Studies of Neotropical Caddisflies, LIII: A Taxonomic Revision of the Subgenus *Curgia* of the Genus *Chimarra* (Trichoptera: Philopotamidae)

OLIVER S. FLINT, Jr.
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Studies of Neotropical Caddisflies, LIII: A Taxonomic Revision of the Subgenus *Curgia* of the Genus *Chimarra* (Trichoptera: Philopotamidae)

*Oliver S. Flint, Jr.*
ABSTRACT

Flint, Oliver S., Jr. Studies of Neotropical Caddisflies, LIII: A Taxonomic Revision of the Subgenus *Curgia* of the Genus *Chimarra* (Trichoptera: Philopotamidae). *Smithsonian Contributions to Zoology*, number 594, 131 pages, 446 figures, 26 maps, 1998.—The genus *Chimarra*, subgenus *Curgia* Walker, is revised, resulting in 92 species being recognized, of which 52 are described as new. The subgenus, which is exclusively New World in distribution, is characterized in the adult stage, and its relationships are briefly discussed. A key to the species, based primarily on the male genitalia, is presented. Diagnostic characters and descriptions are given for all species, the male genitalia are figured, and distribution maps are presented. The subgenus is divided into 16 species groups, which are characterized, their distributions are given, and relationships of the contained species are discussed. Of the 52 names available before this work, 40 are still recognized as valid. Six synonymies are proposed herein: *C. martimoselyi* Botosaneanu under *morio* (Burmeister); *alayoi* Botosaneanu under *moesta* Banks; *punctulata* Flint under *parana* Flint; *catarinensis* Flint under *scopuloides* Flint; and *brustia* Ross and *alamosa* Denning under *laguna* Ross. One species, *barrettae* (Banks), is resurrected from the synonymy of *mexicana* (Banks).
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Studies of Neotropical Caddisflies, LIII: A Taxonomic Revision of the Subgenus *Curgia* of the Genus *Chimarra* (Trichoptera: Philopotamidae)

Oliver S. Flint, Jr.

Introduction

Over the past twenty-five years there has been a rapidly increasing number of works on the caddisflies of the Neotropical realm. These studies have been carried out primarily by field oriented specialists on caddisflies, to wit: Botosaneanu, Bueno, Flint, Holzenthal, and Kumanski. As a result, vast quantities of freshly collected, well-prepared material have been accumulating in collections. One of the most commonly collected genera, in nearly all areas except the Chilean, has been the genus *Chimarra*. Species of this genus are found near most types of flowing water, except perhaps the largest, mud-bottomed tropical rivers. Adults come in large numbers to lights at night, although a few have been found to be very active at day and not to show up at lights operated at the same site at night.

Preliminary sorting of collections of this genus showed that a much larger number of species were present than hitherto had been suspected in both the subgenera *Chimarra* s.s. and *Curgia*. This study was conceived initially to make known less than a few dozen species thought to need names in *Curgia*. As the study progressed it became obvious that many more species were present than initially thought, that many of the old ones needed redescriptions in order to clarify their status, and that some species groupings were readily apparent. Consequently the paper has grown to become a full fledged, but still “classical,” revision of the subgenus *Curgia*. Concurrently, Roger Blahnik, under guidance from Ralph Holzenthal at the University of Minnesota, entered into a modern, cladistic revision of the New World Chimarrininae. They have now published the genus *Chimarrhodella* and are working on the species and groupings of *Chimarra* (*Chimarra*), which is as rich in the New World as is *Curgia*.

**HISTORICAL REVIEW**

*Phryganea marginata* was the first species described that is now placed in *Chimarra*. The species was described from Sweden by Linnaeus in 1767 and transferred to (and became the type species of) the new genus *Chimarra* by Stephens in 1829. Unfortunately, the generic name *Chimarra* was emended by Burmeister (1839) to *Chimarrha*, a spelling that was widely used until it was rejected in the 1940s as an invalid emendation (Ross, 1944). *Chimarra marginata* is the only species of *Chimarra* in Europe, but species were soon described from many other parts of the world. The first New World species was described in 1852 by Walker as *Beraea? obscera*; the first Neotropical species was described by the same author in 1860 as *Curgia braconoides* from Hispaniola.

The generic name *Curgia* has had a checkered career. Although proposed in 1860, it was only mentioned in lists for almost the next 50 years. Ulmer (1905c) listed the species *braconoides* under *Chimarrha*, thereby implicitly synonymizing *Curgia*. The generic name remained unused until 1936 when Milne resurrected it for *Chimarrha argentella* Ulmer and for an unspecified number of “tropical and subtropical species,” with forewings marked with “silvery
spots and bars.” Ross (1956) presented a first attempt at characterization of Curgia, but he only had a small fraction of the species available for his consideration. In recent decades, workers on the Neotropical fauna have tended to assign newly described species to either the subgenera Chimarra or Curgia, but without clearly defining them.

Of the 52 species described before this paper was begun, I recognize 40 as still valid. In addition, another 52 species are described as new in this paper, bringing the total to 92 species currently described in the subgenus Curgia. In comparison, in the subgenus Chimarra itself, there are 17 species currently recognized that were described from the United States and Canada and nearly another 75 recognized from Mexico, the West Indies, and southward (Blahnik, in his revision of this subgenus, will be describing another 60 plus species).

**METHODS**

Basic entomological techniques have been used throughout this study. Specimens are generally collected in the field at night when they are attracted to lights, usually ultraviolet or mercury vapor. Depending on individual preference, they may be taken dry in a killing bottle and pinned within 12 hours, or collected directly into 80% ethyl alcohol (however, material preserved this way will deteriorate in time).

Specific identification is dependent on structures of the male terminalia, which can sometimes be seen with sufficient clarity for identification without clearing. More frequently the abdomen must be removed from the thorax and the contents removed by treatment in 10% KOH or NaOH in order to clearly see the genital parts. Because the phallus is mostly within the body, important structures therein are often obscured by surrounding parts. Sometimes the phallus can be pulled with needle-nosed forceps out far enough to see the internal parts, but often this is not sufficient. In general the phallus can not be pulled out of the abdomen from the rear in its entirety. It is better to grasp its base with the forceps from inside the abdomen and pull it inward, gently loosening it from its surroundings until free. It often happens that the tenth tergum will be inverted at the same time, but the sclerites may be returned to their original position by prodding from inside with forceps or a needle. No special efforts were made to evert the endophallus, but sometimes it was everted naturally at death. After study, the phallus is put inside the abdomen to help prevent its loss.

After clearing, the genitalia are washed in alcohol and studied and drawn in glycerine. They are usually stored in glycerine in a microvial attached to the pin with the remaining parts of the specimen. If the body is in alcohol, the abdomen may be returned to the same vial, but if the phallus has been removed, the abdomen should be put into a microvial first to prevent the loss of small parts.

For each species account, lots with no disposition indicated have been placed in the collection of the National Museum of Natural History, Smithsonian Institution. All other material studied herein has been placed in the following collections, as indicated by the acronyms.

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<td>ZSZMH</td>
<td>Zoologische Staatssammlung und Zoologisches Museum, Hamburg, Germany</td>
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**ACKNOWLEDGMENTS**

I am indebted to many individuals and museums who provided material and other help during the course of this study, and without whose cooperation this study would not have been possible. J.M. Kingsolver (late of the Systematic Entomology Laboratory, U.S. Department of Agriculture), while working for H.H. Ross (then at the Illinois Natural History Survey), initiated a study of Chimarra, producing many fine pencil sketches of various undescribed species. These Kingsolver turned over to me to incorporate into studies whenever possible; a few changes have been made on the sketches where I saw things differently, and the sketches of Curgia were inked by Smithsonian staff artist Young T. Sohn, to whom I am most grateful, and are used herein. John C. Morse (Clemson University) ferreted out the material used for the Ross/Kingsolver study while going through the Ross collection at the University of Georgia; these were also made available to
me for use in conjunction with the sketches. R.W. Holzenthal and R.J. Blahnik (University of Minnesota) have participated in many discussions and fully shared their ideas with me during their parallel studies on the other philopotamid genera. I am most grateful to the Trustees of The Natural History Museum, London, for permission to reproduce the excellent figures of the type of Chimarra (Curgia) braconoides from Betten and Mosely (1940).

Subgenus Curgia Walker


Chimarrhodes Müller, 1887:290 [type species: Chimarrha morio Burmeister, 1839, subsequent designation Fischer, 1961:53].—Ulmer, 1907:199 [Chimarrhodes listed as generic synonym of Chimarra].

DESCRIPTION.—Forewing length 4–10 mm; female usually 1–2 mm larger than male. Color various: body and appendages, fuscous, brown, or orange, underparts usually paler; forewing, uniformly fuscous, fuscous marked with white, silver, or golden maculae (Figure 228), or brown marked with golden maculae. Maxillary palpi 5-segmented; second segment longer, often nearly two times, than third, and with an apical tuft of enlarged setae apically on inner face on a slight enlargement of segment (Figure 2). Labial palpi 3-segmented (Figure 3). Head flattened, elongated posteriad. Ocelli 3. Head with anterior, anteromesal, and posterolateral setal warts; posterior setal warts and subtending suture often lacking (especially in orange-bodied species); with anterior tentorial arms long, broadly connected mesally just prior to short, broad posterior arms (Figure 1). Antennae with scape simple, slightly enlarged, flagellar segments unmodified. Mesonotum with scutellum evenly rounded anteriorly (not produced and slightly divided anteromesally) (Figure 1). Spurs 1, 4, 4 (spur of foreleg very reduced in size and easily overlooked). Male foretarsal claws often asymmetrical, varying from nearly equally developed, to one less than half size of other (Figure 4). Forewing venation nearly complete, except M, 3-branched; Rs and adjacent veins simple and straight (in subgenus Chimarra this area is curved and curiously modified, see Kimmins, 1962, fig. 15); crossveins, basal fork of M, and apex of Cu, all pale, indistinct (Figure 5). Hindwing with 4 branches to Rs, 3 to M; 1A and 2A looped together with single vein extending to wing margin, 3A short, extending directly to posterior wing margin; crossveins, base of M, and Cu, all pale, indistinct (Figure 5). Fifth abdominal sternum with sublateral pore surrounded by a large, dark macula, “cellular” in appearance. Male genitalia (Figures 6–9). Eighth tergum usually modified: either slightly produced into a simple posteromesal lobe, often with lateral lobes bearing strong setal brushes and/or with an elongate mesal process. Ninth segment usually enlarged anteroventrally, never with an anterodorsal, rod-like process; posteroventrally with a mesal keel-like lobe, often produced into an elongate process; dorsal margin united to tenth tergum, often narrow and synsclerous, frequently produced dorsally into a thin plate or rod articulating with posterventral margin of tergum 8 (especially common in those species with strongly modified tergum 8), rarely a free-standing process. Tenth tergum usually entire, with apex uparched and hood-like, rarely divided on midline (in a few species, division reaches completely to base of tergum), but never with mesal membranous structure if so divided; often ornamented with processes and lobes; with many apicolateral sensillae. Cerci (or preanal appendages) simple, setate lobes, generally oval in outline, sometimes elongate. Claspers (or inferior appendages) 1-segmented, usually almost equidimensional, occasionally elongate, rarely greatly so. Phallotheca tubular, base produced into a broad dorsal hood open beneath, apicoventral lip almost never produced into a spine-like process; endotheca membranous, eversible, phallosomal sclerite usually a simple ring-like structure with a small ventral rod (rod-and-ring structure), with various numbers of usually short, black spines; rarely with sclerites and spines greatly enlarged, modified, and heavily sclerotized (then with homologies obscure). Female genitalia (not studied in detail in most species; Figure 10). Eighth segment synsclerous, rarely partially membranous midlaterally, anterior margin often with a short lateral projection, with a short, midventral process; posterolateral margin with 2 pairs of darkened, setal warts (lateral and ventral positions), ventral pair often elongate and even subdivided. Ninth tergum sclerotized, with anterolateral apodemes. Segment 10 membranous, bilobate, bearing a pair of small, apical cerci. Internally with vaginal area variously sclerotized.

DISCUSSION.—There is a series of clearly synapomorphic characters defining the subfamily Chimarrinae, which is generally recognized to contain only two genera, Chimarra and Chimarrhodella. To briefly summarize the synapomorphies: vein M4 of forewing absent; vein 2A of hindwing looped and fused to 1A; claspers 1-segmented; and female sternum and tergum of abdominal segment 8 fused into a tubular ring (Ross, 1956; Blahnik and Holzenthal, 1992; Blahnik, 1997). Chimarrhodella recently has been revised and cladistically studied (Blahnik and Holzenthal, 1992), resulting in a series of defining synapomorphies: second segment of maxillary palp with an apical, bristle-bearing extension, with third segment thus inserted preapically; claspers of male elongate, slender, and linear; phallic endotheca of enlarged and characteristic structure; female with setose process posteriorly from venter of segment 8; wings held horizontally and spread apart when live insect is at rest; and head flattened and elongate posteriad (this characteristic seems to be widespread to some degree through-
FIGURES 1-4.—Chimarra (Curgia) braconoides (Walker), male: 1, head and mesonotum, dorsal; 2, maxillary palpus, lateral; 3, labial palpus, lateral; 4, last tarsal segment and tarsal claws, lateral.
out the family). A single character, the reduction of spurs on the foreleg to one from two, is the only synapomorphy suggested that would define all the species placed in the genus Chimarra. However, this genus is under active study from a cladistic viewpoint by Blahnik and Holzenthal (pers. comm.), and a more rigorous definition is hoped for. Although their study is much more broadly based than this and I therefore defer to their work, I do offer a few observations. The majority of the groups in the subgenus Chimarra would seem to be defined by a few obvious structures that are probably synapomorphic: Rs of forewing with a curved shape related to a bull's-eye-like structure that often modifies other surrounding veins; and ninth segment of male with a variously developed dorsolateral apodeme from anterior margin (polarity uncertain). Again, this leaves the patosa and simpliciforma groups of the subgenus Chimarra and the subgenus Curgia as a still unresolved mishmash. It would appear that the patosa and the simpliciforma groups have several synapomorphies defining each. I am still unable to come up with any structure, except, perhaps, the eighth sternal process in the female genitalia, that might be a synapomorphy inferring the monophyly of the subgenus Curgia. Unfortunately, females have not been studied in detail to make certain that this characteristic is present throughout the subgenus, but a species or two in most groups were studied and all possessed this character.

Little is known of the immature stages of species in this subgenus. The larvae have been described for albomaculata (Flint, 1964; Palmer, 1938), argentella (Flint, 1968), and texana (Edwards and Arnold, 1961). These are all very similar, no obvious differences being apparent in the descriptions. They share several distinctive structures on the head: frontoclypeus with a deep and symmetrical emargination from the anterior margin, and both mandibles with a small, projecting angle at midlength on the mesal margin. In the North American species of the subgenus Chimarra, at least, the frontoclypeal emargination is asymmetrical and often rather irregular (cf. Ross, 1944, figs. 179-182), and, at their respective midlengths, the left mandible has a distinct, projecting tooth and the right mandible has an indentation (Ross, 1944, figs. 175-178). It is difficult to assign polarity to these characteristics, and thus to know if they might prove to be synapomorphic for either subgenus.
FIGURES 6–10.—*Chimarra* (*Curgia*) *centralis* Ross, male genitalia, labelled: 6, lateral; 7, ninth and tenth terga and cerci, dorsal; 8, phallos, lateral; 9, eighth tergum, dorsal. *Chimarra* (*Curgia*) *maria* (Burmeister), female genitalia, labelled: 10, lateral.
Key to Species of Chimarra (Curgia)

The following key to species is designed for males only, and no identification should be considered complete until the genitalia of the unknown has been compared in all details to the figures and descriptions herein, the ranges and coloration considered, and all found to be in substantial agreement. In those couplets leading to a specific identification, I have given the figure number of the lateral view of the genitalia, even though this view may not be the best one for the character being used. My reason is that all aspects of the genitalia must be considered, not just the one selected as the most distinctive.

1. Eighth tergum with brushes of setae of varying size and complexity, usually from the posteralateral angles [Figure 261], and rarely other processes [Figure 427] ................................................................. 59
   Eighth tergum unmodified [Figure 26], with a simple lobe [Figure 62] or point [Figure 70], or rarely posteralateral knobs [Figure 249]; none bearing setal brushes .................................................. 2
2. Eighth tergum with a pair of dorsolateral points [Figure 70] ................................................................. C. (Curgia) tucuna, new species
   Eighth tergum lacking pointed processes .......................... 3
3. Ninth tergum bearing a long, posterosmesal process between the halves of the tenth tergum, which is completely divided mesally [Figure 180] .................................................. 4
   Ninth tergum without such a process; tenth tergum entire or rarely divided .......................... 5
4. Ninth tergal process evenly upcurved, tip slightly enlarged [Figure 179] ................................................................. C. (Curgia) disternina, new species
   Ninth tergal process upcurved, but with apical fourth angled posteroventrally and narrowed [Figure 183] ................................................................. C. (Curgia) aviceps, new species
5. Eighth tergum no more than barely lobate [Figure 27]; posteralateral margin of ninth segment unmodified [Figure 11]; tenth tergum undivided mesally, but with a ventrolateral projection whose tip may be angled posteriad [Figure 11]; phallus with a simple rod-and-ring plus many (rarely as few as 3, usually more than 10) simple, short spines [Figure 14] ................................................................. 6
   Genitalia with one or more of the following: eighth tergum strongly produced [Figure 74] or bilobate [Figure 176]; posteralateral margin of ninth segment may bear points and processes [Figure 257]; tenth tergum may be divided mesally [Figure 83]; phallus usually with 2 to 4 internal spines, some of which may be different in structure from others [Figure 81] ................................................................. 16
6. Tenth tergum long, straight, tapering apicad in lateral aspect [Figure 11], broad in dorsal aspect [Figure 12] ................................................................. 7
   Tenth tergum shorter, often up-arched and widened apicad [Figure 21]; apex, at least, narrow in dorsal aspect [Figure 23] ................................................................. 8
7. Phallus with 50 or more small, internal spines [Figure 11] ................................................................. C. (Curgia) morio (Burmeister)
   Phallus with 3 to 6 small, internal spines [Figure 17] ................................................................. C. (Curgia) froelichii, new species
8. Tenth tergum in lateral aspect straight, parallel-sided, with ventrolateral process very broad, produced, and with outer margin darkened; clasper longer than broad, rectangular with erect apicodorsal point [Figure 57] ................................................................. C. (Curgia) centrispina, new species
   Tenth tergum enlarged apically or subapically with ventrolateral process narrow, extending ventrad along ninth segment, apex produced posteriad [Figure 21]; claspers narrower, crescentic [Figure 26] or trianguloid, often no longer than broad [Figure 45] ................................................................. 9
9. Clasper much longer than broad, crescentic and tapered apicad [Figure 21] ................................................................. 10
   Clasper rarely longer than broad, rectanguloid or trianguloid [Figure 37] .......................... 11
10. Forewing uniformly fuscous; phallus with 15 to 20 small, internal spines [Figure 21] ................................. C. (Curgia) conica Flint
Forewing with 2 to 3 large pale spots; phallus with 8 to 12 small, internal spines [Figure 26] ................................. C. (Curgia) cipoensis, new species

11. Tenth tergum strongly up-arched and narrowed apicad; tip of clasper produced into a spine directed dorsomesad [Figure 53] ................................. C. (Curgia) petricola, new species
Tenth tergum not up-arched, tip usually enlarged [Figure 30] or produced into a dorsal point [Figure 49]; clasper with apicomesal spine directed straight mesad [Figure 37] or lacking altogether [Figure 47] ................................. 12

12. Clasper rounded apically, lacking any spine [Figure 37] ................................. 13
Clasper with a spine on inner face, usually visible in ventral aspect [Figure 47] ................................. 14

13. Eighth tergum with a posterior margin produced into a shallow, broad lobe; posteroverentral keel of ninth segment not as long as broad [Figure 37] ................................. C. (Curgia) boraceia, new species
Eighth tergum with a posterior margin produced into a rectanguloid lobe as long as broad; posteroverentral keel of ninth segment twice as long as broad [Figure 41] ................................. C. (Curgia) beckeri, new species

14. Clasper with a short, rather broad spine placed subterminally on inner face [Figure 30] ................................. C. (Curgia) plaumanni Flint
Clasper with a long, slender spine, placed apicomesally [Figure 47] ................................. 15

15. Ventrolateral process of tenth tergum broad and ending in a long, slender projection in lateral aspect [Figure 45] ................................. C. (Curgia) burmeisteri, new species
Ventrolateral process of tenth tergum very narrow at midlength, terminating in a rounded lobe [Figure 49] ................................. C. (Curgia) petersorum, new species

16. Forewing with a large, circular golden spot centrally; claspers in ventral aspect fused mesally [Figure 64] or fused for basal third [Figure 68], with apicolateral caliper-like spines ................................. 17
Forewing colored differently; claspers not fused mesally ................................. 18

17. Claspers in ventral aspect broadly fused mesally [Figure 64] ................................. C. (Curgia) aurivittata Flint
Claspers only fused for basal third of length [Figure 68] ................................. C. (Curgia) jugescens, new species

18. Eighth tergum strongly produced posteromesally; tenth tergum with a long, pointed process arising ventrolaterally; clasper with a long, acute dorsal lobe and an apicomesal lobe [Figure 74] ................................. 19
Male genitalia with a different combination of characters ................................. 20

19. Tenth tergum with a very high, rectangular, dorsomesal lobe [Figure 74] ................................. C. (Curgia) ensifera, new species
Tenth tergum with dorsomesal lobe low, rounded [Figure 78] ................................. C. (Curgia) donamariae Denning and Sykora

20. Cercus a separate, ovid lobe arising basolaterally from tenth tergum [Figure 82] ................................. 21
Cercus completely fused to tenth tergum, no more than a slightly bulging, setate area [Figure 103] ................................. C. (Curgia) otuzcoensis Flint and Reyes

21. Tenth tergum divided mesally and without ventral lobe [Figure 83], ninth segment with a pointed process arising from posterior margin midway between tenth tergum and clasper [Figure 82] ................................. 22
Genitalia with tenth tergum entire [Figure 187] or divided into dorsal and ventral lobes [Figure 108], or genitalia lacking process from posterolateral margin of ninth segment [Figure 133] ................................. 26

22. Phallus with large, apicoventral, spinose sclerites [Figure 85] ................................. 23
Phallus with large, complex sclerites, but none spinose [Figure 93] ................................. 24

23. Phallus with a short ventral ring, spinose ventrolateral sclerites [Figure 82], and
spiny dorsal process ........................................... C. (Curgia) margaritae Flint
Phallus with a long, slender ring, long spineo ventrolateral processes [Figure 86],
and lacking spiny dorsal process ............. C. (Curgia) chrysosoma, new species

24. Phallus with a lateral, band-like sclerite, truncate apically [Figure 90] ...................... C. (Curgia) minga, new species

Phallus with a lateral band-like sclerite ending in a small, black spine [Figure 94] ..... 25

25. Phallus with internal sclerites very long, consisting of a lateral pair and a slender
pointed central one [Figure 94] ......................... C. (Curgia) acula, new species
Phallus with internal sclerites one-half length of preceding species, consisting of
long and short lateral pairs and a curved central one [Figure 98] ............................. C. (Curgia) lojaensis, new species

26. Tenth tergum tripartite, consisting of a sensillate dorsomesal lobe and pointed,
produced ventrolateral lobes [Figure 108] ................. C. (Curgia) fernandezi Flint
Tenth tergum without pointed ventrolateral lobes, although ventrolateral area may
be enlarged [Figure 129] ....................................... 27

27. Phallus armed with a series of short, black spines in addition to several elongate
internal sclerites [Figure 108] .......................... C. (Curgia) barinita, new species
Phallus lacking short, black spines, with several long slender spines [Figure 115] ..... 28

28. Posteromesal projection of ninth tergum long, almost touching dorsal angle of tenth
tergum [Figure 116] ........................................ C. (Curgia) fernandezi Flint
Posteromesal projection of ninth tergum no more than a sharp point, tenth tergum
not produced dorsad [Figure 112] .............................. 29

29. Tenth tergum divided apicomesally, internal sclerites of phallus very large and
massive [Figure 120] ........................................ C. (Curgia) costaricensis, new species
Tenth tergum with apical margin entire, internal sclerites of phallus much more
slender [Figure 112] ........................................ C. (Curgia) puya, new species

30. Tenth tergum with 2 pairs of basal lobes in addition to the cerci, posterior margin
of ninth segment produced into 2 sharp points [Figure 257] ................................. C. (Curgia) pulchra (Hagen)
Tenth tergum consisting of only a single mesal structure [Figure 188], which may
be partially divided on midline [Figure 134], posterior margin of ninth segment
simple or bearing processes [Figure 156] ........................................ 31

31. Clasper embedded in ninth segment, i.e., either posterolateral [Figure 171] or
posteromesal [Figure 253] margin of ninth segment extending further posteriad
than clasper ....................................................... 32
Clasper extending well beyond posterior margin of ninth segment [Figure 125] ...... 34

32. Posteromesal keel of ninth segment surpassing claspers, no long, slender,
dorsolateral process from ninth segment [Figure 253] ........................................ C. (Curgia) albomaculata (Kolbe)
Posterolateral margin of ninth segment surpassing claspers, with a long, slender,
dorsolateral process from ninth segment [Figure 171] ........................................ 33

33. Tenth tergum with a sharp, dorsal crest [Figure 175] ........................................ C. (Curgia) guyanensis, new species
Tenth tergum with apex slender, unmodified [Figure 171] ................................. C. (Curgia) juliae, new species

34. Clasper long and slender, at least 3 times as long as wide [Figure 125] .............. 35
Clasper shorter, no more than twice as long as wide, often as high as long [Figure
187] .............................................................. 46

35. Ninth segment dorsally developed as a lobe [Figure 141] or dorsolaterally
developed as a spine [Figure 152] or process [Figure 156] over base of tenth
tergum .............................................................. 36
Ninth segment dorsally unmodified [Figure 125] ........................................ 43
36. Eighth tergum bearing a long, slender, posteromesal process; ninth tergum with elongate, pointed processes overlaying tenth tergum [Figure 167].

Without this combination of genitalic characters. 37

37. Eighth tergum developed into a broad lobe, bearing 4 small points from posterior margin; ninth tergum bearing broad triangular lobes larger than tenth tergum [Figure 163]. 38

C. (Curgia) carolae, new species

Male genitalia differently formed. 38

38. Eighth tergum with posterior margin bearing a median lobe flanked by large, rounded lobes; ninth tergum bearing dorsolateral, rod-like processes [Figure 156].

Eighth tergum differently formed [Figures 142, 149]; ninth tergum without rod-like processes [Figure 141]. 40

39. Median lobe of eighth tergum almost square in dorsal aspect [Figure 159].

C. (Curgia) neofimbriata Flint

Median lobe of eighth tergum spatulate in dorsal aspect [Figure 156].

C. (Curgia) fimbriata Flint

40. Eighth tergum with a single, posteroventral process [Figure 149].

Eighth tergum with posterior margin bilobed [Figure 145]. 42

41. Tenth tergum truncate apically; ninth tergum with small, dorsolateral points [Figure 152].

C. (Curgia) truncatiloba Flint

Tenth tergum with apex drawn out into a small lobe; ninth tergum lacking dorsolateral points [Figure 148].

C. (Curgia) medioloba Flint

42. Tenth tergum attenuate, with a small dorsal lobe at midlength [Figure 141].

C. (Curgia) claviloba Flint

Tenth tergum broad, truncate apically, lacking a dorsal lobe [Figure 144].

C. (Curgia) cirrifera, new species

43. Tenth tergum with ventrolateral surface greatly expanded from near apex to base [Figure 129].

Tenth tergum with ventrolateral surface developed only near base [Figure 125].

C. (Curgia) straminea, new species

44. Tenth tergum in lateral aspect twice as long as broad [Figure 133].

C. (Curgia) irwini, new species

Tenth tergum higher than long in lateral aspect [Figure 129].

45. Phallus with spine of rod-and-ring structure barely as long as width of phallus [Figure 137].

C. (Curgia) paria, new species

Spine of rod-and-ring structure of phallus much longer than width of phallus [Figure 132].

C. (Curgia) canoaba, new species

46. Ninth segment (or at least from this area) with 1 or 2 points or lobes from posterolateral margin [Figure 229].

Ninth segment evenly rounded in this area [Figure 187].

Ninth segment of ninth segment low, rounded; clasper shorter than high [Figure 241].

C. (Curgia) quina, new species

Posterior processes of ninth segment elongate, pointed; clasper longer than high [Figure 237].

C. (Curgia) aurantiabasis, new species

47. A pair of angles or processes from (or apparently from) posterolateral margin of ninth segment [Figure 229].

Only a single process in this area [Figure 245].

48. Tenth tergum with a bilobate ventrolateral lobe in addition to the 2 angles or points from the lateral margin of the ninth segment [Figure 237].

Tenth tergum lacking ventral lobes, with only the single pair of processes apparently from posterolateral margin of ninth segment [Figure 229].

49. Posterior processes of ninth segment low, rounded; clasper shorter than high [Figure 241].

C. (Curgia) quina, new species

Posterior processes of ninth segment elongate, pointed; clasper longer than high [Figure 237].

C. (Curgia) aurantiabasis, new species

50. Posterior process of ninth segment with dorsal and ventral arms parallel, dorsal arm blunt apically [Figure 233].

C. (Curgia) gilvimacula, new species

Posterolateral process of ninth segment with dorsal and ventral arms convergent,
dorsal arm sharply pointed [Figure 229] ... C. (Curgia) braconoides (Walker)

51. Eighth tergum produced into a lateral, blackened, knob-like lobe; tenth tergum with a long, slender, basodorsal crest [Figure 249] ... C. (Curgia) argentella (Ulmer)

Eighth tergum without lateral lobes; tenth tergum produced only apicad [Figure 245] ... C. (Curgia) moesta Banks

52. Tenth tergum produced into a dorsal crest; clasper about as high as long [Figure 204] ... C. (Curgia) argentella (Ulmer)

Tenth tergum either extending posteriad [Figure 199] or angled dorsad [Figure 214]; clasper about twice as long as broad [Figure 187] ... C. (Curgia) wilsoni Flint

53. Eighth tergum in dorsal aspect broad, truncate mesally; apex of dorsal crest of tenth tergum distinctly bifurcate in dorsal aspect [Figure 210] ... C. (Curgia) bisectilis, new species

Eighth tergum in dorsal aspect broadly rounded; apex of tenth tergum entire or no more than slightly notched [Figure 204] ... C. (Curgia) wilsoni Flint

54. Tenth tergum in lateral aspect broad basally, sharply constricted at midlength, apex extending almost straight posteriad [Figure 199] ... C. (Curgia) lobata Flint

Tenth tergum not constricted at midlength, apex directed distinctly dorsal [Figure 187] ... C. (Curgia) lobata Flint

55. Tenth tergum in lateral aspect with apex rounded, sharply angled dorsad; dorsal portion of ninth segment strongly produced and angled posteriad over the tenth tergum [Figure 214] ... C. (Curgia) pablito, new species

Tenth tergum only semierect apically, usually angled from near base; ninth segment variously produced, but not curved freely over tenth tergum [Figure 218] ... C. (Curgia) pablito, new species

56. Ninth segment strongly produced dorsad as a narrow sclerite in lateral aspect [Figure 218] ... C. (Curgia) hyoeides Flint

Ninth segment barely produced dorsad in lateral aspect [Figure 187] ... C. (Curgia) hyoeides Flint

57. Eighth tergum with posterior margin developed as a pair of large lobes in dorsal aspect; ninth tergal strap curved posteriad [Figure 223] ... C. (Curgia) hyoeides Flint

Eighth tergum barely produced in dorsal aspect; ninth tergal strap erect [Figure 218] ... C. (Curgia) pablito, new species

58. Forewing with a broad, longitudinal band (sometimes broken into 2 large spots) of golden hair; foretarsal claws almost equal in size; tenth tergum with tip distinctly angled semierect, not carinate [Figure 187] ... C. (Curgia) mexicana (Banks)

Forewing with many small golden spots; one foretarsal claw markedly larger than other; tenth tergum angled semierect from near base, usually with low dorsolateral carinae [Figure 193] ... C. (Curgia) barrettae (Banks)

59. Clasper elongate, tapering beyond dorsomesal tooth in lateral aspect, broadly triangular in ventral aspect [Figure 425] ... C. (Curgia) barrettae (Banks)

Clasper variously shaped, often with apical tooth, never with a dorsomesal tooth ... C. (Curgia) barrettae (Banks)

60. Posteromesal process of eighth tergum extending freely posteriad [Figure 414] ... C. (Curgia) laguna Ross

Posteromesal process of eighth tergum curved ventrad and fused to ninth segment [Figure 422] ... C. (Curgia) texana (Banks)

61. Eighth tergum with a posteromesal lobe; tenth tergum with ventrolateral surface produced into apical lobe; clasper elongate, with apical tooth [Figure 427] ... C. (Curgia) texana (Banks)

Genitalia not with above combination of characters, never with apicoventral lobe to tenth tergum ... C. (Curgia) texana (Banks)
62. Tenth tergum with dorsal crest well developed, nearly as long as tergum; clasper barely longer than broad [Figure 442]. \textit{C. (Curgia) securigera}, new species

63. Tenth tergum with a pair of erect, basodorsal lobes [Figure 427]. \textit{C. (Curgia) immaculata} (Ulmer)

64. Eighth tergum with postero medial process short, narrow apically in dorsal aspect [Figure 432]. \textit{C. (Curgia) persimilis} (Banks)

65. Eighth tergum with posterior margin bearing lateral brushes and a single, mesal brush on a process [Figures 280, 406]. \textit{C. (Curgia) mycterophora}, new species

66. Both postero lateral brushes of eighth tergum extending equally posteriad or postero mesally [Figure 290]. \textit{C. (Curgia) piliferosa}, new species

67. Eighth tergum in dorsal aspect with posterior margin slightly curved [Figure 267]. \textit{C. (Curgia) scopula} Flint

68. Apex of eighth tergal lobe attenuate in dorsal aspect, dorsal arm of postero lateral brush directed dorsally then mesally under eighth tergum [Figure 263]. \textit{C. (Curgia) banksi} (Ulmer)

69. Both posterolateral brushes of eighth tergum extending equally posteriad or postero mesally [Figure 290]. \textit{C. (Curgia) acinaciformis}, new species
Posterolateral brush of eighth tergum either attached directly to tergum [Figure 369] or on a process, in which case it is short, barely attaining apex of tergum [Figure 314] ................................................................. 75

75. Posterolateral angles of eighth tergum bearing a large, trianguloid, hirsute lobe, posterior margin of tergum broadly concave in dorsal view [Figure 369] ................................................................. C. (Curgia) fittkai Flit
Posterolateral brush of eighth tergum borne on a short process, posterior margin either truncate [Figure 310] or lobate [Figure 304], rarely concave [Figure 298] ................................................................. 76

76. Posterior margin of eighth tergum deeply concave in dorsal aspect, with posterolateral lobes overhanging small, posterolateral brush [Figure 296] ................................................................. C. (Curgia) aureopunctata Flit
Posterolateral angles of eighth tergum bearing a large, trianguloid, hirsute lobe, posterior margin of tergum either truncate [Figure 310], produced [Figure 316], or lobate [Figure 304] ................................................................. 77

77. Posterior margin of eighth tergum bilobate in dorsal aspect [Figure 381] ................ C. (Curgia) scopuloides Flit
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Eighth tergum with posterior margin not produced, apicomesal tooth of clasper clearly visible in lateral aspect [Figure 319] ................................................................. C. (Curgia) didyma, new species

82. Eighth tergum with posterior margin in dorsal aspect produced into a small mesal point, eighth tergal brushes folded mesally beneath tergum [Figure 325] ................................................................. C. (Curgia) nasuta, new species
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86. Eighth tergum with a pair of large, well-developed mesal brushes in addition to posterolateral brushes [Figure 389].
87. Eighth tergum with a pair (or two) of small setal lobes arising from sclerite between eighth and ninth terga, posterolateral brushes capping apical margin of large, protruding lobe [Figure 353].

