

HAROLD ROBINSON

*A Monographic Study
of the Mexican
Species of Enlinia
(Diptera: Dolichopodidae)*

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ABSTRACT

Robinson, Harold. A Monographic Study of the Mexican Species of *Enlinia* (Diptera: Dolichopodidae). *Smithsonian Contributions to Zoology*, 25:1-62, 1969.— Fifty-three species are recorded for Mexico, including *Enlinia ciliata* Robinson previously known from the southeastern United States and 52 previously undescribed. The newly described species are placed in 20 groups as follows: I. *E. elegans* (closely related to the type-species, *E. magistri* (Aldrich) of the United States, *E. ornata*, *E. anomalipennis*, *E. lobata*, *E. plumicauda*, *E. crinita*, *E. interrupta*, *E. maculata*, *E. obovata* (last two similar to *E. sordida* (Aldrich) of the West Indies); II. *E. marginata*; III. (*E. ciliata* group) *E. convergens*, *E. albipes*; IV. *E. femorata*, *E. cristata*; V. *E. armata*, *E. fusca*, *E. distincta*, *E. hirtitarsis*, *E. fasciata*, *E. setosa*; VI. *E. flavicornis*; VII. *E. tibialis*; VIII. *E. elongata*, *E. chaetophora*; IX. *E. halteralis*; X. *E. montana*, *E. angustifacies*, *E. maxima*, *E. latifacies*, *E. media*; XI. *E. scutitarsis*; XII. *E. seticauda*, *E. ramosa* (last also reported from Panama); XIII. *E. magnicornis*; XIV. *E. hirtipes*, *E. clavulifera*, *E. fimbriata*; XV. *E. ventralis*, *E. brevipes*; XVI. *E. nigricans*; XVII. *E. acuticornis*, *E. frontalis*; XVIII. *E. caudata*; XIX. *E. lamellata*, XX. *E. simplex*, *E. unisetosa*, *E. brachychaeta*, *E. scabrida*, *E. latipennis*, *E. seriata*, *E. ciliifemorata*, and *E. exigua*. General observations include the trends toward spectacularly ornate male wings, legs, abdominal sternites, and genitalia and the preference for sunlight in group I; the simple structure and preference for shade of group XX; preference for soil rather than rock substrates of group III; occurrence on relatively dry substrates of group V; the relatively large size of species of groups VIII and X, and the apparent restriction of group X to higher elevations where other groups do not occur.

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Since 1932 when the type-species, *Enlinia magistri*, was described by Aldrich from New York, and 1934 when the species was included in the treatment of the North American Diptera by Curran, the highly modified wing of the male has been of particular interest. The distorted venation and clusters of hairs on the wing have seemed unique among the Diptera. Except for a passing comment by Aldrich (1932) on an unnamed female from Indiana, there seems to have been little thought of other possible species in the genus. Actually, a second species had been described from the Lesser Antilles over thirty years earlier by Aldrich (1896) under the name *Achalculus sordidus*. Recently the diversity and wide distribution of the genus have become more obvious with the description of two additional species in the eastern United States (Robinson, 1964) and the discovery of other species ranging from California (one species) to the island of Dominica in the Lesser Antilles (six species). On a series of trips to Mexico in 1961 and 1963 I made a particular effort to collect members of the genus, *Enlinia*, and the present paper is an attempt to treat 53 species I found in that country.

Males of the type-species of *Enlinia* were first collected by two European entomologists during the International Entomological Congress at Ithaca, New York, in 1928. The original name, *Collinellula* Aldrich (1932), was intended to honor one of these collectors, J. E. Collin of England, but that name was preoccupied. The later name, *Enlinia*, provided by Aldrich (1933) was intended in abbreviated form to honor the other collector, G. Enderlein of Berlin.

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Aldrich related his genus to *Achalculus*, and he distinguished *Enlinia* by its many small acrostichals while *Achalculus* had only five pairs. In this case the full range of variation in *Enlinia* was not recognized, while at the same time concepts of *Achalculus* were based on material of other genera. *Achalculus* is a genus of temperate regions that is probably most closely related to *Xanthina*. Two American species placed in the genus by Aldrich have proved to be, in one case, a *Micromorphus*, and in the other, an *Enlinia*. One South American species placed in *Achalculus* by Van Duzee (1930) may also prove to be *Enlinia*.

In my own concepts I have tended to place the genus *Enlinia* close to *Harmstonia*, which has the same general wing venation, but lacks acrostichals and has setae on the female face over the mouth. The genus *Peloro-peodes* shows the same general body form, slightly modified foretarsi, and some modification of the hind margin of the fourth abdominal sternite in the male, but differs in a host of details such as hypopygium, detailed structure of the foretarsus, and uniseriate acrostichals. All similarities with other genera are relatively superficial, and the genus *Enlinia* stands quite sharply distinct from all others presently known. While the genus is very distinct and possibly worthy of a separate subfamily within the Dolichopodidae, any proposal of a separate family for *Enlinia* should be rejected.

Collections

This study is based entirely on specimens collected by the author in Mexico during the years 1961–1963. Holotypes, allotypes, and some paratypes are deposited

in the United States National Museum. Other specimens are presently in the author's collection.

Morphological Variation

Enlinia differs from many genera in the great number of characters subject to variation that, while distinguishing the species, often obscure their relationships. The range of variation in the genus is quite remarkable, and it is not difficult to see how Aldrich might believe his *Achalcus sordidus* and his *Enlinia magistri* to be different genera. The three species in eastern North America, *E. magistri*, *E. ciliata*, and *E. saxicola*, seem amazingly diverse, yet they with *E. sordidus* of the West Indies are all within only one major subdivision of the genus. Where species have been found that are obviously closely related, such as *E. magistri* and *E. elegans*, *E. maculata* and *E. obovata*, *E. ventralis* and *E. brevipes*, *E. lobata* and *E. plumicauda*, *E. acuticornis* and *E. frontalis*, members of the *E. simplex* group, and members of the *E. montana* group, even here differences are often very marked. When even those closely related species are so distinct, one can only wonder at the many species that seem completely unrelated to any other.

Variations of structures that have been observed include almost all parts of the insect. The face, except for the prominent clypeus in the *E. femorata* group, varies primarily in width. The face is always wider in the female, but exactly how wide is apparently not related to the width in the male. The very narrow female face in the *E. ciliata* group, the medium width face of most groups, and the extra broad female face in the *E. elongata* group (Figure 102) are all associated with males having eyes contiguous below. The broad-faced males of the *E. magnicornis* group (Figure 148) and part of the *E. montana* group have females with faces not unusually wide. The size of the anterior facets of the eye is generally related to the width of the face, but general head shape can offset this as in *E. caudata* with its very low broad male head and the most enlarged eye facets seen, and *E. frontalis* with a very high male head and eye facets scarcely enlarged, both species having eyes contiguous or nearly so. The shape of the front is also affected by head shape as in the case of *E. frontalis* (Figure 178) with the front relatively high compared to its width. For purposes of measurement in this study the top limit of the front has been fixed at the lower ocellus. It is unfortunate that the potentially

useful character of head shape is so nearly lost through distortion in dried specimens. The antennae are relatively uniform within the genus, but a few species prove that this structure too is subject to variation. The third segment is usually blunt (Figure 5), but in *E. acuticornis* and *E. frontalis* it is characteristically rather pointed (Figures 174, 180) and in *E. magnicornis* is very much modified with a very short arista (Figure 149).

The thorax of the genus *Enlinia* is one of its characteristic parts with the flattened posterior slope of the mesoscutum, the biseriate acrostichals, and the small dorsocentrals. The acrostichals can vary in number from about four to over eight pairs, but these are usually very difficult to see and their number generally seems to reflect the relative number of dorsocentrals. The number of dorsocentrals while usually observable is not always very helpful. The extremely high number seen by Aldrich in *E. magistri* seems to occur only in that species and its closest relative, *E. elegans*. *Enlinia ornata* and others with modified male wings have only seven or eight pairs of dorsocentrals and the *E. ciliata* group shows mostly eight or nine. Still, the generally higher numbers of nine to twelve are found entirely among those species with metallic green abdomens and large auxiliary genitalia, although not in all such species. The other species with modified male wings seem to have seven or sometimes eight pairs but not less. This latter overlaps with the great majority of other groups in the genus. One series, the *E. armata* group, seems to have characteristically six pairs of dorsocentrals excluding the seta that is usually out of line and obliquely oriented near the anterior end of the row. Though I have consistently excluded it in the counts, this latter seta in some other groups is so nearly in line that it might be considered a dorsocentral. One species, *E. acuticornis*, characteristically seems to have five pairs of dorsocentrals though its close relative *E. frontalis* has six to seven pairs. Elsewhere the number can be highly variable, a situation not helped by the tendency of the dried head to lie back and cover some of the pairs. There is some suggestion that females in the *E. simplex* group tend to have more than males of the same species, but this awaits more certain determination of the females. The large number of dorsocentrals in *E. magistri* as opposed to the characteristic six pairs in *E. armata* suggests two groups standing at opposite or near opposite ends of the genus. This opposition is suggested in other characters as well.

The shape of the scutellum seems a little too subtle for use as a key character, but the closely related *E. acuticornis* and *E. frontalis* seem to differ consistently, and the *E. simplex* and *E. montana* groups seem to contain mostly species with the scutellum rather distinctly pointed and setae relatively close together in contrast to most other groups.

Almost all parts of the legs seem subject to variation. The forecoxa in the *E. magistri* group (Figures 3, 9, 12, 25, 35, 40) characteristically bears highly modified setae, though the coxa is plain in other groups. The femora are never greatly modified, at most the hind femur is spurred in the male of the *E. femorata* group (Figures 61, 65), but all femora may bear modified setae. The fore- and middle femora are markedly setiferous in *E. hirtipes* (Figures 157, 158) and frequently bear ventral setae as in the *E. armata* group (Figures 67, 73, 82, 85) or in *E. seriata* and its relatives in the *E. simplex* group (Figures 191, 194, 195, 199, 201). The middle femur in almost all males has at least one erect slender ventral seta near the base, and in *E. magistri*, *E. ciliata*, and their relatives (Figures 4, 10, 14, 20, 26, 33, 36, 44, 52, 55), there is a very strong seta or a group of stout setae ventrally near the base. Less often the hind femur bears distinct ventral setae such as in *E. chaetophora* (Figure 107), *E. seticauda* (Figure 139), and *E. ramosa* (Figure 144). The foretibia lacks obvious distortion or modified setae except often a long ventral seta at the tip, but the middle tibia is very commonly modified. These tibiae in combination with their femora often seem specialized as raptorial structures as in many members of the *E. magistri* group (Figures 3, 9, 25, 35), the *E. elongata* group (Figures 100, 106), *E. seticauda* (Figure 138), *E. brevipes* (Figure 164), and *E. ciliifemorata* (Figures 194, 195). The middle tibia in *E. scutitarsis* is strongly flattened and distorted (Figure 133), and it bears many distinctive setae in *E. hirtipes* (Figure 158). In *E. scutitarsis*, *E. fasciata*, and *E. setosa* (Figure 69) there is a short but distinct crest of setae anteriorly. Rather erect or even stout setae are present on the middle tibiae in many species including *E. media* (Figure 126) of the *E. montana* group, *E. brevipes* (Figure 165) of the *E. ventralis* group, and *E. scabrida* and others (Figures 195, 211) of the *E. simplex* group. In species of the *E. armata* and *E. flavicornis* groups as well as in *E. scutitarsis*, *E. seticauda*, and *E. ramosa* (Figures 133, 143) the middle tibiae bear a large posterodorsal bristle, but

most species show little or no distinct dorsal. The hind tibiae of *E. ornata*, and the *E. armata*, *E. elongata*, *E. flavicornis*, and *E. tibialis* groups (Figures 72, 91) bear many distinct dorsal bristles, but in most other species the dorsals are small with one apical seta sometimes rather large. The ventral surface in *E. setosa* (Figure 72) bears extremely long setae in the male, and rather long ventral setae occur in *E. fasciata* and *E. scutitarsis*. The foretarsus is modified in every male of the genus. The basic pattern consists of the first and second segments being compressed and the third often flattened and bearing one or two stouter setae of various lengths. In the *E. magistri* group (Figures 3, 9, 13, 19, 25, 27, 32, 35, 40) the foretarsi are usually extremely ornate with the fourth segment often modified. Apparent clasping structures are formed in some species such as *E. elongata* (Figure 99), *E. chaetophora* (Figure 105), *E. halteralis* (Figure 109), *E. latifacies* (Figure 117), *E. maxima* (Figure 128), *E. fimbriata* (Figure 153), and *E. brevipes* (Figure 164). The middle tarsus seems unmodified, but the hind tarsus in *E. hirtitarsis* (Figure 76) and *E. halteralis* (Figure 110) is slightly bent with a few longer setae, and in *E. scutitarsis* (Figure 134), the basal segment is highly modified and bearing a fringe of very long setae.

The wings are the most notably modified structures in the genus. The basic pattern of the third and fourth veins relatively straight and diverging from the base, however, is characteristic of all females and most males. The modified wings are found only in the males of the *E. magistri*, *E. ciliata*, and *E. marginata* groups, and in *E. saxicola* of the eastern United States. The wing in the male of the latter species is modified only slightly, having a narrowed base. The *E. marginata* (Figure 46) and *E. magistri* (Figures 1, 7, 16, 23, 29, 30, 38) groups have a brown streak of pigment and a prominent fringe of long hairs along the anal margin, while many in the *E. magistri* group have uneven hind margins and distorted veins. In *E. magistri* and *E. elegans* (Figure 1) there are clusters of long hairs on the wing surface, and *E. sordida*, *E. maculata*, *E. obovata*, and *E. ornata* (Figures 7, 29, 30) have distinct spots of pigment or brown pubescence on the wings. The wings of *E. lobata* (Figure 23) have more diffuse brownish spots. The wing modification in *E. convergens* (Figure 54) of the *E. ciliata* group seems particularly strange. It belongs in a group with two species having unmodified wings. The pattern of the wing

with its converging third and fourth veins gives the species a resemblance to many other genera of Dolichopodidae.

The abdomen in most species of the genus is brownish or otherwise dark, and obscured by blackish pollen. Violet or other slight metallic reflections may be present. In the *E. ciliata* group and *E. magistri*, *E. elegans*, and to some extent *E. ornata* of the *E. magistri* group, the abdomen is metallic dark green. Other distinctions of the abdomen involve the genitalia and one of the peculiarities of *Enlinia*, the auxiliary genitalia on the abdominal sternites. Such extensively modified sternites are rare in the family but have been noted in the recently described genus *Conchopus* Takagi (1965) of the central and western Pacific shores, and somewhat in the genus *Peloropecodes* Wheeler. The third sternite may be armed near the base, near the hind margin, or in both places, and may bear a small projection or a large stout curving spine. The fourth sternite may bear a small central projection that may fork distally, or there may be two widely separated lobes projecting from the hind margin. The most highly developed projections are found in the *E. ciliata* (Figures 51, 53, 56) and *E. magistri* (Figures 6, 11) groups with smaller projections in some of the *E. magistri* (Figures 15, 18, 22, 28, 34, 37, 42) group and in the *E. marginata* (Figure 45), *E. ventralis* (Figures 161, 167), and *E. hirtipes* (Figures 152, 155, 159) groups. Many of these projections seem arranged so as to interlock or even interlock with the hypopygial appendages. The fifth sternite may be reduced or essentially lacking, but in the *E. acuticornis* group (Figures 172, 179) it is distinct with many short hairs, and in the *E. ventralis* group (Figures 161, 167) it has a long central seta. The other groups have unarmed sternites or only somewhat stouter or longer hairs on the fourth. In *E. flavicornis* (Figure 88) the lateral margins of the fifth tergite are pale and pointed.

The hypopygium is usually small, being the smallest in *E. nigricans* (Figure 170) where it is half as long as the vertical thickness of the abdomen. In contrast the largest hypopygium is that of *E. maxima* (Figure 129), which is globular and not at all immersed in the preabdomen. The hypopygial lamellae vary greatly in size, usually being triangular or elliptical, but in one species, *E. ramosa* (Figure 141), they are greatly divided into many slender long-fringed branches.

Determination of Females

The basic subdivision between the ornate versus relatively inornate males that is used in the key is, I believe, a natural division within the genus, but is, unfortunately, not reflected in the females. The extreme elements within these natural groups are evident by the eight to twelve pairs of dorsocentral setae and green color of the abdomen found only in the groups with relatively ornate males, and by the five or six pairs of dorsocentrals found only in the groups with rather inornate males. Still, the majority in both major parts of the genus show the same basic characters in the female, and I have not yet been able to determine to which species or even group of species many isolated females belong. Many and perhaps all female *Enlinia* do have distinguishing characters, however. The members of the *E. ciliata* group with their narrow female faces and their black legs but white basitarsi are always distinct, and *E. ciliata* has two tarsal segments white while *E. albipes* has only one, a distinction carried over into the female. The *E. armata* group is particularly notable for the ventral setae on the forefemora that occur in both sexes. In fact, all the species with many bristles on the hind tibia seem unusually easy to determine in the female, *E. tibialis* with its greater number of anterodorsals on the hind tibia, *E. ornata* with its black legs, *E. flavicornis* with its yellowish antennae and special arrangement of bristles on the hind tibia, *E. elongata* with its unusually broad female face, and members of the *E. armata* group itself with differences in the halter color and wing shape. *Enlinia seticauda*, *E. ramosa*, and *E. scutitarsis*, the species with a strong dorsal bristle on only the middle tibia, are also rather distinctive in the female. A few individual species are distinctive, *E. acuticornis* with its somewhat pointed antennae and five pairs of dorsocentrals, *E. frontalis* with its high front and long face, and *E. elegans* with its ten or twelve dorsocentrals and specially bent second wing vein. In the latter, the second vein distinguishes it from even its closest relative, *E. magistri*, of the northeastern United States.

Throughout, the prevailing fact remains that most species have wing differences, however subtle, by which the females can be identified. The wings of the *E. montana* and *E. elongata* groups seem to be quite distinct in their length of 1.45–1.8 mm, and furthermore each of these groups is distinct in the texture of the wing, that of the former group more finely granular and translucent, the latter more clear and coarsely granular.

The two groups are also easily distinguished by the form of the second vein. The wing of *E. fimbriata* (Figure 151) is thoroughly distinctive without being greatly modified. The *E. simplex* group has a second vein that curves inward to a point nearly halfway between the costa and the third vein, this being in contrast to such species as *E. nigricans* and members of the *E. hirtipes* group. The various females in the *E. magistri* group show slight differences in curvature of the second vein and placement of the crossvein. Some very subtle differences, such as the sharply rounded wing tip of *E. distincta* compared to *E. armata* and the broadly rounded tip of *E. latipennis* compared to other members of the *E. simplex* group, are difficult to use without material for comparison.

To identify isolated females, for the present, the best way is to use the general key using both parts wherever characters for females are not given. Most of the distinctive features mentioned above appear in the key where applicable and by reference to the illustrations given of wings many of the subtle differences may be recognized.

Distribution

The genus *Enlinia* occurs in North America as far north as Canada in the East and California in the West. Southward it occurs with many species in Mexico and I have seen five species from Panama. Seven species have been seen from the Lesser Antilles. The genus certainly must occur in South America and probably with a great number of species. The material placed in *Achalcus* by Van Duzee (1930) might represent the genus as far south as Chile. For the present, however, no South American records are known.

It seems doubtful that the genus ranges into the Eastern Hemisphere. In South America, the lack of records is not a basis for such belief, but it must be frankly admitted that over the years Europeans have proved to be better collectors of this kind of insect than Americans, and all the early collections in America were made by Europeans—H. H. Smith in St. Vincent and Grenada, and Collins and Enderlein in New York. If the genus occurred in Europe it seems certain it would have been collected. I doubt the genus occurs in Asia primarily because there is no barrier from Asia that would have prevented its spread into Europe.

Individual groups of *Enlinia* show somewhat distinctive distributions. The *E. ciliata* group is represented in

both the eastern United States and in Mexico with the single species *E. ciliata* occurring throughout its range. This is, as far as known, the only such widely ranging species in the genus. The species pair, *E. magistri* and *E. elegans*, show a combined range similar to *E. ciliata*. Other species of the *E. magistri* group related to the Mexican *E. maculata* and *E. anomalipennis* occur in the Lesser Antilles as well. The *E. saxicola* of the northeastern United States is not in the *E. magistri* group itself but is among those with a slightly modified male wing and a distinct group of setae on the bases of the middle femora. As such it might be related to *E. marginata* of Mexico though its wing lacks the brown fringed hind margin. As indicated, all species in the eastern United States belong in the first major subdivision of *Enlinia*. The single species presently known from the western United States, in contrast, is a member of the otherwise Mexican, *E. simplex* group, and is very closely related to *E. seriata* of Oaxaca, differing only in minute details of the foretarsus and genitalia. The western species is not yet described. Most other groups delimited in this treatment are presently known only from Mexico, but there are two additional groups represented in Dominica in the West Indies, one with a projection on the third sternite similar to but not the same as those of the *E. hirtipes* group, and one with bristles on the hind tibiae similar to the *E. elongata* group.

Two cases have been noted of closely related species within Mexico that seem to displace each other in different parts of the country. In Chiapas, *E. distincta* sometimes occurs with but tends to replace the widely distributed *E. armata*. Eastward from central Oaxaca where *E. plumicauda* and *E. lobata* occur together, the former seems to replace the latter.

Ecology

Enlinia is a genus of primarily hovering insects that stay close to the surface of rocks, trees, or soil. They occasionally alight, but usually they follow a fast meandering course frequently returning to particular points of interest.

The most notable first impression regarding *Enlinia*, especially in Mexico, is the ubiquity of the species, with as many as twelve species occurring in a small area the size of a large room. Wherever water is found, there is likely to be at least one species and usually more of *Enlinia*. Even in one of the driest parts of Oaxaca at

the margin of a stagnant pool backed up by a highway culvert, two species, *E. interrupta* and *E. elegans*, were collected. This is in complete contrast to at least one other Mexican genus, *Microcyrtura*, which always is restricted to a single specialized habitat—rather dry rock surfaces by streams in moist ravines—and which never seems to have more than one species in any one locality. In *Enlinia*, even the most closely related species may have ranges that overlap, and they may occur together at the same locality. For the most part the profusion of species in restricted areas seems related to different habitat requirements that have been observed in many of the species. Males and females share the same habitats, and they seem to show none of the slightly different preferences that seem to occur in the genus *Harmstonia* (Robinson, 1967).

One of the most readily observed ecological factors regarding *Enlinia* is substrate. One group, *E. ciliata* and its relatives, occurs over soil and wet sand in contrast to others that occur over rock or leaves and tree trunks. This habitat difference may be the basis of the wide distribution of *E. ciliata*, the habitat being widely available in all areas between the eastern United States and southern Mexico. This difference in substrate preference is very marked and apparently involves some very different basic physiology that is restricted to this small group of related species.

The use of plant material as substrate is not so marked. In eastern Tennessee, *E. saxicola*, which is characteristically on rock, has been collected hovering over *Rhododendron* leaves. In southern Veracruz, *E. obovata* was collected only over leaves well above the ground, but it was with a related species, *E. crinita*, that is commonly found on rocks. In Dominica in the West Indies, the species that is possibly related to *E. hirtipes* is widespread in forested areas meandering up and down over the surface of tree trunks, but also is common on the relatively dry surface of a cement cistern. Limestone is not a normal constituent in Dominica, and it seems significant that a tree trunk species would readily go over to it. The same phenomenon was noticed in a number of other arboreal Dolichopodidae including a *Sciapus* and some *Medeterinae*. In Mexico most of the species were found on limestone but any definite restrictions to this substrate are not certain. Also, no careful inspection for *Enlinia* on tree trunks was made in Mexico. Other species of *Enlinia* in Dominica occurred on other kinds of rock and in some

cases on both volcanic rock and cement. These always occurred on wetter surfaces.

Among the species on rock, light and moisture seem rather important. Regarding light, I have observed in general that the many species in the *E. magistri* group seem to prefer direct sunlight while many others such as *E. scutitarsis*, *E. armata*, *E. hirtipes*, and members of the *E. simplex* group prefer partial to complete shade. As shadows shift often so will the species.

Moisture preferences have been studied on two separate occasions. In one case in Mexico a rock surface of less than two square feet with gradation of moisture was examined for preferences of the five species present. On the most prominent parts that were nearly dry occurred *E. armata*, the moist parts contained *E. scutitarsis*, and the lower wet parts had *E. hirtipes*. To one side where water ran over one end of the rock, *E. unisetosa* and *E. scabrida* were on and around *Podostemum* growing in the water. It might be noted that *E. unisetosa* and *E. scabrida* which occurred in essentially indistinguishable habitats are also the most closely related to each other, both being members of the *E. simplex* group. Also, wherever observed, members of the *E. armata* group all seemed to prefer the relatively dry habitats, the driest in which *Enlinia* species occur. In Dominica three species in the *E. magistri* group occur in slightly distinctive habitats, the first on wet surfaces, the second on surfaces rather constantly splashed by water, and the third on surfaces constantly washed with surging water. The third of the species is the most interesting, seeming to stay always within one or two inches of the water surface though the surface may fluctuate many inches each second. This last is a habitat in which one could hardly imagine finding a minute flying insect, yet it occurs there in great numbers dodging the waves and droplets of water. The species seems, if anything, to increase its activities during heavy rain storms which, of course, at their worst only approximate the normal habitat of the species.

It might be generally noted that two things affecting most Dolichopodidae, rain and season, seem to have little or no effect on *Enlinia*. I have frequently wondered what becomes of the thousands of dolichopodids on a mud flat when a large cloud comes or a storm begins; they almost all disappear somewhere. Except for the species liking direct sunlight, members of the genus *Enlinia* are relatively undisturbed. Cer-

tainly a heavy storm would be expected to drive the drier surface species to shelter. In the eastern United States where the primary dolichopodid season is April to June, *Enlinia* is common from May to September and it avoids only really cold weather. In Mexico while other species are obviously seasonal I have collected many species of *Enlinia* both in May and December. In Dominica where the Dolichopodidae almost completely disappear in late March, *Enlinia* continues business as usual. There may be seasonal fluctuations in *Enlinia* populations in the tropics, but I have no evidence of them, and they are certainly less pronounced than in other Dolichopodidae.

A final factor of interest is elevation. In the Rio Valle Nacional area of Oaxaca in Mexico, collections have been made along a road from an area of low elevation to the crest of the Sierra Juarez. At the lower levels of about 300 meters the *E. magistri* group and species such as *E. hirtipes*, *E. seticauda*, *E. scutitarsis*, *E. unisetosa*, and *E. scabrida* (the latter two of the *E. simplex* group) were common. At higher levels of about 1500 meters the *E. magistri* group seemed to drop out and the other mentioned species were replaced by *E. latipennis* and *E. exigua* of the *E. simplex* group, and *E. magnicornis*, *E. elongata*, and *E. frontalis*. Some species such as *E. cilifemorata* of the *E. simplex* group occur in both regions. At still higher elevations of about 2500 meters in the Cerro San Felipe north of the city of Oaxaca, a completely distinctive group of *Enlinia* takes over represented by five species including *E. montana* and its relatives. Elsewhere attempts to find *Enlinia* at such high elevations have failed, but this may be due to failure to find adequately watered habitats.

Sexual Behavior

Whatever the basis for the different environmental preferences of the *Enlinia* species, these preferences are undoubtedly important in bringing males and females of a species together. Similarly, it might be assumed that the great amount of ornamentation of the males has a sexual function, somehow allowing the females to recognize them. One thing seems certain from observations, once within his own habitat the male is not particularly discriminating. I saw one male attempting to copulate with a female *Peloropecodes*, an

insect of considerably larger size. Another male was observed trying to copulate with a small *Enlinia*-sized black spot on a concrete wall.

The specialized genital structures have not been observed in action; however, it is difficult to see how they could have any but a primarily tactile function. In the case of such species as *E. magistri*, *E. elegans*, and *E. ornata*, the large sternal armatures must have a definite effect on the copulation since they would interfere with normal mounting of the male upon the back of the female. The many types of clasping structures in the male, in the foretarsus, between the hypopygium and the auxiliary genital structures on the abdominal sternites, and the frequently raptorial fore- and middle legs, may have a function in copulation. The specialized setae along the ventral surfaces of the male femora and tibiae are in a position to come in contact with the female during copulation and may have a tactile function.

Genus *Enlinia* Aldrich

Enlinia Aldrich, 1933, p. 168 [new name for *Collinellula* Aldrich].

Collinellula Aldrich, 1932, p. 4 [preoccupied *Collinellula* Strand, 1928, p. 49]; type-species *Collinellula magistri* Aldrich, original designation.

Small, 0.8–1.5 mm long, metallic green to blackish with mostly dark bristles. Face narrowed below with eyes approximated to contiguous above the mouth in the male, female face without setae; palpus small, dark; proboscis usually dark, pseudotracheae of the labellae rudimentary, 12, with small irregular thickenings; antenna with all segments usually short, segment 1 bare above, segment 2 truncate or slightly rounded apically, arista apical; lower postocular setae uniseriate, small, dark. Mesoscutum with posterior slope distinctly flattened; acrostichals biseriate, small; dorsocentrals with anterior pairs not larger than acrostichals; 2 scutellars, a small hair on the lateral scutellar margin. Femora without true preapical bristles; male foretarsus modified. Wing with longitudinal veins in females and in most males straight to slightly curved, all, including veins 3 and 4 diverging for most of length, wings of some males with characteristic distorted margin and venation; crossvein half as long to about as long as last part of vein 5; vein 6 represented by very slight fold. Calypter pale with dark margin and some dark setae.

Abdomen usually about as long as thorax, in some males the sternites bear auxiliary genitalia. Hypopygium usually rather small, sessile to partly immersed.

The genus, including species in the present treatment, contains 56 species.

For a key to the three species known from the eastern United States see Robinson (1964). For discussions of

the relationships of these species see the treatments of the following Mexican species: *E. elegans* (for *E. magistri*), *E. marginata* (for *E. saxicola*), and *E. ciliata*. For a comparison with the West Indian *E. sordida*, see *E. maculata* and *E. obovata*. For notes on various described or undescribed non-Mexican species see discussion of distribution.

