. Eichler informs me that the type is lost and as no specimens from the type host have been seen nothing further can be said about this name.

HOST LIST

Turdinae arranged according to Mayr and Paynter, 1964

*Type host.

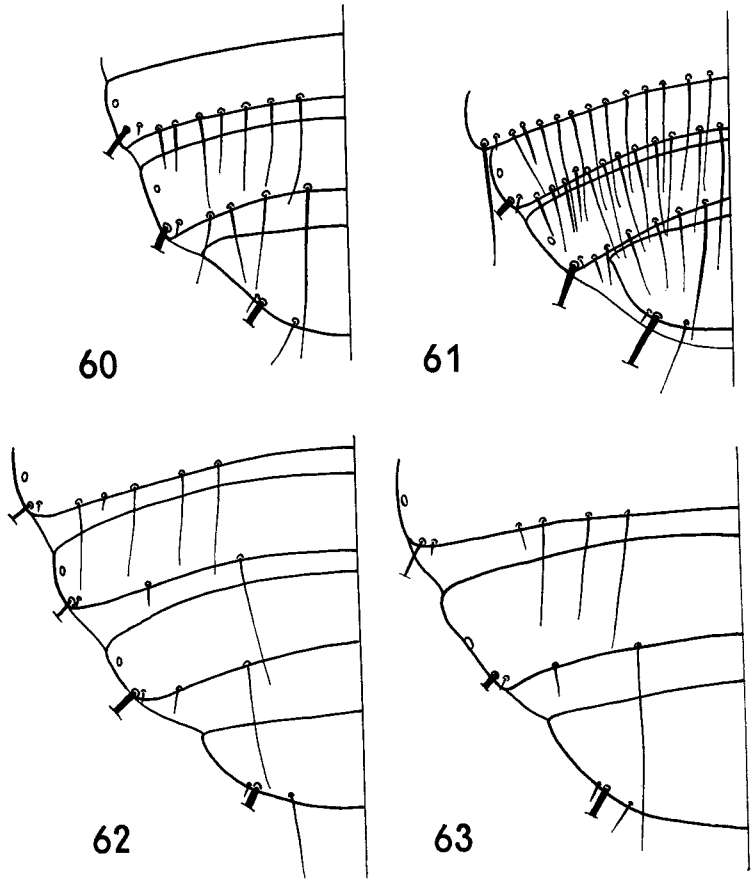
HOST	*Myrsidea* SPECIES	*Page No.*
**Myiophoneus caeruleus temminckii*	*M. sultanpurensis* Ansari	382
**Zoothera gurneyi otomitra*	*M. montana* sp. n.	367
**Zoothera dauma*	*M. ishizawai* Uchida, 1926	379
**Catharus g. gracilirostris*	*M. rohi* Ansari, 1956	364
**Catharus fuscater mentalis*	*M. simplex* Ansari, 1956	366
**Catharus m. mexicanus*	*M. destructor* Ansari, 1956	353
Catharus minimus bicknelli **Catharus u. ustulatus*	*M. incerta* (Kellog, 1896)	349
**Catharus guttatus*	*M. pricei* sp. n.	351
**Turdus a. abyssinicus*	*M. keniensis* sp. n.	348
Turdus bouloul *Turdus merula* *Turdus chrysolaus* *Turdus obscurus* *Turdus ruficollis* **Turdus viscivorus*	*M. thoracica* (Giebel, 1874)	342
**Turdus iliacus*	*M. iliaci* Eichler, 1951	385
**Turdus serranus*	*M. devastator* Ansari, 1956	354
Turdus maranonicus	*M. indigenella* Ansari, 1956	356
**Turdus rufiventris*	*M. elegans* Ansari, 1956	376
**Turdus ignobilis*	*M. varia* Ansari, 1956	362
**Turdus fumigatus aquilonalis*	*M. abidae* Ansari, 1956	358
**Turdus fumigatus obsoletus*	*M. regius* Ansari, 1956	360
**Turdus grayi casius*	*M. carrikeri* (Eichler, 1943)	370
**Turdus g. grayi*	*M. antiqua* Ansari, 1956	372
**Turdus nudigenis*	*M. aitkeni* sp. n.	374
**Turdus migratorius*	*M. emersoni* sp. n.	346

NOTES

1. TYPES OF SPECIES DESCRIBED BY ANSARI, 1956.

The collection of types was sent to me by the U.S. National Museum in the condition it was received from Dr. Ansari. On receipt each slide was marked on the back with the label " U.S. Mus. Wash. " ; all these slides and any new slides with remounts from the original material have been marked on the back " Specimens seen by Ansari ". This was necessary as further material from the same host individuals is present in the Carriker collection.

