

CARL F. W. MUESEBECK

*The Nearctic Species
of Orgilus Haliday
(Hymenoptera:
Braconidae)*

SERIAL PUBLICATIONS OF THE SMITHSONIAN INSTITUTION

The emphasis upon publications as a means of diffusing knowledge was expressed by the first Secretary of the Smithsonian Institution. In his formal plan for the Institution, Joseph Henry articulated a program that included the following statement: "It is proposed to publish a series of reports, giving an account of the new discoveries in science, and of the changes made from year to year in all branches of knowledge not strictly professional." This keynote of basic research has been adhered to over the years in the issuance of thousands of titles in serial publications under the Smithsonian imprint, commencing with *Smithsonian Contributions to Knowledge* in 1848 and continuing with the following active series:

Smithsonian Annals of Flight
Smithsonian Contributions to Anthropology
Smithsonian Contributions to Astrophysics
Smithsonian Contributions to Botany
Smithsonian Contributions to the Earth Sciences
Smithsonian Contributions to Paleobiology
Smithsonian Contributions to Zoology
Smithsonian Studies in History and Technology

In these series, the Institution publishes original articles and monographs dealing with the research and collections of its several museums and offices and of professional colleagues at other institutions of learning. These papers report newly acquired facts, synoptic interpretations of data, or original theory in specialized fields. Each publication is distributed by mailing lists to libraries, laboratories, institutes, and interested specialists throughout the world. Individual copies may be obtained from the Smithsonian Institution Press as long as stocks are available.

S. DILLON RIPLEY
Secretary
Smithsonian Institution

SMITHSONIAN CONTRIBUTIONS TO
ZOOLOGY

NUMBER 30

Carl F. W. Muesebeck **The Nearctic Species
of *Orgilus* Haliday
(Hymenoptera:
Braconidae)**

SMITHSONIAN INSTITUTION PRESS
CITY OF WASHINGTON
1970

ABSTRACT

Muesebeck, Carl F. W. The Nearctic Species of *Orgilus* Haliday (Hymenoptera: Braconidae). *Smithsonian Contributions to Zoology*, 30:1-104. 1970.—The species of the braconid genus *Orgilus* are all internal parasites of lepidopterous larvae, principally of the larvae of Microlepidoptera; some have been employed in the biological control of troublesome pest species. The number of different kinds seems to be very great. In the present paper 107 Nearctic species are treated, all except 16 of these previously undescribed. Keys to the genera considered as comprising the subfamily Orgilinae and to the species of *Orgilus* recognized in the paper are followed by detailed descriptions of the species.

Official publication date is handstamped in a limited number of initial copies and is recorded in the Institution's annual report, Smithsonian Year.

UNITED STATES GOVERNMENT PRINTING OFFICE
WASHINGTON : 1970

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price \$1.25. (paper cover)

Carl F. W. Muesebeck

The Nearctic Species of *Orgilus* Haliday (Hymenoptera: Braconidae)

Introduction

The species of the braconid genus *Orgilus* Haliday are internal parasites of lepidopterous larvae. Some of them appear to be of importance in the control of serious insect pests. *Orgilus obscurator* (Nees) was introduced from Europe into Canada and the United States about forty years ago to assist in the control of the European pine-shoot moth, *Rhyacionia buoliana* (Schifferrmuller); and a little later *O. longiceps* Muesebeck was imported from Japan and released in widely separated areas of the United States where its host, the oriental fruit moth, *Grapholitha molesta* (Busck), was destructive. Very recently another species, *O. lepidus* Muesebeck, was brought into California from South America in the hope that it might become of some importance as a control agent of the potato tuberworm, *Phthorimaea operculella* (Zeller). It has also been introduced into India and Australia. For the great majority of the species treated in this paper, however, the hosts are not yet known, although they may be presumed to be mostly, if not entirely, Microlepidoptera.

Apparently the Nearctic species are very numerous. The number considered in this paper is 107, of which only 16 were previously described; but I have left untreated a considerable residue of specimens comprising many different species. The vast majority of these species are represented by only single specimens, many of them males and some more or less damaged and not suitable for description. They are not identifiable as any of the species discussed in the paper and are presumed to represent further undescribed forms. Ac-

cordingly, it is quite evident that the present study can be considered only a preliminary treatment of the group, extension of which will need to await accumulation of more material, particularly reared series. It seems likely that eventually several hundred Nearctic species of *Orgilus* will be known.

Foerster (1862, p. 246) included *Orgilus* in what we now know as the Agathidinae, and until recently he has been followed in this by most European authors, including Marshall (1885, p. 277), Dalla Torre (1898, p. 127), Szepligeti (1904, p. 119), Morley (1907, p. 219), Enderlein (1920, p. 162), Lyle (1920, p. 178), and Telenga (1933, p. 245); although as early as 1865 Reinhard (1865, p. 261) had questioned the correctness of the placement of *Orgilus* in the Agathidinae, principally because of the difference in the number of segments in the maxillary palpi (5 in Agathidinae and 6 in *Orgilus*) and in certain details of wing venation. He suggested that *Orgilus* seemed related to *Macrocentrus* Curtis.

Enderlein (1905, p. 449) proposed the subfamily name Mimagathidinae for his new genus *Mimagathis* and *Stantonia* Ashmead, 1904; and Szepligeti (1908, p. 426) also gave this little group subfamily rank but incorrectly suppressed *Mimagathis* as a synonym of *Microtypus* Ratzeburg, 1848, and used the subfamily name Microtypinae. *Mimagathis* is actually a synonym of *Stantonia*—n. syn. Although Enderlein later (1920, p. 162) still included *Orgilus* in the Agathidinae he recognized its relationship with *Mimagathis* and *Stantonia* and indicated in a footnote that he considered these three to constitute the tribe Mimagathidini in the subfamily Agathidinae.

Carl F. W. Muesebeck, Department of Entomology, Smithsonian Institution, Washington, D.C. 20560.

Meanwhile Ashmead (1900, p. 122) had placed *Orgilus* in the subfamily Blacinae and had proposed for it the tribal name Orgilini, under which he included also two new genera, *Oresimus* and *Orgilomorpha* (both now considered synonyms of *Orgilus*) and *Hymenochaonia* Dalla Torre, 1898, which clearly does not belong in the Blacinae but appears to be a macrocentrine. Although Lyle (1920–1921), as indicated above, included *Orgilus* in his treatment of the Agathidinae, he expressed some doubt concerning the correctness of this placement and stated (1921, p. 7) that he was inclined to agree with Ashmead. Recent American authors—Martin (1956, p. 9) and Muesebeck and Walkley (1951, p. 111)—kept *Orgilus* in the Blacinae, while Granger (1949, p. 334) treated it as a distinct subfamily, Orgilinae, and Hellén (1958, p. 34) gave it tribal rank (Orgilini) in his broad subfamily Helconinae. *Eubadizon* Nees, 1834, was placed by Hellén in the Blacini, also treated as a tribe of the Helconinae. Other recent workers, including Fahringer (1937), Watanabe (1937), and Tobias (1967), have recognized the subfamily Microtypinae for *Orgilus* and *Microtypus* and in some cases have included also *Stan-*

tonia and *Eubadizon* (in part). Tobias (1965) disposed of the Blacinae by transferring *Blacus* Nees, 1818, and its relatives to the Euphorinae, and in his critical paper on the classification of the Braconidae (1967) he used the subfamily name Microtypinae for *Orgilus*, *Microtypus*, *Stantonia*, and what he called *Eubadizon*, although he placed the type-species of *Eubadizon* in the Calyptinae under the genus *Calyptus* Haliday, 1835. In 1957 (Muesebeck, p. 51) I did not believe there was justification for such a breakdown of *Eubadizon* and for the recognition of *Calyptus*, and after further study I am still of that opinion. Moreover, I find it difficult to agree with Tobias in the assignment of *Blacus* to the Euphorinae, and for the present, at least, I consider *Blacus* and its close relatives as constituting a distinct subfamily. However, I am prepared to recognize *Orgilus*, *Stantonia*, *Microtypus*, and *Eubadizon* as comprising another subfamily closely related to the Blacinae, from which it is distinguished by having the first brachial cell closed at the apex; and since a supergeneric name based on *Orgilus* antedates any such name based on *Microtypus*, I prefer to use the name Orgilinae for this subfamily.

Genera of the Subfamily Orgilinae

1. Second cubital cell small, triangular, and closed outwardly by the second intercubitus, which may be weak but is at least indicated. 2
Second cubital cell open; no indication of the second intercubitus. 3
2. Anellan cell of hind wing extremely short, less than one-third as long as mediellan cell; nervellus strongly inclivous, meeting mediella in a sharply acute angle. *Stantonia* Ashmead
Anellan cell large, at least half as long as mediellan cell; nervellus meeting mediella in virtually a right angle. *Microtypus* Ratzeburg
3. Mesopleuron with the longitudinal furrow distinct, usually sharply impressed and foveolate; second abscissa of radius straight; inner calcarium of hind tibia nearly always half as long as metatarsus. *Orgilus* Haliday
Mesopleuron without a longitudinal furrow; second abscissa of radius arched downward at base; inner calcarium of hind tibia much less than half as long as metatarsus. *Eubadizon* Nees

Acknowledgments

For the loan of unworked material I am indebted to the University of Arizona, University of California, Museum of Comparative Zoology, Cornell University, University of Wisconsin, and particularly to Dr. W. R. M. Mason, of the Entomology Research Institute, Canada Department of Agriculture, who supplied long series of some forms that helped greatly in the development of an understanding of the extent of intraspecific variability. My sincere thanks are also given to Mrs. Elsie H. Froeschner, of the Department of Entomology, who prepared all the illustrations.

Genus *Orgilus* Haliday

- Orgilus* Haliday, 1833, p. 262. [Type-species: *Microdus obscurator* Nees. By monotypy.]
Ischius Wesmael, 1837, p. 20. [Type-species: *Microdus obscurator* Nees. Designated by Muesebeck and Walkley, 1951, p. 111.]
Macropalpus Ratzeburg, 1844, p. 56. [Type-species: *Eubadizon leptoccephalus* Hartig. By monotypy.]
Oresimus Ashmead, 1900, p. 123. [Type-species: *Eubadizon maculiventris* Cresson. By monotypy.]
Orgiomorpha Ashmead, 1900, p. 123. [Type-species: *Ganychorus gelechia* Ashmead. By monotypy.]
Ischiolus Hellén, 1958, p. 34 (as subgenus of *Orgilus*). [Type-species: *Microgaster rugosus* Nees. By monotypy.]

In length, exclusive of the ovipositor, *Orgilus* normally ranges between 2.5 and 5 mm, very rarely exceeding these limits. The head is variable in shape, sometimes very strongly transverse with the face flat and the temples narrow and sharply receding, but in other species long anteroposteriorly with the face strongly protuberant and the temples not at all receding; in front view the head varies from nearly circular to subquadrate, or to narrowly subtriangular, even subrostriform in certain species. The malar space may be only one-sixth as long as the eye height or more than half as long; and there is also wide variation in the relative width of the face and of the temples and in the relative size of the ocelli, also in the extent and nature of the sculpture of the face, cheeks, temples, and vertex. The occipital carina is sometimes complete and very rarely entirely absent, but usually it is strong at the sides and more or less broadly interrupted at the middle. The maxillary palpi are 6-segmented, the labial palpi 4-segmented. In the majority of the species treated in this paper the number of antennal segments falls within a range of 28 to 34, but in a considerable number of forms the number is outside these limits; rarely, however (in occasional specimens of *macrurus*, new species), have I counted as many as 44 segments or (in *capsicola*, new species and *persimilis*, new species) as few as 23.

Usually the thorax is moderately stout but occasionally it is slender; the notauli are always present, usually strongly foveolate but sometimes weakly or indistinctly so. The propodeum is usually rather strongly declivous, very rarely nearly horizontal, and nearly always more or less sculptured (from granulate to coarsely rugose). The longitudinal furrow of the mesopleuron is nearly always foveolate, but rarely weakly indicated in species in which there is no vestige of the third abscissa of cubitus in the forewing. The prepectus is always carinately margined. The hind coxa is usually half as long as the hind femur, sometimes longer, and the latter may be from 3 to 6 times as long as broad; the inner calcarium of the hind tibia is always longer than the outer one and is usually at least half as long as the metatarsus; and the tarsal claws are variable, usually simple but sometimes provided with a subbasal tooth or angulation. In the forewing the stigma is usually rather narrow and the radial cell on the wing margin most often is about as long as the stigma but sometimes noticeably

longer although very rarely going nearly to the wing apex; the first discoidal cell is always sessile; the third abscissa of cubitus is most frequently represented by a stub that is at least as long as the second abscissa, but in one group of species this stub is reduced to little more than a punctiform spur and in another group it is entirely absent; the first brachial cell is always closed, the subdiscoideus originating very low on the outer end of the cell. In the hind wing the submediellan cell is at least half as long as the mediellan cell; the wing itself varies considerably in form, being sometimes very narrow but more often relatively broad.

The abdomen is sessile, although the first segment narrows gradually toward the base, and the spiracles of the first segment are far before the middle. The suture between the first and second tergites is sometimes sharply impressed though fine but often it is only weakly or faintly indicated. The ovipositor is always prominent, the sheath ranging in length from shorter than the abdomen to more than twice as long as the head, thorax and abdomen combined. Very rarely the abdomen is entirely smooth and polished; usually it is more or less extensively granulate, rugulose or striate, especially toward the base.

The genus may be readily divided into three species groups on the basis of the extent to which the stub or spur of the third abscissa of cubitus is developed. The group in which this part of the cubitus is represented only by a more or less punctiform spur and the group in which not a vestige of such a spur remains are both small, each containing comparatively few species. Most of the known species have a well-developed stub of a third abscissa of cubitus that is at least as long as the second abscissa. There is considerable intraspecific variation and specific identification is often difficult. Among the more stable and reliable characters are the shape of the head, the relative length of the malar space, the number of antennal segments, the character and extent of the sculpture on the cheeks, propodeum, metapleura, hind coxae and abdomen, the relative length and width of the hind wing, and the relative length of the lower abscissa of basella, also the relative length and width of the hind femora and the relative length of the ovipositor sheath. The following key will facilitate the identification of the species covered in this paper.

Key to the Known Nearctic Species of *Orgilus*

1. Cubitus entirely effaced beyond intercubitus or represented there by a very short spur that is usually punctiform and rarely one-third as long as second abscissa of cubitus.....2
Cubitus beyond intercubitus represented by a stub that is at least as long as second abscissa.....22
2. Third abscissa of cubitus represented by a very short, more or less punctiform spur; mesopleura usually smooth and shiny.....3
Not even a vestige of third abscissa of cubitus remaining; mesopleura finely granulose or coriaceous and more or less mat.....17
3. Ocellocular line not, or barely, longer than diameter of an ocellus.....4
Ocellocular line much longer than diameter of an ocellus.....6
4. Occipital carina entirely effaced.....*immarginatus*, new species
Occipital carina present laterally.....5
5. Temples finely granulose; propodeum and metapleura uniformly coriaceous and more or less mat; middle lobe of mesoscutum long and narrow and extending far beyond middle of scutum.....*disparilis*, new species
Temples largely smooth; propodeum and metapleura smooth and shiny; middle lobe of mesoscutum short and broad, extending only slightly beyond middle of scutum.....*imitator*, new species
6. Occipital carina broadly interrupted medially; hind tibia without a pale annulus at base; ovipositor sheath at least twice as long as head, thorax, and abdomen combined.....*macrurus*, new species
Occipital carina not or indistinctly interrupted medially; hind tibia with a pale annulus at extreme base; ovipositor sheath not so long.....7
7. Abdomen unusually narrow, the first tergite fully twice as long as wide at apex, the second longer than broad and parallel-sided; antennae 36-40-segmented.....*maculiventris* (Cresson)
Abdomen not so narrow, the first tergite not nearly twice as long as wide at apex, the second usually wider than long; antennae usually 23- to 34-segmented.....8
8. Hind coxae and metapleura smooth and shiny, sometimes punctate but not shagreened or alutaceous.....9
Hind coxae, and usually the metapleura, finely shagreened or alutaceous.....12
9. Thorax yellow, the propodeum sometimes more or less darkened; abdomen largely yellow, darkened only on the basal tergites.....*infrequens*, new species
Thorax extensively marked with black, sometimes entirely black; abdomen largely black, always black apically.....10
10. Dorsal keels of first tergite very weak and short, not distinct beyond spiracles; thorax and abdomen black; hind coxae black on basal half.....*discrepans*, new species
Dorsal keels of first tergite well developed to the middle of the tergite; thorax and abdomen usually with ferruginous markings; hind coxae yellow, rarely a little darkened at extreme bases.....11
11. Metapleuron and outer side of hind coxa minutely but distinctly punctate; mesoscutum closely, finely punctate even along the posterior margin; antennae 30- to 33-segmented; ovipositor sheath as long as the body.....*melissopi*, new species
Metapleuron and outer side of hind coxa virtually impunctate; mesoscutum smooth, polished, and impunctate along posterior margin; antennae 27-segmented in the single known specimen; ovipositor sheath as long as distance from base of scutellum to end of abdomen.....*lautus*, new species
12. Antennae normally 22- to 25-segmented; tarsal claw simple; radial cell not or barely longer than stigma.....13
Antennae normally 27- to 32-segmented; tarsal claw with a subbasal tooth or angulation; radial cell conspicuously longer than stigma.....14
13. Head and thorax black; wings whitish hyaline; hind coxae darkened, at least basally.....*persimilis*, new species
Head and thorax yellow, sometimes varied with black; wings hyaline but not whitish; hind coxae entirely yellow.....*capsicola*, new species

Key to the Known Nearctic Species of *Orgilus*—Continued

14. First tergite only slightly longer than wide at apex, the dorsal keels prominent and extending to apical third of tergite; distance between lateral ocelli shorter than the diameter of one of them; ovipositor sheath one and one-half times as long as head, thorax, and abdomen combined.....*proprius*, new species
First tergite usually relatively longer and the keels weak and short; distance between lateral ocelli a little longer than the diameter of one of them; ovipositor sheath at most only barely longer than head, thorax and abdomen combined.....15
15. Second tergite about as long as broad, parallel-sided; tergites 1 to 5 of female and 1 to 6 of male completely finely rugulose punctate or granulose; hind femur four times as long as wide; hind wing five times as long as its maximum width.....*walleyi*, new species
Second tergite broader at base than long and usually widening caudad; abdomen not so completely sculptured; at least not combining all the above characters.....16
16. Third and following tergites smooth and polished, the first and second coriaceous and shiny; tarsal claw with a subbasal angulation but without a subbasal tooth or lobe; palpi dark.....*lepidus* Muesebeck
Abdomen more coarsely and extensively sculptured; tarsal claw with a subbasal tooth or lobe, palpi usually pale yellow.....*lateralis* (Cresson)
17. Abdomen slender; second tergite longer than wide; ovipositor sheath longer than head, thorax, and abdomen combined.....18
Abdomen not slender; second tergite decidedly wider than long; ovipositor sheath not longer than abdomen.....19
18. Occiput immargined; inner calcarium of hind tibia not nearly half as long as metatarsus; thorax black; antenna of female without a pale annulus.....*tenuis*, new species
Occiput weakly but distinctly margined at the sides; inner calcarium of hind tibia fully half as long as metatarsus; thorax testaceous; antenna of female with a conspicuous white annulus.....*notabilis*, new species
19. Head in front view subtriangular, strongly narrowed below; anterior tentorial pits below level of lower eye margins; occiput immargined.....*absonus*, new species
Head in front view round, not narrowed below; anterior tentorial pits at or above level of lower eye margins; occiput margined.....20
20. Tarsal claw with a well-developed subbasal tooth.....*momphae*, new species
Tarsal claw without a distinct subbasal tooth.....21
21. Temples less than half as wide as eyes; hind wing not nearly five times as long as broad; lower abscissa of basella not more, usually less, than half as long as mediella.....*coleophorae*, new species
Temples more than half as wide as eyes; hind wing more than five times as long as wide; lower abscissa of basella more than half as long as mediella.....*gelechia* (Ashmead)
22. Head rostriform.....23
Head not rostriform.....24
23. Wings uniformly rather strongly infumated; malar space 0.6 as long as eye height.....*rostratus*, new species
Wings hyaline basally, subhyaline apically; malar space hardly half as long as eye height.....*dreisbachi*, new species
24. Tergites 1 to 6 completely sculptured, the basal ones rugose, the apical ones usually granulose or granulose punctate; hind femur less than 3.5 times as long as broad; second tergite about twice as broad at base as long.....25
Abdomen not so completely sculptured; hind femur and second tergite relatively longer...26
25. Wings rather strongly infumated; apex of abdomen brownish to reddish yellow; hind femora usually testaceous or brownish.....*scaber*, new species
Wings clear hyaline; abdomen completely black; hind femora black...*hyalinus*, new species
26. Face strongly protruding and not wider, usually narrower, than eye height; cheeks shiny, not granulose or shagreened; head usually 0.75 as long as wide, in dorsal view, and strongly excavated behind; ocellular line less than twice as long as diameter of an ocellus.....27
Face convex but not so strongly protruding; at least not combining the above characters.....35

Key to the Known Nearctic Species of *Orgilus*—Continued

27. All coxae and trochanters black; hind coxa rugulose above and on outer side. 28
 Coxae and trochanters yellowish or brownish yellow, the hind coxa sometimes blackish basally; hind coxa largely smooth or finely shagreened on outer side. 29
28. Face rather evenly covered with large, separated punctures; cheeks flaring, not convex; lower abscissa of basella not longer than nervellus; first tergite more than 1.5 times as long as wide at apex. *buccatus*, new species
 Face rugulose, at least on upper part; cheeks strongly convex; lower abscissa of basella much longer than nervellus; first tergite not nearly 1.5 times as long as broad at apex. *obscurator* (Nees)
29. Head, and also thorax and abdomen largely, testaceous or brownish yellow. *comptanae*, new species
 Head and thorax black; abdomen sometimes more or less reddish yellow. 30
30. Metapleuron and outer side of hind coxa granulose or coriaceous and rather mat; tegulae usually yellow. 31
 Metapleuron and outer side of hind coxa shiny and largely smooth, not granulose or coriaceous; tegulae usually dark. 33
31. Lower temples rounded and receding; mesonotal lobes more or less shagreened and somewhat dull. *intermedius*, new species
 Lower temples not receding; mesonotal lobes not shagreened, very shiny. 32
32. Abdomen black above, piceous below; hind tibiae entirely darkened. *fictus*, new species
 Abdomen more or less testaceous on second and third tergites; basal sternites yellow; hind tibiae darkened apically and very narrowly basally. *cinctus*, new species
33. Second tergite apically and the third entirely smooth and polished. 34
 Second tergite entirely and the third in part rugulose. *longiceps* Muesebeck
34. Face and clypeus closely, strongly punctate; middle lobe of mesoscutum with irregular, shallow punctures; first tergite closely rugulose. *fulgens*, new species
 Face and clypeus only faintly punctate; middle lobe of mesoscutum impunctate; first tergite smooth except for a little weak rugulosity laterally. *lissus*, new species
35. First and second tergites largely or entirely, the third at least in part, and sometimes the fourth, sculptured; suture between second and third tergites always sharply impressed. . 36
 Third and following tergites smooth and polished, the second usually in large part, and sometimes entirely, smooth; suture between second and third tergites variable, often very weak or even faint. 53
36. Hind wing very narrow, five times as long as broad; lower abscissa of basella half as long as maximum width of hind wing. 37
 Hind wing relatively broad, conspicuously less than five times as long as broad; lower abscissa of basella less than half as long as maximum width of hind wing. 45
37. Reddish yellow. *gelechiaevorus* Cushman
 Black, sometimes more or less varied with reddish yellow. 38
38. Tegulae and wing bases dark. 39
 Tegulae and wing bases yellow or yellowish. 41
39. Legs black; thorax largely granulose and dull; ovipositor sheath decidedly longer than abdomen. *arcticus*, new species
 Legs largely testaceous; thorax smooth and shiny; ovipositor sheath not longer than abdomen. 40
40. Very slender; second tergite at least as long as broad at base; the basal three tergites ferruginous; cheeks smooth and polished. *ejuncidus*, new species
 Not slender; second tergite much broader at base than long; abdomen black; cheeks shagreened and subopaque. *insularis*, new species
41. Head, including vertex, frons and temples, entirely granulose and dull. *opacus*, new species
 At least the temples largely smooth and polished. 42
42. Temples as wide as eyes; head and second and third tergites in female more or less testaceous. *zonalis*, new species
 Temples not as wide as eyes; head and dorsum of abdomen black, at most with reddish spots laterally at apices of first and second tergites. 43

Key to the Known Nearctic Species of *Orgilus*—Continued

43. Forewings contrastingly hyaline basally and infumated apically; ovipositor sheath not or barely longer than abdomen; none of the flagellar segments of the female antennae wider than long. *indagator* Muesebeck
Forewings rather uniformly weakly infumated; ovipositor sheath noticeably longer than the abdomen; some of the preapical segments of the female antennae wider than long. 44
44. Mesoscutum smooth and shiny, with only fine setigerous punctures; mesopleuron smooth and shiny. *cuneatus* (Provancher)
Mesoscutum, especially the middle lobe, finely granulose or shagreened and mat; mesopleuron coriaceous, especially below the longitudinal furrow, and mat. *consuetus*, new species
45. Tergites 1 to 4 closely sculptured. *agrestis*, new species
Fourth tergite smooth and polished. 46
46. First and second tergites longitudinally aciculate; legs black in both sexes. *anthracinus*, new species
First and second tergites not aciculate; legs largely brownish yellow, at least in the female. 47
47. Wings clear hyaline; tegulae and wing bases black or blackish. *ferus*, new species
Wings at least somewhat smoky apically. 48
48. Head ferruginous; female antennae with about 35 segments. *invictus*, new species
Head black; female antennae usually 30- to 32-segmented. 49
49. Malar space clearly more than half as long as eye height; abdomen with reddish spots in apical corners of tergites 1 and 2; metapleuron largely shagreened and dull. *californicus* (Provancher)
Malar space not more than half as long as eye height; abdomen entirely black; metapleuron not shagreened. 50
50. Metapleuron and outer side of hind coxa largely smooth and shining. 51
Metapleuron and outer side of hind coxa largely rugulose. 52
51. Tegulae black; propodeum with a short, prominent, median longitudinal keel at base. *cristatus*, new species
Tegulae yellow; propodeum without such a keel. *lunaris*, new species
52. First tergite completely rugulose, even at base; nervulus postfurcal by more than one-third its length; ovipositor sheath barely as long as abdomen. *frigidus*, new species
First tergite smooth and polished at base; nervulus virtually interstitial; ovipositor sheath at least as long as propodeum and abdomen combined. *fallax*, new species
53. Metapleuron finely granulose or shagreened and mat, at least on upper half; hind coxa finely granulose and dull on the entire outer side; ovipositor sheath never as long as the body. 54
Metapleuron usually very shiny and not granulose; at least not the above combination of characters. 60
54. Head and thorax largely testaceous. *inopinus*, new species
Head and thorax black. 55
55. Tegulae and wing bases, all coxae and trochanters, and the femora largely, black. *glacialis*, new species
Tegulae and wing bases yellow; legs largely yellowish. 56
56. Hind wing five times as long as wide; lower abscissa of basella usually half as long as maximum width of hind wing. 57
Hind wing not nearly five times as long as wide; lower abscissa of basella relatively shorter. 59
57. Abdomen testaceous except at apex; malar space more than half as long as eye height. *tersus*, new species
Abdomen black; malar space less than half as long as eye height. 58
58. Second tergite punctate on basal half; hind coxae yellow. *gracilis* (Brues)
Second tergite smooth and shiny; hind coxae largely black. *citius*, new species
59. Abdomen noticeably narrower than thorax; second tergite parallel-sided and as long as broad at base; mesoscutum and mesopleuron largely smooth and shiny. *dissidens*, new species
Abdomen about as broad as thorax; second tergite broadening caudad and broader at base than long; mesoscutum and mesopleuron extensively sculptured. *dolosus*, new species

Key to the Known Nearctic Species of *Orgilus*—Continued

60. Hind coxae unusually large, at least 0.65 as long as hind femora, usually smooth and shiny and always completely bright testaceous; inner calcarium of hind tibia less than half as long as metatarsus; malar space shorter than longest segment of maxillary palpus; ovipositor sheath fully as long as head, thorax and abdomen combined. 61
Hind coxae not as above; otherwise, not that combination of characters. 64
61. Abdomen completely smooth and polished, with no suggestion of sculpture even on the first and second tergites. 62
At least the first tergite more or less rugulose. 63
62. Hind wing at least five times as long as wide; wings rather strongly infumated; hind femur less than four times as long as wide. *levis*, new species
Hind wing not so narrow; wings almost hyaline; hind femur relatively longer. *politus*, new species
63. Hind coxae smooth and polished; cheeks largely smooth and shining, shagreened and mat only near the lower margins; temples 0.85 as wide as eyes and only slightly receding; abdomen completely black. *alacer*, new species
Hind coxae somewhat shagreened above basally on outer side; cheeks completely strongly shagreened and dull; temples narrower and more strongly receding; first and second tergites with reddish markings in their apical corners. *simulator*, new species
64. All coxae and trochanters black; clypeus entirely black; nervulus usually postfurcal by at least one-third its length. 65
At least fore- and middle coxae testaceous or brownish yellow, very rarely all coxae black in the males of certain species; clypeus usually reddish yellow anteriorly; nervulus variable. 70
65. Propodeum smooth and polished apically and with no stubs of longitudinal carinae arising from the posterior margin. *dioryctriae*, Gahan
Propodeum rugulose apically and with stubs of longitudinal carinae setting off a median apical area and also lateral areas. 66
66. Malar space more than half as long as eye height; hind femur more than five times as long as wide. *coracinus*, new species
Malar space not more, usually less, than half as long as eye height; hind femur less than five times as long as wide. 67
67. Second tergite smooth and polished. 68
Second tergite rugulose or confluent punctate on basal half. 69
68. Malar space less than 0.4 as long as eye height; all coxae and trochanters, and the femora more or less, black or blackish in both sexes. *balsameae*, new species
Malar space longer; coxae and trochanters blackish only in male. *grapholithae*, new species
69. Hind wing very narrow, more than five times as long as its maximum width; antennae of holotype 34-segmented, none of the preapical segments broader than long. *morulus*, new species
Hind wing only about four times as long as its maximum width; antennae 30-segmented in holotype, some of the preapical segments broader than long. *utahensis*, new species
70. Head and, or, thorax more or less testaceous or ferruginous. 71
Head and thorax black. 75
71. Temples noticeably wider than the eyes and with scattered, distinct punctures; antennae 36- to 38-segmented. *coloradensis*, new species
Temples not wider than eyes and without distinct, separate punctures; antennae with fewer segments. 72
72. Abdomen entirely black. *medicaginis*, new species
Abdomen more or less testaceous or ferruginous. 73
73. First tergite fully 1.5 times as long as broad at apex, its width at apex less than the distance from apex to the spiracles; head largely black; ovipositor sheath a little longer than head, thorax, and abdomen combined; length 3.5 to 4 mm. *parallelus*, new species
First tergite much stouter; head entirely testaceous; ovipositor sheath shorter than the body; length less than 3 mm. 74
74. Cheeks smooth and shiny except at lower margins; malar space more than half as long as eye height; forewing whitish hyaline basally and contrastingly infumated apically; ovipositor sheath only slightly longer than abdomen. *cerinus*, new species