Key to the Mexican Species of *Enlinia*

1. Middle femur of male with a group of many long stout black ventral bristles or 1 very long sinuous bristle near base (Figures 4, 10, 14); dorsocentrals always 7 or more pairs; abdomen often metallic green or wings with modified venation (Figures 1, 7, 54) 2
2. Middle femur of male without or with 1 or 2 slender setae near base, sometimes with other setae along ventral margin (Figures 133, 143, 147); dorsocentrals 5-7 pairs; abdomen always blackish; wings of males and females essentially alike (Figures 97, 98, 197, 198) 14
2. Legs blackish with basitarsi white; anal margin of male wing without marginal brown streak or unusually long fringe of hairs (Figures 54, 57); face of female very narrow below 3
3. Legs including basitarsi black or brown; anal margin of male wing with brown streak of pigment and fringe of long sometimes sinuous hairs (Figures 1, 7, 41, 46); face of female below as wide as antennal segment 1 5
3. Veins 3 and 4 convergent distally (Figure 54) *E. convergens*
4. Veins 3 and 4 divergent from base to tips (Figure 57). 4
4. Basal 2 segments of tarsi white; male middle femur with 5 or more long setae at base; hypopygium with long setaceous appendage (Figure 50) *E. ciliata*
5. Only basal segment of tarsi white; male middle femur with usually 3 setae at base; hypopygium without long setaceous appendage (Figure 56) *E. albipes*
5. Forecoxa without long erect black seta on inner anterior surface, pubescence plain; hind margin of wing evenly rounded beyond the base (Figure 46). *E. marginata*
6. Forecoxa of male with long erect black seta on inner anterior surface, sometimes with other modified setae (Figures 3, 9, 35, 40); hind margin of male wing flattened, sinuous, or lobed (Figures 29, 30, 38). 6
6. Dorsocentrals 9-12 pairs; abdomen metallic green; male wing with prominent clusters of hair on surface, vein 2 very sinuous and closely approaching costa near base (Figure 1) *E. elegans*
7. Dorsocentrals 7 or 8 pairs; abdomen mostly brownish or obscured by blackish pollen; male wing without distinct clusters of hair on surface, vein 2 not strongly arched against costa near base. 7
7. Hind tibia with numerous distinct dorsal bristles; male wing with pigment spot along last part of vein 3 (Figure 7). *E. ornata*
8. Hind tibia with few indistinct dorsal setae; male wing with spots of pigment not near vein 3 or lacking 8
8. Wing of male with vein 3 bending backward at tip, converging with vein 4 9
9. Wing of male with vein 3 nearly straight, diverging from vein 4 11
9. Wing of male with vein 3 very close to vein 2 and widely separated from vein 4, wing of female with vein 2 bending slightly but distinctly forward at tip (Figure 17) *E. anomalipennis*
10. Wing of male with vein 3 nearly halfway between veins 2 and 4, female vein 2 essentially straight at tip 10
10. Anal margin of wing straight (Figure 23); hypopygium without long plumose appendage (Figure 22). *E. lobata*
11. Anal margin of wing slightly curved (Figure 21); hypopygium with pair of long plumose appendages (Figure 18) *E. plumicauda*
11. Wing vein 2 curving slightly but distinctly forward at tip, male wing without pigment spots and having bases of veins 4 and 5 not parallel with anal margin 12
12. Wing vein 2 essentially straight at tip, male wing with pigment spot near vein 4, bases of veins 4 and 5 nearly parallel with anal margin 13
12. Hind margin of male wing with a row of long straight setae limited sharply to basal two-thirds (Figure 41). *E. interrupta*
13. Hind margin of male wing with continuous fringe of slender hairs of varying length (Figure 38). *E. crinita*

- 13. Margin of male wing notched at tips of veins 4 and 5 (Figure 30) *E. obovata*
 Margin of male wing not or scarcely notched at tips of veins 4 or 5 (Figure 29) *E. maculata*
- 14. Clypeus bulging forward between eyes in both sexes; male with prominent spur on anteroventral margin of hind femur near tip (Figures 61, 65) 15
 Clypeus not bulging forward, often obliterated by contiguous eyes in male; hind femur without ventral spur 16
- 15. Hypopygial appendage straight with a few long setae apically (Figure 59) *E. femorata*
 Hypopygial appendage curved with distinct crest of setae on one side (Figure 64) *E. cristata*
- 16. Hind tibia with 5 or more small but distinct dorsal bristles 17
 Hind tibia with dorsal setae few or hairlike 26
- 17. Hind tibia with 4 or 5 anterodorsal bristles, fewer posterodorsal bristles (Figure 91). *E. tibialis*
 Hind tibia with more posterodorsal than anterodorsal bristles 18
- 18. Wings 1.5-1.7 mm long, crossvein as long as last part of vein 5 (Figures 97, 98); female face as wide as antennal segment 3 (Figure 102) 19
 Wings 1.3 mm or less long, crossvein usually distinctly shorter than last part of vein 5; female face only as wide as antennal segment 1 20
- 19. Male hind femur with distinct stout black setae along ventral margin (Figure 107); segment 3 of foretarsus with only short black spicule posteriorly (Figure 105) *E. chaetophora*
 Male hind femur with only a few small black ventral setae in basal half; segment 3 of foretarsus with a long stout black seta posteriorly (Figure 99) *E. elongata*
- 20. Antennae yellow, brownish yellow in female; forefemur without a row of distinct ventral setae *E. flavicornis*
 Antennae brown or black; forefemur with a row of distinct black anteroventral setae in both sexes 21
- 21. Hind tibia with somewhat to greatly longer setae ventrally; anteroventrals of forefemur about as long as width of tibia (Figures 67, 73); male middle tibia with a distinct crest of ventral setae near tip (Figure 69) 22
 Hind tibia with only short setae below; anteroventrals of forefemur distinctly shorter than width of tibia (Figures 82, 85) male without ventral crest on middle tibia 23
- 22. Male abdomen with two basal segments yellow; middle tibia with a few long slender dorsals on distal half, hind tibia with ventrals scarcely longer than tibial width; female with hind leg brown except trochanter, knee, and basitarsus *E. fasciata*
 Male abdomen wholly blackish; middle tibia with distinct dorsals distally, hind tibia with series of very long ventrals (Figure 72); female with hind leg nearly uniformly dark yellowish *E. setosa*
- 23. Halter brownish 24
 Knob of halter yellow 25
- 24. Male hind tarsus plain *E. fusca*
 Male hind tarsus curved and bearing long hairs (Figure 76) *E. hirtitarsis*
- 25. Male foretarsus with basal segments much enlarged, 2 long setae posteriorly on segment 2, segment 3 bearing long sinuous thorn (Figure 84); hind tarsus distorted with segments 2 and especially 3 slightly thickened (Figure 83); vein 3 ending almost in point of wing (Figure 87) *E. distincta*
 Male foretarsus rather slender with only short or indistinct setae, segment 3 small; hind tarsus not distorted, without swollen segments; vein 3 ending distinctly before extremity of wing (Figure 81) *E. armata*
- 26. Halter yellow *E. halteralis*
 Knob of halter brown or black 27
- 27. Wings 1.45-1.8 mm long; species occurring at high elevations 28
 Wings 0.9-1.3 mm long; species from elevations of 5000 ft or less 32
- 28. Segment 3 of male foretarsus rather small, cylindrical, bearing only a minute spicule (Figures 112, 119) 29
 Segment 3 of male foretarsus much enlarged or flattened, usually bearing a prominent spicule (Figures 117, 125, 128) 30
- 29. Face of male broad, eyes widely separated; 5th segments of all tarsi much enlarged (Figure 112) *E. montana*
 Face of male very narrow below, eyes nearly contiguous (Figure 118); 5th segments of middle and hind tarsi only moderately enlarged *E. angustifacies*

30. Hypopygium large, globular with large spreading antler-like lamellae (Figure 129); abdominal sternites bearing very long setae *E. maxima*
 Hypopygium small, capping tip of preabdomen, with oblong or triangular setiferous lamellae; abdominal sternites without long setae 31
31. Eyes of male separated and face distinct to mouth in both sexes; middle tibia plain; abdominal sternite 4 with pair of short distinct setae on hind margin (Figure 116) *E. latifacies*
 Eyes of male essentially contiguous above mouth; middle tibia bristly with stiff erect hairs; abdominal sternite 4 without distinctive setae (Figure 123) *E. media*
32. Male with basal segment of hind tarsus broad, flat, and bearing a comb of long setae (Figure 134); middle femur with pair of large ventral setae at base (Figure 133) *E. scutitarsis*
 Male with hind basitarsus plain; middle femur with only single slender seta at base 33
33. Middle tibia with distinct posterodorsal near basal third that is distinctly longer than width of tibia (Figure 143); male hind femur with 1 or 2 black ventral bristles at base (Figures 139, 144) 34
 Middle tibia with posterodorsal short and hairlike or lacking 35
34. Hypopygial lamellae long and much branched, with many slender curving marginal hairs (Figure 141) *E. ramosa*
 Hypopygial lamellae short, rectangular, with two long black apical setae (Figure 137) *E. seticauda*
35. Face of male distinct to mouth, eyes separated (Figure 148); antenna much enlarged, especially segment 3, arista only as long as the 3 segments together (Figure 149) *E. magnicornis*
 Eyes of male contiguous above the mouth or nearly so; antennal segments not much enlarged, arista many times as long as combined segments. 36
36. Abdominal sternite 3 of male with long slender projection from middle of hind margin (Figures 152, 155, 159) 37
 Abdominal sternite 3 without projections 39
37. Fore- and middle femora and middle tibia of male with many long setae (Figures 157, 158) *E. hirtipes*
 Legs without numerous long setae 38
38. Hypopygial lamellae long with many long setae along outer margin (Figure 152) *E. fimbriata*
 Hypopygial lamellae small with only a few slender setae (Figure 155) *E. clavulifera*
39. Abdominal sternites 4 and 5 of male each bearing a long slender erect seta (Figures 161, 167) 40
 Abdominal sternites 4 and 5 with only short or indistinct setae 41
40. Male foretarsus with segments 1 and 2 nearly equal in size (Figure 164); middle tibia with distinct erect ventral setae near tip (Figure 165); hypopygial lamellae not narrower in basal half (Figure 167) *E. brevipes*
 Male foretarsus with segment 1 much longer than segment 2 (Figure 163); middle tibia plain; hypopygial lamellae narrower in basal half (Figure 161) *E. ventralis*
41. Antennal segment 3 rather pointed (Figure 174); male with abdominal sternite 5 present and bearing many short hairs (Figures 172, 179) 42
 Antennal segment 3 blunt; male without evident 5th abdominal sternite 43
42. Legs brownish yellow; 5 pairs of dorsocentral bristles; front more than twice as wide as high (Figure 173) *E. acuticornis*
 Legs black; 6 or 7 pairs of dorsocentral bristles; front less than twice as wide as high (Figure 178) *E. frontalis*
43. Hypopygial lamellae and long apical setae together longer than preabdomen (Figure 182) *E. caudata*
 Hypopygial lamellae short 44
44. Crossvein not as long as its distance from the point where it would, if extended, intersect the hind margin of the wing, vein 2 scarcely curving forward at tip (Figures 169, 185) 45
 Crossvein as long as or longer than its distance from the point where it would intersect the hind margin, vein 2 distinctly curving forward at tip (Figures 197, 198, 200, 204) 46
45. Legs yellowish; hypopygial lamellae crescent-shaped with a row of long setae along convex margin (Figures 187, 188); hypopygial capsule almost as long as vertical thickness of abdomen *E. lamellata*
 Legs brown or black; hypopygial lamellae straight and slender, with longer setae near tip (Figure 170); hypopygial capsule very small, only half as long as vertical thickness of abdomen *E. nigricans*

46. Male middle femur with a series of long erect setae along anteroventral surface (Figures 191, 195, 201) 47
 Male middle femur without or with only one long erect seta anteroventrally 49
47. Legs black; scutellar setae nearer middle than sides; male middle tibia without distinct short erect setae ventrally near tip; hypopygial lamellae black, triangular (Figure 202) . . . *E. exigua*
 Legs brownish with pale trochanters; scutellar setae as near sides as middle; male middle tibia with distinct short erect setae ventrally near tip; hypopygial lamellae brownish, slender (Figures 193, 196) 48
48. Hypopygial lamellae bent backward in the middle, with only 3 distinct setae which are all apical (Figures 192, 193) *E. seriata*
 Hypopygial lamellae straight, with many setae on apex and lateral margins (Figure 196) *E. ciliifemorata*
49. Hypopygial lamellae triangular or rather truncate (Figures 215, 219) 50
 Hypopygial lamellae elliptical (Figures 205, 209, 213) 51
50. Hypopygial lamellae triangular (Figure 215); segment 3 of male foretarsus without tuft of setae anteriorly, with lobe posteriorly (Figure 216) *E. unisetosa*
 Hypopygial lamellae rather truncate apically (Figure 219); segment 3 of male foretarsus with tuft of setae anteriorly, without lobe posteriorly (Figure 218) *E. simplex*
51. Male middle tibia with short stout erect black setae along ventral surface (Figure 211) *E. scabrata*
 Male middle tibia without short stout erect black setae ventrally 52
52. Wing apex rather sharply rounded (Figure 212); hypopygial lamellae rather large, half as long as hypopygial capsule (Figure 213); segment 1 of male foretarsus with a stout apical thorn (Figure 214); distinct pair of short setae on 4th abdominal sternite *E. brachychaeta*
 Wing apex rather broadly rounded (Figure 204); hypopygial lamellae about one-third as long as the capsule (Figure 205); segment 1 of male foretarsus without evident apical thorn (Figure 203); 4th abdominal sternite without distinct pair of setae *E. latipennis*

The Mexican species of the genus can be divided into the following 20 rather distinct groups. The first three groups show distinctive clustered or sinuous setae on the base of the middle femur and have in most cases a modified wing in the male. The remaining groups include species with a less ornate middle femur and an unmodified male wing. These characters seem to reflect a basic subdivision in the genus.

I. *Enlinia magistri* Group (Typical)

The group is distinguished by the sinuous and long-fringed hind margin of the male wing and the specialized setae on the male forecoxa. In the group are those species with the most pairs of dorsocentrals (up to 12), and males with the most ornate foretarsus and abdominal sternites.

Enlinia elegans, new species

FIGURES 1-6

MALE.—Length 1.3 mm; wing 1.2 mm by 0.6 mm. Face and front dark metallic green with only slight pollen; eyes essentially contiguous below, anterior facets much enlarged. Palpus and proboscis dark. An-

tenna (Figure 5) black, segment 3 blunt, arista near twice as long as face.

Thorax metallic dark green with slight pollen, pollen yellowish above, whitish on pleura; setae dark with pale reflections; 8-10 pairs of acrostichals, 10-12 pairs of dorsocentrals; scutellum with hind margin evenly curved, bristles as near sides as middle.

Legs brownish with coxae and hind femur somewhat metallic dark green; setae mostly dark. Forecoxa (Figure 3) with strong seta on inner anterior surface, a tuft of small setae on side; forefemur (Figure 3) rather broad, with stout erect seta below near base, row of short setae along anteroventral edge, those toward tip rather stout; middle femur (Figure 4) rather thick, lower margin somewhat angular near base, long stout seta borne at angle followed by 2 or 3 progressively shorter setae, 1 long slender arching seta on dorsal margin near base; hind femur rather broad with about 3 long slender setae along median part of anteroventral margin; tibiae thicker toward tips, foretibia gradually widened, others wide from near base; middle tibia with numerous crowded erect hairs ventrally; hind tibia with slightly longer dorsal seta near base and tip. Foretarsus (Figure 3) highly modified, segments 2, 3, and 4 each bearing ventral seta, those of 3 and 4 strongly curved,

segment 3 reduced to thin plate; lengths of segments of middle tarsus from base as 7-3-3-2-3; hind tarsus as 11-8-6-4-3.

Wing (Figure 1) generally oval, with middle of hind margin produced as broad truncate lobe, clear with brown veins; vein 2 very sinuous, curving forward before middle and again near tip, running backward beside costa rather far at tip; vein 3 arching slightly forward toward middle; vein 4 arching forward and backward similar to vein 2 but more accentuated, median backward bend at juncture of posterior crossvein; clusters of setae on lower wing surface just anterior to and posterior to last large bend of vein 4, hairs of anterior cluster longer and more numerous; vein 5 ending before wing margin, last part about as long as the rather oblique crossvein; vein 6 fused with straight anal margin, which is slightly brownish and contains spurious veinlike streak; setae of hind margin forming long fringe. Knob of halter black.

Abdomen (Figure 6) slightly longer than thorax, stout, cylindrical but curving downward, metallic green, setae dark; a long stout curved horn on middle of sternite 3, slender forked appendage on sternite 4. Hypopygium brownish, large, capping tip of preabdomen, projecting forward below, bearing a pair of small brown lamellae with short pale hairs; inner appendages thin, translucent, brownish.

FEMALE.—Very plain compared to male. Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Forecoxa and tarsus plain; femora without long setae; middle tibia not much flattened, without dense pubescence. Wing (Figure 2) rather oval, with gradually and evenly rounded hind margin; vein 2 arching slightly forward before the middle in position similar to that of first bend in male wing, straight and nearly parallel to vein 3 distally; veins 3 and 4 nearly straight and diverging from near base; vein 5 reaching margin, last part slightly longer than the perpendicular crossvein; slight fold representing vein 6 well in from anal margin. Abdomen slightly flattened.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, from margin of shaded stagnant pool under culvert, ravine near 660 km marker, Rt. 190, 9 August 1962, H. Robinson (USNM 70281). Allotype ♀ from Oaxaca, around rocks in shallow, partially shaded stream, near 220 km marker, Rt. 185, 9 August 1962. Paratypes: same data as allotype, 11 ♂ and 3 ♀; Valle Nacional, 12 May 1963, 4 ♀; Chiapas: near junction

of Rts. 190 and 200, 21 May 1963, 7, ♂; over crest of sierra above Arriaga, 22 May 1963, 1 ♀; Ixtapan, on moist limestone at roadside above river, 23 May 1963, 3 ♂; Rio Lajas, 23 May 1963, 3 ♀; all collected by H. Robinson.

NOTE.—*Enlinia elegans* is obviously very closely related to *E. magistri* (Aldrich) of the eastern United States. The two species share many distinctive characters including the large number of acrostichal and dorsocentral setae, the very large auxiliary genitalia, and the clusters of hairs on the wing. The new species is distinct in both sexes by the bend of the second wing vein.

Enlinia ornata, new species

FIGURES 7-11

MALE.—Length 1.3 mm; wing 1.3 mm by 0.5 mm. Face and front dark metallic green with only slight pollen; eyes essentially contiguous below, anterior facets greatly enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Thorax metallic dark green with slight yellowish pollen, more grayish pollen on pleura; setae dark with pale reflections; about 7 pairs of acrostichals, about 8 pairs of dorsocentrals; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs brown; setae mostly dark. Forecoxa (Figure 9) with strong seta on inner anterior surface, a tuft of small setae on side; forefemur (Figure 9) rather broad, a rather long erect seta ventrally near base followed by ten or more short erect setae; middle femur (Figure 10) rather broad, lower margin somewhat angular near base, a long stout sinuous bristle borne on tubercle at basal angle followed by 3 or 4 progressively shorter setae on smaller tubercles, a stout but short erect seta on dorsal margin near base; hind femur rather broad with a longer seta anteroventrally toward tip; foretibia (Figure 9) slightly thickened toward tip with distinct apical seta ventrally; middle tibia broad and flattened with many short crowded hairs below, a rather large dorsal seta near the middle; hind tibia rather thick from near base, small but distinct anterodorsal near basal one-third, 4 quite distinct posterodorsals along distal one-half. Foretarsus (Figure 9) distorted, segments 1 and 2 somewhat compressed, segment 2 with two short hooked setae dorsally and a slender retrorse lobe ventrally?, segment 3 inserted near dorsal edge of second with a stout dorsal seta, segments 4 and 5

slightly flattened; lengths of segments of middle tarsus from base as 8-3-3-2-3; hind tarsus as 7-9-6-4-3.

Wing (Figure 7) narrowly oval with nearly straight anal margin and a slight lobe in hind margin by tip of vein 5, clear with brown veins; vein 2 curved slightly forward toward middle, very close to and becoming almost parallel with vein 3 at tip; vein 3 nearly straight with slight bend near tip, the bend lying against anterior margin of a small triangular brownish spot formed of minute dense hairs on lower surface; vein 4 curving slightly backward in basal part, arching slightly forward in last part, diverging from vein 3 from near base; vein 5 not reaching margin, last part very short, less than half as long as the perpendicular crossvein but continuing into a brown streak that curves gradually back nearly to the margin; vein 6 fused with anal margin, anal margin narrowly brownish with spurious veinlike streak in middle part. Knob of halter black.

Abdomen (Figure 11) about as long as thorax, blackish with bright metallic bluish reflections, stout, cylindrical, curving downward, setae dark; a long stout curved horn projecting from middle of sternite 3, curving backward apically and broadened into a deltoid tip; a slender dark seta on each side originating behind sternal horn and possibly homologous to forked appendage of sternite 4 as found in other species. Hypopygium brown, large, capping tip of preabdomen, projecting forward below, bearing small but distinct black lamellae, each lamella with many black hairs and a long black apical bristle; tip of hypopygium shining, bearing a pair of extremely long setae that cross just behind the ventral horn.

FEMALE.—Very plain compared to male. Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Legs including forecoxa plain; middle and hind tibiae with dorsal bristles as in male. Wing (Figure 8) plain with veins 3 and 4 nearly straight and diverging from near base; similar to *E. elegans* female but vein 2 not particularly bent near base and curving slightly forward rather than straight at tip. Abdomen plain, slightly flattened.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, around stones in shallow partially shaded stream, near 220 km marker, Rt. 185, 9 August 1962, H. Robinson (USNM 70282). Allotype ♀ from Chiapas, over crest of sierra above Arriaga, 22 May 1963. Paratypes: same data as allotype, 3 ♂ and 1 ♀; all collected by H. Robinson.

NOTES.—The new species is distinct in both sexes from others known in the group by the bristles on the hind tibiae. The wing of the male is also distinctive. The species seems close to *E. elegans* and has the large auxiliary genitalia similar to that species, but the abdomen is blackish and there are fewer pairs of acrostichal and dorsocentral setae.

Enlinia anomalipennis, new species

FIGURES 12-17

MALE.—Length 0.8 mm; wing 1.0 mm by 0.4 mm. Face and front metallic bluish green with only slight pollen; eyes nearly or essentially contiguous below, facets rather large in lower part. Palpus and proboscis brown. Antenna black, segment 3 blunt, arista half again as long as face.

Thorax shining metallic green with slight yellowish pollen above, more grayish pollen on pleura; setae black with pale reflections; about 7 pairs of acrostichals, 7 or 8 pairs of dorsocentrals; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs brown; setae mostly yellowish brown. Forecoxa (Figure 12) with strong seta on inner anterior surface, a few long upward curved hairs anteriorly; middle femur (Figure 14) rather broad, lower margin rather angular near base, a cluster of stout setae at the angle; hind femur rather broad with a longer seta anteroventrally toward tip; fore- and middle tibiae without distinctive setae, hind tibia with a small dorsal seta near base and one near tip. Foretarsus (Figure 13) highly modified, segment 1 broad with 2 short stout setae, segment 2 short and broad with apical appendage projecting far along beside next segment, segment 3 long and slender with next segment arising near middle, segment 4 distally and segment 5 throughout somewhat broad; lengths of segments of middle tarsus from base as 11-5-4-3-5; hind tarsus as 10-7-6-5-6, distal segments all rather broad.

Wing (Figure 16) rather oval with a cuneate base, a sinuous hind margin, and a fringe of long hairs posteriorly; vein 2 nearly straight throughout; vein 3 close to and parallel with vein 2 except near tip, turned rather sharply back near tip and ending shortly before extremity of wing; vein 4 widely diverging from third, very close to and nearly parallel with vein 5, becoming sinuous beyond crossvein and ending well behind wing tip; last part of vein 5 ending before margin, about twice as long as short crossvein; sinus in

hind margin opposite crossvein; vein 6 completely lacking but anal margin rather thickened and brownish. Knob of halter dark.

Abdomen (Figure 15) about as long as thorax, cylindrical to somewhat compressed, blackish with bluish reflections, seta dark; middle of sternite 3 slightly projecting and bearing a few short but distinct black setae. Hypopygium capping tip of preabdomen and projecting slightly forward below, brown with lighter brown lamellate tips, outer appendages apparently reduced to slender pinnately haired projections.

FEMALE.—Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Forecoxa and tarsus, and middle femur plain; lengths of segments of foretarsus from base as 6-3-2-2-5. Wing (Figure 17) plain with longitudinal veins all rather slightly and evenly diverging from near base, vein 2 bulging rather prominently inward from costa in distal one-half, last of vein 5 reaching hind margin, about twice as long as crossvein.

TYPE-DATA.—Holotype ♂ from Mexico: San Luis Potosi, small ravine a few miles south of Tamazunchale, from partially shaded moist rock surface, 13 August 1962, H. Robinson (USNM 70283). Allotype ♀ from Hidalgo, just north of Chapulhuacan, on rock face moist from seepage, above a roadside spring, 13 August 1962. Paratypes: same locality as holotype, 13–14 August 1962, 2 ♂; 10 May 1963, 5 ♂; same locality as allotype, 5 and 13 August 1962, 5 ♂; 10 and 30 May 1963, 7 ♂ and 3 ♀; Guerrero, near Tierra Colorada, around rocks by partially shaded stream, 29 May 1963, 3 ♂ and 6 ♀; all collected by H. Robinson.

NOTE.—The new species is most distinct in the wide divergence between the third and fourth wing veins.

Enlinia lobata, new species

FIGURES 22–25

MALE.—Length 1.2 mm; wing 1.2 mm by 0.6 mm. Face and front dark metallic greenish with only slight pollen; eyes essentially contiguous below, anterior facets considerably enlarged. Palpus and proboscis brown. Antenna black, segment 3 blunt, arista about half again as long as face.

Thorax metallic dark green, more blackish on pleura, dulled by slight pollen; setae dark with pale reflections; about 7 pairs of acrostichals, 8 pairs of dorso-

centrals; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs brown with coxae almost black, setae mostly dark. Forecoxa (Figure 25) with stout seta anteriorly and long curved seta externally; forefemur (Figure 25) rather broad with a slender erect seta below near base, a row of stouter setae along anteroventral edge; middle femur broad with an angle near base below, with a series of about 5 stout setae beyond the angle of which the first is quite long, followed by a row of more slender setae anteroventrally to near the tip; hind femur with about 3 long setae anteroventrally near the tip; tibiae somewhat thick; foretibia (Figure 25) with a rather long dorsal seta near tip; middle tibia rather flat ventrally on distal half with many short erect close-set setae, a small dorsal near basal one-third; hind tibia with small dorsals near base, near basal one-third, and near tip. Foretarsus (Figure 25) with segments greatly lobed, segment 1 with small lobe anteroventrally, segment 2 with larger ventral lobe which becomes almost black distally and bears one or more stout hairs, segment 3 with a long forked ventral lobe with a stout seta inserted ventrally at base of fork, segment 4 with smaller rather rectangular ventral lobe, last segment long, slightly widened distally; lengths of segments of middle tarsus from base as 6-3-3-3-3; hind tarsus as 7-6-5-4-4.

Wing (Figure 23) generally oval with very sinuous hind margin and cuneate base; with slightly brownish tinge especially near base and toward tip of vein 2 and near tip of vein 5, brownish area near tip of vein 5 surrounding an elongate clear spot between the posterior crossvein and a sinus on the hind margin; vein 2 close to costa, turning slightly backward along costa at tip; vein 3 arching slightly forward then strongly backward distally, reaching margin in a shallow sinus well behind the wing tip; vein 4 only slightly sinuous, reaching margin just beyond another shallow sinus on the hind margin, veins 2, 3, and 4 all divergent except at tips; vein 5 lying close to vein 4 and ending well before the margin in a shallow lobe, last part slightly longer than the perpendicular crossvein; vein 6 represented by slight fold that runs immediately to the slightly thickened anal margin and fuses with it; fringe on hind margin very prominent almost to tip of vein 4. Knob of halter blackish.

Abdomen (Figure 22) about as long as thorax, cylindrical, slightly compressed, blackish with dark metallic green reflections, setae dark; a small setiferous lobe in

middle of sternite 3, many setae arising from sternite 4 which is greatly excavated posteriorly. Hypopygium dark, embedded in tip of preabdomen and extending somewhat forward below; appendages dark, detailed structure not evident.

FEMALE.—Very plain compared to male. Face about as wide below as antennal segment 1, anterior eye facets not much enlarged. Forecoxa, middle tibia, and foretarsus plain; fore- and middle-femora without distinctive ventral setae. Wing (Figure 24) rather oval with gradually and evenly rounded hind margin, without long fringe; veins 2, 3, and 4 nearly straight and diverging from near base, vein 3 ending at wing tip; vein 5 reaching hind margin; vein 6 represented by slight fold lying near but distinct from anal margin. Abdomen cylindrical to slightly flattened.

TYPE-DATA.—Holotype ♂ from Mexico: Hidalgo, just north of Chapulhuacan, from moist limestone seepage area above exposed roadside spring, 5 August 1962, H. Robinson (USNM 70284). Allotype ♀ from same locality as holotype, 13 August 1962. Paratypes: same locality as holotype, 10 May 1963, 3 ♂ and 4 ♀; Oaxaca, above Rio Valle Nacional, 20 December 1962, 1 ♀; 14–16 May 1963, 5 ♂ and 2 ♀; all collected by H. Robinson.

NOTE.—The new species is most closely related to the following, *E. plumicauda*, and differences are indicated under that species.