The slides had no specific names on them and apart from two, no holotype, allotype or paratype designations, although these were designated in the original descriptions. Certain slides had a pencil tick and it has been presumed that this indicates the slide with the holotype and allotype specimens. The specimens could only be identified by comparing the host names and localities on the slide labels with those given in the original descriptions. The male on the slide with the pencil tick, from the type host of the species, has been labelled as holotype (all the holotypes designated were males) and the female as allotype. In those cases where there is more than one male on the slide with the pencil tick, one of these has been designated as lectotype ; where there are two females these are both considered to be paratypes and the allotype designation ignored. Although in the original description measurements of the holotypes are given, it was not found possible to relate these measurements to any particular specimen and therefore holotypes could not be recognized in that way. Female allotypes were designated but no mention made of the distinctive characters of the abdominal terga.



FIGS. 60–63. Terminal segments of male abdomen of *Myrsidea* species, dorsal. 60. *antiqua*. 61. *elegans*. 62. *ishizawai*. 63. *sultanpurensis*.

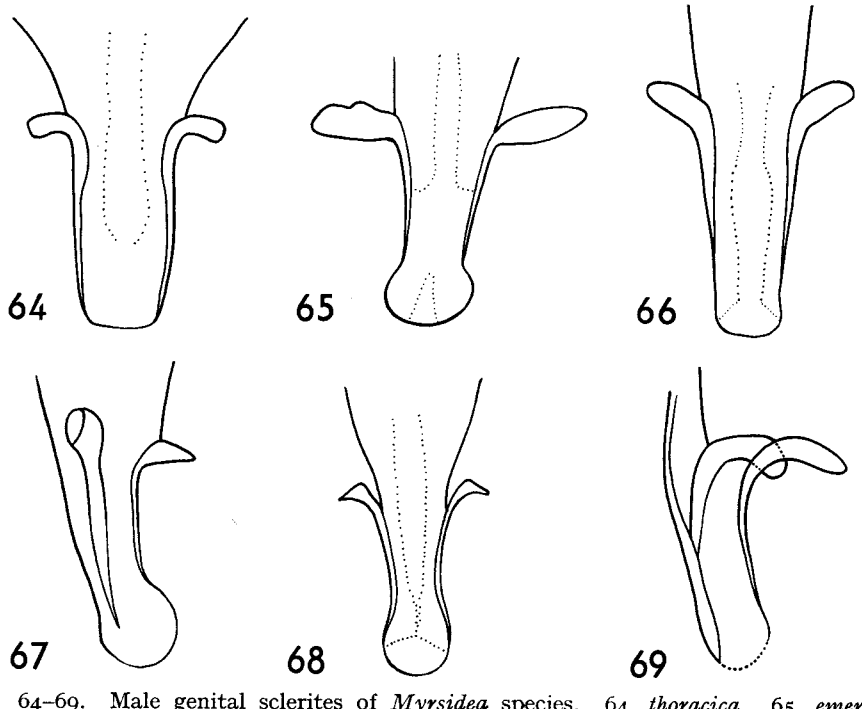
In some specimens it was impossible to see the characters necessary for identification and these have been remounted. When additional slides have been used for this, they are labelled with photocopies of the original labels and a note has been made on the slide saying that the specimens have been remounted from the original type slide and the number of that slide given. All these species were published as new twice (1956 : 163–177 and 1956 : 61–62) ; in the second publication only a key to the species and the type hosts are given. As it has not been possible to find out the exact date of publication of either of these journals, only the first reference has been used ; this paper includes details of the type hosts, making it possible to identify the specimens, which it is not possible to do from the descriptions.

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

Type host : Unknown.

Menopon fuscomarginatum Osborn, 1896. *Bull. U.S. Bur. Ent.* (*n.s.*), **5** : 245. Host : *Turdus minor* [Error].