Key to the Known Nearctic Species of *Orgilus*—Continued

- Cheeks shagreened and mat; malar space less than half as long as eye height; forewings uniformly a little smoky; ovipositor sheath about as long as thorax and abdomen combined..... *pumilus*, new species
75. Second tergite conspicuously wider (1.2–1.5 times) at base than long; first tergite usually at least 0.8 as wide at apex as long; tegulae black or blackish (except usually in *modicus*).....76
 Second tergite relatively narrower, usually with length and basal width subequal; first tergite not so stout; tegulae sometimes black or blackish but more often pale.....87
76. Cheeks largely smooth and polished, only narrowly shagreened near lower margins.....77
 Cheeks shagreened or granulose and more or less dull.....81
77. First tergite fully as broad at apex as long; ovipositor sheath about as long as distance from base of scutellum to end of abdomen..... *gramineus*, new species
 First tergite not so short and broad; ovipositor sheath about as long as abdomen.....78
78. Face about 1.25 times as wide as eye height and malar space nearly or quite half as long as eye height; forewing clear hyaline at base and noticeably infumated beyond median cell..... *cognatus*, new species
 Face not or barely wider than eye height and malar space not more than 0.4 as long as eye height; forewings hyaline, subhyaline or weakly infumated.....79
79. Deep black, including clypeus, mandibles, antennae, tegulae and wing bases and the abdomen both above and below; hind coxae largely blackish; female antennae stout, most of the segments beyond the 15th conspicuously broader than long.....
 *compactus*, new species
 Not so dark; abdomen more or less suffused with brown; female antennae more slender...80
80. Antennae 26- to 28-segmented; metapleuron virtually smooth in upper anterior angle; hind wing about five times as long as wide; tegulae usually yellow; ovipositor sheath as long as distance from base of scutellum to end of abdomen..... *modicus*, new species
 Antennae normally 30- to 32-segmented; metapleuron finely rugulose or confluent punctate in upper anterior angle; hind wing much less than five times as long as wide; tegulae blackish; ovipositor sheath about as long as abdomen..... *mellipes* (Say)
81. Face not or barely wider than eye height; malar space less than half as long as eye height; hind femur less than twice as long as hind coxa and not more than 4.5 times as long as wide.....82
 Face at least 1.2 times as wide as eye height; malar space half as long as eye height; hind femur twice as long as hind coxa and five times as long as wide.....84
82. Disc of scutellum flat; all coxae, trochanters, and femora uniformly brownish yellow; abdomen suffused with brown..... *clivicola*, new species
 Disc of scutellum convex; hind coxae and all trochanters and femora with blackish markings.....83
83. Face shagreened and dull except narrowly down the middle; malar space not longer than clypeus and hardly 0.4 as long as eye height; ovipositor sheath not quite as long as abdomen..... *solidus*, new species
 Face very shiny, with scattered hair punctures; malar space longer than clypeus and 0.45 as long as eye height; ovipositor sheath as long as propodeum and abdomen combined..... *detectus* Provancher
84. Clypeus, antennal scapes, and abdomen completely black; mesopleuron smooth below the longitudinal furrow; ovipositor sheath about as long as abdomen.....85
 Clypeus and antennal scapes more or less reddish yellow; abdomen with rufous markings in apical corners of first and second tergites; mesopleuron somewhat rugulose punctate below the longitudinal furrow; ovipositor sheath as long as propodeum and abdomen combined.....86
85. Second tergite completely smooth and polished; temples nearly as wide as eyes and hardly receding..... *oregonensis*, new species
 Second tergite more or less rugulose punctate on basal half; temples 0.75 as wide as eyes and distinctly somewhat receding..... *impiger*, new species
86. Metapleuron smooth and shiny on upper anterior part; frons transversely striate; second tergite weakly punctate medially on basal third..... *erythropus*, new species
 Metapleuron completely rugulose; frons irregularly rugulose; second tergite smooth and shining..... *validus*, new species

Key to the Known Nearctic Species of *Orgilus*—Continued

87. Hind femora unusually slender, about six times as long as wide 88
 Hind femora not nearly six times as long as wide 90
88. Metapleuron largely rugulose; face conspicuously wider than eye height; second tergite fully as long as broad at base; tegulae yellow 89
 Metapleuron largely smooth and shiny; face hardly wider than eye height; second tergite a little broader at base than long; tegulae black *exilis*, new species
89. Ovipositor sheath as long as head, thorax, and abdomen combined; antennal scape yellow; wings virtually hyaline, the veins of the hind wing not at all pigmented
 *femoralis*, new species
 Ovipositor sheath considerably shorter than the body; antennal scape blackish; wings distinctly infumated, the veins of the hind wing pigmented *ablusus*, new species
90. Temples wider than eyes and with numerous sharp punctures *coloradensis*, new species
 Temples not as above 91
91. Metapleuron almost entirely rugulose though more weakly so in anterior upper angle; face at least 1.2 times as broad as eye height; ovipositor sheath never as long as the body . . . 92
 Metapleuron rugulose at lower posterior margin but nearly always largely smooth and shining; if not so then face is barely wider than eye height and ovipositor sheath is longer than the body 96
92. First tergite closely and finely striate; second tergite rather extensively, though finely, rugulose aciculate *striatus*, new species
 First tergite largely rugulose, sometimes more or less longitudinally so 93
93. Forewings hyaline basally, somewhat infumated on apical half; venter of abdomen black or piceous 95
 Forewings a little infumated even basally; basal abdominal sternites normally yellowish . . 94
94. Mesoscutum densely and sharply punctate on middle lobe; the lateral lobes more sparsely but distinctly punctate; mesopleuron extensively punctate below the longitudinal furrow; face closely, finely rugulose and somewhat mat *boharti*, new species
 Mesoscutum smooth and shiny, not distinctly punctate; at least not combining the above characters *detectiformis* Viereck
95. Stubs of the carinae that arise from the posterior margin of the propodeum prominent and long, setting off apical areas that are open in front; hind femur five times as long as wide; dorsal keels of first tergite distinct to beyond the spiracles *medicaginis*, new species
 Stubs of the carinae at apex of propodeum weak, only the two median ones distinct and these short; hind femur less than five times as long as wide; keels of first tergite not developed *vallis*, new species
96. Abdomen, including first tergite, smooth and polished; all coxae entirely yellow; tegulae and wing bases pale yellow; ovipositor sheath longer than head, thorax, and abdomen combined *rasilis*, new species
 First tergite closely sculptured; at least not combining all the above characters 97
97. First tergite longitudinally striate 98
 First tergite rugulose 100
98. Second tergite largely finely longitudinally rugulose aciculate 99
 Second tergite smooth and polished except for a small rugulose area each side of the middle at base *strigosus*, new species
99. Cheeks largely smooth and polished; abdomen entirely black *monticola*, new species
 Cheeks shagreened and rather dull; abdomen with ferruginous markings and brownish shading *mundus*, new species
100. Tegulae and wing bases black or blackish 101
 Tegulae and wing bases yellow or brownish yellow 103
101. Head conspicuously wider than thorax; temples 0.75 as wide as eyes; ovipositor sheath as long as distance from scutellum to end of abdomen *grapholithae*, new species
 Head not or barely wider than thorax; temples a little narrower; ovipositor sheath much longer than head, thorax, and abdomen combined 102
102. Hind wing more than five times as long as wide; cheeks almost entirely smooth and shiny; wings a little infumated *fisheri*, new species
 Hind wing not nearly five times as long as wide; cheeks shagreened and subopaque; wings hyaline *prolixus*, new species

Key to the Known Nearctic Species of *Orgilus*—Continued

103. Abdomen largely, or at least on second and third tergites, reddish yellow 104
 Abdomen black 105
104. Hind coxae finely shagreened at bases above; hind wing five times as long as wide; face about 1.3 times as wide as eye height; malar space fully half as long as eye height *elasmopalpi*, new species
 Hind coxae rugulose at bases above; hind wing not five times as long as wide; face narrower; malar space less than half as long as eye height *pedalis*, new species
105. Wings hyaline *nitidus*, new species
 Wings distinctly a little infumated 106
106. Hind coxa granulose and dull over most of the outer side; hind wing about five times as long as wide; lower abscissa of basella more than half as long as mediella or maximum width of hind wing 108
 Hind coxa not granulose but largely smooth on outer side; hind wing not so narrow; lower abscissa of basella relatively much shorter 107
107. Lower part of face very smooth and shiny; clypeus virtually impunctate; temples rather strongly rounded; second tergite fully as long as wide at base *pratensis*, new species
 Lower part of face closely punctate; clypeus punctate; temples rather flat; second tergite a little wider at base than long *mimicus*, new species
108. Hind coxae reddish yellow, a little darkened at bases; mesonotal lobes with no suggestion of alutaceous sculpturing; posterior furrow of mesopleuron very coarsely foveate, with about 10 foveae *burksi*, new species
 Hind coxae black; mesonotal lobes weakly alutaceous posteriorly; posterior furrow of mesopleuron not so coarsely foveate *conflictanae*, new species

Orgilus ablusus, new species

This is one of three species treated in this paper with unusually slender hind femora; in this character it resembles *femorialis*, new species, and *exilis*, new species, from both of which it may be readily distinguished as shown in the key.

FEMALE.—Length 3.8 mm. Head distinctly wider than thorax, in dorsal view 1.7 times as wide as long; face in holotype 1.8 times as wide as eye height, minutely punctate and in large part shiny, but along the eye margins the surface is shagreened and somewhat mat; clypeus shiny, with well-separated minute punctures; malar space just about half as long as eye height, shagreened and mat; cheeks also shagreened and mat; temples hardly 0.75 as wide as eyes, polished along eye margins but broadly shagreened and mat along occipital margin and below; occipital carina rather broadly interrupted medially; vertex smooth and shiny; ocellular line about 3 times, postocellar line more than twice, as long as diameter of an ocellus; antennae of holotype 31-segmented, even the shortest flagellar segments at least as long as broad.

Thorax rather slender; mesoscutum shiny, the lateral lobes impunctate and polished, the median lobe with very shallow, rather closely placed punctures that fade out on the posterior part of the lobe; notauli sharply impressed, finely foveolate, disc of scutellum

slightly convex, smooth and polished, impunctate; propodeum largely rugulose but with a small triangular polished area each side of the middle at base, the open apical areas rather distinctly set off by well-developed stubs of longitudinal carinae; side of pronotum rugulose and shiny except for a small area at anterior margin that is very finely granulose and dull; mesopleuron smooth and polished, the longitudinal furrow a little sinuate and evenly finely foveolate; metapleuron rugulose except for a small smooth area in the upper anterior angle. Hind coxa very weakly rugulose on dorsal edge at base, otherwise finely granulose above and on upper part of outer side; hind femur fully twice as long as hind coxa and very nearly or quite six times as long as wide; inner calcarium of hind tibia more than half as long as metatarsus; tarsal claws simple. Stigma about as long as radial cell on wing margin; nervulus just postfurcal; hind wing 4.3 times as long as wide; lower abscissa of basella about as long as nervellus and about one-third as long as mediella or maximum width of hind wing.

Abdomen slender, narrower than thorax; first tergite more than 1.5 times as long as wide at apex, the spiracles a little more than twice as far from apex as from base and the distance between them only slightly more than their distance from base, the tergite closely rugulose, longitudinally so laterally; second tergite as

long as wide at base, parallel-sided, smooth and polished except for a very small area basally each side of middle which is faintly rugulose punctate; second suture faint; remainder of dorsum of abdomen smooth and polished; ovipositor sheath fully as long as propodeum and abdomen combined.

Black; lower part of clypeus and the mandibles ferruginous; antennal scape blackish, the flagellum reddish yellow on basal half and becoming gradually darker beyond middle, nearly black at apex; legs ferruginous, the hind coxa somewhat darkened on lower edge and on basal part of upper edge, each of the femora with a blackish streak on inner side above; hind tibiae slightly darkened at apices and all tarsi darkened; tegulae and wing bases yellow; wings distinctly infumated, the radiella and cubitella of hind wings clearly somewhat pigmented.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from a single female collected at Chatterton, Ontario, 25 August 1948, by J. C. Martin.

Orgilus absonus, new species

FIGURES 6, 6a, 6b, 20, 52

In general appearance this species is very similar to *rostratus*, new species, and *dreisbachi*, new species, which it resembles in head shape, in the very short maxillary palpi, in the stout abdomen with a very short and broad second tergite, in the unusually short and broad hind femora and in the short ovipositor. It differs significantly from those species, however, in lacking even a vestige of the third abscissa of cubitus and in its virtually immargined occiput.

FEMALE.—Length about 3 mm. Head not wider than thorax, in dorsal view about twice as broad as long and in front view narrowly triangular; eyes very large; face about 0.8 as wide as eye height, shallowly punctate and with an indistinct and incomplete median longitudinal keel; clypeus not distinctly separated from face; malar space hardly one-third as long as eye height, finely alutaceous and shiny; temples smooth, not more than half as wide as eyes; head rather strongly excavated behind; occiput smooth, not carinately margined except very weakly below on the sides; antennae shorter than the body, 24- to 26-segmented in the avail-

able specimens, some of the preapical segments fully as broad as long, and the apical segment with a short terminal spicule; maxillary palpi very short, barely as long as eye height.

Thorax compact; mesoscutum rather uniformly covered with closely placed, minute and very shallow punctures; notauli sharply impressed, minutely foveolate; disc of scutellum large and rather flat, sculptured like mesoscutum; propodeum finely granulose laterally, a little rugulose medially; side of pronotum, mesopleuron and metapleuron shagreened; longitudinal furrow of mesopleuron weak or even indistinct, usually indicated by an incomplete row of very shallow punctures. Hind coxa shiny, nearly smooth; hind femur barely more than three times as long as broad; longer calcarium of hind tibia not quite half as long as metatarsus; tarsal claw slender, without a subbasal tooth but weakly angulate beyond middle. Radial cell on wing margin just about as long as stigma; second abscissa of radius slightly arched and not quite on a line with intercubitus; not even a vestige of third abscissa of cubitus present; nervulus just postfurcal; hind wing slightly less than five times as long as wide; lower abscissa of basella much longer than nervellus and nearly or quite half as long as mediella.

Abdomen short and stout; first tergite about as broad at apex as long, entirely minutely confluent punctate, the dorsal keels not developed; second tergite about twice as wide at base as long, finely granulose or minutely confluent punctate like the first; third and following tergites sculptured like the second but successively more weakly so; ovipositor sheath about as long as abdomen.

Brown; head black or blackish; antennae black; palpi pale; tegulae and wing bases testaceous; wings hyaline; lateral lobes of mesoscutum and the pleura sometimes darkened basally; legs brown, hind tibiae apically and all tarsi darkened.

MALE.—Essentially like the female, but the antennae are more slender and as long as the body, and the thorax is much darker, usually concolorous with the head.

HOLOTYPE.—USNM 70138.

DISTRIBUTION.—Known only from the type-series, consisting of 13 females (one the holotype) and 3 males collected by P. H. Timberlake at Mill Creek, San Bernardino Mts., California, at 6000 feet, on *Eriogonum*.

Orgilus agrestis, new species

This species differs from related forms especially in having the first four tergites closely sculptured and the following largely retracted.

FEMALE.—Length about 4 mm. Head slightly broader than thorax, in dorsal view two-thirds as long as wide; face about 1.4 times as broad as eye height, punctate below, finely rugulose medially above, shagreened laterally; clypeus shiny, punctate; malar space distinctly more than half as long as eye height, minutely granulate and dull; cheeks sculptured like malar space; temples receding gradually from eye margins and at mideye point about as wide as eyes, granulate or shagreened behind, smooth and shiny along eye margins; occipital carina narrowly interrupted medially; frons smooth medially, granulate and mat laterally; ocellular line more than twice as long as diameter of an ocellus; antennae 33- or 34-segmented in the available specimens, even the shortest segments in apical fourth of flagellum a little longer than broad.

Mesoscutum with some very shallow punctures, which are most noticeable on the middle lobe; notauli foveolate, meeting in a small rugulose area; propodeum gently convex, finely rugulose but with a small smooth and polished area each side at base, the stubs of the longitudinal carinae that arise from the posterior margin not distinct; side of pronotum largely rugulose punctate; mesopleuron smooth and polished, with the longitudinal furrow foveolate; metapleuron rugulose posteriorly, irregularly punctate anteriorly. Hind coxa barely more than half as long as hind femur and largely finely rugulose; hind femur about five times as long as broad; longer calcarium of hind tibia just about half as long as metatarsus; tarsal claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as the second abscissa; nervulus a little postfurcal; hind wing a little less than five times as long as wide; lower abscissa of basella longer than nervellus but not half as long as mediella or maximum width of hind wing.

Abdomen as wide as thorax; first tergite about 1.2 times as long as wide at apex, finely rugulose punctate, the dorsal keels not developed; second tergite a little broader at base than long, the third strongly transverse, and both closely confluent punctate or very finely rugulose punctate, the third smooth and polished along its posterior margin; fourth tergite largely confluent punctate but more weakly so than second and third,

smooth apically; the following almost completely retracted, only a little of the fifth tergite being visible; second suture sharply impressed and relatively broad; ovipositor sheath barely as long as abdomen.

Head and thorax black; clypeus largely and mandibles red; antennae light brown, blackish apically; palpi dark; tegulae black, wing bases brownish yellow; wings hyaline at bases, noticeably smoky on apical two-thirds; legs yellowish brown, the hind coxae basally, the trochanters in part, all femora inwardly more or less, hind tibiae and all tarsi, somewhat darkened; abdomen reddish brown to black, always black apically.

MALE.—Unknown.

HOLOTYPE.—USNM 70139.

DISTRIBUTION.—Known only from the holotype female collected 12 miles southeast of Bend, Oregon, on *Artemisia tridentata*, 19 July 1957, by Gerald F. Craft, and a female paratype taken by W. R. M. Mason at Drumheller, Alberta, 14 June 1946.

Orgilus alacer, new species

This species very closely resembles *politus*, new species, from which it differs, however, in the presence of some sculpture on the first and second tergites of the abdomen, and in the more strongly sculptured propodeum, darker wings, and relatively shorter lower abscissa of basella.

FEMALE.—Length about 5 mm. Head barely wider than thorax and about 0.6 as long as wide in dorsal view; face only slightly wider than eye height (in ratio of 75:70), very shiny, and finely punctate, the punctures for the most part about a puncture width apart; malar space shagreened and rather dull, about 0.4 as long as eye height, longer than clypeus but slightly shorter than longest segment of maxillary palpus; only lower part of cheeks shagreened and rather mat; temples about 0.85 as wide as eyes, smooth and shiny, occipital carina only narrowly interrupted medially; frons and vertex smooth and shiny; ocellular line hardly twice as long as diameter of an ocellus; antennae of holotype 37-segmented, a few of the preapical flagellar segments about as broad as long.

Mesoscutum very shiny, with only some minute and shallow setigerous punctures; notauli deep and fine, finely foveolate and meeting in a strongly rugulose and narrowly triangular area just before apex of scutum; disc of scutellum very shiny, rather flat; prescutellar sulcus deep but weakly foveolate; propodeum entirely

rugulose except for a small smooth and polished area each side at extreme base, the stubs of the longitudinal carinae that arise from the posterior margin very short and rather weak; side of pronotum largely finely rugulose and shiny; mesopleuron smooth and polished except for a small area below tegula which is rugulose, the longitudinal furrow a little sinuate and completely, strongly foveolate; metapleuron shiny, closely and shallowly punctate, rugulose at the lower posterior margin. Hind coxa smooth and shiny, 0.65 as long as hind femur, which is 4.5 times as long as wide; inner calcarium of hind tibia clearly less than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus longer than second abscissa; nervulus postfurcal by about one-third of its length; hind wing very nearly five times as long as wide; lower abscissa of basella not longer than nervellus and much less than half as long as mediella.

Abdomen as long as head and thorax combined; first tergite about 1.3 times as long as broad at apex, the spiracles more than twice as far from apex as from base, the dorsal keels not developed, the surface of the tergite smooth at base and at apex and very narrowly along the middle, but longitudinally rugulose laterally; second tergite about as long as broad at base, smooth and shiny except for a small confluent punctate area each side of middle at base; remainder of the abdomen smooth and polished; ovipositor sheath a little longer than head, thorax, and abdomen combined.

Deep black; clypeus, palpi and antennae all entirely black; tegulae black, wing bases piceous; wings distinctly somewhat infumated; all coxae, trochanters, and femora yellow, the forefemora a little darkened on the upper edges and the hind femora at extreme apices; middle and hind tibiae a little darkened toward apices, and all tarsi dark; abdomen black above and below.

MALE.—None included in the type material.

HOLOTYPE.—USNM 70140.

DISTRIBUTION.—Described from the holotype female collected in Boulder Canyon, Colorado, at 7800 feet, 8 August 1960, by R. and K. Dreisbach. The United States National Museum has a male from Custer County, Nebraska, collected by R. R. Dreisbach, 21 August 1951, which I believe to be the same species. It appears to agree in all essential respects. The antennae are 38-segmented.

Orgilus anthracinus, new species

FIGURE 42

The closely aciculate first and second tergites, coupled with the intensely black color of the entire insect, including the legs, distinguish this species.

FEMALE.—Length about 3.5 mm. Head not wider than thorax, in dorsal view about 1.7 times as wide as long; face rather strongly convex, only slightly (1.1 times) wider than eye height, finely granulose with a little rugulosity each side of the middle, rather dull laterally, shiny medially, clypeus shiny, largely finely punctate, separated from the face by a sharply impressed line; anterior tentorial pits large and deep; malar space granulose and mat, about half as long as eye height; cheeks and lower temples finely granulose and mat, upper temples smooth and shiny; temples as seen from above somewhat rounded and only slightly receding, at mideye point nearly as wide as eyes; antennae of holotype 28-segmented (29-segmented in the only female paratype with complete antennae), segments 18–27 about as broad as long.

Mesoscutum shiny, and with numerous shallow, setigerous punctures; notauli sharply impressed and finely foveolate; disc of scutellum shiny, with shallow setigerous punctures; propodeum completely strongly rugulose except at extreme base, and without distinct spurs of longitudinal carinae arising from the posterior margin, the apical areas, therefore, not clearly defined; lateral face of pronotum largely rugulose, smooth along upper margin; mesopleuron largely smooth and polished, but with a broad, partly foveolate, partly rugulose longitudinal furrow; metapleuron shiny, nearly smooth anteriorly, rugulose posteriorly and below. Hind coxa largely granulose but a little longitudinally rugulose on upper edge toward base, nearly smooth below on outer side; hind femur slender, about five times as long as wide and twice as long as hind coxa; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claw simple. Radial cell on wing margin barely as long as stigma; second abscissa of radius and intercubitus virtually on a straight line; stub of third abscissa of cubitus as long as the second abscissa; nervulus very slightly postfurcal; hind wing about four times as long as wide; lower abscissa of basella usually less than half as long as mediella and less than half as long as maximum width of hind wing.

Abdomen very shiny; first tergite little longer than its apical width, the two dorsal keels very weak and

short; first and second tergites closely longitudinally aciculate; second tergite nearly as long as wide at base; third tergite largely or entirely smooth and polished, but usually with a little very weak longitudinal sculpture at the middle; ovipositor sheath barely longer than abdomen.

Deep black; tibiae and tarsi sometimes dark piceous; tegulae and wing bases black; wings uniformly weakly infumated.

MALE.—Essentially like the female. However, the malar space is relatively shorter; the antennae of the males examined are 28- to 30-segmented with even the shortest flagellar segments decidedly longer than broad; the face is usually more weakly sculptured and more shiny than in the three known females; the second tergite is often only very weakly aciculate and the third is usually entirely smooth.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—The type-series, which comprises all the known material, consists of 2 females (one the holotype) and 36 males taken at Payne Bay, Quebec, in July and August 1958; 1 female and 2 males from Sugluk, Quebec; 1 male from Eskimo Point, and 2 males from Chesterfield, Northwest Territories; and 1 male from Chilcat Pass, British Columbia, altitude 3500 feet.

Orgilus arcticus, new species

In habitus this species resembles *invictus*, new species, also from Labrador, but it is much darker and much more extensively sculptured.

FEMALE.—Length about 4 mm. Head in dorsal view about twice as broad as long and a little wider than the thorax; face about 1.2 times as broad as eye height and closely punctate; clypeus strongly convex and closely, finely punctate, and sharply set off from the face by a deep furrow; malar space longer than clypeus but hardly half as long as eye height, finely granulate and dull; cheeks also finely granulate and dull; temples about three-fourths as wide as eyes, shagreened and dull; frons laterally and the vertex entirely granulate and dull; ocellular line just about twice as long as diameter of an ocellus; antennae of holotype 31-segmented, a few of the segments in the apical third of the flagellum about as broad as long.

Middle lobe of mesoscutum entirely finely granulate and dull, the lateral lobes granulate and dull along the notauli but otherwise more shiny and weakly sha-

greened; notauli sharply impressed and foveolate; disc of scutellum finely punctate and shiny; propodeum rugulose, the stubs of the longitudinal carinae that arise from the posterior margin very prominent and sharply setting off the apical areas; side of pronotum largely granulate and dull, rugose in the impression; mesopleuron above the foveolate longitudinal furrow largely smooth and polished, immediately below it a little rugulose or confluent punctate, and farther down finely granulate and dull like the mesopectus; metapleuron finely granulate and dull anteriorly, rugose posteriorly. Fore- and middle coxae shagreened; hind coxa coarsely granulate and dull, somewhat rugulose on upper edge toward base; hind femur strongly shagreened, barely four times as long as broad and less than twice as long as hind coxa; inner calcarium of hind tibia noticeably more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin a little shorter than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as the second abscissa; nervulus in holotype postfurcal by about one-third its length; hind wing five times as long as wide; lower abscissa of basella much longer than nervellus and a little more than half as long as mediella or maximum width of hind wing.

Abdomen nearly as wide as thorax; first tergite 1.2 times as long as wide at apex, closely rugulose, the distance from the spiracle to the base much less than one-third the distance to the apex, the dorsal keels not developed; second tergite 1.3 times as wide at base as long, rather uniformly, closely granulate; second suture sharply impressed; third tergite with a little very weak shagreening medially; remainder of dorsum of abdomen smooth and polished; ovipositor sheath nearly or quite as long as propodeum and abdomen combined; ovipositor very slightly and gradually decurved apically.

Black; even the mandibles, as well as palpi and antennae, black; venter of abdomen entirely black; legs black, apices of fore- and middle femora and all the tarsi dark brown; tegulae and wing bases black; wings rather uniformly infumated.

MALE.—Essentially like the female except that the segments of the apical part of the antennal flagellum are longer and more slender.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female collected at Nachvak Fiord, Labrador, 15 August

1954, by E. E. Sterns; and a male paratype from British Mts., Firth River, Yukon Territory, collected 24 July 1956, by R. E. Leech.

Orgilus balsameae, new species

Structurally this species is very similar to *modicus*, new species, seeming to differ only in minor details; but it is readily distinguished from *modicus* by its blackish antennae, tegulae, and wing bases, its extensively blackish legs, its slightly infumated wings and distinctly pigmented radiella and cubitella of the hind wing.

FEMALE.—Length about 3 mm. Head broader than thorax, in dorsal view about 0.6 as long as broad; face just about as wide as eye height, strongly shiny, weakly rugulose punctate, especially laterally above; clypeus shiny, weakly punctate, medially not separated from the face; malar space shagreened and somewhat mat, about as long as clypeus and 0.4 as long as eye height; lower cheeks shagreened; temples a little rounded, gradually receding, about 0.75 as wide as eyes, smooth and shiny, ocellular line hardly twice as long as diameter of an ocellus; antennae normally 29- to 31-segmented, the 10 or 12 segments before the last about as wide as long.

Mesoscutum smooth and shiny with only indistinct setigerous punctures; notauli sharply impressed, finely, minutely punctate and meeting at the very apex of the scutum; disc of scutellum smooth and polished; propodeum finely rugulose but with a large smooth and polished area each side of the middle at base and five small, smooth areas at apex separated by very short stubs of longitudinal carinae that arise from the posterior margin; side of pronotum largely finely rugulose but broadly smooth and shiny at upper margin; mesopleuron smooth and polished, the longitudinal furrow nearly straight and finely foveolate; metapleuron rugulose at the posterior margin, otherwise smooth and shiny, with scattered, extremely shallow punctures. Hind coxa very shiny, more or less rugulose on dorsal edge toward base and on upper part of outer side, largely smooth elsewhere; hind femur about twice as long as hind coxa and 4.5 to 4.7 times as long as broad; inner calcarium of hind tibia a little more than half as long as metatarsus, tarsal claws simple. Radial cell on wing margin not longer than stigma; second abscissa of radius on a line with intercubitus; stub of

third abscissa of cubitus longer than second abscissa; nervulus distinctly postfurcal; hind wing 4.6 times as long as wide; lower abscissa of basella longer than nervellus but not quite, or barely, half as long as mediella or maximum width of hind wing.

Abdomen slender; first tergite about one and one-half times as long as wide at apex, weakly longitudinally sculptured but smooth and polished basally and narrowly across apex; second tergite nearly as long as broad at base, largely or entirely smooth and polished, at most with a little weak sculpture each side of middle toward base; third and following tergites polished; second suture very fine but distinct; ovipositor sheath slightly longer than propodeum and abdomen combined.

Black; mandibles red; clypeus black; antennal flagellum more or less brownish beneath toward base; tegulae and wing bases black or blackish; all coxae black, remainder of legs dark brown to black, with considerable variation in the intensity of the darkening; wings a little infumated, radiella and cubitella distinctly somewhat pigmented.

MALE.—Like the female in essential characters.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Quebec, New Brunswick, Ontario, Maine, New York, and Wisconsin. The type-series consists of the following: 3 females (one the holotype) and 2 males reared at New Carlisle, Quebec, from what was thought to be *Pulicalvaria piceaella* (Kearfott) in June and July 1958; 1 female from an unknown host on balsam fir, Ashland, Maine, 14 June 1948; 3 males from *P. piceaella* on balsam fir, Saranac Lake, New York, 10 June 1948; 1 female from *P. piceaella*, St. Augustine, Quebec, 29 June 1948; 1 female from the same host, St. Denis, Quebec, 26 July 1947; 1 male and 2 females from "*Recurvaria*" sp., Tobique, New Brunswick, June and July 1960; 1 male, same host, Kedgwick, New Brunswick, 29 June 1960; 2 unusually small females with 27-segmented antennae from unknown hosts, Burnett County, Wisconsin, 21 May 1956, and Douglas County, Wisconsin, 4 June 1956; 1 female from *Zeiraphera* sp., Fort William, Ontario; and 1 female, Tobique, New Brunswick, 13 July 1963, 2 females and 1 male, Upsalquitch, New Brunswick, July 1963, 5 females and 3 males, Green River, New Brunswick, July 1963, and 1 male, Cape Breton, Nova Scotia, July 1963, all reared from "*Evagora* sp." on balsam fir by T. Renault.

Orgilus boharti, new species

Orgilus, new species.—Bohart, 1947, p. 291.

In many respects this is very similar to *vallis*, new species, but it differs from that form in its uniformly infumated wings, in its much more coarsely rugose propodeum with prominent and relatively long stubs of longitudinal carinae at its posterior margin, in its closely punctate mesoscutum, and the reddish testaceous coloring of the second and third tergites of the female. From *detectiformis* Viereck, which it also resembles closely, it differs particularly in the presence of sculpture on the upper occiput, in the much more strongly punctate mesoscutum, and in the sculpture of the mesopleura.

FEMALE.—Length about 3.8 mm. Head a little wider than thorax, in dorsal view about 0.6 as long as wide; face 1.3 times as wide as eye height, finely closely rugulose punctate and somewhat mat; malar space longer than clypeus and about half as long as eye height, finely granulose and dull; cheeks also granulose and dull; clypeus closely punctate and shiny; temples gradually receding, nearly three-fourths as wide as eyes, broadly shagreened and mat along the occipital carina, smooth and polished adjacent to the eyes; vertex smooth and shiny, with only setigerous punctures; occiput more or less rugulose above, the occipital carina broadly interrupted at the middle; ocellular line hardly twice as long as diameter of an ocellus; antennae 29-segmented in the available females, not tapering noticeably toward the tips, and with some of the segments of the apical fourth a little wider than long.

Mesoscutum with notauli deep and coarsely foveolate; middle lobe finely and densely punctate, confluent so anteriorly, the lateral lobes more sparsely but distinctly punctate; disc of scutellum strongly convex, smooth and shiny; propodeum coarsely rugose reticulate on the dorsal face but with a small transverse smooth and polished area each side of the middle at base, the rather long posterior face divided into five large, anteriorly open areas by very prominent stubs of longitudinal carinae; side of pronotum rugulose; mesopleuron smooth and shiny above the longitudinal furrow, rather extensively and coarsely punctate below it, the furrow itself coarsely foveolate and medially widened into a small rugose area; metapleuron rugose, very coarsely so on posterior lower half. Hind coxa about half as long as hind femur,

rugulose above at base, rather coarsely granulose outwardly; hind femur about four and one-half times as long as wide; inner calcarium of hind tibia slightly more than half as long as metatarsus, tarsal claws simple. Radial cell on wing margin about as long as stigma; second abscissa of radius only four times as long as the first and on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus very slightly postfurcal; hind wing about 4.2 times as long as wide, lower abscissa of basella slightly longer than nervellus but less than half as long as mediella and much less than half as long as maximum width of hind wing.

Abdomen nearly as wide as thorax, first tergite about 1.3 times as long as wide at apex, finely rugulose except basally where it is smooth and shiny, the spiracles well beyond the basal third of the segment, the basal dorsal keels poorly developed; second tergite large, slightly broader at base than long, largely smooth and polished but with a little weak sculpture medially toward base; second suture very weak; third and following tergites smooth and polished; ovipositor sheath as long as propodeum and abdomen combined.