Enlinia plumicauda, new species

FIGURES 18–21

MALE.—Length 1.1 mm; wing 1.2 mm by 0.7 mm. Very similar to *E. lobata* with the following observed differences:

Forecoxa with only small hairs externally near base; middle femur (Figure 20) essentially as in *E. lobata*. Foretarsus (Figure 19) with shorter lobes on segments 2, 3, and 4, segment 1 longer and with more prominent sinus.

Wing (Figure 21) with more rounded anal margin, without evident pigment spots; vein 3 slightly more strongly arched near tip.

Abdomen (Figure 18) with sternite 3 bearing a small crest of short setae but no evident lobe, sternite 4 deeply excavated centrally and bearing a projecting lobe on each side. Hypopygium bearing a pair of yellowish translucent lamellae, each of which bears a long plumose appendage near its base.

FEMALE.—Relatively plain without evident distinction from that of *E. lobata*.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, above Arriaga, in sunlight on rock face in partially shaded ravine, 21 May 1963, H. Robinson (USNM 70285). Paratypes: same data as holotype, 1 ♀; Chiapas, near Ixtapan, from wet rock by road above river, 23 May 1963, 1 ♂; near Pichucalco, 24 May 1963, 1 ♀; Oaxaca, above Rio Valle Nacional, on sunlit rocks in stream near shrine, 16 May 1963, 1 ♂; all collected by H. Robinson.

NOTES.—The species is most noticeably distinct from the closely related *E. lobata* by the plumose appendage on the hypopygium. Other differences tend to be slight though consistent. The range of *E. plumicauda* is generally more to the south and east, but specimens of both species were collected at the same locality above Rio Valle Nacional on different days.

Enlinia maculata, new species

FIGURES 26–29

MALE.—Length 0.9 mm; wing 1.1 mm by 0.5 mm. Face and front dark metallic green with only slight pollen; eyes essentially contiguous below, anterior facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista nearly twice as long as face.

Thorax metallic dark green with slight yellowish pollen, more grayish pollen on pleura; setae dark with pale reflections; 7 pairs of acrostichals, 7 or 8 pairs of small dorsocentrals; scutellum hind margin evenly rounded, bristles widely separated.

Legs brown with fore- and middle trochanters pale; setae mostly dark. Forecoxa with a strong seta on inner anterior surface, a few small pale setae at base; forefemur rather slender, with series of longer posteroven-trals distally; middle femur (Figure 26) rather broad, lower margin more strongly curved near base and there bearing a crest of a few stout setae, the longest as long as femur width; hind femur rather broad, with somewhat longer stouter setae ventrally especially toward tip; foretibia somewhat stout; middle tibia slightly flattened below with dense short erect pubescence near tip; hind tibia with 3 small dorsals, basal, subbasal, and apical. Foretarsus (Figure 27) segments 1 and 2 somewhat angular with a few stout setae, segments 3 and 4 with prominent lobes, that on segment 4 broader, last segment long and narrow; lengths of segments of mid-

dle tarsus from base as 7-5-5-4-5; hind tarsus as 12-9-7-6-6.

Wing (Figure 29) oval with slightly sinuous hind margin bearing fringe of long hairs, slight sinus at tip of vein 5 followed by slight bulge, a small dark spot lying against anterior side of vein 4 in middle of last part, wing otherwise slightly brownish gray; veins 2, 3, and 4 diverging in basal part, bending near midwing just before crossvein and running nearly parallel to margin; vein 5 close to 4 and with matching bend, somewhat diverging beyond the short oblique crossvein, crossvein one-third the length of last part of vein 5; vein 6 represented by narrowly darkened anal margin and dark intramarginal streak. Knob of halter black.

Abdomen (Figure 28) as long as thorax, blackish with metallic dark green reflections, stout, cylindrical, straight, setae dark; sternite 3 with small median projection near hind margin, sternite 4 with median crest of small setae near front margin, sternite 4 followed by cleft sclerites on each side bearing downward projecting lobe. Hypopygium brown, medium size, capping tip of preabdomen, bearing a pair of small dark setiferous lobes, other appendages with only projecting setae visible.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, above Rio Valle Nacional, 16 May 1963, H. Robinson (USNM 70286). Paratypes: same locality as holotype, 14 May 1963, 1 ♂; Chiapas, above Arriaga, on wet rock in partially shaded hollow, 22 May 1963, 2 ♂; all collected by H. Robinson.

NOTE.—The species is most closely related to the following, *E. obovata*, but is distinct in the less lobed hind margin of the wing and the less prominent hypopygial lamellae.

Enlinia obovata, new species

FIGURES 30-34

MALE.—Length 1.0 mm; wing 1.0 mm by 0.3 mm. Face and front dark metallic green with only slight pollen; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista near twice as long as face.

Thorax metallic dark green with slight yellowish pollen, more grayish pollen on pleura; setae dark with pale reflections; about 6 pairs of small acrostichals, 7 or 8 pairs of small dorsocentrals; scutellum hind

margin strongly rounded, bristles as near sides as middle.

Legs brown with trochanters and sometimes base of forefemur pale; setae dark. Forecoxa with strong seta on inner anterior surface, a few small pale setae at the base; forefemur rather slender with a series of longer posteroventrals distally; middle femur (Figure 33) rather broad with lower margin somewhat angular near base where there are 5 or 6 stout erect black setae; hind femur rather broad, with slightly longer setae ventrally; fore- and middle tibiae without longer setae, hind tibia with 1 small anterodorsal and 1 posterodorsal. Foretarsus (Figure 32) with segment 1 short and broad, 2 very small, 3 and 4 with platelike dorsal extensions, segment 5 long and slender, lengths of segments from base as 4-2-2-3-5; middle tarsus as 6-5-5-4-5; hind tarsus as 12-10-8-5-6.

Wing (Figure 30) obovate, with slight sinus at end of vein 4, larger sinus at end of vein 5, slightly sinuous anal margin, hind margin fringed with long hairs, a large brownish spot lying against anterior side of vein 4 in middle of last part, wing otherwise slightly brownish gray; veins 2, 3, and 4 all slightly sinuous diverging from near base; vein 5 very close to 4, last part of 5 four times as long as short crossvein, vein 5 diverging slightly from vein 4 beyond crossvein and ending just before margin; vein 6 partially merged with anal margin. Knob of halter blackish.

Abdomen (Figure 34) about as long as thorax, blackish with metallic dark green reflections, stout, cylindrical, straight, setae dark; sternite 3 with a rather long broad-tipped median appendage. Hypopygium brown, large, capping tip of preabdomen, bearing a pair of large translucent, spinose-margined plates below.

FEMALE.—Relatively plain with face about as wide as antennal segment 1, anterior facets of eyes not enlarged. Forecoxa with only numerous short hairs anteriorly; femora without long setae; foretarsus plain, lengths of segments from base as 5-3-3-2-5. Wing (Figure 31) narrowly oval, with gradually and evenly rounded hind margin, without fringe of long hairs; vein 3 nearly straight, veins 2 and 4 diverging from vein 3 from base except for parallel or slightly convergent parts just beyond the crossvein; crossvein rather short, half as long as last of vein 5, vein 5 curving slightly forward with vein 4; vein 6 represented by fold distinct from margin.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Veracruz, near Santiago Tuxtla, hovering over leaves, wooded stream by pasture, 26 May 1963, H. Robinson (USNM 70287). Paratypes: same data as holotype, 1 ♂ and 10 ♀; all collected by H. Robinson.

NOTE.—This species with the preceding, *E. maculata*, forms a rather distinct subgroup with the brown spot by the fourth wing vein. The two species are thoroughly distinct from each other with *E. obovata* having the markedly expanded wing tip, the more prominent sinus at the tip of the fifth wing vein, the larger brown spot, and differences in the foretarsus and male genitalia.

Both these Mexican species resemble the West Indian *E. sordida* (Aldrich), which also has a pigment spot lying in front of the last part of the fourth wing vein. In the latter species, however, the spot is much larger and rather irregular in shape, and there is a sinus in the wing margin at the end of the fifth vein and another slightly behind it. In the West Indian species, the fourth and fifth veins are not as closely aligned as in the Mexican, and the crossvein is longer and not as oblique.

Enlinia crinita, new species

FIGURES 35–39

MALE.—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Face and front dark metallic green with very slight pollen; eyes essentially contiguous below, anterior facets enlarged. Palpus and proboscis dark brown. Antenna black, segment 3 blunt, arista near half again as long as face.

Thorax metallic dark bluish green with slight pollen, pleura more brownish; setae dark; about 7 pairs of small acrostichals, 7 or 8 pairs of dorsocentrals; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs brown with rather pale trochanters; setae mostly dark. Forecoxa (Figure 35) with large bristle on inner anterior surface, only short hairs on rest of anterior surface; forefemur (Figure 35) rather thick toward base, a slender ventral seta at thickest part followed by a row of short black setae; middle femur (Figure 36) thickened at base, with a long stout seta at thickest part followed by about 6 stout erect setae, about 2 smaller less erect setae near tip; hind femur with ventral setae not much longer than dorsal; fore-

tibia (Figure 35) gradually slightly widened toward tip; middle tibia (Figure 36) flattened and curved, with a few crowded erect setae ventrally near tip; hind tibia with a slightly larger seta near base and tip dorsally. Foretarsus (Figure 35) modified, segment 1 compressed with a sharp dark point ventrally, segment 2 very short, segment 3 slender with ventral spur constituting half its length, segment 4 about as long as spur of 3, last segment somewhat broadened distally; lengths of segments of middle tarsus from base as 6-3-3-2-3; hind tarsus as 8-6-5-4-5.

Wing (Figure 38) rather elliptical with middle of hind margin very straight and fringed, wing clear with brown veins; vein 2 slightly sinuous, diverging from vein 3 at tip; vein 3 nearly straight, bulging slightly forward; vein 4 diverging from 3rd for most of length, bulging backward in basal part and forward in distal part; crossvein nearly perpendicular to adjacent parts of vein 4, about half as long as last part of vein 5; vein 5 ending short of margin or continuing with only weak trace; vein 6 fused with anal margin which is narrowly brownish. Knob of halter blackish.

Abdomen (Figure 37) about as long as thorax, cylindrical, arching downward, blackish with slight metallic reflections, setae dark; sternite 4 bearing slender erect appendage that is forked near tip with each short tip recurved. Hypopygium rather large, capping tip of preabdomen and extending forward below, brown; lamellae small, triangular, with a few short stout black setae; inner appendages broad and flat, shining reddish brown, flanked by a short dark arm that expands apically into a very thin hyaline lamella.

FEMALE.—Differing from male by face over half as wide as antennal segment 1; forecoxa and fore- and middle femora with only small setae, middle tibia cylindrical with normal setae; foretarsus not modified, lengths of segments from base as 6-2-2-2-3; wing (Figure 39) with vein 4 more nearly straight, vein 5 reaching margin, hind margin evenly rounded and not long fringed.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: San Luis Potosi, small ravine a few km south of Tamazunchale, on surface of moist limestone, 14 August 1962, H. Robinson (USNM 70288). Paratypes: same locality as holotype, 4–5, 13–14 August 1962, 2 ♂ and 6 ♀; San Luis Potosi, El Salto, river below upper falls, limestone deposits, 9 May 1963, 5 ♂; Veracruz, near Santiago Tuxtla, 26 May 1963, 2 ♂ and 2 ♀; Oaxaca, Rio Valle Nacional, 12 May

1963, 1 ♀; Chiapas, Tuxtla Gutierrez, Botanic Garden, on cement aqueduct, 25 December 1962, 2 ♂ and 5 ♀; near Bochil, 23 May 1963, 1 ♀; near Pichucalco, 23 May 1963, 2 ♂ and 1 ♀; all collected by H. Robinson.

NOTE.—The male wing of *Enlinia crinita* is the least modified of any presently recognized in the *E. magistri* group. Only *E. interrupta*, of the species treated here, seems particularly close.

Enlinia interrupta, new species

FIGURES 40–42

MALE.—Length 1.0 mm; wing 1.1 mm by 0.5 mm. Face and front dark metallic green with only slight pollen; eyes essentially contiguous below, anterior facets greatly enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista near half again as long as face.

Thorax metallic dark green with slight grayish pollen; setae dark with pale reflections; about 8 pairs of small acrostichals, 8 or 9 pairs of dorsocentrals; scutellum hind margin evenly curved, bristles as near sides as middle.

Legs mostly brown with paler trochanters; setae mostly dark. Forecoxa (Figure 40) with 2 strong setae on the anterior surface, a few pale hairs distally; forefemur (Figure 40) broad, more so toward the base, with a small erect ventral seta at the broadest part followed by a series of small and not very distinctive setae; middle femur broad, especially toward the base, lower margin somewhat angular near base, a long stout bristle borne on tubercle at angle followed by 3 or 4 progressively shorter setae on smaller tubercles; hind femur rather broad, with a few longer setae anteroventrally near tip; foretibia (Figure 40) becoming wider toward tip; middle tibia rather broad, flattened ventrally in distal half with rather crowded short erect hairs; hind tibia with indistinct but slightly longer dorsal seta near base and tip. Foretarsus (Figure 40) modified with very stout seta on tip of thickened segment 1, segment 3 with an acute projection on tip ventrally, a short stout apical seta partly surrounded by a pubescent lobe of segment 4; lengths of segments of middle tarsus from base as 6-3-3-2-3; hind tarsus as 8-6-5-4-4.

Wing (Figure 41) rather oblong with anal margin considerably rounded in the middle, a shallow lobe near tip of vein 5, wing clear with brown veins; vein 2 rather sinuous, diverging from 3rd at tip; veins 3 and

4 nearly straight, diverging from near base; vein 5 ending short of wing margin, continued in streak of pigment nearly reaching margin, last part of vein slightly shorter than the perpendicular crossvein; vein 6 fused with anal margin, which is darkened, thickened, and bearing progressively longer setae in a series that ceases abruptly at the end of the thickened part of the margin. Knob of halter dark.

Abdomen (Figure 42) about as long as thorax, stout, cylindrical, curving downward, blackish with metallic bluish-green reflections, setae dark; middle of sternite 3 raised into a point, sternite 4 with short forked appendage lying forward against point of 3rd. Hypopygium brown, large, capping tip of preabdomen, projecting forward below, bearing rather small dark lamellae that bear short dark hairs; tip of hypopygium bearing a slender black median projection and a pair of very delicate long-attenuate almost transparent to slightly brownish appendages.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, ravine near 660 km marker, Rt. 190, from margin of shaded stagnant pool under culvert, 9 August 1962, H. Robinson (USNM 70289).

NOTE.—The species is distinguished by a number of structures, including the setae on the anal margin of the wing and the very long slender apical appendages on the hypopygium. The two strong bristles on the forecoxae would also be rather distinctive if constant.

II. *Enlinia marginata* Group

The group is excluded from the preceding group, which it closely resembles, by the rather evenly rounded fringed hind margin of the male wing, and the plain forecoxa.

Enlinia marginata, new species

FIGURES 43–46

MALE.—Length 0.8 mm; wing 0.8 mm by 0.3 mm. Face and front shining blackish; eyes essentially contiguous below, anterior facets enlarged. Palpus and proboscis black. Antenna black, segment 3 blunt, arista half again as long as face.

Thorax appearing brownish to blackish, details hidden by glue; scutellum hind margin strongly and evenly rounded, bristles slightly nearer sides than middle.

Legs brown with forecoxa pale brown; setae mostly dark with pale reflections. Forecoxa without large setae; fore- and hind femora without distinctive setae; middle femur (Figure 44) with a row of many stout mostly short setae below, a few basal ones nearly as long as width of femur; foretibia rather stout; hind tibia with 2 small dorsals, basal and apical. Foretarsus (Figure 43) with lengths of segments from base as 4-2-2-2-5, segment 1 stout, segment 3 with dorsal projection; middle tarsus as 6-4-3-3-4; hind tarsus as 8-6-5-4-5.

Wing (Figure 46) oval, with nearly straight and discolored anal margin bearing fringe of somewhat long hairs; vein 2 curving slightly forward at tip; vein 3 ending slightly below wing apex; crossvein two-fifths length of last part of vein 5. Knob of halter blackish.

Abdomen (Figure 45) about as long as thorax, straight, cylindrical, blackish with violet reflections; sternite 3 with small median lobe, sternite 4 excavated posteriorly. Hypopygium brown, small, partially immersed in tip of preabdomen, with only a few small appendages and hairs visible.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, Rio Valle Nacional, rocky stream margin by road at edge of town, 12 May 1963, H. Robinson (USNM 70290).

NOTE.—The species seems intermediate between the *E. magistri* group and the other less ornate groups. As such it is very reminiscent of *E. saxicola* of the eastern United States. The lack of both a discolored anal margin and a distinct fringe in the male wing of *E. saxicola*, however, seems to preclude any idea of really close relationship.

III. *Enlinia ciliata* Group

The group is readily distinguished by the dark legs with white basitarsi and by the narrow face of the female. The species differ also in their preference for mud or wet sand as a substrate.

Enlinia ciliata Robinson

FIGURES 47-51

Enlinia ciliata Robinson, 1964, p. 124.

MALE.—Length 0.7-1.0 mm; wing 1.0 mm by 0.5 mm. Face and front dark metallic greenish or bluish;

eyes essentially contiguous below, anterior facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Thorax metallic bluish green, pleura brown; setae blackish with pale reflections; 8 or 9 pairs of acrostichals, same number of mostly minute dorsocentrals; scutellar bristles widely separated.

Legs mostly brown with trochanters and basal 2-2½ tarsal segments white. Forecoxa without large setae; middle trochanter with 2 ventral setae; middle femur (Figure 49) with a short row of 4-6 black bristles below near the base, which are mostly as long as femoral width; hind tibia with 2 or 3 small dorsals. Foretarsus (Figure 47) with segments 1 and 2 thickened, other segments rather moniliform, lengths of segments from base as 6-3-3-3-3; middle tarsus as 10-8-5-5-5; hind tarsus as 11-10-7-6-6.

Wing (Figure 48) oval, with anal angle distinctly and evenly rounded, wing hyaline; veins 3 and 4 nearly straight from the base, diverging, 3rd ending near wing tip; last part of vein 5 about twice as long as crossvein; vein 6 represented by a slight fold. Halter black.

Abdomen (Figure 51) with dorsum dark metallic bluish; sternite 3 with erect long slender median armature near hind margin, sternite 4 with slender forked armature. Hypopygium (Figure 50) small, mostly enclosed in tip of preabdomen, brown, bearing small pale pubescent lobes toward base and curved lamellae and a pair of long setae distally.

FEMALE.—The face is very narrow below but reaches the mouth; eye facets not enlarged. Foretarsus plain; lengths of segments from base as 5-2-2-2-3; middle femur without distinct ventral bristles.

DISTRIBUTION.—*Enlinia ciliata* has been collected in the United States from Indiana, Tennessee, North Carolina, Virginia, and Maryland. Five male specimens of the species have been collected in Mexico from Veracruz, near Tierra Blanca.

NOTE.—*Enlinia ciliata* and the other two species of the group, *E. convergens* and *E. albipes*, occur on mud and wet sand. Because of this habitat the species could occur in many areas of northeastern Mexico and the southern United States where few rocky habitats are available. Future collections may show a more nearly continuous range for *E. ciliata*.

Enlinia convergens, new species

FIGURES 52-54

MALE.—Length 1.0 mm; wing 0.9 mm by 0.4 mm. Face and front dark metallic green with only slight pollen; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus and proboscis not visible. Antenna black, segment 3 blunt, arista broken.

Thorax metallic dark green with slight yellowish pollen, more grayish pollen on pleura; setae dark with pale reflections; 7 or 8 pairs of small acrostichals; 7 or 8 pairs of mostly small dorsocentrals, only hind pair larger; scutellum hind margin evenly rounded, bristles very widely separated, nearer sides than middle.

Legs mostly brown with most of segments 1 and 2 of all tarsi white. Forecoxa not visible; middle femur (Figure 52) with series of 4 large stout setae on ventral margin near base; hind femur with somewhat larger setae along upper edge; hind tibia with 2 or 3 small dorsals, setae of other tibiae not visible. Foretarsus with segments short, somewhat moniliform or irregular; middle tarsus with lengths of segments from base as 7-4-4-3-4; hind tarsus as 9-9-6-5-4, segment 1 stouter than second.

Wing (Figure 54) oblong, without long fringe; vein 2 converging with vein 3, diverging slightly near tip; vein 4 converging with vein 3, parallel near tip; crossvein perpendicular to last part of vein 4, nearly as long as last of vein 5; vein 6 represented by slight fold. Halter black.

Abdomen (Figure 53) as long as thorax, metallic dark green, stout, cylindrical, straight, setae dark with pale reflections; sternite 3 with erect long slender distally curved armature near hind margin, sternite 4 deeply excavated posteriorly. Hypopygium rather small, mostly enclosed in tip of preabdomen, brown, bearing a pair of small whitish setiferous lobes, other appendages with only projecting setae visible.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Veracruz, near Ciudad Aleman, in pasture on mud at edge of small roadside pond, 12 May 1963, H. Robinson (USNM 70291).

NOTE.—The wing of *E. convergens* is of interest for both its structure and its phyletic implications. The *E. ciliata* group is seemingly more related to the *E. magistris* and *E. marginata* groups in which the male wings are modified. In the *E. ciliata* group, however, the other two known species have plain wings, and the spe-

cialized wing structure in *E. convergens* is entirely unlike those in related groups. The wing of *E. convergens* is more like a reversion to the wing type common in many other genera, and on this basis, workers not familiar with the species might easily conclude it was not an *Enlinia*.

Enlinia albipes, new species

FIGURES 55-57

MALE.—Length 0.8-1.0 mm; wing 0.9 mm by 0.4 mm. Face and front dark metallic bluish; eyes essentially contiguous below, anterior facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista nearly twice length of face.

Thorax metallic bluish; setae dark with pale reflections; 7 pairs of small acrostichals; 8 or 9 pairs of dorsocentrals, only last pair larger; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs mostly brownish with slightly pale fore- and middle trochanters, all basitarsi and part of segment 2 of foretarsus whitish. Forecoxa with only hairs anteriorly; forefemur with 1 longer erect seta ventrally near base, a few other ventrals distally; middle femur (Figure 55) rather slender with 3 stout erect ventral setae clustered near base, one very long, other less erect ventrals anteriorly in distal half; middle tibia slightly flattened below with crowded short dark hairs near the tip ventrally. Foretarsus with segments 1 and 2 thickened, other segments rather moniliform, lengths of segments from base as 5-2-2-2-2; middle tarsus as 11-5-4-3-4; hind tarsus as 9-7-6-5-4.

Wing (Figure 57) oval, anal margin evenly rounded, hyaline; veins 3 and 4 nearly straight from base, diverging; vein 2 diverging at base and tip, more parallel to vein 3 in middle; last part of vein 5 twice length of crossvein. Halter black.

Abdomen (Figure 56) metallic bluish; sternite 3 with an erect long slender armature near middle of hind margin, sternite 4 with slender forked armature. Hypopygium small, mostly enclosed in tip of preabdomen, brown, bearing small pale pubescent lobes toward base and a pair of rather bladelike stiff yellow translucent forward projecting arms toward tip.

FEMALE.—Face very narrow below but reaching mouth; eye facets not enlarged. Foretarsus plain, lengths of segments from base as 5-3-2-2-4; femora without distinctive ventral setae.

TYPE-DATE.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, near junction of Rts. 190 and 200, on mud at edge of pond, 21 May 1963, H. Robinson (USNM 70292). Paratypes: same data as holotype, 3 ♂ and 1 ♀; Veracruz, near Tierra Blanca, margin of pond in pasture, 12 May 1963, 2 ♂; near Santiago Tuxtla, edge of stream in pasture, 26 May 1963, 1 ♂ and 1 ♀; all collected by H. Robinson.

NOTES.—The species is mostly like *E. ciliata* but differs in the hypopygial appendages, the setae of the middle femur, and in the more restricted whitish color on the tarsi. The latter character is valid for both sexes.

IV. *Enlinia femorata* Group

The group is very distinct, differing markedly from others by the bulging lower part of the face in both sexes, and by the ventral spur near the tip of the male hind femur.

Enlinia femorata, new species

FIGURES 58–61

MALE.—Length 1.1 mm; wing 1.1 mm by 0.5 mm. Face and front dark metallic green with very slight pollen, face narrowed below the antennae, narrow but distinct to the mouth, clypeus bulging forward; anterior facets of eyes enlarged. Palpus and proboscis yellowish brown. Antenna black, segment 3 blunt, arista slightly longer than face.

Thorax metallic dark green with very slight pollen, pollen more yellowish above; setae dark; about 6 pairs of small acrostichals; 6 or 7 pairs of equally small dorsocentrals, last pair rather long; scutellum hind margin evenly rounded, bristles slightly nearer middle than sides.

Legs mostly brown with trochanters slightly paler, tarsi black; setae mostly dark. Forecoxa with only short hairs; forefemur bare below except a short but slender erect seta near base; middle femur with setae longer anteroventrally near tip; hind femur (Figure 61) with a distinct tooth or spur at about distal one-third of lower margin directed anteroventrally, a row of rather strong anteroventral setae along length of the femur, 4 or 5 distinct before spur, a few erect anterodorsals near base; tibiae, especially fore and hind appearing rather stout, without distinctive setae; middle tibia with a long posterodorsal just before middle; hind tibia with slightly longer anterodorsal near base and tip. Foretar-

sus (Figure 60) with only segment 1 noticeably thickened, lengths of segments from base as 5-3-2-2-4; middle tarsus as 6-4-3-3-4; hind tarsus as 7-6-5-4-5.

Wing (Figure 58) rather oval with gradually and evenly rounded hind margin, clear with brown veins; veins 2, 3, and 4 all nearly straight and diverging from near the base; posterior crossvein nearly perpendicular to vein 4, about two-thirds as long as last part of vein 5; vein 6 represented by slight fold lying near anal margin. Halter blackish.

Abdomen (Figure 59) about as long as thorax, cylindrical or somewhat flattened, shining dark brown or blackish; without evident auxiliary genitalia ventrally. Hypopygium small, blackish, capping tip of preabdomen, extending slightly forward below; pair of appendages slender, bearing long, rather pale setae; a longer yellowish pair of armatures apically.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, near bridge in Tuxtepec, from among pebbles and rocks along edge of small shaded stream, taken in early morning, 20 December 1962, H. Robinson (USNM 70293). Paratype: same data as holotype, 1 ♂.

NOTE.—This species and the next, *E. cristata*, are very closely related, differing primarily in the form of the genital lamellae.

Enlinia cristata, new species

FIGURES 62–65

MALE.—Length 0.9 mm; wing 1.0 mm by 0.4 mm. Face and front dark metallic greenish or bronze dulled with slight pollen, face very narrowed below but distinct to mouth, clypeus bulging forward, front brownish pollinose; anterior eye facets enlarged. Palpus dark, proboscis yellowish brown. Antenna black, segment 3 blunt, arista slightly longer than face.

Thorax as in *E. femorata* but appearing more bronze or more reddish pollinose; 6 pairs of acrostichals, 6 or 7 pairs of distinct dorsocentrals.

Legs brown with pale trochanters; structure as in *E. femorata*, but hind femur (Figure 65) with only 2 strong anteroventrals before spur. Foretarsus with segment 1 thicker, other segments rather moniliform, lengths of segments from base as 5-2-2-1-2; middle tarsus as 7-5-4-3-4; hind tarsus as 9-8-5-5-6.

Wing (Figure 62) essentially as in *E. femorata*. Halter blackish.

Abdomen (Figure 64) about as long as thorax, cylindrical, straight, shining brownish or metallic with blackish pollen; without evident auxiliary genitalia ventrally. Hypopygium small, dark, capping or mostly immersed in tip of preabdomen; with pair of long apically curved appendages each bearing a crest of long slender setae distally on lower margin.

FEMALE.—Face somewhat wider than in male, clypeus bulging outward with upper face flat or sunken; thorax more metallic bluish; femora without distinctive setae or spurs; foretarsus plain, lengths of segments from base as 4-3-2-2-3; wing (Figure 63) with crossvein three-fourths the length of last part of vein 5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, about 15 miles south of Pichucalco, on rocks in small roadside spring, 24 May 1963, H. Robinson (USNM 70294). Paratypes: same data as holotype, 1 ♂ and 1 ♀.

NOTE.—The species is clearly distinct from *E. femorata* in the genital lamellae, but other apparent differences are subject to question until more material is available.

V. *Enlinia armata* Group

The group is distinct in the row of short stout setae along the ventral edge of the forefemur in both sexes. The group is one of those distinguished by the strong dorsal bristles on the hind tibia, and characteristically the species have only six pairs of dorsocentrals. The species occur on relatively dry rocks compared to others of the genus.

Enlinia armata, new species

FIGURES 81-82

MALE.—Length 1.2 mm; wing 1.2 mm by 0.5 mm. Front light metallic green dulled with brown pollen; face dark metallic green with slight whitish pollen; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus dark, proboscis yellowish brown. Antenna brown, segment 3 blunt, arista half again as long as face.

Thorax dark metallic green with slight yellowish pollen above, more grayish pollen on pleura; setae yellowish; about 5 pairs of small acrostichals, 6 pairs of dorsocentrals; scutellum hind margin evenly rounded, bristles usually as near sides as middle.

Legs yellow with hind femur and tibia slightly brownish above; setae mostly brownish on tibiae and tarsi, paler on femora. Forecoxa with numerous dark hairs anteriorly; forefemur (Figure 82) with a series of about 10 very short stout setae along anteroventral margin; middle femur with single fine erect anteroventral basally; hind femur with 1 or 2 larger darker setae anteroventrally near tip; tibiae slightly wider toward tip; middle tibia widest nearer middle and bearing large antero- and posterodorsal paired near basal one-fourth and sometimes small anterodorsal beyond the middle; hind tibia with 5 or 6 stout posterodorsals, 3 smaller anterodorsals paired with alternate posterodorsals. Foretarsus with segments 1 and 2 compressed, 3rd flattened distally with short stout black seta posteriorly, lengths of segments from base as 6-2-2-2-3; middle tarsus as 5-4-3-2-3; hind tarsus as 5-6-5-4-4.