C. (Curgia) tamba, new species
Posterolateral brushes not on a long stalk directed posteriad; tenth tergum not humped, but may bear basolateral shoulders [Figure 399].

88. Tenth tergum in lateral aspect evenly curved, without basolateral angles [Figure 392].
C. (Curgia) teresae, new species
Tenth tergum with basolateral, angulate shoulders [Figure 398].

C. (Curgia) camposae, new species

89. Sclerotized plate between eighth and ninth terga bearing 2 pairs of brushes [Figure 360].
C. (Curgia) parana Flint
This plate bearing only a single pair of brushes [Figure 353].

C. (Curgia) cultellata Flint
Tenth tergum apically flattened, slender, angled directly posteriad [Figure 364].
C. (Curgia) piraya Flint
Tenth tergum inflated, semierect [Figure 352].

The morio Group

DIAGNOSIS.—Length of forewing, 5.5–9 mm. Basic color jet black, rarely with forewing marked with few large spots or a broad band of pale yellow or white. Claws of male foreleg not noticeably asymmetrical.

Male Genitalia: Eighth tergum without brushes, at most with posterior margin slightly projecting mesad. Ninth segment with anterior margin nearly vertical, broad dorsad, without any dorsomesal projection. Cercus small, oval. Tenth tergum consisting of dorsal lobe with apex entire and bearing many sensillae; with ventrolateral angle produced into a sclerite lying along posterolateral margin of ninth segment and with its apex produced into a free lobe projecting posteriad. Clasper generally elongate, not greatly modified, often with an apicomesal tooth. Phallus tubular, phallotheca generally produced apicodorsally; internally with a small, basal, rod-and-ring assembly and a variable number (3–100+) of black spines.

DISTRIBUTION.—Primarily mountains of southeastern Brazil, extending inland as far as the state of Rondônia, Brazil, and the province of Misiones, Argentina, and north to Ceará, Brazil.

DISCUSSION.—This is a very uniform group, united by a striking synapomorphy: the ventral extension of the basoventral angle of the tenth tergum. In most species this extension of the tenth tergum terminates with its apex free and angled posteriad; only in C. froehlichii is it not to some degree angled. A few species complexes are apparent within the group, although they are not sharply defined. The morio complex has the tenth tergum rather elongate, the tip unmodified, and, in dorsal aspect, broad; the claspers are also elongate (morio and froehlichii). The conica complex has a shorter tenth tergum whose apex is to some degree enlarged in lateral aspect and in dorsal aspect tapers to a narrow tip; the clasper is elongate, narrow, and concave in lateral aspect (conica and cipoensis). The plaumanni complex also has a shortened tenth tergum whose apex is generally enlarged in lateral aspect, tapered and narrow in dorsal aspect, and often with a distinct basolateral angle; the clasper is usually short, barely longer than high (boraceia, burmeisteri, petersorum, petricola, and plaumanni), but in beckeri it is distinctly longer than high. The final species, centrispina, seems quite distinct from the above groups in shape of clasper and ventrolateral lobe of the tenth tergum, although the general shape of the tergum is quite like that in the plaumanni complex.

Chimarra (Curgia) morio (Burmeister)

FIGURES 11–16; MAP 1
Chimarra morio Burmeister. 1839:911.—Ulmer, 1905a:94.
Chimarra moselyi Ross, 1956:50, 71 [preoccupied by Chimarra moselyi Denning, 1947b:251].
Chimarra moselyi Ross, 1956:50, 71 [new name for Chimarra moselyi Ross] [new synonymy].
REMARKS.—The species *Chimarra morio* Burmeister is based on a number of females, originally stated to be from "Brasilien." Ulmer (1905a) studied two of these types from the "Zoologischen Instituts zu Halle," stating them to be labelled "Brasilien, Beske." These specimens cannot now be located in the Halle collection (Mey, pers. comm.). I have seen a single female specimen in the collection of the MCZ labelled in Hagen's hand "Brasilien. Neu Freiburg. Beschke. Germar." and "Ch. morio Burm."; I consider this to be another syntype. The abdomen of this specimen had been cleared and served as my basis for determining the identity of the species.

Females of most of the species of the *morio* group from the regions of Rio de Janeiro and Nova Friburgo have been cleared and studied, and, as a result, differences can be seen between all the species, although they are rather subtle. I have found several examples that match the syntype of *morio* perfectly, one of which has the same data as the holotype of *moselyi* Ross, the other taken in company with a male of the same species. Somewhat complicating the picture is the fact that several other species have been taken in the same vicinity. However, by study of these species from several other localities, I have been able to associate the sexes for all with what I feel to be a high level of confidence. Thus, the *morio* female is also left by elimination with the same association as herein recognized.

This species is very closely related to the species herein described as *froehlichi*. Both have the tenth tergum broad in dorsal aspect and thin in lateral aspect, and both have relatively long claspers. However, *morio* has a distinct, but small, tooth apicodorsally on the clasper and more than 50 small spines in the phallus. In *froehlichi* the tooth is lacking or is represented by no more than a small bump, and the phallus contains only three to six small spines.

I have seen several series that differ from what I regard as the typical form. In one variant (Figures 15, 16) the clasper appears shorter and broader with the apicodorsal tooth quite pronounced, and the portion apicad of this tooth is nearly vertical. I can see no other differences in the male genitalia. In another variant (from Bahia), the clasper is much the same as in the first variant, but a bit longer. The tip of the tenth tergum and the lobe of the eighth tergum are both slightly bifid, and the posteroverentral keel of the ninth segment is long in this form.

**ADULT.**—Length of forewing, ♀ 7–8.5 mm, ♂ 8–9 mm. Color uniformly jet black.

**Male Genitalia:** Eighth sternum narrow, slightly wider dorsad; tergum with posterior margin slightly and broadly projecting mesad (eighth segment omitted from Figures 11, 12). Ninth segment with anterior margin nearly vertical, broad dorsad; posterovertrantal keel short, broadly triangularoid. Cercus
small, oval. Tenth tergum entire; slightly arched in lateral aspect, broad basally; in dorsal aspect with tip rounded, widening basad, with many sensillae; ventrolateral process developed as a short lobe over clasper base. Clasper elongate, nearly parallel sided basad of apicodorsal tooth, tapering ventrad beyond tooth; in ventral aspect with mesal margin slightly produced apicad. Phallus tubular, produced apicodorsally; internally with a small, basal, rod-and-ring assembly and nearly parallel sided basad, tapering developed as a short lobe over clasper base. Clasper elongate, widening basad, with many sensillae; ventrolateral process very short, broad basally; in dorsal aspect with tip rounded, sides nearly parallel; apically with many sensillae; ventrolateral process very short, not projecting posteriad. Clasper elongate, tapering regularly with a small dorsomesal tooth; in ventral aspect with apex broadly rounded. Phallus tubular, with apicolateral surface produced and rounded apically; internally with a small, basal, rod-and-ring assembly and (rarely one) to three six short, black spines.

**Material Examined.**—Holotype. BRAZIL, Edo. RIO DE JANEIRO, km 54, 26 km E Nova Friburgo, 410 m, 19 Apr 1977, C.M. and O.S. Flint, Jr. MZUSP Type.

Paratypes: Same data as holotype, 9♂, 8♀ (NMNH). Nova Friburgo, municipal water supply, 950 m, 24 Apr 1977, C.M. and O.S. Flint, Jr., 4♂, 1♀. Parque Nacional do Itatiaia, near Lago Azul, 9 Jun 1965, C.G. Froehlich (66), 4♂, 6♀ (MZUSP, NMNH). EDO. SÃO PAULO, Casa Grande, Estação Biológica Boraceia, 21 Feb 1990, L.G. Oliveira, 4♂, 4♀ (MZUSP and NMNH); same, but 5–6 Nov 1974 [C.G. Froehlich] (140, 141), 5♂ (MZUSP); same, but Ribeirã Coruja, 850 m, 2 Apr 1977, C.M. and O.S. Flint, Jr., 1♀; same, but 16 Nov 1974, C.G. Froehlich (401), 1♂, 1♀ (MZUSP); same, but 26 Jan 1974 (292), 11♂, 3♀ (MZUSP). EDO. ESPIRITO SANTO, Caixa d’Agua, Santa Teresa, 23 Apr 1977, C.M. and O.S. Flint, Jr., 2♂, 1♀.

**Etymology.**—Patronym, in honor of Dr. Claudio G. Froehlich, the noted Brazilian plecopterist and aquatic biologist.

**Chimarra (Curgia) conica Flint**

**Figures 21–25; Map 1**

**Remarks.**—This species and the following species, cipoensis, are very closely related. Pinned (and sometimes alcoholic) material is easily distinguished by color; conica is uniformly jet black, and cipoensis has two or three large white spots on the forewing. The male genitalia are very similar, offering few clear distinctions in some populations. However, where the two coexist in Minas Gerais, they are easily distinguished by the tip of the tenth tergum, which in conica is distinctly enlarged at the apex from both the dorsal and ventral margins, giving it an ax-shaped appearance (Figure 22), and by the phallus, which contains 15–20 small, black spines, nearly twice as many as in cipoensis.

**AdULT.**—Length of forewing, 5.5–7 mm, 6.5–7.5 mm.

**Color uniformly jet black.**

**Male Genitalia: Ninth sternum parallel sided; tergum with posterior margin slightly enlarged mesad, with this portion bearing a modified rugose cuticle and either depressed or somewhat invaginated (eighth segment omitted from Figures 17, 18). Ninth segment slightly enlarged anteroventrally; tergal area broad; posteroventral keel produced into a short, blunt process. Cercus elongate, rounded apically. Tenth tergum entire; nearly straight in lateral aspect, widening basad; in dorsal aspect with tip broadly rounded, sides nearly parallel; apically with many sensillae; ventrolateral process very short, not projecting posteriad. Clasper elongate, tapering regularly with a small dorsomesal tooth; in ventral aspect with apex broadly rounded. Phallus tubular, with apicolateral surface produced and rounded apically; internally with a small, basal, rod-and-ring assembly and (rarely one) three six short, black spines.**

**Material Examined.**—Holotype. BRAZIL, Edo. RIO DE JANEIRO, km 54, 26 km E Nova Friburgo, 410 m, 19 Apr 1977, C.M. and O.S. Flint, Jr. MZUSP Type.

Paratypes: Same data as holotype, 9♂, 8♀ (NMNH). Nova Friburgo, municipal water supply, 950 m, 24 Apr 1977, C.M. and O.S. Flint, Jr., 4♂, 1♀. Parque Nacional do Itatiaia, near Lago Azul, 9 Jun 1965, C.G. Froehlich (66), 4♂, 6♀ (MZUSP, NMNH). EDO. SÃO PAULO, Casa Grande, Estação Biológica Boraceia, 21 Feb 1990, L.G. Oliveira, 4♂, 4♀ (MZUSP and NMNH); same, but 5–6 Nov 1974 [C.G. Froehlich] (140, 141), 5♂ (MZUSP); same, but Ribeirã Coruja, 850 m, 2 Apr 1977, C.M. and O.S. Flint, Jr., 1♀; same, but 16 Nov 1974, C.G. Froehlich (401), 1♂, 1♀ (MZUSP); same, but 26 Jan 1974 (292), 11♂, 3♀ (MZUSP). EDO. ESPIRITO SANTO, Caixa d’Agua, Santa Teresa, 23 Apr 1977, C.M. and O.S. Flint, Jr., 2♂, 1♀.

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**Figures 21–25; Map 1**

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**AdULT.**—Length of forewing, 5.5–7 mm, 6.5–7.5 mm. Color uniformly jet black (examples from Nova Teutonia have a broad, golden band in center of wing).

**Male Genitalia: Eighth sternum parallel sided; tergum with posterior margin slightly enlarged mesad, with this portion bearing a modified rugose cuticle and either depressed or somewhat invaginated (eighth segment omitted from Figures 17, 18). Ninth segment slightly enlarged anteroventrally; tergal area broad; posteroventral keel produced into a short, blunt process. Cercus elongate, rounded apically. Tenth tergum entire; nearly straight in lateral aspect, widening basad; in dorsal aspect with tip broadly rounded, sides nearly parallel; apically with many sensillae; ventrolateral process very short, not projecting posteriad. Clasper elongate, tapering regularly with a small dorsomesal tooth; in ventral aspect with apex broadly rounded. Phallus tubular, with apicolateral surface produced and rounded apically; internally with a small, basal, rod-and-ring assembly and (rarely one) three six short, black spines.**
exaggerated, Figure 22); in dorsal aspect tapering to a narrowly rounded tip; apically with many sensillae arranged around apex; ventrolateral process with a short, posteroverentral extension. Clasper elongate, concave dorsally, tapering apicad; in ventral aspect with inner margin straight, rounded laterally, produced into an apicomesal point. Phallus tubular, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly and 15 to 20 short, black spines.


**ETYMOLOGY.**—From the Latin conus, in allusion to the shape of the tenth tergum in dorsal aspect.

**NOTE.**—In the original descriptions and illustrations of this species and *pluamanni* an unfortunate transposition of the drawings of the dorsal view of the tenth terga was made during the assembly of the plates. The actual drawing of *pluamanni* is
**Chimarra (Curgia) plaumanni** Flint, 1983:19.

Paratypes: Serra do Cipó, Rio Capivara, 18 Dec 1974, C.G. Froehlich (409), 1♂, 1♀ (BMNH); same, but tributary to Rio Capivara, 25 July 1972 (171), 1♂ (MZUSP); same, but 20 Dec 1974 (411), 1♀ (MZUSP).

**ETYMOLOGY.**—From the type locality, Serra do Cipó.

**Chimarra (Curgia) plaumanni** Flint, 1983:19.

**REMARKS.**—This species presents a combination of characteristics in the male genitalia relating it to *morio* in some manners, but other structures are shared with the other members of the *plaumanni* complex. The slightly elongate clasper with a subapical mesal tooth is quite characteristic of the *morio* complex, but the narrow tenth tergite with the basolateral shoulder is characteristic of the *plaumanni* complex. The species is distinguished from its congeners by the following combination of characters: the tenth tergum is blunt apically and has a posterior lobe from its ventrolateral process, and its clasper shows a small lobe from the dorsal margin at midlength and a subapicomesal tooth in ventral aspect.

I have seen two males that show slight differences from the type: the clasper is broader and rounded apically, and the tenth tergum is more elongate apically (Figures 34–36).

**ADULT.**—Length of forewing, ♂ 6–8 mm, ♀ 8–9 mm. Color uniformly jet black.

**Male Genitalia:** Eighth sternum narrow, slightly widened dorsad; tergum with posteroventral margin produced into a short, broad angle (eighth segment omitted from Figures 30, 31). Ninth segment slightly enlarged anteroventrally; tergal area broad; posteroventral keel produced into a short, triangular process. Cercus elongate, rounded apically. Tenth tergum entire; in lateral aspect produced into a blunt, broad apex; in dorsal aspect with tip narrow, pointed, with a sharp basolateral point; with many sensillae arranged around apex; ventrolateral process with a short, posteroventral lobe. Clasper elongate, tapering apically, with a small dorsomesal process; in ventral aspect with inner margin slightly produced apically, with a subapical, mesal tooth. Phallus tubular, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly and many (40 to 50) short, black spines.

**MATERIAL.**—BRAZIL, EDO. SANTA CATERINA, Nova Teutonia, 27°11'S, 52°23'W, 300–500 m, 19 Jan 1964, F. Plaumann, ♂ holotype (NMNH); same, but 11 Oct 1936, 2♂, 1♀ (BMNH); same, but 11 May 1938, 1♂ (BMNH).

**VARIANT.**—BRAZIL, EDO. SANTA CATERINA, Blumenau, Loth. Hetshko, 1♂ (BMNH). Santa Catharina [probably from near Blumenau where Müller worked most of his life], F. Müller, McLachlan Coll., 1♂, 2 without abdomen (BMNH).

**ETYMOLOGY.**—Patronym, in honor of Fritz Plaumann, the late Brazilian entomological collector.
MAP 3.—Distributions of *Chimarra* (*Curgia*) *boraceia*, new species, *Chimarra* (*Curgia*) *petersorum*, new species, and *Chimarra* (*Curgia*) *burmeisteri*, new species.

**Male Genitalia:** Eighth sternum slightly widened dorsad; tergum with posteromesal margin produced into a short, broad lobe (eighth segment omitted from Figures 37, 38). Ninth segment produced anteroventrally; tergal area broad; posteroventral keel a very small, trianguloid process. Cercus elongate, rounded apically. Tenth tergum entire; in lateral aspect slightly enlarged subapically, mainly on dorsal margin; in dorsal aspect almost rod-like, barely enlarged basally, tip acute; with many sensillae dorsally; ventrolateral process appearing rather broad, lacking a posteroventral lobe, although slightly produced ventrally. Clasper short, about as long as high, tapering slightly to a broadly rounded apex; in ventral aspect a bit longer than broad, with inner and outer margins slightly flared laterad, apex broadly rounded. Phallus tubular, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly and 50 to 60 short, black spines.


Paratypes: Same data as holotype, 8♂ (MZUSP, NMNH); same, but 21 Jul 1967 (102), 4♂ (MZUSP); same, but 15 Oct 1969 (121), 1♂ (MZUSP); same, but 7 Dec 1969 (127), 5♂ (MZUSP); same, but 3 Apr 1977, C.M. and O.S. Flint, Jr., 1♂; same, but Ribeirão Venerando, 3 Apr 1977, 1♂; same, but Ribeirão Coruja, 26 Jan 1974, C.G. Froehlich (292), 5♂ (MZUSP, NMNH); same, but 12 Oct 1974 (391), 5♂, 1♀ (MZUSP); same, but 16 Nov 1974 (401), 1♂ (MZUSP). Estação Biológica de Paranapiacaba, Serra do Mar, ~40 km SE São Paulo, 17 Sep 1963, C.G. Froehlich (33), 1♂ (MZUSP); same, but 10 Jun 1964 (47), 1♂ (NMNH).

**Etymology.**—Based on the name of the Boraceia biological preserve.

**Chimarra** (*Curgia*) *beckeri*, new species

**Figures 41-44; Map 4**

**Remarks.**—This species, which is a member of the *plaumanni* complex, is very close to *boraceia*. It is to be recognized by the more elongate clasper, the sharper, more elongate, ventrolateral process of the tenth tergum, the longer posteroventral keel of the ninth segment, and especially by the narrow, quadrate posteroesomal lobe of the eighth tergum.

**Adult.**—Length of forewing, ♂ 5.5–7 mm. Color uniformly jet black.

**Male Genitalia:** Eighth sternum parallel-sided, narrowed...
MAP 4.—Distributions of Chimarra (Curgia) petricola, new species, Chimarra (Curgia) centrispina, new species, and Chimarra (Curgia) beckeri, new species.

dorsad; tergum with posteromesal margin produced into a quadrate lobe about as long as wide. Ninth segment produced anteroventrally; tergal area broad; posteroventral keel an elongate, trianguloid process. Cercus elongate, rounded apically. Tenth tergum entire; in lateral aspect arched dorsad, slightly enlarged subapically, mainly on dorsal margin; in dorsal aspect almost rod-like, barely enlarged basally, tip acute; with many sensillae dorsally; ventrolateral process extending ventrad to dorsal margin of clasper along posterior margin of ninth segment, with a pointed, posteroventral lobe above clasper. Clasper about twice as long as high, apex obliquely truncate; in ventral aspect longer than broad, with inner and outer margins subparallel, outer margin slightly flared laterad, apex truncate; dorsal surface with paler central region bounded apically by a heavily sclerotized ridge. Phallus tubular, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly, a pair of bifid, elongate spines at apex of phallotheca, and 60 to 80 short, black spines.

MATERIAL EXAMINED.—Holotype, male: BRAZIL, EDO. Rio DE JANEIRO, Mangaratiba, 150 m, 20 Jan 1993, V.O. Becker. MZUSP Type. Paratypes: Same data as holotype, 20♂, 2♀ (EBPA, MZUSP, NMNH).

ETYMOLOGY.—Patronym, in honor of Vitor O. Becker, the Brazilian lepidopterist and entomological collector.

Chimarra (Curgia) burmeisteri, new species

FIGURES 45-48: MAP 3

REMARKS.—This species and petersorum are closely related. In burmeisteri differences are to be found in the tenth tergum, whose dorsal process is only obtusely angled dorsally and whose ventrolateral process is very wide and ends in a thin posteroventral lobe, and in the clasper that, in ventral aspect, is longer than broad, with the apicomesal process acuminate rather than spiniform.

ADULT.—Length of forewing, ♂ 7-8 mm, ♀ 8-9.5 mm. Color uniformly jet black.

Male Genitalia: Eighth sternum slightly widened dorsad; tergum with posterior margin shallowly and broadly produced mesally (eighth segment omitted from Figures 45, 46). Ninth segment produced anteroventrally; tergal area broad; posteroventral keel produced into a sharp point. Cercus elongate, base broadly fused to ninth segment. Tenth tergum entire; in lateral aspect with dorsal margin produced into a subapical obtuse angle; in dorsal aspect spatulate, narrowed basally, tip
acutus; with many sensillae apically; ventrolateral process mostly fused to lateral margin of ninth segment, very broad, with a small angle near midlength, projecting ventrally as a long, thin lobe. Clasper short, about as long as high, dorsal margin straight, serrate, ventral margin rounded; in ventral aspect longer than broad, with inner and outer margins curved, subparallel, with a strong acuminate spine apicomesally. Phallus tubular, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly and 25 to 30 short, black spines.

**Material Examined.**—Holotype, male: BRAZIL, EDO. RIO DE JANEIRO, municipal water supply, Nova Friburgo, 950 m, 20 Apr 1977, C.M. and O.S. Flint, Jr. MZUSP Type. Paratypes: Same data as holotype, 100s of ♂ and ♀ (MZUSP, NMNH); same, but 24 Apr 1977, 8♀, 6♂ (MZUSP, NMNH).

**Etymology.**—Patronym, in honor of Hermann Burmeister, the famous early entomologist who visited Nova Friburgo in the mid 1800s.

**Chimarra (Curgia) petersorum, new species**

**Figures 49–52; Map 3**

**Remarks.**—This species, a member of the morio group and plaumannii complex, is most closely related to burmeisteri. Both species have a narrow and basally constricted tenth tergum and a short, ventrally rounded clasper with a sharp apicosomal spine. In petersorum the tenth tergite has its apex produced into a dorsal point, with the ventrolateral process no more than a short, rounded lobe, and the clasper in ventral aspect is more nearly oval in outline with the spine very prominent.

**Adult.**—Length of forewing, 8.5–9 mm; ♀ 9 mm. Color uniformly jet black.

**Male Genitalia:** Eighth sternum very slightly widened dorsad; tergum with posterior margin slightly and broadly produced mesally. Ninth segment produced anteroventrally; tergal area broad, depressed mesally; posteroverentral keel produced into a sharp point. Cercus short, base broadly fused to ninth segment. Tenth tergum entire; in lateral aspect with tip produced dorsally into a point; in dorsal aspect spatulate, narrowed basally, tip rounded; with many sensillae apically; ventrolateral process mostly fused to lateral margin of ninth segment, projecting ventrally as a small, rounded lobe. Clasper short, about as long as high, dorsal margin straight, serrate, ventral margin rounded; in ventral aspect almost oval in outline, with a strong spine apicosomally. Phallus tubular, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly and about 16 short, black spines.

**Material Examined.**—Holotype, male: BRAZIL, EDO. RIO DE JANEIRO, Petrópolis, McLachlan Coll. B.M. 1938–674, Chimarra morio Burn [in McLachlan’s hand]. BMNH Type. Paratypes: Same data as holotype, 1♀ (BMNH); Ca-

**Chimarra (Curgia) petricola, new species**

**Figures 53–56; Map 4**

**Remarks.**—This species shows similarities to both the morio and the plaumannii complexes. It shares with morio an elongate tenth tergum and claspers; however, the apex of the tergum is strongly arched and narrowed apically, and the tip of the clasper is more strongly modified, as is in the plaumannii complex. It is distinguished from both in having (1) the tenth tergum strongly arched apically and much widened at midlength, with a very small posterior lobe from its ventrolateral process, and (2) the clasper narrowed and twisted apically, but appearing almost semicircular in ventral aspect, and bearing a sharp apicosomal tooth.

**Adult.**—Length of forewing, 8.5–9 mm; ♀ 9 mm. Color uniformly jet black.

**Male Genitalia:** Eighth sternum very slightly widened dorsad; tergum with posterior margin not noticeably modified (eighth segment omitted from Figures 53, 54). Ninth segment slightly enlarged anteroventrally; tergal area broad; posteroverentral keel produced into a short, triangular process. Cercus elongate, rounded apically. Tenth tergum entire; in lateral aspect strongly arched apicad, widening basad; in dorsal aspect sharply constricted at midlength with tip narrow; apically with many sensillae arranged in a longitudinal, middorsal band; ventro-lateral process with a short, posteroverentral lobe. Clasper elongate, tapering apicad, tip narrow, appearing twisted, with a sharp dorsomesal tooth; in ventral aspect almost semicircular in outline. Phallus tubular, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly and many (40 to 50) short, black spines.

**Material Examined.**—Holotype, male: BRAZIL, EDO. RIO DE JANEIRO, Petrópolis, McLachlan Coll. B.M. 1938–674, Chimarra petricola Peters, who collected the species.

**Chimarra (Curgia) centrispina, new species**

**Figures 57–61; Map 4**

**Remarks.**—This is a very odd species, not fitting well into any species complex. On the basis of the clasper shape, with mesally directed point from the dorsum, large number of internal spines in the phallus, and widened base of the tenth tergum, it is similar to the morio complex. However, the tenth tergum is not as broad as in the other members of the complex, and the form of the ventrolateral process of tenth tergum is unique.
ADULT.—Length of forewing, \( \sigma^* 5–6 \text{ mm} \), \( \varphi 7–8 \text{ mm} \). Color in alcohol uniformly fuscous.

Male Genitalia: Eighth sternum slightly parallel sided; tergum with posterior margin slightly produced mesally (eighth segment omitted from Figure 58). Ninth segment slightly produced anterodorsally; posterodorsal keel produced into a blunt process. Cercus small, rounded. Tenth tergum entire; in lateral aspect parallel sided, nearly straight; in dorsal aspect short, broadly triangular, tip blunt; with many sensillae apically; ventrolateral process mostly fused to lateral margin of ninth segment, very broad, posterior margin oblique and blackened. Clasper elongate, quadratoapex produced into a small dorsomesally directed point; in ventral aspect longer than broad, with outer margin curved, slightly widened apicad. Phallus tubular, rather short, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly and nearly 100 short, black spines.

Material Examined.—Holotype, male: BRAZIL, EDO. MINASGERAIS, Rio Cipó, Yaboticubas, 10 Mar 1956, Machado. INHS Type.

Paratypes: Same data as holotype, \( 1\sigma^*, 6\varphi \) (INHS, NMNH).

ETYMOLOGY.—From the Latin centrum ("midpoint") and spina ("spine"), in allusion to the central spines of the phallic.

The aurivittata Group

DIAGNOSIS.—Length of forewing, 5–7 mm. Body jet black; forewing jet black, with a large, oval, golden spot. Claws of male foreleg apparently unmodified.

Male Genitalia: Eighth sternum slightly parallel sided; tergum with posterior margin slightly produced mesially (eighth segment omitted from Figure 58). Ninth segment slightly produced anterodorsally; posterodorsal keel produced into a blunt process. Cercus small, rounded. Tenth tergum entire; in lateral aspect parallel sided, nearly straight; in dorsal aspect short, broadly triangular, tip blunt; with many sensillae apically; ventrolateral process mostly fused to lateral margin of ninth segment, very broad, posterior margin oblique and blackened. Clasper elongate, quadratoapex produced into a small dorsomesally directed point; in ventral aspect longer than broad, with outer margin curved, slightly widened apicad. Phallus tubular, rather short, with apicodorsal surface produced; internally with a small, basal, rod-and-ring assembly and nearly 100 short, black spines.

DISTRIBUTION.—The species are found in central and northeastern South America.

DISCUSSION.—This is a distinctive group, containing only two species. They are an odd combination of what would appear to be pliosiomorphic and apomorphic characteristics. The eighth tergal structure, the phallus, and the lateral aspect of the tenth tergum all seem to be of ancestral nature. Yet the mesal division of the tenth tergum and, especially, the fusion of the claspers are all strongly derived. The nearly uniform black coloration, with a large, bright orange spot on the forewings, is startling but perhaps is most easily derived from the morio group, which is suggested also by the phallic structure.

Chimarra (Curgia) aurivittata Flint

Figures 62–65; Map 5

Chimarra (Curgia) aurivittata Flint, 1971:22.

REMARKS.—This species is very closely related to the following species, C. jugescens, new species, with which it shares a distinctive coloration: jet black with a central orange spot on the forewing. They can be distinguished only by the male genitalia. In aurivittata the eighth tergal lobe is more deeply divided, the claspers are widely fused mesally and their tips taper more regularly, and the phallus bears fewer spines.

ADULT.—Length of forewing, \( \sigma^* 5–7 \text{ mm} \). Color jet black; ventral side of body and bases of legs stramineous; forewing jet black, with a large, subapical, oval, transverse, gold spot.

Male Genitalia: Eighth sternum not widened dorsad; tergum strongly produced posteriad, in dorsal aspect with a deep, U-shaped mesal incision. Ninth sternum with anterior margin evenly produced, rounded; venter produced as a thin, keel-like lobe, not produced posteriad. Cercus small, ovoid, mostly fused to lateral surface of tenth tergum. Tenth tergum broadly basally, narrowing apicad; dorsal margin sinuate, with a deep, U-shaped mesal excision in dorsal aspect; with scattered sensillae. Clasper elongate, slender, tapering to an acute apex in lateral aspect; in ventral aspect fused mesally except for apicolateral, pointed processes whose tips almost meet mesally. Phallus tubular, short, inflated basally; internally with a rod-and-ring assembly whose rod is greatly produced anteriad, and 12 to 18 short, dark spines.

Material Examined.—GUYANA, DIST. ESSEQUIBO, Mazuruni River, 39 mi [62.8 km] SW Wineiperu, 17–18 Mar 1969, Duckworth and Dietz. \( 1\sigma^* \) paratype (NMNH). Dubulay Ranch, Warniabo Cr., 5°39.8'N, 57°53.4'W, 10–11 Apr 1994, O.S. Flint, Jr., \( 7\sigma^*, 6\varphi \); same, but 14–19 Apr 1995, 5\( \sigma^* \), 8\( \varphi \) (NMNH, UGGG); same, but Aramatani Cr., 5°39.4'N, 57°55.5'W, 15–18 Apr 1995, 7\( \sigma^* \), 1\( \varphi \) (NMNH, UGGG).

BRAZIL, EDO. AMAZONAS, Reserva Dukce, 26 km E. Manaus, 1–5 Feb 1979, O.S. Flint, Jr., 1\( \varphi \). Rio Marauá, Igarapé S. Antônio (Cachoeira), 8 Jan 1963, E.J. Fittkau (A-470), 2\( \sigma^* \), 1\( \varphi \). EDO. RONDONIA, Porto Velho, 180 m, 24–30 Apr 1989, V.O. Becker, 1\( \varphi \). Aripuanã, 180 m, 13–16 Apr 1989, V.O. Becker, 1\( \varphi \).

VENEZUELA, T.F. AMAZONAS, Cerro de la Neblina, basecamp (0°50'N, 66°10'W), 140 m, 4–29 Feb 1984, Davis and McCabe, 19\( \sigma^* \), 8\( \varphi \); same, but 13–24 Mar 1984, Flint and Louton, 22\( \sigma^* \), 18\( \varphi \); same, but 24 Nov–1 Dec 1984, R.L. Brown, 2\( \varphi \); same, but 1–20 Feb 1985, Spangler et al., 23\( \sigma^* \), 27\( \varphi \).

ETYMOLOGY.—From the Latin aurum ("gold") and vitta ("stripe"), in allusion to the spot on the forewing.
MAP 5.—Distributions of Chimarra (Curgia) aurivittata Flint, Chimarra (Curgia) donamariae Denning and Sykora, Chimarra (Curgia) margaritae Flint, and Chimarra (Curgia) acula, new species.
**Chimarra (Curgia) jugescens**, new species

**FIGURES 66-69; MAP 6**

**REMARKS.**—This species and the preceding species, C. aurivittata, share a distinctive coloration and can be distinguished only by the male genitalia. In jugescens the eighth tergal lobe is only shallowly divided, the claspers are fused mesally only near their bases and their tips are distinctly curved, and the phallus bears almost twice as many internal spines.

**ADULT.**—Length of forewing, 5-6 mm. Color jet black; ventral side of body and bases of legs stramineous; forewing jet black, with a large, subapical, oval, transverse, gold spot.

**Male Genitalia:** Eighth sternum not widened dorsad; tergum strongly produced posteriad, in dorsal aspect with a slight mesal division. Ninth sternum with anterior margin broadly produced, rounded; venter produced as a broad, almost terete, lobe, directed ventrad. Cercus small, rectangularoid, mostly fused to lateral surface of tenth tergum. Tenth tergum broad basally, narrowing apicad, with a deep, U-shaped mesal excision in dorsal aspect; with scattered sensillae. Clasper elongate, slender, tapering to an acute, dorsally curving apex in lateral aspect; in ventral aspect fused mesally for basal third, with apicolateral, pointed processes whose tips curve and almost meet mesally. Phallus tubular, short, inflated basally; internally with a rod-and-ring assembly whose rod is produced anteriad and 26 to 29 short, dark spines.

**MATERIAL EXAMINED.**—Holotype, male: BRAZIL, EDO. PARA, stream at Caverna do Tatajuba, ~22 km SE Altamira, 6 Oct 1986, P. Spangler and O. Flint. MZUSP Type.

**ETYMOLOGY.**—From the Latin jugo ("join") and the suffix, -escens ("beginning of "), in allusion to the partial fusion of the claspers.

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**The tucuna Group**

**DIAGNOSIS.**—Length of forewing, 5-7 mm. Color of body and appendages stramineous; forewings mostly pale yellow with several large fuscous spots. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth tergum with posteromesal margin produced, lobe entire, with a pair of subtending spines. Ninth segment with anterior margin oblique, broadest ventrally; posterolateral margin almost straight, posteroventral keel displaced anteriad. Cercus small, elongate. Tenth tergum entire, thin; in dorsal aspect broad basally, rounded apically; bearing many sensillae. Clasper elongate, thin, apex produced into a narrow upcurved lobe. Phallos tubular; internally with basal rod-and-ring assembly and many short black spines.