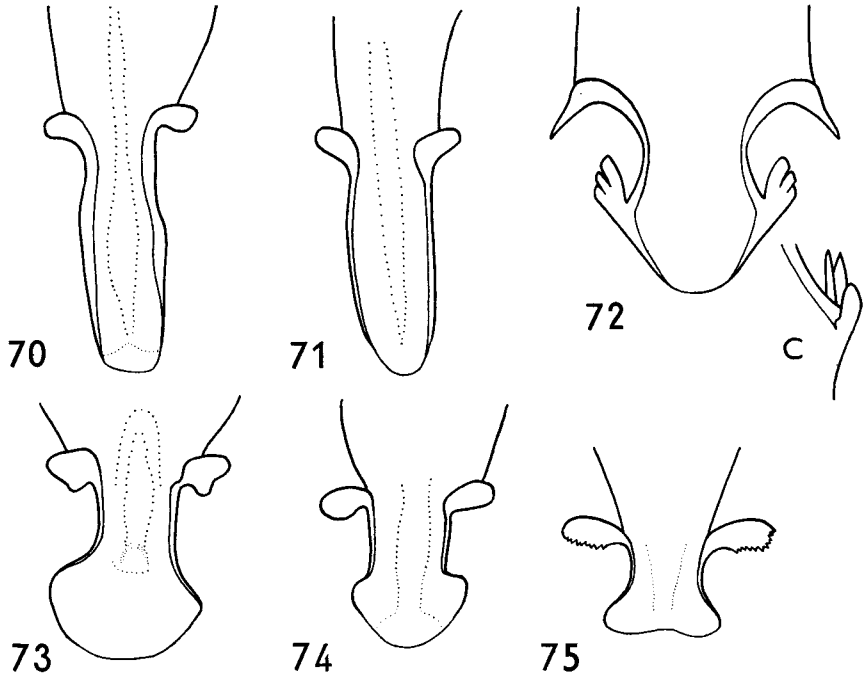
Through the kindness of Dr. P. J. Darlington of the Museum of Comparative Zoology, Harvard University, it has been possible to examine the type specimens of this species. These are similar to authenticated material from species of Icteridae and are presumably stragglers from one of these birds. The species will be dealt with more fully in a subsequent part.



FIGS. 64–69. Male genital sclerites of *Myrsidea* species. 64. *thoracica*. 65. *emersoni*. 66. *incerta*. 67. *destructor*, distorted. 68. *devastator*. 69. *indigenella*, distorted.

3. Genera Described by Zlotorzycka, 1964

It is difficult to understand some of these genera, as the characters used for separation may be incorrect or found in other species or variable within the group. For instance, a female paratype of *Eichlerinopon celeripes* = *M. cornicis* has a group of spine-like setae at each postero-lateral corner of sternite II although these are said to be absent (: 179), these are also present in *M. anthorax*. *M. anaspila* also placed in this " genus " has a long group of setae each end of sternite II. The two latter species do not have the modifications of the anterior tergites as described. The males of these three species all have a group of spine-like or elongated setae each side of sternite II not as given in the description. Further, as the males and females of *E. celeripes*, the type-species, belong to different species (see below) it is difficult to know what this " genus " represents. One of the characters separating *Densidea* is said to be that the spine-like setae in the aster of sternite II are all long in the female and in the male some are shorter. However, it can be seen in the measurements of these setae (see below) from a small number of males and females of *rustica* (the type-species of *Densidea*) that there is overlap in the lengths in the two sexes so that this is not even a specific character



Figs. 70–75. Male genital sclerites of *Myrsidea* species. 70. *abidae*. 71. *regius*. 72. *ishizawai*. C, lateral comb-like structure, distorted. 73. *varia*. 74. *rohi*. 75. *simplex*.

	♀	♂
1st (outer) spine . . .	0·028–0·040 (7)	0·020–0·040 (6)
2nd	0·038–0·060 (7)	0·032–0·052 (7)
3rd	0·048–0·064 (7)	0·048–0·064 (7)
4th	0·054–0·068 (6)	0·052–0·070 (7)
5th (not always present) .	0·060–0·072 (4)	0·056–0·078 (4)

Confusion has also been caused by some of the specimens on which descriptions are based being obvious stragglers. For instance, figs. 5a–c said to represent species from *Corvus corax*, *C. frugilegus* and *C.corone* are almost certainly all *Myrsidea cornicis* from *Corvus corone*. The male holotype and the female paratype (photo 9) of *Eichlerinopon celeripes* belong to different species : the female has the hypopharynx reduced and this together with fig. 5b shows that the specimen is *cornicis*, this species is the only one from European *Corvus* in which the hypopharynx is reduced ; photo 9 of the male shows the hypopharynx in its normal unmodified form. The male may belong to one of the already described species from the Corvidae but is not recognizable from the description; this is unfortunate as it is the holotype of the type species of *Eichlerinopon*. Paratypes of *Neomyrsidella usitata* Zlotorzycka are typical *Myrsidea anathorax* (Nitzsch) from the same host. It is unfortunate in the descriptions that no figures are given of the female anterior terga (except for one species) nor of the male genital sclerite.