Wing (Figure 81) rather oval, hind margin evenly rounded, anal angle not prominent, wing clear, veins yellowish brown; vein 2 nearly straight, diverging from 3rd from near base; veins 3 and 4 essentially straight, diverging from base; crossvein nearly perpendicular to vein 4, three-fifths as long as last part of vein 5; vein 6 represented by slight fold lying near anal margin. Halter pale.

Abdomen slightly longer than thorax, cylindrical, somewhat compressed, blackish with thick black pollen above; setae short, rather pale; without auxiliary genitalia on sternites. Hypopygium small, brown, capping tip of preabdomen, bearing a pair of small brown triangular lamellae, each with many long brownish setae around the tip.

FEMALE.—Similar to male but lower face as wide as antennal segment 1, facets of eyes more uniform in size. Setae of legs as in male. Abdomen slightly flattened.

TYPE-DATA.—Holotype ♂ from Mexico: San Luis Potosi, small ravine a few km south of Tamazunchale, on surface of moist limestone, 4 August 1962, H. Robinson (USNM 70295). Allotype ♀ from Hidalgo, just north of Chapulhuacan, on moist rock face above a roadside spring, 5 August 1962. Paratypes: same locality as holotype, 5-13 August 1962, 3 ♀; 10 and 30 May 1963, 1 ♂ and 1 ♀; same locality as allotype, 13 August 1962, 8 ♂ and 2 ♀; 10 and 30 May 1963, 1 ♂ and 2 ♀; San Luis Potosi, El Salto, limestone deposits below upper falls, 15 December 1962, 1 ♂; 9 May 1963, 1 ♂; Oaxaca, above Rio Valle Nacional,

on moist rocks in ravines and by waterfalls, 13–15 May 1963, 25 ♂ and 10 ♀; Chiapas, above Arriaga, on rocks in shaded roadside ravine, 21 May 1963, 10 ♂ and 5 ♀; Guerrero, near Tierra Colorada, from moist rock surfaces in shaded ravine, 29 May 1963, 6 ♀; all collected by H. Robinson.

NOTE.—The species is one of the most frequently collected because of its occurrence on the more prominent drier parts of rocks. Most species of *Enlinia* seem restricted to wetter surfaces and are more easily overlooked.

Enlinia fusca, new species

FIGURES 78–80

MALE.—Length 1.2 mm; wing 1.3 mm by 0.5 mm. Structure of head, thorax, legs, and abdomen (Figure 78) essentially as in *E. armata*. Color generally brownish with usually femora and tarsi and often tibiae and coxae brown; foretarsus (Figure 79) with lengths of segments from base as 12-5-3-4-6; middle tarsus as 10-7-6-5-7; hind tarsus as 10-12-10-8-7.

Wing (Figure 80) similar to *E. armata* but with crossvein sometimes three-fourths as long as or nearly as long as last part of vein 5. Halter brown.

FEMALE.—Similar to male but lower face as wide as antennal segment 1, facets of eyes not enlarged. Setae of legs as in male; foretarsus plain, with lengths of segments from base as 12-4-3-3-6.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, above Rio Valle Nacional, on drier parts of wet rocks in shaded ravines and by waterfalls, 15–16 May 1963, H. Robinson. Paratypes: same locality as holotype, 12 May 1963, 1 ♀; Rio Valle Nacional, in shaded ravine near town, 20 December 1962, 2 ♂ and 1 ♀; Chiapas, about 10 kms south of Pichucalco, wet shaded ledge by road, 24 May 1963, 4 ♂; all collected by H. Robinson.

NOTE.—The species is distinct from *E. armata* by the brown knob of the halter. As typified here the species is also distinct by a crossvein longer in relation to the last part of the fifth vein, a situation not seen in any specimens of *E. armata*. The series of *E. fusca* from Pichucalco and the paratype female from near Rio Valle Nacional, however, have wings more like *E. armata*, and more collections will be necessary to fully resolve their status.

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Enlinia distincta, new species

FIGURES 83–87

MALE.—Length 1.2 mm; wing 1.2 mm by 0.5 mm. Head essentially as in *E. armata*.

Thorax with mesoscutum metallic green with slight yellowish pollen, more grayish pollen on pleura; setae brownish with pale reflections; about 5 pairs of small acrostichals; 6 pairs of dorsocentrals, only last pair rather long; scutellum hind margin evenly rounded, bristles slightly nearer middle than sides.

Legs including coxae mostly yellow but usually femora, last 2 segments of foretarsus, and last 3 or 4 segments of hind tarsus brown. Forecoxa with only hairs anteriorly, which are mostly dark; forefemur (Figure 85) with a row of about 15 short spicules anteroventrally, 1 much longer slender and erect seta at base; middle femur with 1 very slender erect ventral seta at base, a few rather distinct anteroventrals in addition to those near the tip; foretibia (Figure 85) with 5 or 6 short dark dorsals; middle tibia with smaller anterodorsal and larger posterodorsal paired near basal one-fourth, small anterodorsals near middle and tip; hind tibia with 5 or 6 strong posterodorsals, 3 smaller anterodorsals paired with alternate posterodorsals. Foretarsus (Figure 84) with segment 1 long and thick, ending ventrally in black spicule, segment 2 very short with 2 rather long setae anteriorly, segment 3 triangular, large with large sinuous black seta ventrally, lengths of segments from base as 14-3-6-5-7; middle tarsus as 11-8-6-5-7; hind tarsus (Figure 83) as 11-10-9-7-8, segments 2 and 3 slightly widened and swollen and densely hairy; both middle and hind tarsi strongly curved in dry material.

Wing (Figure 87) very similar to *E. armata* but vein 3 ending almost in extremity of wing and posterior edge receding from it more sharply sometimes giving almost pointed appearance; crossvein three-fourths as long as last part of vein 5. Halter yellow.

Abdomen (Figure 86) essentially as in *E. armata* but perhaps a little stouter.

FEMALE.—Face narrow but distinct to mouth. Setae of femora and tibiae mostly same as male, but long ventral setae at bases of femora absent; foretarsus not distorted, lengths of segments from base as 12-4-3-3-6.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, sierra above Arriaga, in moist shaded ravine by road, 21 May 1963, H. Robinson (USNM 70296). Paratypes: same data as holotype, 3 ♂; Chia-

pas, about 10 km south of Pichucalco, wet shaded roadside ledge, 24 May 1963, 3 ♂; all collected by H. Robinson.

NOTE.—In the Arriaga locality the species occurred with *E. armata* and the female was determined on the basis of the wing. The wings, as observed in males of *E. distincta* and *E. armata*, seem relatively stable in their subtle differences.

Enlinia hirtitarsis, new species

FIGURES 74–77

MALE.—Length 1.2 mm; wing 1.4 mm by 0.6 mm. Front broad, dark metallic green dulled with brownish pollen; face narrowed below, obliterated in lower half by contiguous eyes; anterior facets of eyes enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Mesoscutum metallic green with slight yellowish pollen, pleura more brown with denser grayish pollen; setae brownish with pale reflections; 5 pairs of rather small acrostichals; 6 pairs of dorsocentrals, only last pairs rather long; scutellum prominent, rather sharply rounded apically and straight on sides, bristles distinctly nearer middle than sides.

Legs mostly brownish with trochanters and basal 2 segments of foretarsus rather pale; setae mostly dark. Forecoxa with hairs anteriorly, which are mostly dark; forefemur with row of about 15 short spicules anteroventrally; fore- and middle femora with single slender erect ventral setae near base; foretibia with 5 or 6 short but distinct dorsals; middle tibia with antero- and posterodorsal paired near basal fourth; hind tibia with 5 or 6 strong posterodorsals, alternate ones paired with smaller anterodorsals. Foretarsus (Figure 74) with segments 1 and 2 broad, 2nd bearing long spur anteroventrally, segment 3 fan-shaped with black spine ventrally, last segments slender, lengths of segments from base as 13-5-5-8-8; middle tarsus as 13-9-7-6-6; hind tarsus (Figure 76) as 13-12-11-8-9, tarsus somewhat twisted, segments 1, 2, and 3 with longer more erect setae dorsally, segment 4 with 2 very long dorsal setae.

Wing (Figure 75) similar to *E. armata* but crossvein three-fourths length of last part of vein 5. Knob of halter fuscous.

Abdomen (Figure 77) essentially as in *E. armata*, blackish with slight greenish tinges; no auxiliary genitalia on sternites. Hypopygium small, mostly recessed in

tip of preabdomen, bearing broad, dark, setiferous lamellae.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Puebla, near San Martin, moist rocky stream margin in shaded ravine under old bridge, 27 May 1963, H. Robinson (USNM 70297).

NOTE.—The hind tarsus of the male distinguishes the species from others of the group.

Enlinia fasciata, new species

FIGURES 66–69

MALE.—Length 1.2 mm; wing 1.2 mm by 0.5 mm. Face and front metallic light green, former with slight whitish pollen, more brownish pollen on front; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus and proboscis yellowish brown. Antenna black, segment 3 blunt, arista half again as long as face.

Thorax bright metallic green with slight yellowish pollen above, pleura brown with more grayish pollen, metepimeron yellow; setae brown with pale reflections; about 5 pairs of small acrostichals; 6 pairs of dorsocentrals, only hind pairs rather long; scutellum hind margin evenly rounded, bristles slightly nearer middle than sides.

Legs wholly yellow; setae rather pale on coxae and femora, brownish on tibiae and tarsi. Forecoxa with numerous pale hairs anteriorly; forefemur (Figure 67) with about 6 stout black setae along anteroventral surface; middle femur with single slender erect anteroventral seta basally; middle and hind femora with 1 or 2 longer darker setae anteroventrally near tip; fore- and hind tibiae slightly widened toward tips, middle tibia thicker in middle; fore- and middle tibiae with series of longer darker dorsal setae toward tips; middle tibia (Figure 69) with a strong antero- and posterodorsal paired near basal third, 4 or 5 longer slender dorsal setae on distal half, a crest of 6 or 7 ventral setae along distal half of which those toward ends are progressively shorter; hind tibia with 4 or 5 long stout posterodorsals, alternate ones paired with anterodorsals, basal antero-dorsal large, others smaller, 6–7 rather long slender setae anteroventrally. Foretarsus (Figure 66) with segments 1 and 2 compressed, lengths of segments from base as 5-2-2-2-3; middle tarsus as 6-3-3-3-3; hind tarsus as 6-7-6-4-4, segment 1 with a few distinct posteroventral setae.

Wing (Figure 68) elongate oval, hind margin evenly rounded, anal angle not prominent, wing clear, veins yellowish brown; vein 2 nearly straight, diverging from vein 3 from near base; veins 3 and 4 essentially straight, diverging from base; crossvein perpendicular to vein 5, three-fourths as long as last part of vein 5; vein 6 represented by slight fold lying near anal margin. Halter pale.

Abdomen slightly longer than thorax, cylindrical, somewhat compressed, segments 1 and 2 yellow with white pollen above, other segments blackish with black pollen; setae brown; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown, bearing a pair of small brown triangular lamellae; each lamella with many short pale hairs.

FEMALE.—Similar to male, but lower face about as wide as antennal segment 1, eye facets not enlarged; setae of thorax brownish; hind leg mostly brownish with yellow trochanter, knee, and basitarsus; ventral setae of forefemur and most tibial setae present, middle tibia without ventral crest of setae on distal half; crossvein of wing longer in comparison to last part of vein 5; abdomen wholly blackish.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Hidalgo, just north of Chapulhuacan, on moist rock face above roadside spring, 13 August 1962, H. Robinson (USNM 70298). Paratypes: same data as holotype, 2 ♂; same locality, 10 May 1963, 2 ♂ and 2 ♀; San Luis Potosi, small ravine a few km south of Tamazunchale, on surface of moist limestone, 4–14 August 1962, 1 ♂ and 6 ♀; El Salto, on limestone deposits below upper falls, 9 May 1963, 7 ♂ and 3 ♀; Oaxaca, above Rio Valle Nacional, on moist rocks in ravines and by waterfalls, 12–16 May 1963, 5 ♂ and 3 ♀; Chiapas, near Bochil, 23 May 1963, 2 ♀; about 10 km south of Pichucalco, wet shaded roadside ledge, 24 May 1963, 8 ♂; all collected by H. Robinson.

NOTE.—The yellow base of the male abdomen is thoroughly distinctive. The female is difficult to distinguish from that of *E. setosa*.

Enlinia setosa, new species

FIGURES 70–73

MALE.—Length 1.2 mm; wing 1.2 mm by 0.5 mm. Face and front light metallic green, former dulled with grayish pollen, front with more brownish pollen; eyes essentially contiguous below, anterior facets enlarged.

Palpus and proboscis yellowish brown. Antenna black, segment 3 blunt, arista half again as long as face.

Thorax metallic bluish green, grayish pollen toward sides; setae brown with pale reflections; about 5 pairs of small acrostichals; 6 pairs of dorsocentrals, only hind pairs rather long; scutellum hind margin evenly rounded, bristles slightly nearer middle than sides.

Legs dark yellowish, distal segments of tarsi brown; setae mostly brownish. Forecoxa with pale hairs anteriorly; forefemur (Figure 73) with series of about 9 stout black setae along anteroventral surface; middle femur with single slender erect anteroventral seta at base; middle and hind femora with somewhat stronger anteroventrals near tips; foretibia (Figure 73) with series of small but distinct black dorsals; middle tibia with strong antero- and posterodorsal paired near basal third, crest of 6 short but stout ventrals along distal half, setae in middle of crest longer; hind tibia (Figure 72) with 5 strong black posterodorsals, the 1st paired with a large anterodorsal, the 3rd and 5th paired with smaller anterodorsals, numerous very long irregular setae along ventral surface. Foretarsus with segments 1 and 2 compressed and broad, segment 3 bearing small black spicule, lengths of segments from base as 8-4-3-3-5; middle tarsus as 10-7-6-5-6, segment 1 with small ventral seta at base; hind tarsus as 12-14-12-9-8, segment 1 with a few longer setae posteroventrally.

Wing (Figure 70) essentially as in *E. fasciata*. Halter deep yellowish.

Abdomen (Figure 71) slightly longer than thorax, cylindrical, somewhat curved, blackish or brownish with slight violet reflections; sternites without auxiliary genitalia. Hypopygium small, partially immersed in tip of preabdomen, brown, bearing small hairy lamellae below.

FEMALE.—Similar to male with face narrow but distinct to mouth, eye facets not enlarged; ventral setae of the forefemur and dorsals of tibiae present, ventral crest of middle tibia absent, ventral setae on hind tibia rather long but distinctly shorter than in male; crossvein of wing somewhat longer in relation to last part of vein 5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Guerrero, near Tierra Colorada, rocky stream margin in shaded ravine, 29 May 1963, H. Robinson (USNM 70299). Paratypes: same data as holotype, 15 ♂ and 14 ♀; Guerrero, near Taxco, 28 May 1963, 1 ♀; all collected by H. Robinson.

NOTE.—The species is nearest *E. fasciata* but lacks the yellow base of the abdomen and has very long ventral setae on the hind tibiae. The female seems to differ from that of *E. fasciata* by the lack of the color pattern of the hind leg, dark brown with yellow joints. Also, the middle tibia is without the more distal dorsal setae, and the crossvein is generally longer in relation to the last part of the fifth vein.

VI. *Enlinia flavicornis* Group

The group is established for the single species having yellow antennae, five or six pairs of dorsocentrals, many distinct dorsal setae on the hind tibia, but no specialized ventral setae on the forefemur. The lateral margins of the male fifth tergite are pointed and yellow. Structurally modified tergites have not been observed in other groups of *Enlinia*.

Enlinia flavicornis, new species

FIGURES 88–90

MALE.—Length 0.9 mm; wing 1.0 mm by 0.4 mm. Front metallic dark green; face obliterated by contiguous eyes below, anterior eye facets enlarged. Palpus and proboscis yellowish. Antenna yellow, segment 3 blunt, arista half again as long as face.

Mesoscutum metallic green dulled with grayish pollen, pleura more brown; setae yellowish; 4 pairs of small acrostichals; 5 pairs of rather small dorsocentrals, hind pairs larger; scutellum hind margin rather strongly rounded at tip, bristles about as near sides as middle.

Legs yellow; setae mostly black. Forecoxa with pale setae anteriorly; femora without evident ventral setae, dorsal setae more evident; foretibia with 1 dorsal near middle; middle tibia with dark posterodorsal near basal fourth paired with very small pale anterodorsal; hind tibia with 4 posterodorsals, basal 2 paired with smaller anterodorsals. Foretarsus (Figure 89) with segments 1, 2, and 3 broad, 3rd with rather distal ventral seta, segments 4 and 5 slender, lengths of segments from base as 8-6-6-6-4; middle tarsus as 9-7-6-5-6; hind tarsus as 10-12-7-6-5.

Wing (Figure 90) elliptical as reconstructed from much folded wing of specimen; vein 2 rather evenly arched near costa at base, hardly turning forward at tip; vein 3 ending just before wing tip; crossvein three-

fifths as long as last part of vein 5. Knob of halter yellow.

Abdomen (Figure 88) somewhat shorter than thorax, brown; lower margins of tergite 5 pointed and yellowish with fine marginal hairs; sternites without auxiliary genitalia. Hypopygium small, mostly recessed in tip of preabdomen, with small reflexed pale lamellae.

FEMALE.—Generally dark, setae dark with pale reflections. Face distinct below, as wide as antennal segment 1; antenna dusky yellow. Six pairs of dorsocentrals. Foretarsus plain, lengths of segments from base as 10-5-5-5-6. Wing crossvein two-thirds to three-fourths as long as last of vein 5.

TYPE-DATE.—Holotype ♂ and allotype ♀ from Mexico: Hidalgo, just north of Chapulhuacan, on wet rock face above roadside spring, 10 May 1963, H. Robinson (USNM 70300). Paratype: same data as holotype, 1 ♀.

NOTES.—Strong setae on the tibiae, a reduced number of dorsocentrals, and general wing venation indicate possible close relationship to *E. armata* and its allies. The relationship, however, is not sufficiently close to place *E. flavicornis* in the *E. armata* group. The chaetotaxy of the hind tibia is not the same as in *E. armata*, and the forefemur lacks the ventral spicules evident in both sexes of that group. The yellow antennae and modified lateral margins of the fifth abdominal tergite in *E. flavicornis* seem to be totally distinctive characters.

VII. *Enlinia tibialis* Group

The single species placed in the group differs from others having large setae on the hind tibia by these setae being mostly anterodorsal.

Enlinia tibialis, new species

FIGURES 91–96

MALE.—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Front slightly over twice as wide as high, dulled with brown pollen; face narrowed below, eyes essentially contiguous in lower half, anterior facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Mesoscutum metallic dark green with slight pollen, pleura more brown; setae dark with pale reflections; 6 pairs of small acrostichals; 6 or 7 pairs of dorsocentrals,

hind pair rather long; scutellum hind margin broadly and evenly rounded, bristles as near sides as middle.

Legs brown with trochanters and basal 2 segments of foretarsus rather pale; setae mostly dark. Forecoxa with numerous dark hairs anteriorly; forefemur (Figure 93) with a long erect slender seta ventrally at base, 7 or 8 rather erect setae as long as width of tibia along ventral surface; middle femur (Figure 94) with a very slender rather erect seta anteroventrally near base; hind femur (Figure 92) with about 8 stiff erect setae along posteroventral surface; foretibia (Figure 93) apparently without any long ventral seta at tip; middle tibia (Figure 94) with a small but rather distinct postero-dorsal near basal third, a number of stiff short erect setae ventrally at tip; hind tibia (Figure 91) with a series of usually 5 strong anterodorsals, 2 or 3 somewhat smaller posterodorsals. Foretarsus (Figure 93) with segments 1 and 2 rather compressed, 3rd flattened and ending in sharp point anteriorly, with distinct black seta posteriorly, segment 4 and especially 5 slightly flattened, lengths of segments from base as 10-4-5-7-8; middle tarsus as 12-7-5-4-6; hind tarsus as 11-12-8-6-7.

Wing (Figure 96) rather broadly elliptical with prominently rounded anal margin, clear to brownish tinged; vein 2 evenly arched, curved slightly forward at tip; vein 3 ending slightly before wing tip; crossvein two-thirds to three-fourths as long as last of vein 5. Knob of halter black.

Abdomen (Figure 95) about as long as thorax, cylindrical, brownish with black pollen above; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown; lamellae grayish brown, very narrowly long-triangular, ending in 2 or 3 long black setae nearly as long as the lamellae, slender setae of decreasing length born toward base along outer margin, erect pale hairs along inner margin; inner appendages pale brown, curved with blunt tips.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Chiapas, about 10 km south of Pichucalco, on wet ledges by road, 24 May 1963, H. Robinson (USNM 70301). Paratypes: same data as holotype, 3 ♂.

NOTES.—The setose tibiae seem most similar to those of the *E. elongata* group. The ventrals on the forefemur resemble those of the *E. armata* group, though not as strong. The species is most obviously distinct in the hypopygial lamellae and the chaetotaxy of the hind tibia. On the hind tibia the anterodorsals form a series

and posterodorsals are few and scattered, the reverse of the usual situation.

VIII. *Enlinia elongata* Group

The group is established for two relatively large species having an unusually broad female face and large dorsal setae on the hind tibia, and lacking a series of distinct ventral setae on the forefemur.

Enlinia elongata, new species

FIGURES 97-103

MALE.—Length 1.4 mm; wing 1.7 mm by 0.62 mm. Front metallic dark bluish with brown pollen; face (Figure 101) narrowed below, with grayish pollen; eyes contiguous or nearly contiguous in lower half, anterior facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Mesoscutum dark metallic green with slight yellowish pollen, pleura more brown; setae dark with pale reflections; 6-8 pairs of acrostichals, a few hind pairs longer; 6 or 7 pairs of dorsocentrals, hind pairs rather long; scutellum hind margin rather broadly and evenly rounded, bristles as near sides as middle.

Legs brown with pale trochanters, often basitarsi or even tibiae paler; setae mostly dark. Forecoxa with some prominent dark hairs anteriorly; fore- and middle femur with small slender erect seta ventrally at base; hind femur with a few scattered short black setae ventrally toward base; fore- and middle tibiae in dried material rather broad and flattened; middle tibia (Figure 100) with rather long reclining hairs on most surfaces, hairs more crowded ventrally, many very short stout erect black setae ventrally toward the tip; hind tibia with usually 5-7 small but distinct posterodorsals, 3 or 4 similar but more widely spaced anterodorsals. Foretarsus (Figure 99) with segments 1 and 2 rather compressed, 2nd with acute projection on distal hind corner, segment 3 slightly asymmetric, flattened with stout black hooked seta posteriorly beyond the middle, segments 4 and especially 5 rather flattened, lengths of segments from base as 12-6-5-6-10; middle tarsus as 14-9-8-5-10, segment 5 somewhat enlarged and flattened; hind tarsus as 15-14-12-9-11.

Wing (Figure 97) elliptical, hind margin evenly rounded, rather clear; vein 2 slightly more arched in basal half, only slightly curved forward at tip; vein 3

curving slightly and evenly back in distal half; cross-vein about as long as last of vein 5. Knob of halter brown or black.

Abdomen (Figure 103) slightly longer than thorax, cylindrical, blackish with violet reflections, setae dark; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown with small pale brown short-pubescent lamellae below, with a pair of long pale flattened tapering and apically hooked armatures extending forward.

FEMALE.—Similar to male in general body form and in chaetotaxy of hind tibia, but face (Figure 102) very broad below, as wide as antennal segment 3 and covered with brown pollen; forecoxa with weaker and generally paler hairs; femora without distinctive ventral setae; middle tibia plain with pair of very small dorsals; foretarsus plain, segments as 17-6-6-5-9; wing (Figure 98) larger and generally laxer in build, cross-vein slightly longer than last of vein 5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, Sierra Juarez, Route 175, 104 km marker, by stream and pools among rocks, wet shaded rocky ravine in rain forest area, 19 May 1963, H. Robinson (USNM 70302). Paratypes: same data as holotype, 2 ♂ and 3 ♀; all collected H. Robinson.

NOTES.—The females cited above might be either this or the next species, *E. chaetophora*. Distinctions between females of the two are not clear at present. Each of the four females is slightly different in wing venation, chaetotaxy of the hind tibia, or in other characters, and I don't know which differences might be significant. With the different general appearance of the male and female wings and the broad female face in comparison to the contiguous eyes of the male, it is possible the females are some other species entirely. Since the females were collected at the same site and agree in size, setae of the hind tibia, and in general wing venation, however, there is a strong indication of conspecificity.

The larger size is reminiscent of the *E. montana* group. Actual relationship seems closer to *E. armata* and its relatives, which nevertheless differ by having distinctive ventral setae on the forefemur.

Enlinia chaetophora, new species

FIGURES 104–107

MALE.—Length 1.4 mm; wing 1.5 mm by 0.6 mm. Head, thorax, and wing essentially as in *E. elongata*,

but only 7 pairs of dorsocentrals seen; wings much folded and not completely observable.

Legs dark brown with trochanters slightly paler; setae mostly dark. Forecoxa with some prominent dark hairs anteriorly; fore- and middle femora with a small erect ventral near base; hind femur (Figure 107) with about 9 stout long black bristles along posteroventral surface; middle tibia (Figure 106) with rather long hairs, denser pubescence ventrally with a series of very short stout erect black setae near tip; hind tibia with usually 4 or 5 small but distinct posterodorsals, 3 smaller more widely spaced rather indistinct anterodorsals. Foretarsus (Figure 105) with segments 1 and 2 rather compressed, segment 3 flattened with very short stout thorn posteriorly near base, segment 5 rather flattened, lengths of segments from base as 8-6-6-6-8; middle tarsus as 12-7-7-6-8, segment 5 somewhat enlarged and flattened; hind tarsus as 12-12-9-7-8.

Abdomen (Figure 104) slightly longer than thorax, cylindrical, becoming broader distally, blackish with violet reflections, setae dark; sternites without auxiliary genitalia. Hypopygium small, capping tip of abdomen, brown; lamellae small, brown, short-pubescent, with small black hook on inner surface; a pair of long curved yellowish flattened and distally somewhat enlarged armatures projecting forward.

FEMALE.—Not seen or not distinguished from *E. elongata*.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, Sierra Juarez, Route 175, 104 km marker, by stream and pools among rocks, wet shaded rocky ravine in rain forest area, 19 May 1963, H. Robinson (USNM 70303). Paratype: same data as holotype, 1 ♂.

NOTE.—The species is closely related to *E. elongata*, which occurred in the same locality. *Enlinia chaetophora* is most easily distinguished by the stout black setae ventrally on the male hind femur. The females are not obviously distinct as indicated in the discussion of *E. elongata*.

IX. *Enlinia halteralis* Group

The single species has a characteristically operculiform hypopygial capsule along with a yellow halter, six pairs of dorsocentrals, and few or no distinct dorsal setae on the tibiae.

Enlinia halteralis, new species

FIGURES 108-111

MALE.—Length 0.9 mm; wing 1.0 mm by 0.4 mm. Face narrowed below, eyes contiguous in lower half, anterior eye facets much enlarged. Palpus and proboscis dark. Antenna brown, segment 3 blunt, arista nearly twice as long as face.

Thorax dark metallic greenish above, more brown on pleura; setae dark with pale reflections; about 5 pairs of small acrostichals; 6 pairs of dorsocentrals, hind pairs rather long; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs yellowish; setae mostly dark. Forecoxa with rather light-brown hairs anteriorly; middle trochanter with small ventral seta; femora without evident distinctive ventral setae; foretibia with long slender erect ventral seta at tip; hind tibia with 1 small but distinct dorsal at tip. Foretarsus (Figure 109) with segments 1 and 2 rather broad and laterally compressed, each bearing a long seta anteriorly, 1st also bearing small anterior spicule and many erect slender hairs, segment 3 strongly curved with distinct hooked seta ventrally, segments 4 and 5 slender, lengths of segments from base as 7-4-4-4-6; middle tarsus as 9-5-4-3-3; hind tarsus (Figure 110) as 9-12-5-4-4, in dried specimen apical segments strongly recurved, segment 3 with a few slightly longer setae.

Wing (Figure 108) rather broadly elliptical with gradually and evenly rounded hind margin; vein 2 slightly and evenly arched, curving only slightly forward at tip, rather close to costa throughout; vein 3 ending just before wing tip; crossvein half as long as last of vein 5. Halter yellow.

Abdomen (Figure 111) about as long as thorax, cylindrical with downward curve, brown with slight blackish pollen above; sternite 4 with pair of distinct short black setae in middle of hind margin, without other indications of auxiliary genitalia. Hypopygium small, showing operculum-like structure that would cap tip of preabdomen, brown, with a pair of broad brown armatures ending anteriorly in a broad hyaline wing, very small short-haired lamellae below.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Chiapas, sierra above Arriaga, from rocks in shaded roadside ravine, 21 May 1963, H. Robinson (USNM 70304).

NOTE.—The only other species known having a yellow halter are ones with distinct dorsal setae on the

hind tibia. The species is also rather distinct in the operculum-like form of the hypopygial capsule. A character that might be useful in determination of the female is the second wing vein lying close to the costa.

Enlinia montana Group

The five species of the group were all collected in the same locality at much higher elevation than any other *Enlinia* species. The species include the largest known in the genus. A few species have males with relatively wide faces. The wings are of a rather distinct slightly opaque texture. The second wing vein, which bulges prominently inward from the costa, resembles that of the possibly related *E. simplex* group.

Enlinia montana, new species

FIGURES 112-114

MALE.—Length 1.0 mm; wing 1.5 mm by 0.6 mm. Front dark metallic green, covered with brown pollen; face narrowed below but distinct to mouth, clypeus half as broad as antennal segment 1, with grayish pollen and slight green tinges; anterior facets of eyes not notably enlarged. Palpus and proboscis dark. Antennae blackish, segment 3 slightly conical, arista nearly twice as long as face.

Mesoscutum metallic bluish with slight yellowish pollen, pleura more brownish; setae brownish with pale reflections; about 5 pairs of small acrostichals; 6 pairs of dorsocentrals, only hind pairs rather long; scutellum hind margin evenly rounded, bristles as near each other as to sides.