**DISTRIBUTION.**—The central Amazon basin near Manaus, Brazil.

**DISCUSSION.**—This group contains only a single species. It may be related to the morio group, with which it agrees in the shape of the tenth tergum and phallus; however, the pair of spines from the posterior margin of the eighth segment, the shape of the ninth segment, and lack of the ventrolateral sclerite from the tenth tergum all prevent its placement in that group. Its coloration is unique within the subgenus.

**Chimarra (Curgia) tucuna**, new species

**FIGURES 70-73; MAP 6**

**REMARKS.**—This very distinctive species bears no clear relationship to any other known species of Curgia, as discussed above.

**ADULT.**—Length of forewing, 5-7 mm. Color pale golden yellow; body and appendages stramineous; head and thorax with golden yellow hair; forewing pale golden yellow, with a large fuscous spot at midlength of posterior margin, a round, fuscous spot on radial system just before chord, and entire apical fourth, fuscous.

**Male Genitalia:** Eighth sternum almost parallel sided; tergum with posterior margin middorsally produced into a short, rectangular lobe, with a small pointed process on each side. Ninth sternum produced anteroventrally; with ventral keel directed ventrad, not reaching posterior margin. Cercus elongate, angulate, base broadly fused to dorsolateral margin of ninth segment. Tenth tergum elongate, broad apically in dorsal aspect, tapering apicad in lateral; with many sensillae. Clasper elongate, rounded ventradly, serrate dorsally, with apex narrowed, hooked dorsad. Phallos tubular, slightly inflated basad; internally with a small basal rod-and-ring assembly and about 40 small, black spines.

**MATERIAL.**—Holotype, male: BRAZIL, EDO. AMAZONAS, Igarapé Tucunáre, 75 km W Itacoatira, 30 Jan 1979, O.S. Flint, Jr. MZUSP Type.

**Paratypes:** Same data as holotype, 9♂, 9♀ (INPA, MZUSP, NMNH).

**ETYMOLOGY.**—A name suggested by the type locality.

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**The ensifera Group**

**DIAGNOSIS.**—Length of forewing, 5.5-7 mm. Color of body and forewings fuscous. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth tergum with posteromesal margin produced, lobe entire or barely bilobed. Ninth segment with anterior margin produced ventrally; posterolateral margin slightly produced over base of clasper, and bearing a long, slender, process ventrad of tenth tergum. Cercus small, circular or elongate. Tenth tergum entire, with mesal portion erect or raised above lateral portion, bearing many sensillae. Clasper short, produced into a dorsolateral projection and an apicome-
MAP 6.—Distributions of Chimarra (Curgia) chrysosoma, new species, Chimarra (Curgia) minga, new species, Chimarra (Curgia) tucuna, new species, Chimarra (Curgia) ensifera, new species, and Chimarra (Curgia) jugescens, new species.

Discussion.—This group only contains two known species. It seems to be unrelated to any other group in the genus. The strong spine from the posterior margin of the ninth segment suggests the margaritae group, but other parts on the genital

sal tooth. Phallus tubular; internally with basal rod-and-ring assembly, a pair of long spines, and two to three pairs of short to long black spines.

Distribution.—Widespread around the Amazonian Basin.
capsule argue against this relationship, especially the internal sclerites of the phallus.

*Chimarra* (*Curgia*) *ensifera*, new species

**FIGURES 74-77; MAP 6**

**REMARKS.**—This distinctive species is easily distinguished from *donamariae* by the erect central lobe of the tenth tergum, the placement and shape of the processes of the claspers, and the structure of the phallus.

**ADULT.**—Length of forewing, *σ* and *φ* 5.5–7 mm. Color fuscous, coxae paler; forewing fuscous.

*Male Genitalia:* Eighth sternum almost parallel sided; tergum with posterior margin middorsally produced into an elongate, apically rounded lobe. Ninth sternum very wide in lateral aspect, anterior margin strongly produced ventrally, with small dorsal lobe; dorsolateral margin with a series of strong, spine-like setae, and bearing from inner face a slender decurved, pointed process; ventral keel short, broad. Cercus small, circular. Tenth tergum nearly erect, hood-like in lateral aspect, squarely truncate apically in dorsal aspect; with many sensillae. Clasper elongate, rounded ventrally, with apex narrowed, pointed dorsal, with a slender, ventromesal point. Phallus long, tubular, slightly inflated basad; with internal structures displaced toward apex, with a rod-and-ring assembly, a pair of long, slender spines, two to four short, stout spines, and a pair of short spines, each divided into two or three smaller spines, comb-like.

**MATERIAL.**—Holotype, male: VENEZUELA, TERRITORIO FEDERAL AMAZONAS, Cerro de la Neblina, Camp IV, 0°58'N, 65°57'W, 760 m, 15–18 Mar 1984, O.S. Flint, Jr., NMNH Type.

Paratypes: Same data as holotype, 28*σ*, 21*φ* (IZAM, NMNH); same, but Camp V, 0°49'N, 66°0'W, 1250 m, 23–24 Mar 1984, 3*σ*, 1*φ* (IZAM, NMNH); same, but Camp III, 0°56'10"N, 66°3'53"W, 1820 m, 15–17 Feb 1984, D.R. Davis, 3*σ*, 1*φ* (IZAM, NMNH); same, but Camp X, 0°54'N, 60°2'W, 1690 m, 12–13 Feb 1985, W.E. Steinier, 18*σ*, 7*φ* (IZAM, NMNH); same, but Basecamp, 0°51'N, 66°10'W, 140 m, 19 Mar 1984, Flint and Louton, 10*σ*; same, but 10–20 Feb 1985, Spangler et al., 10*φ*.

**ETYMOLOGY.**—From the Latin *ensifer* ("sword-bearing"), in allusion to the process of the male genitalia.

*Chimarra* (*Curgia*) *donamariae* Denning and Sykora

**FIGURES 78-81; MAP 5**


*Chimarra* species.—Sattler, 1962:125 [larva, pupa, biology].

**REMARKS.**—Although clearly related to *ensifera*, it is easily distinguished by the lower central lobe of the tenth tergum, the more claw-like shape of the clasper, and the shapes and placement of the spines in the phallus, especially the apicolateral, C-shaped ones.

**ADULT.**—Length of forewing, *σ* 5.5 mm, *φ* 7 mm. Color fuscous; forewing fuscous.

*Male Genitalia:* Eighth sternum narrow, almost parallel sided; tergum with posterior margin middorsally produced into an elongate lobe, apex slightly bilobed. Ninth sternum produced anteroventrally; bearing from inner face a slender, pointed process; ventral keel short, broad. Cercus small, posteroventral margin developed as a curving ridge laterally on tenth tergum. Tenth tergum with mesal portion slightly elevated above shoulder-like lateral portions in lateral aspect, apex very slightly bilobed in dorsal aspect; with many sensillae on mesal portion. Clasper elongate, with a slender, erect, and mesally curving process middorsally, with apex narrowed, pointed. Phallus long, tubular, slightly inflated basad, with paired apicolateral, dark, C-shaped sclerites; internally with a slender rod-and-ring assembly, a pair of very long, slender spines whose apices cross, a pair of more lightly sclerotized long spines, and a pair of short spines.

**MATERIAL EXAMINED.**—BRAZIL, EDO. PARÁ, Rio Xingu Camp (52°22'W, 03°39'S), ~60 km S Altamira, 1–7 Oct 1986, Spangler and Flint, 1*σ* (MZUSP); same, but Igarapé Jabuti, 8–16 Oct 1986, Malaise trap, day collection, 1*σ*, 1*φ* (MZUSP, NMNH); same, but 1st jungle stream, trail 1, 2–8 Oct 1986, Malaise trap, day collection, 1*φ* (NMNH).

PERU, DPTO. MADRE DE DIOS, Pakitza (11°56'S, 71°18'W), tributary to Quebrada Paujil-Picoflor, trail 1, past marker 21, 350 m, 5 Jul 1993, Blahnik and Pescador, 3*σ*, 1*φ* (MHNJP, NMNH, UMSP).

**ETYMOLOGY.**—Patronym, in honor of Dona Maria Koltzau, who assisted Dr. Sattler in the discovery of the species.

**The margaritae Group**

**DIAGNOSIS.**—Length of forewing, 5–9 mm. Color of body orange, or orangeish to black; forewings jet black. Claws of male foreleg apparently unmodified.

*Male Genitalia:* Eighth tergum with posteroventral margin produced, lobe usually divided mesally. Ninth segment with anterior margin usually somewhat produced ventrally, broadened dorsally; posteroventral margin produced into a small, rounded lobe over base of clasper; with a blackened, pointed process from posterior between tenth tergum and claspers. Cercus rounded, ovate. Tenth tergum divided mesally, halves elongate, rod-like, bearing many sensillae. Clasper elongate, generally rectanguloid, with a strong posterior tooth. Phallus tubular; dorsolateral and lateroventral surfaces of phallotheca sclerotized, ribbon-like, serving to invert the internal complex; if internal complex everted, the lateroventral ribbons often seen to end with a dark spine; internally with rod-and-ring assembly modified beyond homology (generally), often consisting of paired, elongate, spiculate, or otherwise modified, lobes, usually with one or two large spines additionally.
**DISTRIBUTION.**—The Andes of northern and western South America from Bolivia to Venezuela.

**DISCUSSION.**—This is a very distinctive group of five closely related species. It is united by a series of striking apomorphies: the divided tenth tergum; the blackened, pointed process from the posterior margin of the ninth segment; and strikingly modified internal sclerites of the phallus. There are several weak clusters of species. The pair *margaritae* and *chrysosoma* both have strikingly orange bodies, elongate, rectangular claspers, and paired spiculate lobes from the phallus. The species *minga* has a similar elongate clasper but has a dark body, and the internal sclerites of the phallus are distinctly different. The final two species, *lojaensis* and *acula*, also have dark bodies, but the clasper tapers more, the apical tooth is greatly enlarged, the internal sclerites of the phallus are distinctive, and the lateroventral phallic ribbons end in a dark spine.

*Chimarra (Curgia) margaritae* Flint

**FIGURES** 82–85; **MAP** 5


**REMARKS.**—This species is very closely related to *chrysosoma*, distinguished only by details of the male genitalia. In *margaritae* the eighth tergum is broadly and roundly produced, but in *chrysosoma* it is distinctly bilobed. The most clear-cut differences are seen in the phallus, which in *margaritae* has a dorsal spiny band and a short basal ring with the lateral spiny processes heavily sclerotized; in *chrysosoma* there is no dorsal process, the basal ring is long and pointed and intrudes between the lateral spiny processes, which are much longer and not clearly attached to a sclerite.

**ADULT.**—Length of forewing, $\varphi$ and $\delta$ 6.5–9 mm. Color black and orange; head, thorax, abdomen, coxae, and femora orange; antennae, palpi, tibiae and tarsi, and wings black. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum nearly parallel sided; tergum produced posterosolesmally into a broad, rounded lobe. Ninth sternum slightly produced anteroventrally, posteroventral keel well developed; with a blackened process from posterior margin between clasper and tenth tergum. Cercus a small, ovoid lobe. Tenth tergum in lateral aspect an elongate, rounded rod, in dorsal aspect deeply divided mesally; each lobe with many sensillae. Clasper rather rectangular in lateral aspect, dorsal margin serrulate, with a distinct, upright, apicosmesal lobe. Phallus tubular, inflated basally, apex membranous, but with sclerotized dorso- and ventrolateral bands; apex dorsally with a transverse sclerite with small, dark spines, ventrally with dark, paired sclerites bearing many spicules and arising from a sclerotized basal structure.

**MATERIAL EXAMINED.**—**COLOMBIA**, **DEPT. ANTIOQUIA**, 12 km NW Medellin [road to San Pedro], 13 Feb 1983, O.S. Flint, Jr., 23$\varphi$ (including holotype), 5$\varphi$; same, but 20 Feb 1984, C.M. and O.S. Flint, Jr., 7$\varphi$, 3$\varphi$. Quebrada Bocana, 8 km E Medellin [road to Sta. Elena], 24 Feb 1983, O.S. Flint, Jr., 1$\varphi$, 12 km E Medellin [road to Sta. Elena], 6 Feb 1983, O.S. Flint, Jr., 6$\varphi$, 1$\varphi$. 24 km NW of Medellin [road to San Jerómino], 22 Feb 1984, C.M. and O.S. Flint, Jr., 2$\varphi$. 27 km NW of Medellin [road to San Jerómino], 23 Feb 1984, C.M. and O.S. Flint, Jr., 10$\varphi$, 4$\varphi$. 12 km N Fredonia [road to Medellin], 12 Feb 1983, O.S. Flint, Jr., 4$\varphi$, 2$\varphi$. Quebrada Cocorná, Aug 1981. R. Vélez, 6$\varphi$, 3$\varphi$ (UNCM); same, but A. Madrigal C., 2$\varphi$, 1$\varphi$ (UNCM); same, but Jul 1980, A.M. del Corral, 1$\varphi$ (UNCM). San Luis, Sep 1980, A.M. del Corral, 3$\varphi$ (UNCM). **DEPT. VALLE DEL CAUCA**, Topacio, 1600 m, 13 Sep 1985, A.D. Quintero, 6$\varphi$, 3$\varphi$.

**ETYMOLOGY.**—Patronym, in honor of Margarita M. Correa G., a student of Trichoptera at the University of Antioquia, who helped me greatly during my trips to Colombia.

*Chimarra (Curgia) chrysosoma,* new species

**FIGURES** 86–89; **MAP** 6

**REMARKS.**—This species and the preceding species, *margaritae*, are very closely related. The differences are found in the male genitalia, as noted previously. The shapes of the eighth terga and phalli are most distinctive.

**ADULT.**—Length of forewing, $\varphi$ and $\delta$ 7.5–9 mm (Peruvian examples 5–7 mm). Color black and orange; head, thorax, abdomen, coxae, and femora orange; antennae, palpi, head between antennae, tibiae and tarsi, and wings black. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum parallel sided; tergum produced posteromesally into a pair of rounded submesal lobes. Ninth sternum with anterior margin nearly vertical; with a small posteroventral keel; posterolateral margin produced posteriad over base of clasper into a small, round lobe, with a blackened, pointed process beneath phallus. Cercus a small, ovoid lobe. Tenth tergum in lateral aspect an elongate, slender lobe; in dorsal aspect divided mesally, with lateral arms slightly divergent posteriad; each lobe with many sensillae. Clasper elongate, rectanguloid, with a distinct, apicodorsal tooth; in ventral aspect broadly rounded apically. Phallus tubular, inflated basally; apically with elongate lateral bands of short, dark spines between which mesosabally lies an elongate, pointed sclerite.

**MATERIAL.**—**Holotype.** male: BOLIVIA [PCIA. LA PAZ], Yungas La Paz, Circunata to Cajuata, 2400 m, 3–5 Dec 1984, L.E. Peña G.; NMNH Type.

**Paratypes:** Same data as holotype, 2$\varphi$, 4$\varphi$. Unduavi to Coroico, 2500 m, 19–25 Nov 1984, L.E. Peña G., 2$\varphi$.

135 (13°07'S, 71°43'W), 2200 m, 28–29 Aug 1989, N.E. Adams, 1♂; same, but river at Puente Union (13°04.2'S, 71°34.0'W), 1670 m, 21–23 Jun 1993, Blahnik and Pescador, 6♂, 3♀; same, but Puente San Pedro, km 152 (13°03.3'S, 71°32.8'W), 44 km NW Pilcopata, 1450 m, 2–3 Sep 1988, O. Flint and N. Adams, 5♂; same, but 24 Jun 1993, Blahnik and Pescador, 3♂, 1♀; same, but Quitacalzon, km 164 (13°01.6'S, 71°30.0'W), 32 km NW Pilcopata, 1050 m, 1–2 Sep 1989, N. Adams et al., 9♂, 3♀; same, but 25–27 Jun 1993, Blahnik and Pescador, 16♂, 8♀; same, but streamlet 50 m E Quitacalzon, 2 Sep 1989, 4♂, 4♀, 2♂; same, but 26 Jun 1993, Blahnik and Pescador, 2♂ (MHNJP, NMNH, UMSP).

ETYMOLOGY.—From the Greek chrysos (“gold”) and soma (“body”), in allusion to the body color.

Chimarra (Curgia) minga, new species
FIGURES 90–93; MAP 6

REMARKS.—Although very clearly a member of the margaritae group, this species offers a number of distinctive differences from the others, especially in color and the phallus. The entirely black body and wings are in marked contrast to the orange, or at least pale, bodies with black wings in the other species. The internal sclerites of the phallus are not spiny, but plate-like and broad basally and become membranous apically.

ADULT.—Length of forewing, ♂ and ♀ 6–7 mm. Color jet black, immaculate. Claws of male foreleg apparently unmodified.

Male Genitalia: Eighth sternum parallel sided; tergum produced posteromesally into a pair of submesal lobes. Ninth sternum produced anteromesally; posteroverentral keel produced into a slender process; posterolateral margin produced posteriad over base of clasper into a pointed lobe, with a blackened, pointed process beneath phallus. Cercus a small, ovoid lobe. Tenth tergum in lateral aspect an elongate, slender lobe; in dorsal aspect deeply divided mesally, with lateral arms divergent posteriad; each lobe with many sensillae. Clasper rectanguloid, slightly produced posteromesally, with a distinct, apicodorsal tooth; in ventral aspect barely rounded apically with spine very distinct apicomisally. Phallus tubular, inflated basally; apex divided into a dorsal, tubular plate and lateral, elongate plates; internally with paired, curved plates, membranous apically, and a single, curved spine basomesally.


ETYMOLOGY.—A name suggested by the locality Domingo.

Chimarra (Curgia) acula, new species
FIGURES 94–97; MAP 5

REMARKS.—This species is allied to the following species, lojaensis, as shown by the black body and wings, the somewhat shorter clasper tapering apicoventrally and bearing a much more prominent apical tooth, and the phallus having black seta at the apex of the ventrolateral ribbons. The two differ most notably by the phallic armature.

ADULT.—Length of forewing, ♂ and ♀ 7.5–8 mm. Color black; body blackish, legs basally paler, abdomen yellow-orange; wings black. Claws of male foreleg apparently unmodified.

Male Genitalia: Eighth sternum slightly narrowed ventrad; tergum produced posteromesally into a shallowly divided mesal lobe. Ninth sternum with anterior margin sinuate; with a posterior ventral keel; posterolateral margin produced posteriad over base of clasper into a small lobe, with a blackened, pointed process beneath phallus. Cercus a small, ovoid lobe. Tenth tergum in lateral aspect an elongate, slender lobe; in dorsal aspect divided mesally, with lateral arms divergent posteriad; each lobe with many sensillae. Clasper rectanguloid, slightly produced posteroverentral, with a distinct, apicodorsal tooth; in ventral aspect barely rounded apically with spine very distinct apicomisally. Phallus tubular, inflated basally; apically with an elongate, lateral sclerite ending in a black spine; internally with a pair of elongate, lateral sclerites, between which lies mesally an elongate, pointed sclerite that bears a dark central band.

MATERIAL.—Holotype, male: PERU, DEPT. CUSCO, Pcia. Paucartambo, Puente San Pedro, km 152 (13°03.3'S, 71°32.8'W), 44 km NW Pilcopata, 1450 m, 2–3 Sep 1988, O. Flint and N. Adams. NMNH Type. Paratypes: Same data as holotype, 3♀.

ETYMOLOGY.—From the Latin acula (“pin”), in allusion to the point on the clasper.

Chimarra (Curgia) lojaensis, new species
FIGURES 98–102; MAP 7

REMARKS.—This species and the preceding species are closely related, but small differences are found in all parts of the male genitalia, especially the phallic sclerites.

ADULT.—Length of forewing, ♂ and ♀ 7.5–8 mm. Color black; body blackish dorsally; basal part of legs, ventral part of thorax, and abdomen orange; wings black. Claws of male foreleg apparently unmodified.

Male Genitalia: Eighth sternum slightly narrowed ventrad; tergum produced posteromesally into a shallow mesal lobe. Ninth sternum with anterior margin slightly produced ventrad; with a posteroverentral keel; posterolateral margin slightly and broadly produced posteriad over base of clasper, with a blackened, pointed process beneath phallus. Cercus a small, ovoid lobe. Tenth tergum in lateral aspect an elongate, slender...
lode; in dorsal aspect divided mesally, with lateral arms slightly divergent basally; each lobe with many sensillae. Clasper rectanguloid, produced posteroventrally, with a distinct, api-
codorsal tooth; in ventral aspect barely rounded apically, with spine very distinct apicomesally. Phallus tubular, inflated basally; apically with an elongate, lateral sclerite ending in a
small, black spine; internally with a pair of short, basally broad, lateral spines, between which lies mesally an upcurved spine united basally to the lateral spines, apicilaterally with a second pair of short, black spines.

**MATERIAL.**—*Holotype, male:* ECUADOR, PCIA. ZAMORACHTINChIPE, 30 km E Loja, 2000 m, 23 Sep 1990, O.S. Flint, Jr. NMNH Type.

**Paratypes:** Same data as holotype, 2♂, 1♀.

**ETYMOLOGY.**—From the type locality, Loja.

**The otuzcoensis Group**

**DIAGNOSIS.**—Length of forewing, 7–8.5 mm. Color of body and forewings jet black. Claws of male foreleg apparently unmodified to slightly asymmetrical.

**Male Genitalia:** Eighth tergum with posteroesmal margin produced, lobe divided mesally. Ninth segment with anterior margin slightly produced ventrally, broadened dorsally; posterolateral margin slightly produced and angulate at midlength. No free cercus, but an oval, setate lobe fused to the side of tenth tergum may be cercal in origin. Tenth tergum divided mesally, halves elongate, rod-like, bearing many sensillae. Clasper elongate, rectangular, with a dorsomesal tooth apically. Phallus tubular; dorsomesal and lateral surfaces of phallotheca sclerotized, ribbon-like, and end with a dark spine; internally with rod-and-ring assembly modified beyond recognition, consisting of two pairs of large, black spines and a midventral sclerite.

**DISTRIBUTION.**—The Andes of northwestern South America from Peru to Ecuador.

**DISCUSSION.**—This group contains only a single species. In most respects it resembles the margaritae group, especially *lojaensis*. It differs from all species in the margaritae group in two major aspects: the lack of a process from the posterior margin of the ninth segment and the loss of the cercus, or more probably the fusion of the cercus to the lateral surface of the tenth tergum. With the exception of these two characteristics, *otuzcoensis* and *lojaensis* are quite similar, especially in the structure of the internal sclerites and the apex of the phallus.

**Chimarra (Curgia) otuzcoensis** Flint and Reyes

FiguRes 103–107; Map 7

**Chimarra (Curgia) otuzcoensis** Flint and Reyes, 1991:480.

**REMARKS.**—Although herein placed in its own group, this species shares several common structures with the *margaritae* group, especially with *lojaensis*, as discussed above.

**ADULT.**—Length of forewing, ♂ and ♀ 7–8.5 mm. Color overall jet black, immaculate. Claws of male foreleg sometimes slightly asymmetrical.

**Male Genitalia:** Eighth sternum narrow, parallel sided, posterior margin concave; tergum produced posteriad into a pair of rounded, submesal lobes. Ninth segment produced into a rounded anterodorsal lobe; with a small posteromesal keel; posterolateral margin slightly produced and angulate at midlength. Cercus completely fused to lateral surface of tenth tergum, visible only as an oval, setate area. Tenth tergum in lateral aspect broad basally, produced into an apical, nose-like lobe with many sensillae; in dorsal aspect with a deep, U-shaped, mesal excision separating lateral arms. Clasper elongate, rectangular with a small apicodorsal point in lateral aspect; in ventral aspect with an apicominal lobe from dorsal margin. Phallus tubular, inflated basally; apex with a thin, pointed process from dorsolateral surface on each side; a pair of long, arched, black spines dorsally, and a shorter pair of black spines laterally; midventrally with a large, black spine whose apex is trifid in ventral aspect and which bears a pair of slender basal processes.


**ETYMOLOGY.**—From the type locality, Province of Otuzco.

**The fernandezi Group**

**DIAGNOSIS.**—Length of forewing, 6–9 mm. Color uniformly fusous. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth tergum with a posteroesmal lobe. Ninth segment with anterior margin produced ventrally, broad dorsad, with posterior margin produced to some degree over base of tenth tergum; posterolateral margin produced over base of clasper. Cercus short, ovate, appressed to side of tenth tergum. Tenth tergum entire to slightly divided; halves divided into elongate dorsal and ventrolateral lobes, bearing many sensillae on dorsal lobe. Clasper elongate, tapering to a pointed apex. Phallus tubular, inflated basally; internally with rod-and-ring assembly greatly modified and unrecognizable, with long, heavy, dark spines and plates, rarely with short, black spines.

**DISTRIBUTION.**—The Andes of northern South America from Ecuador to Venezuela, and Costa Rica.

**DISCUSSION.**—This is a distinctive group of four closely related species. The form of the tenth tergum (divided into dorsal and ventral lobes but with the dorsal lobe not generally divided mesally), the broad dorsum of the ninth segment produced somewhat over the base of the tenth segment, the elongate and tapering clasper, and the very modified rod-and-ring assembly of the phallus are all synapomorphies uniting this group. The species *costaricensis* is the most modified of the group, with its divided tenth tergum and exceedingly
modified internal plates of the phallus, but the other three species form a very uniform complex of species.

**Chimarra (Curgia) barinita, new species**

**FIGURES** 108-111; **MAP** 7

REMARKS.—This species, together with *fernandezi* and *puya*, form the distinctive *fernandezi* complex, which is characterized by the tenth tergum being bifid in lateral aspect but entirely apically in dorsal. *Chimarra barinita* is the sister of *puya* and is generally indistinguishable from it in most parts, except for the phallus. There are two subequal pairs of long internal spines, the dorsalmost of which have their apices angled laterad and bear a ventral tooth, and the membrane bears a cluster of short spines in the phallus of *barinita*.

**ADULT.**—Length of forewing, 7–7.5 mm. Color uniformly fuscous; forewings unmarked.

**Male Genitalia:** Eighth sternum narrowing ventrad; ter-gum produced posteriad as a small, mesal lobe. Ninth segment produced anteroventrally; posteroventral keel produced into a broad lobe. Cercus small, ovate. Tenth tergum hood-like, slightly uparched, apex bulbous, entire, with many sensillae; with a bluntly pointed ventrolateral lobe. Clasper elongate, ventral and dorsal margins convex; apex produced into a small hook directed dorsomesad. Phallus tubular, base inflated; internally with a pair of very long, dark spines ventrally united to a basal sclerite and with apices sharply upturned, dorsally with a pair of short, dark spines; apicodorsal surface of phallotheca ending in a very short, ribbon-like sclerite.

**MATERIAL EXAMINED.**—**Holotype.** male: ECUADOR, PCIA. PASTAZA, 27 km N Puyo, Estacion Fluviometrica, 4 Feb 1976, P.J. Spangler et al. NMNH Type.

**Paratypes:** Same data as holotype, 2♂. ETYMOLOGY.—A name suggested by the locality Puyo.

**Chimarra (Curgia) fernandezi** Flint

**FIGURES** 116-119; **MAP** 8

**ADULT.**—Length of forewing, 7–8 mm. Color uniformly fuscous; forewings unmarked.

**Male Genitalia:** Eighth sternum narrowing ventrad; ter-gum produced posteriad as a small, mesal lobe. Ninth segment produced anteroventrally; posteroventral keel produced into a broad lobe. Cercus small, ovate. Tenth tergum hood-like, slightly uparched, apex bulbous, entire, with many sensillae; with a bluntly pointed ventrolateral lobe. Clasper elongate, ventral and dorsal margins convex; apex produced into a small hook directed dorsomesad. Phallus tubular, base inflated; internally with a pair of very long, dark spines ventrally united to a basal sclerite and with apices sharply upturned, dorsally with a pair of short, dark spines; apicodorsal surface of phallotheca ending in a very short, ribbon-like sclerite.

**MATERIAL EXAMINED.**—**Holotype.** male: ECUADOR, PCIA. PASTAZA, 27 km N Puyo, Estacion Fluviometrica, 4 Feb 1976, P.J. Spangler et al. NMNH Type.

**Paratypes:** Same data as holotype, 2♂. ETYMOLOGY.—A name suggested by the locality Puyo.

**Chimarra (Curgia) puya**, new species

**FIGURES** 112-115; **MAP** 7

**ADULT.**—Length of forewing, 8.5–7 mm. Color uniformly fuscous; forewings unmarked.

**Male Genitalia:** Eighth sternum narrowing ventrad; ter-gum produced posteriad as a small, mesal lobe. Ninth segment produced anteroventrally; posteroventral keel produced into a broad lobe. Cercus small, ovate. Tenth tergum hood-like, slightly uparched, apex bulbous, entire, with many sensillae; with a bluntly pointed ventrolateral lobe. Clasper elongate, ventral and dorsal margins convex; apex produced into a small hook directed dorsomesad. Phallus tubular, base inflated; internally with a pair of very long, dark spines ventrally united to a basal sclerite and with apices sharply upturned, dorsally with a pair of short, dark spines; apicodorsal surface of phallotheca ending in a very short, ribbon-like sclerite.

**MATERIAL EXAMINED.**—**Holotype.** male: VENEZUELA, EDO. BARINAS, 22 km NW Barinitas, 19 Feb 1976, C.M. and O.S. Flint, Jr. NMNH Type.

**Paratypes:** Same data as holotype, 2♂, 2♀ (IZAM, NMNH).


**ETYMOLOGY.**—A name suggested by the locality Barinita.

**Chimarra (Curgia) puya**, new species

**FIGURES** 112-115; **MAP** 7

**REMARKS.**—This species and *barinita* are very closely related sister species. Although in *puya* the tenth tergum is more uparched and bulbous and the point at the tip of the clasper is much reduced, the definitive differences are seen in the phallus. In *puya* the cluster of small spines is lacking at the tip of the phallus, the dorsal spines are much smaller, and the ventral spines are stouter.
MAP 8.—Distributions of Chimarra (Curgia) costaricensis, new species, Chimarra (Curgia) fernandezi Flint, Chimarra (Curgia) straminea, new species, Chimarra (Curgia) canoaba, new species, and Chimarra (Curgia) paria, new species.

Est. La Colina, 600 m, 22 Jan 1994, Holzenthal et al., 5♂, 4♀ (UMSP).

ETYMOLOGY.—Patronym, in honor of the late F. Fernandez Yepes, Venezuelan entomologist, who was very helpful during my visits to Venezuela.

**Chimarra (Curgia) costaricensis, new species**

**FIGURES** 120–124; **MAP** 8

REMARKS.—This is the fourth species in the *fernandezi* complex, and the only member of the entire group known from Central America. There are slight differences in many parts of the male genitalia among the various species, but between this species and the others, the primary difference lies in the internal sclerites of the phallus. The eighth tergum is produced dorsomesally into a narrow lobe, the tenth tergum is distinctly divided apicomesally, and the cerci are completely fused to the lateral margins of the tergum in *costaricensis*. The internal sclerites of the phallus are large and heavily sclerotized, the dorsolateral rods are thin but broad and pointed in ventral aspect, and the ventromesal sclerite is large and joined to the dorsolateral rods basally.

ADULT.—Length of forewing, ♂ and ♀ 6–9 mm. Color uniformly fuscous; forewings unmarked.

Male Genitalia: Eighth sternum narrowing slightly ven-
trad; tergum produced posteriad as a narrow, mesal lobe. Ninth segment slightly produced anteroventrally; posteroventral keel about twice as long as high; dorsal margin flattened, heavily sclerotized, and produced posteriad as a sharp mesal point. Cercus a small, ovoid lobe completely fused mesally to lateral surface of tenth tergum. Tenth tergum produced into a rounded dorsal lobe in lateral aspect, but in dorsal aspect tergum distinctly divided mesally for half length; with a distinct, bluntly pointed ventrolateral lobe. Clasper elongate, pointed apicomesally; ventral and lateral margins convex. Phallus tubular, base inflated; internally with a pair of long dorsolateral spines, thin in lateral aspect, but broad and pointed in ventral aspect, united near base to a long, elongate, midventral sclerite.


ETYMOLOGY.—From the type country, Costa Rica.

The canoaba Group

DIAGNOSIS.—Length of forewing, 4–8 mm. Color uniformly fuscous or stramineous. Claws of male foreleg apparently unmodified.

Male Genitalia: Eighth sternum hardly narrowing ventrad; tergum produced posteriad as a simple, mesal, hood-like lobe. Ninth segment slightly produced anteroventrally; posteroventral keel produced into a pointed, slender process. Cercus a small, ovate lobe. Tenth tergum hood-like, arched dorsad; apex of the tenth tergum produced into a small, dorsally directed hook. Phallus tubular, base slightly inflated; internally with a pair of long, slender, curved spines attached to a basal sclerite, and apex with a cluster of about 30 short, black spines.

MATERIAL EXAMINED.—Holotype, male: VENEZUELA, EDO. MÉRIDA, 10 km E Santo Domingo, 6800 ft [2040 m], 7 Feb 1978, montane forest, blacklight, J.B. Heppner. NMNH Type.

Paratypes: EDO. MÉRIDA, Quebrada Mucuy, 7 km E Tabay (8.637°N, 71.034°W), 2200 m, 18 Jan 1994, Holzenthal et al., 1♂, 8♀ (UMSP); same, but Mucuy Fish Hatchery, 6600 ft [1980 m], 10–13 Feb 1978, J.B. Heppner, 9♂, 4♀. EDO. BARINAS, 30 km NW Barinatas, 24 Feb 1976, C.M. and O.S. Flint, Jr., 2♀. San Isidro, 24 Sep 1975, R.E. Dietz, 1♂ (IZAM). La Chimenea, 5 km S La Soledad, 1500 m, 28–29 May 1975, R.E. Dietz, 1♂ (IZAM).

ETYMOLOGY.—From the Latin stramineus ("of grass"), in allusion to its color.

Chimarra (Curgia) canoaba, new species

FIGURES 125–128; MAP 8

REMARKS.—Chimarra canoaba is very closely related to the following new species, irwini, on the basis of the shape of the tenth tergum. However, canoaba is easily distinguished by the much shorter tenth tergum and mesal lobe of the eighth tergum, the shape of the apex of the clasper, and the presence of long internal spines in the phallus.

ADULT.—Length of forewing, ♂ and ♀ 4–5 mm. Color with the uniform color, fuscous to stramineous, render this group very easily recognized.

Chimarra (Curgia) straminea, new species

FIGURES 125–128; MAP 8

REMARKS.—From the other species of the group, straminea is easily recognized by its uniform stramineous color and narrowed and uparched apex of the tenth tergum in lateral aspect that is notched mesally in dorsal aspect. In the three other species, the apex is broad and nearly rectangular in lateral aspect and deeply, but narrowly, cleft in dorsal aspect and their color is fuscous. Differences also exist among all four species in the shape of the eighth tergum, tip of the claspers, and phallic armature.

ADULT.—Length of forewing, ♂ and ♀ 7–8 mm. Color uniformly stramineous; forewings unmarked.

Male Genitalia: Eighth sternum hardly narrowing ventrad; tergum produced posteriad as a simple, mesal, hood-like lobe. Ninth segment slightly produced anteroventrally; posteroventral keel produced into a pointed, slender process. Cercus a small, ovate lobe. Tenth tergum hood-like, arched dorsad; apex bifid in dorsal aspect, with many sensillae. Clasper elongate, ventral margin convex, dorsal margin nearly straight; apex produced into a small, dorsally directed hook. Phallus tubular, base slightly inflated; internally with a pair of long, slender, curved spines attached to a basal sclerite, and apex with a cluster of about 30 short, black spines.