Head and thorax black; palpi blackish; mandibles and apex of clypeus reddish yellow; antennae dark brown, scape and first flagellar segment lighter below; tegulae and wing bases yellow; legs, including all coxae, testaceous, with the bases of hind coxae, the basal trochanters, the apices of hind femora and tibiae, and all the tarsi a little darkened, hind femora not darkened along dorsal edges and on inner surfaces as in *detectiformis* and *vallis*; forewings entirely rather strongly infumated; abdomen black at base and apex but with apex of first tergite and all of second and third tergites reddish yellow.

MALE.—In general like the female except as follows: Antennae 30-segmented in the two available males with complete antennae, entirely black, longer and tapering noticeably toward tips, all flagellar segments considerably longer than wide; clypeus entirely black; abdomen without the conspicuous reddish-yellow band, the second tergite piceous to castaneous with rufous shadings laterally.

HOLOTYPE.—USNM 70141.

DISTRIBUTION.—Known only from the short type-series consisting of the following: 2 females (one the holotype) and 1 male reared from bent grass at Southgate, Los Angeles County, California, 29 July 1941, and 1 male reared from bluegrass, Bakersfield, California,

30 June 1941, by R. M. Bohart, who has informed me in correspondence that all the specimens were reared from the larvae of *Crambus* spp.; also 1 female from Tulare County, California, 14 May 1947, collected by N. W. Frazier.

Orgilus buccatus, new species

FIGURES 10, 10a, 10b

These species is structurally most similar to *longiceps* Muesebeck, which it resembles in its unusually long head, with flaring temples and cheeks, but it may be immediately distinguished by its dark legs and clypeus, its coarsely roughened hind coxae, and its smooth third tergite. From *obscurator* (Nees), which it closely resembles superficially, it differs in its longer head, flaring temples and cheeks, narrower first abdominal tergite, and evenly punctate face.

FEMALE.—Length 5 mm. Head a little narrower than thorax and 0.8 as long as wide, in dorsal view; face protuberant, its straight-line diameter hardly as long as eye height, its surface shiny and uniformly covered with strong, well-separated punctures; clypeus strongly convex, and punctate like the face; anterior tentorial pits below level of lower eye margins; malar space about 0.4 as long as eye height, minutely punctate; cheeks and temples very broad and flaring beyond outer margins of the eyes, the cheeks shiny and with rather well-separated punctures, the temples shiny and weakly punctate and at their widest a little wider than eyes; frons rugulose; vertex largely smooth but with scattered punctures; back of head above rugulose punctate; occipital carina distinct only at the sides; ocellular line less than twice the diameter of an ocellus; antennae of the single known specimen broken, 25 segments remaining, the last of which is as broad as long.

Thorax stout, deeper than wide; mesoscutum covered with sharp, well-separated punctures; notauli very shallow but finely foveolate and extending into an elongate median rugose area on apical third of scutum; disc of scutellum punctate like mesoscutum; propodeum very weakly declivous caudad, and closely rugulose with only a very small smooth and polished area each side at base, the usual short apical carinae not distinct; side of pronotum completely rugose; mesopleuron smooth and shiny, the longitudinal furrow a little sinuate and strongly foveolate; metapleuron largely rugulose punctate, weakly so anteriorly above.

Hind coxa rugulose above, closely, strongly punctate on outer side, shiny; hind femur about four times as long as broad; hind tibia with numerous short and stout spines on outer side near apex, the inner calcarium slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin barely as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa; nervulus slightly post-furcal; hind wing about four times as long as wide; lower abscissa of basella not longer than nervellus and much less than half as long as mediella.

Abdomen a little narrower than thorax; first tergite fully one and one-half times as long as wide at apex, completely closely rugulose except for the small basal impression, which is smooth and polished; second tergite about as long as broad at base, finely rugulose except along apical margin where it is smooth and polished; third and following tergites smooth and polished; ovipositor sheath about as long as thorax and abdomen combined.

Black; mandibles reddish; antennae dark brown beneath; tegulae and wing bases black; wings subhyaline; coxae and trochanters black, remainder of the legs largely dark brown or piceous; venter of abdomen ferruginous.

HOLOTYPE.—USNM 70143.

DISTRIBUTION.—Known only from the holotype female collected at Long Beach, Long Island, New York, 17 April 1926, by F. M. Schott. In the United States National Museum collection there is a male specimen from Mono County, California, taken at an elevation of 10,000 feet, which is so strikingly similar to the type that it would appear to be the same species, but this seems unlikely in view of the locality record. More material of the western form, and especially female specimens, will be required to determine its status.

Orgilus burksi, new species

Although very similar to *confictanae*, new species, *burksi* may be distinguished as shown in the key (couplet 108).

FEMALE.—Length about 3.2 mm. Head a little wider than thorax, and in dorsal view 0.65 as long as wide; face slightly narrower than eye height, shiny, weakly shagreened above, smooth and shiny below; clypeus smooth and shiny, almost impunctate; malar space barely 0.4 as long as eye height, weakly

shagreened and shiny; cheeks smooth and polished except near their lower margins where they are weakly shagreened; temples polished, rather strongly rounded and about 0.6 as wide as eyes; vertex and frons (except the latter narrowly at eye margins) smooth and shiny; ocellular line hardly twice as long as diameter of an ocellus; antennae of holotype 32-segmented, even the shortest flagellar segments at least as long as broad.

Thorax slender; mesoscutum smooth and shiny, the middle lobe with some very shallow punctures, the lateral lobes impunctate; notauli strongly foveolate; disc of scutellum small, shiny, with a few indistinct punctures; propodeum rugose, with a narrow, transverse polished area each side of middle at base, and the large apical areas, which are set off by short longitudinal carinae, largely smooth and shiny; side of pronotum largely finely rugulose and shiny, more weakly roughened above and with a large area at anterior margin coarsely granulate and dull; mesopleuron smooth and polished, the longitudinal furrow coarsely foveate; metapleuron smooth and shiny except posteriorly and below where it is rugulose. Hind coxa finely granulate above and on upper part of outer side; hind femur hardly twice as long as hind coxa and 4.3 times as long as broad; inner calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Stigma just about as long as radial cell and very narrow; radius arising from well beyond middle of stigma, the first abscissa longer than width of stigma, the second more than 5 times as long as the first and on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus postfural by about one-third its length; hind wing about 5.5 times as long as wide; lower abscissa of basella a little more than half as long as mediella or maximum width of hind wing.

Abdomen at widest point about as wide as thorax at tegulae; first tergite about 1.7 times as long as wide at apex and closely finely granularly rugulose except basad of spiracles where it is smooth and shiny, the spiracles about twice as far from apex of tergite as from base, the distance between them one and one-half times the distance to the base; second tergite as long as wide at base, noticeably wider at apex than at base, smooth and polished, with only a few faint punctures laterally near base; the following tergites entirely smooth and polished; ovipositor sheath barely longer than abdomen.

Black; clypeus entirely black; antennae testaceous above as well as below on more than basal third and

including the scape; legs largely testaceous, the hind coxae rather broadly blackish basally; hind femora black on apical half; hind tibiae a little darkened; tegulae and wing bases yellowish brown; wings distinctly a little infumated.

MALE.—Unknown.

HOLOTYPE.—USNM 70142.

DISTRIBUTION.—Known only from female holotype collected on Mt. Mitchell, North Carolina, at 5500 feet, 9 September 1950, by B. D. Burks.

Orgilus californicus (Provancher)

Eubadizon californicus Provancher, 1888, p. 383.

Orgilus californicus (Provancher).—Muesebeck and Walkley, 1951, p. 111.

Superficially this seems most similar to *cuneatus* (Provancher), but the malar space is relatively much longer and the face broader, and the hind wing is relatively wide, with the lower abscissa of basella barely longer than the nervellus; in addition, *californicus* is much larger. I have seen no other specimen that I can confidently identify as *californicus*. The following notes are based on the female holotype.

Length about 4 mm. Head a little wider than thorax, in dorsal view about 0.6 as long as wide; face about 1.3 times as wide as eye height, mat, rather strongly sculptured and densely hairy, the hair punctures tending to form aciculae that converge obliquely on the meson; malar space conspicuously more than half as long as eye height, nearly 1.5 times as long as clypeus, and granulate and mat; cheeks shagreened and mat; temples smooth and shining near the eyes, somewhat shagreened adjacent to the occipital carina; antennae broken, but 28 segments of the right antenna remain, the last of these, like several of the preceding ones, slightly broader than long.

Mesoscutum shining, rather thickly hairy; propodeum largely very finely rugulose, but smooth and shining at base and in the apical lateral angles; mesopleuron smooth and shining, the longitudinal furrow foveolate; metapleuron shiny and nearly smooth above with only a little faint shagreening there, rugulose below. Hind coxa somewhat granulate and opaque; longer calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma; second abscissa of radius on a line with intercubitus; nervulus a little postfural; hind wing not nearly five times as long as

wide; lower abscissa of basella about as long as nervellus and much less than half as long as mediella or maximum width of hind wing.

Abdomen elongate, narrower than thorax; first and second tergites finely rugulose, the second nearly parallel-sided, the suture between it and the third sharply impressed; third tergite largely smooth and shining but with a small, finely, and confluent punctate area near base; ovipositor sheath about as long as propodeum and abdomen combined.

Black; antennae reddish yellow on basal half, the scapes darkened above; clypeus yellow on lower third; tegulae yellowish; legs brownish yellow, the hind coxae weakly darkened basally above; wings a little infumated; abdomen black but with conspicuous yellowish spots in the apical corners of the first and second tergites, the second tergite also rather broadly pale along the lateral margins.

MALE.—Unknown.

HOLOTYPE.—In the Quebec Provincial Museum collection, Laval University, Sainte Foy, Quebec.

DISTRIBUTION.—Known only from the holotype, which was taken at Los Angeles, California, by D. W. Coquillett.

Orgilus capsicola, new species

FIGURES 11, 21

Orgilus, new species, Schuster, 1959, p. 118.

Superficially this species resembles some of the smaller specimens of *lateralis* (Cresson), but it may be at once distinguished from that species by its relatively short radial cell and simple tarsal claws.

FEMALE.—Length about 3 mm. Head wider than thorax, in dorsal view about twice as broad as long; face nearly flat, smooth and shiny, with scattered, very shallow punctures, its width subequal to the eye height; clypeus smooth and polished; anterior tentorial pits on a line with the lower eye margins; malar space about one-fourth as long as eye height, weakly shagreened; cheeks very shiny, slightly shagreened near malar line; temples receding gradually, half as wide as eyes, smooth and shiny; occipital carina not strong but complete; ocellular line hardly twice as long as diameter of an ocellus; antennae 23- to 25-segmented in the available specimens, even the shortest segments of the flagellum distinctly longer than broad, the apical segment with a short but distinct terminal spicule.

Mesoscutum largely smooth and shiny, with scattered, very shallow punctures on the lobes; notauli sharply impressed and finely foveolate; disc of scutellum evenly convex, smooth; propodeum rugulose punctate, the petiolar area not marked off by stubs of carinae arising from the posterior margin; side of pronotum very shiny, nearly smooth, with only weak shagreening below and above the impression; mesopleuron smooth and polished, the longitudinal furrow sinuate and finely foveolate; metapleuron smooth and shiny, with a few weak punctures. Hind coxa about two-thirds as long as hind femur, shiny, weakly shagreened on outer side; hind femur hardly four times as long as broad; inner calcarium of hind tibia not more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin not or barely longer than stigma; second abscissa of radius very nearly on a line with intercubitus; stub of third abscissa of cubitus punctiform; nervulus postfurcal by more than one-third its length; hind wing a little more than 4 times as long as wide; lower abscissa of basella much longer than nervellus and about half as long as mediella.

Abdomen about as wide as thorax; first tergite almost or quite as broad at apex as long, closely punctate or rugulose punctate, the dorsal keels not distinct, the spiracles much farther from each other than from the base of the segment; second tergite nearly twice as broad as long, sculptured like the first; second suture sharply impressed and curved forward at the sides; third, fourth, and fifth tergites all strongly transverse and all more or less punctate, the fifth very sparsely so; ovipositor sheath slightly longer than the abdomen.

Brownish yellow, sometimes with dark markings on the vertex and the back of the head, on the mesonotal lobes and on the sides of the scutellum; antennae brown, paler beneath; palpi pale; propodeum and mesopectus blackish; wings clear hyaline; tegulae and wing bases yellow; legs yellow, apices of hind femora darkened, also hind tibia on apical third and narrowly a little beyond base; extreme base of hind tibia whitish; all tarsi darkened; abdomen testaceous or brownish yellow, with the first tergite and sometimes the second more or less darkened medially.

MALE.—Essentially like the female but darker.

HOLOTYPE.—USNM 70144.

DISTRIBUTION.—Known only from the type-series consisting of 8 females (one the holotype) and 6 males which were reared from the pepperflower budworm, *Symmetischema capsicum* (Bradley and Povolny),

often incorrectly recorded in the literature under the name *Gnorimoschema gudmanella* (Walsingham), at Weslaco, Texas, in March 1967, by M. F. Schuster.

Orgilus cerinus, new species

In size and general color this species is very much like *pumilus*, new species, but it is readily distinguished from that species by its relatively broader face and longer malar space, shorter ovipositor, smoother cheeks, and basally hyaline forewings.

FEMALE.—Length about 2.5 mm. Head wider than thorax, in dorsal view barely more than half as long as wide; face 1.3 times as wide as eye height, shiny, weakly and sparsely punctate and a little shagreened between the punctures on the upper half laterally; clypeus smooth and shiny; malar space decidedly longer than clypeus and 0.55 as long as eye height, finely shagreened; cheeks shiny, smooth except near lower margins where they are very weakly shagreened; temples nearly as wide as eyes, smooth and shiny; frons shagreened laterally; occipital carina broadly interrupted medially; ocellular line at least twice as long as diameter of an ocellus; antennae slender, 25- and 26-segmented in the two available specimens, even the segments of the apical fourth of the flagellum noticeably longer than broad.

Mesoscutum smooth and shiny, with only a few, rather indistinct, punctures; notauli sharply impressed and very finely foveolate; disk of scutellum smooth and shiny; propodeum rugulose, with a small smooth and polished area each side at base, and with the apical areas rather smooth but poorly defined, the stubs of the carinae that arise from the posterior margin being weak or indistinct; side of pronotum closely rugulose except narrowly along upper margin; mesopleuron smooth and polished, the longitudinal furrow weakly sinuate and foveolate; metapleuron rugulose at the posterior margin, elsewhere with scattered, shallow punctures, and shiny. Hind coxa only half as long as hind femur, largely smooth, weakly rugulose above toward base; hind femur 4.5 times as long as broad; inner calcarium of hind tibia not more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin just about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus slightly postfurcal; hind wing about 4.3 times as long as wide; lower abscissa of basella a little longer

than nervellus but less than half as long as mediella.

Abdomen with first tergite about 1.4 times as long as wide at apex, finely longitudinally rugulose punctate, the dorsal keels indicated only at extreme base; second tergite about 1.2 times as wide at base as long, smooth and shiny laterally and posteriorly but with the median basal half very fine confluent punctate; remainder of abdomen smooth and shiny; ovipositor sheath only slightly longer than abdomen.

Head and thorax reddish yellow; palpi dark; antennae reddish yellow basally, especially below, elsewhere brown; tegulae and wing bases yellow; wings hyaline basally, somewhat infumated apically; legs yellowish brown, the hind femora darkened inwardly toward apices, also the hind tibiae more or less and the hind tarsi darkened; abdomen testaceous on first and second tergites, the third and following darkened.

MALE.—Unknown.

HOLOTYPE.—USNM 70145.

DISTRIBUTION.—Known only from two females, one the holotype, taken at Claypool, Arizona, 19 June 1957, by F. G. Werner and G. D. Butler.

Orgilus cinctus, new species

This species is exceedingly like *factus* in structure, but the second tergite is relatively longer and the propodeum is smoother at the base; in color it differs strikingly, at least in the female, in having the apex of the first tergite and all the second and third tergites yellow.

FEMALE.—Length about 3.2 mm. Head not wider than thorax, deeply excavated behind, in dorsal view 0.75 as long as wide; straight-line width of face a little shorter than eye height; face weakly and minutely punctate on a shagreened surface; malar space about 0.3 as long as eye height; the anterior tentorial pits only very slightly below level of lower eye margins; cheeks and temples smooth and polished, the latter not receding and about 0.75 as wide as eyes; frons smooth medially, shagreened laterally; occiput carinately margined only at the sides; ocellular line 1.5 times as long as diameter of an ocellus; antennae of holotype 33-segmented, even the shortest flagellar segments distinctly longer than broad.

Thorax slender; mesonotal lobes shiny, not distinctly punctate; notauli sharply and deeply impressed, finely foveolate; propodeum largely smooth at base, elsewhere finely rugulose; side of pronotum finely rugulose, mesopleuron smooth and polished, the longitu-

dinal furrow strongly foveolate; metapleuron largely very finely coriaceous, rugose at the posterior margin. Hind coxa finely shagreened, about 0.6 as long as hind femur, the latter about 4 times as long as broad; inner calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin barely longer than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus subequal with second abscissa; nervulus very slightly postfurcal; hind wing very narrow, more than five times as long as wide; lower abscissa of basella much longer than nervellus and at least half as long as mediella or as maximum width of hind wing.

Abdomen with first tergite about 1.5 times as long as wide at apex, smooth and polished medially toward base, finely rugulose or granulose beyond; second tergite very nearly or quite as long as broad at base, largely finely granulose but very narrowly smooth at apex; third tergite with a little confluent punctation near base, otherwise smooth and shiny like the following tergites; ovipositor sheath about as long as distance from base of scutellum to end of abdomen.

Head and thorax black; antennae yellow brown, darker apically; palpi piceous; mandibles yellow; legs yellow, hind femora apically and hind tibiae basally and apically a little darkened and all tarsi dark; tegulae and wing bases yellow; wings very weakly infumated; abdomen black or blackish at base and at apex, the apical part of the first tergite, all of the second tergite and most of the third reddish yellow.

MALE.—Unknown.

HOLOTYPE.—USNM 70146.

DISTRIBUTION.—Known only from the holotype female from Wolcott, New York, 18 May 1955, N. Neunzig, and a female paratype from Holliston, Massachusetts, 2 August, N. Banks. A male from Lyme, Connecticut, which is in the United States National Museum collection, may be this species, but more material will be needed for definite identification.

Orgilus citus, new species

FIGURE 55

Although this species is very close to *gracilis* (Brues), it seems to be distinct. The second tergite is almost completely smooth and very shiny, and the hind coxae are usually much darker. In addition, the face is more completely shagreened and rather mat, the first tergite has the spiracles farther from the base and has dis-

tinct, although weak, dorsal keels extending to beyond the spiracles, and the lower abscissa of basella is relatively longer.

FEMALE.—Length about 3 mm. Head in dorsal view about 0.6 as long as wide; face not, or barely, wider than eye height, minutely shagreened and rather mat; malar space just about as long as clypeus and about 0.43 as long as eye height, shagreened and mat; cheeks very shiny, shagreened and mat only near lower margins, the upper part a little alutaceous; temples about 0.75 as wide as eyes, receding, smooth and polished except narrowly along occipital carina where they are weakly shagreened; occiput carinately margined only at the sides; vertex usually a little shagreened laterally; ocellular line 2.5 times as long as diameter of an ocellus; antennae 27- to 29-segmented in the available specimens, some segments in apical fourth of flagellum as wide as long.

Mesoscutum shiny, the middle lobe with some very weak punctures; notauli sharply impressed, very fine, and finely foveolate; propodeum more or less rugulose on a granulose ground, the stubs of the longitudinal carinae that arise from the posterior margin rather prominent; side of pronotum finely granulose anteriorly, rugulose in the impression; mesopleuron smooth and polished, the longitudinal furrow complete and foveolate; metapleuron granulose and mat, rugulose at the lower posterior margin. Hind coxa finely granulose or shagreened above and on outer side; hind femur barely twice as long as hind coxa but nearly five times as long as broad; inner calcarium of hind tibia more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long as second abscissa; nervulus just postfurcal; hind wing five times as long as wide, the anterior and posterior margins virtually parallel; lower abscissa of nervellus nearly or quite half as long as mediella or maximum width of hind wing.

First abdominal tergite finely rugulose punctate, very delicately shagreened and shining at base, about 1.4 times as long as broad at apex, the spiracles at end of basal third, the dorsal keels weak but distinct to beyond the spiracles; second tergite just about as long as broad at base, and broadening a little caudad, smooth and polished, only a little alutaceous or faintly shagreened basally; remainder of abdomen smooth and polished; ovipositor sheath barely as long as propodeum and abdomen combined.

Black; mandibles and lower half of clypeus testaceous; antennae yellow on basal half, darkened apically, the scapes darkened above; legs yellow, but the hind coxae usually black except at the apices, occasionally largely testaceous, hind femora on inner side and above, hind tibiae apically, and all the tarsi a little darkened; tegulae and wing bases yellow; wings a little smoky, especially apically.

MALE.—A little more shiny than the female, and the antennae darker and a little more slender.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the type-series which consists of the following: 3 females and 1 male from Parke Reserve, Kamouraska County, Quebec, 950 feet, collected by W. R. M. Mason, the holotype female and 1 male paratype on 9 August 1957, the 2 paratype females on 7 August and 13 August 1957; 2 paratype males taken at Biscotasing, Ontario, July 1930, by K. E. Schedl; and 1 paratype male collected at Madoc, Ontario, 24 July 1952, and 1 paratype female taken at Chatterton, Ontario, 22 July 1951, both by J. C. Martin.

Orgilus clivicola, new species

Superficially this species closely resembles *compactus*, new species, but it differs in the color of the abdomen and legs, in the rather flat mesoscutum and disc of scutellum, more slender antennae and shagreened cheeks.

FEMALE.—Length 3.3 mm. Head not wider than thorax, in dorsal view 0.6 as long as broad. Face at narrowest hardly wider than eye height, rather strongly convex, largely finely punctate but a little rugulose just below antennae; malar space longer than clypeus and 0.47 as long as eye height, shagreened; cheeks shagreened; temples at mideye point 0.8 as wide as eyes, largely smooth and polished but weakly shagreened along occipital carina, which is broadly interrupted medially; ocellular line hardly twice as long as diameter of an ocellus; antennae of holotype 27-segmented, none of the segments quite as broad as long.

Mesoscutum rather flat, smooth and shiny, without distinct punctures; notauli very shallow but finely foveolate, a few confluent punctures at the junction of the notauli; scutellar sulcus deep and long, strongly foveate; disc of scutellum flat, smooth and polished, impunctate; propodeum strongly convex, largely rugu-

lose but with a fairly large smooth and polished area each side at extreme base and rather smooth in the apical areas, which are defined by very short stubs of longitudinal carinae that arise from the posterior margin; side of pronotum rather strongly rugulose over most of its surface; mesopleuron smooth and polished, the longitudinal furrow nearly straight and evenly foveolate; metapleuron smooth and shiny except posteriorly where it is rugulose punctate. Hind coxa finely rugulose above toward base and on outer side; hind femur a little less than twice as long as hind coxa and about 4.3 times as long as broad; inner calcarium of hind tibia fully half as long as metatarsus; tarsal claws simple. Radial cell on wing margin not quite as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus clearly postfurcal; hind wing about 4.3 times as long as wide; lower abscissa of basella longer than nervellus but less than half as long as mediella or maximum width of hind wing.

Abdomen stout and short; first tergite nearly 0.9 as broad at apex as long; finely rugulose across the middle part, smooth and shiny at base before spiracles and narrowly so at apex, the spiracles twice as far from each other as from base and more than twice as far from apex as from base; the dorsal keels of first tergite not developed; second tergite 1.5 times as broad at base as long, finely rugulose on a basal median area that extends beyond the middle of the tergite on the median line, smooth and polished elsewhere; the second suture very faint; third tergite much shorter than second, smooth and polished but with a small, transverse, confluent punctate area near base; segments beyond the fourth largely retracted; ovipositor sheath just about as long as abdomen.

Blackish brown; the abdomen a little lighter than head and thorax, especially on the margins of the first tergite; antennae brown, paler basally, gradually darkening apically; palpi piceous; clypeus except at the extreme base and the mandibles reddish yellow; legs testaceous, the hind femora completely so, the tarsi somewhat darkened; tegulae and wing bases piceous; wing subhyaline.

MALE.—Unknown.

HOLOTYPE.—USNM 70147.

DISTRIBUTION.—Known only from the holotype female collected at Colorado Springs, Colorado, 5915 feet, in August, by E. S. Tucker.

Orgilus cognatus, new species

In habitus, structure, and sculpture this species is very similar to *compactus*, new species, but it differs in its relatively wider face and temples and longer malar space, and in its paler legs, clypeus, and antennae. From *clivicola*, new species, which it also closely resembles, it differs in its relatively broader face, smoother cheeks, more convex mesoscutum and scutellar disc, virtually interstitial nervulus and somewhat stouter antennae.

FEMALE.—Length 3.5 mm. Head slightly broader than thorax, in dorsal view 0.55 as long as broad; face 1.25 times as wide as eye height, smooth and shiny with only weak setigerous punctures; malar space longer than clypeus and very nearly half as long as eye height; cheeks smooth and shiny, weakly alutaceous below; temples smooth and polished, nearly as wide as eyes; vertex smooth and shiny; occipital carina rather broadly interrupted medially; ocellular line a little more than twice as long as diameter of an ocellus; antennae of holotype 29-segmented, several of the pre-apical segments a little wider than long.

Mesoscutum smooth and shiny; notauli shallow but foveolate, no rugulose area at their junction; disc of scutellum slightly convex, smooth, and polished; propodeum rugulose, the stubs of the apical longitudinal carinae distinct but short and not very prominent, a transverse smooth and polished area each side at base; side of pronotum rugulose except along upper margin where it is broadly rather smooth; mesopleuron smooth and polished, the longitudinal furrow a little sinuate, completely and uniformly foveolate; metapleuron largely rugulose punctate, smooth and shiny in the anterior angle. Hind coxa about 0.6 as long as hind femur, rugulose above toward base, weakly roughened on outer side; hind femur four times as long as broad; inner calcarium of hind tibia fully half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus virtually interstitial; hind wing 4.5 times as long as wide; lower abscissa of basella a little less than half as long as mediella; radiella and cubitella very weak, not pigmented.

Abdomen short and broad; first tergite 0.8 as broad at apex as long, rugulose or rugulose punctate, even on basal third, only a band across apex smooth, the dorsal keels not distinct; spiracles of first tergite twice as far from each other as from base and more than twice as

far from apex as from base; second tergite 1.5 times as broad at base as long, smooth and polished except for a small confluent punctate area basally each side of the middle; third tergite smooth and polished, with no suggestion of sculpture; the second suture very fine but distinct; fourth tergite very short, the following almost entirely retracted; ovipositor sheath very slightly longer than abdomen.

Black, clypeus and mandibles testaceous; antennae testaceous on basal half, darkened apically; palpi piceous; tegulae blackish, wing bases reddish yellow; wings hyaline basally, slightly smoky apically; legs testaceous, with only bases of hind coxae and apical segment of each tarsus darkened; posterior corners of first tergite and a small subapical spot at each side of second tergite reddish.

MALE.—Unknown.

HOLOTYPE.—USNM 70148.

DISTRIBUTION.—Known only from the holotype female collected at Lapoint, Utah, 25 September 1925, by C. J. Sorenson.

Orgilus coleophorae, new species

FIGURES 7, 7a, 7b, 14, 22

This species is most similar to *gelechia* (Ashmead) and *momphae*, new species. From the former, which it resembles in the character of the tarsal claws, it differs in its narrower temples, relatively broader hind wings and relatively shorter lower abscissa of basella; from *momphae* it may be at once distinguished by the lack of a subbasal tooth on the tarsal claw, and by the shorter antennae and relatively broader hind wings.

FEMALE.—Length around 3.5 mm. Head not distinctly wider than thorax, but nearly twice as wide as long in dorsal view; face, frons, vertex, temples, and cheeks finely granulose and mat; face only very slightly broader than eye height; anterior tentorial pits on a line with lower eye margins; clypeus strongly convex, smooth; malar space shorter than clypeus and about one-third as long as eye height; temples less than half as wide as eyes and strongly receding; occipital carina broadly interrupted medially; ocellular line less than twice as long as diameter of an ocellus; antennae usually 28- to 33-segmented in the specimens examined, rarely 34- to 36-segmented.

Mesoscutum and scutellum delicately shagreened and more or less dull; notauli complete but usually not distinctly foveolate; propodeum granulose and mat and

without spurs of longitudinal carinae arising from the posterior margin; side of pronotum, and the mesopleuron and metapleuron finely coriaceous; longitudinal furrow of mesopleuron very weak but more or less foveolate. Hind coxa finely granulose; hind femur not more than four times as long as wide; longer calcarium of hind tibia slightly less than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin barely longer than stigma; cubitus ending abruptly at intercubitus, not even a vestige of third abscissa of cubitus present; nervulus sometimes interstitial but usually a little postfurcal; hind wing about 4.7 times as long as wide; lower abscissa of basella a little longer than nervellus but not or hardly half as long as mediella or maximum width of hind wing.

Abdomen with all tergites very finely, contiguously, or even confluent, punctate, the apical ones more weakly so; all tergites beyond the first strongly transverse, the second about twice as broad as long, the following relatively even broader, the second suture sharply impressed; ovipositor sheath usually about as long as the hind tibia.

Black, antennae dark brown toward bases; clypeus reddish anteriorly; palpi yellow; thorax usually black but sometimes varied with reddish yellow below and on the sides; tegulae testaceous; wings clear hyaline; fore- and middle legs yellow, their tarsi darkened; hind coxae blackish above, reddish brown on the sides and below; hind femora reddish yellow, blackish at apices, hind tibiae and tarsi blackish, the tibiae narrowly yellow at bases; abdomen beyond the first tergite usually more or less brownish, at least along the lateral margins.

MALE.—Essentially like the female, but the abdomen is somewhat darker and the legs are more extensively darkened; antennae 28- to 33-segmented in the male specimens examined.

HOLOTYPE.—USNM 70149.

DISTRIBUTION.—The type-series consists of the following: 25 females (one the holotype) and 31 males reared by A. E. Brower on Mt. Desert Island, Maine, from *Coleophora salmani* Heinrich in July and August 1930; 6 females and 4 males reared from the same host and at the same locality by R. L. Taylor in July 1929; and from 18 females and 27 males from Queen's County, New Brunswick, July 1949, 1 female and 6 males from York County, New Brunswick, July 1948 and 1949, 1 male from St. John County, New Brunswick, July 1948, and 1 female from Halifax County,

Nova Scotia, July 1949, all reared from *C. salmani*. In addition I have seen the following material not included in the type-series: Specimens from *Coleophora* sp. on blackberry, Melrose Highlands, Massachusetts; from *C. ulmifoliella* McDunnough in New Hampshire and Ontario; from *C. laricella* Huebner in New Brunswick; from *C. sp.* on hickory, in Ontario; from *C. monardella* McDunnough and *C. cretaticostella* Clemens in Ontario; from *C. umbrotica* Braun in Virginia; from *C. limosipenella* Duponchel in Ontario; and from *Recurvaria thujaella* Kearfott in Maine; most of these reared in the month of July. I have also seen specimens without host data from various localities in Nova Scotia, Quebec, Ontario, New York, Michigan, Illinois, Wisconsin, Iowa, and Alaska.

There is considerable variation in color. In general the type-series and other specimens from North Atlantic coastal areas agree with the color description given above. Specimens from farther inland, however, are normally much lighter in color, the hind coxae sometimes entirely yellow, the face brownish yellow, and the thorax and abdomen more or less extensively brownish yellow.

Orgilus coloradensis, new species

FIGURES 5, 5a, 5b

The unusually broad temples, combined with 36- to 38-segmented antennae, distinguish this form from the known related species. A large, rather stout species.

FEMALE.—Length about 5 mm. Head clearly broader than thorax, in dorsal view 0.7 as long as broad, deeply excavated behind; face at narrowest point 1.35 times as wide as eye height and strongly, completely, and closely punctate, sometimes partly rugulose punctate; malar space longer than clypeus and 0.6 as long as eye height; clypeus punctate; temples at mideye point about 1.2 times as wide as eyes, weakly convex and barely receding, with some small and shallow scattered punctures; cheeks minutely granulose; occipital carina developed only at the sides; ocellular line nearly three times as long as diameter of an ocellus; antennae 36- to 38-segmented in the available specimens, some segments in apical fifth of flagellum about as broad as long.