Legs brown with trochanters pale; setae mostly dark. Forecoxa with sparse pale hairs anteriorly; forefemur with a distinct row of rather short erect anteroventral setae, basal one longest; middle femur with about 10 longer erect slender anteroventral setae, basal one longest; hind femur with 2 or 3 short anteroventrals besides usual apical series; tibiae essentially plain, hind tibia with 2 or 3 very small dorsals. Foretarsus (Figure 112) with segment 1 long and slender, segment 2 short and flattened, 3 with small ventral spicule, segment 5 much enlarged, lengths of segments from base as 7-4-4-4-6; middle tarsus as 11-7-5-4-7, segment 5 slightly broadened; hind tarsus as 12-11-9-7-7, segment 5 slightly broadened.

Wing (Figure 113) rather oblong oval with rather broadly rounded tip and evenly rounded anal margin,

of a translucent granular texture; vein 2 evenly and distinctly arched, curving distinctly forward at tip; vein 3 subtly sinuous, straight or with a slight forward curve at tip, ending slightly before wing tip; crossvein about as long as last of vein 5. Knob of halter brown.

Abdomen (Figure 114) about as long as thorax, cylindrical with very slight flaring distally, brown; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown, with brownish-pubescent short narrow lamellae appressed to the long smooth brown inner appendages.

FEMALE.—Not seen or not distinguished from *E. latifacies*.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, Cerro San Felipe above Oaxaca, about 2500 m, in rocky stream in cloud forest area, 20 May 1963, H. Robinson (USNM 70305). Paratypes: same data as holotype, 12 ♂.

NOTE.—*Enlinia montana* is one of three species in the group having a relatively broad face in the male. From both of the others it is easily distinguished by the rather simple structure of the foretarsus.

Enlinia angustifacies, new species

FIGURES 118–122

MALE.—Length 1.1 mm; wing 1.45–1.50 mm by 0.6 mm. Face and front dark metallic green; front with brownish pollen; face (Figure 118) extremely narrow below but distinct to mouth; anterior eye facets somewhat enlarged. Palpus and proboscis dark. Antenna blackish, segment 3 blunt, arista nearly twice as long as face.

Mesoscutum metallic bluish, nearly obscured by pollen; setae dark with pale reflections; 6 or 7 pairs of very small acrostichals; 6 pairs of dorsocentrals, the hind pairs rather long; scutellum hind margin rather sharply rounded in middle, bristles as near each other as sides.

Legs brown with trochanters pale; setae mostly dark. Forecoxa with small brownish hairs anteriorly; forefemur (Figure 119) with short slender setae along posteroventral surface; middle femur (Figure 121) with long erect slender ventral near base anteroventrally, with about 8 long black rather erect setate along posteroventral surface; fore- (Figure 119) and middle tibiae plain; hind tibia with 2 or 3 small indistinct dorsals. Foretarsus (Figure 119) with segments 1 and 2

compressed, 3 slightly asymmetric with a small spicule on each side, segments 4 and especially 5 broader and flattened, lengths of segments from base as 8-4-6-5-6; middle tarsus as 10-8-6-4-6, segment 5 slightly enlarged; hind tarsus as 11-12-8-6-6, segment 5 scarcely flattened.

Wing (Figure 120) elliptical with rather broadly rounded apex and evenly rounded anal margin, of a translucent granular texture; vein 2 evenly arched, distinctly curved forward at tip; vein 3 straight or slightly curved forward at tip, ending just before wing tip; crossvein three-fourths as long as last of vein 5. Knob of halter black.

Abdomen (Figure 122) about as long as thorax, cylindrical, brown, nearly covered with blackish pollen above; sternites without auxiliary genitalia or distinctive setae ventrally. Hypopygium small, capping tip of preabdomen, brown, with a pair of narrowly triangular brown lamellae each bearing 6 or more long slender curving marginal setae; inner appendages pale and slender, about as long as lamellae.

FEMALE.—Not seen or not distinguished from *E. latifacies*.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, Cerro San Felipe above Oaxaca, about 2500 m, in rocky stream in cloud forest area, 20 May 1963, collected in early morning, H. Robinson (USNM 70306). Paratype: same data as holotype, 1 ♂.

NOTE.—The legs with the relatively simple foretarsus and the wings with the shape of the third vein are most like *E. montana*, but the narrow face, fringed middle femur, smaller fifth segments of the tarsi, and details of the genitalia are different.

Enlinia maxima, new species

FIGURES 128–130

MALE.—Length 1.4 mm; wing 1.8 mm by 0.7 mm. Face and front covered with brown pollen, face distinct to mouth with lower half as broad as antennal segment 1; anterior facets of eyes not enlarged. Palpus and proboscis dark. Antenna dark brown, segment 3 slightly conical, arista almost half again as long as face.

Mesoscutum strongly convex, metallic dark blue nearly obscured by black pollen; setae dark with pale reflections; 7 pairs of very small acrostichals; 6 pairs of dorsocentrals, the hind pairs rather long; scutellum hind margin gradually and evenly rounded, bristles distinctly closer to middle than sides.

Legs brown with pale trochanters; setae mostly dark. Forecoxa with sparse light-brown hairs anteriorly; fore- and middle femora each with an erect slender ventral seta near base; hind femur with a lax group of long slender setae along distal half of posterior surface; middle tibia with more erect hairs ventrally toward tip; hind tibia with 1 dorsal near tip. Foretarsus (Figure 128) with segment 1 thick, cylindrical, segment 2 short and thick with prominent hook ventrally, 3 fan-shaped, 4 slender, 5 rather broad and flat distally, lengths of segments from base as 12-6-6-7-10; middle tarsus as 15-11-9-7-8; hind tarsus as 17-15-14-11-12.

Wing (Figure 130) elliptical with rather broadly rounded apex and evenly rounded anal margin, of a translucent granular texture; vein 2 slightly and evenly arched, distinctly curved forward at tip; vein 3 ending in wing apex; crossvein about as long as last part of vein 5. Knob of halter brown.

Abdomen (Figure 129) slightly longer than thorax cylindrical with flaring tip, brown with slight brown pollen toward base; tergite 5 broad with prominent rounded lower edges; sternites 3 and 4 somewhat enlarged, bearing some long sinuous black setae, without auxiliary genitalia. Hypopygium large and rather globular, brown; lamellae long and narrow, black with many stiff black hairs on hind margin, a few longer black setae near tip, with 4 long stout pale setae of which the longest is apical and 3 are on the hind margin.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, Cerro San Felipe above Oaxaca, about 2500 m, in rocky stream in cloud forest area, 20 May 1963, collected in early morning, H. Robinson (USNM 70307).

NOTE.—The species is the largest known in the genus *Enlinia*. The relatively large hypopygium is more reminiscent of the genus *Harmstonia*.

Enlinia latifacies, new species

FIGURES 115-117

MALE.—Length 1.2 mm; wing 1.6 mm by 0.63 mm. Front dark greenish with brown pollen; face distinct to mouth with lower half as broad as antennal segment 1, metallic green with grayish pollen which is thicker on clypeus; anterior eye facets not enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista nearly twice as long as face.

Mesoscutum dark metallic green with slight pollen, pleura more brown; setae dark with pale reflections; 5-7 pairs of small acrostichals; 6 pairs of dorsocentrals, hind pairs rather long; scutellum hind margin rather bluntly pointed in middle, bristles nearer each other than sides.

Legs brown with pale trochanters; setae dark. Forecoxa with sparse hairs anteriorly; all femora with a row of short slender setae along posteroventral surface, forefemur (Figure 117) with small slender ventral near base; foretibia (Figure 117) with slender erect ventral setae near tip; hind tibia with 2 or 3 small indistinct dorsals. Foretarsus (Figure 117) with all segments broad and rather flattened, segment 3 very broad and flat, asymmetric with short stout spicule on posterior margin, lengths of segments from base as 9-5-6-7-10; middle tarsus as 14-8-7-5-7, last segment only slightly broadened; hind tarsus as 14-14-10-7-8, last segment not broadened.

Wing (Figure 115) oblong-oval with rather broadly rounded apex and evenly rounded anal margin, of a translucent granular texture; vein 2 slightly and evenly arched, distinctly curved forward at tip; vein 3 straight to slightly curved forward at tip, ending just before wing apex; crossvein about as long as last of vein 5. Knob of halter brown.

Abdomen (Figure 116) as long as or slightly longer than thorax, cylindrical, slightly flaring distally, brown dulled with brownish pollen; sternite 4 with a pair of distinct short black setae in middle of hind margin. Hypopygium small, capping tip of preabdomen, brown; lamellae brown, short and broad with blunt apical half sometimes reflexed, bearing a fringe of long pale curved setae distally; inner appendages very slender, subapically constricted with 2 very small setae near tip.

FEMALE.—Similar to male but face slightly wider, nearly as wide as antennal segment 3; femora and foretibia without evident ventral setae; foretarsus plain, lengths of segments from base as 10-6-5-5-8.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, Cerro San Felipe above Oaxaca, about 2500 m, in rocky stream in cloud forest area, 20 May 1963, collected in early morning, H. Robinson (USNM 70308). Paratypes: same data as holotype, 9 ♂, 15 ♀, and 1 ♀.

NOTES.—The species seems closest to *E. montana* with which it and other members of the group were found, but the foretarsus is more ornate, the last segments of the middle and hind tarsi are less enlarged,

the fourth sternite has distinct setae on the hind margin, and the hypopygial appendages are different. One specimen showed the typical hypopygium and abdominal sternites of the male but the legs, head, and body of a female. Females listed may include some of *E. montana* for which I can see no possible distinctions.

Enlinia media, new species

FIGURES 123–127

MALE.—Length 1.1 mm; wing 1.5 mm by 0.6 mm. Front with brown pollen; face narrowed below, eyes essentially contiguous in lower half; anterior eye facets somewhat enlarged. Palpus and proboscis dark. Antenna blackish, segment 3 blunt, arista half again as long as face.

Mesoscutum dark with green reflections, dulled with brownish pollen, pleura more brown; setae brownish with pale reflections; about 5 pairs of small acrostichals; 7 pairs of dorsocentrals, hind pairs rather long; scutellum hind margin more strongly rounded in middle, rather pointed, bristles as near each other as sides.

Legs light brown with yellow trochanters; setae brownish with pale reflections. Forecoxa with pale brownish setae anteriorly; forefemur (Figure 124) with long erect ventral seta at base and 7–9 rather short erect setae along anteroventral surface; middle femur (Figure 126) with rather strong erect anteroventral seta near base, a row of rather reclining setae along posteroventral surface; foretibia (Figure 124) with rather longer erect hairs dorsally near base, a long slender erect ventral seta near tip; middle tibia (Figure 126) covered with distinct erect pubescence; hind tibia with 2 or 3 small dorsals. Foretarsus (Figures 124, 125) with segment 1 thickened and wider distally, 2 bearing a very long or stout seta and a stiff ventral hook, 3 flattened and nearly discoid, 4 and 5 slightly flattened, lengths of segments from base as 10-6-6-5-9; middle tarsus as 13-7-7-6-7; hind tarsus as 14-15-12-9-8.

Wing (Figure 127) rather oblong-oval with rather broadly rounded tip and evenly rounded anal margin, of a translucent granular texture; vein 2 evenly and distinctly arched, curving distinctly forward at tip; vein 3 curving slightly backward and ending at extremity of wing; crossvein about as long as last of vein 5. Knob of halter brown.

Abdomen (Figure 123) about as long as thorax, cylindrical with very slight flare distally, brown with

slight blackish pollen above; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown, with rather large brown triangular setiferous lamellae and a group of long pale slender curving inner appendages.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, Cerro San Felipe above Oaxaca, about 2500 m, in rocky stream in cloud forest area, 20 May 1963, collected in early morning, H. Robinson (USNM 70309).

NOTE.—The only other species in the group having a narrow face in the male is *E. angustifacies*, which differs by the relatively simple foretarsus. *Enlinia maxima* and *E. latifacies*, which have a similar foretarsus, differ by the broader face.

XI. *Enlinia scutitarsis* Group

The single species included in the group is very distinctive in the pair of large setae on the base of the male middle femur, and by the greatly enlarged male hind basitarsus. The species seems related to those in the *E. seticauda* group by the rather strong dorsal seta on the middle tibia.

Enlinia scutitarsis, new species

FIGURES 131–135

MALE.—Length 1.0 mm; wing 1.1 mm by 0.4 mm. Face and front dark metallic bluish, with blackish pollen; eyes essentially contiguous below, anterior facets considerably enlarged. Palpus and proboscis dark. Antenna black, segment 3 short and broad, blunt, arista half again as long as face.

Mesoscutum metallic dark greenish black with violet tinges, dulled by slight pollen, pleura more blackish; setae dark; 7 or 8 pairs of small acrostichals, hind pairs longer and farther apart; 7 or 8 pairs of small dorsocentrals, hind pairs quite long; scutellum hind margin strongly but evenly rounded, bristles as near sides as middle.

Bases of coxae dark, distal halves of coxae with trochanters and bases of femora pale, legs otherwise yellowish brown or brownish; setae mostly dark. Fore- and middle coxae with short hairs anteriorly; forefemur (Figure 132) slender, with rather long slender erect seta below near base, otherwise plain; middle femur (Figure 133) with 2 or 3 rather strong setae below near base, at least 1 anteroventrally and 1 posteroventrally;

hind femur broad without distinctive setae; foretibia (Figure 132) slender, widened at tip, with rather long ventral seta near tip; middle tibia (Figure 133) curved in middle, flattened below on distal half, flattened part bearing row of strong erect setae, anterior edge with a comb of erect setae near middle, tip with a comb of anteriorly directed setae, 1 long dorsal near basal third; hind tibia rather thickened with small but distinct dorsal setae near base and basal third, a larger seta near tip. Foretarsus (Figure 132) with segments 1 and 2 compressed, 3 inserted toward dorsal edge of 2nd and broadened distally, 4 inserted in slightly retuse tip of 3rd, lengths of segments from base as 9-4-3-3-6; middle tarsus as 10-6-4-4-5; hind tarsus (Figure 134) as 9-10-8-6-7, segment 1 flattened, nearly as wide as long, rather concave anteriorly with comb of very long curved setae on dorsal edge, segment 2 hollowed out and very flat on basal half anteriorly, with rather long setae below on the expanded tip.

Wing (Figure 131) rather oval, with rather prominently rounded anal margin, with slight brownish tinge, veins brown; vein 2 rather evenly arched, curving distinctly forward at tip; veins 3 and 4 nearly straight and diverging from near base; crossvein nearly perpendicular to vein 4, slightly shorter than last of vein 5; vein 6 represented by slight fold lying near anal margin. Halter blackish.

Abdomen (Figure 135) longer than thorax, cylindrical, rather compressed, dull brownish; sternites without evident auxiliary genitalia. Hypopygium small, capping tip of preabdomen, extending only slightly forward below, brown, bearing a pair of narrow dark lamellae each with numerous short rather pale setae.

FEMALE.—Similar to male, but lower part of face nearly as broad as antennal segment 1; legs plain, without distinctive setae on femora or ventrally on fore- or middle tibiae, middle tibia with distinct dorsal; lengths of segments of foretarsus from base as 4-3-2-2-4, hind tarsus as 7-7-5-4-5 with slightly longer setae anterodorsally on segments 1 and 2; abdomen slightly flattened.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, above Rio Valle Nacional, on twigs and rocks by waterfall, in shaded rocky roadside ravine, 12-16 May 1963, H. Robinson (USNM 70310). Paratypes: same data as holotype, 25 ♂ and 9 ♀; same locality as holotype, 20-21 December 1962, 6 ♂ and 3 ♀; all collected by H. Robinson.

NOTE.—The hind tarsus and the setae on the base of the male middle femur are unlike any other known species of *Enlinia*.

XII. *Enlinia seticauda* Group

The two species of the group are very different in many characters, but they share two features, a strong dorsal seta on the middle tibia, and a distinct ventral seta at the base of the male hind femur.

Enlinia seticauda, new species

FIGURES 136-139

MALE.—Length 1.3 mm; wing 1.3 mm by 0.6 mm. Front dark metallic bluish with some brownish pollen; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus and proboscis brown. Antenna brown to yellowish brown, segment 3 slightly conical to blunt, arista only slightly longer than face.

Thorax metallic dark green above, more brownish or yellowish brown on pleura, with slight pollen; setae long, dark; 7 or 8 pairs of small acrostichals; 6 pairs of dorsocentrals slightly larger than acrostichals; scutellum hind margin with middle bluntly pointed, bristles widely separated.

Legs rather pale with bases of fore- and hind coxae and most of middle coxa brownish; setae mostly dark. Fore- and middle coxae with short dark hairs anteriorly; forefemur (Figure 138) nearly bare below, a long slender erect seta below at base; middle femur without distinct ventral setae near base; hind femur (Figure 139) with a few short black ventral setae near base; foretibia (Figure 138) rather thick, with a long slender erect seta ventrally at tip; middle tibia with a very short anterodorsal and a longer posterodorsal near basal third; hind tibia slightly thickened, with small anterodorsals near base, second fifth, and tip, the last rather strong, small posterodorsal near basal third, row of ventral hairs rather long. Foretarsus (Figure 138) with segments 1 and 2 broad, 2 with flat rather bare outer surface, a few long setae posterodorsally, truncate apically with segment 3 attached at apex dorsally, 3 slightly broadened with segment 4 attached on slightly retuse apex, lengths of segments from base as 6-4-2-3-4; middle tarsus as 6-4-3-2-4; hind tarsus as 6-7-5-4-4.

Wing (Figure 136) rather oval with gradually and evenly rounded hind margin, with slight brownish tinge, veins brown; vein 2 slightly sinuous, slightly

curved forward at tip; veins 3 and 4 slightly diverging throughout length; crossvein nearly perpendicular to costa, slightly shorter than last of vein 5; vein 6 represented by slight fold lying near anal margin. Halter blackish.

Abdomen (Figure 137) longer than thorax, cylindrical, dull brownish; sternites without evident auxiliary genitalia. Hypopygium small, capping tip of preabdomen and extending slightly forward below, brown, bearing a pair of rather pale oblong lamellae each of which bears 2 very long stout black apical bristles.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, above Rio Valle Nacional, wet rock surface by roadside waterfall, 18 May 1963, H. Robinson (USNM 70311). Paratype: same locality as holotype, 21 Dec. 1962, 1 ♂.

NOTE.—The species is named for its distinctive hypopygial lamella, which bears two very strong black bristles apically.

Enlinia ramosa, new species

FIGURES 140–144

MALE.—Length 0.9 mm; wing 1.1 mm by about 0.5 mm. Front about twice as wide as high, dark brownish with thin brown pollen; eyes contiguous or nearly so in lower half, anterior facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Mesoscutum dark greenish dulled with pollen, more brown on pleura; setae dark with pale reflections; 6 pairs of small acrostichals; 6 or 7 pairs of dorsocentrals, hind pairs rather long; scutellum hind margin broadly and evenly rounded, bristles as near sides as middle.

Legs yellowish to light brown, with trochanters and bases of tarsi paler; setae mostly dark. Forecoxa with small mostly pale hairs anteriorly; forefemur (Figure 142) with a long slender erect seta anteroventrally at base, a few very small slender more reclining setae along ventral edge; middle femur (Figure 143) with a long erect slender seta anteroventrally at base, a few short black progressively shorter setae ventrally near middle; hind femur (Figure 144) with a long curved retrorse black seta ventrally at base; foretibia (Figure 142) with a long slender black seta anteroventrally at tip; middle tibia (Figure 143) with small but distinct anterodorsal and a large posterodorsal paired near basal third, a series of rather long hairs along middle of pos-

teroventral surface; hind tibia with 1 antero- and 2 posterodorsals in basal half all small but distinct, a somewhat larger posterodorsal near tip. Foretarsus (Figure 142) with segments 1 and 2 rather compressed, 1st rather shaggy with long hairs, 3 flattened with distinct small black seta anteriorly and a small short-pubescent apical lobe posteriorly, segments 4 and 5 somewhat flattened, lengths of segments from base as 9-3-3-6-7; middle tarsus as 8-6-5-4-6; hind tarsus as 9-10-7-5-6.

Wing (Figure 140) greatly folded in dried specimen, but as reconstructed, elliptical with evenly rounded hind margin, clear; vein 2 evenly arched, curved only slightly forward at tip; vein 3 ending slightly before wing tip; crossvein two-thirds as long as last of vein 5. Knob of halter black.

Abdomen (Figure 141) about as long as thorax, cylindrical, brown with blackish pollen above; sternites without auxiliary genitalia. Hypopygium rather large, seated on tip of preabdomen, brown with minute whitish appendages at tip; each of the grayish-brown lamellae large and many-branched, bearing many very slender curved marginal and apical setae.

FEMALE.—Similar to male, but face distinct to mouth, about as wide as antennal segment 1; femora and tibiae without distinctive ventral setae; foretarsus plain, segments from base as 10-3-3-3-5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, about 10 km south of Pichucalco, on wet roadside ledge, 24 May 1963, H. Robinson (USNM 70312). Paratype: Panama Canal Zone, Gamboa, Rio Agua Salud, July 1967, 1 ♂, W. W. Wirth.

NOTE.—The species is named after the distinctive branching hypopygial lamella.

XIII. *Enlinia magnicornis* Group

The group is established for a single species having a highly modified male antenna and the face of the male broad.

Enlinia magnicornis, new species

FIGURES 145–150

MALE.—Length 1.0 mm; wing 1.1 mm by 0.4 mm. Face and front dark metallic green with grayish pollen, whitish pollen on clypeus; face (Figure 148) narrowed below but distinct to mouth, becoming about

half as wide as antennal segment 1; anterior facets of eyes slightly enlarged. Palpus and proboscis dark. Antenna (Figure 149) with 3 segments together about as long as face, segment 1 somewhat yellowish, 2 and 3 black; segment 1 flaring from small base, longest toward inside; segment 2 very broad but short, appearing as narrow setiferous rim around base of segment 3; segment 3 conical, as long as others combined, covered with dense long pale pubescence; arista apical, short, about as long as face, with distinct joint at basal fourth.

Mesoscutum metallic dark bluish and slightly pollinose, pleura more brown; setae dark with pale reflections; 6 or 7 pairs of small acrostichals; 7 pairs of dorsocentrals, last pair rather long; scutellum hind margin evenly rounded or slightly more rounded in middle, bristles slightly to distinctly nearer middle than sides.

Legs light brown with pale trochanters; setae mostly dark. Forecoxa with sparse short hairs anteriorly; forefemur (Figure 145) and middle femur (Figure 147) with distinct slender erect seta anteroventrally near base; middle femur with about 8 long rather erect mostly black setae along ventral edge; foretibia (Figure 145) distinctly shorter than its femur; hind tibia with 2 or 3 small dorsals. Foretarsus (Figure 145) with segments 1 and 2 compressed, 3 flat with large stout seta ventrally, 4 and especially 5 broadened and flattened distally, lengths of segments from base as 6-4-5-4-6; middle tarsus as 9-6-5-4-6, segment 5 enlarged and flattened; hind tarsus as 9-10-8-6-6, segment 5 slightly enlarged.

Wing (Figure 146) elliptical with evenly rounded hind margin, texture slightly granular; vein 2 slightly and evenly arched, curving distinctly forward at tip; vein 3 rather straight at tip, ending just before tip of wing; crossvein three-fourths as long as last part of vein 5. Knob of halter black.

Abdomen (Figure 150) about as long as thorax, rather cylindrical, brown with blackish pollen above; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown, with small triangular brownish and short-pubescent lamellae below; a pair of inner appendages very slender, yellowish.

FEMALE.—Similar to male, but lower face nearly as broad as antennal segment 3; all antennal segments short, of near equal length, segment 3 blunt, arista half again as long as face; femora without distinctive ventral setae; foretarsus plain, lengths of segments from

base as 9-4-3-2-6; crossvein of wing nearly as long as last part of vein 5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, Sierra Juarez, near 104 km marker, rocky stream margin in shaded ravine, rain forest area, about 1500 m, 19 May 1963, H. Robinson (USNM 70313). Paratypes: same data as holotype, 2 ♂ and 15 ♀; Sierra Juarez, 100 km marker, rocks in roadside spring, 17 May 1963, 2 ♂ and 1 ♀.

NOTES.—The form of the male antenna in *E. magnicornis* is distinctive for the species. Throughout the remainder of the known species the structure of the antenna is quite conservative. The broad male face is also rather distinctive, being found otherwise only in the *E. montana* group. Such features as the broadly rounded wing apex and somewhat granular wing texture, and the fringe of setae on the middle femur, suggest possible relationships to both *E. montana* and *E. simplex* groups.

XIV. *Enlinia hirtipes* Group

The three species of the group all bear a slender erect projection on the hind margin of the third adominal sternite, and the second wing vein is rather close to the costa. In numerous other characters the species are very distinct from each other.

Enlinia hirtipes, new species

FIGURES 157-160

MALE.—Length 0.8 mm; wing 0.9 mm by 0.35 mm. Front with some greenish color; face narrowed below, eyes essentially contiguous in lower half, anterior eye facets enlarged. Palpus and proboscis dark. Antenna dark, all segments short and broad, segment 3 blunt, arista half again as long as face.

Thorax brownish with some green color above; setae dark with pale reflections; about 5 pairs of acrostichals; 7 pairs of dorsocentrals, hind pairs longer; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs yellow or with femora, tibiae, or even tarsi often rather brown; setae mostly dark. Forecoxa with sparse pale brownish hairs anteriorly; forefemur (Figure 157) with long slender erect ventral seta at base, other shorter ventrals in basal half, a few short erect stiff setae distally on posteroventral surface and many very long pale curving hairs along anteroventral surface;

middle femur (Figure 158) with many rather long erect black ventral setae along basal half, anteroventrally with 2 or more very long stiff black setae in basal half and 3 or 4 slender flexuous setae near tip; hind femur plain; foretibia (Figure 157) with long erect slender ventral seta at tip; middle tibia (Figure 158) distinctly shorter than femur, with 10 or more rather long stiff black ventral setae along basal two-thirds, very long slender almost straight setae anteriorly and a few very long slender curved hairs posteriorly; hind tibia with 2 or 3 small indistinct dorsals. Foretarsus (Figure 157) with segments 1 and 2 rather broad and flat, 3 small and curved, 4 and 5 small and only slightly flattened, lengths of segments from base as 6-3-3-4; middle tarsus as 6-4-4-4-5, sometimes segments tightly folded; hind tarsus as 7-7-6-5-4.

Wing (Figure 160) elliptical; vein 2 slightly and evenly arched, curving slightly forward at tip, remaining closer to costa than to vein 3; vein 3 ending just before tip of wing; crossvein about one-half to three-fourths as long as last of vein 5. Knob of halter brown.

Abdomen (Figure 159) about as long as thorax; sternite 3 with slender erect projection from near middle of hind margin. Hypopygium small, capping tip of preabdomen, brown; with pair of small pale-brownish short-triangular lamellae below which have a few black apical setae; inner appendages long, hyaline, bladellike, in resting position longer pair extending forward past projection on sternite 3.

FEMALE.—Possible female seen with head lacking, legs plain, lengths of segments of foretarsus from base as 8-2-2-2-3.

TYPE-DATA.—Holotype ♂ from Mexico: Chiapas, about 10 km south of Pichucalco, on wet roadside ledge, 24 May 1963, H. Robinson (USNM 70314). Allotype ♀: Oaxaca, above Rio Valle Nacional, 14 May 1963. Paratypes: same data as holotype, 1 ♂; same locality as allotype, 14-16 May 1963, 14 ♂; all collected by H. Robinson.

NOTE.—The very numerous long setae on the fore- and middle legs are unlike any other known species of *Enlinia*. The large bladellike inner appendages of the hypopygium are also rather distinctive.

Enlinia clavulifera, new species

FIGURES 154-156

MALE.—Length 0.8 mm; wing 0.8 mm by 0.3 mm. Face and front metallic dark bluish, front with black-

ish pollen; face narrowed below, eyes contiguous in lower half, anterior eye facets enlarged. Palpus and proboscis dark. Antenna dark brown, segment 3 blunt, arista more than twice as long as face.

Mesoscutum metallic dark bluish with slight brownish pollen, pleura more brown; setae dark with pale reflections; 6 or 7 pairs of small acrostichals; 6 or 7 pairs of dorsocentrals, hind pair rather long; scutellum hind margin broadly and evenly rounded, bristles widely separated.

Legs brown, trochanters more yellow; setae mostly dark. Forecoxa with small pale and dark hairs anteriorly; forefemur with short slender erect seta ventrally at base, all femora otherwise without distinctive setae; middle tibia rarely with a small indistinct dorsal seta near middle; hind tibia with 2 or 3 small dorsals. Foretarsus (Figure 154) with segments 1 and 2 somewhat compressed, 3 slightly asymmetric with rather distinct seta dorsally near base, another less distinct seta posteriorly, segments 4 and 5 slender, lengths of segments from base as 7-4-3-3-5; middle tarsus as 7-5-4-3-5; hind tarsus as 8-7-6-5-5.

Wing (Figure 156) elliptical, clear; vein 2 evenly arched, curved only slightly forward at tip, remaining rather close to costa throughout; vein 3 curving slightly and evenly backward, ending just before wing tip; crossvein about half as long as last of vein 5. Knob of halter black.

Abdomen (Figure 155) about as long as thorax, cylindrical, brown with blackish pollen above; sternite 3 with rather long slender erect projection from middle of hind margin. Hypopygium small, partially immersed in tip of preabdomen, brown; lamellae dark, reflexed, each bearing a few long slender curved setae distally; inner appendage placed well forward, minute, broadest in apical half with a short point and a few small marginal setae.

FEMALE.—Similar to male, but face distinct to mouth, lower half about as wide as antennal segment 1; foretarsus plain, lengths of segments from base as 5-2-2-2-3.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, sierra above Arriaga, at rocky stream margin in small shaded ravine just off road, 21-22 May 1963, H. Robinson (USNM 70315). Paratypes: same data as holotype, 2 ♂; Chiapas, Ixtapan, on wet rocky surface by road, in ravine above river, 23 May 1963, 3 ♂; all collected by H. Robinson.