MATERIAL EXAMINED.—Holotype, male: COSTA RICA, PIU. ALAHUELA, Río Bochinche tributary, 6 km (air) NW Dos Ríos, Cerro Campana (10.945°N, 85.313°W), 810 m, 3 Mar 1986, Holzenthal et al., 2♂, 1♀ (UMSP); same, but Mucuy Fish Hatchery, 6600 ft [1980 m], 10–13 Feb 1978, J.B. Heppner. NMNH Type.

Paratypes: Same data as holotype, 3♂, 13♀ (INBIO, NMNH, UMSP). PIU. PUNTAARENAS, Río Singri, ~2 km (air) S Rio San Lorencito and tributaries, Reserva Forestal San Ramon 640 m, 15–16 Mar 1986, Holzenthal and Fasth, 29 (UMSP). PCIA. Río Negro, Parque Nacional Rincon de la Vieja (10.216°N, 84.607°W), 980 m, 30 Mar–1 Apr 1987, Holzenthal et al., 1♂ (UMSP).

ETYMOLOGY.—From the type country, Costa Rica.
uniformly fuscous; forewings unmarked.

**Male Genitalia:** Eighth sternum hardly narrowing ventrad; tergum produced posteriad as a simple, mesal, hood-like lobe. Ninth segment produced anteroventrally; posteroventral keel produced into a slender process. Cercus irregularly elongate. Tenth tergum small, with a small, dorsal lobe that is narrowly divided dorsomesally and bears many sensillae; with a large, rectangular, ventrolateral lobe. Clasper elongate, ventral margin convex, dorsal margin nearly straight; apex produced into a small, basally directed hook that bears a small apically directed lobe. Phallus tubular, base slightly inflated; internally with a small basal rod-and-ring assembly, a pair of long, dark spines with enlarged bases and sharply curved apices, and with a cluster of about 16 short, black spines.

**Material Examined.—Holotype, male: VENEZUELA, EDO. CARABOBO, near Canoabo, 850 m, 24 Jan 1983, O.S. Flint, Jr. NMNH Type.**

**Paratypes:** Same data as holotype, 1♂, 1♀ (IZAM, NMNH). EDO. MIRANDA, Santa Cruz del Rio Grande, 7 Feb 1976, C.M. and O.S. Flint, Jr., 1♂.

**Etymology.—** A name suggested by the locality Canoabo.

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**Chimarra (Curgia) irwini, new species**

**Figures 133-136; Map 9**

**Remarks.—** This species is a very distinctive member of the *straminea* complex and is probably the sister species to *paria*. Both have the posterior margin of the eighth tergum produced into a slender process, and both lack long spines in the phallus. In *irwini* the tenth tergum is almost twice as long as high, deeply and narrowly divided dorsomesally; each lateral lobe consisting of a dorsal portion whose dorsal margin curves upwardly in lateral aspect and bears many sensillae and a thin, lateral plate whose posterior margin recedes ventrad and is produced into a small, posteroventral angle. Clasper elongate, nearly parallel sided; apex produced into a small, dorsomesally directed hook. Phallus tubular, base slightly inflated, apex produced into a rounded lobe ventrally, with an apicodorsal hood-like sclerite; internally with a rod-and-ring assembly whose rod is elongate, and paired rows of 13 to 15 short, black spines in each.

**Material Examined.—Holotype, male: VENEZUELA, EDO. SUCRE, Rio La Viuda, Uquire, Peninsula de Paria, 10°42.830'N, 61°57.661'W, 15 m, 30 Mar–1 Apr 1995, Holzenthal, Flint, and Cressa, NMNH type.**

**Paratypes:** Same data as holotype, taken in malaise trap, 12♂, 1♀ (IZAM, NMNH, UMSP).

**Etymology.—** A name suggested by the locality Paria Peninsula.

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**The medioloba Group**

**Diagnosis.—** Length of forewing, 4.5–7.5 mm. Body, appendages, and forewing uniformly fuscous, bases of legs slightly paler. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum with posteroventral margin variable: slightly to strongly bilobed, with mesal lobe between these lobes, to single, elongate, mesal process. Ninth segment produced anteroventrally, narrow dorsad, often with dorsomesal margin produced or bearing dorsolateral projections from posterior margin; posterolateral margin generally produced as lobe over clasper base, sometimes greatly produced. Cercus variable, fused to basolateral lobe of tenth tergum. Tenth tergum divided mesally, rarely shallowly, generally deeply to completely so, broad basally, tapering apically, of variable shape, bearing many sensillae. Clasper elongate, almost parallel sided, apically with tooth or acutely pointed. Phallus...
MAP 9.—Distributions of Chimarra (Curgia) *ypsilon* Flint, Chimarra (Curgia) *aviceps*, new species, Chimarra (Curgia) *irwini*, new species, and Chimarra (Curgia) *distermina*, new species.

tubular, inflated basally; internally with basal, rod-and-ring assembly, often associated with pair of large, black spines, and additional four to six enlarged, black spines.

DISTRIBUTION.—Limited to the region north of the Amazon River and south and east of the Orinoco and Negro rivers; primarily the Guyanan Crystalline Shield area.
DISCUSSION.—This is a distinctive group of 10 species, separable into two major complexes; one, the \textit{juliae} complex, consisting of \textit{juliae} and \textit{guyanensis}, is the most highly modified. The other complex, the \textit{medioloba} complex, contains the remaining species, separable into five clusters, but all closely related. The \textit{claviloba} cluster also contains \textit{cirrifera} and is characterized by rather simple eighth and ninth terga. Another complex contains \textit{medioloba} and \textit{truncatiloba} and is characterized by an elongate, mesal process of the eighth tergum, but a rather simple ninth tergum. More modified is the cluster of \textit{fimbriata} and \textit{neofimbriata}, in which the eighth tergum bears large submesal lobes flanking a mesal lobe, and the ninth segment bears elongate dorsolateral processes. The species \textit{quaternaria} stands alone and is distinguished by its broadly produced eighth tergum bearing four apical points, its ninth segment with large, pointed dorsolateral lobes, and its much reduced tenth tergum. Also standing alone is \textit{carolae}, with its single, long, mesal process of the eighth tergum and its paired, long, dorsolateral processes of the ninth tergum overlaying the tenth tergum. The \textit{juliae} complex bears submesal lobes from the eighth tergum, but the ninth segment bears long, slender, dorsolateral processes and a very large ventrolateral lobe, surpassing the claspers and almost completely hiding them in lateral aspect.

\textbf{Chimarra (Curgia) claviloba Flint}

FIGURES 141–143; MAP 10


REMARKS.—This species and the new species \textit{cirrifera} are related on the basis of the slight modifications of the eighth and ninth terga. In \textit{claviloba} the tenth tergum is pointed apically, with each side bearing a distinct dorsal lobe (rather than being broad and lacking the lobe in \textit{cirrifera}) and the phallus lacks the heavy spines associated with rod-and-ring assembly (as are present in \textit{cirrifera}).

ADULT.—Length of forewing, $\sigma$ 6.5 mm. Color probably fuscous when alive.

\textit{Male Genitalia:} Eighth sternum enlarged dorsad; tergum with posterior margin produced mesally and with small apical excision; in lateral aspect with small, dark tooth laterad of...
uniformly fuscous. With the rod-and-ring assembly, and the elongation and curling of the other spines of the phallus of this species.

ADULT.—Length of forewing, \( \sigma \) and \( \varphi \) 4.5–7.5 mm. Color uniformly fuscous.

Male Genitalia: Eighth sternum slightly enlarged dorsad; tergum with long, slightly drooping, mesal process from posterior margin, apex constricted. Ninth sternum with anteroventral margin produced; with short, distinct, postero medial keel; dorsum produced into two, bilobed, narrow, transverse ridges dorsad of tenth tergum. Cercus elongate, fused to dorsolateral margin of lateral lobe of tenth tergum. Tenth tergum divided mesally into broad lateral plates narrowed apicad, with many sensillae; each plate bearing a flaring basolateral lobe. Clasper elongate, narrow, tapering, with apex produced into a dorsally directed tooth; in ventral aspect elongate, parallel sided, produced apico mesally. Phallus tubular, base inflated; internally with rod-and-ring assembly in association with two pairs of curved, large, dark spines (one spine of basal pair lost in type).

MATERIAL EXAMINED.—BRAZIL, EDO. AMAZONAS, Cerro de la Neblina, Beccadelli, 19°51’N, 66°10’W, 140 m, 20–24 Mar 1984, Flint and Louton, NMNH Type.

Paratypes: Same data as holotype, 1\( \varphi \); same, but 19 Mar 1984, 2\( \sigma \); same, but 26–31 Jan 1985, 1\( \sigma \), 1\( \varphi \); same, but 1–9 Feb 1985, 1\( \sigma \); same, but 10–20 Feb 1985, 2\( \sigma \); same, but 21–28 Feb 1985, 1\( \varphi \); same, but 24 Nov–1 Dec 1984, R.L. Brown, 1\( \varphi \); same, but Agua Blanca, 0°49’N, 66°08’W, 160 m, 20–21 Mar 1984, Flint and Louton, 1\( \varphi \) (IZAM, NMNH).

ETYMOLOGY.—From the Latin cirrus (“tendril”) and suffix -\( \text{fera} \) (“to bear”), in allusion to the curled spines of the phallus.

**Chimarra (Curgia) medioloba Flint**

**Figures 148–151; Map 11**

**Chimarra (C.) medioloba Flint, 1971:22.**

**Remarks.**—This species and the following species, *truncatiloba*, are very similar in all aspects of the male genitalia. They are separated from each other by the acuminate apex of the tenth tergum and the presence of a pair of heavy spines associated with the rod-and-ring assembly of the phallus in *medioloba*.

ADULT.—Length of forewing, \( \sigma \) and \( \varphi \) 4.5–7.5 mm. Color uniformly fuscous.

Male Genitalia: Eighth sternum slightly enlarged dorsad; tergum with long, slightly drooping, mesal process from posterior margin, apex constricted. Ninth sternum with anter oventral margin produced; with very short postero med al keel; dorsum produced into two, bilobed, narrow, transverse ridges dorsad of tenth tergum. Cercus elongate, fused to dorsolateral margin of lateral lobe of tenth tergum. Tenth ter gum divided mesally into broad lateral plates narrowed apicad, with many sensillae; each plate bearing a flaring basolateral lobe. Clasper elongate, narrow, tapering, with apex produced into a dorsally directed tooth; in ventral aspect elongate, parallel sided, produced apico mesally. Phallus tubular, base inflated; internally with rod-and-ring assembly strongly modified and bearing a pair of slender apicodorsal spines, and with two pairs of curved, large, dark spines (one heavier than other).

MATERIAL EXAMINED.—BRAZIL, EDO. AMAZONAS, Cerro de la Neblina, Camp VII, 0°51’N, 65°58’W, 1850 m, 30 Jan–10 Feb 1985, Spangler et al., 5\( \sigma \), 6\( \varphi \). Caño Coromoto, El Tobogán, 40 km S Puerto Ayacucho, 24 Jan 1989, Spangler et al., 1\( \sigma \), 2\( \varphi \).

ETYMOLOGY.—From the Latin *medius* (“middle”) and *lobus* (“projection”), in allusion to the process of the eighth tergum.
ADULT.—Length of forewing, $5 \text{ mm}$. Color uniformly dark brown (probably fuscous when alive).

Male Genitalia: Eighth sternum parallel sided; tergum with long, straight, mesal process from posterior margin, apex constricted. Ninth sternum with anteroventral margin greatly produced; with a short, distinct, posteromesal keel; dorsum produced into narrow, transverse ridge divided into a central, plate-like area and paired, short spines laterad to plate and dorsad of tenth tergum. Cercus rounded, fused to dorsolateral margin of lateral lobe of tenth tergum. Tenth tergum divided mesally into broad lateral plates truncate apicad, with many sensillae; each plate bearing a flaring basolateral lobe. Clasper elongate, narrow, tapering, with apex produced into a dorsally directed tooth; in ventral aspect elongate, parallel sided, produced apicomesally. Phallus tubular, base inflated; phallotheca very long, angulate at midlength; internally with small rod-and-ring assembly associated with pair of small spines, and with two pairs of curved, elongate, dark spines.

Material Examined.—SURINAME, Litani [River], War- emapan Soela [=Rapids], 30 Jul 1939, D.C. Geijskes, 1♂ paratype (NMNH).

ETYMOLOGY.—From the Latin truncus (“cut off”) and lobus (“projection”), in allusion to the shape of the apex of the tenth tergum.

**Chimarra (Curgia) fimбриata Flint**

*Figures 156-158; Map 12*


REMARKS.—The species *fimбриata* and *neofimбриata* are strongly modified and very distinctive in the region of the eighth and ninth terga. In *fimбриata* the mesal process of the eighth tergum is clavate apically, and the tenth tergum is decurved apically. The phallus bears a pair of heavy spines associated with the rod-and-ring assembly in *fimбриata*, which are lacking in *neofimбриata*.

ADULT.—Length of forewing, $4.5 \text{ mm}$. Color uniformly pale brown in alcohol (probably fuscous when alive).

Male Genitalia: Eighth sternum parallel sided; tergum with long, clavate, mesal process from posterior margin, flanked by large rounded lobes. Ninth sternum with anterovent-
Chimarra (Curgia) fimbriata Flint

FIGURES 159-162; MAP 11

Chimarrha (C.) neofimbriata Flint, 1974:23.

REMARKS.—As mentioned above, fimbriata and neofimbriata share striking synapomorphies of the eighth and ninth terga. In neofimbriata the mesal lobe of the eighth tergum is squarely truncate; the tenth tergum, although directed slightly ventrad, is not strongly curved in that direction; and the phallus lacks stout spines associated with the rod-and-ring assembly.

ADULT.—Length of forewing, ♂ and ♀ 5.5–7 mm. Color uniformly fuscous.

Male Genitalia: Eighth sternum slightly widened dorsad; tergum with elongate, irregularly truncate, mesal process from posterior margin, flanked by large rounded lobes. Ninth sternum with anteroventral margin slightly produced; with distinct, posteromesal keel; dorsum broad, with elongate dorsolateral processes; posterior margin produced into broad, obliquely truncate flap laterally. Cercus rounded, projecting from dorsolateral margin of lateral lobe of tenth tergum. Tenth tergum divided mesally into broad, elongate, lateral plates narrowed apicad (probably with many sensillae); each plate bearing a flaring basolateral lobe. Clasper elongate, narrow, tapering, with apex produced into tooth; in ventral aspect elongate, parallel sided, barely produced apicomesally. Phallus tubular, base inflated; internally with small rod-and-ring assembly associated with pair of large, dark spines fimbriate at their tips; and with pair of large, dark spines and four small spines.

Material Examined.—Suriname, Brownsberg, top near small stream, 475 m, 20 Sep 1938, D.C. Geijskes, at light, 1♂ paratype (NMNH, genitalia completely transparent, with structure not apparent).

Recorded from.—Suriname, Nassau Mountains, trail south from km 7, large mountain stream, 3 Mar 1938, D.C. Geijskes, ♂ holotype (RNH, not restudied).

Etymology.—From the Latin fimbriatus (“fringed”), in allusion to the apex of the phallic spines.
slightly narrowed apicad; each plate bearing a flaring basolateral lobe. Clasper elongate, narrow, tapering, with apex truncate; in ventral aspect elongate, narrowed apically, with small apicomesal tooth. Phallus tubular, base inflated; internally with small rod-and-ring assembly, with two pair of long, dark, multifid spines, a pair of large, dark spines, and a cluster of small, apical spines.

**MATERIAL EXAMINED.**—GUYANA, Kumu Stream, 25 km SE Lethem, 3°15.9'N, 59°43.6'W, 4–5 Apr 1994, O.S. Flint, Jr., 4♂, 2♀ (NMNH, UGGG); same, but 28–30 Apr 1995, 4♂, 2♀.

**RECORDED FROM.**—Suriname, Wilhelmina Mountains, trail 11 km 12, mountain creek, 21 Sep 1943, D.C. Geijskes, ♂ holotype (RNH, not restudied).

**ETYMOLOGY.**—From the Greek *neos* ("new"), in allusion to its close relationship to the species *fimbriata*.

### Chimarra (Curgia) quaternaria Flint

**Figures** 163–166; **Map** 12


**REMARKS.**—This very distinctive species cannot be confused with any other in the group. The structure of the eighth tergum, the dorsolateral processes of the ninth tergum, and the very reduced size of the tenth tergum are all unique.

**ADULT.**—Length of forewing, ♂ and ♀ 5.5 mm. Color uniformly dark brown in alcohol (probably fuscous in life).

**Male Genitalia:** Eighth sternum narrow, parallel sided; tergum with posterior margin strongly and broadly produced, in dorsal aspect margin bearing four apical points. Ninth sternum with anteroventral margin produced; with short, distinct, posteroventral keel; dorsum unmodified. Cercus seemingly lacking, but possibly fused to lateral margin of lateral lobe of tenth tergum. Tenth tergum divided mesally into short, bilobed plates, pointed apically, with many sensillae; each plate bearing a flaring basolateral lobe. Clasper elongate, narrow, with apex produced into elongate tooth, hooked dorsad; in ventral aspect elongate, lateral margin produced subapically, produced apicommesally. Phallus tubular, base inflated; internally with rod-and-ring assembly modified, apicoventral angle produced into blackened spine, and two pairs of large, black spines.

**MATERIAL EXAMINED.**—Holotype, male: VENEZUELA, EDO. AMÁN, 12 km S Rio Caripito, 10°41'N, 60°49'W, 1–3 Oct 1976, C.M. and O.S. Flint, Jr. NMNH Type.

**Paratypes:** Same date as holotype, 4♂, ♀ (IZAM, NMNH).

**ETYMOLOGY.**—Patronym in honor of my wife, Carol, who collected the types on our trip to Venezuela.

### Chimarra (Curgia) juliae, new species

**Figures** 167–170; **Map** 11

**REMARKS.**—This is another rather isolated species, easily distinguished from the other species of the complex. The very long, slender, mesal process from the eighth tergum and the pair of long, pointed processes overlaying the tenth tergum are all unique to *juliae*.

**ADULT.**—Length of forewing, ♂ and ♀ 5–6 mm. Color uniformly fuscous.

**Male Genitalia:** Eighth sternum narrow, parallel sided; tergum with posterior margin produced mesally into long, slender, mesal process. Ninth sternum with anteroventral margin strongly produced; with small, posteroventral keel; dorsum produced into two transverse ridges dorsal of tenth tergum: dorsalmost a broad, rounded mesal lobe in dorsal aspect, ventralmost strongly produced into pointed lobe, divided mesally, extending dorsolaterally over tenth tergum. Cercus rounded, fused to dorsolateral margin of lateral lobe of tenth tergum. Tenth tergum divided mesally into broad lateral plates, pointed apically, with many sensillae; each plate bearing a flaring basolateral lobe. Clasper elongate, narrow, with apex produced into elongate tooth, hooked dorsad; in ventral aspect elongate, lateral margin produced subapically, produced apicommesally. Phallus tubular, base inflated; internally with rod-and-ring assembly modified, apicoventral angle produced into blackened spine, and two pairs of large, black spines.

**MATERIAL EXAMINED.**—Holotype, male: VENEZUELA, EDO. BOLÍVAR, La Escalera, 108 km S Rio Cuyuni, 11–12 Feb 1976, C.M. and O.S. Flint, Jr. NMNH Type.

**Paratypes:** Same date as holotype, 4♂, 2♀ (IZAM, NMNH).

**ETYMOLOGY.**—From the Latin *quaternaria* ("consisting of four"), in allusion to the four points on the eighth tergum.
unmodified; posterior margin greatly produced ventrolaterally, dorsal margin of which bears low, elongate setate lobe (probable cercus) and small setate point, apex rounded; posteromesal process elongate, terete. Long, slender, process with scattered enlarged setae, fused to dorso lateral margin of ninth tergum (possible cercus). Tenth tergum entire, broad basally, tapering to small, apical lobe bearing sensillae, in dorsal aspect shallowly bilobed; each side bearing large, thin, basoventral lobe lining inner surface between ventrolateral lobes of ninth segment. Clasper elongate, narrow, in lateral aspect, mostly embedded in ventromesal area of ventrolateral lobe of ninth segment; in ventral aspect elongate, slightly curved, with strong apicomesal point. Phallus tubular, base inflated, sclerotization produced apicoventrally; internally with small rod-and-ring assembly overlaying a pair of large, stout, tapering to small, apical lobe bearing sensillae, in apically, bearing a cluster of spines. Tenth tergum entire, broad basally, posteromesal process elongate, terete. Long, slender, process modified; posterior margin greatly produced ventrolaterally, with posterior margin produced into pair of elongate, apically crested, birdhead-like shape, and the spines associated with the posteromesal process of the ninth segment; posterolateral margin with dorsal angle of tenth tergum. Cercus elongate, oblique. Tenth tergum divided mesally, halves of tenth tergum; posterolateral margin with dorsal angle produced into a slender, tapering apicad. Phallus tubular, base inflated, sclerotization strongly produced apicoventrally and with mid dorsal, ribbon-like sclerite; internally with small rod-and-ring assembly overlaying a pair of long, slender, black, crescentic spines, apically with pair of large, black spines dorsally and second pair of shorter spines internally.

**Material Examined.**—Holotype. male: GUYANA, Kumu Stream, 25 km SE Lethem, 3°15.9'N, 59°43.6'W, 4-5 Apr 1994, O.S. Flint Jr. NMNH Type. Paratypes: Same date as holotype, 7♂, 2♀ (NMNH, UGGG); same, but W.N. Mathis, 1♂; same, but 28-30 Apr 1995, O.S. Flint Jr., 11♂, 6♀ (NMNH, UGGG).

**Etymology.**—From the type country, Guyana.

**The distermina Group**

**Diagnosis.**—Length of forewing, 5-8.5 mm. Color jet black overall; abdomen paler, orangish. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth tergum with a small posteromesal lobe. Ninth segment with anterior margin nearly vertical, broad dorsad, with a long, rod-like dorsomesal projection between halves of tenth tergum; posterolateral margin with dorsal angle continuous with ventral angle of tenth tergum. Cercus elongate, oblique. Tenth tergum divided mesally, halves elongate, narrow apically, bearing many sensillae. Clasper elongate, tapering apicad. Phallus tubular, barely inflated basally; internally with an elongate, rod-and-ring assembly, a pair of elongate spines, and a single curved spine.

**Distribution.**—The Andes of western South America from Bolivia to Peru.

**Discussion.**—This is a very unusual group of two very closely related species. The divided tenth tergum, with a single mesal rod between the lobes, is distinctive. The two species were first thought to be variants of a single species, but with the discovery of other very close species pairs (i.e., geranoides and peruviana, mycterophora and erectiloba) coexisting at one site and undoubtedly being valid, I suspect the same exists with this species pair, although they have not yet been found at the same site.

**Chimarra (Curgia) distermina, new species**

**Figures 179-182; Map 9**

Remarks.—The species aviceps, from Peru, is very closely related to distermina. The two species are readily distinguished by the shape of the posteromesal process of the ninth segment, which is blunt and produced into a small dorsal angle in distermina but is angled downward and produced into a slender process in aviceps. The pair of dark spines in the phallus of distermina are nearly twice as long as the dorsal spine but are barely as long as aviceps.
ADULT.—Length of forewing, $c^a$ and $q^a$ 7–8.5 mm. Color overall jet black, immaculate; abdomen pale orangish.

**Male Genitalia:** Eighth sternum narrow, slightly narrower ventrad; tergum produced posteromesally into a lobe, broad basally with a short, truncate apex. Ninth segment barely produced anteroventrally; posteromesal keel short and broad; posterolateral margin slightly produced and angulate at midlength, where it meets ventral margin of tenth tergum; middorsally bearing a long, upcurved, posteromesal process ending in a blunt apicocondal angle and lying between the tenth tergal halves. Cercus narrow, elongate, directed posteroventrad. Tenth tergum in lateral aspect broad basally, produced apically with many sensillae; in dorsal aspect with a deep, U-shaped, mesal excision separating lateral lobes, which are broad and flat dorsally; with the mesal lobe of the ninth segment lying between the halves. Clasper elongate, inflated at midlength, tip produced into a dorsally directed point; in ventral aspect with lateral margin rounded, mesal margin straight. Phallus tubular, barely inflated basally; apex with a single dorsal spine, a pair of ventral spines twisted at apex and barely longer than dorsal spine, and a very weakly sclerotized and elongate rod-and-ring assembly.

**Material Examined.—Holotype, male:** PERU, DPTO. CUSCO, Peña Paucartambo, stream 3 km E Puente San Pedro (13°03.3'S, 71°32.8'W), 41 km NW Pilecopata, 1430 m, 31 Aug 1989, N. Adams et al. NMNH Type.

**Paratypes:** Same data as holotype, 1$\sigma^a$, 2$\varphi$; same, but river at Puente Union (13°04.2'S, 71°34.0'W), 1670 m, 21–23 Jun 1993, Blahnik and Pescador, 1$\sigma^a$, 1$\varphi$. DPTO. CUSCO, Cosñipata Valley, Santa Isabel, 22 Jan 1952, F. Woytkowski, 1$\sigma^o$ (INHS); Callanga, Stauringer, 2$\sigma^a$, 1$\varphi$ (ZSMH). DPTO. HUANUCO, Tingo Maria, 672 m, 1–6 Feb 1980, J.B. Heppner, premontane rain forest, 1$\sigma^a$.

**ETYMOLOGY.—From the Latin avis (“bird”) and caput (“head”), in allusion to the shape of the mesal process of the ninth segment.**

**The mexicana Group**

**DIAGNOSIS.—**Length of forewing, 4–10 mm. Body brown, appendages generally paler; head and thorax may be covered with golden hair; forewing brown, usually marked with golden spots or lines, rarely with a broad, longitudinal, golden band. Claws of male foreleg vary from exceedingly to not noticeably asymmetrical.

**Male Genitalia:** Eighth tergum without brushes, usually with posterior margin projecting and divided. Ninth segment greatly produced anteroventrally, narrow dorsad; usually with simple dorsomesal projection, which may even project freely posteriad; posterolateral margin usually simple, rarely produced as a rounded lobe. Cercus elongate, ovate. Tenth tergum entire, hood-like, apex usually upturned, rarely with apicocondal projection, bearing many sensillae. Clasper generally short, to slightly elongate, not greatly modified, often with an apical or apicocondal, small tooth. Phallus tubular, base inflated; internally with a small, basal, rod-and-ring assembly and a number (1–20) of short, black spines.

**DISTRIBUTION.—**Species are found in middle America and northern South America, from Mexico to Ecuador; and a pair are found in the mountains and uplands of southeastern South America (Argentina, Brazil, Paraguay, and Uruguay).

**DISCUSSION.—**This group seems to be closely related to the *laguna* group based upon the body coloration and the form of male genitalia, differing primarily in lack of brushes from the eighth tergum. The species *wilsoni* and *bisceltis* are closely related as shown by the short clasper with its apicocondal tooth and the presence of a dorsomesal point from the tenth tergum. The remaining species all share a more elongate clasper and a simpler tenth tergum. The pair *mexicana* and *barrettae* are very...
similar in all characteristics of the male genitalia, with *pablito* and *lobata* forming another pair on the basis of the apically tapering claspers, but they are more abundantly distinct from each other than are the former pair. Finally, the pair *ypsilon* and *hyoeides* are much like the latter two in general, but they are found in southeastern South America.

**Chimarra (Curgia) mexicana** (Banks)

**FIGURES** 187–192; **MAP 13**


*Wormaldia mexicana* Ulmer, 1905b:89.—Flint, 1967b:3 [synonymy].

*Chimarra mexicana* (Ulmer).—Ulmer, 1907:206; 1913:405.—Betten, 1934:176.


*Chimarra (Curgia) mexicana* (Banks).—Flint, 1967b:3.—Bueno and Flint, 1980:197.

**REMARKS.**—This species and the species *barrettae* are very closely related, and I had earlier synonymized the two species. After studying much more material than was available earlier, including three collections in which both species were found, I now believe that they are distinct. Although there is a good deal of variation in both, there are several differences between the two that seem to be consistent in the studied material.

Male specimens of *mexicana* have a broad golden band down the forewing that may be divided at midlength into two large spots; in male *barrettae* the gold hair is broken into many small spots. In the females, *mexicana* may be colored as the males, but generally the forewing has less golden hair, and it is frequently reduced to spots, as is always the case in the females of *barrettae*. The tarsal claws of the male forelegs in *mexicana* are equal in size or only moderately asymmetric, but in *barrettae* one is several times larger than the other. The clasper of *mexicana* is broader at the apex, with a small apicodorsal and apicoventral knob, and in posteroventral aspect the tip has the distalmost point produced further mesad than the more basal angle; in *barrettae* the clasper is much narrowed apicad, with a distinct apicodorsal point, and in posteroventral aspect the tip has the basalmost angle produced further mesad than the
distalmost angle. The phallus in *mexicana* has four or five small, black, internal spines, but in *barrettae* it has only two or three. The tenth tergum tends to have its tip more sharply angled dorsad in *mexicana* with its dorsolateral margins not carinate; in *barrettae* the tip is less sharply angled dorsad, and the dorsolateral margins are more or less carinate. Unfortunately, all of the characteristics are variable in both species, but the first three states all seem to break at the same point. There also seems to be some differences in the two species’ distributions. Although they broadly overlap from Vera Cruz, Mexico, to central Guatemala, *mexicana* also is known from northwestern Mexico, and *barrettae* is found in Costa Rica and northern Panama.

ADULT.—Length of forewing,♂ and ♀ 7-9.5 mm. Color brown; appendages pale brown; head and thorax dorsally with golden hair; forewing brown, usually with a broad, central, golden band (sometimes divided into two large golden spots, infrequently in females into many golden spots). Male foretarsal claws slightly to moderately different in size.

Male Genitalia: Eighth sternum slightly widened dorsad; tergum produced into a pair of rounded, submesal lobes from posterior margin. Ninth sternum produced anteroventrally; with short, posteromesal keel. Cercus elongate, slightly enlarged apicad. Tenth tergum with tip entire, angled dorsad; apex broadly rounded in dorsal aspect, with many sensillae. Clasper elongate, tip truncate or broadly rounded; in ventral aspect, with apical lobe angled mesad, distalmost angle of lobe extending furthest mesad, with a rounded excision in mesal margin basad of lobe. Phallus short, tubular, inflated basally; extending furthest mesad, with a rounded excision in mesal margin basad of lobe. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and four or five small, black spines.


ETYMOLOGY.—Undoubtedly from the type country, Mexico.

Chimarra (Curgia) barrettae (Banks), resurrected species

**Figures 193-198; Map 14**


Chimarra (Curgia) mexicana (Banks).—Flint, 1967b:3 [barrettae to synonymy].—Bueno and Flint, 1980:197 [barrettae as synonym].

Chimarra mexicana (Banks).—McElroy et al. 1981:152 [misidentification].

REMARKS.—As discussed more fully under *mexicana*, these two species are very closely related. The tarsal claws on the male forelegs in this species are exceedingly asymmetrical, but they are almost equal in *mexicana*. Characteristics of coloration (always spotted in *barrettae*) and male genitalia (more pointed clasper with differently shaped tips and phallus with only two or three, internal, black spines in *barrettae*) seem to distinguish the two species. Although the females of the two may be similarly colored, the forewings of *barrettae* are always spotted with golden hair, which is generally more extensive and coalesced in *mexicana*. The type of *barrettae* is a female with spotted forewings, which leads to questions as to its identity. (I am unable to find differences in the female genitalia between the two species.) I have seen a male from near the type locality (designated allotype below) that agrees exactly in maculation. To avoid unnecessary proliferation of names, I consider the name *barrettae* to apply to this entity on the basis of
preponderance of evidence. I am leaving unidentified all other females with spotted wings that lack associated males.

ADULT.—Length of forewing, $\sigma^+$ and $\varphi$ 7–10 mm. Color brown; appendages pale brown; head and thorax dorsally with golden hair; forewing brown, with many golden spots of various sizes. Male foretarsal claws grossly asymmetrical.

Male Genitalia: Eighth sternum slightly widened dorsad; tergum produced into a pair of rounded, submesal lobes from posterior margin. Ninth sternum produced anteroventrally; with posteromesal keel. Cercus elongate, slightly enlarged apicad. Tenth tergum with tip entire, slightly angled dorsad, often with dorsolateral margins carinate; apex broadly rounded in dorsal aspect, with many sensillae. Clasper elongate, with an apicodorsal point; in ventral aspect, with apical lobe angled mesad, distalmost angle of lobe not extending as far mesad as basal angle, with a rounded excision in mesal margin basad of lobe. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and two or three small, black spines.

MATERIAL EXAMINED.—MEXICO, EDO. VERACRUZ, Jalapa, 4 [? = April] [Barrett, in original description], holotype female, MCZ Type 11823. Córdoba, 6–9 Nov 1966, A.B. Lau, allotype, male (NMNH). Tlapacoyan, Rio Tomata, 4 Oct 1986, J. Magro, 1$\sigma^+$ (IBUNAM). EDO. OAXACA, Carretera Tuxtepec, km 70, 3000 ft. [900 m], 2 Mar 1986, A. Ibarra, 11$\sigma^+$, 16$\varphi$ (IBUNAM, NMNH). Metates, Sierra de Juarez, 1600 m, 16 Sep 1982, A. Ibarra, 1$\sigma^+$, 2$\varphi$ (IBUNAM). Near junctions of roads to Santa Marta Chilchota y Huatla de Jimenez, along road to Sta. Maria, 3900 ft. [1170 m], 9 Jul 1982, R.W. Holzenthal, 5$\sigma^+$ (IBUNAM, NMNH). La Esperanza, 18 Apr 1983, M. Garcia, 3$\sigma^+$ (IBUNAM, NMNH). EDO. PUEBLA, Cuetzalan to Zacatlan, Rio Apulco, km 25, 18 Mar 1987, J. Bueno, 1$\sigma^+$, Cuetzalan, Rio Apulco, 1 May 1987, J. Bueno, 3$\sigma^+$, 1$\varphi$ (IBUNAM). San Diego, 16 May 1953, 1$\sigma^+$ (IBUNAM). Xicotepec de Juarez, 24 Mar 1977, H. Brailovsky, 1$\sigma^+$ (IBUNAM). EDO. CHIAPAS, El Triunfo [near Finca Prusia, 15°45’N, 92°43’W, ~1800 m], 13–14 May 1985, H. Velasco, 11$\sigma^+$ (IBUNAM, NMNH). Finca Esperanza, 20–28 Feb 1939, A. Dampf, MF686, 7$\sigma^+$, 8$\varphi$ (INHS). El Vergel, 12 Jun 1935, A. Dampf, MF4506, 1$\sigma^+$ (INHS). EDO. HIDALGO, Laguna Atezca, Molango, 8 Nov 1980.
H. Perez, 1σ♂ (IBUNAM); same, but 18 May 1978, 2σ♂ (IBUNAM, NMNH).

GUATEMALA [DPTO. ALTA VERAPAZ], Cobán, Biotopo, km 156, 28 Aug 1985, F. Arias and H. Velasco, 1σ♂ (IBUNAM).


ETYMOLOGY.—Patronym, undoubtedly for the collector, Mrs. O.F. Barrett.

Chimarra (Curgia) lobata Flint

FIGURES 199-203; MAP 13

Chimarra (Curgia) lobata Flint, 1967a:7.