Thorax large and stout; mesonotal lobes shining, with scattered and very shallow punctures that are most abundant on the middle lobe; notauli sharply im-

pressed and completely foveolate; disc of scutellum with a few weak punctures; propodeum rugulose reticulate, with a narrow, transverse, polished area of each side of the middle at base, the stubs of the longitudinal carinae that arise from the posterior margin poorly developed so that the apical areas are not well defined; side of pronotum rugulose; mesopleuron very shiny, the longitudinal furrow strongly foveolate, and usually numerous sharp punctures below the furrow, especially anteriorly; metapleuron rugulose posteriorly and below, punctate elsewhere. Hind coxa rugulose above and on upper part of outer side; hind femur nearly five times as long as its greatest width; longer calcarium of hind tibia more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin just about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long as second abscissa and strongly curved; nervulus slightly postfurcal; hind wing about four times as broad as long; nervellus and the two abscissae of the basella subequal in length and less than half as long as mediella.

Abdomen stout; first tergite about 1.5 times as long as broad at apex, finely rugulose; second tergite as long as broad at base, sometimes partly rugulose punctate, sometimes partly shagreened, but always broadly smooth apically and laterally and usually also smooth medially at base; third and following tergites smooth and shiny; ovipositor not decurved at apex, the sheath barely longer than abdomen.

Yellow ferruginous; palpi darkened; antennae reddish yellow, blackish apically; mesosternum, metanotum, and the metapleura in part, blackish; occasionally some irregular piceous markings on the second and following tergites; inner side of hind femur and all tarsi somewhat darkened; tegulae yellowish; wings slightly smoky.

MALE.—In structure essentially like the female; in color it usually differs markedly, being almost entirely black; tegulae dark, the wing bases lighter; legs largely reddish, the hind coxae black and all femora darkened above. The antennae of the available male specimens are broken.

HOLOTYPE.—USNM 70150.

DISTRIBUTION.—Known only from the short type-series which consists of the following: 4 females (one the holotype) and 3 males all taken by C. F. Baker at Fort Collins, Colorado, in 1894, the holotype and three of the paratypes collected on alfalfa. From the ap-

pearance of these few specimens it would seem that there is considerable color variation in both sexes of this species.

Orgilus compactus, new species

In habitus this species rather closely resembles *gramineus*, new species, but it is readily separable as pointed out in the description of that species. It is apparently even more similar to *cognatus*, new species, and *clivicola*, new species, which it resembles in the short ovipositor and in the retraction of the apical abdominal segments. From both it may be at once distinguished, however, by its shorter malar space, stouter female antennae, and deep black color.

FEMALE.—Length 3.1 mm. Head not wider than thorax, in dorsal view 1.6 times as wide as long; face barely wider than eye height (in ratio of 63:60), very smooth and shiny but with some minute well-separated punctures; malar space not longer than clypeus and only slightly more than 0.4 as long as eye height; shiny and only faintly alutaceous; cheeks smooth and very shiny, faintly alutaceous only below; temples smooth and polished, about 0.75 as wide as eyes; occipital carina broadly interrupted medially; ocellular line more than twice as long as diameter of an ocellus; antennae stout, 29-segmented in the single specimen in which they are complete, most of the segments beyond the fifteenth clearly wider than long.

Thorax stout; mesoscutum very smooth and shiny, only weakly punctate anteriorly on the middle lobe; notauli sharply impressed, finely foveolate; disc of scutellum small, convex, smooth, and polished, impunctate; propodeum finely rugulose, narrowly smooth and polished on a small transverse area each side of middle at extreme base, and more or less smooth and shiny at apex, the stubs of longitudinal carinae arising from the posterior margin not well developed and the apical areas, therefore, poorly indicated; side of pronotum finely rugulose, nearly smooth below upper margin; mesopleuron smooth and polished, the longitudinal furrow finely foveolate; metapleuron smooth and shiny anteriorly, rugulose posteriorly. Hind coxa granulose above toward base, largely smooth and very shiny on outer side; hind femur less than twice as long as hind coxa and about 4.3 times as long as wide; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin a little

shorter than stigma; second abscissa of radius on a line with intercubitus; first abscissa of radius much longer than width of stigma; stub of third abscissa of cubitus at least as long as second abscissa; nervulus slightly postfurcal; hind wing about 4.8 times as long as wide; lower abscissa of basella longer than nervulus but less than half as long as mediella or maximum width of hind wing.

Abdomen short and stout; first tergite at least 0.8 as broad at apex as long, finely rugulose, the dorsal keels not developed, the spiracles about twice as far from each other as from base of segment; second tergite about 1.3 times as broad at base as long, largely smooth and shiny, weakly rugulose basally each side of the middle; second suture fine but sharply impressed; third and fourth tergites smooth and shiny, the remainder retracted; ovipositor sheath just about as long as abdomen, the ovipositor weakly decurved at apex.

Black; clypeus entirely black; mandibles black or blackish; palpi piceous; antennae brownish black; legs yellowish brown, the hind coxae largely black, the hind femora broadly darkened apically, the fore- and middle femora darkened along dorsal edges, the hind tibiae basally and apically and all the tarsi dark, tegulae and wing bases blackish; wings slightly infumated; dorsum of abdomen deep black, the venter piceous to black.

MALE.—Unknown.

HOLOTYPE.—USNM 70151.

DISTRIBUTION.—Known only from two females (one the holotype) collected at Hood River Rapids, Mt. Hood, Oregon, 3000 feet, on 31 July 1921, by A. L. Melander.

Orgilus comptanae, new species

FIGURES 8, 8a, 8b

This species is readily distinguished by its largely reddish-yellow color from the other species that belong in the group in which the head is very long and the face is unusually protuberant.

FEMALE.—Length around 4 mm. Head slightly narrower than thorax, higher than wide in front view and fourth-fifths as long as broad in dorsal view, deeply excavated behind; face protruding strongly, its straight-line width hardly equal to eye height, weakly punctate or shagreened medially; clypeus weakly separated from face, smooth, as long as malar space, which is slightly more than one-third as long as eye

height; anterior tentorial pits a little below level of lower eye margins; cheeks smooth and shiny except at the extreme lower margins where they are a little alutaceous; temples and cheeks bulging slightly, the temples impunctate and about 0.75 as wide as eyes; ocellular line about one and one-half times as long as diameter of an ocellus; antennae 31- or 32-segmented in the available specimens.

Thorax slender; mesoscutum shiny, not distinctly punctate; notauli sharply impressed, foveolate; scutellar sulcus very broad and deep; propodeum granulose or very finely rugulose and rather mat; side of pronotum largely rugulose but finely granulose anteriorly; mesopleuron smooth and polished, the longitudinal furrow finely foveolate; metapleuron coriaceous and somewhat dull. Hind coxa about two-thirds as long as hind femur, finely granulose or coriaceous and rather dull above and on outer side; hind femur less than 4.5 times as long as wide; longer calcarium of hind tibia more than half as long as metatarsus; tarsal claws simple. Stigma very nearly as long as radial cell on wing margin; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus longer than second abscissa; nervulus a little postfurcal; hind wing about five times as long as wide; lower abscissa of basella a little more than half as long as mediella and more than half as long as maximum width of hind wing.

Abdomen a little longer than thorax; first tergite hardly one and one-half times as long as wide at apex, finely rugulose except basally where it is smooth; second tergite nearly as long as wide at base, almost entirely finely rugulose; third tergite confluent punctate on basal half or more, smooth along lateral margins and posteriorly; the remaining tergites smooth and shiny; second suture impressed but very fine; ovipositor sheath nearly as long as distance from base of scutellum to end of abdomen.

Reddish testaceous; scape black above; antennal flagellum darkened apically; palpi blackish, also metanotum, hind tibiae apically and all tarsi; wings a little infumated.

MALE.—Essentially like the female but the abdominal sculpture usually a little weaker, and sometimes the body more extensively darkened.

HOLOTYPE.—USNM 70152.

DISTRIBUTION.—The type-series consists of the following: Female holotype reared from *Ancyliis comptana* Froelich at Lockport, New York, 16 July 1929, by

D. M. Daniel; a male paratype, also from *A. comptana*, reared by J. J. Davis at Moorestown, New Jersey, in May 1924; 2 males, Bridgeville, Delaware, 1932, from *A. comptana*; 1 male from Moorestown, New Jersey, "ex *A. comptana* infested leaves of strawberry"; 1 female, Salisbury, Maryland, ex *A. comptana*; and field-collected specimens from localities in Quebec, New York, Pennsylvania, New Jersey, Maryland, Virginia, North Carolina, Illinois, Mississippi, Georgia, and Florida.

Orgilus conflictanae, new species

Although this is exceedingly like *burksi*, new species, it differs as pointed out in the key (couplet 108).

FEMALE.—Length about 3.2 mm. Head a little wider than thorax, in dorsal view 0.65 as long as wide; minimum width of face equal to eye height; face minutely shagreened and rather mat on upper part, very shiny and with scattered shallow punctures on lower part; clypeus almost impunctate, very shiny; malar space only very slightly more than 0.4 as long as eye height, hardly longer than clypeus and a little shorter than the longest segment of maxillary palpus, finely shagreened; cheeks largely smooth and shiny, finely shagreened and somewhat mat on lower third; temples smooth and polished, at mideye point 0.8 as wide as eyes; occiput carinately margined only at the sides; vertex smooth and polished; ocellular line slightly more than twice as long as diameter of an ocellus; antennae of holotype broken, 26 segments remaining, the last very nearly as wide as long.

Mesoscutum very shiny, in part faintly alutaceous, the lobes weakly convex, notauli rather shallow and finely foveolate; disc of scutellum convex, faintly alutaceous; propodeum rugose, the stubs of the two median apical longitudinal carinae short but prominent, the lateral ones not distinct; side of pronotum granulate anteriorly, rugulose in the impression, nearly smooth below the upper margin; mesopleuron smooth and polished, the longitudinal furrow complete and foveolate; metapleuron largely smooth and very shiny but rugulose at the lower posterior margin. Hind coxa slightly more than half as long as hind femur, finely granulate and dull above and on outer side; hind femur 4.5 times as long as broad; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long

as second abscissa; nervulus postfurcal by one-third its length; hind wing about five times as long as wide; lower abscissa of basella a little more than half as long as mediella or maximum width of hind wing.

Abdomen at widest point about as wide as thorax; first tergite nearly 1.5 times as long as wide at apex, largely longitudinally rugulose, smooth and polished at extreme base and medially at apex, the dorsal keels indistinct; second tergite about as long as broad at base, smooth and polished like the following tergites; second suture very faint; ovipositor sheath barely longer than abdomen.

Black: clypeus entirely black; palpi dark; antennae brownish yellow on basal two-thirds, the scape slightly darker, the apical part of the flagellum blackish; legs testaceous, hind coxae black except at extreme apices below, hind femora piceous on apical two-thirds, reddish basally; tegulae and wing bases yellow; wings a little infumated.

MALE.—Unknown.

HOLOTYPE.—USNM 70153.

DISTRIBUTION.—Known only from the holotype female, which was reared from *Choristoneura conflictana* (Walker) at "Muddy District" in the Gunnison National Forest, Colorado, 31 January 1958, by B. H. Wilford, under Hopkins US no. 34220-L42.

Orgilus consuetus, new species

This is very similar to *cuneatus* (Provancher) and *indagator* Muesebeck. From the former it differs in its largely finely shagreened and subopaque mesonotum, shagreened or coriaceous mesopleura, and shorter ovipositor, and from the latter in its less extensively sculptured abdomen, more uniformly infumated wings, stouter female antennae and slightly longer ovipositor.

FEMALE.—Length about 3.2 mm. Head slightly wider than thorax, in dorsal view about 0.6 as long as broad; face slightly wider than eye height, finely shagreened and rather mat; clypeus smooth, with only a few scattered punctures; malar space finely granulate and mat, barely longer than clypeus and about 0.42 as long as eye height, also about as long as longest segment of maxillary palpus; cheeks shagreened and mat; temples at mideye point 0.75 as wide as eyes, smooth and polished except adjacent to occipital carina where they are minutely shagreened; occiput carinately margined only at the sides; vertex weakly alutaceous or minutely shagreened; ocellular line a little more than

twice as long as diameter of an ocellus; antennae 29-segmented in the holotype, 28-segmented in the only paratype, the 8 or 10 preapical segments slightly wider than long.

Middle lobe of mesoscutum finely shagreened and subopaque, also the parts of the lateral lobes than are adjacent to the notauli; notauli sharply impressed, very narrow, finely punctate anteriorly and foveolate posteriorly, meeting well before apex of scutum in a narrow rugulose area; disc of scutellum shiny but weakly shagreened; propodeum dorsally finely granulose and dull, with some irregular rugulae, the posterior face rather abruptly declivous and with five shiny and weakly roughened apical areas that are separated by prominent stubs of longitudinal carinae, which arise from the posterior margin and extend to the top of the posterior face; side of pronotum rugulose in the impression, granulose anteriorly and minutely shagreened above; mesopleuron largely coriaceous or minutely shagreened, more noticeably so below than above the foveolate longitudinal furrow; metapleuron granulose and dull, rugulose at lower posterior margin. Hind coxa 0.6 as long as hind femur, finely granulose above and on outer side; hind femur about 4.5 times as long as wide; inner calcarium of hind tibia just longer than half the metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as second abscissa; nervulus very slightly postfurcal; hind wing five times as long as wide; lower abscissa of basella nearly or quite half as long as maximum width of hind wing.

Abdomen rather slender; first tergite 1.5 times as long as wide at apex, finely and closely rugulose, more or less longitudinally so laterally; second tergite barely broader at base than long, finely confluent punctate; third tergite shiny and very weakly shagreened on basal half; remainder of abdomen smooth and polished; second suture fine but sharply impressed; ovipositor sheath about as long as propodeum and abdomen combined.

Black; clypeus except basally and the mandibles testaceous; palpi a little darkened, at least basally; antennae yellow, darkened apically; tegulae and wing bases yellow; wings slightly infumated; legs testaceous, the hind coxae weakly darkened basally; hind femora somewhat darkened apically and on inner sides; hind tibiae weakly infuscated apically; the basal abdominal sternites yellow.

MALE.—Not represented in the type material.

HOLOTYPE.—USNM 70154.

DISTRIBUTION.—The type-series consists of only the holotype female and one female paratype collected at Lost River State Park, Hardy County, West Virginia, in July 1955, by K. V. Krombein. Other specimens that seem to be this species are from Ontario, Maryland, North Carolina, and Florida. The single Florida specimen is labeled as having been reared from *Laspeyresia caryana* (Fitch).

Orgilus coracinus, new species

Structurally this species seems to be most similar to *medicaginis*, new species, but the female is much darker, even all the coxae and the entire clypeus being black; in addition, the temples are hardly as broad as in *medicaginis* and are more extensively sculptured, the metapleuron is smoother and the vertex is more sculptured.

FEMALE.—Length 4.5 mm. Head slightly wider than thorax, in dorsal view 1.5 times as broad as long; face 1.25 times as wide as eye height, rugulose above and laterally, weakly punctate below and medially and very shiny; clypeus rather closely but minutely punctate; malar space longer than clypeus and 0.6 as long as eye height, and granular and dull like the cheeks; temples about 0.8 as wide as eyes, receding a little, broadly punctate granulose along the occipital carina, smooth and polished adjacent to the eyes; occiput margined only at the sides, rather sharply punctate immediately below the ocelli; vertex between ocelli and eyes rugulose punctate; ocellocular line more than twice as long as diameter of an ocellus; antennae of holotype 32-segmented, some segments of apical fourth about as broad as long.

Mesoscutum very shiny, the middle lobe weakly punctate and the lateral lobes with some very shallow punctures along the notauli; notauli sharply impressed and strongly foveolate, a few confluent punctures at their junction; disc of scutellum convex, shiny, with a few faint punctures; propodeum sloping roundly from base to apex without defined dorsal and posterior faces, rugose, the stubs of the longitudinal carinae that arise from posterior margin prominent but short; side of pronotum largely strongly rugulose, more finely so anteriorly and nearly smooth at the upper margin; mesopleuron largely smooth and polished, the longitudinal furrow strongly foveolate, a large area anteriorly below the furrow rather finely punctate;

metapleuron rugulose posteriorly below, smooth and polished on the upper anterior part. Hind coxa rugulose above at base, smooth and shiny on the outer side with only shallow setigerous punctures there; hind femur more than 5 times as long as wide and 2.2 times as long as hind coxa; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin a little longer than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long as second abscissa; nervulus postfurcal by one-third its length; hind wing about 4.3 times as long as wide; lower abscissa of basella not longer than nervellus and only about one-third as long as mediella.

Abdomen a little narrower than thorax; first tergite 1.5 times as long as broad at apex, finely longitudinally rugulose, the basal dorsal keels not developed; second tergite about as long as broad at base, smooth and polished except for a small faintly sculptured area near base each side of the middle; third tergite not quite two-thirds as long as second, the separating suture very weak; third and following tergites smooth and polished; ovipositor sheath as long as propodeum and abdomen combined.

Deep black; clypeus entirely black; mandibles reddish; antennae black; also tegulae and wing bases black; wings only faintly infumated; all coxae and basal trochanters black; all femora with dorsal edges black or blackish, the tibiae and tarsi more or less infuscated; wings a little smoky.

MALE.—Unknown.

HOLOTYPE.—USNM 70155.

DISTRIBUTION.—Known only from the holotype female collected by D. D. Lindsdale at Ruby Lake, Inyo County, California, 13 August 1957.

Orgilus cristatus, new species

Although very similar to *lunaris*, new species, this form may be readily distinguished by the presence of a short but high, median longitudinal keel at the base of the propodeum, by its closely sculptured and dull cheeks and by its black tegulae.

FEMALE.—Length about 4.4 mm. Head hardly wider than thorax at tegulae, in dorsal view fully 0.7 as long as wide and strongly excavated behind; face about 1.15 times as wide as eye height, closely rugulose punctate; clypeus very strongly convex and closely punctate; malar space barely longer than clypeus,

about 0.45 as long as eye height, and finely granulose and dull; cheeks entirely granulose and dull; temples very nearly as wide as eyes, flat, barely receding, and broadly shagreened along occipital carina although smooth and shiny adjacent to eyes; occipital carina very prominent at the sides; ocellular line less than twice as long as diameter of an ocellus; antennae of holotype incomplete, 29 segments remaining, segments 20–25 fully as broad as long.

Thorax stout; mesoscutum smooth and shiny, the middle lobe with very shallow but closely placed punctures anteriorly; notauli finely foveolate, meeting in a strongly rugulose triangular area at apex of scutum; prescutellar sulcus very broad and deep and strongly foveate; disc of scutellum convex, smooth and shining; propodeum coarsely rugose, and with a short but very prominent median longitudinal keel at base, the stubs of the apical carinae prominent and extending more than one-third the distance toward base of propodeum; side of pronotum finely rugulose in the impression, rather broadly smooth at upper margin and finely granulose on a small area at anterior margin; mesopleuron smooth and polished, the longitudinal furrow nearly straight and completely finely foveolate; metapleuron rugose on lower half, smooth and shiny above in the basal angle. Hind coxa half as long as hind femur, rugulose on upper edge and on upper part of outer side, smooth below; hind femur 5.5 times as long as wide; inner calcarium of hind tibia fully half as long as metatarsus; tarsal claws simple. Stigma about as long as radial cell on wing margin, very narrow, much narrower than length of first abscissa of radius; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus postfurcal by about one-third its length; hind wing not more than four times as long as wide; lower abscissa of basella hardly as long as nervellus and only one-third as long as mediella.

Abdomen a little narrower than thorax; first tergite about 1.2 times as long as wide at apex, closely longitudinally rugulose, the dorsal keels weak but distinct to beyond spiracles; second tergite large, as long as broad at base and closely, finely longitudinally rugulose except narrowly at apex where it is smooth; second suture fine and sharply impressed; third tergite largely smooth and polished but with a small, finely rugulose area on the basal middle; remainder of abdomen smooth and polished, the segments after the fourth almost completely retracted; ovipositor sheath

nearly or quite as long as propodeum and abdomen combined.

Black; clypeus and palpi black; mandibles reddish; antennae black, the flagellum a little brownish on the underside toward base; tegulae black, wing bases piceous; wings distinctly infumated, rather more strongly so apically than basally; fore- and middle coxae yellowish brown; hind coxae black, brownish at apices; basal trochanters of all legs darkened, also the upper edges of the fore- and middle femora and the hind femora on the inner side; hind tibiae apically and all tarsi more or less darkened; abdomen completely black above and below.

MALE.—Unknown.

HOLOTYPE.—USNM 70156.

DISTRIBUTION.—Known only from the holotype female, which was taken at Sagehen Creek, near Hobart Mills, Nevada County, California, 16 July 1964, by M. E. Irwin.

Orgilus cuneatus (Provancher)

Blacus cuneatus Provancher, 1888, p. 383.

Orgilus cuneatus (Provancher).—Muesebeck and Walkley, 1951, p. 111.

This species belongs in the *indagator* Muesebeck complex, but it seems to differ from *indagator* in having a smoother and more shining mesonotum and a long ovipositor. The holotype female is a very small specimen, only about 2.5 mm long. I have seen only one other specimen that seems to belong here. It is a female from Houston, Delaware, in the United States National Museum collection. It agrees in size and in what appear to be the most essential characters as described in notes made on examination of the type, but the abdomen is darker, completely lacking the pale markings on the first and second tergites of the holotype. Following is a redescription of the type specimen.

Head a little wider than thorax, in dorsal view about 0.6 as long as wide; face minutely shagreened and mat, at narrowest point barely wider than eye height, largely minutely shagreened; malar space a little more than 0.4 as long as eye height; cheeks shagreened and rather mat; temples about 0.6 as wide as eyes, smooth and shiny; antennae of holotype broken, 23 segments remaining, the apical segment a little broader than long (the female from Houston, Delaware, has 28-segmented antennae, with some of the preapical segments of the flagellum at least as wide as long).

Mesoscutum largely smooth, with some minute setigerous punctures; notauli sharply impressed, finely foveolate; propodeum largely granulose; side of pronotum granulose or finely rugulose; mesopleuron smooth and shiny, the longitudinal furrow nearly straight and finely foveolate; metapleuron finely shagreened, somewhat rugulose at lower margin. Hind coxa shagreened; inner calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa; nervulus very slightly postfurcal; hind wing about 5 times as long as wide; lower abscissa of basella much longer than nervellus, a little more than half as long as mediella and more than half as long as maximum width of hind wing.

Abdomen slender; first tergite about 1.5 times as long as wide at apex, its surface minutely granulose, the dorsal keels not distinct; second tergite nearly as long as wide at base, finely shagreened; third tergite shagreened basally; remainder of abdomen smooth and polished; ovipositor sheath about 1.4 times as long as abdomen.

Black; antennae yellow, darkened apically; palpi piceous; tegulae yellow; wings faintly smoky; legs yellow, the hind coxae slightly darkened at bases above, also apices of hind femora and of hind tibiae and the hind tarsi more or less darkened; abdomen with apical corners of first tergite yellowish and lateral margins of second tergite more or less yellowish.

HOLOTYPE.—In the Quebec Provincial Museum collection, Laval University, Sainte Foy, Quebec.

DISTRIBUTION.—The holotype is from Cap Rouge, Quebec.

Orgilus detectiformis Viereck

FIGURES 17, 50

Orgilus detectiformis Viereck, 1917, p. 226.

Although the holotype is a male I believe I have correctly identified the female. The male paratype is a different, apparently undescribed, species. *Orgilus detectiformis* somewhat resembles *elasmopalpi*, new species, but may be distinguished from it as indicated in the description of that species. It seems to be even more similar to *boharti*, new species, from which it differs principally in the sculpture of the head and

mesopleuron and in certain other details mentioned in the description of *boharti*.

FEMALE.—Length around 4 mm. Head barely or not wider than thorax, in dorsal view about 0.55 as long as broad, weakly excavated behind; face about 1.25 times as wide as eye height, weakly but closely punctate, finely granulose or rugulose on upper third; malar space longer than clypeus and half as long as eye height, finely granulose and subopaque like the cheeks; temples receding a little, about 0.8 as wide as eyes, a little shagreened along occipital carina, smooth and polished adjacent to eyes; occipital carina narrowly interrupted medially; ocellular line more than twice as long as diameter of an ocellus; antennae normally 29- to 33-segmented, some of the preapical segments slightly wider than long.

Mesoscutum smooth and shiny, not distinctly punctate; notauli sharply impressed and finely foveolate; propodeum rugulose, with a small polished area each side at base, and the posterior declivity with prominent stubs of longitudinal carinae setting off five apical areas; side of pronotum finely granulose along anterior margin, elsewhere rugulose except along upper margin where it is nearly smooth; mesopleuron smooth except for the foveolate longitudinal furrow and a few scattered punctures below this, especially anteriorly; metapleuron largely rugulose but weakly so in the upper anterior angle. Hind coxa about half as long as hind femur, longitudinally rugulose above toward base, shiny and weakly sculptured on lower part of outer side; hind femur around 4.5 times as long as wide; inner calcarium of hind tibia barely more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as second abscissa; nervulus usually only very slightly postfurcal; hind wing little more than four times as long as wide; lower abscissa of basella usually subequal in length with nervellus, sometimes slightly longer but less than half as long as mediella and only one-third as long as maximum width of hind wing.

Abdomen rather stout; first tergite about 1.5 times as long as wide at apex, irregularly rugulose over most of its surface, the spiracles about twice as far from apex as from base, the basal dorsal keels distinct but weak; second tergite very nearly as long as broad at base, usually parallel-sided, weakly punctate or alutaceous over more or less of its surface but especially

on basal half medially, usually polished laterally and posteriorly; third and following tergites smooth and polished; ovipositor sheath about as long as distance from base of scutellum to end of abdomen.

Black; palpi piceous; clypeus more or less ferruginous; mandibles ferruginous; antennae usually reddish yellow on basal half, darkened apically; legs largely brownish yellow, the hind femur darkened inwardly and along upper edge, also the hind tibia and all the tarsi more or less darkened; tegulae usually yellowish or brownish yellow, the wing bases always pale; wings uniformly slightly infumated; abdomen with first tergite dark, the remainder usually more or less testaceous to ferruginous but sometimes largely brownish to piceous; venter of abdomen largely pale.

MALE.—Essentially like the female but darker; the hind coxae usually largely black; the tegulae usually black or piceous; and the abdomen sometimes entirely black.

HOLOTYPE.—USNM 66256.

DISTRIBUTION.—The holotype is from Connecticut. Specimens I have identified as this species are from Massachusetts, New York, Pennsylvania, Maryland, District of Columbia, North Carolina, Georgia, Indiana, Illinois, Wisconsin, South Dakota, Iowa, Ontario, Quebec, and New Brunswick. Two specimens from Indiana are labeled as having been reared from larvae of *Crambus* sp.

Orgilus detectus Provancher

Orgilus detectus Provancher, 1886, p. 139.

This species seems to be most similar to *solidus*, new species, but it differs in its relatively longer malar space, its shiny and very weakly punctate face and its somewhat longer ovipositor.

FEMALE.—Length about 3.5 mm. Head in dorsal view about 0.6 as long as wide; face only slightly wider than eye height, shiny, with scattered setigerous punctures; malar space about 0.45 as long as eye height and a little longer than clypeus; temples rather strongly receding, smooth and shiny; antennae of holotype 29-segmented, some of the preapical segments quadrate.

Mesoscutum shiny, hairy, indistinctly punctate; propodeum finely rugulose except on the basal third where it is nearly smooth; mesopleuron smooth and shiny, the longitudinal furrow strongly foveolate; metapleuron smooth and shiny on the upper part, changing to rugose below. Hind coxa a little rugulose above

and on upper part of outer side; inner calcarium of hind tibia a little more than half as long as metatarsus. Radial cell on wing margin about as long as stigma; second abscissa of radius on a line with intercubitus; nervulus a little postfurcal; lower abscissa of basella a little longer than nervellus but less than half as long as mediella.

Abdomen moderately stout; first tergite about 0.75 as wide at apex as long, finely rugulose over most of its surface; second tergite about 1.25 times as broad at base as long, confluent punctate on the basal two-thirds, smooth and polished apically and along the lateral margins; remainder of abdomen smooth and polished; ovipositor sheath fully as long as propodeum and abdomen combined.

Black; antennae darkened except for the basal flagellar segments; legs yellowish, the hind coxae black at their bases, the trochanters, femora, and tibiae shaded with brown, the tarsi dark; tegulae blackish, wing bases yellowish; wings slightly infumated.

MALE.—Unknown.

HOLOTYPE.—In the Quebec Provincial Museum collection, which is maintained at Laval University, Sainte Foy, Quebec.

DISTRIBUTION.—Known only from the female holotype, which was taken at Ottawa, Canada. I have seen no other specimen that I could confidently identify as this species.

Orgilus dioryctriae Gahan

FIGURES 12, 33

Orgilus dioryctriae Gahan, 1919, p. 121.

This species is distinguished from related species by its relatively narrow head, nonreceding temples and cheeks, unusually smooth apex of propodeum and black legs.

FEMALE.—Length ranging from 3.5 to 4.5 mm in the available material. Head hardly as wide as thorax at tegulae, in dorsal view about 0.6 as long as wide, strongly excavated behind; occipital carina prominent and narrowly interrupted medially; face 1.25 times as wide as eye height, coarsely punctate to rugulose punctate; clypeus with scattered punctures; malar space longer than clypeus and at least 0.45 as long as eye height; cheeks broad, flaring, shagreened; temples largely smooth, 0.75 as wide as eyes, flat and not at all receding, the occipital carina on each side in line

with outer eye margin; ocellular line about 1.5 times as long as diameter of an ocellus; antennae 30- to 32-segmented in the available specimens, some segments in apical fifth of flagellum as broad as long.

Thorax stout; notauli narrow, finely foveolate, and meeting in a very acute angle just before apex of scutum; mesoscutum very shiny and with numerous minute and shallow punctures, the lateral lobes nearly smooth apically and laterally; disc of scutellum minutely punctate; propodeum finely rugulose punctate, narrowly smooth at base and broadly smooth apically, especially at the middle, the apical smooth area sometimes extending forward medially to the middle of the propodeum and occasionally even reaching the transverse basal smooth area, the usual stubs of carinae that arise at the posterior margin and set of several apical areas very weak, the median ones wanting; mesosulcus very fine and shallow, finely punctate; side of pronotum largely rugulose but broadly smooth along upper margin; mesopleuron smooth and polished, the longitudinal furrow slightly sinuate and finely foveolate; metapleuron rugulose along the lower posterior margin, smooth and shiny elsewhere although often with some very shallow punctures. Hind coxa finely rugulose above toward base, about 0.6 as long as hind femur, which is hardly four times as long as broad; longer calcarium of hind tibia more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma; metacarpus extending barely beyond apex of radial cell; second abscissa of radius on a line with intercubitus; third abscissa of cubitus at least as long as second abscissa; nervulus usually postfurcal by about half its length; hind wing about 4.2 times as long as wide; lower abscissa of basella subequal in length with nervellus or slightly longer, much less than half as long as mediella.

Abdomen rather stout; first tergite usually less than 1.3 times as long as broad at apex, finely rugulose, smooth medially at base and apex; second tergite usually about 1.2 times as broad at base as long, largely smooth, sometimes weakly punctate each side of the middle on basal two-thirds, sometimes only more or less shagreened; second suture finely impressed; third and following tergites smooth and polished; ovipositor sheath about as long as thorax and abdomen combined.

Black; basal segments of antennal flagellum brownish, at least below; clypeus entirely black; mandibles testaceous; palpi dark; legs black or blackish, the apices

of the forefemora and the foretibiae brownish yellow; tegulae and wing bases black; wings subhyaline.

MALE.—The single available male is even darker than the females, the antennae, mandibles, and foretibiae being entirely black.

HOLOTYPE.—USNM 21620.

DISTRIBUTION.—The type-series was reared from *Dioryctria xanthaenobares* Dyar at Patrick's Creek, California. I have also seen 2 females from Sequoia National Park, California, recorded as having been reared from *Coleotechnites milleri* (Busck) on lodge-pole pine, 21 July 1953, by B. E. Wichman and a single female from Virginia Dale, Colorado, labeled as reared from *Choristoneura lambertiana ponderosana* Obratzov, in July 1965. The specimens from *C. milleri* have the second tergite more strongly and more completely sculptured than the other available specimens but they seem to be the same species.

Orgilus discrepans, new species

FIGURE 25

Structurally this is extremely similar to *lateralis* (Cresson), although the thoracic pleura and hind coxae are smoother than they usually are in *lateralis*, and the inner calcarium of the hind tibia is less than half as long as the metatarsus; but it is much darker than *lateralis*, the thorax and abdomen being entirely black and the hind coxae being black, at least basally.