NOTE.—The wing venation and the projection on the third abdominal sternite are like *E. hirtipes*, to which the species may be rather closely related. The two species differ in a number of characters, of which the many setae on the legs of *E. hirtipes* are the most obvious.

Enlinia fimbriata, new species

FIGURES 151–153

MALE.—Length 0.7 mm; wing 0.8 mm by 0.34 mm. Front about twice as broad as high, metallic bluish with blackish pollen; face narrowed below, eyes contiguous in lower half, anterior eye facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista only slightly longer than face.

Mesoscutum shining metallic bluish or greenish with slight brownish pollen, pleura more brown; setae dark with pale reflections; 6 pairs of small acrostichals; 7 or 8 pairs of dorsocentrals, hind pair rather long; scutellum hind margin broadly and evenly rounded, bristles nearer to sides than middle.

Legs dark brown with dark setae. Forecoxa with small dark hairs anteriorly; forefemur (Figure 153) and middle femur with a small slender erect seta anteroventrally at base; foretibia (Figure 153) with a long slender erect setae ventrally at tip; hind tibia with 2 or 3 small indistinct dorsals. Foretarsus (Figure 153) with segments 1 and 2 rather compressed, 2nd pointed on distal hind corner, 3 flattened with curving anterior margin bearing many stout hairs, distinct black erect seta on hind margin, segments 4 and especially 5 somewhat flattened, lengths of segments from base as 8-4-4-2-4; middle tarsus as 8-6-4-3-5; hind tarsus as 8-8-6-4-5.

Wing (Figure 151) rather broadly oval, with prominently rounded anal margin, wing clear; vein 2 hardly curved, very close to costa; veins 3 and 4 rather straight, 3rd ending slightly before wing tip; crossvein about half as long as last of vein 5. Knob of halter black.

Abdomen (Figure 152) about as long as thorax, cylindrical to somewhat compressed, brown with blackish pollen above; sternite 3 with rather long slender erect projection from middle of hind margin. Hypopygium small, partially immersed in tip of preabdomen, brown; lamellae grayish, large, strap-shaped with constricted tip, bearing many long black curved or slightly sinuous setae along outer margin, inner margin

with many shorter more slender curved setae and a small pubescent tuft near the base; inner appendages hooklike, projecting forward nearly to projection on sternite 3.

FEMALE.—Similar to male but face distinct to mouth, lower half as wide as antennal segment 1; femora and foretibia without erect ventral setae; foretarsus plain, lengths of segments from base as 7-3-3-2-4.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, near Ixtapan, on wet rock face by road, in ravine above river, 23 May 1963, H. Robinson (USNM 70316). Paratypes: same data as holotype, 18 ♂ and 1 ♀; Chiapas, about 10 km south of Pichucalco, wet ledges by road, 24 May 1963, 4 ♂ and 1 ♀; all collected by H. Robinson.

NOTE.—The long strap-shaped lamellae are rather distinctive, especially when compared to the other species in the group.

XV. *Enlinia ventralis* Group

The group is established for two very closely related species having both abdominal sternites four and five armed with a distinct seta.

Enlinia ventralis, new species

FIGURES 161–163

MALE.—Length 0.8 mm; wing 1.0 mm by 0.34 mm. Front over twice as wide as high, metallic dark bluish dulled with blackish pollen; face narrowed below, eyes contiguous in lower half, anterior eye facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Mesoscutum metallic dark greenish or bluish with slight blackish pollen, pleura more brown; setae dark with pale reflections; about 4 pairs of small acrostichals; 6 or 7 pairs of dorsocentrals, hind pairs rather long; scutellum hind margin broadly rounded, bristles as near sides as middle.

Legs dark yellowish to light brownish with trochanters pale; setae mostly dark. Forecoxa with small partially dark hairs anteriorly; fore- and middle femora with a rather long slender erect seta anteroventrally near base, forefemur (Figure 163) with a few slender rather erect pale hairs along ventral surface; foretibia (Figure 163) with a long slender ventral seta near tip; middle and hind tibiae with 2 or 3 small rather indistinct dorsals, ventral hairs toward tip of middle

tibia scarcely more erect than other hairs. Foretarsus (Figure 163) with segments 1 and 2 rather compressed, 3 flattened and somewhat projecting on lower anterior end, with slightly longer darker seta anteriorly near base, segments 4 and especially 5 slightly flattened, lengths of segments from base as 7-4-4-4-5; middle tarsus as 7-6-5-4-4; hind tarsus as 9-8-6-5-5.

Wing (Figure 162) elliptical, with evenly rounded hind margin, clear; vein 2 slightly and evenly arched, curved slightly forward at tip; vein 3 ending slightly before wing tip; crossvein three-fifths to two-thirds as long as last of vein 5. Knob of halter black.

Abdomen (Figure 161) about as long as thorax, cylindrical, brown with blackish pollen above; sternites 4 and vestigial 5th each with a very slender erect seta from middle of anterior part, seta of sternite 4 more pale and slender. Hypopygium small, exerted from tip of preabdomen, brown; lamellae brownish, long and slender, slightly wider and more brownish at tips with an apical crest of 5 or 6 long slender apically hooked setae; inner appendages pale, very slender.

FEMALE.—Similar to male, but face distinct to mouth, about as wide as antennal segment 1; femora without erect setae ventrally; foretarsus plain, segments as 9-4-3-3-5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Guerrero near Tierra Colorada in rocky partially shaded stream by small roadside pasture, 29 May 1963, H. Robinson (USNM 70317). Paratype: same data as holotype 1 ♀.

NOTE.—The species is distinct among those with armed sternites by the elongate apically crested hypopygial lamellae. After careful examination and after comparison with the closely related *E. brevipes*, it is obvious that the setae of the abdominal sternites are born on the surfaces of the sclerites four and five rather than on the hind margins of sclerites three and four. As such they seem to have nothing in common with the projections on the sternites in the *E. hirtipes* group.

Enlinia brevipes, new species

FIGURES 164-167

MALE.—Length 0.85 mm; wing 0.9 mm by 0.3 mm. Front more than twice as wide as high, nearly obscured with brownish pollen; face narrowed below, eyes contiguous in lower half, anterior eye facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Mesoscutum dark metallic greenish brown dulled with slight grayish pollen, pleura more brown with whiter pollen; setae dark with pale reflections; about 6 pairs of small acrostichals; 6 pairs of dorsocentrals, hind pairs rather long; scutellum hind margin broadly and evenly rounded, bristles as near sides as middle.

Legs brown with trochanters whitish; setae mostly dark. Forecoxa with small rather pale hairs anteriorly; forefemur (Figure 164) and middle femur (Figure 165) with a long slender erect seta anteroventrally near base; foretibia (Figure 164) with a long slender seta ventrally at tip; middle tibia (Figure 165) with erect short crowded hairs ventrally toward tip; middle and hind tibiae with 2 or 3 small rather indistinct dorsals. Foretarsus (Figure 164) with segments 1 and 2 rather compressed, broad, with a black tooth on the ventral margin of each, the 2 teeth appearing opposable, with longer hairs on posterior surfaces, segment 3 flattened, anterior margin somewhat produced with black seta near base, segments 4 and especially 5 somewhat flattened, lengths of segments from base as 5-5-3-3-6; middle tarsus as 7-5-4-3-5; hind tarsus as 9-9-7-5-6.

Wing (Figure 166) elliptical with evenly rounded hind margin, clear with slight brownish tinge; vein 2 slightly and evenly arched, very slightly curved forward at tip; vein 3 ending slightly before wing tip; crossvein three-fifths to two-thirds as long as last of vein 5. Knob of halter black.

Abdomen (Figure 167) about as long as thorax, cylindrical, brown with blackish pollen above and slight violet reflections; sternite 4 with a pair of very close-set erect black setae near the middle, sternite 5 small but bearing an erect slender seta near anterior margin. Hypopygium small, exerted from tip of preabdomen, brown; lamellae broadly strap-shaped, brownish toward tip with apical crest of 6 or 7 long black curved setae; inner appendages pale, very slender with tip notched to one side.

FEMALE.—Similar to male, but with face distinct to mouth, lower part as broad as antennal segment 1; femora and tibiae without distinctive ventral setae; foretarsus plain, length of segments from base as 7-3-2-2-4.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, about 10 km south of Pichucalco, on wet rock ledges by road, 24 May 1963, H. Robinson (USNM 70318). Paratypes: same data as holotype, 6 ♂ and 2 ♀.

NOTES.—This species and the closely related *E. ventralis* have the fifth abdominal sternites present and bearing a distinctive seta. As formed, this plate makes it unlikely that the hypopygium could be recessed in the tip of the preabdomen, and in all males observed of the two species the hypopygium is fully exerted.

In relation to the whole spectrum of the genus, the two species, *E. brevipes* and *E. ventralis*, are very closely related; however, they still show many differences in foretarsus, middle tibia, a double versus single seta on the fourth sternite, different shaped hypopygial lamellae, and different shaped setae on the lamellae.

XVI. *Enlinia nigricans* Group

The group includes one species which seems quite distinct by a combination of characters, including the second wing vein lying close to the costa, the abdominal sternites being unarmed, and the hypopygial lamellae being relatively simple. The hypopygial capsule is the smallest seen in the genus.

Enlinia nigricans, new species

FIGURES 168–170

MALE.—Length 0.8 mm; wing 0.9 mm by 0.3 mm. Face and front metallic bluish, front with blackish pollen; face narrowed below with eyes contiguous in lower half, anterior eye facets enlarged. Palpus and proboscis black. Antenna black, segment 3 blunt, arista half again as long as face.

Thorax dark, mesoscutum metallic with slight blackish pollen, pleura more brown; setae dark with pale reflections; about 5 pairs of small acrostichals; 6 pairs of dorsocentrals, hind pairs rather long; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs brown with foretrochanter sometimes slightly more pale; setae dark. Fore- and middle coxae with small hairs anteriorly; forefemur with a few short slender hairs along anteroventral surface, 1 slender more erect ventral seta near base; hind tibia with 2 or 3 small indistinct dorsals. Foretarsus (Figure 168) with segments 1 and 2 broad and compressed, 3 very flat, strongly asymmetric with strong spicules on posterior and distal margins, 4 and 5 slender, lengths of segments from base as 9-4-3-4-5; middle tarsus as 10-6-5-4-5; hind tarsus as 7-8-6-5-5.

Wing (Figure 169) elliptical, clear; vein 2 evenly arched, curved only slightly forward at tip, remaining rather close to costa throughout; vein 3 very slightly but evenly curving backward, ending just before wing tip; crossvein about half as long as last of vein 5. Knob of halter black.

Abdomen (Figure 170) about as long as thorax, cylindrical, blackish with dark setae; sternites without auxiliary genitalia. Hypopygium very small, seated on extremity of preabdomen giving hind end generally oblique silhouette, black; a pair of small slender black lamellae each with a fan of about 5 long slender black setae distally, these lamellae arising from rather large pubescent pad below; inner appendages brown, narrow with truncate tips.

FEMALE.—Similar to male, but face distinct to mouth, lower half as wide as antennal segment 1; foretarsus plain, segments from base as 7-4-4-4-5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Hidalgo, just north of Chapulhuacan, on wet sunlit rock face above roadside spring, 30 May 1963, H. Robinson (USNM 70319). Paratype: same data as holotype, 5 ♂ and 2 ♀; same locality, 10 May 1963, 2 ♂ and 4 ♀.

NOTE.—The generally black color of the species is rather distinctive and was noticeable in the freshly collected material. Morphologically, the second wing vein lying close to the costa, and the small hypopygium resulting in an oblique outline of the end of the abdomen, are distinctive.

XVII. *Enlinia acuticornis* Group

The males of the two species in the group have antennae with third segments rather conical, and the fifth abdominal sternite is present and covered with numerous minute hairs.

Enlinia acuticornis, new species

FIGURES 171–175

MALE.—Length 1.0 mm; wing 1.2 mm by 0.5 mm. Front (Figure 173) slightly over twice as broad as high, metallic bluish, covered with brown pollen; face narrowed below, eyes essentially contiguous in lower half, anterior eye facets only slightly enlarged. Palpus and proboscis dark. Antenna (Figure 174) black, segment 3 conical, about as long as broad with arista

slightly to side of acute apex, arista nearly twice as long as face.

Thorax metallic dark green above, a little more brownish on pleura, with slight pollen; setae pale brownish; about 6 pairs of small acrostichals; 5 pairs of dorsocentrals, only hind pair rather long; scutellum hind margin rather sharply rounded in middle, bristles nearer middle than sides.

Legs brownish yellow with most of forecoxa, trochanters, and sometimes most of femora paler; setae mostly dark. Fore and middle coxa with numerous hairs anteriorly; femora nearly bare below, middle femur with small erect pale seta near base; middle tibia with indistinct dorsal seta before middle; hind tibia with an indistinct dorsal seta near base and distal third, a slightly larger seta near tip. Foretarsus (Figure 175) with segments 1 and 2 compressed, 3 quite widened distally with small stout black seta posteriorly, 4 and 5 slightly flattened, lengths of segments from base as 6-4-4-3-5; middle tarsus as 9-6-5-4-5; hind tarsus as 10-8-7-5-6.

Wing (Figure 171) narrowly elliptical, hind margin evenly rounded, wing clear, veins brown; vein 2 slightly and evenly arched, curved slightly forward at tip; veins 3 and 4 essentially straight, diverging from near base; crossvein perpendicular to vein 4, two-thirds as long as last of vein 5; vein 6 represented by weak fold lying near anal margin. Knob of halter black.

Abdomen (Figure 172) about as long as thorax, cylindrical, somewhat compressed, dark, slightly dulled with blackish pollen above; sternites without auxiliary genitalia, but sternite 5 distinct and bearing numerous small dark hairs. Hypopygium small, capping tip of preabdomen, brown; bearing a pair of pale brown oval lamellae each with short rather pale marginal setae; inner appendages yellowish, short, rodlike.

FEMALE.—Similar to male, but face below as wide as antennal segment 1, face and front with brown pollen, eye facets not enlarged, antennal segment 3 conical but shorter; femora without distinctive setae below; foretarsus plain, lengths of segments from base as 6-3-2-2-5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Chiapas, Ixtapan, wet roadside rock faces, in ravine above river, 23 May 1963, H. Robinson (USNM 70320). Paratypes: same data as holotype, 1 ♂ and 5 ♀; San Luis Potosi, a few km south of Tamazunchale, on partially shaded rocky ledges wet from seepage, in small ravine, 22-23 December 1961,

2 ♂; Oaxaca, above Rio Valle Nacional, shaded rocky ravine by waterfall, 12 May 1963, 1 ♂; all collected by H. Robinson.

NOTE.—The antennae are not as obviously distinct as in *E. magnicornis*, but they differ from those of most species of *Enlinia* by having the third segments distinctly and consistently conical. A slight tendency toward such segments is found in the *E. montana* group, but apparently no close relationship is involved.

Enlinia frontalis, new species

FIGURES 176-181

MALE.—Length 1.0 mm; wing 1.2-1.3 mm by 0.5 mm. Front (Figure 178) slightly less than twice as wide as high, dark blue or violet with slight grayish pollen; face very high, narrowed below with eyes contiguous or nearly so in lower two-thirds; anterior eye facets only slightly enlarged. Palpus and proboscis dark. Antenna (Figure 180) black, segment 3 slightly pointed, about as long as broad, arista slightly longer than face.

Mesoscutum metallic dark green with slight blackish pollen, pleura more brown; setae dark with pale reflections; 5 pairs of small acrostichals; 6 or 7 pairs of dorsocentrals, hind pair rather long; scutellum hind margin rather evenly rounded, bristles as near sides as middle.

Legs black with dark setae. Forecoxa with small dark hairs anteriorly; fore- and middle femora with a small very slender seta anteroventrally near base; middle tibia with a small indistinct dorsal seta; hind tibia with 2 or 3 small indistinct dorsals. Foretarsus (Figure 181) with segments 1 and 2 rather compressed, 3 flattened with a small black spicule posteriorly near base, 4 and 5 slightly flattened, lengths of segments from base as 7-4-6-4-5; middle tarsus as 8-6-5-4-5; hind tarsus as 10-9-7-5-5.

Wing (Figure 176) elliptical, with evenly rounded hind margin, rather clear; vein 2 slightly and evenly arched, curved only slightly forward at tip; vein 3 straightened distally, ending slightly before wing tip; crossvein two-thirds to three-fourths as long as last of vein 5. Knob of halter black.

Abdomen (Figure 179) about as long as thorax, cylindrical to rather compressed, brown with blackish pollen, setae dark; sternites without auxiliary genitalia, but sternite 5 distinct with numerous small dark setae. Hypopygium small, capping tip of preabdomen,

brown; with short brownish dense short-pubescent lamellae below; slender sharply pointed pale brownish inner appendage scarcely visible.

FEMALE.—Similar to male but face distinct to mouth, lower part as wide as antennal segment 1; antennal segment 3 more shortly pointed; femora without distinctive ventrals; foretarsus plain; crossvein of wing (Figure 177) nearly as long as last part of vein 5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, Sierra Juarez, Route 175 near 95 km marker, roadside spring in rain forest area at medium elevation, 17 May 1963, H. Robinson (USNM 70321). Paratype: same general locality as holotype, 104 km marker, wet shaded rocky ravine, 19 May 1963, 1 ♂.

NOTE.—The form of the third antennal segment and the fifth abdominal sternite leaves little doubt of close relationship to *E. acuticornis*. Still, *E. acuticornis* differs by a number of characters, including paler legs, only five pairs of dorsocentrals, scutellar bristles closer together, and the much shorter face. The long head in *E. frontalis* is thoroughly distinctive.

XVIII. *Enlinia caudata* Group

The single species in the group is most obviously distinct in the very elongate hypopygial lamellae and the very broad head with much enlarged anterior eye facets. In addition, the second wing vein is close to the costa and the abdominal sternites are unarmed.

Enlinia caudata, new species

FIGURES 182–184

MALE.—Length 0.8 mm; wing 0.9 mm by 0.27 mm. Head relatively wide; front more than twice as wide as high, metallic greenish with slight pollen; face relatively short, narrowed below, eyes contiguous in lower half or more; anterior eye facets greatly enlarged, more than any other species of *Enlinia* seen. Palpus and proboscis dark. Antenna dark brown to black, segment 3 blunt, arista twice as long as face.

Mesoscutum shining metallic dark green with only slight pollen, more brownish on pleura; setae dark with pale reflections; about 4 pairs of small acrostichals; 5 pairs of dorsocentrals, hind pair rather long; scutellum hind margin broadly and evenly rounded, bristles as near sides as middle or nearer to sides.

Legs yellowish or pale brownish, with mostly dark setae. Forecoxa with sparse hairs anteriorly; fore- and middle femora with a small slender erect seta antero-ventrally at base, that of middle femur smaller; middle tibia with a very small indistinct dorsal seta before middle; hind tibia with 3 or 4 small dorsals, 2 of which with some long hairs in a series near the tip. Foretarsus (Figure 184) with segments 1 and 2 rather compressed, 2nd with small apical spur ventrally, 3 flattened and broad with pubescent lobe anteriorly and a small black spicule near tip posteriorly, lengths of segments from base as 8-5-4-5-7; middle tarsus as 10-6-5-4-4; hind tarsus as 9-10-6-5-6.

Wing (Figure 183) elliptical, with evenly rounded hind margin, clear; vein 2 only slightly but evenly arched, only slightly curved forward at tip, remaining relatively close to costa; vein 3 ending slightly before wing tip; crossvein about half as long as last of vein 5. Knob of halter black.

Abdomen (Figure 182) about as long as thorax, cylindrical, becoming slightly wider distally, brown with blackish pollen above and some violet reflections, setae dark; sternites without auxiliary genitalia. Hypopygium small, partly immersed in tip of preabdomen, brown; each lamella of pair grayish brown, ribbon-form, gradually tapering and ending in 1 or 2 strong curving black setae that are at least as long as lamellae, shorter setae and pale hairs born along outer edge.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, above Rio Valle Nacional, in shaded ravines near road, by waterfall and along rocky stream margin, 13 May 1963, H. Robinson (USNM 70322). Paratypes: same data as holotype, 2 ♂.

NOTES.—The elongate hypopygial lamellae seem very distinctive. There are other species such as *E. fimbriata* with elongate hypopygial lamellae, but they do not seem closely related. The head of *E. caudata* seems wider in relation to its height than any other seen in *Enlinia*.

XIX. *Enlinia lamellata* Group

The crescent-shaped hypopygial lamellae of the single species in the group seem unique; the second wing vein is rather close to the costa. Otherwise the species is similar to members of the *E. simplex* group.

Enlinia lamellata, new species

FIGURES 185-188

MALE.—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Front metallic green or violet, with little or no pollen; face narrowed below, eyes essentially contiguous in lower half; anterior eye facets considerably enlarged. Palpus and proboscis dark. Antenna brownish, segment 3 blunt, arista half again as long as face.

Thorax metallic dark green above, more brownish on pleura, with slight pollen; setae pale brownish; about 6 pairs of short acrostichals; 6 or 7 pairs of dorsocentrals, only hind pairs rather long; scutellum hind margin broadly rounded, more sharply rounded at setae, bristles as near sides as middle.

Legs yellowish, extreme bases of coxae and dorsal margins of middle and hind femora darker; setae mostly dark. Fore- and middle coxae with numerous often pale hairs anteriorly; femora nearly bare below; forefemur (Figure 186) and middle femur with a small erect seta below near base; foretibia (Figure 186) with long black apical seta below; hind tibia with very small dorsal seta near base, another near tip. Foretarsus (Figure 186) with segments 1 and 2 compressed, 3 flattened and rather broad, with black spicule on posterior margin, 4 and 5 cylindrical, lengths of segments from base as 8-5-4-3-5; middle tarsus as 8-6-5-4-4; hind tarsus as 8-9-7-5-5.

Wing (Figure 185) oval, hind margin evenly rounded, anal angle not prominent, wing surface clear, veins brown; vein 2 slightly and evenly arched, curving slightly forward at tip; vein 3 slightly sinuous; vein 4 nearly straight; crossvein perpendicular to vein 5, about half as long as last part of vein 5. Knob of halter blackish.

Abdomen (Figures 187, 188) about as long as thorax, cylindrical, somewhat compressed, brown with blackish pollen above; sternites without auxiliary genitalia. Hypopygium rather small, capping end of preabdomen, brown, bearing a pair of crescentic brown lamellae, each lamella with numerous rather long black marginal setae; inner appendages short, brownish.

FEMALE.—Similar to male, but lower part of face about half as broad as antennal segment 1, anterior eye facets only slightly enlarged; femora without erect ventral setae, seta of foretibia very small; foretarsus plain, lengths of segments from base as 6-2-2-2-3; abdomen slightly flattened.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: San Luis Potosi, a few km south of Tamazunchale, on partially shaded limestone rocks moist from seepage, rocky ravine, 14 August 1962, H. Robinson (USNM 70323). Paratypes: same data as holotype, 1 ♂; same locality, 10 May 1963, 1 ♂.

NOTE.—The crescentic shape of the hypopygial lamella has been confirmed in a specimen preserved on a microscope slide. The actual shape of the lamella is very difficult to see in dried material. At first impression it seems sessile, very short, and broadly rounded.

XX. *Enlinia simplex* Group

The group includes a series of relatively inornate species in which abdominal sternites are unarmed, hypopygial appendages are relatively simple, and the second wing vein is bulging inward from the costa. A number of species in the group have a series of erect ventral setae on the fore- and middle femora.

Enlinia seriata, new species

FIGURES 189-193

MALE.—Length 1.1 mm; wing 1.2 mm by 0.5 mm. Face and front dark metallic green with slight blackish-brown pollen; eyes essentially contiguous below, anterior facets somewhat enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista near half again as long as face.

Thorax dark metallic green, more brownish on pleura, with slight pollen; setae brownish; about 6 pairs of small acrostichals; 7 pairs of dorsocentrals, only hind pair rather long; scutellum hind margin evenly rounded, bristles as near sides as middle.

Legs brownish, trochanters and tip of forecoxa rather pale; setae mostly dark. Fore- and middle coxae with a few small hairs anteriorly; forefemur and middle femur (Figure 191) with a series of about 10 setae on the ventral surface, setae about as long as widths of tibiae, those on forefemur very slender and pale and difficult to see, those on middle femur black and distinct; hind femur with a few small black setae antero-ventrally especially near tip; fore- and hind tibiae toward tips and hind basitarsus with distinctly pale hairs ventrally; middle tibia with dark rather erect hairs ventrally near tip; hind tibia with very small dorsal setae near base and distal third, larger more

distinct dorsal near tip. Foretarsus (Figure 190) with segments 1 and 2 compressed, 3 flattened and slightly broader distally, lengths of segments from base as 7-3-4-3-4; middle tarsus as 8-6-4-3-3; hind tarsus as 9-9-6-4-5.

Wing (Figure 189) elongate-oval, hind margin evenly rounded, anal angle not prominent, surface clear, veins brown; vein 2 slightly and evenly arched, curving slightly but distinctly forward at tip; veins 3 and 4 nearly straight, diverging from near base; crossvein perpendicular to vein 4, two-thirds as long as last of vein 5; vein 6 represented by weak fold lying near anal margin. Knob of halter blackish.

Abdomen (Figures 192, 193) slightly longer than thorax, cylindrical, somewhat compressed, brown with blackish pollen above; sternites without auxiliary genitalia. Hypopygium very small, capping tip of preabdomen, bearing a pair of pale brown slender bent lamellae, each lamella bearing about 3 long pale brownish setae near tip; short brownish stylus visible as inner appendage.

FEMALE.—Similar to male, but lower face as wide as antennal segment 1, anterior eye facets only slightly enlarged; femora without longer ventral setae; foretarsus plain, lengths of segments from base as 5-2-2-2-3; abdomen slightly flattened.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, near Huajuapán de León, from wet rocks by small shaded waterfall in eroded grazed area, 11 August 1962, H. Robinson (USNM 70324). Paratypes: same data as holotype, 4 ♂ and 5 ♀.

NOTE.—The species is one of four in the *E. simplex* group having a series of distinct erect ventral setae on the male fore- and middle femora. These include, in addition to this and the following two species, an undescribed species from San Mateo County, California. The California species differs most obviously by the much larger third segment of the male foretarsus, and the less tapered hypopygial lamella bearing about five setae distally.

Enlinia ciliifemorata, new species

FIGURES 194-198

MALE.—Length 0.8 mm; wing 0.9-1.1 mm by 0.3-0.4 mm. Front slightly more than twice as wide as high, dark metallic green obscured by blackish pollen; face concolorous, narrowed below, eyes essentially contiguous in lower half, anterior facets enlarged. Palpus

dark; proboscis dark with yellowish tip. Antenna black, segment 3 blunt, arista half again as long as face.

Mesoscutum dark metallic bluish nearly obscured by blackish pollen, pleura more brown; setae dark with pale reflections, 5-7 pairs of small acrostichals; 6 or 7 pairs of dorsocentrals, only hind pair rather long; scutellum hind margin gradually and evenly rounded, bristles as near sides as middle.

Legs brownish with pale trochanters; setae mostly dark. Forecoxa with rather pale hairs anteriorly; forefemur (Figure 194) and middle femur (Figure 195) each with a row of 8-10 slender erect pale anteroventrals, basal 1 slightly longer and more erect; middle tibia (Figure 195) with a few small erect ventral hairs near tip; hind tibia with 2 or 3 very small dorsals. Foretarsus (Figure 194) with segments 1 and 2 thickened, 3 and 4 comparatively narrow, 5 somewhat broad, lengths of segments from base as 7-3-3-2-5; middle tarsus as 8-5-4-3-5; hind tarsus as 8-9-6-5-6.

Wing (Figure 197) elliptical, hind margin evenly rounded; vein 2 evenly arching and curving distinctly forward at tip; vein 3 ending slightly before wing tip; crossvein two-thirds as long as last of vein 5. Knob of halter brown.

Abdomen (Figure 196) usually about as long as thorax, cylindrical, blackish pollinose with very slight metallic reflections, setae small and dark; sternites without auxiliary genitalia. Hypopygium small, partially immersed in tip of preabdomen, brown; with pair of small spatulate brownish lamellae, each lamella bearing many setae on apex and distal margins.

FEMALE.—Similar to male, but face below as wide as antennal segment 1, eye facets all small; 6-8 pairs of acrostichals and dorsocentrals; fore- and middle femora and middle tibia without longer or erect setae ventrally; wing (Figure 198) with crossvein up to three-fourths as long as last of vein 5.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, above Rio Valle Nacional, from wet shaded rocks, by waterfall in ravine, 14 May 1963, H. Robinson (USNM 70325). Allotype ♀: Oaxaca, Sierra Juarez, Route 175 about 100 km from Tuxtepec, 16 May 1963. Paratypes: same locality as holotype, 21 December 1962, 1 ♂; same locality as allotype, 16-18 May 1963, 23 ♂ and 9 ♀; all collected by H. Robinson.

NOTE.—The species is close to *E. seriata*, but the hypopygial lamellae of *E. ciliifemorata* are straight with more setae. The male foretarsi seem to differ slightly also.

Enlinia exigua, new species

FIGURES 199-202

MALE.—Length 0.8 mm; wing 1.1 mm by 0.4 mm. Front about twice as wide as high, dark metallic blue nearly obscured by brackish-brown pollen; face concolorous, narrowed below, eyes contiguous in lower half; anterior eye facets enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Mesoscutum shining metallic dark blue with slight pollen, pleura more brown; setae dark with pale reflections; 3 pairs of small acrostichals; 5 pairs of dorsocentrals, hind pairs longer; scutellum hind margin sharply rounded in middle, bristles as near each other as to sides.

Legs black with dark setae. Forecoxa with a few hairs anteriorly; forefemur (Figure 199) with rather long slender erect seta ventrally near base, about 6 long slender rather erect setae following along anteroventral surface; middle femur (Figure 201) with erect slender anteroventral at base followed by about 8 erect slender setae; middle tibia with 1 minute dorsal; hind tibia with 2 or 3 minute indistinct dorsals. Foretarsus (Figure 199) with segments 1 and 2 rather compressed, 3 flattened with stout black seta posteriorly, 4 and especially 5 broadened and flattened, lengths of segments from base as 7-5-4-4-6; middle tarsus as 10-6-4-3-7, segment 5 slightly enlarged; hind tarsus as 10-9-7-4-6.