REMARKS.—The most closely related species would seem to be the new species pablito based on the elongate and tapering claspers in both. However, in lobata the eighth tergum has its posterior margin clearly bilobate, the apex of the tenth tergum is narrow and straight, and the ninth segment does not project dorsosomally.

ADULT.—Length of forewing, σ♂ and ♀ 5.5-7 mm. Color dark brown; appendages pale brown; forewing brown with many yellowish spots almost completely covering wing. Claws of male foreleg not noticeably asymmetrical.

Male Genitalia: Eighth sternum widened dorsad; tergum with posterior margin broadly produced into a rounded, mesal lobe. Ninth sternum produced anteroventrally; with small, posteroomesal keel; with dorsal extension broad in lateral aspect. Cercus elongate, slightly enlarged apicad, directed laterad. Tenth tergum with tip entire; apex narrow, directed posteriad, ventral margin with a right-angle excision in lateral aspect; apex nearly truncate in dorsal aspect; with many sensillae. Clasper elongate, narrowed apicad; in posteroventral aspect, with inner margin nearly straight, lateral margin produced, apex narrowed. Phal1lus short, tubular, inflated basally; internally with a small rod-and-ring assembly, two short, black spines, and a longer, slender, curved spine.


ETYMOLOGY.—From the Latin lobus (“projection”), in allusion to the shape of the eighth tergum.

Chimarra (Curgia) wilsoni Flint

FIGURES 204-209; MAP 13


REMARKS.—This species and bisectilis, new species, are very similar sister species that can be differentiated only by small differences in the male genitalia. In wilsoni the posterior margin of the eighth tergum is more strongly produced, the tip of the tenth tergum is either entire or only minutely notched in dorsal aspect, and the mesal tooth of the clasper is mostly hidden in ventral aspect by the posteroomesal lobe of the clasper.

ADULT.—Length of forewing, σ♂ and ♀ 5.5-8 mm. Color dark brown; appendages pale brown; forewing dark brown with scattered, golden spots. Claws of male foreleg exceedingly asymmetrical.

Male Genitalia: Eighth sternum widened dorsad; tergum with posterior margin broadly produced into a rounded, mesal lobe. Ninth sternum produced anteroventrally; with small, posteroomesal keel; with dorsal extension broad in lateral aspect. Cercus elongate, slightly enlarged apicad, directed laterad. Tenth tergum with tip entire; apex narrow, reflexed, crest-like, tip narrow, usually with a small apical notch in dorsal aspect; with many sensillae. Clasper short, apicoventral margin slightly produced, with tooth extending beyond apical margin in lateral aspect; in ventral aspect, with inner margin produced more than lateral margin, tooth barely projecting mesad. Phallus tubular, inflated basally; internally with a small rod-and-ring assembly and one or two short, black spines.

MATERIAL EXAMINED.—COSTA RICA [Pcia. PUNTARENAS], Las Cruces, near San Vito, 19-20 Mar 1965, S.S. and W.D. Duckworth, 2♂♂ holotype, NMNH Type 69580; same, but 24 Apr 1965, 2♀. Rio Cotón in Las Alturas, 8.938°N, 82.826°W, 1360 m, 16 Feb 1986, Holzenthal et al., 3♂♂ (UMSP). Rio Jaba at rock quarry, 1.4 km (air) NW Las Cruces,
MAP 15.—Distributions of Chimarra (Curgia) argentella (Ulmer), Chimarra (Curgia) quina, new species, Chimarra (Curgia) bisectilis, new species, and Chimarra (Curgia) albomaculata (Kolbe).

FIGURES 210-213; MAP 15

REMARKS.—This species and wilsoni are very closely related sister species. The small differences are seen in the male genitalia: in bisectilis the eighth tergum is less enlarged, the tip of the tenth tergal crest is distinctly divided in dorsal aspect, and the tooth of the clasper is clearly seen in ventral aspect.

ADULT.—Length of forewing, ♂ and ♀ 5–6 mm. Color dark brown; appendages pale brown; forewing dark brown with scattered, golden spots. Claws of male foreleg exceedingly asymmetrical.
Male Genitalia: Eighth sternum slightly widened dorsad; tergum with posterior margin barely produced into a broad, mesal lobe. Ninth sternum produced anteroventrally; with small, posteromesal keel; with dorsal extension narrow in lateral aspect. Cercus elongate, slightly enlarged apicad, directed laterad. Tenth tergum with tip entire; apex reflexed, mesal lobe. Ninth sternum produced anteroventrally; with posteromesal keel; with dorsal extension rod-like and free in lateral aspect, curved posteriad over tenth tergum. Cercus short, clavate. Tenth tergum with tip entire; apex curved and free in lateral aspect, curved posteriad over tenth tergum. Tergum with posterior margin barely produced and slightly indented mesally. Ninth sternum produced more than lateral margin, tenth tergum with sharp, distinct apex projecting mesad. Phallic tubular, inflated basally; externally with a pair of short, black spines. Clasper elongate, tapering apicad in lateral aspect; in ventral aspect, with apex produced more than lateral margin, tenth tergum with posterior margin not produced more than lateral margin, tenth tergum with a small rod-and-ring assembly and a pair of short, black spines.

Material.—Holotype, male: COSTA RICA [PCIA. CARTAGNO], Turrialba, 15–19 Jul 1965, P.J. Spangler. NMNH Type.


PCIA. ALAJUELA, Reserva Forestal San Ramón, Río San Lorenzo and trib., 10.216°N, 84.607°W, 980 m, 13–16 Jun 1988, Flint et al., 1♂, 1♀; same, but 2–4 Jul 1986, Holzenthal et al., 1♂, 1♀ (UMSP); same, but 1–4 May 1990, 2♂, 5♀ (UMSP); same, but 28–30 Jul 1990, 2♂, 4♀ (UMSP); same, but 6–10 Mar 1991, 2♂, 1♀ (UMSP); same, but 30 Mar–1 Apr 1987, 63♂ (UMSP); same, but 24–27 Feb 1987, I. and A. Chacón, 4♂ (INBIO); same, but 5–9 Jul 1986, 3♂ (INBIO); same, but 1–4 Oct 1986, 3♂, 1♀ (INBIO); same, but Dec 1986, 6♂ (INBIO). Cerro Campana, Rio Bochinché trib., 6 km (air) NW Río Rivas, 10.945°N, 85.413°W, 600 m, 22–23 Jul 1987, Holzenthal et al., 1♂ (NMNH); same, but 15–16 Mar 1986, Holzenthal et al., 1♂ (INBIO).

Panama [PCIA. PANAMA], Goofy Lake [on Cerro Azul], 14 Jun 1955, R.M. Altman, 1♂ (INHS).

Etymology.—From the Latin -bi (“two”) and sectilis (“cut”), in allusion to the shape of the tenth tergum.

Chimarra (Curgia) pablito, new species

Figures 214–217; Map 16

Chimarra undescribed sp. “C” (nr. spangleri Trivette Ms.).—McElravy et al., 1981:152.

Remarks.—This species is quite distinctive and is perhaps most similar to lobata Flint. It differs from this species and its congeners in the eighth tergum, which is not produced at all, in the curved, elongate dorsal projection of the ninth segment, the rounded, upturned tip of the tenth tergum, and the elongate clasper.

Adult.—Length of forewing, 4♂, 4♀ 4–6 mm. Color dark brown; appendages pale brown; forewing dark brown, with scattered, golden spots. Claws of male foreleg not noticeably asymmetrical.

Male Genitalia: Eighth sternum nearly parallel-sided; tergum with posterior margin barely produced and slightly indented mesally. Ninth sternum produced anteroventrally; with large posteromesal keel; with dorsal extension rod-like and free in lateral aspect, curved posteriad over tenth tergum. Cercus short, clavate. Tenth tergum with tip entire; apex curved dorsad, rounded, in dorsal aspect tip with small anteromesal excision; with sensillae. Clasper elongate, tapering apicad in lateral aspect; in ventral aspect, with apex slightly produced more than lateral margin, tenth tergum with posterior margin barely produced into a broad, mesal lobe; in lateral aspect, apex reflexed, mesal lobe. Ninth sternum produced more than lateral margin, tenth tergum with posterior margin not produced more than lateral margin, tenth tergum with a small rod-and-ring assembly and a pair of short, black spines.
MAP 16.—Distributions of *Chimarra (Curgia) pablito*, new species, *Chimarra (Curgia) macara*, new species, *Chimarra (Curgia) pulchra* (Hagen), and *Chimarra (Curgia) acinaciformis*, new species.

ETYMOLOGY.—Patronym in honor of Paul J. Spangler, collector of first seen examples of the species.

*Chimarra (Curgia) ypsilon* Flint

FIGURES 218-222; MAP 9

*Chimarra (Curgia) ypsilon* Flint, 1983:16.

REMARKS.—This species and the following species are clearly related, not only on the basis of coloration, but also on the basis of the male genitalia. In coloration, *ypsilon* has a large

19; same, but 3 Dec, M. Bates, 2♂ (MCZ); same, but 22 Nov, 1♂ (MCZ); same, but Jul 1967, W.W. Wirth, 1♂; same, but Marker 3, Snyder-Molino Trail, various dates 4 Mar 1987-9 Apr 1991, H. Wolda, light trap, 386♂, 528♀. COMARCA DE SAN BLAS, Nusigandi, 9°20'N, 78°56'W, 1-6 Mar 1985, Flint and Louton, 3♂, 3♀.

ECUADOR, PROV. PICHINCHA, via Puerto Quito at km 113, 24 Jun 1976, J. Cohen, 1♂. Rio Umachaca, Forestry Station Maquipucuna, ~5 km E Nanegal, 0°07'S, 78°37'W, 1250 m, 4-5 Sep 1990, O.S. Flint, Jr., 1♂; same, but seep 0.5 km S Station, 1300 m, 5 Sep 1990, 1♂.
golden basal spot and a large, distinct Y-shaped mark on the forewing; in *hysodees* the basal spot is broken into at least two smaller spots, and the Y-mark is smaller and less distinct. The dorsal lobes of the eighth tergum are small in *ypsilon*, the tenth tergum is shorter and up-arched, and the clasper is truncate, and the phallus bears many small spines.

**ADULT.**—Length of forewing, $\varphi$ and $\sigma$ 6–9 mm. Color generally fuscescent; head and thorax with golden pubescence; forewing extensively marked with golden hair, especially basally, and with a Y-shaped mark from costal margin at stigma. Claws of male foreleg exceedingly asymmetrical.

**Male Genitalia:** Eighth sternum widened dorsad; tergum barely produced posteromesadly, in dorsal aspect with a pair of small, submesal lobes. Ninth sternum with anteroventral angle slightly produced; dorsal margin produced into an erect lobe; with posteroventral keel elongate. Cercus large, elongate, flared laterad. Tenth tergum broad basally, narrowing apicad, apex slightly up-arched, hook-like; apex narrowed in dorsal aspect; with scattered sensilla. Clasper elongate, quadrate with small apicodorsal points in lateral aspect; in ventral aspect produced apicodorsally. Phallus tubular, short, inflated basally; internally with a rod-and-ring assembly and about 18 to 24 short, dark spines.

**MATERIAL EXAMINED.**—ARGENTINA, Prov. MISIONES, Puerto Libertad, 24 Nov 1973, O.S. Flint, Jr., $\sigma$ holotype, 29 paratypes (NMNH). Arroyo Piray Mini, Rt. 17 W Dos Hermanas, 23 Nov 1973, O.S. Flint, Jr., 1 $\varphi$ paratype.

**ETYMOLOGY.**—From the Greek *ypsilon*, in allusion to the shape of the mark on the forewing.

**Chimarra (Curgia) hyoeides Flint**

*Figures 223–227; Map 17*

**Chimarra (Curgia) hyoeides Flint, 1983:17**

**REMARKS.**—As discussed under *ypsilon*, that species and this species are clearly related. In coloration, *hysodees* has more smaller, golden spots, and the Y-shaped mark is narrower and not as distinct. The dorsal lobes of the eighth tergum are large in *hysodees*, the tenth tergum is long and straight, the clasper tapers apicad, and the phallus bears only a few small spines. The claws of the male foreleg are strongly asymmetrical, but less so than in *ypsilon*.

**ADULT.**—Length of forewing, $\varphi$ and $\sigma$ 6–9 mm. Color generally fuscescent; head and thorax with golden pubescence; forewing extensively marked with many small golden spots, and with narrow Y-shaped mark from costal margin at stigma. Claws of male foreleg strongly asymmetrical.

**Male Genitalia:** Eighth sternum widened dorsad; tergum strongly produced posteromesally, in dorsal aspect with a pair of large, submesal lobes. Ninth sternum with anteroventral angle slightly produced; dorsal margin produced into an erect lobe angled posteriad; with posteroventral keel long, slender. Cercus large, elongate, flared laterad. Tenth tergum broad basally, narrowing apicad, apex directed dorsad at 45° angle, hook-like; tapering abruptly to narrow apex in dorsal aspect; with scattered sensilla. Clasper elongate, tapering apically in lateral aspect; in ventral aspect produced apicolaterally. Phallus tubular, short, inflated basally; internally with a rod-and-ring assembly, two elongate basal spines, and four or five short, dark spines.


**BRAZIL, EDO. SANTA CATARINA, Nova Teutonia (27°11'S, 52°23'W), 300–500 m, Sep-Oct 1964, F. Plaumann, 39 paratypes. EDO. SÃO PAULO, Pedrojulho, 140 km NE Ribeirão Preto, 13 Apr 1989, L.G. Oliveira, 1 $\sigma$, 1 $\varphi$. EDO. PARÁ, Aldeia Coraci, 11 km W Canindé, Rio Gurupi, Dec 1964, B. Malkin, 1 $\sigma$ (MZUSP).

**ETYMOLOGY.**—From the Greek *ypsilon*, in allusion to the similarity of this and the preceding species.

**The braconoides Group**

**DIAGNOSIS.**—Length of forewing, 5–9 mm. Body orange; appendages fuscous; forewing fuscous and usually marked with few large spots of orange, yellow, or silver. Claws of male foreleg not noticeably to strongly asymmetrical.

**Male Genitalia:** Eighth tergum without brushes, usually with posterior margin projecting, divided and depressed to some degree mesally, dorsolateral lobes may be enlarged and darkened. Ninth segment greatly produced anteroventrally, narrow dorsad, without any dorsomesal projection; posterolateral margin produced, often strikingly, usually over dorsal base of clasper. Cercus small, oval. Tenth tergum consisting of dorsal lobe with entire apex, usually with apicoventral projections, bearing many sensillae; usually with ventrolateral angle produced into a sclerite lying along posterolateral margin of ninth segment and with posterior margin often bearing one or two free lobes projecting posteriad. Clasper generally short to slightly elongate, not...
greatly modified. Phallus tubular, inflated basally; internally with a small, basal, rod-and-ring assembly and a variable number (2-30) of black spines.

**DISTRIBUTION.**—All species are limited to the Greater Antilles, with each major island supporting one or more species.
DISCUSSION.—This is a distinctive group of seven species, limited to the Greater Antilles. There are some obvious groupings of species, e.g., *braconoides* and *gilvimacula* on Hispaniola, *quina* and *aurantibasis* on Cuba. However, the Cuban *moesta*, the Jamaican *argentella*, and the Puerto Rican *albomaculata* all stand distinctly apart from each other.

**Chimarra (Curgia) braconoides** (Walker)

**Figures 1–5, 228–232; Map 13**


*Chimarra braconoides* (Walker).—Betten and Mosely, 1940:15 [redescription of holotype].


**REMARKS.**—The holotype of this species, the type species of *Curgia*, was redescribed and figured in detail by Betten and Mosely (1940). It and the following new species, *gilvimacula*, are very close sister species, agreeing in all basic points of genitalia. There are, however, small but consistent differences in the form of certain parts and in the color of the forewings that serve to distinguish the two. In *braconoides* the dorsolateral process from the ventral lobe of the tenth segment is sharply pointed and angled ventrad, so that this and the ventral process converge slightly. The clasper also lacks any indication of an apical lateral lobe, so that in ventral aspect the apicomesal angle extends farthest posteriad. The coloration differs between the two species, so that in unrubbed examples both sexes may be identified. *Chimarra braconoides* has the forewing markings a deep golden yellow, rather than the pale creamy yellow of *gilvimacula*.

**ADULT.**—Length of forewing, 29 7–9 mm. Color fuscous; head, thorax, abdomen, and appendages orange; antennae, maxillary palpi, tibiae, and tarsi fuscous; setae of head and thorax orange; forewing fuscous, marked with deep golden yellow spots and bands. Male foretarsal claws distinctly asymmetrical.

**Male Genitalia:** Eighth sternum narrowing ventrad; tergum produced posteriad into a pair of small, rounded, submesal lobes. Ninth segment produced anteroventrally; posteroventral keel appearing pointed in lateral aspect, but broad and truncate in ventral aspect. Cercus a small, elongate lobe. Tenth tergum with a narrow neck, apex enlarged and produced into pointed dorsal and ventral angles; produced ventrolaterally along posterior margin of ninth segment, this extension bearing slender, pointed, dorsal and ventral process whose tips are slightly convergent. Clasper short, bluntly pointed in lateral aspect; in ventral aspect with tip obliquely truncate, mesal angle extending farther posteriad than lateral. Phallos tubular, base slightly inflated; internally with a small, lightly sclerotized, rod-and-ring assembly and four large, black spines.


*HAITI, Crew, 1σ (MCZ).* [From lot, some labelled "Hayti," no further data], 1σ (MCZ).

**ETYMOLOGY.**—Possibly from the Latin *bracon* ("a kind of wasp") and the Latin suffix -oides ("like"), perhaps due to the similar orange and black color pattern of the wasps in the genus *Bracn* and this species.

**Chimarra (Curgia) gilvimacula**, new species

**Figures 233–236; Map 14**

**REMARKS.**—This species and *braconoides* are closely related sister species, differing slightly, but consistently, in coloration and male genitalia. I have collected both species together at two different sites in the Dominican Republic. With good, well-marked, pinned examples, *gilvimacula* is easily distinguished from *braconoides* by being slightly smaller, with the wing markings being a creamy white rather than a deep, golden yellow. The male genitalia of the two also offer small differences. The dorsal process of the ventrolateral extension of the tenth tergum in *gilvimacula* is rounded apically, and the two processes are parallel. The claspers in *gilvimacula* have a small apicolateral lobe, so that in ventral aspect the apicolateral angle extends farthest posteriad, but in *braconoides* it is the apicomesal angle that extends farthest posteriad.
ADULT.—Length of forewing, $\sigma^*$ and $\varphi$ 6.5-7 mm. Color fuscous; head, thorax, abdomen, and appendages orange; antennae, maxillary palpi, tibiae, and tarsi fuscous; setae of head and thorax orange; forewing fuscous, marked with a distinct pattern of cream-colored spots and bands. Male foretarsal claws slightly asymmetrical.

Male Genitalia: Eighth sternum nearly parallel sided; tergum produced posteriad into a pair of small, rounded, submesal lobes. Ninth segment produced anteroventrally; posteroverentral keel appearing pointed in lateral aspect, but broad and truncate in ventral aspect. Cercus a small, ovate lobe. Tenth tergum with a narrow neck, apex enlarged and produced into pointed dorsal and ventral angles; produced ventrolaterally along posterior margin of ninth segment, this extension bearing slender, blunt, dorsal and ventral process that are parallel. Clasper short, with a small apicolateral lobe; in ventral aspect with tip obliquely truncate, lateral angle extending farther posteriad than mesal. Phallus tubular, base slightly inflated; internally with a lightly sclerotized, indistinct, rod-and-ring assembly and five large, black spines.

MATERIAL EXAMINED.—Holotype, male: DOMINICAN REPUBLIC [LA VEGA PROVINCE], Rio Camú, 19 km NE Jarabacoa, 12 Jun 1969, Flint and Gomez. NMNH Type.

Paratypes: Same data as holotype, 6$\sigma^*$, 3$\varphi$. Convento, 12 km S Constanza, 6-13 Jun 1969, Flint and Gomez, 1$\sigma^*$. Rio Baiguate, 1-2 km S Jarabacoa, 19°06.9'N, 70°37.0'W, 520 m, 8-9 May 1995, O.S. Flint, 2$\varphi$; same, but 19-21 May 1995, 7$\sigma^*$, 1$\varphi$. Ao. Guasara, 9.5 km W Jarabacoa, 19°04.4'N, 70°42.1'W, 680 m, 19 May 1995, O.S. Flint, 1$\sigma^*$. 15 km N Jarabacoa, 240 m, 21 Jul 1987, Rawlins and Davidson, 1$\sigma^*$. (CMNH). Bayacanes, 120 m, 24 Jul 1987, Rawlins and Davidson, 2$\sigma^*$ (CMNH). PUERTO PLATA PROVINCE, Los Hidalgos, 4-5 Jun 1969, Flint and Gomez, 1$\sigma^*$. Pico El Murazo, north slope near summit, 19°41'N, 70°57'W, 910 m, 29 Nov 1992, J. Rawlins et al., 1$\varphi$ (CMNH). DAJABÓN PROVINCE, Rio Massacre, Balneario Don Miguel, 7 km SW Dajabón, 40 m, 26 May 1973, D. and M. Davis, 1$\sigma^*$. 9 km S Loma de Cabrera, 19°21'N, 71°37'W, 620 m, 12 Jul 1992, J. Rawlins et al., 26$\sigma^*$, 24$\varphi$ (CMNH, NMNH). EL SEIBO PROVINCE, Loma Cocuyo, 6 km S Pedro Sanchez, 18°55'N, 69°07'W, 475 m, 4 Jul 1992, J. Rawlins et al., 1$\sigma^*$ (CMNH). 15 km S Miches, ~500 m, 31 May 1973, D. and M. Davis, 1$\sigma^*$. Rio Quisqueyano, E El Seiba, 18°45.3'N, 68°55.7'W, 12 May 1995, O.S. Flint, 2$\sigma^*$, 2$\varphi$. PEDERNALES PROVINCE, along Rio Miluto, 13 km N Pedernales, 18°09'N, 71°46'W, 230 m, 17 Jul 1992, J. Rawlins et al., 46$\sigma^*$, 64$\varphi$ (CMNH, NMNH). Rio Miluto, 21 km N Pedernales, 18°09.5'N, 71°45.4'W, 280 m, 14 May 1995, O.S. Flint, 13$\sigma^*$, 6$\varphi$. HATO MAYOR PROVINCE, Parque Los Haitises, E Trepada Alta, 12 km W El Valle, 18°59'N, 69°30'W, 145 m, 6 Jul 1992, J. Rawlins et al., 4$\sigma^*$, 6$\varphi$ (CMNH, NMNH). Parque Los Haitises, 3 km W Cueva de Arena, 19°04'N, 69°29'W, 20 m, 7-9 Jul 1992, J. Rawlins et al., 4$\sigma^*$, 2$\varphi$ (CMNH). AZUA PROVINCE, Rio Las Cabezas, 8 km NE Padre Las Casas, 1846'N, 70°53'W, 580 m, 7 Aug 1990, J. Rawlins et al., 1$\sigma^*$ (CMNH); same, but 3-4 Oct 1991, 1$\sigma^*$ (CMNH). ELIAS PINA PROVINCE, N slope Sierra de Neiba, 2 km SW Canada, 7 km WSW Hondo Valle, 18°42'N, 71°45'W, 980 m, 29 Aug 1995, J. Rawlins et al., 1$\sigma^*$, 3$\varphi$ (CMNH). SAN JUAN PROVINCE, Presa de Sabaneta, 1 km SE Ingenito, 11 km NE Hato Nuevo, 19°02'N, 71°18'W, 610 m, 31 Aug 1995, J. Rawlins et al., 2$\sigma^*$ (CMNH). [SAN CRISTÓBAL PROVINCE] Villa Altgrayacra, Jul 1938, Darlington, 1$\varphi$ (MCZ). [Province unknown] San Francisco Mts., 15 Sep 1905, A. Busck, 18$\sigma^*$, 21$\varphi$ (MCZ, NMNH).

HAITI [DEPARTMENT OF L'ARTIBONITE], Ennery, 12 Jul 1956, B. and B. Valentine, 1$\sigma^*$, 2$\varphi$, 3 without abdomen. Haiti [no further data], 3$\sigma^*$, 1$\varphi$ (MCZ).

ETYMOLOGY.—From the Latin gilvus ("pale yellow") and macula ("spot"), in allusion to the marks on the forewing.

Chimarra (Curgia) aurantibasis, new species

FIGURES 237-240; MAP 14

REMARKS.—This Cuban species is closely related to the Cuban quina, and both are more distantly related to the Hispanician braconoides and gilvimacula. The species is most easily recognized by the shape of the processes from the posterior margin on the ninth segment, the form of the apical lobe of the tenth tergum, and, most especially, the claspers that are a bit longer than broad in ventral aspect. The holotype is very greasy, but it does show a rather distinct color pattern. The forewings are primarily fuscous, but there is a longitudinal band of orange hair along the radial system for about one-third of the wing length at which point it curves out to, and ends at, the anterior wing margin.

ADULT.—Length of forewing, $\sigma^*$ 8 mm, $\varphi$ 9 mm. Color fuscous and orange; body, scape, legs to the tibiae, and hair of head and thorax orange; antennal flagellum, palpi, tibiae, and tarsi fuscous; forewing fuscous, with a bright orange longitudinal band from base along radial veins for one-third of wing length, then curved to anterior margin. Male foretarsal claws slightly asymmetrical.

Male Genitalia: Eighth sternum widened dorsad; tergum slightly produced posteriad into a pair of small, rounded, submesal lobes. Ninth segment produced anteroventrally; posteroverentral keel produced into a small lobe; posterolateral margin produced into two points laterad of clasper. Cercus a small, ovate lobe. Tenth tergum with a narrow neck, apex slightly produced posteriad into a pair of small, rounded, submesal spines. Male foretarsal claws slightly asymmetrical.

ETYMOLOGY.—From the Latin gilvus ("pale yellow") and macula ("spot"), in allusion to the marks on the forewing.

Chimarra (Curgia) aurantibasis, new species

FIGURES 237-240; MAP 14

REMARKS.—This Cuban species is closely related to the Cuban quina, and both are more distantly related to the Hispanician braconoides and gilvimacula. The species is most easily recognized by the shape of the processes from the posterior margin on the ninth segment, the form of the apical lobe of the tenth tergum, and, most especially, the claspers that are a bit longer than broad in ventral aspect. The holotype is very greasy, but it does show a rather distinct color pattern. The forewings are primarily fuscous, but there is a longitudinal band of orange hair along the radial system for about one-third of the wing length at which point it curves out to, and ends at, the anterior wing margin.

ADULT.—Length of forewing, $\sigma^*$ 8 mm, $\varphi$ 9 mm. Color fuscous and orange; body, scape, legs to the tibiae, and hair of head and thorax orange; antennal flagellum, palpi, tibiae, and tarsi fuscous; forewing fuscous, with a bright orange longitudinal band from base along radial veins for one-third of wing length, then curved to anterior margin. Male foretarsal claws slightly asymmetrical.

Male Genitalia: Eighth sternum widened dorsad; tergum slightly produced posteriad into a pair of small, rounded, submesal lobes. Ninth segment produced anteroventrally; posteroverentral keel produced into a small lobe; posterolateral margin produced into two points laterad of clasper. Cercus a small, ovate lobe. Tenth tergum with a narrow neck, apex slightly produced posteriad into a pair of small, rounded, submesal spines. Male foretarsal claws slightly asymmetrical.
GUIN [PROVINCE], Pinares de Mayari, 640 m, Jul 1990, V.O.

Paratypes: Without any data [but judging from similar matting and appearance to holotype, they may have been taken together], 2♀ (INHS, NMNH). OTE. [Oriente], La Brea, Moa, Jun 1954, F. Zayas and P. Alayo, 1♂ (CMNH).

ETYMOLOGY.—From the Latin aurum (“gold”) and base (“basal”), in allusion to the marking on the forewing.

**Chimarra (Curgia) quina**, new species

FiguReS 241–244; Map 15

REMARKS.—This is another species of the *braconoides* group, and it is closely related to *aurantibasis*. From the latter, it is distinguished by the sharply pointed crest and the broadly rounded apex of the tenth tergum, the very short claspers, and the much larger number of spines in the phallus.

ADULT.—Length of forewing, ♂ and ♀ 6–7 mm. Color fuscous and orange; body, scope, to the tibiae, and hair of head and thorax orange; antennal flagellum, palp, tibiae, and tarsi fuscous; forewing fuscous, with base orange and with orange hair. Male foretarsal claws not noticeably asymmetrical.

Male Genitalia: Eighth sternum slightly widened dorsal; tergum produced posteriad into a pair of rounded, submesal lobes. Ninth segment produced anteroventrally into a narrow lobe; posteroventral keel produced into a small lobe; postero-lateral margin produced into a shallow, broad, lobe laterad of clasper. Cercus a small, ovate lobe. Tenth tergum with a narrow neck, apex enlarged and produced into a sharp dorsal point and a broadly rounded apex; produced ventrolaterally along posterior margin of ninth segment, this extension bearing a dorsal process near base of tergum and a flat plate along posterior margin of ninth segment. Clasper short, higher than long, without teeth. Phallus tubular, base slightly inflated; internally with a rod-and-ring assembly and about 30 black spines.

Material Examined.—Holotype, male: CUBA, HOL-GUIN [PROVINCE], Pinares de Mayarí, 640 m, Jul 1990, V.O. Becker. NMNH Type.


ETYMOLOGY.—A name suggested by the locality Turquino.

**Chimarra (Curgia) moesta** Banks

FIGURES 245–248; Map 14

*Chimarra (Curgia) moesta* Banks, 1924:449.—Fischer, 1961:67.—Flint, 1967b:4 [figure of female genitalia attributed erroneously to holotype].

REMARKS.—There has been a most unfortunate exchange of abdominal preparations of the type of this species with a specimen of *C. guapa* Botosaneanu (or closely related). This had occurred sometime before I figured the supposed type abdomen in 1967. During the preparation of this paper, I restudied this abdomen, associated with the type, and I realized that it probably was that of *guapa*, but the remainder of the type was clearly a species of *Curgia*. At the same time, I discovered a specimen with prepared male abdomen in Cuban material recently returned by Ross that was easily recognizable as *alayoi* Botosaneanu. However, Ross had marked this specimen “gen. may not belong to body.” Checking the wing venation, I, too, realized that these were misassociated and observed that the proportions of the abdomen were far too large for the body. I realized that perhaps these two genital preparations had been exchanged, and I went back to the bodies to see if there was any other evidence. The abdomen of the type of *moesta* had been cleanly cut at midlength, and the basal segments were still attached to the thorax; the abdomen of the *guapa* specimen had been broken off at the base. Eureka! The male genital preparation of *alayoi* was neatly clipped at about the fifth segment (the preparation has since become more disarticulated), and the size of the preparation and the body matched perfectly. The female preparation was of the whole abdomen, thus it could not have come from the type, and its size was proportional to the *guapa* body. Now that the correct male abdomen has been reassociated with the rest of the type of *moesta*, the synonymy of *alayoi* is established.

The species is very distinctive and is not closely related to any other species of the group, as is shown by the unmodified posterior margin of the eighth tergum and the rather simple, hood-like tenth tergum, in comparison to the crested tenth tergum of the other species. Other distinctive features are the single, hook-like postero-lateral process of the ninth segment and the very small, quadrate claspers.

The type of *moesta* is almost totally denuded, and there is no indication of any pale spots in the wing membrane, as seen in many of the other species when lacking their wing hair. Very careful examination of the wings, however, reveals a few white hairs, mostly in the stigmal area and near the chord. Thus, I expect that well-marked examples will be mostly fuscous, including the body, with a few, small, creamy white spots on the forewing.

ADULT.—Length of forewing, ♂ 7.5 mm. Color dull fuscous, nearly unicolorous; wings mostly denuded, but see “Remarks,” above. Male foretarsal claws broken, symmetry unknown.

Male Genitalia: Eighth sternum almost parallel sided; tergum barely produced posteriad medially. Ninth segment slightly produced anteroventrally; posteroventral keel produced into an elongate rod; postero-lateral margin produced into a pointed lobe whose dorsal margin bears an angulate shoulder, and whose tip extends posteriad beyond the clasper. Cercus a small, ovate lobe. Tenth tergum broad basally, with a small notch in dorsal margin subbasally, narrowed and arched apically, hood-like; in dorsal aspect triangular in outline; with a flat, plate-like sclerite extending ventrad from ventrolateral margin.
and ending in a darkened knob above clasper bases. Clasper shorter than high, almost rectangular in outline and mostly recessed into ninth segment, apex in ventral aspect with a small apicosomal lobe. Phallus tubular, base slightly inflated; internally with a distinctive rod-and-ring assembly and nine elongate, black spines.

**Material Examined.**—"Cuba, Ch. Wright," "MCZ Type 14876," σ holotype (MCZ). Pia. Pinar del Río, Arroyo del Pinar del Viñales ["a very clear and fast flowing brook, found in a pine forest very near Viñales"] [no date], P. Alayo, Q allotype, 19 paratype (NMNH).

**Etymology.**—Probably from the Latin moestus ("sorrowful"), in allusion to its somber color.

**Chimarra (Curgia) argentella (Ulmer)**

**Figures 249-252; Map 15**

Chimarrha argentella Ulmer, 1906:92.

**Remarks.**—This species of the *bracconoides* group inhabits the island of Jamaica. Milne (1936) recorded the species from Florida; I have seen those specimens in the MCZ, and they appear to be correctly identified and are labelled "Florida." However, I expect that they are mislabelled because neither this species nor any other *Curgia* has been found subsequently in that state.

The males are very easily recognized by the large, black, knob-like, lateral lobes of the eighth tergum and the very long, blackened, dorsal prolongation of the tenth tergum. There does not appear to be any ventral extension of the tenth tergum in the blackened, dorsal prolongation of the tenth tergum, the bipartite ventrolateral lobes from the tenth segment, and the small clasper that is recessed into ninth segment, apex in ventral aspect with a small apicosomal angle produced into a large tooth. Phallus tubular, base slightly inflated; internally with a lightly sclerotized, rod-and-ring assembly and two large, black spines.


**Etymology.**—Probably from the Latin argentinus ("sIlvery"), in allusion to its forewing color.

**Chimarra (Curgia) albomaculata (Kolbe)**

**Figures 253-256; Map 15**

Chimarrha albomaculata Kolbe, 1888:175.
Chimarra luquillo Denning, 1947a:657.—Flint, 1964:21 [luquillo to synonym].

Chimarra albomaculata (Kolbe).—Fischer, 1961:54; 1971:220.—Flint, 1964:21 [male, female, larva, pupa, distribution].

**Remarks.**—This species of the *bracconoides* group inhabits the island of Puerto Rico. I have seen over 25 different collections containing many hundreds of specimens in the collections of the AMNH, INHS, MCZ, and NMNH. It is a very common and abundant species throughout the island wherever there is flowing water that is not grossly polluted.

The males are recognized very easily by the sharp, dorsal prolongation of the tenth tergum, the bipartite ventrolateral lobes from the tenth segment, and the small clasper that is almost totally surrounded by the ninth segment.

**ADULT.**—Length of forewing, σ and Q 5-7 mm. Color fuscous; head, thorax, abdomen, and appendages orange; antennae and maxillary palpi fuscous; tarsi slightly infuscate; setae of head and thorax orange; forewing fuscous, marked with silvery white spots and bands. Male foretarsal claws exceedingly asymmetrical.