ACKNOWLEDGEMENTS

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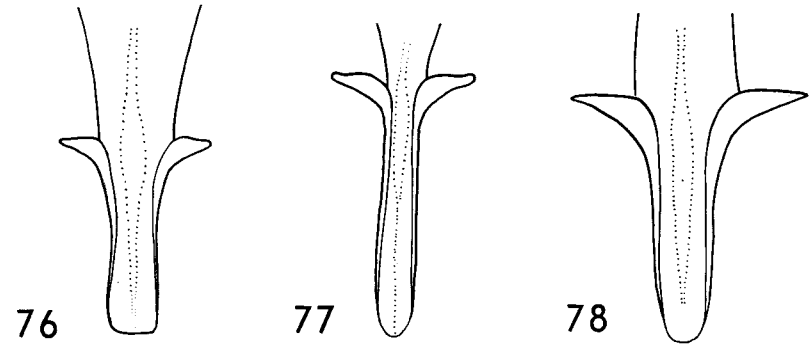

FIGS. 76–78. Male genital sclerites of *Myrsidea* species. 76. *carrikeri*. 77. *antiqua*. 78. *elegans*.

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TABLES I–VIII

Key to species of *Myrsidea* :

A. *thoracica*.	J. *regius*
B. *emersoni*.	K. *varia*.
C. *keniensis*.	L. *rohi*
D. *incerta*.	M. *simplex*
E. *pricei*.	N. *montana*.
F. *destructor*.	O. *carrikeri*.
G. *devastator*.	P. *antiqua*.
H. *indigenella*.	Q. *elegans*.
I. *abidae*.	R. *ishizawai*.
	S. *sultanpurensis*.

R. range ; M. mean ; number of specimens in brackets.

TABLE I

Tergocentral setae

♀

		A. (5)	C. (2)	D. (9)	E. (5)	G. (7)	O. (5)	P. (3)
I. .	R.	9–11	13–16	9–12	9–13	35–40	16–18	12–14
	M.	10·0	..	10·7	10·4	36·7	17·0	13·0
II. .	R.	9–11	9–11	9–14	10–13	24–33	16–18	14–16
	M.	9·5	..	11·6	12·2	30·7	16·8	14·7
III. .	R.	10–12	11–12	9–13	11–13	23–27	19–24	15–19
	M.	11·0	..	10·7	12·0	24·3	21·6	16·7
IV. .	R.	11–15	11–13	8–11	10–13	20–27	21–25	14–19
	M.	12·4	..	9·8	11·6	23·1	23·2	17·0
V. .	R.	13–15	12–15	7–11	8–11	14–25	22–27	16–20
	M.	13·6	..	9·4	9·0	21·6	25·0	18·0
VI. .	R.	11–13	11–14	4–6	4–6	14–24	19–25	16–22
	M.	12·0	..	5·2	5·3	15·7	23·0	18·3
VII. .	R.	7–11	7	4	4	4–8	15–20	13–17
	M.	9·0	..	..	..	..	18·4	15·7
VIII. .	R.	3–4	4	4	4	4–6	10–12	8–11
	M.	3·8	..	..	..	..	11·0	9·3