Wing (Figure 200) elliptical, with evenly but shallowly rounded anal margin, clear; vein 2 evenly arched, curved distinctly forward at tip; vein 3 curved slightly, straightened at tip, ending just before wing tip; crossvein two-thirds to three-fourths as long as last of vein 5. Knob of halter black.

Abdomen (Figure 202) about as long as thorax, cylindrical to rather compressed, brown with blackish pollen above, setae dark; sternites without auxiliary genitalia. Hypopygium small, partly immersed in tip of preabdomen, brown, with pair of small black triangular lamellae below, each lamella bearing 8 or more long slender black setae; inner appendages pale, slender, longest pair with small hook on end.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, Sierra Juarez, Route 175 at 100 km marker, rocks around roadside spring, in rain forest area, 18 May

1963, H. Robinson (USNM 70326). Paratype: same data as holotype, 1 ♂.

NOTE.—The species seems the most distinct of those in the *E. simplex* group that have the male fore- and middle femora fringed below. The species differs from *E. seriata* and its other relatives by the black legs which lack erect ventral setae on the middle tibiae, and by the black triangular hypopygial lamellae.

Enlinia latipennis, new species

FIGURES 203-206

MALE.—Length 1.0 mm; wing 1.2 mm by 0.5 mm. Face and front (Figure 206) dark metallic green dulled with blackish-brown pollen; face narrow below, eyes usually not quite contiguous, anterior eye facets enlarged. Palpus and proboscis dark, latter with yellowish tip. Antenna brown, segment 3 blunt, arista half again as long as face.

Thorax dark brown with slight metallic reflections and blackish pollen above; setae dark; about 5 pairs of small acrostichals; 6 or rarely 7 pairs of dorsocentrals, only hind pairs rather long; scutellum rather sharply rounded at middle of hind margin, bristles distinctly nearer middle than sides.

Legs brownish with anterior trochanters rather pale; setae mostly dark. Forecoxa with a few dark hairs anteriorly; femora without distinctive ventral setae; hind tibia with 2 or 3 small dorsals. Foretarsus (Figure 203) with segments 1 and 2 slightly thicker than others, 3 with small but distinct ventral seta, lengths of segments from base as 8-4-4-4-6; middle tarsus as 8-7-5-4-5; hind tarsus as 10-10-8-6-6.

Wing (Figure 204) rather oblong-oval, with evenly rounded hind margin; vein 2 slightly and evenly arched, curving distinctly forward distally; vein 3 ending in the rather broadly rounded wing tip; crossvein two-thirds as long as last of vein 5. Knob of halter brown.

Abdomen (Figure 205) as long as thorax, cylindrical, brown with blackish pollen above, setae dark; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown, with a pair of small pale-brown setiferous lamellae and with longer rodlike inner appendages.

FEMALE.—Similar to male, but face below as wide as antennal segment 1; eye facets all small; foretarsus plain, lengths of segments from base as 8-3-3-3-4;

crossvein of wing three-fourths or more as long as last part of vein 5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, Sierra Juarez, Route 175 near 100 km marker, from wet rocky ravine in rain forest area, 17 May 1963, H. Robinson (USNM 70327). Paratypes: same general locality as holotype, 100–104 km, 17–19 May 1963, 19 ♂ and 13 ♀.

NOTES.—The hypopygial lamellae are most similar to those of *E. scabrida* and *E. ciliifemorata*, but *E. latipennis* is distinct by the plain legs and the more broadly rounded wing apex. I have had great difficulty separating the females from those of *E. magnicornis* which occur in the same area. For the present I have considered those with more beadlike segments of the foretarsus as *E. latipennis*.

In addition to having some resemblance and perhaps relationship to *E. magnicornis*, some characters such as the broadly rounded wing apex are reminiscent of the *E. montana* group. In spite of the marked differences between the *E. simplex*, *E. magnicornis*, and *E. montana* groups, they may be rather closely related.

Enlinia scabrida, new species

FIGURES 207–211

MALE.—Length 0.8 mm; wing 0.8 mm by 0.3 mm. Face and front dark metallic green dulled with blackish-brown pollen; front slightly over twice as wide as high; face narrowed below, eyes essentially contiguous below, anterior facets enlarged. Palpus and proboscis dark. Antenna blackish, segment 3 blunt, arista half again as long as face.

Thorax dark metallic bluish, nearly obscured by blackish pollen; setae brown with pale reflections, about 5 pairs of small acrostichals; 6 or rarely 7 pairs of dorsocentrals, only hind pair rather long; scutellum hind margin evenly rounded, bristles slightly nearer middle than sides.

Legs usually brown with pale trochanters; setae mostly dark. Forecoxa with a few dark hairs anteriorly; fore- and middle femora each with a small erect slender anteroventral seta at base; middle and hind femora with a few longer anteroventrals distally; middle tibia (Figure 211) with short stiff erect black setae ventrally, these more pronounced on distal half; hind tibia with 2 or 3 minute dorsals. Foretarsus (Figure 210) with segment 1 slightly thickened, 2 very small, 3 larger than 2nd, with minute black seta ventrally, lengths of

segments from base as 7-2-4-3-4; middle tarsus as 8-5-4-3-4; hind tarsus as 7-9-6-5-5.

Wing (Figure 207) rather narrowly elliptical, hind margin evenly rounded; vein 2 evenly arched, curving slightly but distinctly forward at tip; vein 3 ending just before wing tip; crossvein about half as long as last of vein 5. Knob of halter brown.

Abdomen (Figure 209) slightly longer than thorax, cylindrical, brownish or blackish, setae small and dark; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown, with pair of very small oval setiferous brown lamellae.

FEMALE.—Similar to male but lower face nearly as wide as antennal segment 1, anterior eye facets not notably enlarged; femora and middle tibia without erect ventral setae; foretarsus plain, lengths of segments from base as 7-4-3-2-6; wing (Figure 208) generally slightly broader and laxer in relation to length, crossvein three-fifths as long as last of vein 5.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, above Rio Valle Nacional, 14 May 1963, H. Robinson (USNM 70328). Paratypes: same locality as holotype, on wet rocks by streams and waterfalls, 13–16 May 1963, 26 ♂ and 16 ♀; all collected by H. Robinson.

NOTE.—The erect ventral setae on the male middle tibia are rather distinctive. Otherwise in the *E. simplex* group, only a few species with a ventral fringe on the femora have middle tibiae in any way similar.

Enlinia brachychaeta, new species

FIGURES 212–214

MALE.—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Face and front dark metallic greenish, with only slight brownish pollen; face narrowed below, eyes essentially contiguous in lower half, anterior eye facets somewhat enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista half again as long as face.

Thorax metallic greenish, more brownish on pleura, with slight pollen; setae dark with pale reflections; 5 or 6 pairs of small acrostichals; about 6 pairs of dorsocentrals, hind pairs longer; scutellum hind margin evenly curved, bristles slightly nearer middle than sides.

Trochanters, extreme tips of coxae, and bases of femora very pale, legs otherwise brownish; setae mostly dark. Fore- and middle coxae with short hairs anteriorly; forefemur with erect slender seta ventrally near base; middle and hind femora with only a few

longer setae anteroventrally near tips; foretibia with a long slender ventral seta near tip; middle tibia with small dorsal near basal third; hind tibia with 2 or 3 small dorsals. Foretarsus (Figure 214) with segment 1 compressed and bearing short very stout black spurlike seta on lower posterior corner, segment 2 slightly compressed, 3 inserted toward dorsal edge of 2nd, broadened distally, lengths of segments from base as 5-2-2-2-3; middle tarsus as 5-3-3-2-3; hind tarsus as 5-5-4-3-3.

Wing (Figure 212) rather oval, hind margin gradually and evenly rounded, wing clear, veins brown; vein 2 slightly and evenly arched, distinctly curving forward at tip; veins 3 and 4 nearly straight, diverging from near base; crossvein perpendicular to vein 4, slightly shorter than last of vein 5; vein 6 represented by slight fold lying near anal margin. Knob of halter blackish.

Abdomen (Figure 213) slightly longer than thorax, cylindrical, slightly compressed, dull brownish with short dark setae; sternites 3 and 4 each with a pair of setae near middle, those on 4th distinctly stouter. Hypopygium small, capping tip of preabdomen, brown, bearing a pair of rather large oval pale lamellae, each lamella bearing a fringe of long black marginal setae; inner appendages small.

FEMALE.—Not seen.

TYPE-DATA.—Holotype ♂ from Mexico: San Luis Potosi, El Salto, on moist rock beside river, just below upper falls, 15 December 1962, H. Robinson (USNM 70329). Paratypes: same data as holotype, 3 ♂.

NOTE.—The species is rather distinct in the *E. simplex* group by the larger hypopygial lamellae, the pairs of setae on the abdominal sternites, and the stout spurlike bristle on the foretarsus.

Elinia unisetosa, new species

FIGURES 215-217

MALE.—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Face and front dark metallic green; front dulled with blackish-brown pollen, slightly over twice as wide as high; face narrowed below, eyes essentially contiguous in lower half, anterior eye facets slightly enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista near half again as long as face.

Thorax metallic dark green above, more brownish on pleura, with slight pollen; setae dark; about 6 pairs of small acrostichals; 5 or 6 pairs of slightly longer

dorsocentrals, hind pair quite long; scutellum hind margin more sharply rounded at setae, bristles as near sides as middle.

Legs yellowish brown with trochanters and distal half of forecoxa paler, tarsi darker; setae mostly dark. Fore- and middle coxae with short hairs anteriorly; forefemur (Figure 216) plain; middle femur with a single rather long erect seta anteroventrally near base; hind femur nearly bare below; foretibia (Figure 216) plain; middle and hind tibiae with only small indistinct dorsals; middle tibia with ventral setae on distal half rather erect. Foretarsus (Figure 216) with segments 1 and 2 compressed and widened, 2nd bearing 1 or 2 short but distinct setae on dorsal margin, segment 3 inserted near dorsal edge of 2nd, broadened somewhat distally, segment 4 inserted in slightly retuse distal margin of 3rd, lengths of segments from base as 5-2-2-2-3; middle tarsus as 5-3-2-2-3, last segments rather flattened; hind tarsus as 6-7-5-4-4.

Wing (Figure 217) rather oval, with slightly but evenly curved hind margin, anal angle not prominent, clear with brown veins; vein 2 slightly and evenly arched, curved slightly but distinctly forward at tip; veins 3 and 4 nearly straight, diverging from near wing base; crossvein nearly perpendicular to vein 4, about two-thirds as long as last of vein 5; vein 6 represented by slight fold lying near anal margin. Knob of halter blackish.

Abdomen (Figure 215) only slightly longer than thorax, cylindrical, slightly compressed, dull brownish, with short dark setae; sternites without evident auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown, bearing a pair of reflexed narrow rectangular dark lamellae, each lamella with a few long dark marginal setae; inner appendages pale, slender and branched.

FEMALE.—Similar to male, with lower half of face as wide as antennal segment 1; middle femur without erect seta ventrally near base; foretarsus plain, lengths of segments from base as 6-2-2-2-3; abdomen rather stout, slightly flattened.

TYPE-DATA.—Holotype ♂ and allotype ♀ from Mexico: Oaxaca, above Rio Valle Nacional, on wet rocks in shaded ravines, 14 May 1963, H. Robinson (USNM 70330). Paratypes: same locality as holotype, 20-21 December 1962, 3 ♂ and 1 ♀; 13-14 May 1963, 6 ♂ and 2 ♀; Oaxaca, Sierra Juarez, 16 May 1963, 1 ♂; Chiapas, about 10 km south of Pichucalco,

on wet roadside ledges, 24 May 1963, 1 ♂; all collected by H. Robinson.

NOTE.—This species, like *E. simplex*, lacks notable characters. Distinctions are based primarily on the detailed structure of the male foretarsus and genitalia.

Enlinia simplex, new species

FIGURES 218–221

MALE.—Length 1.0 mm; wing 1.0 mm by 0.4 mm. Face and front dark metallic green; front dulled with blackish-brown pollen, slightly over twice as wide as high; face narrowed below, eyes essentially contiguous in lower half; anterior eye facets somewhat enlarged. Palpus and proboscis dark. Antenna black, segment 3 blunt, arista nearly half again as long as face.

Thorax metallic dark green above, a little more brownish on pleura, with slight pollen; setae yellowish brown; about 6 pairs of small acrostichals; 6 or rarely 7 pairs of dorsocentrals, only hind pairs rather long; scutellum hind margin rather sharply rounded in middle or evenly rounded, bristles usually slightly nearer middle than sides.

Legs yellowish brown with trochanters, most of fore-coxa, and sometimes most of forefemur rather pale; setae mostly dark. Fore- and middle coxae with numerous pale hairs anteriorly; fore- and middle femora with only small setae, sometimes a weak erect pale seta below near base of middle femur; hind femur with a few longer setae anteroventrally toward tip; middle tibia with small but distinct seta near distal third; hind tibia with small dorsal setae near base, distal third, and tip. Foretarsus (Figure 218) with segments 1 and 2 compressed, 3 cylindrical with a cushion of setae anteriorly near base and a small stout seta posteroventrally near tip, lengths of segments from base as 5-2-4-2-3; middle tarsus as 6-4-3-3-3; hind tarsus as 6-7-5-4-4.

Wing (Figure 221) oval, with evenly curved hind margin, anal angle not prominent, wing surface slightly brownish tinged or clear, veins brown; vein 2 slightly but evenly arched, curved distinctly forward at tip; veins 3 and 4 nearly straight, diverging from near base; crossvein nearly perpendicular to vein 4, about as long as last of vein 5; vein 6 represented by slight fold lying near anal margin. Knob of halter blackish.

Abdomen (Figure 219) slightly longer than thorax, cylindrical, slightly compressed, covered above with

dull brownish pollen, rather translucent on sides, with short dark setae; sternites without auxiliary genitalia. Hypopygium small, capping tip of preabdomen, brown, bearing a pair of narrow rather truncate pale brown lamellae (Figure 220), each lamella with a few long whitish marginal setae mostly near tip; inner appendages slender, pale brownish.

FEMALE.—Similar to male, with lower face as wide as antennal segment 1; middle femur without erect seta near base; foretarsus plain; abdomen slightly flattened.

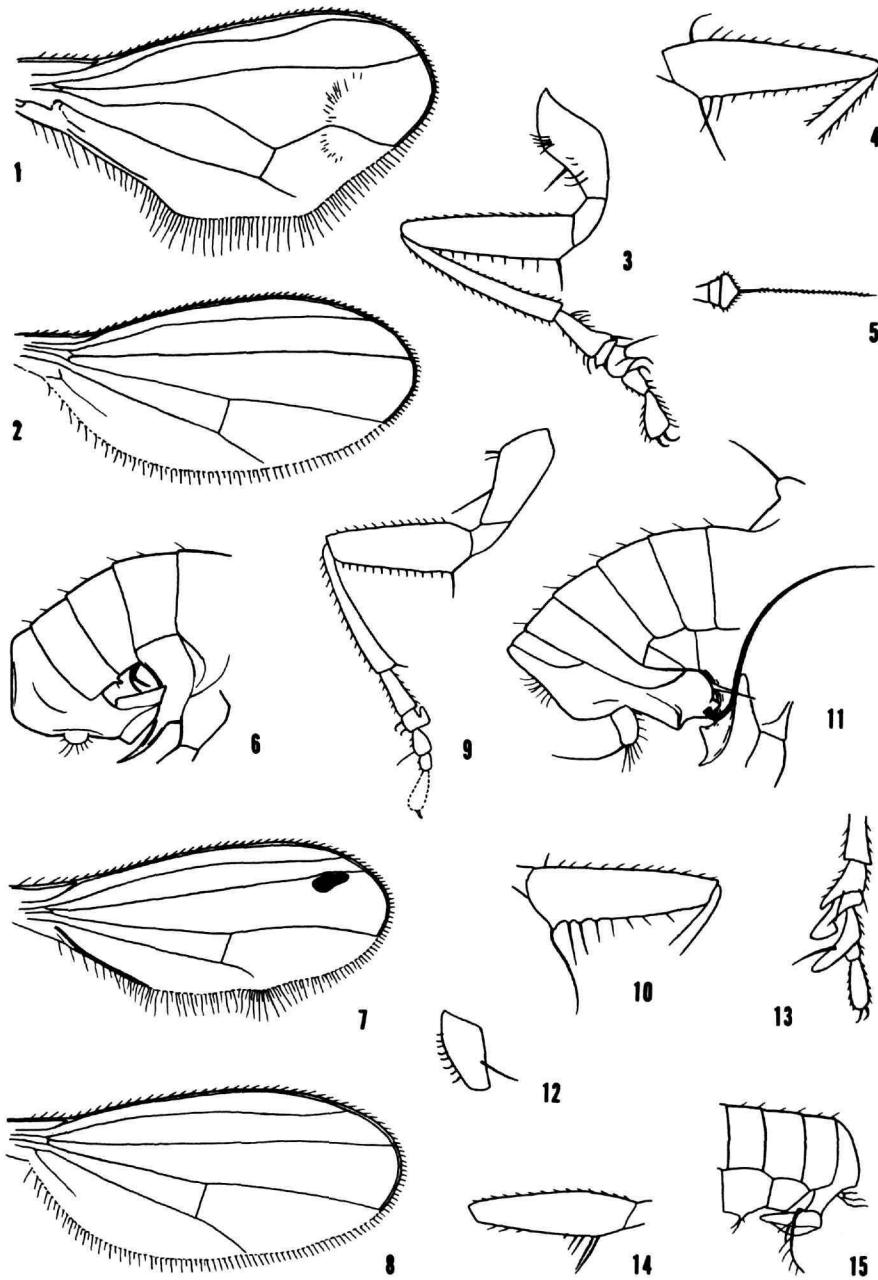
TYPE-DATA.—Holotype ♂ from Mexico: Oaxaca, near Huajuapán de León, from wet rocks by small shaded waterfall in eroded grazed area, 11 August 1962, H. Robinson (USNM 70331). Allotype ♀: Chiapas, near Bochil, from rocks in stream, pasture, 23 May 1963. Paratypes: same data as allotype, 4 ♂ and 2 ♀; Chiapas, Ixtapan, on moist limestone at roadside above river, 23 May 1963, 3 ♂; San Luis Potosí, a few km south of Tamazunchale, on partially shaded limestone moist from seepage, rocky ravine, 22 December 1961, 2 ♂; Hidalgo, just north of Chapulhuacán, on wet rock face above roadside spring, 10 and 30 May 1963, 7 ♂ and 5 ♀; Veracruz, escarpment above Acultzingo, on wall of roadside shrine wet from waterfall, 7 August 1962, 8 ♂; all collected by H. Robinson.

NOTE.—The species seems close to *E. unisetosa*, but differs by the shape of the third segment of the foretarsus, the size of the ventral seta on the middle femur, and the shape of the hypopygial lamella.

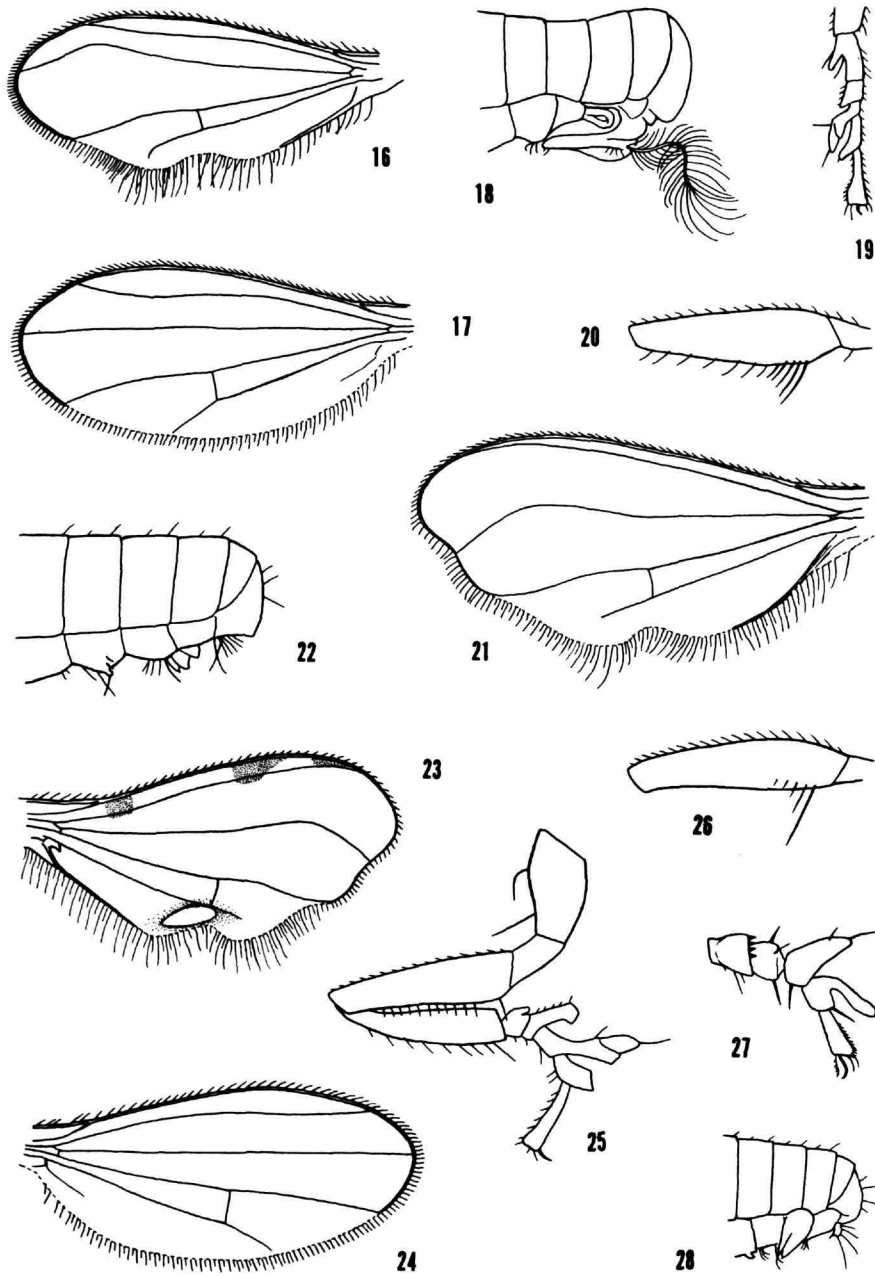
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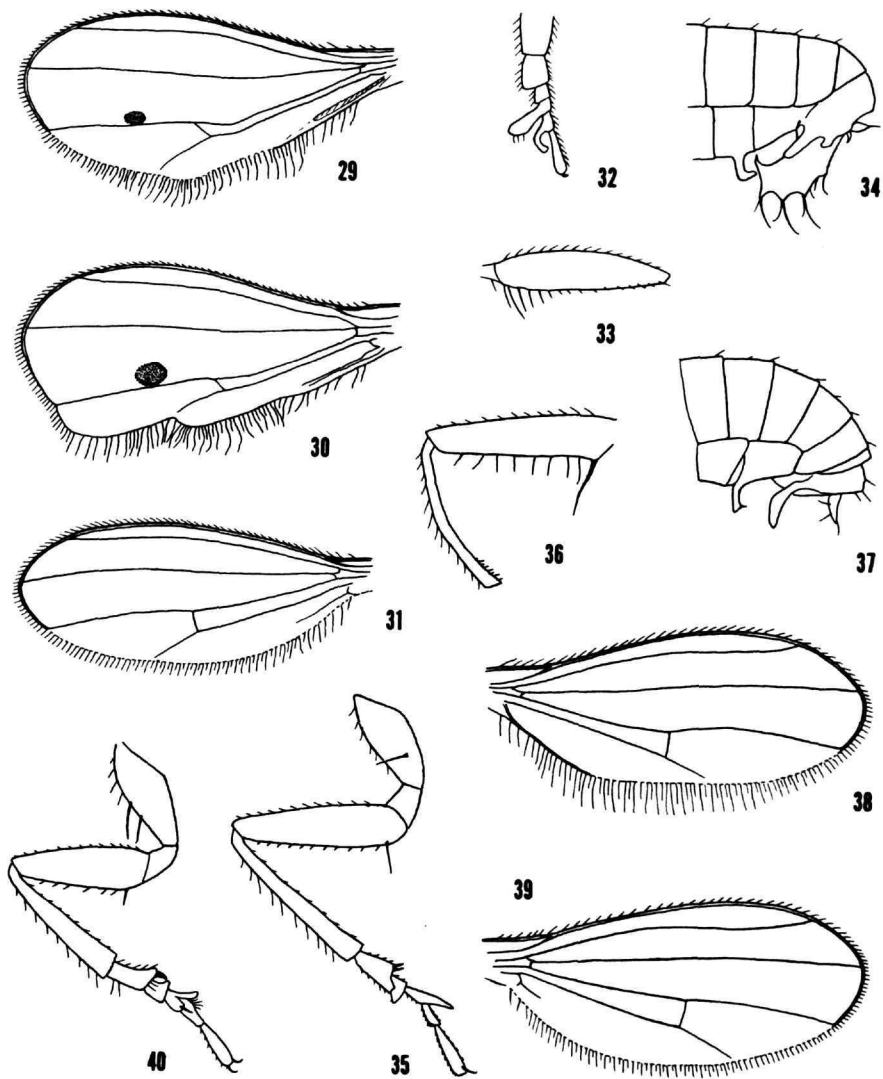
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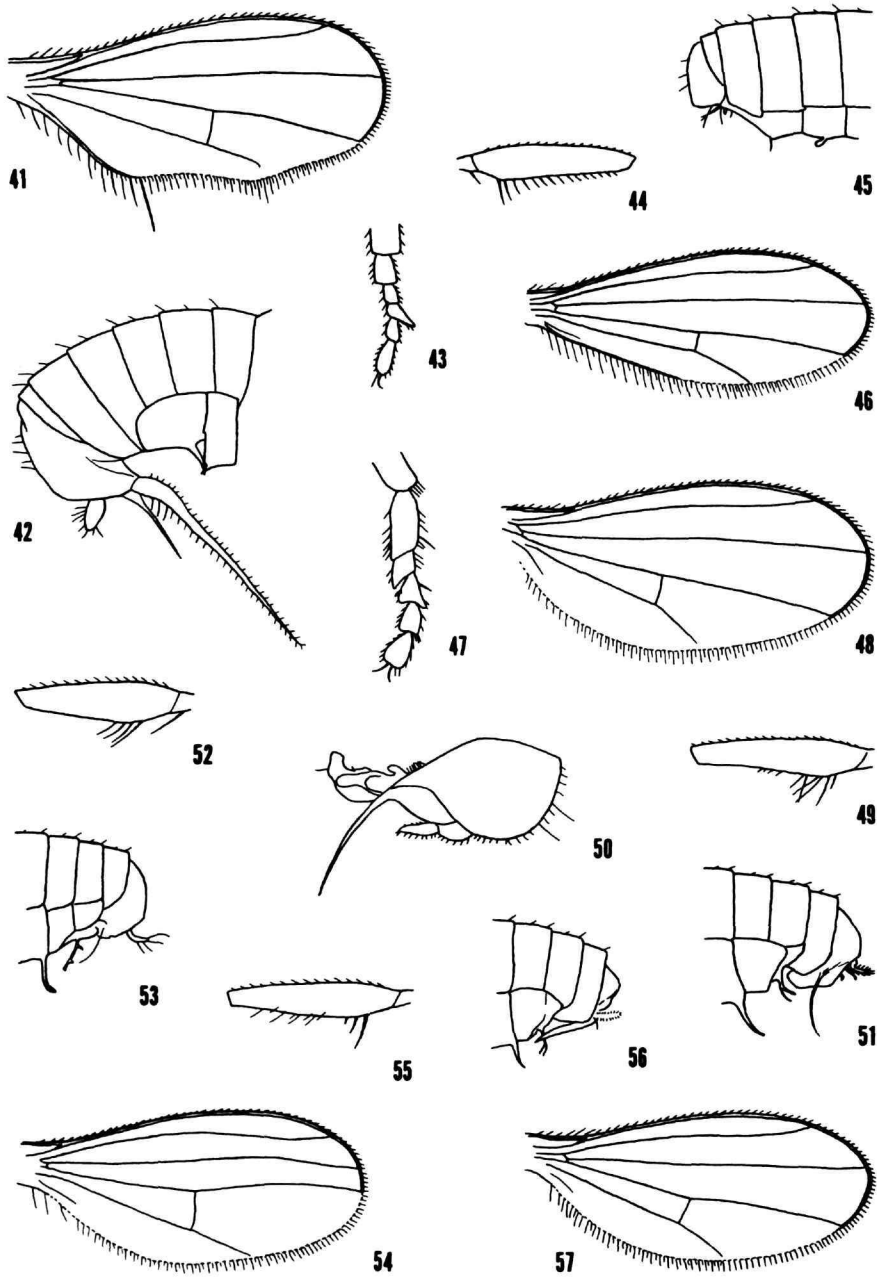
FIGURES 1-15.—*Emlinia elegans*, new species: 1-2, wings, male and female; 3, foreleg, male; 4, middle femur, male; 5, antenna, male; 6, abdomen, male. *E. ornata*, new species: 7-8, wings, male and female; 9, foreleg, male; 10, middle femur, male; 11, abdomen, male. *E. anomalipennis*, new species: 12, forecoxa, male; 13, foretarsus, male; 14, middle femur, male; 15, abdomen, male.