FEMALE.—Length about 3 mm. Head barely wider than thorax, in dorsal view twice as broad as long; face smooth and shiny, with only a little extremely weak punctation, its width just about equal to the eye height; anterior tentorial pits on a line with lower eye margins; malar space less than one-third as long as eye height and shorter than longest segment of maxillary palpus; cheeks and lower temples finely shagreened and dull; temples gradually receding, just about half as wide as eyes; upper temples, vertex, and frons smooth and shiny; occipital carina complete; ocellular line just about twice as long as diameter of an ocellus; antennae, in the only known female in which they are complete, 27-segmented, even the shortest flagellar segments a little longer than broad, the apical segment with a very short terminal spicule.

Mesoscutum very smooth and shiny, at most with some shallow punctures on middle lobe and adjacent to notauli on lateral lobes, in the holotype almost impunctate; propodeum weakly rugulose punctate, stubs

of apical carinae indistinct; side of pronotum, mesopleuron and metapleuron smooth and very shiny, the mesopleural furrow strongly sinuate and finely foveolate. Hind coxa a little roughened at base above, about two-thirds as long as hind femur, which is less than four times as long as broad; longer calcarium of hind tibia less than half as long as metatarsus; tarsal claw with a prominent subbasal tooth. Stigma about three-fourths as long as radial cell on wing margin; second abscissa of radius not nearly on a line with intercubitus; third abscissa of cubitus punctiform; nervulus postfurcal, usually by about half its length; hind wing less than five times as long as wide; lower abscissa of basella fully half as long as mediella and at least half as long as maximum width of hind wing.

Abdomen very shiny; first tergite at least one and one-half times as long as broad at apex, finely longitudinally rugulose, the distance from the spiracles to the base about equal to the distance between them; second tergite about 1.3 times as broad at base as long, largely rugulose punctate but smooth laterally and at apex, the suturiform articulation sharply impressed; third tergite finely rugulose punctate in a transverse band a little beyond base, the extreme base, and the apex broadly, smooth and polished; the following tergites smooth and polished or with a few weak punctures; ovipositor sheath about as long as the distance from the tegulae to the end of the abdomen.

Black; head yellowish brown, with frons, vertex, and occiput more or less darkened; papli pale; antennae dark brown, the scape and sometimes more or less of the flagellum paler beneath; tegulae and wing bases pale yellow; wings clear hyaline; legs yellow, the hind coxae blackish except apically, the hind femora at apices and the tarsi somewhat darkened; the hind tibia with a whitish annulus at base, otherwise brownish but with the apex darkened and an indefinite dark spot at the end of the basal white annulus.

MALE.—Like the female in most essential details but with the second and following tergites entirely smooth.

HOLOTYPE.—USNM 70157.

DISTRIBUTION.—Known only from the type-series that consists of the female holotype from Mormon Lake, Arizona, 7000 feet, taken in July 1956 by F. Werner, and a female paratype and a male paratype collected in the Graham Mts., Arizona, 7500 feet, 8 July 1957.

Orgilus disparilis, new species

FIGURE 36

From *immarginatus*, new species, which this species resembles in its unusually large eyes and in the fine granulate sculpture of the vertex and temples, it is immediately distinguished by having the occiput carinately margined at the sides and by its coriaceous meso- and metapleura.

FEMALE.—Length about 4 mm. Head a little wider than thorax, wider than high in front view, twice as wide as long in dorsal view, and nearly flat behind; face very finely punctate, its width less than eye height; clypeus not separated from face medially; anterior tentorial pits just above level of lower eye margins; malar space only half as long as longest segment of maxillary palpus and hardly one-sixth the eye height; temples very narrow, strongly receding and, together with cheeks and vertex, finely granulate and mat; occipital carina weak and incomplete but distinct at the sides, ocellular line barely longer than diameter of an ocellus; antennae of holotype incomplete, those of a female paratype 38-segmented, conspicuously thinner apically, all flagellar segments longer than broad, the terminal segment provided with a short stout apical spicule.

Mesoscutum without a sculptured area at junction of notauli, which are weakly foveolate or punctate; scutellum flat; propodeum virtually horizontal, only slightly declivous at apex, finely granulate and mat; side of pronotum minutely granulate, very weakly so above the impression; mesopleuron and metapleuron coriaceous, the former weakly so and shining, the latter rather dull; the longitudinal furrow of mesopleuron straight, not distinctly foveolate. Hind coxa at least 0.75 as long as hind femur, finely shagreened; hind femur somewhat compressed and only about three times as long as broad; inner spur of hind tibia much more than half as long as metatarsus; tarsal claw without a subbasal tooth. Stigma only 0.75 as long as radial cell on wing margin; stub of third abscissa of cubitus not more than one-third as long as second abscissa; nervulus postfurcal by nearly half its length; hind wing about 4.3 times as long as wide; lower abscissa of basella shorter than or subequal to nervellus and much less than half as long as mediella.

Abdomen hardly as long as thorax; first tergite only a little longer than broad at apex, delicately coriaceous; second tergite twice as broad as long and,

together with the third, sculptured like the first although even more weakly; suture between second and third tergites distinct; fourth and following tergites smooth; ovipositor sheath about as long as abdomen, conspicuously hairy.

Ferruginous; palpi yellow; stemmaticum black; legs concolorous with the body except that the hind tibia is pale yellow at extreme base and has a dark subbasal annulus, and the hind tarsus is somewhat darkened; tegulae and wing bases testaceous to ferruginous; wings clear hyaline; apical abdominal tergites more or less darkened.

MALE.—Like the female in essential particulars; antennae 37-segmented.

HOLOTYPE.—USNM 70158.

DISTRIBUTION.—Known only from the type-series comprised of the following: Holotype female, Gainesville, Florida, 13 May 1962, F. W. Mead; paratype male, Levy County, Florida, 6 May 1955, F. W. Mead; paratype female, Washington, D.C., 24 June 1915, V. A. Roberts, and a second paratype female, Lyme, Connecticut, 25 July 1918, W. S. Fisher.

Orgilus dissidens, new species

From *tersus*, new species, which it closely resembles structurally, this form may be distinguished at once by its black abdomen, and from *dolosus*, new species, which is even more similar, by its more slender abdomen and smoother mesonotum and mesopleuron.

FEMALE.—Length 3.5 mm. Head a little wider than thorax, in dorsal view 0.65 as long as wide; face 1.2 times as wide as eye height, finely punctate on an alutaceous ground; malar space longer than clypeus and fully half as long as eye height, granulate and dull; cheeks also finely granulate and dull; temples about 0.8 as wide as eyes, slightly receding, smooth and polished adjacent to eyes but broadly shagreened toward occipital margins; occipital carina narrowly interrupted medially; ocelli small, the ocellular line three times as long as diameter of an ocellus; vertex smooth and shiny; antennae of holotype 31-segmented, some segments in apical third of flagellum as wide as long.

Mesoscutum shiny, and smooth except for some very shallow punctures on the middle lobe and a few on the lateral lobes near the notauli; notauli sharply impressed and foveolate; disc of scutellum convex, smooth, and shiny; propodeum dorsally rugulose ex-

cept for a smooth and polished transverse area each side of the middle at base, the posterior declivity largely shiny and with rather prominent stubs of longitudinal carinae setting off the apical areas; side of pronotum closely rugulose; mesopleuron smooth and polished, the longitudinal furrow rather coarsely foveolate; metapleuron strongly rugose on posterior half, finely granulose and subopaque in the basal angle. Hind coxa rugulose on dorsal edge, finely granulose or shagreened and somewhat dull on upper part of outer side; hind femur nearly five times as long as wide but not quite twice as long as hind coxa; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma, the latter not angled at origin of radius; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long as second abscissa; nervulus a little postfurcal; hind wing about 4.5 times as long as wide; lower abscissa of basella slightly longer than nervellus but less than half as long as mediella.

Abdomen slender, narrower than thorax, first tergite about 1.5 times as long as wide at apex, closely and finely longitudinally rugulose, the spiracles twice as far from apex as from base, the dorsal keels not developed; second tergite about as long as broad at base, parallel-sided, finely longitudinally rugulose punctate on basal two-thirds except for the smooth and shiny lateral margins; remainder of abdomen smooth and shiny; the second suture very weak; ovipositor sheath about as long as propodeum and abdomen combined.

Black; clypeus reddish yellow anteriorly; mandibles yellow; palpi rather piceous; scape of antenna largely dark but light brown below; flagellum brownish yellow above as well as below on at least basal half, darkened apically; tegulae and wing bases yellow, wings slightly infumated; legs yellowish brown, the hind coxae basally and the hind tibiae apically a little darkened; basal abdominal sternites yellow.

MALE.—Unknown.

HOLOTYPE.—USNM 70159.

DISTRIBUTION.—Known only from the type-series consisting of three females: The holotype from Mt. Katahdin, Maine, 5215 feet, collected 19 August 1902; one paratype taken near Ithaca, New York, 14 July 1951, by J. C. Martin, and a second paratype collected at Chatterton, Ontario, 6 June 1956, by Martin.

Orgilus dolosus, new species

Although very similar to *dissidens*, new species, this species may be readily distinguished by its stouter abdomen, with the second tergite wider than long and not parallel-sided, and by the much stronger sculpture of the mesonotum and mesopleuron.

FEMALE.—Length about 3.5 mm. Head very slightly wider than thorax, in dorsal view 0.6 as long as wide; face 1.25 times as wide as eye height, closely and rather strongly punctate and subopaque; clypeus more sparsely punctate and shiny; malar space longer than clypeus and fully half as long as eye height, finely granulose and dull; cheeks strongly shagreened and mat; temples about 0.75 as wide as eyes, smooth and polished adjacent to eyes, shagreened along occipital carina; vertex finely granulose and dull between lateral ocelli and eyes; occipital carina narrowly interrupted medially; ocellocular line about two and one-half times as long as diameter of an ocellus; antennae of holotype 32-segmented, a few of the preapical segments of flagellum as wide as long.

Mesoscutum with the middle lobe finely rugulose punctate and the spaces between the large, elongate and shallow punctures more or less shagreened, the lateral lobes similarly but much more weakly sculptured; disc of scutellum with shallow punctures and faint shagreening between the punctures; the propodeum rugose, the stubs of the longitudinal carinae that arise from the posterior margin rather prominent and setting off the apical areas; side of pronotum strongly rugulose over most of its surface, granulose on a narrowly triangular area at anterior margin and very weakly rugulose and shiny just below upper margin; mesopleuron with the longitudinal furrow coarsely foveolate, the surface below it rugulose punctate and an area below the tegula strongly rugose, also an elongate area beginning at the posterior margin and extending for a distance along the upper edge of the longitudinal furrow finely aciculate; metapleuron largely rugose, very coarsely so below and posteriorly, and coarsely granulose and dull in the anterior upper angle. Hind coxa strongly granulose and dull on outer and inner sides, weakly rugulose on dorsal edge; hind femur twice as long as hind coxa and about 4.8 times as long as wide; inner calcarium of hind tibia barely more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin fully as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as

long as second abscissa; nervulus postfurcal by more than one-third its length; hind wing a little more than four times as long as wide; lower abscissa of basella less than half as long as mediella.

Abdomen rather stout, at widest point as broad as thorax; first tergite about 0.8 as wide at apex as long and closely, finely rugulose, the spiracles less than twice as far from apex as from base and about as far from each other as from base; second tergite about 1.2 times as broad at base as long, finely rugulose punctate on basal two-thirds except for broad polished lateral margins and a polished median triangular area at base, the apex of the tergite broadly polished; third and following tergites smooth and polished; second suture fine but sharply impressed; ovipositor sheath as long as the distance from the base of the scutellum to the apex of the abdomen.

Black; clypeus ferruginous anteriorly; mandibles yellow; palpi piceous; scape of antenna blackish above and testaceous below, flagellum testaceous on more than basal half below, on less than that above, remainder darkened; legs testaceous, hind coxae black except at apices, hind femora a little darkened on inner side and the tarsi very slightly darkened; tegulae and wing bases yellow; wings slightly infumated; basal abdominal sternites yellow.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female that was collected by J. C. Martin, 22 May 1956, at Chatterton, Ontario.

Orgilus dreisbachi, new species

FIGURE 48

This species is similar to *rostratus*, new species, but it seems to be distinct, differing especially in having hyaline or virtually hyaline wings and a definitely shorter malar space.

FEMALE.—Length about 3.5 mm. Head not wider than thorax at tegulae, strongly excavated behind, rostriform, in front view higher than wide, in dorsal view nearly twice as broad as long; temples rounded, hardly receding, a little more than half as wide as eyes; occiput finely carinately margined at the sides; anterior tentorial pits large, well below the level of the lower eye margins; malar space hardly half as long as eye height; maxillary palpi shorter than height of head; exposed part of galea broad and about as long as the

longest segment of the maxillary palpus; straight-line width of face just about equal to eye height; face finely and closely punctate medially, weakly so laterally; malar space and cheeks smooth and shiny; ocellocular line hardly twice as long as diameter of an ocellus; antennae shorter than the body, 24- to 26-segmented in the known specimens, several of the preapical flagellar segments a little broader than long.

Mesoscutum with very shallow punctures and more sparsely hairy than in *rostratus*; notauli sharply impressed and finely foveolate; disc of scutellum polished, with only a few weak punctures; propodeum weakly declivous, finely rugulose basally, more coarsely so apically; side of pronotum rugose in the impression, nearly smooth above it and granulose below; mesopleuron weakly punctate below the foveate longitudinal furrow, smooth and polished above it; metapleuron finely punctate anteriorly above, coarsely rugulose punctate posteriorly below. Hind coxa largely smooth except at base above and nearly two-thirds as long as hind femur, which is barely three times as long as wide; longer calcarium of hind tibia fully half as long as metatarsus; tarsal claws simple. Stigma slightly shorter than radial cell on wing margin; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa, which is less than half as long as intercubitus; nervulus interstitial or very weakly postfurcal; hind wing slightly less than five times as long as wide; lower abscissa of basella longer than nervellus but a little less than half as long as mediella.

Abdomen a little longer, and in its widest part slightly wider, than thorax; first tergite about as broad at apex as long and with two prominent dorsal keels on basal half, the area between these smooth at base and rugulose apically, the parts laterad of the keels rugulose to granulose; second tergite more than twice as broad as long, entirely finely confluent punctate and more or less dull; second suture sharply impressed but not punctate; third, fourth, and fifth tergites sculptured like the second but more finely, their apices narrowly smooth; ovipositor sheath a little shorter than abdomen, the ovipositor decurved at apex.

Head brownish yellow; frons, vertex, and occiput black; palpi piceous; antennae brownish black, the scapes pale below; thorax brownish yellow varied with black, especially on mesosternum, pleura, and propodeum; sometimes thorax largely black; legs, including all coxae, brownish yellow, apices of hind

femora and of hind tibiae and all the tarsi more or less darkened; tegulae piceous or black; wings hyaline; abdomen brownish yellow, the first, second, and third tergites blackish medially.

MALE.—Antennae more slender than in the female and 26- or 27-segmented in the available specimens.

HOLOTYPE.—USNM 70160.

DISTRIBUTION.—Known only from the short type-series that consists of the following: The holotype female and a paratype male collected at Thedford, Nebraska, 31 August 1960, by R. R. Dreisbach; one male, Alfalfa County, Oklahoma, 10 September 1949, S. Coppock, Jr., and one male, Springerville, Arizona, 25 July 1956, "Gerhardt and Butler." The species is named for the late R. R. Dreisbach, of Midland, Michigan, for many years a tireless collector of Hymenoptera, particularly in his home state.

Orgilus ejuncidus, new species

FIGURE 51

This species is distinguished by its very slender thorax and abdomen, its unusually narrow hind wings, its nearly horizontal propodeum and its rather strongly infumated wings. It is rather strikingly different from all other known Nearctic species.

FEMALE.—Length about 4 mm. Head noticeably broader than thorax and in dorsal view 0.7 as long as broad; face strongly convex, its straight-line width barely greater than eye height, shiny, rather smooth medially, finely shagreened laterally and with minute setigerous punctures; clypeus smooth and shiny, with very small scattered punctures; malar space about 0.4 as long as eye height; cheeks and temples smooth and shiny, the latter rounded and slightly receding and at mideye point more than three-fourths as wide as eyes; occiput carinately margined only at the sides; ocellular line twice as long as diameter of an ocellus; antennae 35-segmented in the holotype, some segments in apical fourth of flagellum nearly as wide as long.

Thorax much deeper than wide; mesoscutum much longer than wide, smooth and shiny; notauli unusually shallow and finely foveolate, meeting well before apex of scutum, the scutum not impressed or sculptured at the junction of the notauli; disc of scutellum rather elongate, smooth and shiny; propodeum horizontal, a little declivous only at extreme apex, rugulose, with a small polished area each side of the middle at base; side of pronotum largely rugulose; mesopleuron

smooth and shiny and with a strongly foveolate longitudinal furrow; metapleuron rugulose, weakly so in the anterior upper angle. Hind coxa at least 0.75 as long as hind femur, the latter four times as long as wide; inner calcarium of hind tibia hardly half as long as metatarsus; tarsal claws simple. Wings unusually long and narrow, and densely hairy; radial cell on wing margin very slightly longer than stigma; second abscissa of radius on a line with intercubitus; nervulus slightly postfurcal; stub of third abscissa of cubitus as long as second abscissa; hind wing more than six times as long as wide; lower abscissa of basella twice as long as nervellus, more than half as long as mediella and three-fourths as long as maximum width of hind wing.

First tergite of abdomen about twice as long as wide at apex, smooth and polished basally, finely longitudinally rugulose on apical two-thirds, the spiracles nearer to each other than to base of segment, the dorsal keels wanting; second tergite clearly longer than broad at base, finely rugulose except narrowly at apex; third tergite largely and the following tergites entirely smooth and shiny, the third with only a little weak shagreening toward base; second suture fine but sharp; ovipositor sheath a little shorter than abdomen, the ovipositor strongly decurved at apex.

Head and thorax black; antennae blackish, the flagellum dark brown beneath toward base; palpi and mandibles black; tegulae and wing bases black; wings rather strongly infumated, a little more strongly apically than basally; legs reddish yellow, with only extreme apices of hind femora, bases and apices of hind tibiae, and all the tarsi darkened; abdomen with the first three tergites testaceous to ferruginous, the following black.

MALE.—Unknown.

HOLOTYPE.—In the Cornell University collection.

DISTRIBUTION.—Known only from the type-series comprising three females (one the holotype) collected at Casco, Maine, early in August 1944, by J. C. Bradley.

Orgilus elasmopalpi, new species

FIGURE 53

Although this species is very similar to *detectiformis* Viereck, it may be distinguished by the uniform, delicate sculpture of the hind coxae, the smoother second tergite, the largely smooth metapleuron, the usually

paler legs and palpi, and the nearly hyaline wings.

FEMALE.—Length around 3.7 mm. Head barely wider than thorax, in front view subtriangular and broader than high, in dorsal view nearly twice as broad as long; face about 1.3 times as wide as eye height, punctate above, smooth and shiny below; malar space longer than clypeus and slightly more than half as long as eye height; cheeks not bulging, finely granulose; temples gradually receding, at mideye point about 0.85 as wide as eyes; ocellular line more than twice as long as diameter of an ocellus; occipital carina broadly interrupted medially; antenna 30- or 32-segmented in the specimens examined, the 10 or 12 segments before the last barely longer than broad.

Mesoscutum smooth and shiny, with only a few weak punctures on the middle lobe; propodeum rugose, with a subtriangular smooth area each side of the middle at base, and with prominent stubs of longitudinal carinae extending forward from the posterior margin and setting off five apical areas; dorsal face of propodeum nearly horizontal and much longer than the declivous posterior face; side of pronotum largely rugulose punctate, granulose and mat anteriorly below; mesopleuron smooth and polished, the longitudinal furrow finely foveolate; metapleuron largely smooth and shiny but rugulose at the lower posterior margin. Hind coxa about half as long as hind femur, uniformly granulose or shagreened and subopaque on outer side and above; hind femur nearly five times as long as wide; longer calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Stigma narrow and slightly shorter than radial cell on wing margin; second abscissa of radius on a line with intercubitus; stub of third abscissa of radius at least as long as second abscissa; nervulus interstitial or virtually so; hind wing about five times as long as wide; lower abscissa of basella distinctly longer than nervellus but less than half as long as mediella or maximum width of hind wing.

First abdominal tergite nearly 1.5 times as long as wide at apex, finely rugulose over most of its surface; second tergite very slightly broader at base than long (usually about 0.9 as long as broad), smooth and polished, at most with a little faint shagreening each side of middle basally; the following tergites also smooth, the second suture very weak; ovipositor sheath about as long as the distance from base of scutellum to end of abdomen.

Black; palpi yellowish or brownish yellow; clypeus

at lower margin and the mandibles reddish yellow; scape below and basal half of flagellum brownish yellow, remainder of antenna darkened; tegulae and wing bases yellow; wings hyaline or subhyaline; legs, including all coxae, reddish yellow; apices of hind femora and of hind tibiae a little darkened; abdomen reddish yellow, the first tergite broadly blackish medially, the apical tergites usually brownish.

MALE.—Unknown.

HOLOTYPE.—USNM 70416.

DISTRIBUTION.—The type-series contains the following female specimens reared from *Elasmopalpus lignosellus* Zeller: 6 (one the holotype), Gainesville, Florida, 1965; 1 Gainesville, Florida, 11 September 1916, R. N. Wilson; 14, Tifton, Georgia (1 in 1935, 1 in 1936, 12 in 1962), D. B. Leuck; 1, Athens, Georgia, November 1899; 1, "Georgia," 23 July 1957, M. Dupree, and 1, Burke County, Georgia, 13 August 1944, T. L. Bissell. In addition the type-series includes female specimens as follows: 1, Locust Grove, Georgia, 8 October 1937, P. W. Fattig; 1, from a green cotton boll, Brownsville, Texas, 12 July 1956; 1, Brownsville, Texas, November 1953, J. M. McGough; 1, recorded as reared from *Diatraea saccharalis* (Fabricius) in corn, Columbia, South Carolina, 8 September 1881; 1, Highlands, North Carolina, 24 August 1957, L. A. Kelton; 1, Highlands, North Carolina 9 May 1957, W. R. M. Mason, and 1, Cedar Mt., North Carolina, 4 October 1941, Henry Townes. The paratype reared from *E. lignosellus* at Gainesville, Florida, in 1916 by R. N. Wilson is the specimen mentioned by Chittenden (1900, p. 21) as having been identified by Ashmead as "*Orgilus* (*Microgaster*) *mellipes* Say."

Orgilus erythropus, new species

Although this species very closely resembles *validus*, new species, it seems to be distinct. The metapleuron is less completely rugulose and the frons is transversely striate rather than irregularly rugulose as in *validus*; also, the second tergite is a little punctate basally.

FEMALE.—Length about 4.5 mm. Head about as wide as thorax and in dorsal view 0.6 as long as wide; face 1.2 times as wide as eye height, only slightly convex, shiny but closely punctate, confluent so on upper third; clypeus closely punctate; malar space half as long as eye height, shagreened; cheeks strongly shagreened and mat; temples 0.8 as wide as eyes, distinctly receding, smooth and polished adjacent to eyes, sha-

greened near occipital carina, which is broadly interrupted medially; frons transversely striate immediately above antennal foramina; ocellular line less than twice as long as diameter of an ocellus; a few punctures on back of head below ocelli; antennae of holotype 32-segmented, some segments in the apical fourth as wide as long.

Mesoscutum shiny, the middle lobe with shallow setigerous punctures; notauli strongly foveolate; disc of scutellum convex, smooth and shiny; propodeum coarsely rugose, the dorsal face short, the posterior declivity abrupt and long, the apical stubs of the longitudinal carinae that arise from the posterior margin very prominent and setting off large apical areas that are roughened; side of pronotum closely rugulose; mesopleuron smooth and polished above the longitudinal furrow except for a rugulose area in the upper anterior angle, the furrow coarsely, rather irregularly foveate, the area below it finely rugulose punctate; metapleuron rugulose on lower half, smooth and shiny in upper angle. Hind coxa rugulose above and more finely so on outer side; hind femur twice as long as hind coxa and about five times as long as wide; inner calcarium of hind tibia very slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as second abscissa; nervulus a little postfurcal; hind wing about four times as long as wide; lower abscissa of basella about as long as nervellus and about one-third as long as mediella or maximum width of hind wing.

Abdomen stout, widest on third segment; first tergite 1.2 times as long as wide at apex, closely rugulose except at base and medially at apex, where it is smooth and polished, the dorsal keels not developed, the spiracles about twice as far from apex as from base; second tergite 1.2 times as wide at base as long, broadening conspicuously caudad, and largely smooth and polished, only weakly punctate medially on basal third; second suture faint; third and following tergites smooth and polished; ovipositor sheath as long as propodeum and abdomen combined.

Black; clypeus anteriorly and the mandibles ferruginous; palpi piceous; antennae yellowish below on basal half, brown apically and above; legs reddish yellow except the apical tarsal segments which are a little darkened; tegulae blackish, wing bases yellow; wings slightly infumated, more strongly so apically

than basally; conspicuous reddish spots in the apical corners of the first and second tergites.

MALE.—Unknown.

HOLOTYPE.—USNM 70161.

DISTRIBUTION.—Known only from the holotype female taken at Corinne, Utah, 8 August 1929, by G. F. Knowlton and M. F. Bowen.

Orgilus exilis, new species

In its very slender femora this species resembles *femorialis*, but otherwise it is very different. The face is relatively much narrower, the ovipositor is considerably shorter, the dorsal keels of the first tergite are lacking, the second tergite is relatively broader, and the tegulae are black.

FEMALE.—Length 3 mm. Head distinctly wider than thorax, in dorsal view 1.8 times as wide as long; face barely wider than eye height (in ratio of 60:57) and very shiny, a little rugulose just below antennae but largely weakly punctate; clypeus with only a few very weak minute punctures; malar space virtually half as long as eye height (in ratio of 28:57), granulate and dull; cheeks shagreened and subopaque; temples 0.6 as wide as eye, smooth and polished; ocellular line a little more than twice as long as diameter of an ocellus; antenna of holotype 28-segmented, some of the segments in the apical third at least as broad as long.

Mesoscutum very shiny, but lateral lobes, as well as median lobe, covered with very shallow punctures; disc of scutellum smooth and shiny; propodeum finely rugulose, the stubs of carinae arising from the posterior margin rather prominent and long, at least the two median ones which define the median apical area; side of pronotum rugulose in the impression, narrowly smooth along upper margin and nearly smooth and very shiny on the area in front of the impression; mesopleuron smooth and polished, the longitudinal furrow foveolate; metapleuron smooth and very shiny on at least the anterior half, finely rugulose posteriorly. Hind coxa largely smooth and shiny but with a little weak sculpture basally above and on outer side; hind femur twice as long as hind coxa and virtually six times as long as wide; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Stigma slightly longer than radial cell on wing margin; nervulus postfurcal by nearly half its length; hind wing 4.5 times as long as wide; lower abscissa of

basella much longer than nervellus but less than half as long as mediella or maximum width of hind wing.

Abdomen slender, much narrower than thorax; first tergite 1.25 times as long as wide at apex, the spiracles three times as far from apex as from base, basal part of the tergite completely smooth and polished, with no suggestion of the dorsal keels, the tergite also narrowly smooth and polished across apex, the area between these polished bands finely longitudinally rugulose; second tergite parallel-sided, a little broader at base than long (in ratio of 70:60), smooth and polished with only a little faint sculpture medially at base; the following tergites smooth and polished, the suture between second and third tergites faint; ovipositor sheath slightly longer than propodeum and abdomen combined.

Black; clypeus entirely black; antennae dark brown; tegulae black, wing bases piceous; wings hyaline, radiella and cubitella of hind wings not at all pigmented; legs brownish yellow; hind coxae blackish at bases, hind tibiae slightly darkened apically, and the tarsi also darkened; abdomen black above and below.

MALE.—Unknown.

HOLOTYPE.—In the collection of R. D. Shenefelt, University of Wisconsin.

DISTRIBUTION.—Known only from the holotype female collected 15 June 1938, near Dufur, Oregon, by K. Gray and J. Schuh.

Orgilus fallax, new species

This species is very similar to *frigidus*, new species, but it may be distinguished by its somewhat longer ovipositor, relatively broader hind wings, barely postfurcal nervellus, smoother first tergite and relatively longer second tergite.

FEMALE.—Length about 4 mm. Head in dorsal view about 0.6 as long as wide, not wider than thorax at tegulae; face about 1.2 times as wide as eye height, strongly convex and closely and finely punctate, the interspaces on upper part of face shagreened; malar space half as long as eye height, finely granulose and mat; clypeus weakly punctate and shiny; cheeks shagreened and mat; temples 0.85 as wide as eyes, only slightly receding, smooth and polished adjacent to eyes, finely and rather broadly shagreened along occipital carina, which is broadly interrupted medially; vertex and back of head smooth and shiny; ocellular line barely twice as long as diameter of an ocellus; antennae

of holotype 30-segmented, none of the flagellar segments wider than long, the five preceding the apical segment distinctly longer than wide.

Thorax rather stout; mesoscutum very smooth and shiny, but the middle lobe with some very shallow and minute punctures; notauli sharp and very finely foveolate, meeting much before apex of scutum, a few punctures behind their junction; disc of scutellum convex and shiny; propodeum rugose, a small transverse, smooth and polished area each side of the middle at extreme base, the stubs of the longitudinal carinae that arise from the posterior margin rather prominent and extending forward at least one-third the way toward base, the lateral apical areas impressed and smooth and shiny; side of pronotum finely rugulose in the impression, granulose along anterior margin and weakly shagreened and shiny along upper margin; mesopleuron smooth and polished, the longitudinal furrow finely foveolate, no punctures or other sculpture below the furrow and the surface in the upper anterior angle almost entirely smooth; metapleuron rugulose but weakly so in the upper anterior angle. Hind coxa strongly rugulose on upper edge and on upper part of outer side; hind femur twice as long as hind coxa and about five times as long as broad; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma, the latter very narrow; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervellus barely postfurcal; hind wing 4.3 times as long as wide; lower abscissa of basella about as long as nervellus and much less than half as long as mediella.

Abdomen stout, at widest point nearly as wide as thorax; first tergite 0.8 as wide at apex as long, closely rugulose punctate except on basal third where it is smooth and shiny, the dorsal keels not developed, the spiracles about twice as far from each other as from the base of the segment; second tergite about 1.15 times as broad at base as long, broadening slightly caudad, and finely confluent punctate except narrowly at apex and along lateral margins; second suture fine but sharply impressed; third tergite with a small transverse area of weak punctures a little beyond base, otherwise smooth and polished like the following; ovipositor sheath about as long as propodeum and abdomen combined.

Black; palpi blackish; clypeus on lower third and

the mandibles reddish yellow; trochanters not darkened; hind coxae blackish, especially above and toward bases; hind femora darkened above and inwardly; hind tibiae apically and all the tarsi more or less darkened; tegulae black, wing bases dark brown; wings a little infumated; abdomen black above, the apical margin of third tergite a little rufous; venter piceous.

MALE.—Unknown.

HOLOTYPE.—USNM 70162.

DISTRIBUTION.—Known only from the holotype female from Mt. Laguna, San Diego County, California, collected 23 May 1959, by J. Powell.

Orgilus femoralis, new species

FIGURE 13

In habitus and in some details this species resembles *mundus*, new species; but it may be readily distinguished by its unusually slender hind femora, its smooth second tergite and its yellow tegulae and palpi.

FEMALE.—Length about 4 mm. Head about 1.2 times as wide as thorax, in dorsal view 1.5 times as wide as long; face about 1.25 times as wide as eye height, very shiny, more or less roughened just below antennae, otherwise smooth and shiny with only indistinct punctures; clypeus shiny, with a few weak punctures; malar space shagreened and mat, much longer than clypeus and 0.57 as long as eye height; cheeks finely shagreened; temples more than three-fourths as wide as eyes, gradually receding, smooth, and shiny except along posterior margins where they are a little shagreened; occipital carina narrowly interrupted at the middle; frons smooth and polished except for a small shagreened area adjacent to each eye; vertex polished; both ocellular line and postocellar line more than twice as long as diameter of an ocellus; antennae of the two known specimens incomplete.