TABLE II

Tergocentral setae

♂

		A. (7)	C. (2)	E. (4)	L. (3)	N. (8)	O. (6)	P. (4)
I. .	R.	6–8	10–11	4–8	7–10	10–14	12–15	12–15
	M.	7·3	..	6·0	8·3	12·0	13·6	13·2
II. .	R.	7–10	10–11	8–11	7–10	10–13	14–18	15–17
	M.	8·7	..	9·5	8·5	11·0	16·0	15·7
III. .	R.	8–11	10–12	8–11	9–10	10–14	17–22	15–17
	M.	9·9	..	9·7	9·3	12·0	19·5	16·2
IV. .	R.	9–12	11–13	10–13	9–10	10–13	19–22	17–20
	M.	10·9	..	11·0	9·5	11·6	21·0	17·7
V. .	R.	7–14	12–13	9–10	7–9	11–14	19–24	16–19
	M.	11·0	..	9·6	8·0	12·0	21·3	16·7
VI. .	R.	9–11	11–12	4–8	7–8	8–14	18–21	15–17
	M.	10·0	..	6·0	7·7	11·0	20·0	15·5
VII. .	R.	6–9	8·9	4	4	6·8	15–18	13–15
	M.	7·3	..	4·0	4·0	7·0	17·0	14·0
VIII. .	R.	4	3–5	4	4	4–7	9–12	7–9
	M.	4·0	..	4·0	4·0	5·4	10·0	8·0

TABLE III

*Marginal setae of sternites**

		A. (5)	D. (14)	I. (2)	J. (5)+	L. (2)	M. (3)	O. (2)	P. (3)
III. .	R.	22–25	17–18	24–25	21–22	16–18	13–15	26	21–23
	M.	23·6	..	..	21·7	..	14·0	..	21·6
IV. .	R.	24–26	16–22	23–24	22–24	17–18	18–20	26–28	20–25
	M.	25·2	..	..	23·0	..	19·0	..	22·0
V. .	R.	21–24	19–21	22–23	23–24	17	16–19	24–28	21–22
	M.	23·0	..	..	23·4	..	17·6	..	21·6
VI. .	R.	20–23	17–22	20–22	19–22	18	16–17	23–26	20
	M.	21·4	..	..	20·8	..	16·6	..	..
VII. .	R.	12–14	8–14	10–11	14–17	15–17	8–10	15	10–11
	M.	13·2	..	..	15·2	..	9·0	..	10·3
VIII. . –IX	R.	10–12	8–12	11	11–17	11	11–12	12–17●	13–15
	M.	10·8	..	..	14·6	..	11·3	..	13·6
Vu.	R.	11–13	10–13	13–15	17–22	11–14	12–15	12–16●	13–15
	M.	12·0	..	..	19·0	..	13·3	13·6	14·0

* Includes marginal setae of brushes; + includes Trinidad specimens; ● range and mean of 5 specimens; Vu. marginal setae of vulva.

TABLE IV

*Lateral anterior sternal setae**

♀

		A. (10)	D. (28)	I. (4)	J. (10)	L. (4)	M. (6)	O. (4)	P. (6)
III. .	R.	0–2	0–2	2–3	4–7	0–3	0	2	2–3
	M.	0·7	..	..	4·9	1·5	0	2·0	2·7
IV. .	R.	6–9	2–6	10–11	7–11	2–3	3–5	5–7	6–9
	M.	7·8	..	..	8·9	2·5	3·8	6·0	7·8
V. .	R.	8–13	4–8	8–10	7–11	2–5	3–5	9–10	6–8
	M.	10·2	..	..	9·1	3·7	4·2	9·2	7·2
VI. .	R.	4–9	2–6	5–7	4–10	0–2	2–5	4–5	4–6
	M.	6·6	..	..	7·3	1·0	2·7	4·8	5·3
VII. .	R.	0–3	0–1	1–2	0–3	0	0–1	1	0–1
	M.	1·1	..	..	1·1	0	0·17	1·0	0·83

* Lateral brushes, not including marginal setae, each side of abdomen considered separately.

TABLE V

Marginal setae of sternites

♂

		A. (7)	I. (2)	J. (3)*	K. (3)	L. (3)	N. (8)	O. (2)	P. (4)	Q. (3)
III. .	R.	16–24	23–24	20–23	19–21	12–15	17–23	24–25	22–28	28–29
	M.	19·7	..	..	..	..	19·6	..	24·5	..
IV. .	R.	20–23	24–25	22–25	18–20	14–15	21–24	22–32	22–24	27–28
	M.	21·3	..	..	..	..	22·0	..	23·0	..
V. .	R.	18–23	24	21–24	19–20	15–17	18–22	25	22–26	27–28
	M.	20·7	..	..	..	..	20·7	..	23·7	..
VI. .	R.	17–22	19–22	19–22	17–18	15–16	17–22	23	20–24	22–26
	M.	19·6	..	..	..	..	19·1	..	22·0	..
VII. .	R.	12–15	12–17	14–17	12–13	14–15	10–15	17–18	14	18–27
	M.	13·3	..	..	..	..	13·4	..	..	..
VIII. .	R.	5–8	7–8	8–10	5–6	4–7	5–12	11–14+	9–11	13–16
	M.	6·4	..	..	..	..	7·6	12·0	10·7	..
IX. .	R.	6–8	10–12	8–11	8–9	8–9	6–9	8–11+	8–10	12–10
	M.	7·1	..	..	..	..	7·9	9·0	9·0	..