**Male Genitalia:** Eighth sternum narrowing slightly ventrad; tergum produced posteriad into a large, darkened, rounded, lateral lobe and deeply divided dorsomesally with dorsum concave. Ninth segment produced anteroventrally; posteroventral keel reduced to a very small point; posterolateral margin produced into a pointed lobe whose dorsal margin is slightly angulate. Cercus an elongate lobe. Tenth tergum with a narrow neck, apex enlarged and produced into a very long, pointed dorsal process and a shorter, apically rounded lobe. Clasper elongate, dorsomesal margin irregular, tapering to an apical point; in ventral aspect with apicosomal angle produced into a large tooth. Phallus tubular, base slightly inflated; internally with a lightly sclerotized, rod-and-ring assembly and two large, black spines.
The *pulchra* Group

**DIAGNOSIS.**—Length of forewing, 6–9 mm. Body orange; appendages fuscous; forewing fuscous, usually marked with few large spots or a band of orange. Claws of male foreleg, not noticeably asymmetrical.

**Male Genitalia:** Eighth tergum without brushes, with posterior margin slightly projecting. Ninth segment greatly produced anteroventrally, narrow dorsal, without any dorsomesal projection; posterolateral margin strikingly produced. Cercus small, oval. Tenth tergum consisting of dorsal lobe with entire apex, bearing many sensillae, with two pairs of small basodorsal projections. Clasper elongate, tapering apicad. Phallos tubular; internally with a rod-and-ring assembly whose apicodorsal and ventral margins are produced posteriad, with no internal spines.

**DISTRIBUTION.**—Limited to the Greater Antillean island of Cuba.

**DISCUSSION.**—The group is limited to a single species on Cuba. It would seem to combine some characteristics of the *mexicana* and *braconoides* groups with its own apomorphies. With *mexicana*, especially, it shares its coloration, a rather simple eighth tergum, an elongate clasper, and the lack of ventrolateral lobe of the tenth tergum. With the *braconoides* group, it shares the development of the posterolateral margin of the ninth segment. The extra basal lobes of the tenth tergum and the internal structure of the phallos are unique.

*Chimarra* (*Curgia*) *pulchra* (Hagen)

**FIGURES 257–260; MAP 16**

*Chimarrha pulchra* Hagen, 1861:298.—Ross, 1952:32 [lectotype].

*Chimarra* (*Curgia*) *fraterna* Banks, 1924:449.


*Chimarrha fraterna* (Banks).—Fischer, 1961:60.

**Chimarrha (Curgia) pulchra* (Hagen).”—Flint, 1967b:4 [fraterna to synonymy].—Botosaneanu, 1980:98.

**REMARKS.**—This is a very widespread species on Cuba and has been recorded from all Provinces and the Isle of Pines. It also is quite variable in coloration. There is generally a broad, irregular, golden yellow band widthwise on the forewing; this band may be broken into two or three discrete spots or short bands (type of *fraterna*). On the eastern end of the island, from Camagüey, at least, all the pinned examples I have seen have a uniformly fuscous forewing. However, I am unable to see any differences in either the male or female genitalia in all this material.

Although the species appears similar to *C. moesta* Banks, in the form of the hood-like tenth tergum, the two pairs of basodorsal processes are unique to *pulchra*.

**ADULT.**—Length of forewing, ♂ 6–8 mm, ♀ 8–9 mm. Color fuscous and orange; body, scape, legs to the tibiae, and hair of neck, apex enlarged and produced into a long, sharply pointed dorsal process and a short, rounded, apical lobe, bifid in dorsal aspect; posteroventral lobe produced into a large, projecting structure, divided centrally. Clasper very small, ovate, completely withdrawn within posterior margin of ninth segment. Phallos tubular, base slightly inflated; internally with a well-sclerotized, rod-and-ring assembly, four black spines, and a small, rugose lobe apicoventrally.


**ETYMOLOGY.**—Probably from the Latin *albus* ("white") and *macula* ("spot"), in allusion to its forewing color.

*Chimarra* (*Curgia*) *pulchra*
head and thorax orange; antennal flagellum, palpi, tibiae, and tarsi fuscous; forewing fuscous, with broad central orange band, often broken into several large spots, rarely totally lacking orange color. Male foretarsal claws not noticeably asymmetrical.

**Male Genitalia:** Eighth sternum slightly widened dorsad; tergum rarely produced posteriad mesally. Ninth segment produced anteroventrally; posteroventral keel produced into a small lobe; postero-lateral margin produced into a pair of widely separated, pointed lobes. Cercus small, ovate. Tenth tergum broad basally, narrowed and produced apicad, hood-like; in dorsal aspect triangular in outline, with two pairs of basal lobes, lateralmost much longer. Clasper elongate, tapering apicad, apex with a small dorsomesal tooth. Phallos tubular, base slightly inflated; internally with a rod-and-ring assembly, which is greatly produced posteriad dorsally and ventrally, lacking spines.

**Material Examined.**—"Cuba, o. Packen, Mar 1858," "Lectotype Chimarrha pulchra," "MCZ Type 11100," $\sigma$ lectotype (MCZ).

"Cuba, Ch. Wright," "Lectotype $\sigma$ Chimarrha fraterna Bks. By Flint '64," "MCZ Type 14876," $\sigma$ lectotype, 4$\varphi$ lectotypes (MCZ).

**CUBA, PINAR DEL RIO PROVINCE,** S. Diego d 1 Banos [San Diego de los Baños], Apr 15.00 [15 Apr 1900], Palmer and Riley, 1$\sigma$, 2$\varphi$ (MCZ). Rancho Mundoito, S. Randel, 5 [\text{？} May?] 1953, F. de Zayas, 3$\varphi$ (INHS). Rancho Mundoito, Sierra de los Organos, 28 May 1948, J. Ferrás, 1$\sigma$, 1$\varphi$ (INHS). Sierra Rosario, 400 m, 5–15 Jun 1990, V.O. Becker, 5$\sigma$, 6$\varphi$. San Vicente, 9 Apr 1922, S.C. Bruner and J. Acuña, 1$\sigma$ (INHS). San Blas, 1918, W.M. Mann, 1$\varphi$. Soroa, 27-28 Apr 1983, W.N. Mathis, 7$\sigma$, 2$\varphi$; same, but 4–6 Dec 1994, Flint and Mathis, 8$\sigma$, 6$\varphi$. La Caridad, 2.2 km NW Soroa, 4–5 Dec 1994, Flint and Mathis, 4$\sigma$, 8$\varphi$. Viñales, 100 m, 20 Jul 1990, V.O. Becker, 5$\sigma$, 3$\varphi$. Mogotos de Hernanos, 3 km W Viñales, 150 m, 7–8 Feb 1981, D.R. Davis, 1$\varphi$.

**LA HABANA PROVINCE,** Havana, Baker, 2$\varphi$ (MCZ). Canagrejas, 30 May 1931, S.C. Bruner, 1$\sigma$ (INHS). Somorrostro, 31953, F. de Zayas, 2$\sigma$ (INHS).

**MATANZAS PROVINCE,** Cienaga Zapata, nr. Playa Larga, 3 m, 10–11 Feb 1981, D.R. Davis, 1$\varphi$.

[CIFUENGO or SANCTI SPIRITUS PROVINCE] Buenos Aires, Trinidad Mts., 17–23 Jun 1939, C.T. Parsons, 1$\sigma$, 1$\varphi$ (MCZ).

[CIFUENGO PROVINCE], all the following localities referring to "Soledad" are at what is now called the Jardin Botanico Cienfuegos, 3 km E Pepito Tey = the old Central Solidad, at 22°07.5'N, 80°19.2'W.] Soledad, Sta. Clara, 24–28 Jun 1932, Bates and Fairchild, 3$\sigma$, 6$\varphi$ (MCZ). Cien. Soledad, Sta. Clara, 1 May 1932, S.C. Bruner, A. Otero, 1$\sigma$ (INHS). Soledad, near Cienfuegos, 6–20 Aug, N. Banks, 2$\sigma$, 5$\varphi$ (MCZ). Soledad, Cienfuegos, Jun 1929, Darlington, 1$\varphi$ (MCZ); same, but Apr 1936, 2$\sigma$, 1$\varphi$ (MCZ). Soledad, 21 Feb 1925, Geo. Salt, 1$\varphi$ (MCZ); same, but 5 Jul 1925, 1$\varphi$ (MCZ); same, but 9 Jun 1925, 1$\varphi$ (MCZ). Near Casa Harvard, Soledad, Cienfuegos, 11–14 Aug 1933, N.A. Weber, 2$\varphi$ (MCZ). Rio Caburni, 5 km WNW Topes de Collantes, 10–11 Dec 1994, Flint and Mathis, 3$\varphi$, 2$\varphi$.


**SANTIAGO DE CUBA PROVINCE,** Municipio Contramaestre, Filé (near Los Negros, Hotel El Salton), 200 m, 20 Jul 1995, R.S. Peigler, 1$\sigma$, 4$\varphi$ (DMNH).

In addition to the material seen above, many additional localities have been published by Botosaneanu and Sykora (1973), Botosaneanu (1977, 1979, 1980) and Kumanski (1987). These authors recorded the presence of the species on Isla de Pinos and added many more specific localities all over the island, which are not noted herein on the map.

**ETYMOLOGY.**—Probably from the Latin *pulcher* ("beautiful"), in allusion to its coloration.

**The banksii Group**

**DIAGNOSIS.**—Length of forewing, 4–10.5 mm. Color light to dark brown; forewing brown, extensively marked with pale brown to creamy spots and blotches (rarely the wing is fuscous with more silvery spots). Claws of male foreleg apparently unmodified to exceedingly asymmetrical.

**Male Genitalia:** Eighth tergum with postero-lateral setal brushes, and often lobes and/or secondary brushes posteromesally or beneath tergum. Ninth segment with anterior margin produced ventrally, indented at midlength; dorsally produced into a thin plate or lobe serving to support eighth tergum or to close in large membranous region ventrad to the eighth tergum; postero-lateral margin unmodified; postero-mesal keel varying from short and broadly triangular to elongate and slender. Cercus elongate, ovoid, often flared posterolaterally. Tenth tergum entire, tip narrow and directed dorsad, with processes and lobes from dorsal development, or with processes and lobes from dorsal surface of tergum; bearing many sensillae. Phallos tubular, inflated basally; internally with a rod-and-ring assembly, which is greatly produced posteriad dorsally and ventrally, lacking spines.

**Material Examined.**—"Cuba, o. Sacken, Mar 1858," "Lectotype Chimarrha pulchra," "MCZ Type 11100," $\sigma$ lectotype (MCZ).
south, and in the uplands southeast of the Amazon to northern Argentina and Uruguay.

**Discussion.**—This is a rather heterogeneous group of 28 species, which offers a series of complexes and single species that show a bewildering melange of characters. The presence of brushes and other processes of the eighth tergum and the development of dorsal plates from the ninth tergum, in conjunction with these modification, is synapomorphic, as is the reduction of phallic spines to between four and one, or absent entirely. The claspers also are reduced in size, which is probably a specialization. Many modifications similar to these occur in other groups, but not in the same manner and combination.

One of the more well-marked complexes is the *banksi* complex of three species: *banksi*, *sarophora*, and *macara*. These have the posterior margin of the eighth tergum produced somewhat dorsolaterally, the brush divided in a free ventral arm, a dorsal arm appressed to the membrane between the eighth and ninth segments, the tip of the tenth tergum upturned, the clasper elongate and semierect, and no spines in the phallus.

Another well-marked species is *centralis*, which stands alone in the group on the basis of a number of unique structures in the male genitalia. The unusual postero mesal and posterolateral brushes of the eighth tergum, the basodorsal lobes of the tenth tergum, and especially the free-standing dorsomesal rod of the ninth tergum are all distinctive structures.

The union of *acinciformis* and *piliferosa* in a single complex is advanced with some trepidation. At first sight, the former species, with only a single pair of eighth tergal brushes combined with the latter species bearing two pairs, seems highly improbable. Yet the virtually identical structure of the ninth and tenth terga, claspers, and phallus is quite convincing. The uniquely derived placement of the tenth tergal sensillae in a small patch on the posterior prominence on the segment is synapomorphic for the two.

The species *aureopunctata* is another single-species complex. The most striking apomorphy is the deep and broad membranization of the eighth tergum, combined with the placement of the lateral brush on a small process developed mesally from a broad posterolateral flap on the segment. The structure of the ninth and tenth terga, claspers, and phallus are very like those of the *purisca* and *spatulata* complexes.

The *purisca* complex of two species (*purisca* and *maritza*) is very close to the *spatulata* complex, differing only in the posterior margin of the eighth tergum, which in lateral aspect is long and vertical, and in the male foretarsal claws, which are not noticeably modified. The clasper also is produced apicodorsally, with the posterior margin bilobate.

Containing four species (*spatulata*, *didyma*, *nasuta*, and *blepharophera*), the *spatulata* complex is one of the larger ones in the group. It also is easily recognizable: the eighth tergum has a small posterolateral brush, the clasper is ovoid in outline in lateral aspect with a small apicom esal tooth in ventral aspect, and it has grossly asymmetrical male tarsal claws. The latter characteristic is clearly an apomorphy for the complex.

The *geranoides* complex of three species, *geranoides*, *peruviana*, and *minca*, is a very tight-knit group. They share the possession of the paired dorsal processes on the tenth tergum, the mesal, hirsute lobe from the eighth tergum, and the internal structure of the phallus, which are all apomorphic characteristics.

The five species of the *brasili ana* complex, *brasili ana*, *piraya*, *cultur ella*, *parana*, and *fiitkau*, are all very similar in appearance. The eighth tergum has a rather simple, broad, posterolateral lobe bearing the brush, but it has a specialization in the ninth dorsal plate, which also bears a smaller brush of various forms. The complex is divisible into two pairs of very close species: *brasili ana* and *piraya*, *cultur ella* and *parana*, and a more distant one, *fiitkau*.

The *scopula* complex contains only the nominotypical species and *scopuloides*. Again the eighth tergum offers major distinctions: the posterolateral brushes are small and elongate, and a pair of large lobes arise from the dorsal margin. The dorsal process of the ninth tergum is slender and rod-like, and the clasper is slightly elongate with an apicosomal tooth.

The species *tamba* is placed in its own group, primarily on the basis of the configuration of the eighth tergum. The posterolateral lobes of the eighth tergum are elongate but lack the usual brushes, which are found instead on the ventral surface of a mesal plate, and there are additional small setate lobes. The basic shapes of the ninth segment, tenth tergum, claspers, and phallus are all typical of the *banksi* group, although offering specific differences.

The two species, *teresa* and *camposae*, are closely related, forming a distinctive complex, perhaps related to the preceding one. The uniquely structured eighth tergum and its brushes are the most distinctive synapomorphies of the complex. The ninth tergum also is broad dorsally, but the claspers and phallus are all quite typical.

Perhaps the most bizarre complex is the *mycterophora* complex, containing only the additional species *erectiloba*. The eighth tergum bears its posterolateral brushes on long, straight processes and has a long central lobe with an apicoventral brush from the posterior margin. This development is highly apomorphic, although foreshadowed by *erectiloba*. The dorsal plate of the ninth tergum is divided into two long lobes that lie between the lateral and central brushes of the eighth tergum.

**Chimarra** (*Curgia*) *banksi* (Ulmer)

**Figures** 261-266; **Map** 18

*Wormaldia mediana* Banks, 1905:18 [preoccupied].


**Remarks.**—The three species, *banksi*, *sarophora*, and
macara, form a complex of closely related species that can be told apart only by the structure of the eighth tergum. In banksi the posterior margin of the tergum is produced into large, trianguloid lobes deeply divided mesally. The posterolateral lobe is divided into a lateral arm bearing an apical brush and a slender dorsal arm, appressed to the inner face of the tergum, and which also bears an apical brush. The apex of the dorsal arm is slender and extends freely from under the tergum. In sarophora the dorsal arm is broad and extends across the posterior face of the eighth segment, and the brush is continuous along the inner margin. In macara the dorsal arm is slender and extends directly mesad across the face of the segment, and, before bending abruptly upward, its brushes are divided into a pair of brushes at the tips of the two arms, but there are a few scattered setae connecting these brushes. The posterior margin of the eighth tergum in sarophora bears a pair of small lobes, but in macara these lobes are quite long and rather narrow.

ADULT.—Length of forewing, ♂ and ♀ 5.5–7 mm. Color brown; appendages pale brown; forewing brown, with many
small, golden spots. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum slightly widened dorsad; tergum strongly produced into an acute dorsolateral angle, broadly and deeply divided dorsomesally; with posterolateral lobe divided into a ventrolateral arm, bearing a brush of setae apically, and a dorsomesal lobe appressed to inner face of tergum and ending in a small projection, bearing a small, apical brush. Ninth sternum produced anteroventrally; with elongate, posteromesal keel; produced into a long dorsal extension, narrow in lateral and posterior aspects, articulating to ventromesal projection from eighth tergum at base of central excision. Cercus elongate, decurved, slightly enlarged apicad. Tenth tergum with tip entirely, sharply curved dorsad; apex broadly rounded in dorsal aspect, with many sensillae. Clasper elongate, apical \( \frac{3}{2} \) angled dorsad; in ventral aspect, with a small angle mesally, apex narrowed. Phal1lus short, tubular, inflated basally; internally with a small rod-and-ring assembly, no spines.

**Material Examined.—Holotype, male: NICARAGUA [DPTO. CHINANDEGA], Chinandega, Baker, MCZ Type 11826.**


**Etymology.—**Patronym in honor of Nathan Banks, the noted North American specialist on Trichoptera and other neuropteroids.

**Chimarra (Curgia) sarophora, new species**

*Figures 267-272; Map 17*

**Remarks.—**This species is closely related to *banksi*. The primary difference between them is in the eighth and, to a lesser degree, the tenth terga of the male genitalia. In *sarophora* the lateral and mesal brushes are a continuous band extending from the mesal margin of a large, broad sclerite that does not project freely as a slender process dorsomesally, nor are the lobes from the posterior margin on the tergum very large. In *banksi* the brushes are borne from the extremity of the lateral lobe and from the apex of a very slender sclerite that curves dorsad and projects freely from beneath the tergum, and the lobes from the posterior margin are much larger, especially as seen in dorsal aspect. The apex of the tenth tergum is a bit larger and more sharply angled dorsad in *sarophora* than it is in *banksi*.

**Adult.—**Length of forewing, ♂ and ♀ 6-7 mm. Color brown, body and appendages paler; forewing light yellowish brown, with many small, dark flecks. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsally; tergum with posterior margin produced into a pair of small, rounded, submesal lobes; with a hirsute posterolateral lobe that is produced into a large lobe held against inner face of tergum and is hirsute along inner margin. Ninth sternum produced anteroventrally; with slender posteromesal keel; produced into long, slender, dorsal extension, articulating to inner surface of eighth tergum. Cercus elongate, enlarged apicad. Tenth tergum short, tip entire; apex curved and produced sharply dorsad, rounded apically in dorsal aspect; with many sensillae. Clasper elongate, thin, semierect; mesal margin in posterior aspect dark brown, with many small, dark flecks. Claws of male foreleg apparently unmodified.
without spines.

**Material.**—Holotype. male: PANAMA, Canal Zone [PCIA. COLÓN], Rio Agua Salud, Pipeline Road, 8–12 Jul 1967, Flint and Ortiz. NMNH Type.

**Paratypes:** Same data as holotype, 2♂; same, but 30 Mar 1965, S.S. and W.D. Duckworth, 3♂, 1♀. PCIA. PANAMA, Barro Colorado Island, Snyder-Molino trail marker 3, 8 Apr 1987–12 Feb 1991, H. Wolda (light trap), 13♂, 12♀.

**Etymology.**—From the Greek *saron* (“broom”) and the suffix -pher (“to bear”), in allusion to the brushes of the eighth tergum.

**Chimarra (Curgia) macara, new species**

**Figures 273–279; Map 16**

**Remarks.**—This species is another in the complex of species closely related to *banksi*. The primary difference between the various species is in the eighth and, to a lesser degree, the tenth terga of the male genitalia. In *macara* there is a slender arm extending directly mesal from the lateral brushes, which is at its apex recurved upward where it bears a setal brush; this brush is connected to the lateral brush by a continuous row of scattered setae along the posterior margin. The lobes from the posterior margin on the eighth tergum are displaced laterad and are longer than wide. In *banksi* the brushes are borne from the extremity of the lateral lobe and from the apex of a very slender sclerite that curves dorsad and projects freely from beneath the tergum, and the lobes from the posterior margin are much larger, especially as seen in dorsal aspect. The apex of the tenth tergum is a bit broader in *macara* than it is in *banksi*.

**Adult.**—Length of forewing, ♂ and ♀ 6.5–7 mm. Color brown; body and appendages paler; forewing light yellowish brown, with many small, dark flecks. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsad; tergum with posterior margin bearing a pair of rounded, lateral lobes; with a slender posterolateral lobe bearing an apical brush of setae, and a slender arm projecting directly mesal before curving dorsad and bearing a setal brush apically; setal brush connected by scattered setae along inner margin to lateral brush. Ninth sternum produced anteroventrally with posteromesal keel; produced into a long, curved, dorsal extension, narrow in lateral aspect, free of all attachment to eighth segment. Cercus elongate, ear-like, slightly enlarged apicad. Tenth tergum with tip entire, produced into a small apicodorsal lobe, with many sensillae; basally bearing a pair of dorsolateral, plate-like lobes and a lateral projection (just mesad of base of cercus), with ventrolateral margins expanded. Clasper short, broadest apicad; in ventral aspect mitten-like with a very short, mesal “thumb.” Phallicus short, tubular, inflated basally; internally with a small rod-and-ring assembly and two to four small, dark spines.


**Paratypes:** Same data as holotype, but Macará, 13 Aug 1977, 1♂, 2♀.

**Etymology.**—A name suggested by the locality Macará.

**Chimarra (Curgia) centralis Ross**

**Figures 6–9, 280–284; Map 19**

**Remarks.**—This species stands alone in the group on the basis of a number of unique structures in the male genitalia. The unusual posteromesal and posterolateral brushes of the eighth tergum, the basodorsal lobes of the tenth tergum, and especially the free-standing dorsomesal rod of the ninth tergum are all distinctive structures. The shape of the claspers, however, is like that of *acinaciformis* and some other species in the group.

**Adult.**—Length of forewing, ♂ and ♀ 4.5–5 mm. Color brown; body and appendages paler; forewing light yellowish brown, with many small, dark flecks. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsad; tergum produced posteromesally as a trianguloid lobe with a fringe of short spines along apical margin in dorsal aspect; with a large posterolateral lobe bearing a brush of short setae along apical margin and covered with short scabrous spines. Ninth sternum produced anteroventrally; with elongate, slender, posteromesal keel; produced into a long, curved, dorsal extension, narrow in lateral aspect, free of all attachment to eighth segment. Cercus elongate, ear-like, slightly enlarged apicad. Tenth tergum with tip entire, produced into a small apicodorsal lobe, with many sensillae; basally bearing a pair of dorsolateral, plate-like lobes and a lateral projection (just mesad of base of cercus), with ventrolateral margins expanded. Clasper short, broadest apicad; in ventral aspect mitten-like with a very short, mesal “thumb.” Phallicus short, tubular, inflated basally; internally with a small rod-and-ring assembly and two to four small, dark spines.

MAP 19.—Distribution of Chimarra (Curgia) centralis Ross.


PANAMA, PCIA. CHIRIQUI, Fortuna Dam Site, nr. Horimitos, 1050 m, 8°55'N, 82°16'W, 11-24 May 1977, H. Wolda, 5♂; same, but 10-16 Aug 1977, 1♂. PCIA. COCLE, El Potroso, 10 km NE El Copé, 4 Nov 1980, University of Panama student collection, 1♂.

ECUADOR, PCIA. PICHINCHA, via Puerto Quito (at km 113), 24 Jun 1976, J. Cohen at blacklight, 6♂.

ETYMOLOGY.—Probably from the Latin centrum ("mid-point"), of unknown connotation.

**Chimarra (Curgia) acinaciformis**, new species

FIGURES 285-289; MAP 16

REMARKS.—This species is easily distinguished from the only other species in the complex, piliferosa. The single pair of very long processes that bear the posterolateral brushes on the
eighth tergum and the broad, almost rounded, tip of the tenth tergum easily distinguish this species from its compatriot.

**ADULT.**—Length of forewing, σ and φ 5–6.5 mm. Color brown, body and appendages paler; forewing light yellowish brown, with many small, dark flecks. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsally; tergum with posterior margin bearing a pair of very short, rounded, submesal lobes; with a long, slender posterolateral lobe bearing an apical brush of setae. Ninth sternum strongly produced anterolaterally; with slender posteromesal keel; produced into long, slender, dorsal extension, articulating to inner surface of eighth tergum. Cercus elongate, barely enlarged apicad. Tenth tergum short, tip entire; curved sharply dorsad, tip thin, slightly reflexed, rounded apically in dorsal aspect; with many sensillae on small apical knob. Clasper short, roughly quadrate; in ventral aspect with a small apicomeral tooth. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly, two small, dark spines, and a pair of slightly longer, more slender, hooked spines.

**Material.**—Holotype, male: BOLIVIA, Yungas de La Paz, Rio San Pedro, 850 m, 8–9 Jan 1976, L.E. Peña G. NMNH Type.

**Paratype:**—PERU, Quince Mil, Sep 1962, L.E. Peña G., 1σ.

**ETYMOLOGY.**—From the Latin *acinaces* (“scimitar”) and *forma* (“shape”), in allusion to the shape of the tenth tergum.

**Chimarra (Curgia) aureopunctata Flint**

**FIGURES** 296–301; **MAP** 20


**Remarks.**—This monotypic complex is easily recognized by the deep and broad posteromesal excision of the eighth tergum. The broad posterolateral lobe of the same tergum serves to obscure the small brush that is directed mesad.

**ADULT.**—Length of forewing, σ and φ 5.5–7.5 mm. Color brown; appendages pale brown; forewing brown, with many small, golden spots. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum slightly widened dorsad; tergum produced into a dorsolateral angle pointed in lateral aspect, but broadly rounded in dorsal aspect, broadly and deeply divided dorsomesally; with posterolateral lobe narrow, short, produced beneath dorsolateral angle and bearing a small, apical brush. Ninth sternum produced anterolaterally; with broad, posteromesal keel; produced into a dorsal extension, narrow in lateral and posterior aspects, anterior margin attached to membranous central area of eighth tergum, but with apex extending freely posteriad. Cercus elongate, slightly enlarged apicad. Tenth tergum with tip entire; apex produced dorsad, hatchet-shaped, slightly narrowed in dorsal aspect; with many sensillae. Clasper elongate, apex produced dorsad; in posteroventral aspect, with a small mesal lobe, apex narrowed. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and four short, black spines.

**Material Examined.**—COSTA RICA [PCIA. CARTAGO], Turrialba, 22–28 Feb 1965, S.S. and W.D. Duckworth, 2σ (holotype and paratype), NMNH Type 69578. PCIA. GUANACASTE, Rio los Ahogados, 11.3 km ENE Quebrada Grande, 10.865°N, 85.423°W, 470 m, 26 Jun 1986, Holzenthal et al., 1σ; 1Q (UMSP); same, but 7 Mar 1986, 2σ (UMSP). PCIA. ALAJUELA, Quebrada Provisión, Parque Nacional Rincón de la Vieja, 10.769°N, 85.281°W, 810 m, 4 Mar 1986, Holzenthal and Fasth, 1σ, 2ψ (UMSP). Rio Sarapiquí, ~2 km SE Cariblanco, 10.299°N, 82.172°W, 710 m, 27 Mar 1986, Holzenthal and Fasth, 1σ (UMSP). Rio Peñas Blancas, Reserva Bosque Nubosa Monteverde, 10.303°N, 84.744°W, 950 m, 1 Mar 1986, Holzenthal and Fasth, 1σ (UMSP).
MAP 20.—Distributions of Chimarra (Curgia) peruviana, new species, Chimarra (Curgia) aureopunctata Flint, Chimarra (Curgia) fittkaui Flint, and Chimarra (Curgia) brasiliana (Ulmer).
Panama, Canal Zone [PCIA. Colón], Mojinga Swamp [adjacent to Fort Sherman, near Colón], 15 Nov 1951, F.S. Blanton, 1♂.

ETYMOLOGY.—From the Latin aurum ("gold") and punctum ("dot"), in allusion to the marking of the forewing.

Chimarra (Curgia) purisca, new species

FIGURES 302–307; MAP 21

REMARKS.—The two new species, purisca and maritza, are a very closely related pair. Chimarra purisca is, on average, slightly larger than maritza. The male genitalia also are very similar, the main differences being in the eighth tergum that is produced into a conical lobe posteromesally in purisca but is truncate in maritza. The apex of the tenth tergum also is rounded dorsally in purisca but is sharply angulate in maritza.

ADULT.—Length of forewing, ♂ and ♀ 6–8 mm. Color dark brown, body and appendages paler; forewing dark brown, with many small, golden flecks. Claws of male foreleg apparently unmodified.

Male Genitalia: Eighth sternum widened dorsally; tergum produced into a conical mesal lobe from posterior margin; with a small posterolateral lobe borne from inner face of tergum, with apical brush of setae. Ninth sternum slightly produced anteroven trally; with large posteromesal keel; produced into thin, long, dorsal extension, articulating to inner surface of eighth tergum. Cercus elongate, slightly enlarged apicad. Tenth tergum short, tip entire; apex rounded and bowed dorsal, narrowed apically in dorsal aspect; with many sensillae. Clasper slightly elongate, semierect, mesal margin in posterior aspect with a small lobe at midlength, tip rounded. Phallus narrowed apically in dorsal aspect; with many sensillae.

Ninth sternum short, tubular, inflated basally; internally with a small posterolateral lobe borne from inner face of tergum, with apical brush of setae. Eighth sternum widened dorsally; tergum produced into a conical mesal lobe from posterior margin; with a small posterolateral lobe borne from inner face of tergum, with apical brush of setae. Ninth sternum slightly produced anterov entrally; with large posteromesal keel; produced into thin, long, dorsal extension, articulating to inner surface of eighth tergum. Cercus elongate, slightly enlarged apicad. Tenth tergum short, tip entire; apex produced dorsal into a sharp point, narrowed apically in dorsal aspect; with many sensillae. Clasper slightly elongate, semierect, mesal margin in posterior aspect with a small lobe at midlength, tip rounded. Phal lus short, tubular, inflated basally; internally with a small rod-and-ring assembly and two (rarely three or four) small, dark spines.

MATERIAL.—Holotype, male: COSTA RICA, PCIA. SAN José, P.N. Braulio Carillo, 6.2 km NE adm. Build., 10.09°N, 83.97°W, 1100 m, 6 Feb 1986, Holzenthal and Morse. NMNH Type.


ETYMOLOGY.—A name suggested by the locality Puriscal.

Chimarra (Curgia) maritza, new species

FIGURES 308–313; MAP 22

REMARKS.—As discussed in more detail under purisca, these two species are very closely related; however, maritza can be distinguished by its slightly smaller size, its truncate eighth tergum, and the pointed apex of its tenth tergum.

ADULT.—Length of forewing, ♂ and ♀ 5–6 mm. Color dark brown, body and appendages paler; forewing dark brown, with many small, golden flecks. Claws of male foreleg apparently unmodified.

Male Genitalia: Eighth sternum widened dorsally; tergum with posterior margin squarely truncate, with mesal area ventrally bearing many short or long, spinous setae; with a small posterolateral lobe borne from inner face of tergum, with apical brush of setae. Ninth sternum slightly produced anterov entrally; with large posteromesal keel; produced into thin, long, dorsal extension, articulating to inner surface of eighth tergum. Cercus elongate, enlarged apicad. Tenth tergum short, tip entire; apex produced dorsal into a sharp point, narrowed apically in dorsal aspect; with many sensillae. Clasper slightly elongate, semierect, mesal margin in posterior aspect with a small lobe at midlength, tip rounded. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and two small, dark spines.


Paratypes: Same data as holotype, but 19–20 Jul 1987, Holzenthal et al., 1♂ (UMSP); same, but 31 Aug 1990,
MAP 21.—Distributions of Chimarra \((\text{Curgia})\) purisca, new species, Chimarra \((\text{Curgia})\) piraya Flint, Chimarra \((\text{Curgia})\) erectiloba, new species, and Chimarra \((\text{Curgia})\) cultellata Flint.
MAP 22.—Distributions of Chimarra (Curgia) maritza, new species, Chimarra (Curgia) parana Flint, Chimarra (Curgia) teresae, new species, and Chimarra (Curgia) tamba, new species.
Huisman and Quesada, 1♂ (INBIO). Río Gónora (sulphur mine), 4 km (air) NE Queb. Grande, 10.887°N, 85.470°W, 590 m, 21 Jul 1987, Holzenthal et al., 1♂ (UMSP). PCIA. ALAJUELA, Quebrada Latas, 8.9 km NE Bajos del Toro, 10.269°N, 84.260°W, 1030 m, 6 Sep 1990, Holzenthal et al., 1♂ (UMSP).


ETYMOLOGY.—A name suggested by the locality Maritza.

Chimarra (Curgia) spatulata Ross

FIGURES 314–318; MAP 23


REMARKS.—This species is very close to C. didyma and can be distinguished from it only by the details of the structure of the male genitalia. The eighth tergum in dorsal aspect is produced into a broad lobe whose apex is either truncate or broadly rounded, rather than not produced at all. The claspers are slightly more elongate, and the mesal tooth is completely hidden in lateral aspect, not differing greatly in ventral aspect, although the tooth is a bit nearer the middle of the posterior margin. The phallus in spatulata usually lacks (rarely present) the two small, black spines seen in didyma.

ADULT.—Length of forewing, ♂ and ♀ 6–7.5 mm. Color dark brown, body and appendages paler; forewing dark brown, with many small, golden flecks. Claws of male foreleg grossly asymmetrical, longer claw often turned back on and twisted around apical tarsomere.

Male Genitalia: Eighth sternum nearly parallel sided; tergum produced posteriad, posterior margin nearly truncate to broadly rounded in dorsal aspect, with a short posterolateral lobe bearing a brush of setae. Ninth sternum produced anteroventrally; with short, posteromesal keel; produced into a long dorsal extension, narrow in lateral aspect, in dorsal aspect.

MAP 23.—Distributions of Chimarra (Curgia) spatulata Ross and Chimarra (Curgia) blepharophera, new species.
very wide, wider than tenth tergum. Cercus long, slightly enlarged apicad. Tenth tergum short, tip entire, arched dorsad, narrowed apically in dorsal aspect, with many sensillae. Clasper slightly elongate, with mesal tooth completely hidden in lateral aspect; in ventral aspect tooth directed mesad, arising from near center of posterior margin. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and, rarely, with one or two small, dark spines.

**Material Examined.**—**MEXICO,** EDO. CHIAPAS, Finca Vergel, at light, 22 May 1935, A. Dampf MF 4259, holotype, male (INHS).

NICARAGUA, Santa Rita, Boaco, 20 Mar 1958, M. Vaughan, 1♂. 5.3 mi [8.5 km] E Matagalpa, 30 Jul 1967, O.S. Flint, Jr., 1♂.