Thorax slender; mesoscutum smooth and shiny, the middle lobe with a few weak punctures; notauli sharp, deep, finely foveolate; disc of scutellum convex, longer than wide, smooth and polished; propodeum rugulose, with a small, smooth and polished area each side of the middle at base, and with the apical areas set off by rather poorly developed stubs of the carinae that arise from the posterior margin of the propodeum; side of pronotum closely rugulose; mesopleuron smooth and polished, the longitudinal furrow nearly straight and

finely foveolate; metapleuron largely closely rugulose, only smooth in the upper anterior angle. Hind coxa rugulose at base above, punctate and shiny on outer side; hind femur twice as long as hind coxa and very nearly six times as long as its maximum width; inner calcarium of hind tibia hardly half as long as metatarsus; tarsal claws simple. Radial cell on wing margin just about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus about as long as second abscissa; nervulus slightly postfurcal; hind wing about 4.3 times as long as wide; lower abscissa of basella not or barely longer than nervellus and much less than half as long as mediella.

Abdomen slender, a little narrower than thorax; first tergite 1.5 times as long as broad at apex, largely finely, longitudinally rugulose, the dorsal keels distinct to beyond the spiracles; second tergite very slightly longer than broad at base, smooth and shiny, at most with a little faint shagreening toward base; remainder of abdomen smooth and shiny; ovipositor sheath just about as long as head, thorax, and abdomen combined.

Black; clypeus reddish yellow apically; palpi yellowish; antennae basally yellow or brownish yellow, darkened apically; legs brownish yellow, the hind coxae more or less extensively blackish basally and each of the femora with a dark streak along inner side near upper edge; tarsi usually pale; tegulae and wing bases yellow; wings slightly infumated; third and following tergites largely dark brown.

MALE.—Unknown.

HOLOTYPE.—USNM 70163.

DISTRIBUTION.—Known only from the holotype female collected at Hollister, Idaho, 4 May 1931, by D. E. Fox, and one paratype female taken by C. F. Baker at Fort Collins, Colorado, 6 December 1892, "under a stone along the roadside."

Orgilus ferus, new species

FIGURE 39

This species most closely resembles *lunaris*, new species, but is distinguished especially by its black tegulae and wing bases, more receding temples and hyaline wings.

FEMALE.—Length about 3.8 mm. Head slightly wider than thorax, in dorsal view nearly twice as wide as long; face about 1.3 times as wide as eye height, shiny, with scattered shallow punctures on the lower part and rugulose on the upper part; malar space

longer than clypeus and just about half as long as eye height; anterior tentorial pits much below level of lower eye margins; cheeks weakly alutaceous; temples smooth and polished, gradually receding, about 0.75 as wide as eyes; occipital carina narrowly interrupted medially; ocellular line twice as long as diameter of an ocellus; antennae 30- or 31-segmented in the available specimens, none of the segments as broad as long.

Mesoscutum smooth and shiny, without distinct punctures; notauli sharply impressed, foveolate, very coarsely so posteriorly, and meeting in a small rugulose area; prescutellar sulcus large and deep, the septa very low, the foveae very small; disc of scutellum convex, polished; propodeum strongly convex, rugulose punctate, the stubs of the carinae at the posterior margin weak or indistinct; side of pronotum rugulose, weakly so toward upper margin; mesopleuron smooth and polished, the longitudinal furrow evenly and finely foveolate; metapleuron rugulose posteriorly below, largely smooth anteriorly above. Hind coxa about half as long as hind femur, rugulose above, at least toward base, largely smooth on outer side; hind femur very nearly five times as long as broad; inner calcarium of hind tibia more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin slightly shorter than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa; nervulus a little postfurcal; hind wing just over four times as long as wide; lower abscissa of basella not longer than nervellus.

Abdomen barely longer than thorax; first tergite about 1.2 times as long as broad at apex, very finely rugulose punctate but with the smooth basal area extending caudad medially to the middle of the tergite, the dorsal keels not developed; second tergite about 0.75 as long as broad at base, finely confluent punctate except along posterior margin where it is smooth; third tergite with a transverse punctate area on basal half; second suture very fine but distinct; remainder of dorsum of abdomen smooth and polished; ovipositor sheath about as long as distance from base of scutellum to end of abdomen.

Black; scape entirely black or blackish; flagellum more or less brownish toward base; palpi black; legs reddish testaceous, with the basal segments of the trochanters of all legs, the dorsal edges of all femora more or less, the middle and hind tibiae in part, and

all the tarsi, somewhat darkened; tegulae black, wing bases piceous; wings hyaline.

MALE.—Essentially like the female. Antennae 30- or 31-segmented in the available specimens, the segments of the apical half considerably longer than in the female; the legs darker than in the female, all coxae usually black and the fore- and middle femora more extensively darkened.

HOLOTYPE.—USNM 70164.

DISTRIBUTION.—Known only from the type-series which comprises the following: Holotype female and 1 male collected by M. C. Lane at Lind, Washington, 7 May 1923 and 15 May 1922, respectively; 1 female and 1 male, Lind, Washington, 11 June 1919, F. W. Carlson; 1 female, Park Valley, Utah, 17 July 1929, G. F. Knowlton; 1 female, Wellsville, Utah, 29 June 1929, G. F. Knowlton; 2 females, Melba, Idaho, June and July 1957, H. W. Homan; 1 female, Hollister, Idaho, 11 July 1929; 2 females, Taos, New Mexico, 9000 feet, June 1960, "Burks and Kinser," and 1 female, Walker Pass, Kern County, California, 26 April 1949.

Orgilus fictus, new species

Structurally this species is extremely like *cinctus*, new species, but the temples are a little wider and the second tergite is relatively shorter and broader; in color it differs in lacking the yellow band on the abdomen and in the darker antennae.

FEMALE.—Length about 3.8 mm. Head hardly as wide as thorax and in dorsal view 0.75 as long as wide; face protruding, clearly narrower than eye height, granulose above, alutaceous laterally and below; anterior tentorial pits much below level of lower eye margins; clypeus strongly convex and finely punctate; malar space less than one-third as long as eye height, finely shagreened and rather mat; cheeks weakly shagreened below, smooth and shiny above; temples smooth and polished, not receding and 0.85 as wide as eyes; occiput carinately margined only at the sides; ocellular line slightly shorter than postocellar line and less than twice as long as diameter of an ocellus; maxillary palpi as long as height of head; antennae 31-segmented in the holotype, even the shortest flagellar segments a little longer than broad.

Mesoscutum shiny, but the surface of the lobes faintly alutaceous and with some extremely shallow, indistinct punctures; notauli sharply impressed and

foveolate; disc of scutellum rather large, strongly convex and faintly alutaceous; propodeum largely weakly shagreened on basal half, finely rugulose on posterior declivity; side of pronotum largely finely granulose or shagreened, somewhat rugulose in the impression; mesopleuron smooth and polished, the longitudinal furrow sinuate and foveolate; metapleuron largely granulose or shagreened and rather mat. Hind coxa finely shagreened and subopaque; hind femur just about four times as long as wide, finely granulose and rather dull; inner calcarium of hind tibia slightly more than half as long as metatarsus; claws simple. Stigma very narrow, slightly shorter than radial cell on wing margin; second abscissa of radius nearly on a line with intercubitus; stub of third abscissa of cubitus about as long as second abscissa; nervulus a little postfurcal; hind wing five times as long as wide; lower abscissa of basella much longer than nervellus, half as long as mediella and fully half as long as maximum width of hind wing.

Abdomen with first tergite about 1.4 times as long as wide at apex, finely granulose over most of its surface, with only a few weak rugulae laterally, the dorsal keels weak but distinct to well beyond the spiracles; second tergite about 0.7 as long as wide at base, almost parallel-sided, finely and confluent punctate each side of the middle, smooth and polished across base and medially, faintly alutaceous apically; third tergite largely smooth and shiny, with only a little weak shagreening laterally; second suture sharply impressed; fourth and following tergites smooth and polished; ovipositor sheath about as long as distance from base of scutellum to end of abdomen.

Black; mandibles yellow; palpi blackish; clypeus ferruginous anteriorly; antennae yellowish brown below toward bases, darker above, the scape darker than the basal part of the flagellum; legs, including all coxae, testaceous, the femora more or less darkened on the upper edges, also the hind femur on inner and outer sides of apical fourth, the hind tibia dark, a little lighter on the middle third, the tarsi darkened; tegulae and wing bases yellow; wings somewhat smoky; abdomen black, even the sternites rather piceous.

HOLOTYPE.—In the Museum of Comparative Zoology, Harvard University.

DISTRIBUTION.—Known only from the holotype female, which was taken by H. Levi in sweeping a dry field at West Springfield, Erie County, Pennsylvania, 5 June 1961.

Orgilus fisheri, new species

This species is exceedingly like *prolixus*, new species, but the two seem definitely to be distinct. In *fisheri* the hind wing is relatively much narrower, the face, cheeks, first tergite, and metapleuron are smoother and the wings are somewhat infumated.

FEMALE.—Length 3.2 mm. Head not distinctly wider than thorax, in dorsal view 0.65 as long as wide; face very slightly wider (1.1 times) than eye height, very shiny and with only scattered minute punctures, not shagreened laterally as in *prolixus*; malar space slightly longer than clypeus and 0.45 as long as eye height, very weakly shagreened; cheeks largely smooth, very weakly shagreened only at the lower margins; temples about 0.7 as wide as eyes, a little receding, smooth and shiny; occipital carina present only at the sides; ocellular line a little more than twice as long as diameter of an ocellus; antennae of holotype 32-segmented, even the shortest segments of the flagellum a little longer than broad.

Mesoscutum smooth and shiny, the middle lobe with a few very shallow setigerous punctures; notauli sharply impressed, foveolate and meeting in a small rugulose punctate area; disc of scutellum very small, flat smooth, and polished; propodeum strongly rugose, the stubs of the longitudinal carinae that arise from the posterior margin short and rather weak; side of pronotum completely rugulose punctate, more weakly so along upper margin; mesopleuron smooth and polished, the longitudinal furrow finely foveolate, nearly straight; metapleuron rugulose except on a small area in the upper basal angle, which is shiny and very weakly punctate. Hind coxa more than half as long as hind femur, smooth and shiny except basally on the dorsal edge where it is a little roughened; hind femur 4.7 times as long as broad; inner calcarium of hind tibia about half as long as metatarsus; tarsal claws simple. Radial cell on wing margin just about as long as stigma; second abscissa radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus just postfurcal; hind wing very narrow, at least five times as long as wide; lower abscissa of basella about half as long as mediella or as maximum width of hind wing.

Abdomen rather slender; first tergite 1.4 times as long as wide at apex, weakly longitudinally rugulose laterally, nearly smooth down the middle, smooth and polished at base and apex, dorsal keels weak but distinct to beyond spiracles; second tergite as long as wide

at base, smooth and polished except for a small confluent punctate area each side of the middle on basal half; third and following tergites smooth and polished, the second suture very weak; ovipositor sheath one and one-half times as long as head, thorax and abdomen combined.

Black; lower margin of clypeus reddish; mandibles yellowish, also the antennal flagellum on the basal third, remainder of antenna darkened; legs yellow; tegulae piceous, wing bases yellowish brown; wings a little smoky; the first tergite at apex, and the second and third tergites largely, yellowish brown; apical tergites piceous; venter of abdomen largely yellowish.

MALE.—Unknown.

HOLOTYPE.—USNM 70165.

DISTRIBUTION.—Known only from one female collected by W. S. Fisher at Lyme, Connecticut, 11 July 1918.

Orgilus frigidus, new species

This species is most similar to *fallax*, new species, but it differs in having the first tergite completely sculptured, even at base, in its more strongly postfurcal nervulus and in its shorter ovipositor.

FEMALE.—Length 3.8 mm. Head barely wider than thorax, in dorsal view 0.65 as long as broad; face 1.2 times as wide as eye height, largely rugulose punctate and medially above with a very short and low, longitudinal, shining keellike elevation; clypeus closely punctate; malar space just about half as long as eye height, shagreened and dull like the cheeks; temples nearly as wide as eyes (in ratio of 35:38), only very slightly receding, shagreened along occipital margin, smooth and polished adjacent to eyes; occipital carina rather broadly interrupted medially; ocellular line more than twice as long as diameter of an ocellus; antennae of holotype 31-segmented, rather slender and apically thinner, none of the preapical segments quite as broad as long.

Mesoscutum smooth and shiny, with only some very shallow punctures on the middle lobe; notauli sharply impressed, strongly foveolate; disc of scutellum polished; the prescutellar sulcus very large, more than half as long as disc of scutellum; propodeum evenly convex, rugose, a very weak, median longitudinal raised line at base, the stubs of the longitudinal carinae that arise from the apical margin rather prominent and extending the length of the posterior declivity;

side of pronotum closely rugulose and dull except narrowly along upper margin where it is nearly smooth; mesopleuron smooth and polished, the longitudinal furrow sinuate and rather strongly foveolate; metapleuron rugulose, coarsely so posteriorly, weakly anteriorly. Hind coxa rugulose, coarsely so above toward base; hind femur twice as long as hind coxa and about five times as long as broad; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin slightly shorter than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus postfurcal by one-third its length; hind wing only a little less than five times as long as its maximum width, but lower abscissa of basella only slightly longer than nervellus and decidedly less than half as long as mediella or than maximum width of hind wing.

Abdomen at widest point (at base of third tergite) as wide as thorax at tegulae; first tergite closely rugulose, even at the base, 1.3 times as long as wide at apex, the basal dorsal keels not developed, the spiracles hardly twice as far from apex as from base; second tergite about 1.3 times as broad at base as long, closely rugulose punctate, narrowly smooth and polished at apical margin; second suture sharply impressed; third tergite smooth and polished except for a transverse, confluent punctate area at the middle; remainder of dorsum of abdomen smooth and polished; ovipositor sheath barely as long as abdomen.

Black; clypeus except basally and the mandibles testaceous; palpi blackish; antennae yellowish brown basally, brown to blackish apically; legs testaceous, the hind coxa basally, the middle femur on upper edge, the hind femur on inner side toward apex, and all the tarsi more or less, darkened; tegulae and wing bases brownish yellow; wings hyaline basally, a little infumated apically; abdomen entirely black above, the venter piceous.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female, which was collected at Norman Wells, Northwest Territories, 23 July 1949, by W. R. M. Mason.

Orgilus fulgens, new species

This is rather similar to *longiceps* Muesebeck, but it may be distinguished immediately by its much smoother abdomen. From *lissus*, new species, which

it seems to resemble even more closely, it differs as indicated in the description of that species.

MALE.—Length 4.3 mm. Head hardly as wide as thorax, in dorsal view 0.75 as long as wide; face slightly narrower than eye height, coarsely rugulose punctate; clypeus strongly and closely punctate; malar space about one-third as long as eye height, punctate granulose; cheeks smooth and polished; anterior tentorial pits below level of lower eye margins; temples not receding, very nearly as wide as eyes, smooth and polished; vertex smooth and polished; occipital carina broadly interrupted medially; ocellular line less than twice as long as diameter of an ocellus; antennae of holotype 33-segmented, even the shortest flagellar segments clearly longer than broad.

Thorax stout; mesoscutum smooth and shiny; notauli sharply impressed and foveolate, meeting in a very acute angle just before posterior margin of scutum; disc of scutellum small, smooth and polished; propodeum closely rugulose, even in the posterior areas that are set off by short and weak stubs of longitudinal carinae arising from the posterior margin; side of pronotum rugulose, broadly smooth above; mesopleuron smooth and polished, the longitudinal furrow sinuate and foveolate; metapleuron smooth and polished except along the lower posterior margin where it is somewhat rugulose. Hind coxa considerably more than half as long as hind femur, smooth and shiny on outer side, finely granulose on upper edge basally; hind femur stout, barely four times as long as wide; inner calcarium of hind tibia just about half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus about as long as second abscissa; nervulus slightly postfurcal; hind wing 4.5 times as long as broad; lower abscissa of basella a little longer than nervellus but less than half as long as mediella.

Abdomen on third tergite only very slightly narrower than thorax; first tergite about 1.3 times as long as broad at apex, largely finely rugulose punctate; second tergite only slightly (1.1 times) broader at base than long, largely smooth and shiny but with a closely punctate area each side of the middle on basal half; third and following tergites smooth and polished.

Black; clypeus entirely black; palpi piceous; scape black or blackish below as well as above, the flagellum yellowish brown on basal half, darker apically, legs reddish yellow, the hind coxae darkened basally; hind

femora darkened on apical two-thirds; hind tibiae a little infuscated basally and on apical third; hind tarsi dark; tegulae piceous, wing bases brownish yellow; wings a little infumated.

FEMALE.—Unknown.

HOLOTYPE.—USNM 70166.

DISTRIBUTION.—Known only from two males: The holotype collected 28 June 1953, near Cumberland, Maryland, by Luella M. Walkley, and a paratype labeled only "Agr. College, Mich."

Orgilus gelechia (Ashmead)

FIGURE 23

Ganychorus gelechia Ashmead, 1889, p. 645.

Blacus gelechia (Ashmead).—Dalla Torre, 1898, p. 92.

Orgilomorpha gelechia (Ashmead).—Ashmead, 1900, p. 125.

Eubadizon lithocolletidis Viereck, 1912, p. 622.

Orgilus gelechia (Ashmead).—Muesebeck and Walkley, 1951, p. 111.

From *momphae*, new species, which is very similar to *gelechia*, the latter may be definitely distinguished by the structure of the tarsal claws. In *momphae* the claw has a strong and prominent subbasal tooth, whereas in *gelechia* the claw is simple or is only weakly angulated near the middle of the inner margin. The hind femora seem always to be completely yellow in *gelechia*, but in *momphae* they are somewhat darkened apically; and whereas the head of *momphae* is normally black, that of *gelechia* is usually largely, often entirely, yellow. Moreover, the ocelli in *momphae* are smaller, the ocellular line being three times the diameter of an ocellus, and the second abscissa of the radius is nearly on a line with the intercubitus, which is not the case in *gelechia*.

FEMALE.—Length normally ranging from 2.5 to 3.3 mm. Head wider than thorax, less than twice as wide as long, as seen from above, and only very weakly excavated behind; face convex, slightly wider than eye height, minutely granulose or shagreened; malar space less than one-fourth as long as eye height; anterior tentorial pits about on a line with lower eye margins; cheeks shagreened and mat; temples gradually receding, more than half as wide as eyes, shagreened and mat; antennae with 27 to 37 segments, all flagellar segments longer than broad; ocellular line less than three times as long as diameter of an ocellus; distance between ocelli about equal to the diameter of an ocellus; occipital carina broadly interrupted medially.

Mesoscutum finely shagreened and more or less dull; notauli sharply impressed but not distinctly foveolate; propodeum granulate, several short longitudinal carinae arising from posterior margin and setting off five apical areas; side of pronotum, mesopleuron and metapleuron shagreened, the longitudinal mesopleural furrow usually not distinct. Hind coxa at least 0.75 as long as hind femur, which is about four times as long as wide; inner calcarium of hind tibia a little less than half as long as metatarsus; tarsal claw simple or with a more or less distinct angulation near middle of inner edge. Radial cell on wing margin usually about 1.2 times as long as stigma, which emits the radius well beyond its middle; second abscissa of radius not nearly on a line with intercubitus; nervulus usually interstitial, occasionally slightly antefurcal or postfurcal; hind wing about five times as long as wide; lower abscissa of basella much longer than nervellus, sometimes twice as long, and more than half as long as mediella or than maximum width of hind wing.

Abdomen stout, often a little broader than thorax; first tergite a little longer than broad at apex, all the rest strongly transverse; basal dorsal keels distinct to the middle of first tergite; all sutures, including the second, sharply impressed; all tergites usually closely punctate, in part confluent so; ovipositor sheath about as long as the abdomen, sometimes a little shorter. Usually largely or entirely yellow but frequently with more or less extensive blackish markings on the thorax and abdomen, rarely thorax and abdomen largely darkened above; legs yellow, the hind femora always immaculate, even in the darkest specimens examined; hind tarsi dusky; tegulae and wing bases yellow; wings hyaline, stigma and veins yellow.

MALE.—Like the female in most essential respects but abdomen usually more weakly sculptured, especially apically.

HOLOTYPE.—That of *gelechia*, USNM 2970; that of *lithocolletidis*, USNM 14718.

DISTRIBUTION.—The type of *gelechia* is from Missouri, that of *lithocolletidis* is from Massachusetts. In addition to the types the U.S. National Museum collections contain numerous specimens from Maine, Connecticut, New York, Pennsylvania, Ohio, Minnesota, Virginia, West Virginia, Florida, Alabama, Louisiana, and Texas. Recorded hosts are *Lithocolletes hamadryadella* Clemens, *L. sp.* on *Myrica* and *Evippe prunifoliella* Chambers. Among material of *Orgilus* lent to me for this study by other institutions I have identified

specimens of *gelechia* from Ontario, Quebec, Nova Scotia, Prince Edward Island, New Jersey, Maryland, Tennessee, North Carolina, South Carolina, Michigan, and Wisconsin. A series in the Canadian National Collections from Nova Scotia is labeled as having been reared from *Gracilaria* sp. on *Cornus*.

Because the range in the number of antennal segments in this material is wider than seems to be usual in *Orgilus*, it is possible that what I am here treating as *gelechia* may ultimately, when more material and more biological information have become available, be found to comprise more than one form. At present, however, I am compelled to treat the specimens before me as a single species.

Orgilus gelechiaevorus Cushman

FIGURES 2, 2a, 2b, 54

Orgilus gelechiaevora Cushman, 1920, p. 291.

In its reddish-yellow coloring this species resembles *comptanae*, new species, but it is structurally very different, being readily distinguished by its strongly transverse head, its broader and less protuberant face, longer malar space, receding temples and finely sculptured cheeks.

Length usually 3 to 3.5 mm. Head slightly broader than thorax, in dorsal view 0.6 as long as wide; face a little broader than eye height, finely granulate; anterior tentorial pits considerably below level of lower eye margins; malar space a little longer than clypeus and nearly half as long as eye height; cheeks shagreened and mat; temples gradually receding, at mideye point about three-fourths as wide as eyes, shagreened along occipital margin, smooth adjacent to eyes; occiput margined only at the sides; ocellular line more than twice as long as diameter of an ocellus; antennae 28- to 33-segmented in the specimens examined, some segments in the apical fourth of the female antennae not longer than broad.

Mesoscutum usually somewhat alutaceous, especially adjacent to the notauli; disc of scutellum alutaceous; propodeum granulate or finely rugulose; side of pronotum finely granulate and rather mat; mesopleuron smooth above the sinuate foveolate longitudinal furrow, shagreened below it; metapleuron granulate and dull. Hind coxa 0.6 as long as hind femur, finely granulate and rather dull above and on outer side; hind femur not more than four times as long as broad;

inner calcarium of hind tibia not more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin not longer than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus about as long as the second abscissa; nervulus usually slightly postfurcal but sometimes virtually interstitial; hind wing more than five times as long as wide; lower abscissa of basella half as long as mediella and usually more than half as long as maximum width of hind wing.

Abdomen usually about as wide as thorax; first tergite approximately 1.3 times as long as wide at apex, closely, finely granulose, the dorsal keels not developed; second tergite a little broader at base than long, finely granulose like the first; third tergite much more weakly sculptured and usually smooth apically, and the following tergites smooth; ovipositor sheath about as long as propodeum and abdomen combined.

Reddish testaceous; ocellar triangle, metanotum, apices of hind femora and tibiae and all the tarsi sometimes more or less darkened; tegulae and wing bases yellow; wings very weakly infumated; abdomen sometimes darkened on apical segments.

DISTRIBUTION.—In addition to the holotype, which is from New Jersey, and was reared from *Aroga triabamaculella* (Chambers), the U.S. National Museum collection contains a specimen labeled as having been reared from *Laspeyresia caryana* (Fitch) at Cuero, Texas, and other material, all without host data, from New Jersey, Virginia, Alabama, Florida, Kentucky, Iowa, and Texas, including a series of 35 specimens from Weslaco, Texas, obtained in *Antonina graminis* (Maskell) breeding cages and presumably from larvae of some lepidopteran occurring in the grass crowns; other specimens are labeled as "from cotton bolls," or "in cotton fields" in Texas.

Orgilus glacialis, new species

This species superficially resembles *arcticus*, new species, especially in being strongly sculptured and in its black legs. The face is relatively narrower, however, the temples are smoother, the antennae are more slender, the third abdominal tergite is completely smooth, and the lower abscissa of basella is relatively shorter.

FEMALE.—Length about 4 mm. Head in dorsal view 0.6 as long as wide, just about as wide as thorax; face barely wider than eye height (in ratio of 62:60), rugulose and rather dull; malar space longer than

clypeus but not quite half as long as eye height, and together with the cheeks shagreened and mat; temples shagreened below middle of eyes, largely smooth and shiny above; clypeus smooth and very shiny, with only a few scattered punctures, and not set off from the face medially as in *arcticus*; temples at mideye point about 0.8 as wide as eyes; vertex shagreened; ocellular line more than twice as long as diameter of an ocellus; occiput carinately margined only at the sides; antennae 29-segmented in the holotype, becoming thinner apically, none of the flagellar segments quite as wide as long.

Mesoscutum shagreened and subopaque; notauli sharply impressed and finely foveolate; disc of scutellum only very faintly alutaceous, shiny; propodeum closely rugulose, the stubs of the carinae that arise from the posterior margin prominent and setting off apical areas that are smoother than the dorsal face of the propodeum; side of pronotum completely rugulose and mat, even at the upper margin; mesopleuron faintly alutaceous and shiny above the longitudinal furrow, shagreened and somewhat mat below it; metapleuron granulose anteriorly, rugulose posteriorly and below, dull. Middle coxae finely shagreened; hind coxae rugulose above, strongly granulose on the outer sides, and dull, more than half as long as hind femora which are just about four times as long as wide; inner calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin very slightly shorter than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as second abscissa; nervulus just postfurcal; hind wing about five times as long as wide; lower abscissa of basella about as long as nervellus and much less than half as long as mediella or than half the maximum width of the hind wing.

Abdomen with first tergite 1.3 times as long as wide at apex, closely rugulose, the basal dorsal keels not developed, the distance from the spiracles to the base about one-third the distance to the apex, second tergite 0.85 as long as wide at base, closely rugulose punctate except very narrowly at the sides and more broadly at the apex; third and following tergites completely smooth and polished; ovipositor sheath as long as propodeum and abdomen combined.

Black; palpi, clypeus, and antennae black; mandibles piceous; middle and hind legs entirely blackish; forecoxae, trochanters, and bases of femora blackish,

the forefemora apically and the foretibiae yellowish, foretarsi only a little darkened; tegulae and wing bases blackish; wings uniformly a little smoky.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female labeled "King Salmon, Naknek R., Alaska, 19. vii. 1952, J. B. Hartley."

Orgilus gracilis (Brues)

Blacus gracilis Brues, 1908, p. 55.

Orgilus gracilis (Brues).—Muesebeck and Walkley, 1951, p. 111.

This species is extremely similar to *citius*, new species, from which it differs noticeably only in its much paler hind coxae and more extensively sculptured second tergite. The following redescription is based on the female holotype.

Length 2.8 mm. Head noticeably wider than thorax; its width-length ratio, in dorsal view, 90:55; face slightly wider than eye height (in ratio of 53:47), weakly shagreened to alutaceous, shiny, almost smooth on a narrow strip down the middle; clypeus smooth and shiny, with only a few punctures, and set off from face by a very shallow impression; malar space only slightly longer than clypeus and less than half as long as eye height (in ratio of 20:45), finely shagreened and mat; temples rounded, gradually receding, at mideye point about 0.75 as wide as eyes, smooth and polished; occipital carina distinct only at the sides; vertex considerably above upper level of eyes, smooth; ocellular line about 2.5 times as long as diameter of an ocellus; frons smooth and shiny; antennae 28-segmented, some of the preapical segments not longer than broad.

Thorax slender; mesoscutum shiny, weakly punctate anteriorly but not at all granulose or shagreened; notauli sharply impressed but not foveolate or punctate; disc of scutellum very slightly shagreened on posterior half; propodeum finely rugulose with some shagreening between the rugulae, especially laterally and basally, very narrowly polished at extreme base each side of the middle; side of pronotum entirely rugulose up to the dorsal margin, except only anteriorly where it is granulose, the rugulosity weakest near the upper edge; mesopleuron smooth and shiny, the longitudinal furrow narrow and finely foveolate, the surface below it faintly alutaceous; metapleuron very finely

granulose and mat anteriorly, strongly rugulose on lower posterior half. Hind coxa finely shagreened and subopaque, not rugose at base above; hind femur 4.7 times as long as broad and not quite twice as long as hind coxa; inner calcarium of hind tibia slightly more than half as long as metatarsus. Radial cell narrow; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus barely postfurcal, nearly interstitial; hind wing a little more than five times as long as wide, the anterior and posterior margins parallel; lower abscissa of basella longer than nervulus but less than half as long as mediella (in ratio of 25:60).

Abdomen with first tergite finely granulose or punctate, smooth across apex, the dorsal keels not developed, the spiracles at the end of the basal fourth; second tergite 0.9 as long as broad at base, broadening slightly but distinctly caudad, weakly rugulose punctate on basal half except laterally where it is smooth; third and following tergites smooth and polished; ovipositor sheath as long as propodeum and abdomen combined.

Head and thorax black; palpi and mandibles yellow; clypeus testaceous on apical two-thirds, piceous basally, antenna yellow on basal half, including scape and pedicel (except that scape is brownish above), darkened apically; legs yellow, the fore- and middle pairs entirely so, hind coxae darkened at extreme bases above, hind femora a little brownish apically, hind tibiae apically and hind tarsi a little darkened; tegulae and wing bases pale yellow; wings subhyaline; abdomen with first tergite blackish, its posterior corners red; remainder of dorsum of abdomen brownish piceous; basal sternites yellow, apical ones somewhat piceous.

HOLOTYPE.—In the collection of the University of Minnesota.

DISTRIBUTION.—The holotype is from Minneapolis, Minnesota. I have seen only one other specimen which I could safely identify as *gracilis*. It is a female in the Canadian National Collections from Stockton, Manitoba, collected 26 May 1958, by C. D. F. Miller.

Orgilus gramineus, new species

The unusually broad first tergite distinguishes this species from those most closely related to it, except *compactus*, new species, from which it differs especially

in its longer ovipositor, relatively shorter second tergite, less retracted apical abdominal segments, and paler hind coxae.

FEMALE.—Length about 3.5 mm. Head hardly as wide as thorax, in dorsal view 1.7 times as wide as long; face strongly convex, barely wider than eye height (in ratio of 60:58), very shiny and with well-separated minute punctures; malar space hardly longer than clypeus and about 0.45 as long as eye height, weakly shagreened and shiny; clypeus shiny, minutely punctate; cheeks largely polished, only weakly shagreened near lower margins; temples entirely smooth and polished, slightly receding and 0.65 as wide as eyes; frons smooth and shiny; maxillary palpi shorter than height of head; occipital carina narrowly interrupted medially; antennae 29-segmented in the holotype, some segments in apical fourth of flagellum fully as broad as long.

Thorax stout; mesonotal lobes rather flat, smooth and very shiny, with only some very weak oblique punctures near the notauli; notauli shallow, finely foveolate; disc of scutellum very weakly convex and with a few faint punctures; propodeum strongly convex, rugulose, the stubs of the carinae that arise from the posterior margin poorly developed; side of pronotum largely rugulose but broadly smooth at upper margin; mesopleuron smooth and polished, the longitudinal furrow straight and very weak, only indistinctly and incompletely foveolate; metapleuron smooth and shiny anteriorly, rugulose posteriorly. Hind coxa only slightly rugulose at base above, very smooth and shiny on outer side; hind femur hardly four times as long as broad and less than twice as long as hind coxa; longer calcarium of hind tibia distinctly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin slightly shorter than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus about as long as second abscissa; nervulus clearly postfurcal; hind wing about 4.4 times as long as wide; lower abscissa of basella longer than nervellus and nearly half as long as mediella but distinctly less than half as long as maximum width of hind wing.

Abdomen stout; first tergite a little broader at apex than long, shiny, weakly longitudinally rugulose, polished apically, the dorsal keels not distinct, the spiracles fully twice as far from each other as from base of segment; second tergite 1.5 times as wide at base as long, largely smooth and polished and with only a

little faint sculpture each side of the middle toward base; third and following tergites smooth and polished; ovipositor sheath about as long as distance from base of scutellum to end of abdomen.

Black; mandibles reddish yellow; clypeus entirely black; palpi and antennae brownish black; tegulae and wing bases black; wings slightly infumated; legs brownish yellow, the hind coxae a little darkened basally; also the basal trochanters, the hind femora inwardly above and all tibiae and tarsi more or less darkened.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female that was collected at Waterton, Alberta, 18 June 1956, by O. Peck by sweeping grass.