* Includes one Trinidad specimen, see also text. + 6 specimens.

TABLE VI

Lateral anterior sternal setae

♂

		A. (14)	I. (4)	J. (6)*	K. (6)	L. (6)	N.(16)	O. (4)	P. (8)	Q. (5)
III. .	R.	0–2	1–2	3–5	0–2	0–1	2–5	2–3	1–3	1–4
	M.	0·71	..	4·0	..	..	3·1	..	1·7	..
IV. .	R.	3–7	6–9	7–10	4–5	1–4	3–8	5–9	4–8	5–8
	M.	4·8	..	8·0	..	..	5·8	..	5·9	..
V. .	R.	4–8	4–7	7–10	4–6	2–3	4–8	6–7	4–9	6–9
	M.	6·5	..	8·5	..	..	6·1	..	7·1	..
VI. .	R.	2–5	4–8	6–7	3–4	1–3	2–6	5–7	6–9	3–8
	M.	4·1	..	6·5	..	..	4·6	..	6·7	..
VII. .	R.	0–1	1–2	1–2	0–1	0	0–3	1	1–2	0–6
	M.	0·5	..	1·5	..	..	0·4	..	1·1	..

* As in Table V.

TABLE VII

Lengths of setae of pleurite VIII

♀

		A.	B.	C	D.	E.	F.	G.
I.	R.	0·092–0·206	0·100–0·184	0·056–0·066	0·052–0·072*	0·072–0·110+	0·048–0·056	0·056–0·078
	M.	0·132 (7)	0·135 (6)	(4)	(6)	0·092 (7)	(2)	..
O.	R.	0·052–0·064	0·058–0·106	0·052–0·064	0·024–0·036*	0·044–0·056	0·034	0·050–0·056
	M.	0·059 (7)	0·072 (7)	(4)	(6)	0·048 (11)	(1)	..

*Also one I = 0·040 & one O = 0·058. + Also one specimen with I = 0·052 + 0·056.

		H.	I.	J.	K.	L.	M.	N.
I.	R.	0·096	0·056–0·064	0·054–0·092	0·052	0·060–0·080	0·040–0·060	0·070–0·088
	M.	(1)	(4)	(4)	(1)	(3)	0·048 (6)	(4)
O.	R.	0·060	0·058–0·060	0·052–0·072	0·048	0·024–0·032	0·036–0·048	0·060–0·068
	M.	(1)	(2)	(4)	(1)	(3)	0·043 (6)	(2)

		O.	P.	Q.	R.	S.
I.	R.	0·080–0·112	0·072–0·104	0·132–0·140	0·180–0·260	0·056–0·080
	M.	0·095 (8)	0·090 (6)	(2)	(5)	0·067 (7)
O.	R.	0·046–0·068	0·042–0·052	0·044–0·060	0·036–0·056	0·040–0·064
	M.	0·059 (7)	0·048 (6)	(2)	(5)	0·050 (7)

TABLE VIII

Lengths of setae of pleurite VIII

♂

		A.	B.	C.	D.	E.	F.	G.
I.	R.	0·088–0·130	0·072–0·086	0·066–0·092	0·052–0·064	0·076–0·096	0·036–0·048	0·052–0·068
	M.	0·103 (8)	(6)	(3)	(4)	0·085 (7)	(2)	(4)
O.	R.	0·034–0·040	0·022–0·034	0·032–0·044	0·020–0·028	0·022–0·034	0·036	0·030–0·036
	M.	0·038 (11)	(6)	(6)	(4)	0·029 (9)	(1)	(4)

		H.	I.	J.	K.	L.	M.
		(2)	(4)	(4)	(4)	(3)	(2)
I.	R.	0·080–0·084	0·048–0·070	0·072–0·088	0·068–0·080	0·040–0·076	0·040–0·044
O.	R.	0·040–0·044	0·040–0·048	0·032–0·034	0·028–0·036	0·016–0·020	0·028–0·026