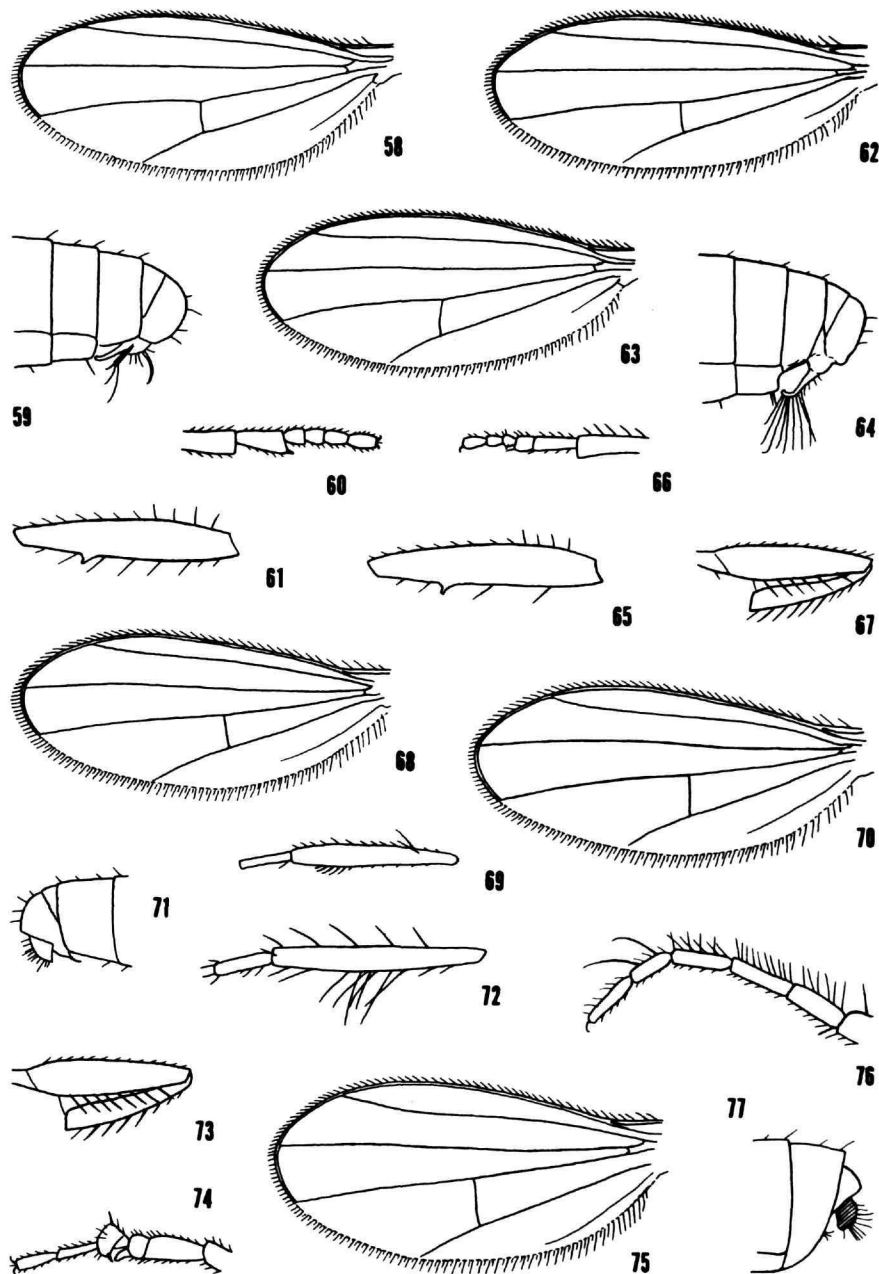
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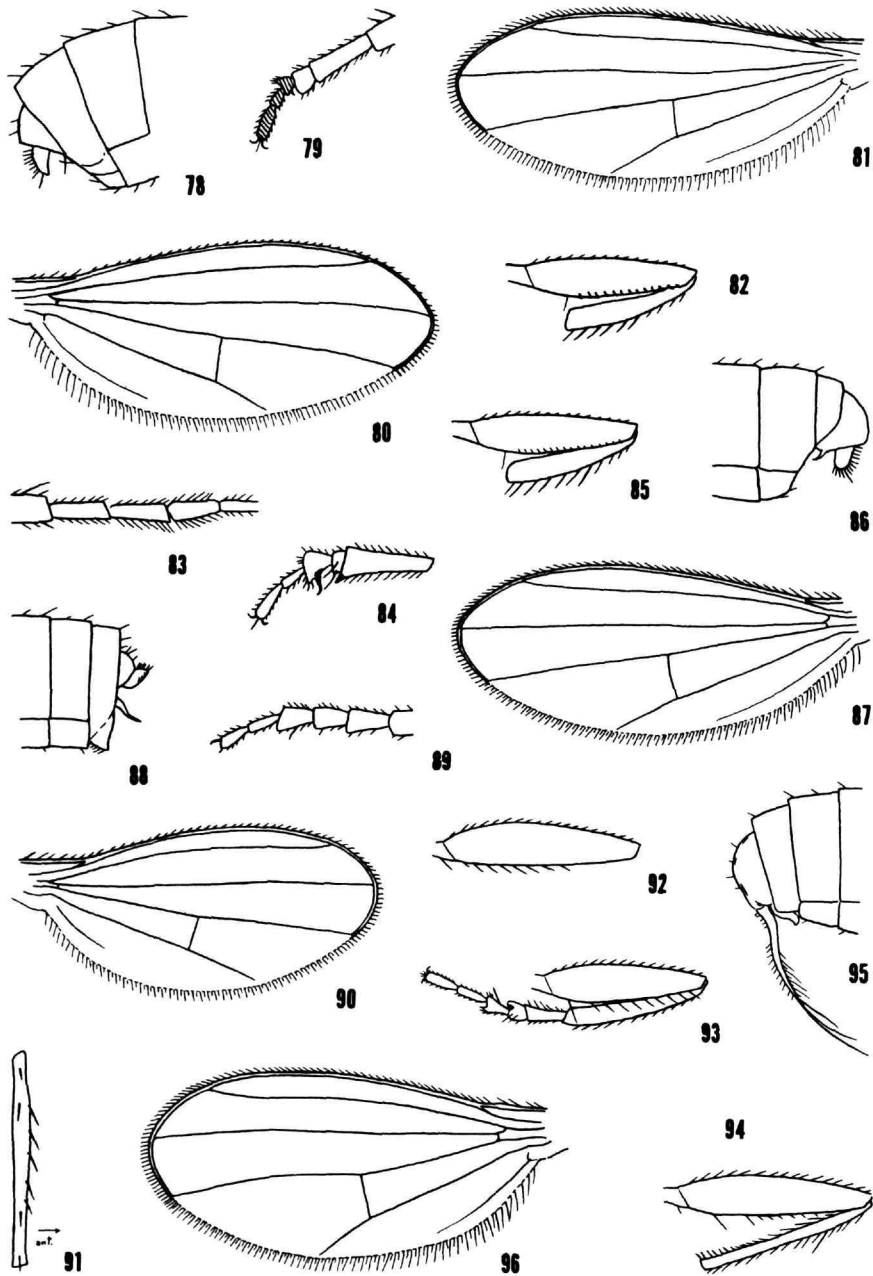
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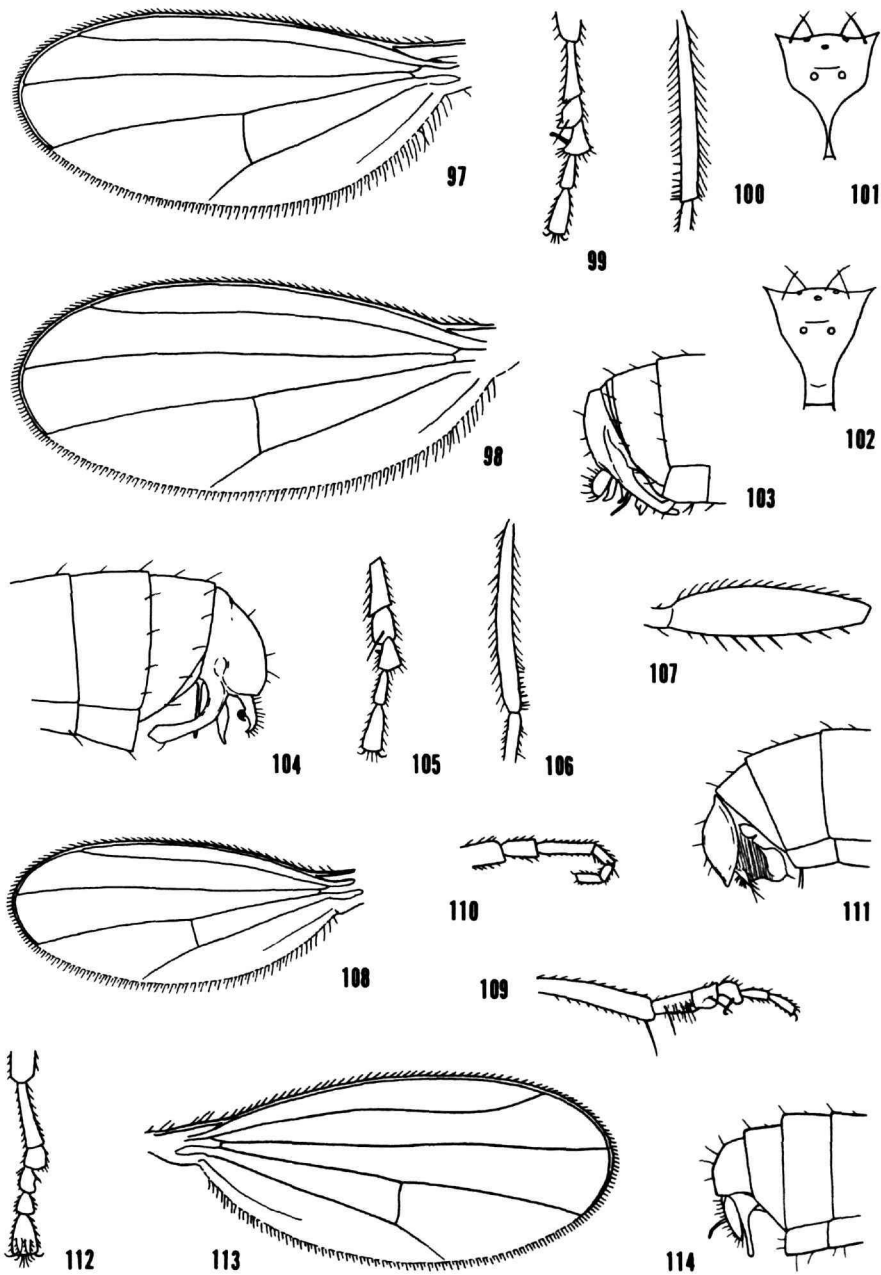
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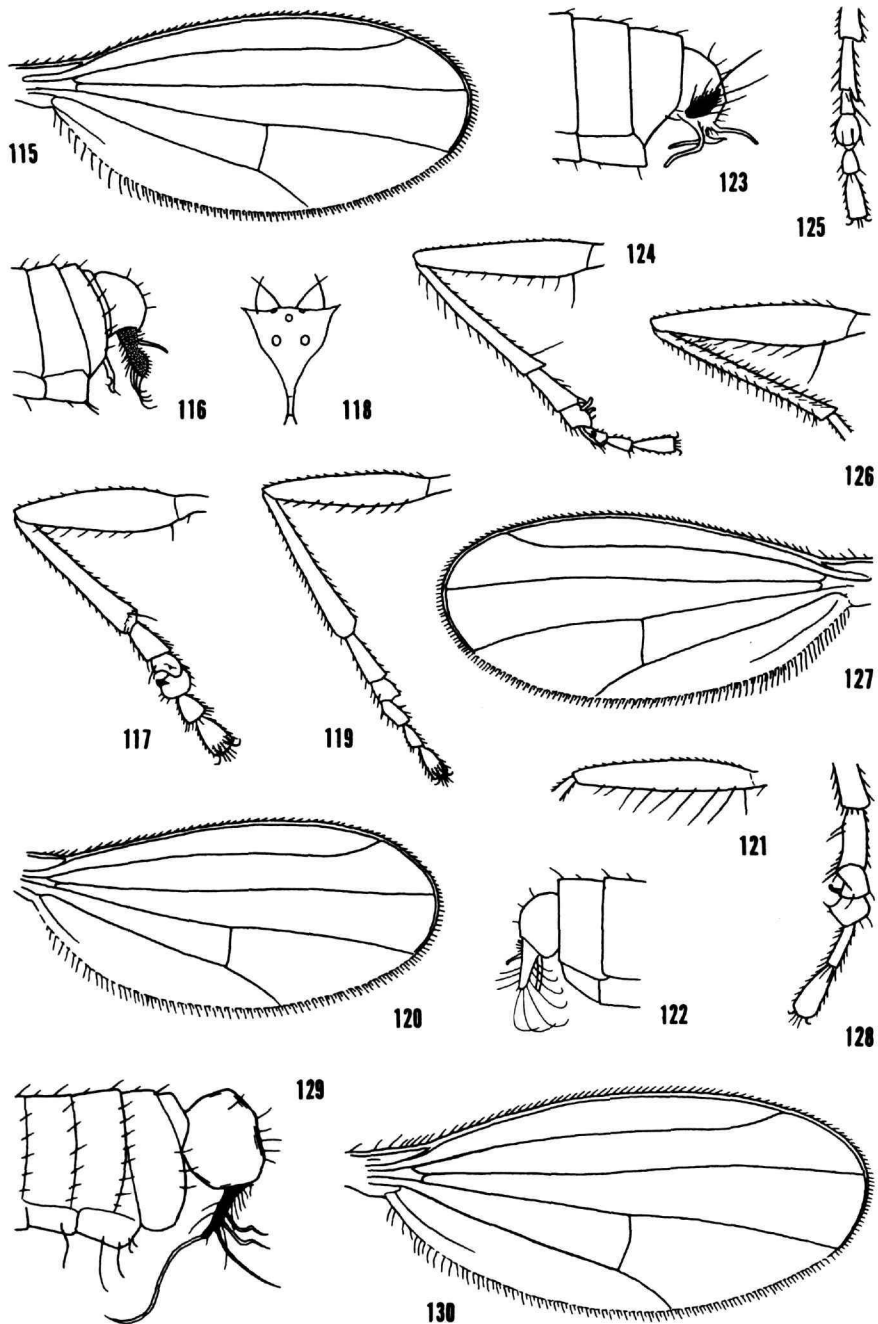
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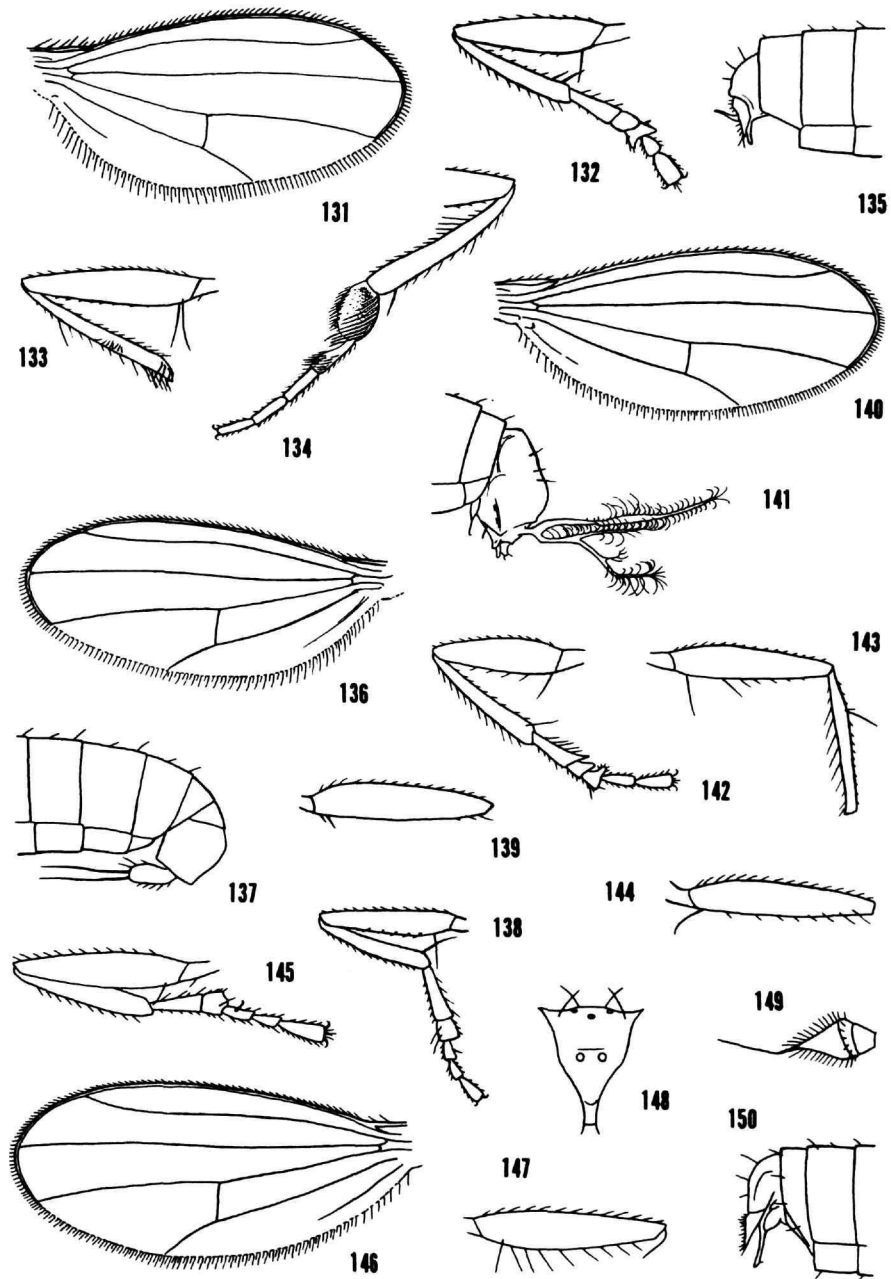
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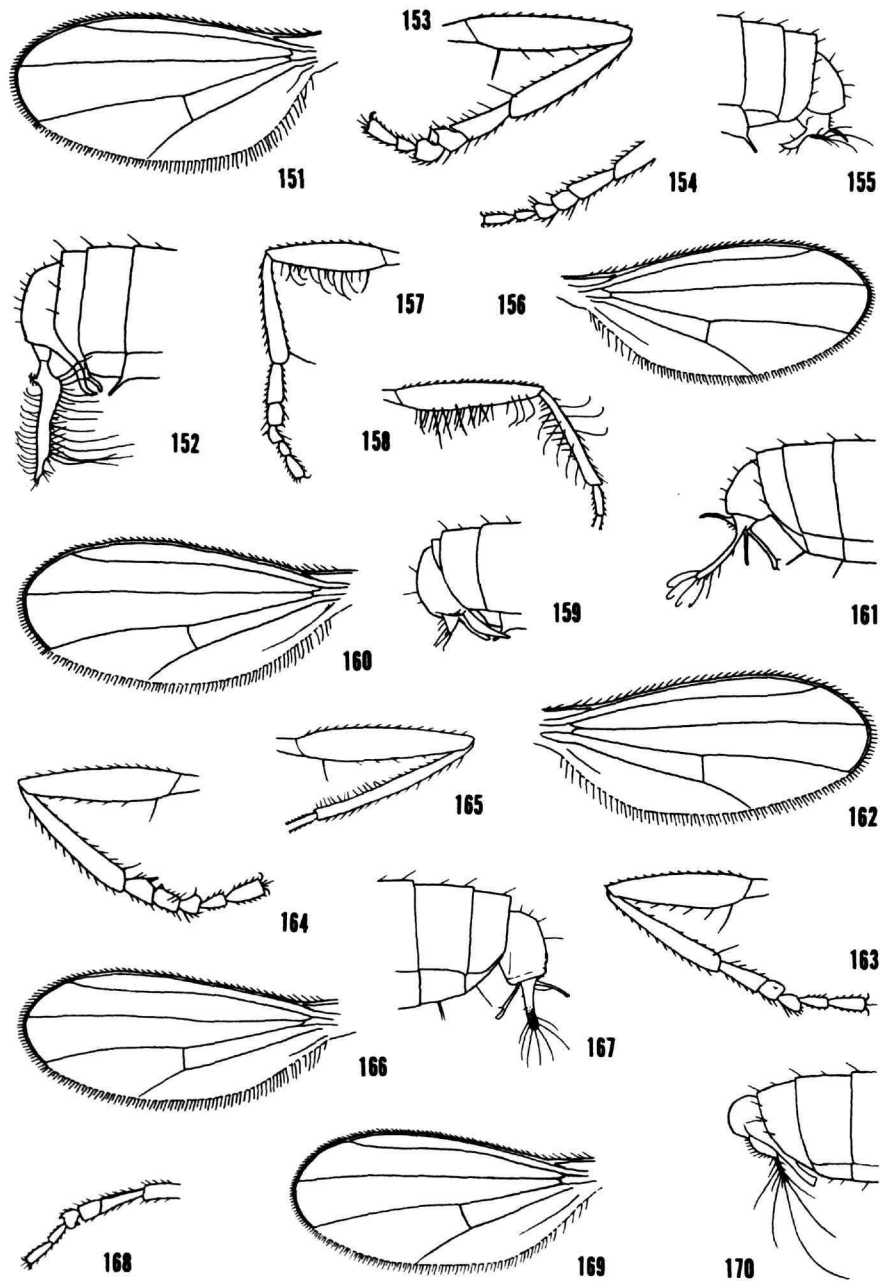
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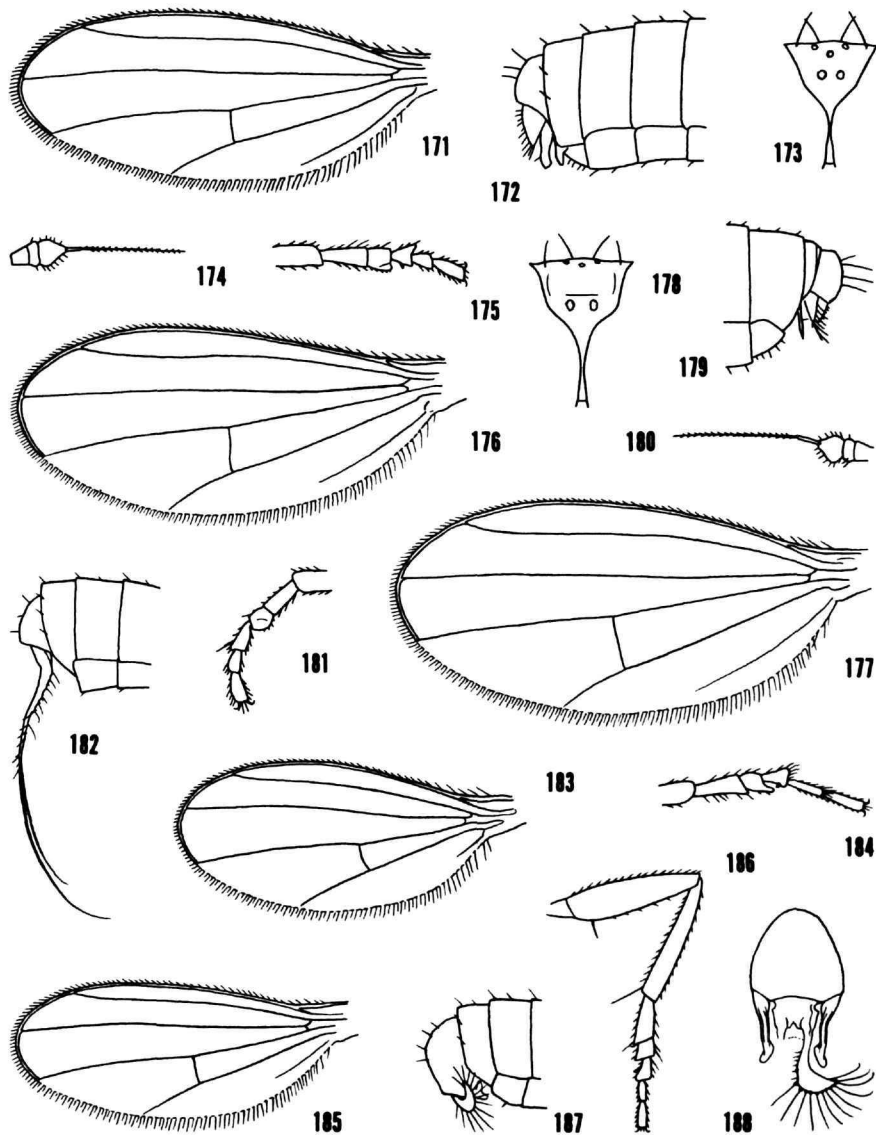
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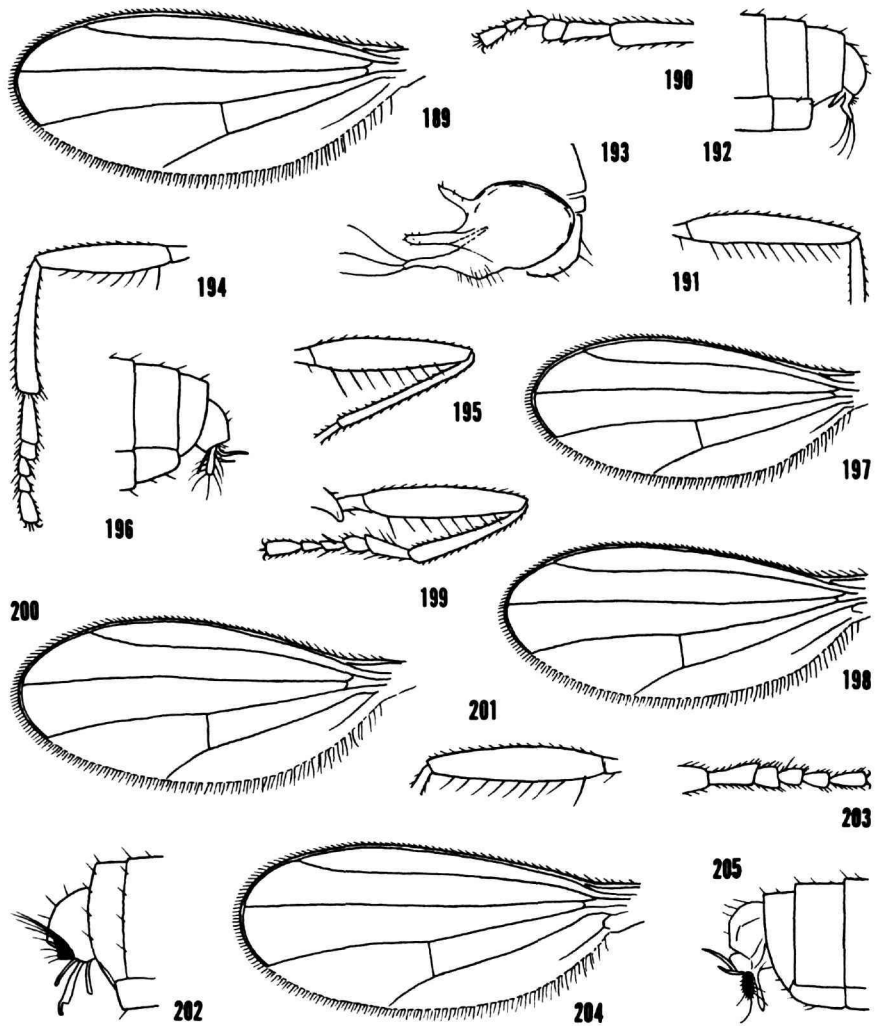
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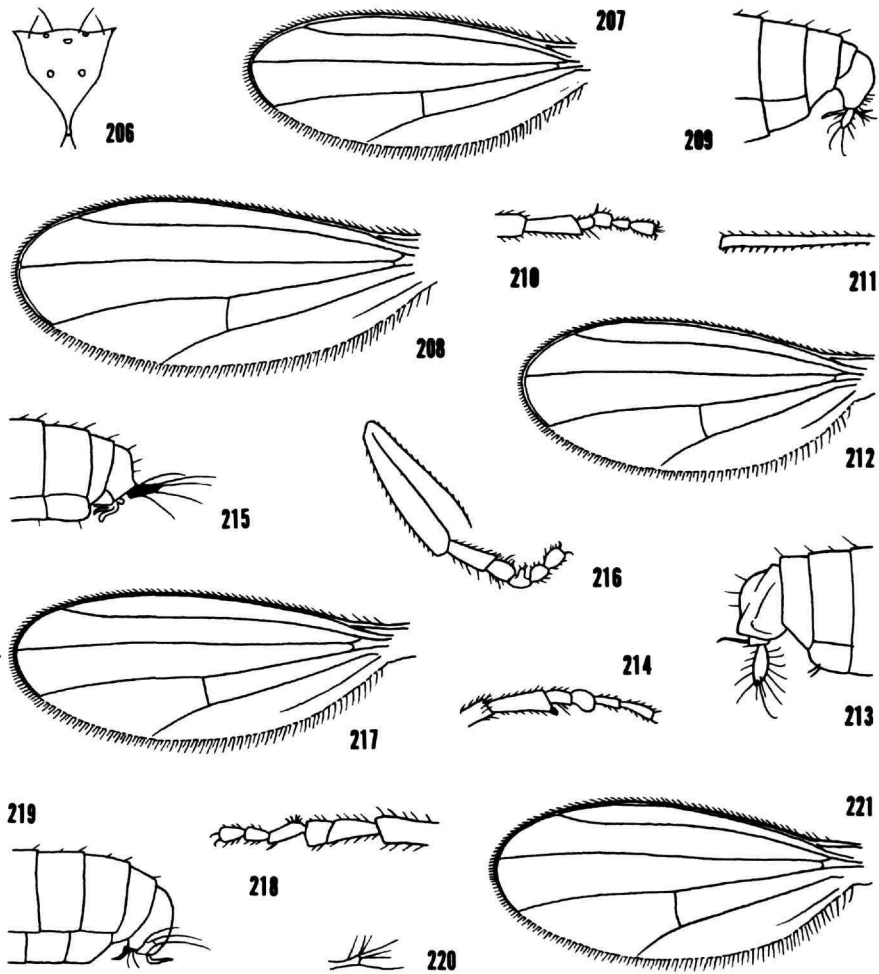
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