**Etymology.**—Probably from the Latin spatula ("paddle"), of unknown connotation.

**Chimarra (Curgia) didyma,** new species

**Figures** 319–324; **Map** 18

**Remarks.**—This species is very close to spatulata and can be distinguished from it only by the details of the structure of the male genitalia. The eighth tergum in dorsal aspect is nearly truncate posteriorly, rather than produced into a broadly conical lobe. The claspers are shorter and more quadrate, with the mesal tooth clearly projecting beyond the apex in lateral aspect, more rounded apically, and placed nearer the mesal margin in ventral aspect. The phallus bears two small, black spines in addition to the small rod-and-ring assembly that is present only in spatulata (rarely a single black spine is seen).

**Adult.**—Length of forewing, ♂ and ♀ 6–7 mm. Color dark brown, body and appendages paler; forewing dark brown, with many small, golden flecks. Claws of male foreleg grossly asymmetrical.

**Male Genitalia.** Eighth sternum nearly parallel-sided; tergum produced posteriad, posterior margin nearly truncate in dorsal aspect, with a short posterolateral lobe bearing a brush of setae. Ninth sternum produced anteroventrally; with short, posteromesal keel; produced into a long dorsal extension, narrow in lateral aspect, in dorsal aspect very wide, wider than tenth tergum. Cercus long, slightly enlarged apicad. Tenth tergum short, tip entire, slightly arched dorsad (in Venezuelan specimens with a small basolateral projection, Figure 324), broadly rounded apically in dorsal aspect, with many sensillae. Clasper quadrate, with mesal tooth extending beyond tip in lateral aspect; in ventral aspect with tooth rounded apically, directed mesad. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and a pair of small, dark spines.

**Material.**—Holotype, male: **PANAMA,** PCIA. PANAMA, Cerro Azul, 7 Jul 1967, Flint and Ortiz. NMNH Type.

**Paratypes:** **PANAMA,** PCIA. COCLE, El Valle, 829 m, 25–27 May 1983, Spangler et al., 1♂, 1♀; same, but 7 Mar 1957, R.M. Altman, 8♂, 4♀ (INHS).


**Venezuela.** EDO. ZULIA, Parque Nacional Perija, Río Negro in Tororo, 10.05°N, 72.71°W, 360 m, 15 Jan 1994, Holzenthal et al., 7♂, 11♀ (IZAM, NMNH, UMSP).

**Etymology.**—From the Greek didymos ("double"), in allusion to the two spines of the phallus.
**Chimarra (Curgia) nasuta**, new species

*Figures 325-330; Map 18*

**Remarks.**—This species is very close to *spatulata* and is distinguished, again, only by the details of the structure of the male genitalia. The eighth tergum in dorsal aspect is produced into a small point posteromesally, which appears as a small lobe in lateral aspect, and the posterolateral brushes are on elongate stalks and folded underneath the tergum (perhaps they can be twisted outward to look more like the other species, but all examples are folded under). The claspers are produced into an apicodorsal angle, and the mesal tooth projects beyond the apex in lateral aspect, is more rounded apically, and is placed nearer the mesal margin in ventral aspect. The tenth tergum is up-arched before the tip in the holotype but is angled directly upwardly from its base at about 45° in the paratypes, and the apex is rounded.

**Adult.**—Length of forewing, ♂ 6.5–7 mm. Color brown, body and appendages paler; forewing dark brown, with many small, golden flecks, especially concentrated along chord. Claws of male foreleg grossly asymmetrical.

**Male Genitalia:** Eighth sternum nearly parallel sided, posterior margin bulging slightly; tergum produced posteriad with a small apical lobe in lateral aspect, posterior margin conical, with a small median point in dorsal aspect, with a posterolateral lobe folded under tergum, bearing a brush of setae apically. Ninth sternum produced anteroven-trally; with short, postero-mesal keel; produced into a long dorsal extension, narrow in lateral aspect, in dorsal aspect tapering to a narrow dorsal lobe, much narrower than tenth tergum. Cercus elongate, slightly enlarged apically. Tenth tergum short, tip entire, uparched anterapically (in paratypes angled dorsad at nearly 45°, Figure 330), rounded apically in dorsal aspect, with many sensillae. Clasper quadrato, apicodorsal angle slightly produced, with mesal tooth extending beyond tip in lateral aspect; in ventral aspect tooth rounded apically, directed mesad. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and no spines.


**Etymology.**—From the Latin *nasutus* ("large-nosed"), in allusion to the projection of the eighth tergum.

**Chimarra (Curgia) blepharophera,** new species

*Figures 331–335; Map 23*

**Remarks.**—This species is another member of the *spatulata* complex, most similar to *nasuta*, with which it shares the straight apical margin of the tenth tergum and the development of the apicodorsal angle of the clasper. From the latter species, it is distinguished by the shape of the eighth tergum in dorsal aspect, which is truncate posteromesally. The tenth tergum of *blepharophera* is more elongate apically and is not as erect in lateral aspect as in *nasuta*, but it exhibits intraspecific variation within *blepharophera* in that it is somewhat narrower in dorsal aspect in the holotype but is more broadly rounded in the series from Jalisco.

**Adult.**—Length of forewing, ♂ 6.5–9 mm. Color brown, body and appendages paler; forewing dark brown, with many small, golden flecks, especially concentrated along chord. Claws of male foreleg grossly asymmetrical.

**Male Genitalia:** Eighth sternum widened dorsad, especially from posterior margin; tergum produced posteriad in lateral aspect, posterior margin conical, apical half squarely truncate in dorsal aspect; with a short posterolateral lobe bearing a brush of setae apically. Ninth sternum produced anteroven-trally; with short, postero-mesal keel; produced into a long dorsal extension, narrow in lateral aspect, in dorsal aspect as broad ventrally as base of tenth tergum, but the dorsal appendage narrow. Cercus elongate, slightly enlarged apically. Tenth tergum short, tip entire, angled slightly dorsad, in dorsal aspect narrowed for apical half, tip angled or rounded; with many sensillae. Clasper quadrato, apicodorsal angle slightly produced, acute, with mesal tooth barely extending beyond tip in lateral aspect; in ventral aspect with tooth rounded apically, directed mesad. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and no spines.

**Material.**—Holotype, male: MEXICO, EDO. OAXACA, 7.4 mi [11.9 km] N Putla, Hwy 125, 3200' [–970 m], 3–5 Jan 1989, N. Bloomfield. SDMNH Type (on indefinite loan to NMNH).


**Etymology.**—From the Greek *blepharon* ("eyelid") and *phero* ("to bear"), in allusion to the brush of the eighth tergum.
**Chimarra (Curgia) geranoides, new species**

*Figures 336-340; Map 17*

**Remarks.**—This species and the following two new species, *peruviana* and *minca*, are very closely related sister species. The lack of posteralateral brushes, presence of a small divided mesal brush and small submesal lobes of the eighth tergum, deeply concave dorsal plate of the ninth segment, and flattened and rugose tip of the tenth tergum are diagnostic for *geranoides*.

The three species also have differing ranges. *Chimarra minca* is the northernmost of the three species, occurring in northern Colombia and Venezuela; *geranoides* occurs in central Ecuador and southern Colombia; and *peruviana* overlaps *geranoides* in east central Ecuador but then continues into southern Peru.

**Adult.**—Length of forewing, ♂ and ♀ 6–8 mm. Color pale brown; body and appendages stramineous; forewing stramineous, with scattered flecks of darker hair. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsally; tergum posterolaterally with small, sclerotized lobe, which may bear a few small setae mesally, not brush-like; posterior margin bearing many long setae, with a dorsomesal excision, and bearing beneath here a small, hirsute lobe, divided mesally. Ninth sternum produced anteroventrally; with posteromesal keel; produced dorsally into deeply concave plate between lateral margins of eighth tergum. Cercus elongate, flared laterad, enlarged apicad. Tenth tergum with tip entire, but with dorsomesal groove; with an upcurved, slender process on each side from base of mesal lobe with several apical sensillae, apex of mesal lobe flattened, surface irregular, with many sensillae. Clasper slightly elongate, tip pointed apicodorsally, with a small tooth apicoventrally, with a transverse ridge in ventral aspect. Phallus short, tubular, inflated basally, with apicolateral face produced; internally with a small rod-and-ring assembly, a pair of slender, curved, basal spines, and a pair of stouter, dark, apical spines.

**Material.**—**Holotype.** Male: ECUADOR, PCIA. PI-LANCHINA, Rio Umachaca, Forestry Station Maquipucuna, ~5 km E Nanegal, 0°075'N, 78°37'W, 1250 m, 4–5 Sep 1990, O.S. Flint, Jr. NMNH Type.

**Paratypes:** Same date as holotype, 48♂, 15♀. Nanegal, 1100 m, 19–20 Sep 1977, L.E. Peña G., 3♂, 4♀. PCIA. PASTAZA, 12 km W Puyo, 9 May 1977, Spangler and Givens, 1♂, 3♀. 16 km W Puyo, 3 Feb 1976, Spangler et al., 4♂; same, but 22 km W Puyo, 5 Feb 1976, 1♂. PCIA. TUNGURAHUA, 39 km E Baños, 4200 m, 25 Jan 1976, Spangler et al., 1♂, 1♀. PCIA. ZAMORA-CHINCHIPE, 6 km E Zumbi, 980 m, 21 Sep 1990, O.S. Flint, Jr., 1♂, 2♀.

**COLOMBIA,** DPTO. RISARALDA, 4 km E Santa Rosa de Cabal, 29 Feb 1984, C.M. and O.S. Flint, Jr., 3♂, 6♀. DPTO. NARIÑO, La Planada, 7 km S Chuconés, 1800 m, June 1992, W. Eberhard, 1♂, 1♀ (UMSP).

**Etymology.**—From the Greek *geranos* (‘crane’) and the suffix -oides (‘like’), in allusion to the projection of the tenth tergum.

**Chimarra (Curgia) peruviana, new species**

*Figures 341–345; Map 20*

**Remarks.**—As mentioned under *geranoides* and *minca*, these species are very closely related. The distinctive genitalic characters in *peruviana* are the small posteralateral brushes, the entire, elongate mesal lobe flanked by rod-like lobes of the eighth tergum, and the sharply upturned tip of the tenth tergum, which also bears a small dorsolateral point midway between the dorsal process and tip.

**Adult.**—Length of forewing, ♂ and ♀ 6–9 mm. Color pale brown; body and appendages stramineous; forewing stramineous, with scattered flecks of darker hair. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsally; tergum posterolaterally with small, sclerotized lobe bearing a small brush apically; posterior margin bearing many long setae, with a dorsomesal excision, bearing on each side a slender rod-like projection capped by several very long setae, and bearing beneath here a tongue-like, hirsute lobe. Ninth sternum produced anteroventrally; with posteromesal keel; produced dorsally as a plate, barely concave, between lateral margins of eighth tergum. Cercus elongate, flared laterad, enlarged apicad. Tenth tergum with tip entire, but with dorsomesal groove; with an upcurved, slender process on each side from base of mesal lobe with several apical sensillae, apex of mesal lobe flattened, surface irregular, with many sensillae. Clasper slightly elongate, tip pointed apicodorsally, with a small tooth apicoventrally; with a transverse ridge in ventral aspect. Phallus short, tubular, inflated basally, with apicolateral face produced; internally with a small rod-and-ring assembly, a pair of slender, curved, basal spines, and a pair of stouter, dark, apical spines.

**Material.**—**Holotype.** Male: ECUADOR, PCIA. NAPO, Rio Jondachi, 30 km N Tená, 950 m, 10 Sep 1990, O.S. Flint, Jr. NMNH Type.

**Paratypes:** Same date as holotype, 3♀. 5.2 km SW Pano, 640 m, 13 Sep 1990, O.S. Flint, Jr., 1♂. PCIA. PASTAZA, Puyo, 5–17 May 1977, Spangler and Givens, 8♂, 4♀; same, but 1.5 km S Puyo, 14–21 May 1977, 5♂. Estación Fluviometrica, 27 km N Puyo, 4 Feb 1976, Spangler et al., 3♂, 3♀.

**PERU,** DPTO. CUSCO, *Pcia. Paucartambo*, Puente San Pedro at km 152 (13°13.3'S, 71°32.8'W), 44 km NW Pilcopata, 1450 m, 2–3 Sep 1988, O. Flint and N. Adams, 1♂ (NMNH). Quicatálon at km 164, (13°01.6'S, 71°30.0'W), 32 km NW Pilcopata, 1050 m, 1–2 Sep 1989, N. Adams et al., 21♂, 9♀; same, but 25–27 Jun 1993, Blahnik and Pescador, 3♂; same,
but streamlet, 50 m E Quitacalzón, 2 Sep 1989, 18♀, 4♂; same, but 26 Jun 1993, Blahnik and Pescador, 1♂, 2♀. Cosñipata Valley, 29 Nov 1951, F. Woytkowski, 1♂ (INHS); same, but Cosñipata Valley, Hacienda María (tropical jungle), 2700' (~820 m), 20 Feb 1952, F. Woytkowski, 1♂ (INHS); same, but Santa Isabel, Cosñipata Valley, 1 Jan 1952, 1♂ (INHS).

Pilcopata (premontane rain forest), 600 m, 8–10 Dec 1979, J.B. Heppner, 1♂. Quince Mil, Sep 1962, L.E. Peña G., 10♂, 19♀.

**Chimarra Brasiliana** Ulmer, 1905a:96.—Tomaszewski, 1961:2.

**Chimarra brasiliana** (Ulmer).—Fischer, 1961:58.—Flint, 1966:3; 1972:228.

**Chimarra brasiliana** (Ulmer).—Fischer, 1961:68.

**Chimarra (Curgia) minca**, new species

**FIGURES** 346–351; **MAP** 18

**Remarks.**—The three species, *geranoïdes*, *peruviana*, and *minca*, are a closely related complex of species. The eighth tergum in *minca*, with its strong posterolateral brushes, simple posterior margin, and small mesal brush, the upwardly curved basodorsal processes, and rounded tip of the tenth tergum with irregular dorsolateral margin, is very distinctive.

**Adult.**—Length of forewing, ♀ 6–7 mm. Color pale brown; body and appendages stramineous; forewing stramineous, with scattered flecks of darker hair. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsally; tergum with brush on a short stalk from posterolateral face; posterior margin bearing many long setae, with a dorsomesal excision, and bearing beneath here a small, hirsute lobe. Ninth sternum slightly produced anteroventrally; with posteromesal keel; produced dorsally into a plate, between lateral brushes of eighth tergum. Cercus elongate, flared laterad, enlarged apicad. Tenth tergum with tip entire, semierect, tip broadly rounded in dorsal aspect, with posterolateral brush on a straight, decumbent lobe, a second, smaller brush directed mesally from near base of inner margin of lobe (actually this brush is detached from eighth segment and borne from dorsolateral angles of ninth tergal plate). Ninth sternum strongly produced anteroventrally; with an elongate posteromesal keel; with a thin, but broad, dorsomesal plate-like sclerite produced between lateral lobes of eighth tergum. Cercus elongate, ovoid in outline. Tenth tergum with tip entire, semierect, tip broadly rounded in dorsal aspect, with many sensillae. Clasper as long as high, with apicodorsal point in lateral aspect and apicommesal point in both lateral and ventral aspects. Phallus tubular, inflated basally, lateral margin produced apicoventrally; internally with a small rod-and-ring assembly and two pairs of short, dark spines, one pair longer and more slender than other.


**PARAGUAY, Alto Paraná, SE Naranjal (~20 km S. Puerto Stroessner), 18–24 Aug 1988, 1♀, Peña G., 74♂, 23♀.

**URUGUAY, Cerro Largo, Arroyo Quebracho, 4–8 Mar 1959, C.C. Carbonell, 3♂, 3♀.

**Etymology.**—A name suggested by the locality Minca.

**Chimarra (Curgia) piraya** Flint

**FIGURES** 356–359; **MAP** 21

**Remarks.**—As discussed more fully under *brasiliana*, these species and the following species, *piraya*, are very closely related and only slightly less so to *cultellata* and *parana*. They are distinguished from each other by relatively small differences in the shapes of the eighth and tenth terga. In *brasiliana* the posterolateral brushes of the eighth tergum are on a lobe whose dorsal margin is nearly straight (rather than arcuate), the tenth tergum is broader and regularly semierect, and the apicoventral tooth of the clasper is shorter than in *piraya*. In addition, there are subtle but valid differences in coloration between the two.

**Adult.**—Length of forewing, 4.5–7 mm. Color fuscous; tibiae, tarsi, and antennae paler; head and thorax dorsally with creamy white hair; forewing fuscous, with scattered silvery white maculae. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum with posterior margin produced at midheight; tergum deeply and broadly concave in dorsal aspect, with posterolateral brush on a straight, decumbent lobe, a second, smaller brush directed mesally from near base of inner margin of lobe (actually this brush is detached from eighth segment and borne from dorsolateral angles of ninth tergal plate). Ninth sternum strongly produced anteroventrally; with an elongate posteromesal keel; with a thin, but broad, dorsomesal plate-like sclerite produced between lateral lobes of eighth tergum. Cercus elongate, ovoid in outline. Tenth tergum with tip entire, semierect, tip broadly rounded in dorsal aspect, with many sensillae. Clasper as long as high, with apicodorsal point in lateral aspect and apicommesal point in both lateral and ventral aspects. Phallus tubular, inflated basally, lateral margin produced apicoventrally; internally with a small rod-and-ring assembly and two pairs of short, dark spines, one pair longer and more slender than other.


**BRAZIL, EDO. SANTA CATARINA, NOVA TEUTONIA, 27°11'S, 52°23'W, 300–500 M, JUN 1963, F. PLAUMANNN, 3♂, 3♀; SAME BUT AUG–NOV 1963, 100 ♀ AND ♀; SAME, BUT JAN–FEB 1963, 3♂, 2♀; SAME, BUT AUG 1964, 1♂; SAME, BUT OCT 1964, 19♂, 38♀; SAME, BUT 24 AUG–4 OCT 1939, 10♂, 8♀ (MCZ).

**BRAZIL, PCIA. MAGDALENA, MINCA, 27°11'S, 52°23'W, 300–500 M, JUN 1963, F. PLAUMANNN, 3♂, 3♀; SAME BUT AUG–NOV 1963, 100 ♀ AND ♀; SAME, BUT JAN–FEB 1963, 3♂, 2♀; SAME, BUT AUG 1964, 1♂; SAME, BUT OCT 1964, 19♂, 38♀; SAME, BUT 24 AUG–4 OCT 1939, 10♂, 8♀ (MCZ).

**PARAGUAY, ALTO PARANÁ, SE NARANJAL (~20 KM S. PUERTO STROESSNER), 18–24 AUG 1988, L.E. PÉÑA G., 74♂, 23♀.

**URUGUAY, CERRO LARGO, ARROYO QUEBRACHO, 4–8 MAR 1959, C.C. CARBONELL, 3♂, 3♀.

**Etymology.**—A name suggested by the country Brazil.
two species are very closely related. This species is distinguishable by coloration and by the shapes of the eighth tergum and its brushes, the tenth tergum, and claspers.

**ADULT.**—Length of forewing, ♂ and ♀ 6–8 mm. Color fuscous; head and thorax dorsally with golden hair; forewing fuscous, with none to a few scattered, silvery white maculae. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum with posterior margin produced at midheight; tergum deeply and broadly concave in dorsal aspect, with posterolateral brush on a gently curved lobe, a second pair of smaller brushes directed posteriorly from small prominences on posterior margin of inner lobe. Ninth sternum produced anteroventrally; with an elongate posteroimesteral keel; with a thin, but broad, dorsomesal plate-like sclerite produced between lateral lobes of eighth tergum. Cercus elongate, ovoid in outline. Tenth tergum with tip entire, broad basally, slender apicad and directed straight posteriad, tip extended as a narrow, apically rounded lobe in dorsal aspect, with scattered sensillae. Clasper as long as high, with apico-odorsal point in lateral aspect, apicomesal point scarcely evident, with a darkened ridge on posterior face. Phallus tubular, inflated basally, lateral margin produced apicoventrally; internally with a small rod-and-ring assembly and a pair of short, dark spines.


**ETYMOLOGY.**—A name suggested by the river Parana.

**Chimarra (Curgia) para**

_Flind_ 72:227.

_Flind_ 83:15 [new synonym].

**REMARKS.**—The species _para_ and _culturata_ are very closely related; the majority of genital parts are nearly identical. Only two distinctions seem to be clear-cut and consistent: the mesal plate of the eighth tergum in _para_ bears two pairs of small brushes, and the phallus bears only one pair of spines; in _culturata_ there is only one pair of small brushes from the inner lobe of the eighth tergum, and the phallus bears two pairs of spines.

**ADULT.**—Length of forewing, ♂ and ♀ 5–7 mm. Color dark brown; body, bases of legs, and antennae light brown; head and thorax with golden hair dorsally; forewing dark brown, with many scattered, mostly small, golden maculae. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum with posterior margin produced at midheight; tergum deeply and broadly concave in dorsal aspect, with posterolateral brush on a broad, decurved lobe, inner lobe bearing two pairs of small brushes directed posteriorly, ventralsmost brush slightly above dorsal margin of tenth tergum. Ninth sternum produced anteroventrally; with an elongate posteroimomasal keel; with a thin, but broad, dorsomesal, plate-like sclerite produced between lateral lobes of eighth tergum. Cercus elongate, ovoid in outline. Tenth tergum with tip entire, broad basally, slender apicad and directed straight posteriad, tip extended as a narrow, apically rounded lobe in dorsal aspect, with scattered sensillae. Clasper as long as high, with apico-odorsal point in lateral aspect, apicomesal point scarcely evident, with a darkened ridge on posterior face. Phallus tubular, inflated basally, lateral margin produced apicoventrally; internally with a small rod-and-ring assembly and a pair of short, dark spines.


**ETYMOLOGY.**—A name suggested by the river Parana.

**Chimarra (Curgia) cultellata**

_Flind_ 83:15.

**REMARKS.**—As discussed more fully under _brasiliana_, the
three species, *brasiliiana*, *cultellata*, and *piraya*, are all very closely related. The elongate, slender apex of the tenth tergum in the male of this species, which extends straight posteriorly, is diagnostic.

**ADULT.**—Length of forewing, $\sigma^*$ and $\varphi$ 4.5–6 mm. Color brown; body, bases of legs, and antennae light brown; head and thorax with yellow-brown hair dorsally; forewing brown, almost covered by yellow-brown maculae, leaving only scattered darker marks. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum with posterior margin produced at midheight; tergum deeply and broadly concave in ventral aspect with a broad, decumbent spur on a broad, decumbent keel; with a thin, but broad, dorsomesal plate-like sclerite produced between lateral lobes of eighth tergum. Cercus elongate, ovoid in outline. Tenth tergum with tip entire, broad basally, slender apicad and directed straight posteriad, tip extended as a narrow, apically rounded lobe in dorsal aspect, with scattered sensillae. Clasper as long as high, with apicoventral point in lateral aspect, apicomesal point scarcely evident, with a darkened ridge on posterior face. Phallus tubular, inflated basally, lateral margin produced apicoventrally; internally with a small rod-and-ring assembly and two pairs of short, dark spines.

**Material examined.**—ARGENTINA, PCIA. MISIONES, Iguazú, 30 Jan–13 Mar 1945, Hayward, Willink, and Golbach, 1$\sigma^*$, $7\varphi$.

**BRAZIL**—EDO. SANTA CATARINA, Nova Teutonia, 27°11'S, 52°23'W, 300–500 m, Jan 1963, F. Plaumann, holotype $\sigma^*$. DISTRITO FEDERAL, Planaltina, 15°35'S, 47°42'W, 1000 m, 26 Aug 1986, V.O. Becker, 1$\sigma^*$ (EBPA). EDO. MINAS GERAIJS, Serra do Cipó, km 110, 29 Oct 1974, C.G. Froehlich, 1$\sigma^*$, 1$\varphi$ (MZUSP). EDO. RONDÔNIA, 62 km S Ariquemes, Linea C-20, 7 km E B-65, Fazenda Rancho Grande, 10°32'S, 62°48'W, 165 m, 17 Nov 1991, D. Petr, 1$\sigma^*$, 1$\varphi$. Linea C-20, off B-65, at Rio Pardo, 19 Nov 1991, D. Petr, 1$\sigma^*$, 1$\varphi$. 8 km S Caucaudania, creek, 21 Nov 1991, D. Petr, 7$\sigma^*$, 10$\varphi$.

**VENezuela**—TF. AMAZONAS, Rio Cataniapo, 10 km S Puerto Ayacucho, 9 Mar 1984, O.S. Flint, Jr., 7$\sigma^*$, 5$\varphi$.

**ETYMOLOGY.**—From the Latin *cultellus* ("small knife"), in allusion to the projecting tenth tergum.

**Chimarra (Curgia) fittkau Flint**

**Figures 369–374; Map 20**

**Chimarra (Curgia) fittkau Flint, 1971:22.**

**REMARKS.**—This is a very distinctive species, on the basis of male genitalia. The male genitalia are clearly of the *brasiliiana* pattern, but the eighth tergum is constructed rather differently from the other species of the group. Whereas the other species have the posteroventral lobe bearing brushes of long setae, *fittkau* has these lobes bearing only short, scabrous setae. Also, the ninth tergal plate is constructed quite differently in this species than the in others in the group.

**ADULT.**—Length of forewing, $\sigma^*$ and $\varphi$ 5–7 mm. Color pale brown; body, bases of legs, and antennae stramineous; forewing stramineous, with many irregular, brown maculae. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum greatly widened dorsad; tergum strongly produced posterolaterally and bearing apically a brush of short, setae, all directed mesad, in dorsal aspect with a deep, wide, U-shaped mesal emargination. Ninth sternum with anteroventral angle strongly produced; dorsal margin produced into an erect, broad, hirsute lobe between lobes of eighth tergum; with large posteroventral mesal keel. Cercus large, elongate, flared laterad. Tenth tergum broad basally, narrowing apicad, apex up-arched, hood-like; apex narrowed in dorsal aspect; with scattered sensillae. Clasper short, quadrate, with apicoventral and apicodorsal points in lateral aspect; in ventral aspect with pale apicomesal point mostly obscured by a dark ridge on posterior face. Phallus tubular, short, inflated basally; internally with a rod-and-ring assembly associated with two elongate, slender spines and three short, dark spines.

**Material examined.**—BRAZIL (EDO. AMAZONAS), Rio Maruá, Endstation vor langer Cachoeira, Fluss tritt hier aus dem Gebirge mit starkem Gefälle, 28 Jan 1963, E.J. Fittkau (A-502), $\sigma^*$ holotype, $\sigma^*$ paratype.

**GUAYANA,** Moco Moco River, Kanuku Mts., 30 km E Letherm, 3°18.2'N, 59°38.9'W, 29 Apr 1995, O.S. Flint, Jr., $8\sigma^*$, $3\varphi$ (NMNH, UGGG); same, but 3–6 Apr 1994, W.N. Mathis, 1$\varphi$.

**ETYMOLOGY.**—Patronym in honor of E.J. Fittkau, dipterist, who collected the type series.

**Chimarra (Curgia) scopula Flint**

**Figures 375–380; Map 24**

*Chimarra (Curgia) scopula* Flint, 1974:18.

**REMARKS.**—The species *scopula* and *scopuloides* are very closely related, as suggested by their specific epithets. Only two distinctions seem to be clear-cut and consistent: the apex of the tenth tergum is rounded and extends posteriad in *scopula* but is upcurved and pointed in *scopuloides*; and the clasper is slightly produced apicodorsally in lateral aspect, with the mesal tooth well developed and pointed in *scopula* but rectangular with a blunt tooth in *scopuloides*.

**ADULT.**—Length of forewing, $\sigma^*$ and $\varphi$ 4.5–5.5 mm. Color pale brown; body, bases of legs, and antennae stramineous; forewing pale brown, with many irregular, stramineous maculae. Claws of male foreleg exceedingly asymmetrical.

**Male Genitalia:** Eighth sternum widened dorsad; tergum strongly produced posteriad, in dorsal aspect with a deep, U-shaped mesal incision, with two small posteroventral brushes.
on small processes ventrad of each dorsal lobe. Ninth sternum produced anteroventrally; with an elongate posteromesal process; with a thin, very narrow, dorsomesal sclerite produced between lateral lobes of eighth tergum. Cercus elongate, ovoid in outline. Tenth tergum with tip entire, broad basally, slender apicad and directed posteriad, tip slightly elevated, extended as
a tapering, apically rounded lobe in dorsal aspect, with scattered sensillae. Clasper slightly longer than high, produced slightly apicodorsally in lateral aspect, apicosomal tooth well developed, sharply pointed. Phallus tubular, inflated basally, produced apicoventrally; internally with a small rod-and-ring assembly associated with one or two tubular, inflated basally, produced apicoventrally; internally with a small rod-and-ring assembly, a pair of elongate, lightly sclerotized spines, and two to four shorter, dark spines.

**Material Examined.**—**Suriname River, Kabelstation, river bank in leaves, 25 Sep 1938, D.C. Geijskes.**


**Etymology.**—From the Latin *scopula* ("small broom"), in allusion to the brushes of the eighth tergum.

**Chimarra (Curgia) scopuloides** Flint

**Figures 381-386; Map 24**

*Chimarra (Curgia) scopuloides* Flint, 1974:19 [new synonymy].

**Remarks.**—This species and the preceding species, *scopula*, are very closely related. Only two differences in the male genitalia seem to be consistent: the apex of the tenth tergum is upcurved and pointed in *scopuloides* but is rounded and extends posteriad in *scopula*; and the clasper in ventral aspect is rectangular with a blunt tooth in *scopuloides* whereas the apicosomal tooth is well developed and pointed in *scopula*. The small, uppermost brush from the ventrolateral margin of the eighth tergum is quite variable, even being totally lost in the holotype of *catarinensis*.

**Adult.**—Length of forewing, 7–8 mm. Color brownish; body and appendages stramineous; forewing dark brown (especially veins), with scattered, obscure darker maculae. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsally; tergum with an elongate posterolateral stalk with few long setae and scattered apicosomal spiculae, with a pair of large, horizontal plates mesally, with ventral surfaces densely spinose, with slender, pale processes dorsolaterally bearing several, long apical setae; with posterior margin deeply incised mesally in dorsal aspect, with a central, inverted V-shaped mark. Ninth sternum greatly produced anteroventrally; with elongate, posteromesal keel; produced dorsally into a thin, broad plate beneath mesal brushes of eighth tergum and with dorsolateral angles produced anteriad between the lateral lobes and the mesal plate of the eighth tergum. Cercus elongate, flared laterad, rounded apically. Ninth tergum with tip entire, apex arched, with a dorsal knob at midlength; with many sensillae. Clasper short, trianguloid; with a mesoventral tooth barely visible in ventral aspect. Phallus short, tubular, base inflated (now broken off), with apicosomal face produced; internally with a small rod-and-ring assembly, a pair of slender curved spines, the longer of which is bifid apically, and a small, dark, apical spine.

**Material.**—Holotype, male: **Peru, Dpto. Cusco, Pcia. Paucartambo, streamlet 50 m E Quitacalzón at km 164 (13°01.6'S, 71°30.0'W), 32 km NW Pilcopata, 1050 m, 2 Sep...**
1989, N. Adams et al. NMNH Type.

Paratypes: Same data as holotype, but Puente San Pedro at km 152 (13°03.3'S, 71°32.8'W), 44 km NW Pilcopata, 1450 m, 2-3 Sep 1988, O. Flint and N. Adams, 1♂ (NMNH). Santa Isabel, Cosnipata Valley, 30 Nov 1951, Felix Woytkowski, 1♂ (INHS).

ETYMOLOGY.—A name suggested by the locality Paucartambo.

Chimarra (Curgia) teresae, new species
FIGURES 392-397; MAP 22

REMARKS.—Although this species and the following species are placed in their own complex on the basis of the ornamentation of the eighth tergum, there does seem to be some similarity in this structure to that seen in tamba. The remaining parts of the male genitalia are very typical of a large number of species in the banksii group. The larger mesal brush and differently formed posterior margin of the eighth tergum and the evenly curved and hood-like tenth tergum distinguishes teresae from camposae.

ADULT.—Length of forewing, ♂ and ♀ 5.5-7 mm. Color brownish; body and appendages stramineous; forewing pale brown, with scattered, obscure darker maculae. Claws of male foreleg apparently unmodified.

Male Genitalia: Eighth sternum widened dorsally; tergum with a sharply inturned, posterolateral brush on a short stalk, with a pair of vertical plates mesally, with inner surfaces densely spinose, with posterior margin slightly produced laterad and bearing some spinose hairs and deeply incised mesally in dorsal aspect. Ninth sternum produced anteroventrally, broad dorsally with mesal region depressed and bearing a small anteromesal, knob-like lobe; with posteromesal keel, produced dorsally into a plate divided to each side of mesal brushes of eighth tergum. Cercus elongate, flared laterad, enlarged apicad. Tenth tergum with dorsal margin nearly straight with tip slightly turned down and bearing many sensillae, with a distinct basal projection as seen in lateral aspect, ventral margin nearly right-angled at midlength, with small basolateral lobe. Clasper short, rounded apicodorsally, with small, blunt apicoventral tooth. Phallus short, tubular, base slightly inflated, ventral margin angulate, with apico- lateral face produced; internally with a small rod-and-ring assembly and a pair of small, dark, apical spines.

MATERIAL.—Holotype, male: BRAZIL, EDO. MINAS GERAI S, Corrego Marumbe, Municipio Nova Lima, 20°03′31″S, 43°53′29″W, 4 Aug 1988, Campos and Junqueira. MZUSP Type.

Paratypes: Same data as holotype, 7♂ (MZUSP, NMNH); same, but Rio do Peixe, 20°18′55″S, 43°53′29″W, 5 Aug 1988, 2♂ (NMNH). Ribeirão do Silva, Municipio Itabirito, 20°16′21″S, 43°56′08″W, 5 Aug 1988, Campos and Junqueira, 7♂ (MZUSP, NMNH). ETYMOLOGY.—Patronym in honor of Monica de Cassia de Souza Campos, aquatic ecologist, who collected the type series.

Chimarra (Curgia) mycterophora, new species
FIGURES 404-408; MAP 24

REMARKS.—The two new species, mycterophora and erecti-loba, form a closely related species pair. They share a virtually unique structure of the eighth tergum, although clearly foreshadowed by the less extreme development of the same in the geranoides complex. The two species are distinguished most easily by the structure of the tenth tergum, which in mycterophora is longer and bears no erect basal process, and by the dorsolateral, setate lobes of the eighth tergum, which in mycterophora are free of the central lobe for a considerable distance.

ADULT.—Length of forewing, ♂ and ♀ 6-10.5 mm. Color fuscous; body and appendages stramineous; forewing fuscous,
with many scattered, paler hairs. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsal; tergum with long ventrolateral arms, darkened apicad and bearing dark points; with long, posteromesal lobe whose apex is hooked ventrad and bears ventrally a brush of short, fine hair, and bearing at midlength short, dorsolateral, setate lobes. Ninth sternum produced anteroventrally; with short, posteromesal keel; produced into a pair of long, dorsal extensions, mostly filling area between mesal and lateral processes of eighth tergum. Cercus elongate, slightly enlarged apicad. Tenth tergum short, tip entire, hood-like, angled dorsad, dorsal surface before sensillate lobe with a pair of small angles; in dorsal aspect narrowed for apical half, tip rounded; with many sensillae. Clasper short, quadrate, with small ventromesal tooth barely extending beyond tip in lateral and ventral aspects. Phallus tubular, inflated basally; internally with a small rod-and-ring assembly, a pair of slender, curved, black spines, and a second pair of short, dark spines.