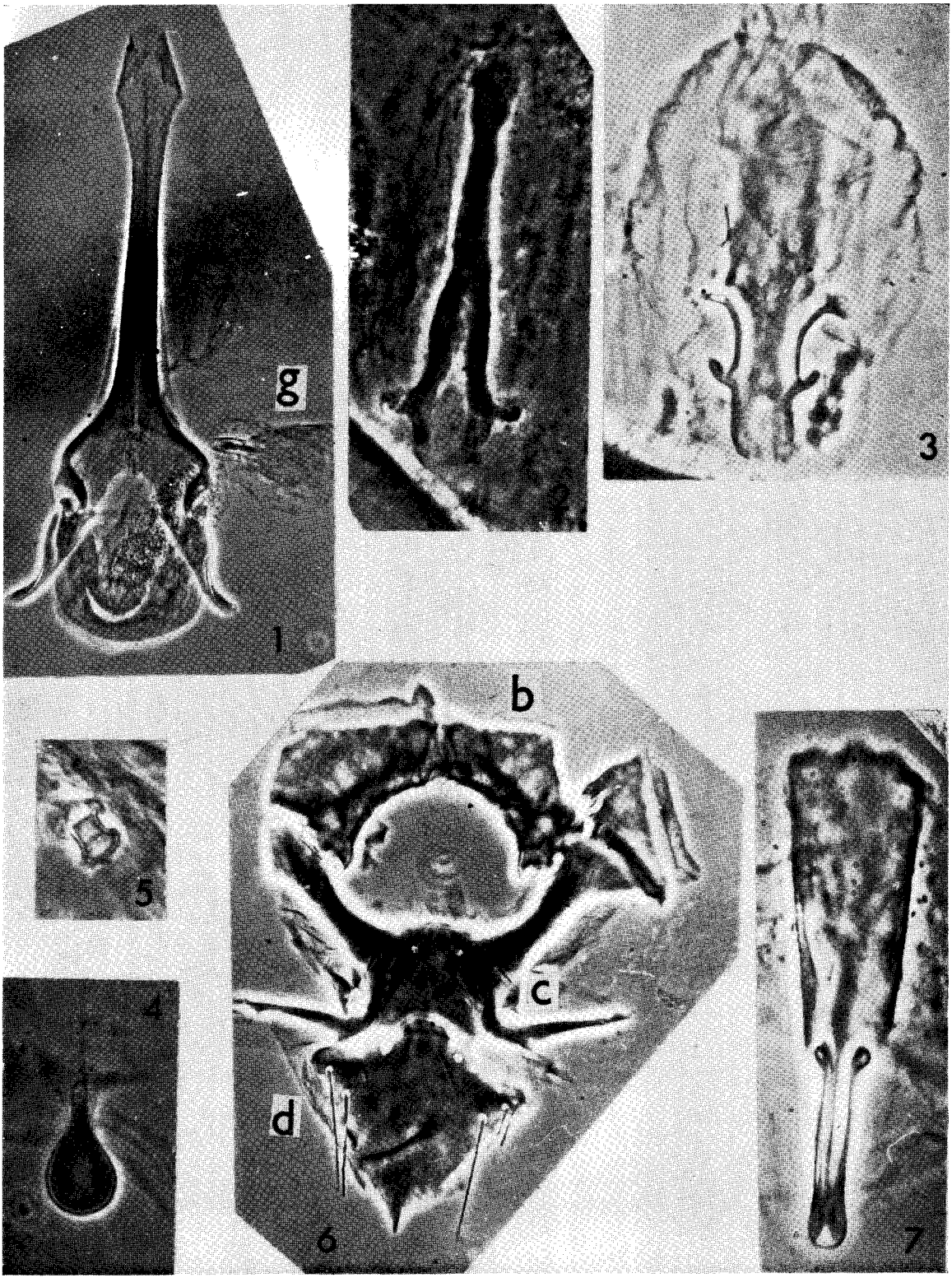
		N.	O.	P.	Q.	R.	S.
I.	R.	0·068–0·090	0·076–0·112	0·076–0·100	0·096–0·114	0·216	0·044–0·060
	M.	0·073 (6)	0·102 (10)	0·084 (7)	(2)	(1)	0·054 (6)
O.	R.	0·028–0·042	0·028–0·040	0·032–0·036	0·028–0·036	0·036–0·044	0·028–0·033
	M.	0·033 (5)	0·037 (8)	0·034 (7)	(2)	(4)	0·030 (6)

EXPLANATION OF TABLES VII & VIII

R. = range in mm. ; M = mean and/or number of setae ; I. = seta on inner side and O. on outer side of long stout central seta ; where there are four pleural setae the longest inner or outer is given.