Orgilus grapholithae, new species

This species is extremely similar to *pratensis*, new species, but it may be distinguished rather readily by its dark tegulae and wing bases and by the much better developed stubs of carinae at the apex of the propodeum.

FEMALE.—Length around 3.5 mm. Head distinctly broader than the thorax, also broader than high in front view, and about 1.6 times as broad as long in dorsal view; face a little broader (about 1.15 times) than eye height, finely rugulose below antennal foramina, weakly punctate elsewhere, very shiny; clypeus impunctate; malar space a little longer than clypeus and nearly half as long as eye height (in ratio of 25:57); cheeks rounded, very finely shagreened; temples at mideye point 0.75 as wide as eyes, smooth and shiny, slightly and gradually receding; ocellular line more than twice as long as diameter of an ocellus; occipital carina strong at the sides, broadly interrupted medially; antennae 29-segmented in the two available females, most of the segments in apical third of flagellum at least as broad as long.

Mesoscutum smooth and shiny; notauli very fine, finely punctate anteriorly, minutely foveolate posteriorly; propodeum rugulose, narrowly polished at base and with the five apical areas well defined, the stubs of the longitudinal carinae that arise from posterior margin of propodeum well developed and extending more than one-third the way toward base of propodeum; side of pronotum largely rugulose but more or less smooth

below upper margin; mesopleuron smooth and polished, the longitudinal furrow finely foveolate and no punctures below the furrow; metapleuron smooth and very shiny, rugulose posteriorly. Hind coxa rugulose at base above, largely smooth on outer side; hind femur nearly five times as long as broad; longer calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; third abscissa of cubitus a little longer than second abscissa; nervulus postfurcal by one-third its length; hind wing about 4.2 times as long as wide; lower abscissa of basella not longer than nervellus and much less than half as long as mediella, only one-third as long as maximum width of hind wing.

Abdomen slender; first tergite about 1.5 times as long as wide at apex, finely longitudinally rugulose, the dorsal keels very weak or indistinct, spiracles only a little farther from each other than from base of segment; second and following tergites smooth and very shiny, the second very nearly or quite as long as broad at base and usually with a little very faint shagreening each side of middle on basal half; second suture faint; ovipositor sheath as long as propodeum and abdomen combined.

Black; palpi piceous; clypeus except at base and the mandibles ferruginous; scape brownish below, flagellum brownish yellow basally, dark brown apically; tegulae and wing bases blackish; legs brownish yellow, the hind coxae blackish toward bases, hind femora inwardly and the middle and hind tarsi more or less infuscated; wings very weakly infumated; second and following tergites tinged with brown; basal sternites brownish yellow.

MALE.—Like the female except as follows: Antennae 31-segmented, all flagellar segments elongate; second tergite relatively a little shorter than in the female; clypeus entirely black; antennae blackish; legs somewhat darker, all coxae and basal trochanters blackish in the two available males.

HOLOTYPE.—USNM 70167.

DISTRIBUTION.—Known only from the type-series, which consists of the female holotype and 3 paratypes (2 males and 1 female), reared at Forest Grove, Oregon, 24 June 1922, by S. E. Keen from larvae of *Grapholitha conversana* Walsingham collected at Seaside, Oregon.

Orgilus hyalinus, new species

Structurally this species is very similar to *scaber*, new species, although the dorsal keels of the first tergite are much weaker, but the species may be immediately distinguished from *scaber* by its clear hyaline wings.

MALE.—Length about 3 mm. Head in dorsal view about 0.6 as long as wide; face prominent, its straight-line width barely greater than eye height, closely and more or less confluent punctate and shiny; clypeus very strongly convex, weakly punctate, not separated from face by an impressed line, its base barely below the level of the lower margins of the eyes; malar space about one-third as long as eye height, shagreened; cheeks and temples smooth and polished; temples slightly more than half as wide as eyes; occipital carina narrowly interrupted at the middle; ocellular line less than twice as long as diameter of an ocellus; antennae 28-segmented in the holotype.

Mesoscutum shiny, closely and rather strongly punctate, especially on the middle lobe; notauli very shallow, foveolate, fading out caudad; disc of scutellum flat, polished and with a few weak punctures; propodeum strongly rugose, the stubs of the carinae that arise from the posterior margin prominent; side of pronotum rugulose except broadly along upper margin where it is nearly smooth; mesopleuron smooth and shiny, the longitudinal furrow nearly straight and foveolate but fading out anteriorly; metapleuron entirely rugulose. Hind coxa about two-thirds as long as hind femur, a little rugulose above, punctate on outer side, shiny; hind femur less than four times as long as wide; hind tibia with a cluster of short, stout spines on outer side just before apex, its inner calcarium half as long as metatarsus; tarsal claws simple. Radial cell on wing margin fully as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus barely postfurcal; hind wing 4.3 times as long as wide; lower abscissa of basella not or barely longer than nervellus and much less than half as long as mediella.

Abdomen with tergites 1–6 sculptured, the first and second finely rugulose, the others more or less granulose, the sixth weakly so; dorsal keels on first tergite distinct but weak and short; first tergite only a little longer than wide at apex; the second more than 1.5 times as broad at base as long and the second suture sharply and deeply impressed.

Black, including the clypeus entirely, mandibles, tegulae and wing bases, and all coxae and trochanters; femora largely black or blackish, the fore- and middle pairs light brown apically; tibiae and tarsi more or less infuscated; wings perfectly clear hyaline.

FEMALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from a single male collected at "Lost River, Onefour," Alberta, Canada, 3 June 1956, by O. Peck.

Orgilus imitator, new species

This form closely resembles *disparilis*, new species, but it is much smoother and more shiny, and the middle lobe of the mesoscutum is very different, being unusually short and broad.

FEMALE.—Length about 3.8 mm. Head slightly wider than thorax, in dorsal view fully twice as broad as long; face about 0.75 as wide as eye height; eyes very large; anterior tentorial pits above level of lower eye margins; malar space not more than one-sixth as long as eye height, finely granulose and mat like the cheeks; temples largely smooth and shiny, sharply receding and barely one-third as wide as eyes; occipital carina complete but weak; vertex smooth and shiny; ocellular line slightly longer than the maximum diameter of an ocellus; antennae 32-segmented in the holotype, 34-segmented in the only other known female, even the shortest segments of the flagellum decidedly longer than broad, the apical segment with a short terminal spicule.

Mesoscutum smooth and shiny, with only minute and extremely shallow setigerous punctures; notauli fine, shallow, weakly foveolate and short, fading out near middle of scutum, and the median lobe unusually short, extending only to the middle of the scutum; disc of scutellum rather large, smooth and shiny, the scutellar sulcus minutely foveolate; propodeum largely smooth and shiny with only a little very weak roughening medially; side of pronotum entirely smooth and polished; mesopleuron and metapleuron also smooth and polished, the longitudinal furrow of mesopleuron very fine, sinuate, and minutely foveolate. Hind coxa smooth; hind femur somewhat less than five times as long as broad; inner calcarium of hind tibia hardly half as long as metatarsus; tarsal claw without a sub-basal tooth or angulation. Radial cell on wing margin about 1.3 times as long as stigma; second abscissa of

radius not nearly on a line with intercubitus; spur of third abscissa of cubitus less than half as long as second abscissa; nervulus clearly postfurcal; hind wing barely four times as long as wide; lower abscissa of basella hardly as long as nervellus and much less than half as long as mediella.

Abdomen a little narrower than thorax; first tergite 1.5 times as long as broad at apex, nearly smooth, with only a little faint shagreening; second tergite 1.5 times as broad at base as long, faintly shagreened; the following tergites smooth and shiny; ovipositor sheath about as long as distance from tegulae to end of abdomen.

Brownish yellow; in the holotype with broad blackish markings on the mesonotal lobes and the upper anterior angle of the mesopleuron blackish; metanotum and propodeum black; abdomen more or less darkened basally and apically; palpi pale yellow; antennae brownish yellow, darker apically; tegulae and wing bases yellow; legs testaceous, apex of hind femur darkened, also the hind tibia except for a conspicuous pale annulus at extreme base, and the hind tarsus; wings hyaline, iridescent.

MALE.—Essentially like the female, but the antennae are 31-segmented and the flagellum is dark brown.

HOLOTYPE.—USNM 70168.

DISTRIBUTION.—Known only from the short type-series, which consists of the holotype female captured at light at Deep Canyon, Riverside County, California, 23 November 1964, by M. E. Irwin; a paratype female taken at Portland, Oregon, 18 September 1897, by A. P. Morse; and a paratype male obtained from "webbing of *Gnorimoschema*" at Presidio, Texas, 13 December 1943.

Orgilus immarginatus, new species

FIGURES 4, 4a, 4b, 37

The completely immargined occiput distinguishes this species from *disparilis*, which it otherwise closely resembles.

FEMALE.—Length around 4 mm. Head distinctly wider than thorax, in dorsal view more than twice as wide as long, flattened behind; face smooth and shiny, narrower than eye height; clypeus not separated from face medially; anterior tentorial pits clearly above level of lower eye margins; eyes enormous; malar space less than half as long as longest segment of maxillary palpus and hardly one-sixth the eye height; temples abruptly receding, almost parallel with face, finely granulose and

mat like cheeks and vertex; occiput not margined even on the sides; ocellular line slightly longer than distance between lateral ocelli and about equal to the longest diameter of one of them; antennae 34- or 35-segmented in the available specimens, all flagellar segments longer than broad, the apical segment terminating in a short but distinct spicule.

Thorax slender; mesoscutum smooth and shining; notauli not distinctly foveolate and fading out apically; scutellum somewhat convex; propodeum smooth and shining, very gently convex, barely declivous caudad, and with four very short stubs of carinae arising from posterior margin; side of pronotum smooth above the impression, finely shagreened below it; mesopleuron and metapleuron smooth and polished, the longitudinal mesopleural furrow weakly impressed and not foveolate. Hind coxa smooth and shining and two-thirds as long as hind femur, which is hardly four times as long as broad; inner calcarium of hind tibia more than half as long as metatarsus; tarsal claw with a weak subbasal tooth. Radial cell much longer than stigma, very nearly attaining extreme apex of wing; spur of third abscissa of cubitus less than one-third as long as second abscissa; nervulus interstitial or slightly postfurcal; hind wings about 4.8 times as long as wide; lower abscissa of basella usually a little longer than nervellus but clearly less than half as long as mediella.

Abdomen about as long as thorax; first tergite at least 1.5 times as long as broad at apex, faintly coriaceous; second tergite much broader than long, smooth and shining, with only a faint suggestion of coriaceous sculpture; third and following tergites smooth and polished; ovipositor sheath about as long as abdomen.

Uniformly pale yellow; antennal flagellum brownish above; stemmaticum blackish; legs entirely yellow; tegulae and wing bases pale yellow; wings clear hyaline.

MALE.—Like the female; antennae 33- or 34-segmented in the available specimens.

HOLOTYPE.—USNM 70169.

DISTRIBUTION.—Known only from the type-series which consists of the following: Holotype female reared from *Gretchena bolliana* (Slingerland), 22 July 1929, by J. M. Langston at A. & M. College, Mississippi; 2 males, Pecan, Mississippi, June 1915, J. B. Gill, without host record; 2 females, Pascagoula, Mississippi, 28 June 1915, J. B. Gill; 1 female from *Acrobasis juglandis* (LeBaron), Fort Adams, Mississippi, 5 April 1929, W. L. Grey; 1 male from *Laspeyresia caryana*

(Fitch) on pecan, A. & M. College, Mississippi, 29 May 1929, J. M. Langston; 1 female and 1 male, Crestview, Florida, 14 May 1938, and 1 male, Savannah, Illinois, 8 August 1946.

Orgilus impiger, new species

FIGURE 45

This species closely resembles *oregonensis*, from which it may be distinguished, however, by its shorter head, narrower and more receding temples, somewhat more slender female antennae, and the partly sculptured second tergite.

FEMALE.—Length around 4 mm. Head hardly wider than thorax, in dorsal view about 0.6 as long as wide; face about 1.2 times as wide as eye height, closely, often confluent, punctate below and rugulose above; clypeus with distinct scattered punctures; malar space finely granulose, longer than clypeus and just about half as long as eye height; cheeks granulose and dull; temples smooth and shiny; about 0.75 as wide as eyes, receding gradually and somewhat rounded; occipital carina broadly interrupted medially; ocellular line about twice as long as diameter of an ocellus; vertex and back of head smooth and shiny, at most with a few weak punctures; maxillary palpi hardly as long as width of head; antennae 29- to 32-segmented in the available specimens, some segments in apical fourth of flagellum about as wide as long.

Middle lobe of mesoscutum usually closely, rather strongly punctate; notauli sharply impressed and foveolate; disc of scutellum convex, smooth and polished, sometimes with a few weak punctures; propodeum convex, strongly rugose, the stubs of the longitudinal carinae that arise from the posterior margin short and rather weak so that the apical areas are poorly defined; side of pronotum closely rugulose, weakly so at upper margin; mesopleuron smooth and polished, the longitudinal furrow a little sinuate and completely foveolate; metapleuron usually largely rugulose, coarsely so posteriorly, sometimes smooth and shiny in the anterior angle. Hind coxa rugulose, most strongly so basally on dorsal edge, but also roughened on the outer side; hind femur twice as long as hind coxa and about five times as long as broad; inner calcarium of hind tibia barely more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin just about as long as stigma; second abscissa of radius on a line with intercubitus; stub of

third abscissa of cubitus about as long as second abscissa; nervulus somewhat postfurcal; hind wing about 4.2 times as long as wide; lower abscissa of basella just about as long as nervellus and much less than half as long as mediella or maximum width of hind wing.

Abdomen a little narrower than thorax; first tergite about 1.25 times as long as broad at apex, closely rugulose except basad of the spiracles where it is smooth and polished, the dorsal keels not developed; second tergite about 1.2 times as broad at base as long, usually largely smooth, but more or less punctate or finely rugulose on basal half; third and following tergites smooth and polished; ovipositor sheath only a little longer than the abdomen.

Black; clypeus black; palpi and antennae black or blackish; tegulae and wing bases black; wings weakly infumated; legs brownish, the fore- and middle coxae reddish yellow, the hind coxae black basally, basal trochanters of all legs more or less darkened, all femora streaked with black on the inside above, tibiae and tarsi more or less darkened; abdomen completely black above and blackish or piceous below.

MALE.—Unknown.

HOLOTYPE.—In the collection of the University of California.

DISTRIBUTION.—Known only from the type-series consisting of seven females (one the holotype) collected on *Erigonum nudum* at Mt. Shasta City, Siskiyou County, California, 2 July 1958, by J. Powell.

Orgilus indagator Muesebeck

FIGURE 18

Orgilus indagator Muesebeck, 1967a, p. 135.

This species is not redescribed here since it was described in detail in the above paper. All the material recorded there was from Minnesota. Since publication of the description I have seen two additional specimens, from the Province of Quebec.

HOLOTYPE.—USNM 69367.

Orgilus infrequens, new species

Except for its lighter coloring this species is exceedingly like *melissopi*, from which it may be distinguished, however, as indicated in the description of that species and in the key.

FEMALE.—Length about 4.6 mm. Head about as wide as thorax, and in dorsal view fully twice as wide as long; face weakly convex, finely punctate, and only very slightly wider than eye height; anterior tentorial pits on a line with lower eye margins; malar space hardly one-fourth as long as eye height; cheeks and lower temples minutely granulose and mat; temples strongly receding, about 0.6 as wide as eyes; occipital carina complete; ocellular line a little more than twice as long as diameter of an ocellus, the distances between the ocelli very slightly greater than the diameter of one of them; antennae 33- or 34-segmented in the available specimens, most of the segments of the apical fourth fully as broad as long, the apical segment with a minute terminal spicule.

Thorax stout; mesoscutum smooth and very shiny, with scattered weak punctures on middle lobe; the notauli finely foveolate anteriorly and the depression in which they meet not at all rugulose or punctate; unlike the condition in *melissopi*, the narrow strip along posterior margin of mesoscutum impunctate; propodeum very shiny, convex, rather strongly punctate medially, sometimes confluent so there but very weakly punctate laterally; side of pronotum smooth and polished above the impression, shagreened or, in part, weakly rugulose below it; mesopleuron and metapleuron smooth and polished, the longitudinal furrow of the mesopleuron sinuate and finely foveolate. Hind coxa smooth and shiny outwardly but with a few weak punctures, delicately shagreened on the upper edge; hind femur four times as long as wide; longer calcarium of hind tibia not more than half as long as metatarsus; tarsal claw with a strong subbasal tooth. Radial cell large, on wing margin 1.6 times as long as stigma; second abscissa of radius not nearly on a line with intercubitus; stub of third abscissa of cubitus more or less punctiform; nervulus slightly postfurcal; hind wing barely more than four times as long as wide; lower abscissa of basella longer than nervellus and more than half as long as mediella.

Abdomen smooth and shiny, at most with a little longitudinal striation laterally on the first tergite; first tergite much longer than wide at apex; second tergite nearly as long as wide at base; ovipositor sheath nearly as long as thorax and abdomen combined.

Brownish yellow; antennae dark brown, blackish apically; palpi piceous; stemmaticum black; propodeum somewhat darkened medially; tegulae and wing bases pale yellow; wings clear hyaline; legs concolorous

with the body, the middle and hind femora black at apices, the hind tibia infuscated but with a narrow yellowish-white annulus at extreme base and a broader yellowish band at the middle, all the tarsi more or less infuscated; first tergite, except laterally at apex, and the second medially, somewhat darkened.

MALE.—Unknown.

HOLOTYPE.—USNM 70170.

DISTRIBUTION.—Known from three female specimens: The holotype from Florida Caverns State Park, Jackson County, Florida, collected by H. V. Weems, Jr., 21 August 1958; one paratype collected by R. C. Shannon at Mathias Point, Virginia, 5 September 1931, and a second paratype from Martha's Vineyard, Massachusetts, collected by C. W. Johnson in August 1931.

Orgilus inopinus, new species

This species resembles *cerinus*, new species, in color, but it differs in many structural details, including its finely granulate or shagreened face and hind coxae, longer head, larger eyes, less slender antennae and relatively narrower hind wings.

FEMALE.—Length about 3 mm. Head slightly wider than thorax, in dorsal view 0.7 as long as wide; face about 1.25 times as wide as eye height, finely granulate or shagreened and mat and with some scattered punctures; clypeus shiny and with a few punctures; malar space slightly more than half as long as eye height, shagreened and mat; cheeks also shagreened and rather mat; temples about 0.75 as wide as eyes, shagreened posteriorly, smooth and shiny adjacent to eyes; occipital carina rather narrowly interrupted medially; ocellular line a little more than twice as long as diameter of an ocellus; antennae of holotype 29-segmented, a few of the preapical segments about as wide as long.

Mesoscutum largely smooth but with a little faint shagreening in the vicinity of the notauli and some very weak and indefinite punctures; notauli not distinctly foveolate, meeting just before apex of scutum in a sharply acute angle; disc of scutellum smooth; propodeum largely granulate on basal half, with a small smooth and polished area each side at extreme base, somewhat rugulose posteriorly and with rather prominent stubs of longitudinal carinae arising from posterior margin setting off more or less smooth and shiny apical areas; side of pronotum granulate, rugulose in

the impression; mesopleuron smooth and shiny above the finely foveolate longitudinal furrow, weakly but distinctly alutaceous below it; metapleuron shagreened and mat except at posterior margin where it is rugulose. Hind coxa about half as long as hind femur, finely granulate and mat above and on outer side; hind femur 4.5 times as long as wide; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin slightly longer than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus only slightly postfurcal; hind wing five times as long as wide, the anterior and posterior margins virtually parallel; lower abscissa of basella longer than nervellus and very nearly half as long as mediella or maximum width of hind wing.

Abdomen slender; first tergite about 1.5 times as long as wide at apex, granulate, the dorsal keels not distinct; second tergite nearly or quite as long as broad at base, faintly shagreened medially toward base and very shiny; second suture well defined; remainder of abdomen smooth and polished; ovipositor sheath about as long as propodeum and abdomen combined.

Reddish yellow; an indefinite spot on middle of frons and vertex, the area each side of scutellar disc and the apical abdominal tergites, black; antennae reddish yellow on basal two-thirds, blackish apically; palpi brown; tegulae and wing bases yellow; wings very lightly infumated; legs brownish yellow, apices of hind femora and of hind tibiae and the apical segments of all tarsi a little darkened.

MALE.—Darker than the female: The metapleura and propodeum blackish; the abdomen dark brown basally instead of reddish yellow, and all tarsi entirely darkened. The antennae are 30-segmented and are more elongate than in the female.

HOLOTYPE.—USNM 70171.

DISTRIBUTION.—Known only from the holotype female collected 21 June 1934, in Clay County, Iowa, by H. C. Knutson, and a male paratype taken by the same collector 20 June 1934, in Black Hawk County, Iowa.

Orgilus insularis, new species

This species differs from known related species especially in its completely rugulose metapleura.

FEMALE.—Length about 3 mm. Head about 1.2 times as wide as thorax, in dorsal view about 0.55

as long as broad; face about 1.2 times as wide as eye height, finely shagreened over most of its surface, rather mat laterally, more shiny medially; malar space half as long as eye height, slightly longer than longest segment of maxillary palpus, finely granulose and dull; clypeus smooth and shiny, with a few scattered punctures; cheeks shagreened; temples rather strongly receding, about 0.75 as wide as eyes, smooth and polished except adjacent to occipital carina where they are finely shagreened; frons smooth and polished medially, shagreened and rather dull laterally; ocellular line more than twice as long as diameter of an ocellus; antennae of holotype 32-segmented, some segments of apical third of flagellum fully as broad as long.

Mesoscutum very shiny, with poorly defined and very shallow punctures; notauli sharply impressed and strongly foveolate; disc of scutellum polished; propodeum strongly rugose on dorsal face, the posterior face with five large, somewhat impressed and more or less smooth and shiny areas at the posterior margin, these areas separated by prominent stubs of longitudinal carinae that arise at the posterior margin of the propodeum and extend more than one-third the distance to the base; side of pronotum rugulose, weakly so along the upper margin; mesopleuron smooth and polished, the longitudinal furrow strongly foveolate; metapleuron completely rugulose. Hind coxa slightly more than half as long as hind femur and coarsely rugulose above and on the upper part of the outer side; hind femur just about four times as long as wide; inner calcarium of hind tibia half as long as metatarsus; tarsal claws simple. Radial cell on wing margin slightly shorter than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa; nervulus virtually interstitial; hind wing about five times as long as wide; lower abscissa of basella much longer than nervellus and just about half as long as mediella or as maximum width of hind wing.

Abdomen as long as thorax; first tergite 1.25 times as long as wide at apex, closely rugulose punctate and dull, the basal dorsal keels weak but extending to the end of the basal third of the tergite, the spiracles twice as far from each other as from base of tergite and three times as far from apex as from base; second tergite about 0.6 as long as wide at base, entirely closely rugulose punctate; third tergite finely rugulose punctate medially on basal two-thirds, smooth laterally and posteriorly; remainder of dorsum of abdomen

smooth and polished; ovipositor sheath just about as long as abdomen.

Black; antennae brown, a little paler below toward bases; palpi and tegulae black; wings slightly but distinctly infumated; legs largely testaceous, the hind coxae blackish on basal half, all femora more or less darkened above on inner sides and all tibiae and tarsi more or less darkened; basal abdominal sternites testaceous.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female, which was reared from an unidentified microlepidopterous larva at White Point Beach, Prince Edward Island, 6 August 1934, by J. McDunnough.

Orgilus intermedius, new species

Because of its narrow and proturbant face, relatively large ocelli, and very short malar space this species is placed in the group represented by *obscurator* (Nees) and its close relatives, although it differs from other forms of this group in its more convex and somewhat receding temples. In the structure and sculpture of the thorax and abdomen it is suggestive of *zonalis*, new species, but its narrow face, short malar space, and narrower temples distinguish it immediately from that form.

FEMALE.—Length about 3.5 mm. Head not wider than thorax, in dorsal view about 0.75 as long as wide, weakly excavated behind; face prominent, a little narrower than eye height, minutely granulose or shagreened; malar space about 0.3 as long as eye height and much shorter than longest segment of maxillary palpus; anterior tentorial pits barely below level of lower eye margins; clypeus strongly convex and longer than the width of its apical truncature; cheeks weakly shagreened on lower half; temples 0.75 as wide as eyes, rounded and somewhat receding, smooth and polished; occiput carinately margined only at the sides; ocellular line 1.5 times as long as diameter of an ocellus; antennae of holotype incomplete, 27 segments remaining, none of the flagellar segments as broad as long.

Thorax slender; notauli deeply and sharply impressed and finely foveolate; middle lobe of mesoscutum and the parts of the lateral lobes adjacent to the notauli, as well as the disc of scutellum, finely shagreened and rather mat; propodeum nearly horizontal, granulose and with some rugulae; side of

pronotum largely finely granulose and dull, rugulose in the impression; mesopleuron faintly alutaceous below the narrow, foveolate, longitudinal furrow, shiny; metapleuron evenly granulose and dull. Hind coxa finely granulose and dull above and on outer side; hind femur not more than four times as long as broad; inner calcarium of hind tibia fully half as long as metatarsus; tarsal claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus nearly interstitial; hind wing more than five times as long as wide; lower abscissa of basella much longer than nervellus, more than half as long as mediella and also more than half as long as maximum width of hind wing.

Abdomen a little longer than thorax; first tergite nearly 1.5 times as long as wide at apex, strongly granulose and mat, the dorsal keels indistinct; second tergite about as long as broad at base, noticeably wider at apex than at base, and closely granulose like the first; second suture fine but sharply impressed; third tergite with basal half or more finely granulose, or shallowly confluent punctate; remainder of dorsum of abdomen smooth and shiny; ovipositor sheath about as long as propodeum and abdomen combined.

Black; antennae testaceous, brownish black apically, the scape brownish above; palpi pale; legs testaceous; apical half of hind femur, apical third or more of hind tibia, and more or less of the tarsi, darkened; tegulae and wing bases yellow; wings weakly infumated; second tergite brownish with narrow reddish-yellow lateral margins on basal half; basal two sternites yellow.

MALE.—In general like the female. The segments of the antennal flagellum, however, are all noticeably longer than broad, the temples are relatively a little wider, sometimes the tegulae are brownish, the hind coxae are blackish basally, and the hind femora and tibiae and all the tarsi are more extensively darkened.

HOLOTYPE.—USNM 70172.

DISTRIBUTION.—Known only from the type-series, which consists of the following: The holotype female and 1 male collected at Rosslyn, Virginia (no date on labels), by H. H. Smith; 1 male from Cabin John, Maryland, 29 June 1917, R. M. Fouts; 1 male from Plummers Island, Maryland, 18 August 1912, J. R. Malloch, and 1 male from Glen Echo, Maryland, 16 June 1919, R. M. Fouts.

Orgilus invictus, new species

In many respects this species is very similar to *frigidus*, new species, but it is readily distinguished by its ferruginous head and unusually stout female antennae.

FEMALE.—Length about 4.2 mm. Head slightly wider than thorax, in dorsal view 0.65 as long as wide; face about 1.2 times as wide as eye height, finely, closely punctate on a shagreened surface; clypeus strongly convex and closely punctate, not separated from the face medially by an impression; malar space only very slightly longer than clypeus and not quite half as long as eye height; cheeks shagreened and dull; temples only very slightly receding, at mideye point about as wide as eyes, smooth and shiny near eyes but shagreened and somewhat mat along the strongly reflexed occipital carina; occipital carina broadly interrupted medially; ocellular line more than twice as long as diameter of an ocellus; antennae 35-segmented in the holotype, most of the flagellar segments after the fifteenth broader than long.

Mesoscutum rather shiny, but with numerous extremely shallow punctures; notauli sharply impressed, finely foveolate and meeting in a very acute angle; disc of scutellum small, weakly convex, with a few very shallow punctures; propodeum finely rugulose, with a transverse smooth and polished area each side at base, the stubs of the carinae that arise from the posterior margin rather poorly developed, especially the median ones; side of pronotum largely rugulose, granulose and mat at anterior margin and narrowly nearly smooth along upper margin; mesopleuron smooth and shiny, the longitudinal furrow irregularly foveolate, the surface below it faintly alutaceous and a few weak punctures below the furrow anteriorly; metapleuron closely rugulose over most of its surface but a small area in the anterior angle punctate with a little weak shagreening between the punctures, rather mat. Hind coxa about half as long as hind femur, somewhat rugulose on upper edge toward base and finely granulose and dull on outer side; hind femur nearly five times as long as broad; inner calcarium of hind tibia more than 0.6 as long as metatarsus; tarsal claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus about as long as second abscissa; nervulus barely postfurcal; hind wing 4.5 times as long as wide; lower abscissa of basella slightly longer than nervellus but less than half as long as mediella.

Abdomen considerably longer than thorax and on third tergite fully as wide; first tergite about 1.3 times as long as wide at apex and finely closely rugulose, even in the basal impression, longitudinally so laterally, the dorsal keels not distinct, the spiracles more than twice as far from apex as from base; second tergite 0.9 as long as broad at base, finely closely rugulose except very narrowly at posterior margin where it is smooth and shiny; third tergite very finely rugulose on basal two-thirds, smooth and polished apically; the following tergites polished; ovipositor sheath as long as propodeum and abdomen combined.

Head reddish testaceous, stemmaticum black; basal half of antenna reddish yellow, the scape above and the apical half of the flagellum darkened; palpi piceous; thorax black; tegulae and wing bases yellowish brown; wings subhyaline on basal third, somewhat infumated on apical two-thirds; legs yellowish brown, the trochanters and femora of fore- and middle legs blackish inwardly, hind coxae darkened on inner side and basally below, hind trochanters and femora black on inner side, the latter also darkened outwardly toward apices, and the hind tibiae and tarsi more or less piceous; abdomen black; venter entirely blackish.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female collected at Hebron, Labrador, 11 August 1954, by E. E. Sterns.

Orgilus laeiventris (Cresson)

Ischius laeiventris Cresson, 1872b, p. 182.

Orgilus laeiventris (Cresson).—Cresson, 1887, p. 228.—Muesebeck and Walkley, 1951, p. 111.

Muesebeck and Walkley (1951) suppressed *laeiventris* as a synonym of *mellipes* (Say), but I now believe that action was not warranted. The unique type differs from what is currently identified as *mellipes* in its completely smooth and polished second tergite, which is as long as broad at base; in its more slender hind femora, which are about five times as long as broad; in its almost completely smooth and polished first tergite, and in having all coxae darkened. Unfortunately, the holotype is a headless male. Because head characters are very important in this group, and because no other specimen has been encountered that can definitely be identified as *laeiventris*, it has seemed advisable to omit this form from the key and to treat it, at least temporarily, as a doubtful species.

HOLOTYPE.—USNM 1640.

DISTRIBUTION.—Known only from the holotype male from Texas.

Orgilus lateralis (Cresson)

FIGURES 1, 1a, 1b, 35, 44

Eubadizon lateralis Cresson, 1872a, p. 229.

Orgilus kearfotti Ashmead, 1903, p. 144.

Orgilus maculiventris (Cresson).—Cushman, 1920, p. 290.—Nickels, Pierce, and Pinkney, 1950, p. 12.—Muesebeck and Walkley, 1951, p. 111.

I have seen the holotypes of *lateralis*, *kearfotti*, and *maculiventris*, and I think there can be no doubt that *kearfotti* is the same as *lateralis*. However, the repeated identification of this species as *maculiventris* has been incorrect; the latter is a very different form. The true *lateralis* is most like *walleyi*, new species, from which it may be distinguished as shown in the description of the latter species.

FEMALE.—Length usually ranging from 3 to 4 mm. Head about as wide as thorax, in dorsal view nearly twice as wide as long; face about 1.15 times as wide as eye height, finely punctate and shiny; anterior tentorial pits on a line with level of lower eye margins; malar space 0.3 as long as eye height; cheeks minutely granulate and mat; temples largely smooth, strongly receding, at mideye point hardly half as wide as eyes; occipital carina complete; ocellular line about twice as long as diameter of an ocellus; antennae normally 27- to 32-segmented, even the shortest flagellar segments slightly longer than broad, the apical segment with a very short terminal spicule.