**Material.**—Holotype. male: BOLIVIA, DPTO. LA PAZ, quebradas del Río Zongo, 1400 m, 24–30 Oct 1984, L.E. Peña G. NMNH Type.


**PERU, DPTO. CUSCO, Peia. Paucartambo,** river at Puente Union (13°04.2'S, 71°34.0'W), 1670 m, 21–23 Jun 1993, Blahnik and Pescador, 54♂, 29♀ (MHNJP, NMNH, USMSP). Puente San Pedro at km 152 (13°03.3'S, 71°32.8'W), 44 km NW Pilcopata, 1450 m, 2–3 Sep 1988, O. Flint and N. Adams. NMNH Type.

**Paratypes:** Same data as holotype, 15♂, 19♀; same, but 30–31 Aug 1989, N. Adams et al., 5♂, 5♀; same, but 24 Jun 1993, Blahnik and Pescador, 14♂, 11♀; same, but stream 3 km E Puente San Pedro, 31 Aug 1989, N. Adams, 5♂, 4♀. River at Puente Union (13°04.2'S, 71°34.0'W), 1670 m, 21–23 Jun 1993, Blahnik and Pescador, 2♂, 1♀. Quillacalzon at km 164 (13°01.6'S, 71°30.0'W), 32 km NW Pilcopata, 1050 m, 1–2 Sep 1989, N. Adams, 6♂, 1♀; same, but 25–27 Jun 1993, Blahnik and Pescador, 15♂, 21♀; same, but streamlet 50 m E Quillacalzon, 2 Sep 1989, N. Adams, 6♂; same, but 26 Jun 1993, Blahnik and Pescador, 5♂, 2♀. Santa Isabel, Coshipata Valley, 7 Dec 1951, Felix Woytkowski, 1♂ (INHS).

**Etyymology.**—From the Latin *erectus* ("upright") and *lobus* ("projection"), in allusion to the process of the tenth tergum.

**The laguna Group**

**Chimarra (Curgia) erectiloba, new species**

**Figures** 409–413; **Map 21**

**Remarks.**—This species and *mycterophora* form a readily recognized species complex characterized especially by the structure of the eighth tergum. In *erectiloba* the dorsolateral, setate lobes on the posteromesal lobe of the eighth tergum are fused to the mesal lobe, being noticeable only as a ridge in lateral aspect, and the tip of the tenth tergum is narrow and bears a pair of erect, slender processes.

**ADULT.**—Length of forewing, 5♂ and 9♀ 7–9 mm. Color pale brown; body and appendages stramineous; forewing with pale brown hair, with many scattered, darker flecks. Claws of male foreleg apparently unmodified.

**Male Genitalia:** Eighth sternum widened dorsal; tergum with long ventrolateral arm whose apex is nubbly; with long, posteromesal lobe whose apex bears ventrally a brush of short, fine hair internally, and bears at midlength lateral, setate lobes mostly fused to dorsal margin of mesal lobe. Ninth sternum produced anteroventrally; with posteromesal keel; produced into a pair of long, dorsal extensions, mostly filling area between mesal and lateral processes of eighth tergum, central region deeply concave in lateral aspect. Cercus elongate, slightly enlarged apicad. Tenth tergum short, tip entire, hood-like, semierect, dorsal surface before sensillate lobe with a pair of slender, erect processes; in dorsal aspect narrowed for apical half, tip rounded; with many sensillae. Clasper short, quadrate, with small ventromesal tooth barely extending beyond tip in lateral and ventral aspects. Phallus tubular, inflated basally; internally with a small rod-and-ring assembly, a pair of slender, curved, black spines, and a second pair of short, dark spines.

**Material.**—Holotype. male: PERU, DPTO. CUSCO, Peia. Paucartambo, Puente San Pedro at km 152 (13°03.3'S, 71°32.8'W), 44 km NW Pilcopata, 1450 m, 2–3 Sep 1988, O. Flint and N. Adams. NMNH Type.

**Paratypes:** Same data as holotype, 15♂, 10♀; same, but 30–31 Aug 1989, N. Adams et al., 5♂, 5♀; same, but 24 Jun 1993, Blahnik and Pescador, 14♂, 11♀; same, but stream 3 km E Puente San Pedro, 31 Aug 1989, N. Adams, 5♂, 4♀. River at Puente Union (13°04.2'S, 71°34.0'W), 1670 m, 21–23 Jun 1993, Blahnik and Pescador, 2♂, 1♀. Quillacalzon at km 164 (13°01.6'S, 71°30.0'W), 32 km NW Pilcopata, 1050 m, 1–2 Sep 1989, N. Adams, 6♂, 1♀; same, but 25–27 Jun 1993, Blahnik and Pescador, 15♂, 21♀; same, but streamlet 50 m E Quillacalzon, 2 Sep 1989, N. Adams, 6♂; same, but 26 Jun 1993, Blahnik and Pescador, 5♂, 2♀. Santa Isabel, Coshipata Valley, 7 Dec 1951, Felix Woytkowski, 1♂ (INHS).

**Etyymology.**—From the Latin *erectus* ("upright") and *lobus* ("projection"), in allusion to the process of the tenth tergum.
MAP 25.—Distributions of Chimarra (Curgia) laguna Ross and Chimarra (Curgia) texana (Banks).

inflated basally; internally with small rod-and-ring assembly and two short, black spines.

**DISTRIBUTION.**—Southwestern United States, south through Mexico to Costa Rica.

**DISCUSSION.**—This is a distinctive group of two closely related species. The structure of the eighth tergum, especially the slender mesal process, the upturned tip of the tenth tergum, and the shape of the clasper render the group easily recognizable. In the field, the dark, usually fuscous wings with bright silvery spots also permit ready recognition.

**Chimarra (Curgia) laguna Ross**

*Figures 414-421; Map 25*


Chimarra (Curgia) brustia Ross, 1959:176.—Fischer, 1971:221 [new synonymy].


**REMARKS.**—This very wide-ranging species is quite constant in most respects over its range. Some examples from Costa Rica appear to be identical in coloration and genitalia to examples from Baja California. However, some variations are found. The brushes on the lateral lobes of the eighth tergum are quite variable, sometimes divided into two as shown herein, but frequently they are broadly connected by many more spines, and the tip of the lobe can be drawn out a bit. Material from Guatemala and scattered lots from southern Mexico to Costa Rica have a point on either side of the central spine of the eighth tergum. They also have a basic dark brown (not fuscous), even when living, ground color that is variously spotted with from none to many small cream-colored spots. However, the material from Cascada Misolja and Rio Tulija, which also have the points on the eighth tergum, are colored exactly like examples from Baja California, whereas the series from near Arriaga, Mexico, are colored like the Guatemalan examples but have genitalia like the Baja examples. The "brustia" form seems to be an extreme example of the development of the point into a shelf-like lobe (*Figure 421*). Because these
variations do not exhibit any constant association of characteristics or exclusive ranges, I consider them to be only variants that exhibit greater frequency and integrity in certain regions.

ADULT.—Length of forewing, \( \sigma \) and \( \varphi \) 6.5–8 mm. Color fuscous, appendages a bit paler; forewing fuscous, with four silvery white maculae, sometimes subdivided or virtually lost (quite variable).

Male Genitalia: Eighth sternum slightly widened dorsad; tergum strongly produced in a sharp, posteroesomal spine, posterior margin laterad of spine nearly straight in dorsal aspect; with a large postero lateral lobe bearing brushes of setae apically and basodorsally. Ninth sternum produced anteroventrally; with elongate, slender, posteroesomal keel; produced into a long dorsal extension, narrow in lateral aspect, articulating ventrobasally to eighth tergal spine. Cercus elongate, decurved, slightly enlarged apicad. Tenth tergum with tip entire, sharply curved dorsad, apically pointed; with many sensillae. Clasper longer than high, with dorsomesal tooth projecting above body in lateral aspect; in ventral aspect almost equidimensional, with tooth barely visible mesally, directed mesad. Phallus short, tubular, inflected basally; internally with a small rod-and-ring assembly and a pair of small, dark spines.

Material Examined.—MEXICO, BAJA CALIFORNIA SUR, El Triunfo, 3 Oct 1981, Andrews and Faulkner, 2\( \varphi \) (NMNH, SDMNH). 12.2 mi [19.6 km] SE San Pedrito, near Rancho Saucito, 8 Oct 1981, Andrews and Faulkner, 1\( \varphi \) (SDMNH). El Salto, 8 mi [12.9 km] NE Todos Santos, 9 Oct 1983, Andrews and Faulkner, 4\( \varphi \), 6\( \sigma \) (NMNH, SDMNH). Ramal de Naranjas, 6 mi [9.7 km] W Highway 1, near Santa Anita, 11 Oct 1983, Andrews and Faulkner, 2\( \sigma \), 6\( \varphi \) (NMNH, SDMNH). EDO. SONORA, Maycoba River, W Maycoba, 21 Aug 1986, Baumann et al., 1\( \sigma \), 3\( \varphi \). EDO. SINALOA, 2 mi [3.2 km] SW Santa Lucia (Villa Blanca), 6 Aug 1986, Sinaloa, 1\( \sigma \), 1\( \varphi \) (NMNH, SDMNH). EDO. NAYARIT, 7.3 mi [11.8 km] W Huajicori, Mina el Tigre, 12–13 Mar 1987, Bloomfield, 4\( \sigma \), 1\( \varphi \) (NMNH, SDMNH). 49.4 mi [79.6 km] SE Palenque, 17 May 1976, H. Brailovsky, 2\( \varphi \) (IBUNAM). Rio Palma, near Balzapote, 3 May 1991, R. Arce, 1\( \varphi \) (IBUNAM). Corozal, 25 May 1984, Barrera and Velasco, 13\( \sigma \) (brustia form, IBUNAM). Place of the Oro, 22 Nov 1984, Barrera and Velasco, 14\( \sigma \) (brustia form, IBUNAM, NMNH). EDO. MORELOS, San Rafael Vicente Aranda, 15 km SE Tehuixtla, 26–27 Mar 1982, H. Velasco, 40\( \varphi \), 2\( \sigma \) (brustia form, IBUNAM, NMNH); same, but 16 Apr 1982, 27\( \varphi \) (IBUNAM). EDO. MEXICO, Tejupilo, 13 Apr 1988, Cadona et al., 1\( \sigma \) (brustia form, IBUNAM). EDO. VERACRUZ, Los Tuxtla area, Balzapote, 3 May 1991, R. Arce, 1\( \varphi \) (IBUNAM); same, but 21 Dec 1976, 1\( \sigma \) (IBUNAM); same, but Rio Palma, near Sontecomapan, 5 Dec 1975, C.M. and O.S. Flint, Jr., 2\( \sigma \), 2\( \varphi \); Camino a Uxpanapa, 29 May 1976, H. Brailovsky, 2\( \sigma \) (IBUNAM). EDO. OAXACA, 7.4 mi [11.9 km] N Putla, Hwy 125, 3200’ [960 m], 3–5 Jan 1989, N. Bloomfield, 2\( \sigma \), 2\( \varphi \) (NMNH, SDMNH). 15 mi [24.2 km] N Pochutla, 1100’ [330 m], 7–10 Jan 1989, N. Bloomfield, 7\( \sigma \), 9\( \varphi \) (NMNH, SDMNH). Ruta 175, 12 km E Pocutla, 5 Sep 1982, J. Bueno, 1\( \varphi \) (IBUNAM). Arroyo Chaopan, Bethania, 31 km S Tuxtepec, 24 May 1981, C.M. and O.S. Flint, Jr., 2\( \sigma \), 6\( \varphi \). Tehuantepec, 23 Jul 1964, J.P. Spangler, 1\( \varphi \). Candelaria de Lozichica, 10 Feb 1982, A. Ibarra, 2\( \varphi \) (IBUNAM). Carretera Tuxtepec km 70, 2 Apr 1986, A. Ibarra, 1\( \varphi \), 2\( \sigma \) (IBUNAM). Uxpanapa, 27 Sep 1977, 1\( \varphi \) (IBUNAM). EDO. TABASCO, Rio Puyacatengo, E Teapa, 28–29 Jul 1966, Flint and Ortiz, 29\( \sigma \), 17\( \varphi \) (including 2 pairs, IBUNAM, NMNH); same, but 9 Dec 1985, L. Cervantes, K. Barba, 1\( \varphi \) (IBUNAM); same, but Grutas de Cocona, Rio Puyacatengo, 7 Mar 1988, Barba and Barrera, 2\( \varphi \) (IBUNAM). Rio Teapa, Villahermosa, 6 May 1985, H. Velasco, 7\( \sigma \), 15\( \varphi \) (IBUNAM). EDO. CHIAPAS, 7.8 mi [12.6 km] E Pichucalco, 7 Dec 1975, C.M. and O.S. Flint, Jr., 3\( \sigma \), 4\( \varphi \). Palenque, 19 May 1984, M. Garcia, 2\( \sigma \) (IBUNAM). Rio Chacamax, Palenque, 6 Dec 1975, C.M. and O.S. Flint, Jr., 1\( \sigma \), 4\( \varphi \). 3 mi [4.8 km] N Palenque, 14 Jun 1974, J.R. Zimmerman, 1\( \sigma \). 10 mi [16.1 km] W Palenque, 300 m, 7 Aug 1985, Wolfe and Valverde, 1\( \varphi \) (SDMNH). Cascada Misojola, 20 km S Palenque, 17–18 May 1981, C.M. and O.S. Flint, Jr., 54\( \varphi \), 25\( \sigma \) (including 2 pairs); same, but 18 May 1981, J. Bueno, H. Velasco, 4\( \sigma \) (IBUNAM). Agua Azul, 1 May 1978, H. Brailovsky, 6\( \sigma \), 5\( \varphi \) (IBUNAM); same, but 25 May 1979, L. Rivera, 1\( \varphi \) (IBUNAM); same, but 2 May 1978, E. Barrera, 5\( \varphi \), 8\( \varphi \) (IBUNAM). Rio Tulijá, 48 km S Palenque, 17 May 1981, C.M. and O.S. Flint, Jr., 7\( \sigma \), 6\( \varphi \) (IBUNAM, NMNH). Ruinas de Bonampak, 3 May 1978, E. Barrera, 24\( \sigma \) (IBUNAM); same, but 21 May 1980, J. Bueno, 13\( \sigma \) (IBUNAM); same, but 5 May 1978, H.S. Brailovsky, 4\( \sigma \) (IBUNAM); same, but 20–22 May 1984, A. Ibarra, 6\( \varphi \) (IBUNAM). Rio Lacanja, 22 km N Ocosingo, 19 May 1981, C.M. and O.S. Flint, Jr., 2\( \sigma \). Rt 35, 4 km N Arriaga, 9 Dec 1975, C.M. and O.S. Flint, Jr., 8\( \sigma \), 3\( \varphi \). Puente Arroyo Viejo, Rt. 200 km 141, 9 Jun 1967, Flint and Ortiz, 3\( \sigma \), 4\( \varphi \). Ixtacomitan, Matamoros, 10 Dec 1985, Arias et al., 5\( \varphi \) (IBUNAM). Ixhuatan, km 3 carretera Pozo-Rosarito, 11 Dec 1985, R. Barba, L. Cervantes, 2\( \varphi \) (IBUNAM). El Lagartero, Colon, 6 Apr 1979, J. Bueno, 21\( \sigma \) (IBUNAM). Huitiupán, 18 Feb 1987, C. Beutelspacher, 33\( \sigma \), 2\( \varphi \) (IBUNAM). Corozal, 25 May 1984, Barrera and Ibarra, 1\( \varphi \) (IBUNAM).


ETYMOLOGY.—Probably from the Spanish laguna (“lake”), possibly from the locality “Sierra Laguna,” one of the typical localities.

Chimarra (Curgia) texana (Banks)

FIGURES 422–426; MAP 25

Chimarra texana Banks, 1920:360.—Ross, 1938:7 [lectotype].

Chimarra betteni Denning, 1941:82.

Chimarra texana (Banks).—Ross, 1944:292.—Fischer, 1961:71 [catalog].—Bueno and Flint, 1980:190, 197 [distribution, betteni to synonymy].


REMARKS.—This species and laguna are very closely related. They are undoubtedly sister species, laguna being found in western Mexico and south to Costa Rica, texana being restricted to northeastern Mexico and adjacent Texas.

The overall form of the male genitalia in these two species is very similar, from the eighth, ninth, and tenth segments, to the claspers and phalli. The posteroventral process of the eighth tergum in laguna is long and free but curved ventrad and attached to the dorsomesal projection of the ninth segment in texana. The posteroventral process of the eighth segment generally is longer and more slender in texana than in laguna, although it varies greatly in length and shape in the latter. The apex of the clasper is drawn out to a longer and sharper point, in both lateral and ventral aspects, in texana than it is in laguna.

ADULT.—Length of forewing, 4.5–6 mm. Color fuscous, appendages a bit paler; forewing fuscous, with four silvery white maculae, sometimes subdivided or virtually lost (quite variable).

Male Genitalia: Eighth sternum almost parallel sided; tergum produced in a posteroventral spine decurved apically and joining ninth tergum, posterior margin laterad of spine with a large, flat lobe, thin in lateral aspect; with a large posteroventral lobe, elongate apically and with a basodorsal lobe bearing setal brush along dorsal margin. Ninth sternum slightly produced anteroventrally; with elongate, slender, posteroventral keel; produced into a long dorsal extension, narrow in lateral aspect, joining decurved apex of eighth tergal spine. Cercus elongate, enlarged apically. Tenth tergum with tip entire, sharply curved dorsad, narrow, apically pointed; with many sensillae. Clasper with apex produced into an upcurved point, with dorsomesal tooth projecting above body in lateral aspect; in ventral aspect with apex produced into a point, with tooth barely visible mesally, directed mesad. Phallus short, tubular, inflated basally; internally with a small rod-and-ring assembly and a pair of small, dark spines.

Natural Area, elev. 360 m, 17-19 May 1993, Gelhaus et al., 6♂, 11♀ (ANSP, NMNH).


ETYMOLOGY.—Probably a name suggested by the state.

The immaculata Group

DIAGNOSIS.—Length of forewing, 5-7 mm. Body and appendages brown; forewing brown marked with many small, yellowish spots. Claws of male foreleg apparently unmodified. Male Genitalia: Eighth tergum with posterolateral brushes on stalks, with a single, posteromesal projection. Ninth segment not produced anteroventrally, narrow dorsad, with a dorsomesal projection bearing one or two small setose lobes on each side; posterolateral margin often produced as a broad, rounded lobe. Cercus elongate, stalked basally, ovate apically. Tenth tergum hood-like, often with a dorsal crest, with apex entire, subapically bearing a broad lateroventral lobe, bearing many sensillae. Casper generally elongate, apex rather broad, with apicoventral tooth. Phallus tubular, phallotheca produced, lip-like, apicoventrally; internally with a small, basal, nod-apical ring assembly, no black spines, but often with a spicate pouch.

DIETETY.—Primarily the Andes of western and northern South America extending north into Central America as far as Honduras.

DISCUSSION.—This is a distinctive group of four species, all very closely related and separable only by details of the male genitalia. Of the four, immaculata, peytoni, and persimilis form a cluster of very similar species, whereas securigera stands a bit apart from this cluster. Map 26 shows the generally allopatric distribution of the species in this group.

Chimarra (Curgia) immaculata (Ulmer)

FIGURES 427-431; MAP 26

Chimarra immaculata Ulmer, 1911:15; 1913:405.—Lestage, 1925:37.


REMARKS.—The differences between this species and the others of the group are seen in the male genitalia, especially in the shapes of the eighth and tenth terga. In immaculata the mesal process of the eighth tergum is long, and the tenth tergum bears large, erect processes basolaterally. The phallus bears two spicate pockets. Chimarra (C.) peytoni also bears a long process from the eighth tergum, but the basolateral processes of the tenth tergum are no more than low ridges and the spicate patches of the phallus are reduced to a small, indistinct sclerite. In persimilis the eighth tergal lobe is short, the basolateral
processes of the tenth tergum are very low, but the spiculate pockets of the phallos are well developed.

ADULT.—Length of forewing, ♂ and ♀ 5–6.5 mm. Color brown, body and appendages paler; forewing yellowish brown, with many small, dark flecks.

Male Genitalia: Eighth sternum slightly enlarged dorsad; tergum with long mesal process from posterior margin, apex enlarged, fish-tail-like in dorsal aspect; with narrow postero-lateral lobe bearing an apical brush of setae. Ninth sternum with anterior margin vertical; with broad posteromesal keel; produced into dorsal extension, articulating to inner surface of eighth tergum, these plates bearing large setose lobes dorsomesally. Cercus elongate, clavate. Tenth tergum short, tip entire; apex produced in a low dorsal lobe, with basolateral shoulder-
like lobe elongate, erect, with posteroventral lobe; with many sensillae dorsally. Clasper elongate, tapering, basally with dorsal lobe, with small apicoventral lobe; in ventral aspect tapering to a blunt apical point. Phallus short, tubular, base greatly inflated, opening ventrad; with a strong, apicoventral lip-like lobe and a slender dorsal sclerotization; internally with a small rod-and-ring assembly and a pair of seta-bearing pockets.

**MATERIAL EXAMINED.**—BOLIVIA, Alto Beni, Palos Blancos, 600 m, 11–15 Jan 1976, L.E. Peña G., 1♂, 2♀.

**COLOMBIA,** DPTO. CAQUETA, Morelia, Río Bodoquero, 430 m, 19–20 Jan 1969, Duckworth and Dietz, 7♂, 11♀.

**ECUADOR,** Pcia. NAPO, Lago Agrio, 16 Aug 1975, A. Langley, 1♂; same, but 19 Sep 1975, 1♂. **PCIA. PASTAZA,** Puyo, 6–21 May 1977, Spangler and Givens, 3♂, 16♀; same, but 1.5 km S Puyo, 8–21 May 1975, 8.5♂, 32♀; same, but 5 km E, 17 May 1975, 4♂, 4♀.


**VENEZUELA,** EDO. ARAGUA, Rancho Grande, 10–12 Feb 1969, Duckworth and Dietz, 1♂, 1♀.

**ETYMOLOGY.**—Probably from the Latin im- ("not") and macula ("spot"), in allusion to the appearance of the type.

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**Chimarra (Curgia) persimilis** (Banks)

**FIGURES** 432–436; **MAP 26**

**Chimarra persimilis** Banks, 1920:360.—Lestage, 1925:37.


**REMARKS.**—As discussed more fully above, **immaculata,** **persimilis,** and **peytoni** are very similar. **Chimarra (C.) persimilis** is recognized by the structure of the male genitalia, especially the very short middorsal process of the eighth tergum. In addition, the basolateral processes of the tenth tergum are very low, and the phallus bears well-developed spicate pockets.

**ADULT.**—Length of forewing, ♂ and ♀ 5–7 mm. Color brown, body and appendages paler; forewing yellowish brown, with many small, dark flecks.

**Male Genitalia:** Eighth sternum slightly enlarged dorsad; tergum with short, pointed mesal process from posterior margin (somewhat variable in length); with narrow posterolateral lobe bearing an apical brush of setae. Ninth sternum with anterior margin vertical; with long posteroesmal keel; produced into dorsal extension, articulating to inner surface of eighth tergum, these plates each bearing small setose lobe from near center (lobe size and setal numbers quite variable). Cercus elongate, clavate. Tenth tergum short, tip entire; apex produced in a low dorsal lobe and basolateral shoulder-like expansions, with posteroventral lobe; with many sensillae dorsally. Clasper elongate, tapering, basally with dorsal lobe (much of clasper base and dorsal lobe covered by lateral face of ninth sternum), with small apicoventral lobe; in ventral aspect tapering to a blunt apical point. Phallus short, tubular, base greatly inflated, opening ventrad; with a strong, apicoventral lip-like lobe and a slender dorsal sclerotization; internally with a small rod-and-ring assembly and a pouch bearing many small spicules.


**ECUADOR** [PCIA. LOS RÍOS], Quevedo, lectotype ♂, lectotypicotype ♀ (MCZ); same, but 11 May 1975, Spangler et al., 1♂. 5 km S Quevedo, 14 Jan 1978, Spangler and Anderson, 1♂. 11 km S Quevedo, 3 Jul 1975, Langley and Cohen, 3♂, 4♀. Rio Palenque Biological Station, 56 km N Quevedo, 220 m, 7.
Chimarra (Curgia) peytoni, new species

Figures 437-441; Map 26

Chimarra immaculata (Umer) — Flint, 1981:12 [misidentification, in part].

Remarks.—Together with immaculata and persimilis, this species forms a very distinctive cluster of species. The long mesal process of the eighth tergum, the lack of erect basolateral processes of the tenth tergum, and the reduction of the spicate pouches of the phallos render this species distinctive.

ADULT.—Length of forewing, \( \sigma \) and \( \varphi \) 5–7 mm. Color brown, body and appendages paler; forewing yellowish brown, with many small, dark flecks.

Male Gentilia: Eighth sternum parallel sided; tergum with long, mesal process from posterior margin whose apex is expanded and bilobed in dorsal aspect; with slender postero-lateral lobe bearing an apical brush of setae. Ninth sternum with anterior margin vertical; with long postero-mesal keel; produced into long dorsal extension, articulating to inner surface of eighth tergum, laterally these plates bearing two setose knobs, dorsalmost larger. Cercus elongate, clavate. Tenth tergum short, tip entire; apex produced in a low dorsal lobe and low, basolateral shoulder-like knobs, with posteroventral lobe; with many sensillae dorsally. Clasper elongate, tapering, basally with small, dorsal lobe (much of clasper base and dorsal lobe covered by lateral face of ninth sternum), dorsal margin with a small angle near midlength and small apicoventral keel; in ventral aspect tapering to a blunt apicominal point. Phallos short, tubular, base greatly inflated, opening ventrad; with a strong, apicoventral lip-like lobe and a slender dorsal sclerotization; internally with a small rod-and-ring assembly and a small, sclerotic spot with a few minute spicules.

Material.—Holotype. male: VENEZUELA, EDO. BARINAS, Puente Parangula, 8 km S Barinitas, 18 Feb 1976, C.M. and O.S. Flint, Jr. NMNH Type.

Paratypes: Same data as holotype, 2\( \sigma \), 1\( \varphi \). EDO. ZULIA, Dist. Mara, Rio Socuy, Campamento Corpozulia, 50 km W Carrasco, 6–7 Oct 1979, Savage and Romero, 1\( \sigma \). El Tucuco, Sierra de Perijá, 28–29 Jan 1978, J.B. Heppner, 2\( \sigma \), 4\( \varphi \). Parque Nacional Perijá, Rio Negro in Toromo, 10.051°N, 72.712°W, 70 m, 15 Jan 1994, Holzenthal et al., 3\( \sigma \), 7\( \varphi \) (IZAM, USMP). Caño Carichume, 3.4 km SE Carbones del Guasare, 11.002°N, 72.285°W, 360 m, 15 Jan 1994, Holzenthal et al., 7\( \sigma \), 4\( \varphi \) (IZAM, NMNH). EDO. ZULIA, Carbones del Guasare, 11.002°N, 72.285°W, 70 m, 12–13 Jan 1994, Holzenthal et al., 3\( \sigma \), 7\( \varphi \) (UMSP). EDO. ARAGUA, Parque Nacional Henri Pittier, Rio La Trilla, 22.5 km N Rancho Grande, 17–19 Sep 1979, H.M. Savage, 1\( \sigma \), 1\( \varphi \). Ocumare [de la Costa], 19–20 Feb 1969, P. and P. Spangler, 7\( \sigma \), 10\( \varphi \) (IZAM, NMNH). EDO. MIRANDA, Rio La Sabana, ~2 km S La Sabana, 10.606°N, 66.383°W, 10 m, 25 Jan 1994, Holzenthal et al., 1\( \sigma \), 1\( \varphi \) (USMP).

COLOMBIA, DPTO. TOLIMA, Armero, near Guayabal, 2–10 Feb 1977, E.L. Peyton, 130\( \sigma \), 73\( \varphi \).
ETYMOLOGY.—Patronym in honor of E.L. Peyton, culcidiologist, in whose collection I first recognized the species.

**Chimarra (Curgia) securigera, new species**  
**FIGURES 442–446; MAP 26**

REMARKS.—The most distinctive species of the *immaculata* group, *securigera*, is recognized immediately by several structures of the male genitalia. The eighth tergum not only has a long mesal process, but it is very wide basally, and the lateral brushes are on very long stalks. The tenth tergum is produced dorsally into a high crest whose dorsobasal angle is developed into a sharp point. The clasper also is much shorter and proportionately higher apically than in the other species, almost square in both lateral and ventral aspects.

**ADULT.**—Length of forewing, $\sigma^+$ 5.5 mm. Color brown, body and appendages paler; forewing brown, with many small dark flecks.

**Male Genitalia:** Eighth sternum parallel sided; tergum with long, mesal process from posterior margin; with a long, slender posterolateral lobe bearing an apical brush of setae. Ninth sternum with anterior margin vertical; with posteromesal keel; produced into long dorsal extension, articulating to inner surface of eighth tergum, laterally these plates bearing a setose knob at dorsal margin. Cercus elongate, barely enlarged apicad. Tenth tergum short, tip entire; apex produced in a long, thin, crest dorsally, with small posteroventral lobe; with many sensillae on dorsal crest. Clasper short, roughly quadrate, with small apicodorsal and ventral lobes; in ventral aspect with apicolateral and mesal lobes, basal half of inner margin darkened. Phallus short, tubular, inflated subbasally; with a strong, apicoventral lip-like lobe and a slender dorsal sclerotization; internally with a small rod-and-ring assembly.

**MATERIAL.**—*Holotype*, male: VENEZUELA, EDO. BARINAS, Rio Santo Domingo, Barinas, 17 Feb 1976, C.M. and O.S. Flint, Jr. NMNH Type.

**ETYMOLOGY.**—From the Latin *securiger* ("ax-bearing"), in allusion to the ventral lobe of the tenth tergum.
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FIGURES 11-16.—*Chimarra (Curgia) morio* (Burmeister), male genitalia: 11, lateral; 12, ninth and tenth terga and cerci, dorsal; 13, clasper, ventral; 14, phallus, lateral. 15, 16, variant from Blumenau: 15, clasper, lateral; 16, clasper, ventral.
FIGURES 17-25.—Male genitalia. *Chimarra (Curgia) froehlichi*, new species: 17, lateral; 18, ninth and tenth terga and cerci, dorsal; 19, clasper, ventral; 20, phallus, lateral. *Chimarra (Curgia) conica* Flint: 21, lateral; 22, tip of tenth tergum of northern form, lateral; 23, ninth and tenth terga and cerci, dorsal; 24, clasper, ventral; 25, phallus, lateral.
FIGURES 26–36.—Male genitalia. *Chimarra (Curgia) cipoensis*, new species: 26, lateral; 27, eighth, ninth, and tenth terga and cerci, dorsal; 28, clasper, ventral; 29, phallus, lateral. *Chimarra (Curgia) plaumanni* Flint: 30, lateral; 31, ninth and tenth terga and cerci, dorsal; 32, clasper, ventral; 33, phallus, lateral. 34–36, variant from Blumenau: 34, cercus and tenth tergum, lateral; 35, clasper, lateral; 36, clasper, ventral.
FIGURES 37–44.—Male genitalia. *Chimarra (Curgia) boraceia*, new species: 37, lateral; 38, ninth and tenth terga and cerci, dorsal; 39, clasper, ventral; 40, phallus, lateral. *Chimarra (Curgia) beckeri*, new species: 41, lateral; 42, eighth, ninth, and tenth terga and cerci, dorsal; 43, clasper, ventral; 44, phallus, lateral.
FIGURES 57–69.—Male genitalia. *Chimarra (Curgia) centrispina*, new species: 57, lateral; 58, ninth and tenth terga and cerci, dorsal; 59, clasper, ventral; 60, clasper, posterioventral; 61, phallus, lateral. *Chimarra (Curgia) aurivittata* Flint: 62, lateral; 63, eighth, ninth, and tenth terga and cerci, dorsal; 64, claspers, ventral; 65, phallus, lateral. *Chimarra (Curgia) jugescens*, new species: 66, lateral; 67, eighth, ninth, and tenth terga and cerci, dorsal; 68, claspers, ventral; 69, phallus, lateral.
FIGURES 70-81.—Male genitalia. *Chimarra* (*Curxia*) *tucuna*, new species: 70, lateral; 71, eighth, ninth, and tenth terga and cerci, dorsal; 72, clasper, ventral; 73, phallus, lateral. *Chimarra* (*Curxia*) *ensifera*, new species: 74, lateral; 75, eighth, ninth, and tenth terga and cerci, dorsal; 76, clasper, ventral; 77, phallus, lateral. *Chimarra* (*Curxia*) *donamariae* Denning and Sykora: 78, lateral; 79, eighth, ninth, and tenth terga and cerci, dorsal; 80, clasper, ventral; 81, phallus, lateral.
FIGURES 82-93.—Male genitalia. *Chimarra (Curgia) margaritae* Flint: 82, lateral; 83, eighth, ninth, and tenth terga and cerci, dorsal; 84, ninth segment and claspers, posterior; 85, phallus, lateral. *Chimarra (Curgia) chrysosoma*, new species: 86, lateral; 87, eighth, ninth, and tenth terga and cerci, dorsal; 88, clasper, ventral; 89, phallus, lateral. *Chimarra (Curgia) minga*, new species: 90, lateral; 91, eighth, ninth, and tenth terga and cerci, dorsal; 92, clasper, ventral; 93, phallus, lateral.
FIGURES 94–102.—Male genitalia. *Chimarra (Curgia) acula*, new species: 94, lateral; 95, eighth, ninth, and tenth terga and cerci, dorsal; 96, clasper, ventral; 97, phallus, lateral. *Chimarra (Curgia) lojaensis*, new species: 98, lateral; 99, eighth, ninth, and tenth terga and cerci, dorsal; 100, clasper, ventral; 101, phallus, lateral; 102, apex of phallus, dorsal.
FIGURES 103–107.—Male genitalia. *Chimarra (Curgia) otuzcoensis* Flint and Reyes: 103, lateral; 104, eighth, ninth, and tenth terga, dorsal; 105, claspers, ventral; 106, phallus, lateral; 107, apex of phallus, dorsal.
FIGURES 120-128.—Male genitalia. *Chimarra (Curgio) costaricensis*, new species: 120, lateral; 121, eighth, ninth, and tenth terga and cerci, dorsal; 122, clasper, ventral; 123, phallus, lateral; 124, sclerites of phallus, dorsal. *Chimarra (Curgio) straminea*, new species: 125, lateral; 126, eighth, ninth, and tenth terga and cerci, dorsal; 127, clasper, ventral; 128, phallus, lateral.
FIGURES 129–140.—Male genitalia. *Chimarra* (*Curgia*) canoaba, new species: 129, lateral; 130, eighth, ninth, and tenth terga and cerci, dorsal; 131, clasper, ventral; 132, phallus, lateral. *Chimarra* (*Curgia*) irwini, new species: 133, lateral; 134, eighth, ninth, and tenth terga and cerci, dorsal; 135, clasper, ventral; 136, phallus, lateral. *Chimarra* (*Curgia*) paria, new species: 137, lateral; 138, eighth, ninth, and tenth terga and cerci, dorsal; 139, clasper, ventral; 140, phallus, lateral.
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