PLATE 1

FIGS. 1–7. *Myrsidea* spp. 1, *thoracica* (Giebel). Male genitalia. g, genital sclerite; 2, *latifrons* (Carriker). Male genital sclerite; 3, *picae* (Linn.). Male genital sclerite; 4, *antiqua* Ansari. Spermatheca; 5, *thoracica* (Giebel). Sclerotized end of spermathecal tube; 6, *thoracica* (Giebel). Metasternal plate and view of flattened mesothorax; b, mesonotum; c, mesosternum, d, metasternal plate; 7, *montana* sp. n. Male genital sclerite. All phase contrast.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b
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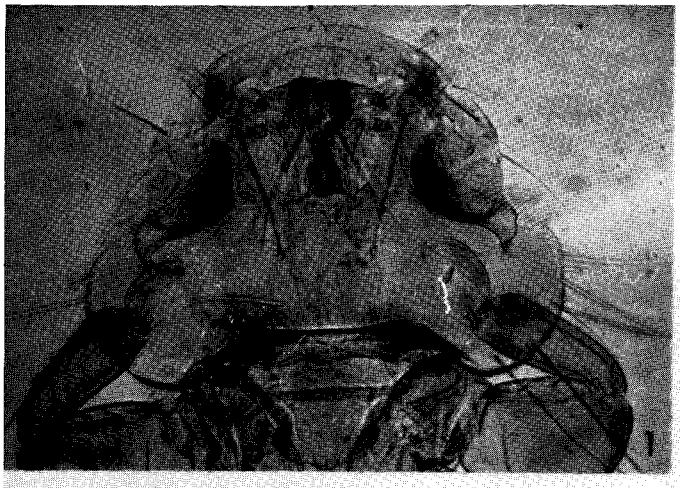
PLATE 2

FIGS. 1–7. Female heads of *Myrsidea* spp. 1, *ishizawai* Uchida; 2, *sultanpurensis* Ansari; 3, *carrikeri* (Eichler) (B.M. Neg. 34252); 4, *abidae* Ansari (B.M. Neg. 34249); 5, *incerta* (Kellogg) (B.M. Neg. 34245); 6, *rohi* Ansari (B.M. Neg. 34253); 7, *varia* Ansari (B.M. Neg. 34243).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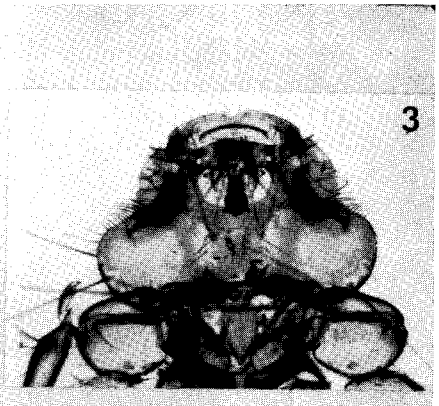
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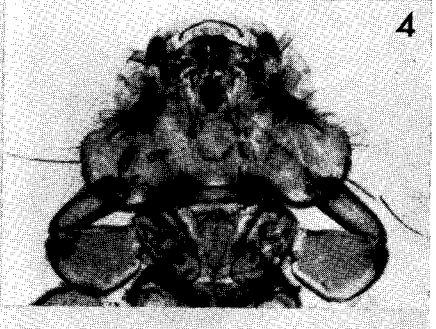
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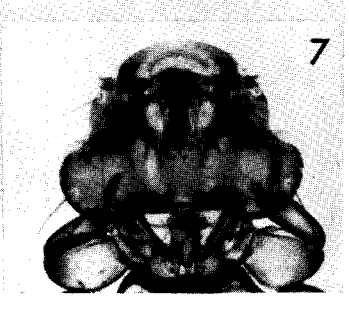
7

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

BY

T. CLAY

British Museum (Natural History)

Pp. 327–395 ; 2 *Plates*, 78 *Text-figures*

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