Mesoscutum shiny, with very shallow punctures; notauli sharply impressed and very finely, sometimes indistinctly, punctate; propodeum more or less punctate or rugulose punctate medially and finely granulate to nearly smooth laterally; side of pronotum and the mesopleuron smooth and shiny, the mesopleural furrow sinuate and evenly, finely foveolate; metapleuron often faintly alutaceous. Hind coxa three-fourths as long as hind femur and very finely coriaceous on the outer side; hind femur about 3.7 times as long as wide; inner calcarium of hind tibia about half as long as metatarsus; tarsal claw with a well developed subbasal tooth. Radial cell about 1.3 times as long as stigma; second abscissa of radius not nearly on a line with intercubitus; stub of third abscissa of cubitus punctiform; nervulus postfurcal; hind wing usually nearly 4.5 times

as long as wide; lower abscissa of basella much longer than nervellus and usually half as long as mediella.

Abdomen usually a little narrower than thorax; first tergite usually about 1.5 times as long as broad at apex, confluent punctate or very finely rugulose, the dorsal keels weak and very short; second tergite around 1.2 times as broad at base as long, confluent punctate or finely rugulose punctate, more weakly so laterally; third tergite similarly but more weakly sculptured; fourth and fifth tergites usually somewhat punctate; ovipositor sheath usually about as long as distance from tegulae to end of abdomen, but in some of the smallest specimens, particularly those from Coleophoridae, the ovipositor sheath may be significantly shorter, occasionally only very slightly longer than the abdomen.

Honey yellow or ferruginous, usually varied with black; in the darkest specimens the vertex and occiput are largely darkened, and also the dorsum of the thorax and the abdomen, but the abdomen has yellowish markings at least at the sides; palpi usually yellow; antennae yellowish beneath, at least basally, brown above and toward apices beneath; wings clear hyaline; tegulae and wing bases yellow; legs honey yellow or ferruginous, the apices of the hind femora, usually the hind tibiae except at bases, where they are yellowish white, and the tarsi, more or less darkened.

MALE.—Essentially like the female but usually a little more slender.

HOLOTYPE.—That of *lateralis* is in the Academy of Natural Sciences of Philadelphia; that of *kearfotti* is in the United States National Museum (USNM 6960).

DISTRIBUTION.—The holotype of *lateralis* is from Illinois, that of *kearfotti* from Caldwell, New Jersey. Other material examined indicates a range from New Brunswick, Quebec, and Ontario to Florida and the Gulf Coast, and from there west to California; it also includes specimens from the state of Nuevo Leon, Mexico. Hosts recorded on the labels of the specimens include *Acrobasis caryae* Grote, *A. comptoniella* Hulst, *A. indiginella* (Zeller), *A. juglandis* (LeBaron), *Pulicavaria thujaella* (Kearfott), *P. piceaella* (Kearfott), *Petrova albicapitana* Busck, *Coleophora* sp. on *Betula*, *C. caryae-foliella* Clemens, *C. ulmifoliella* McDunnough, *Coleotechnites mackiei* (Keifer), *Recurvaria juniperella* Kearfott, *Mompha* sp., and *Choristoneura fumiferana* (Clemens). I am not completely satisfied that the present treatment applies to only one species, but thus far I have been unable to discover satisfactory bases for distinguishing different forms.

Orgilus lautus, new species

This species is very similar to *melissopi*, new species, but it is distinguished by its smoother face, its smoother, virtually impunctate metapleuron and outer side of hind coxa, the much less extensively punctate mesoscutum, and the paler antennae, which differ also in having fewer segments.

FEMALE.—Length about 3.8 mm. Head fully twice as wide as long in dorsal view; face flat, smooth and shiny, with only faint, minute punctures, slightly wider than eye height (in ratio of 70:65); malar space about one-fourth as long as eye height, shagreened and mat like the cheeks and lower temples; temples a little more than half as wide as eyes, sharply receding from eye margins and rather flat, smooth and polished above mideye level; occipital carina complete; ocellular line at least twice as long as diameter of an ocellus; antennae of holotype 27-segmented, even the shortest segments of flagellum slightly longer than broad.

Mesoscutum smooth and shiny, very weakly punctate on the lobes, smooth and polished along posterior margin behind the large punctate depression at the end of the middle lobe; notauli complete and finely foveolate; propodeum nearly smooth laterally, somewhat rugulose punctate medially, the stubs of the apical longitudinal carinae weak; side of pronotum smooth and polished behind and above the impression, a little shagreened anteriorly; mesopleuron smooth and polished, the longitudinal furrow complete, strongly sinuate and finely foveolate; metapleuron smooth and shiny. Hind coxa smooth on outer side; hind femur 3.6 times as long as wide; longer calcarium of hind tibia just about half as long as metatarsus; tarsal claw with a broad subbasal tooth. Radial cell on wing margin 1.5 times as long as stigma; second abscissa of radius not nearly on a line with intercubitus; stub of third abscissa of cubitus extremely short, punctiform; nervulus postfurcal by half its length; hind wing about 4.4 times as long as wide; lower abscissa of basella longer than nervellus and nearly half as long as mediella.

Abdomen about as broad as thorax; first tergite 1.3 times as long as wide at apex, the surface finely alutaceous and with some weak rugulae, the dorsal keels well developed and extending to the middle of the tergite; second tergite about 1.5 times as wide at base as long, faintly alutaceous and shiny; remainder of abdomen smooth and shiny; ovipositor sheath as long

as distance from base of scutellum to end of abdomen.

Head testaceous but with a large median blackish area on frons and vertex that extends onto the back of the head where it broadens considerably; palpi pale; antennae brownish yellow below on more than basal half, darkened above and toward apices; thorax dark ferruginous, with the mesonotal lobes, upper parts of the pleura and the propodeum black or blackish; legs, including all coxae, testaceous, the hind tibia darkened narrowly near base and at apex but the extreme base whitish, apical tarsal segments dark; tegulae and wing bases pale yellow; wings hyaline; abdomen above largely piceous varied with ferruginous, especially on the third and fourth tergites; venter of abdomen entirely yellow.

HOLOTYPE.—USNM 70173.

DISTRIBUTION.—Known only from the holotype female taken in Livingston County, Michigan, 28 May 1944, by R. R. Dreisbach.

Orgilus lepidus Muesebeck

FIGURE 24

Orgilus lepidus Muesebeck, 1967b, p. 177.

This Neotropical species has been described in detail in the above paper and is therefore not redescribed here. As pointed out in that article this parasite of the potato tuberworm has been released in California. Whether it has become firmly established there is not yet known. Since the publication of the description I have learned that *O. lepidus* has also been introduced into India and Australia in the hope that it may eventually become helpful in controlling the potato tuberworm, *Phthorimaea operculella* (Zeller), in those areas.

HOLOTYPE.—USNM 69536.

Orgilus levis, new species

This species resembles *politus* in its smooth and polished abdomen and hind coxae, but it may be distinguished by the much narrower hind wing, which is also differently shaped, being broadly rounded at the apex and having the anterior and posterior margins parallel, by the relatively shorter hind femora and by the nearly horizontal and rugulose propodeum; also by the blackish mandibles and darker wings.

MALE.—Length of holotype 4 mm. Head conspicuously wider than thorax, in dorsal view about 0.6

as long as wide. Face a little narrower than eye height (in ratio of 60:65), shiny, and with some minute and faint punctures; malar space hardly one-third as long as eye height, and finely shagreened like the lower cheeks; temples rounded, smooth and polished, about 0.75 as wide as eyes; occipital carina broadly interrupted medially; ocellocular line twice as long as diameter of an ocellus; antennae 35-segmented in the holotype, 33-segmented in the smaller paratype.

Thorax very narrow; mesoscutum shiny, with minute and very shallow setigerous punctures; mesonotal lobes very prominent because of the deeply impressed notauli, which are very fine and not clearly foveolate; propodeum nearly horizontal, finely rugulose, the stubs of longitudinal carinae that arise from the posterior margin very short; side of pronotum shiny, weakly rugulose anteriorly and in the impression; mesopleuron smooth and shiny, the longitudinal furrow straight and weak, rather weakly foveolate; metapleuron shiny and largely smooth, rugulose posteriorly. Hind coxa smooth and shiny, 0.75 as long as hind femur, which is less than four times as long as broad; inner calcarium of hind tibia less than half as long as metatarsus, the outer calcarium much shorter than the second tarsal segment. Radial cell on wing margin not quite as long as stigma; second abscissa of radius on a line with intercubitus; nervulus a little postfurcal; hind wing five times as long as wide, broadly rounded at apex, the anterior and posterior margins virtually parallel; lower abscissa of basella very nearly or quite half as long as mediella or maximum width of hind wing.

Abdomen completely smooth and polished, with no trace of sculpture, even on the first tergite, which is also without any trace of the dorsal keels; first tergite nearly 1.5 times as long as wide at apex, the second nearly as long as wide at base.

Black; clypeus, mandibles, palpi, and antennae black; tegulae and wing bases brown; wings uniformly a little smoky; legs, including all coxae entirely, testaceous, the tibiae and tarsi more or less darkened.

FEMALE.—Unknown.

HOLOTYPE.—USNM 70174.

DISTRIBUTION.—Known only from two males (one the holotype) taken in Bradford County, Florida, 8 December 1962, by F. W. Mead, additionally labeled as from "pine flatwoods and drained cypress ponds."

Orgilus lissus, new species

This species is very similar to *fulgens*, new species, but the face, propodeum, and first tergite of the abdomen are much smoother.

FEMALE.—Length 4.3 mm. Head a little narrower than thorax, deeply excavated behind, in dorsal view about 0.9 as long as wide; face narrower than eye height (in ratio of 65:75), smooth and shiny with only a few weak punctures; clypeus slightly longer than malar space, not sharply separated from face medially, sparsely punctate; malar space one-third as long as eye height; cheeks and temples smooth and polished, the latter very nearly as wide as eyes and flat, not at all receding; vertex polished; occiput carinately margined only at the sides; ocellular line a little less than twice as long as diameter of an ocellus; antennae of holotype incomplete.

Thorax much higher than wide; mesoscutum very smooth and shiny, the lobes impunctate; notauli very fine, weakly and incompletely foveolate; disc of scutellum small, convex, polished; basal third of propodeum completely smooth and shiny, the remainder with only a little weak rugulosity; side of pronotum largely rugulose; mesopleuron smooth and polished, the longitudinal furrow shallow and finely foveolate; metapleuron smooth and polished, rugulose only very narrowly at the lower posterior margin. Hind coxa smooth and shiny; hind femur barely twice as long as hind coxa and slightly less than four times as long as wide; inner calcarium of hind tibia half as long as metatarsus; tarsal claws simple. Radial cell on wing margin barely longer than stigma; second abscissa of radius on a line with intercubitus; nervulus barely postfurcal; hind wing 4.5 times as long as wide; lower abscissa of basella half as long as mediella.

Abdomen about as long as head and thorax combined; first tergite almost entirely smooth, only a little faint sculpture near the middle laterally; second tergite about 1.25 times as broad at base as long, finely rugulose punctate on basal third, otherwise smooth and shiny; third tergite virtually smooth, with only a little very weak punctation near base; ovipositor sheath a little shorter than thorax and abdomen combined.

Black; clypeus black; mandibles ferruginous; palpi black; antennal scape black, the flagellum brown below toward base; blackish apically; legs testaceous, the apices of the hind femora and of the hind tibiae and all the tarsi more or less darkened; tegulae black, wing

bases yellowish brown; wings subhyaline; abdomen entirely black above and below.

MALE.—Unknown.

HOLOTYPE.—USNM 70175.

DISTRIBUTION.—Known only from the holotype female, which was taken at Sierraville, Sierra County, California, 14 July 1958, by R. M. Bohart.

Orgilus longiceps Muesebeck

FIGURE 32

Orgilus longiceps Muesebeck, 1933, p. 53.

This species most closely resembles *obscurator* (Nees) and *buccatus*, new species. It differs from both in being not so dark, with the legs largely reddish yellow, and the clypeus except at base, the mandibles and more or less of the antennae, reddish, and the wings almost clear hyaline. It differs further from *obscurator* in its more slender body, its longer and narrower head, which is more strongly excavated behind, its shorter malar space, flaring temples and more finely punctate face, and in its extensively sculptured third tergite. From *buccatus*, which it resembles in the shape of the head, including the flaring temples, it differs in color, as noted above, and also in its more slender form and sculptured third tergite.

HOLOTYPE.—USNM 44853.

DISTRIBUTION.—In addition to the type-series, from Japan, the U.S. National Museum has 26 specimens, all of them, like the type material, reared from *Grapholitha molesta* (Busck) in Japan. The species was introduced into the United States by the U.S. Department of Agriculture between 1933 and 1937, and it was released in *G. molesta* infestations in thirty widely separated localities from Massachusetts to Michigan south to South Carolina and Arkansas (Allen, 1962, p. 119). Although it now seems doubtful that *longiceps* has become established here, it is thought advisable to include it in the present treatment.

Orgilus lunaris, new species

This form is extremely similar to *ferus*, new species, but the tegulae and wing bases are yellow, the temples are less receding, and the wings are somewhat infumated apically.

FEMALE.—Length about 3.8 mm. Head just about as wide as thorax at tegulae, in dorsal view 0.7 as long as wide; face slightly wider than eye height (in

ratio of 70:65), very shiny, closely punctate over most of its surface, a little rugulose just below antennae, where there is also a short median longitudinal keel; clypeus weakly separated from face by a shallow impression and with a few scattered punctures; malar space longer than clypeus and very nearly half as long as eye height, shagreened and mat; cheeks very weakly shagreened; temples at mideye point 0.7 as wide as eyes, only very slightly receding, smooth and polished except along the occipital carina where they are shagreened; ocellular line decidedly less than twice as long as diameter of an ocellus; antennae of holotype 31-segmented, those of the only female paratype in which they are complete 30-segmented, three or four of the segments in the apical fourth of the flagellum about as broad as long.

Mesoscutum smooth and very shiny, with only extremely shallow punctures on the middle lobe; notauli sharply impressed, finely foveolate anteriorly, coarsely so posteriorly; propodeum closely rugulose, the stubs of the apical carinae rather weak, especially the median ones, the median apical area usually weakly defined; side of pronotum rugulose in the impression, granulose anteriorly and virtually smooth along upper margin; mesopleuron smooth and polished, the longitudinal furrow sinuate and foveolate; metapleuron very shiny, rugulose at the posterior margin, otherwise smooth with only very shallow scattered punctures. Hind coxa rugulose above basally, largely smooth on outer side, half as long as hind femur, which is about four and one-half times as long as wide; inner calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin slightly shorter than stigma; second abscissa of radius on a line with intercubitus; third abscissa of cubitus just about as long as second abscissa; nervulus a little postfurcal; hind wing about 4.4 times as long as wide; lower abscissa of basella subequal in length with nervellus and much less than half as long as mediella or maximum width of hind wing.

Abdomen at apex of third tergite nearly or quite as broad as thorax; first tergite about 1.25 times as long as wide at apex, closely rugulose except medially at base and at apex, the basal dorsal keels not developed, the distance from the spiracles to the base of the tergite about one-third the distance to the apex; second tergite only very slightly broader at base than long (1.1 times), finely rugulose on basal two-thirds, polished apically and rather broadly smooth laterally,

especially in the apical corners; second suture well defined but weak; third tergite with a transverse confluent punctate area at the middle; remainder of dorsum of abdomen smooth and polished; ovipositor sheath slightly longer than propodeum and abdomen combined.

Black; clypeus anteriorly and the mandibles ferruginous; antennae brownish yellow on basal two-thirds, the scape darker, black above; legs largely testaceous, the hind coxae a little darkened basally, also the hind femora apically on the inner side, the hind tibiae apically and the tarsi; tegulae and wing bases yellow; wings a little smoky, most noticeably so apically; abdomen completely black, above and below.

MALE.—Unknown.

HOLOTYPE.—USNM 70176.

DISTRIBUTION.—Idaho and California. Known only from the type-series consisting of 2 females from Craters of the Moon National Park, Idaho, 25 August 1964 (holotype) and 12 September 1964 (paratype), D. S. Horning; 1 female from Hat Creek, Shasta County, California, 21 June 1955, E. E. Linquist, and 1 female from Mill Creek, San Bernardino Mts., California, 20 August 1949, P. H. Timberlake.

Orgilus macrurus, new species

FIGURES 27, 49

The combination of characters given in the key will distinguish this species from those most similar to it. The ovipositor is unusually long, being longer than in any other species of *Orgilus* known to me.

FEMALE.—Length around 3.5 mm. Head wider than thorax, in dorsal view nearly twice as wide as long, weakly excavated behind; face just about as broad as eye height, shiny, and with some scattered punctures medially; clypeus strongly convex, not separated from the face medially; anterior tentorial pits very deep and on a line with lower eye margins; malar space about one-fourth as long as eye height; cheeks finely granulose and mat; temples about half as wide as eyes, somewhat convex, receding; occipital carina interrupted medially; ocellular line a little longer than distance between the lateral ocelli and nearly or quite twice as long as the diameter of one of them; antennae 38- or 39-segmented in the available female specimens with complete antennae, even the shortest flagellar segments at least as long as broad, the apical

segment with a very short, sometimes indistinct, terminal spicule.

Thorax slender, 2.5 times as long as wide; mesoscutum smooth and shiny, without a rugulose area at the junction of the notauli, which are finely foveolate; the middle lobe a little punctate anteriorly; disc of scutellum rather flat and with a few weak punctures; propodeum only a little declivous caudad, usually finely rugulose over most of its surface but sometimes granulose or even nearly smooth laterally, the stubs of the carinae that arise from the posterior margin of propodeum in many species of the genus not distinct; side of pronotum granulose below the impression, coriaceous above it; prepectal carina weak; mesopleuron smooth and polished, the longitudinal furrow nearly straight, finely foveolate; metapleuron weakly, indefinitely sculptured anteriorly, more or less rugulose posteriorly and below. Hind coxa two-thirds as long as hind femur, finely coriaceous and rather mat; hind femur four times as long as broad; longer calcarium of hind tibia not more than half as long as metatarsus; tarsal claws simple. Stigma only slightly shorter than radial cell on wing margin; second abscissa of radius very nearly on a line with intercubitus; stub of third abscissa of cubitus punctiform; nervulus always post-furcal, sometimes by nearly half its length; hind wing usually about 4.6 times as long as wide; lower abscissa of basella a little more than half as long as mediella.

Abdomen slightly longer than thorax; first tergite 1.5 times as long as broad at apex, largely finely granulose or shagreened but smooth at base, the basal dorsal keels distinct but weak; second and following tergites smooth, the second not quite as long as broad at base; second suture very weak, sometimes barely apparent; ovipositor sheath more than twice as long as head, thorax, and abdomen combined.

Black or blackish, palpi yellow, sometimes darkened basally; face and antennae brownish; tegulae yellow; wings hyaline; legs testaceous, the tarsi darkened and sometimes also the hind femora and tibiae more or less; abdomen brownish yellow medially, the first tergite except apically, and the fifth and following tergites, darkened.

MALE.—Legs usually somewhat darker than in the female; antennae of the available male specimens 43- or 44-segmented.

HOLOTYPE.—USNM 70177.

DISTRIBUTION.—The holotype is from Plummers Island, Maryland, collected 28 June 1961, by

K. V. Krombein. Paratypes (24 in all) are from various localities in Maryland, Virginia, West Virginia, New York, Colorado, Quebec, and Ontario.

Orgilus maculiventris (Cresson)

FIGURE 46

Eubadizon maculiventris Cresson, 1872b, p. 178.

Oresimus maculiventris (Cresson).—Ashmead, 1900, p. 123.

This name has been generally misapplied since its original publication. It has been used for what is, in fact, *lateralis* (Cresson). Recent study of the holotype has reestablished the identity of the species. It may be readily distinguished from *lateralis* by its elongate form and longer antennae and by the longitudinal sculpture of the basal three tergites.

FEMALE.—Length around 5 mm. Head a little wider than thorax, in dorsal view about 1.8 times as broad as long; face rather flat and very finely punctate and shiny, its width about equal to the eye height; clypeus not separated from the face medially; anterior tentorial pits on a line with lower eye margins; malar space a little less than one-third as long as eye height; cheeks and lower temples finely granulose and mat; temples about half as wide as eyes and rather strongly receding; vertex smooth; occipital carina complete though weak medially; ocellular line twice as long as the distance between the lateral ocelli, which is about equal to the diameter of one of them; antennae 39-segmented in the only available female specimen with complete antennae, all segments of the flagellum longer than broad, the apical segment with a short terminal spicule.

Thorax more than twice as long as wide; mesoscutum smooth; notauli finely foveolate; propodeum only slightly declivous caudad, rugulose punctate medially, smooth toward the sides, stubs of longitudinal carinae arising from posterior margin and setting off five apical areas that are open in front; side of pronotum, mesopleuron, and metapleuron smooth and polished, the longitudinal mesopleural furrow sinuate and finely foveolate; prepectal carina strong, attaining anterior margin of mesopleuron. Hind coxa nearly smooth, 0.7 as long as hind femur, the latter a little more than four times as long as wide and closely punctate and shiny on the outer side; inner calcarium of hind tibia a little more than half as long as metatarsus; tarsal claw with a well-developed subbasal tooth. Radial cell on wing margin at least one and one-half

times as long as stigma, nearly attaining apex of wing; stigma nearly four times as long as wide; spur of third abscissa of cubitus little more than punctiform; nervulus interstitial or very slightly postfurcal; hind wing about 4.5 times as long as wide; lower abscissa of basella much longer than nervellus and a little more than half as long as mediella or maximum width of hind wing.

Abdomen distinctly longer than head and thorax combined and only two-thirds as wide as the thorax; first tergite fully twice as long as wide at apex, longitudinally rugulose, abruptly impressed at extreme base and slightly constricted immediately behind the spiracles, which are farther from each other than from the base of the segment and more than three times as far from the apex as from the base; second tergite conspicuously longer than broad at base, nearly parallel-sided, and longitudinally rugulose striate; third tergite sculptured like the second but more weakly; the remaining tergites smooth and shiny; ovipositor a little decurved at apex, the sheath about as long as head, thorax, and abdomen combined.

Reddish yellow; palpi slightly darkened; antennae brownish yellow beneath, dark brown above; stemmaticum, usually a large elongate spot on each mesonotal lobe, propodeum except along the sides, first tergite largely, second tergite except narrowly at the sides and a median spot on each of the following tergites, black or blackish; legs reddish yellow, extreme apices of middle and hind femora and of middle tibiae blackish, the hind tibia blackish, with a yellowish-white annulus at extreme base and a yellowish-brown streak covering the middle half of the posterior surface, and all the tarsi more or less darkened, the posterior pair nearly black; tegulae yellow; wings hyaline. There is considerable variation in the extent of the dark markings; occasionally the thorax and abdomen are entirely yellow.

MALE.—Agrees in all essentials with the female. The antennae of the available males are 37-segmented.

HOLOTYPE.—In the Academy of Natural Sciences of Philadelphia.

DISTRIBUTION.—The holotype is from Comal County, Texas. Other specimens I have seen are from Brookline, Massachusetts, Falls Church, Virginia, (reared from *Antaeotricha humilis* (Zeller), Mt. Pleasant, Florida, and Opelousas, Louisiana.

Orgilus medicaginis, new species

FIGURES 9, 9a, 9b, 30, 40

This species is rather similar to *detectiformis* Viereck, but it differs in its normally darker abdomen, with even the venter blackish or piceous, in its basally hyaline wings, in its normally smoother second tergite, and in the head and thorax of the female being usually more or less ferruginous.

FEMALE.—Length usually 4 to 4.5 mm. Head slightly wider than thorax, about 0.65 as long as wide in dorsal view; face 1.3 as wide as eye height, shiny, punctate over most of its surface but a little rugulose just below the antennae; clypeus usually weakly punctate but occasionally strongly so; malar space longer than clypeus and half as long as eye height; cheeks shagreened and rather mat like the malar space; temples at mideye point at least 0.8 as wide as eyes, sometimes their width just about equal to eye width, rather flat and very gradually receding, smooth and shiny except narrowly along the occipital carina where they are a little shagreened; occipital carina prominent, broadly interrupted medially; frons shagreened laterally, very faintly rugulose or punctate near the ocelli; upper occiput smooth or with some weak punctures; ocellular line about twice as long as diameter of an ocellus; antennae usually 30- to 33-segmented, some of the preapical segments at least as broad as long.

Mesoscutum smooth and shiny, with scattered shallow punctures; notauli foveolate, meeting at apex of scutum in a small rugulose area; disc of scutellum smooth; propodeum rugulose, with a small smooth area each side of the middle at base and with prominent stubs of longitudinal carinae arising from the posterior margin and setting off five apical areas that are open in front; side of pronotum closely rugulose except along upper margin; mesopleuron smooth and shiny, the longitudinal furrow strongly foveolate; metapleuron largely rugulose, weakly so in the anterior angle. Hind coxa not more than half as long as hind femur, rugulose basally above, largely smooth and shiny on outer side below; hind femur about five times as long as broad; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin just about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as second abscissa; nervulus distinctly postfurcal, usually by about one-third its length; hind wing little

more than four times as long as broad; lower abscissa of basella usually about as long as nervellus, much less than half as long as mediella and only one-third as long as maximum width of hind wing.

Abdomen a little narrower than thorax; first tergite about 1.5 times as long as broad at apex, rugulose, the dorsal keels distinct but very short, the spiracles a little farther from each other than from base; second tergite broadening slightly caudad, as long as broad at base and sometimes as long as broad at apex; second and following tergites smooth and polished, the second sometimes a little punctate or shagreened medially at base; the second suture distinct but very fine; ovipositor sheath about as long as propodeum and abdomen combined.

Head usually largely ferruginous varied with black, especially above and behind; palpi dark; antennae usually reddish brown, darkened apically; thorax varied with ferruginous and black, the pro- and mesopectus, lateral lobes of mesoscutum, metapleura, and propodeum nearly always black; tegulae and wing bases reddish yellow or reddish piceous; wings hyaline basally, weakly infumated apically; anterior and middle legs brown, their coxae testaceous, their trochanters and femora somewhat darkened above; hind legs, and especially the coxae, varying from ferruginous to black, the femora more or less darkened on the inner sides even in the palest specimens; abdomen black, the venter piceous to blackish.

MALE.—Darker than the female, the head and thorax nearly always black, except for the lower part of the clypeus and the mandibles, which are ferruginous; tegulae and wing bases sometimes reddish yellow but usually black or blackish; legs usually darker than in the female but extremely variable. The antennae of the specimens examined are 31- to 34-segmented. Usually the second tergite is relatively a little shorter than in the female.

HOLOTYPE.—USNM 70178.

DISTRIBUTION.—The type-series consists of 36 females (one the holotype) and 63 males swept from alfalfa at Elfrida, Arizona, 2 May 1956, by F. G. Werner and G. D. Butler. In addition, I have seen many specimens from other localities in Arizona, most of them swept from alfalfa but some collected on cotton; also scattered specimens collected from alfalfa or cotton in California, New Mexico, and Texas.

Orgilus melissopi, new species

FIGURES 16, 28

Orgilus, new species.—Dohanian, 1942, p. 838.

This might be easily confused with *infrequens*, new species, but the second tergite is much shorter and broader, the head and thorax are usually more or less extensively black, and the maxillary palpi are pale, at most a little darkened basally (in the available material of *infrequens* the head and thorax are almost entirely brownish yellow and the palpi are piceous or blackish).

FEMALE.—Length around 4.2 mm. Head in dorsal view about twice as broad as long; face slightly wider than eye height, punctate and closely covered with short hair; malar space about one-fourth as long as eye height; cheeks finely granulose and dull; temples half as wide as eyes, a little rounded and receding, shiny, weakly punctate below; vertex punctate; ocellular line just about twice as long as diameter of an ocellus; occipital carina complete although sometimes barely distinct at the very middle; antennae 31- to 33-segmented in the specimens examined, even the shortest segments of the apical fourth of the flagellum slightly longer than broad.

Mesoscutum closely, finely punctate, even along posterior margin behind the depression at end of the middle lobe; notauli sharply impressed, complete, finely foveolate; propodeum more or less rugulose punctate, more weakly so laterally, the stubs of the apical longitudinal carinae prominent; side of pronotum, except narrowly in the impression, and the mesopleuron smooth and polished; the longitudinal furrow of mesopleuron sinuate and foveolate; metapleuron with well separated punctures, shiny. Hind coxa shiny, with scattered punctures, about two-thirds as long as hind femur, the latter less than four times as long as its maximum width; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claw with a subbasal tooth. Radial cell on wing margin more than 1.5 times as long as stigma; second abscissa of radius not nearly on a line with intercubitus; spur of third abscissa of cubitus very short, less than one-fourth as long as second abscissa; nervulus a little postfurcal; hind wing four times as long as wide; lower abscissa of basella conspicuously longer than nervellus and about half as long as mediella.

Abdomen fully as wide as thorax; first tergite less than one and one-half times as long as wide at apex,

the dorsal keels well developed and distinct to the middle of the tergite, the surface of the tergite more or less longitudinally roughened; second and third tergites faintly alutaceous; remainder of abdomen smooth and shiny; ovipositor sheath about as long as thorax and abdomen combined.

Head reddish yellow, the vertex and occiput largely blackish; palpi yellow, sometimes a little darkened basally; antennae entirely black; thorax black varied more or less extensively with ferruginous, or ferruginous varied with black; anterior and middle legs entirely yellow; hind legs yellow, the extreme apex of hind femur, the hind tibia except for a whitish annulus at base and a broader brownish-yellow band at the middle, and the hind tarsus blackish or piceous; wings hyaline; tegulae and wing bases pale yellow; abdomen usually largely blackish varied with ferruginous.

MALE.—Generally darker than the female, otherwise essentially similar.

HOLOTYPE.—USNM 70179.

DISTRIBUTION.—Oregon and California. The type-series consists of the following: 2 females (one the holotype) and 3 males reared by S. M. Dohanian from larvae of *Melissopus* in acorns at Grants Pass, Oregon, in 1942 and 1943, the holotype, 31 July 1942; 1 female from Ashland, Oregon, reared from an acorn of *Quercus kelloggii* by P.D. Sergeant, 23 August 1916; 1 female reared from *Melissopus* in acorns, Myrtle Creek, Oregon, 14 August 1941, by S. M. Dohanian; 1 male "ex *Melissopus* prob. *latiferreanus* (Wlsm.)" in acorn of *Quercus dumosa*, Napa County, California, 1963; and 1 female reared from an acorn of *Quercus agrifolia*, Los Padres National Forest, California, 21 April 1939.

Orgilus mellipes (Say)

Microgaster mellipes Say, 1936, p. 261.

Eubadizon incognitus Ashmead, 1889, p. 644.

Orgilus mellipes Gahan, 1919 p. 123.

The type of *mellipes* is apparently lost. Specimens that were identified by A. B. Gahan as *mellipes*, and which served as the basis for his transfer of the specific name to *Orgilus*, seem to agree in every way with Say's description and are accepted as representing the true *mellipes*. Ashmead described *incognitus* from two females with identical data and mounted on one pin. One of these (the specimen with complete antennae and spread wings, which I have marked "L" on the

tag) is designated the lectotype. It appears to agree in all significant details with the form here treated as *mellipes*. *Orgilus mellipes* is very similar to *modicus*, new species, from which it differs most importantly in its relatively wider hind wings, relatively shorter ovipositor, dark tegulae, pale venter of the abdomen, and longer antennae.

FEMALE.—Length around 3 mm. Head about 0.6 as long as wide in dorsal view; face just about as wide as eye height, largely rugulose punctate; clypeus with some shallow punctures; malar space not longer than clypeus and only about one-third as long as eye height, finely shagreened and subopaque; cheeks shiny, only faintly shagreened below; occipital carina broadly interrupted at the middle; temples a little rounded, smooth and polished, about 0.7 as wide as eyes; ocellular line not or barely twice as long as diameter of an ocellus; antennae 30- to 32-segmented in the specimens examined, some of the segments in the apical fourth of the flagellum hardly as long as wide.

Mesocutum smooth and shiny, the middle lobe with some faint punctures; disc of scutellum impunctate, polished, weakly convex; propodeum rugulose, the stubs of the carinae that arise from the posterior margin usually poorly developed; side of pronotum strongly rugose in the impression, nearly smooth along the upper margin; mesopleuron smooth and polished, the longitudinal furrow coarsely foveate; metapleuron rugose posteriorly and below, shallowly and confluent punctate in the upper basal angle. Hind coxa more than half as long as hind femur, rugulose on upper edge toward base and on the upper part of the outer side; hind femur about four times as long as wide; inner calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin just about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus about as long as the second abscissa; nervulus very slightly postfurcal, sometimes virtually interstitial; hind wing about 4.5 times as long as wide; lower abscissa of basella usually a little longer than nervellus but less than half as long as mediella.

Abdomen usually only a little narrower than thorax; first tergite about 0.8 as wide at apex as long, the spiracles nearly twice as far from each other as from base, the surface of the tergite finely longitudinally rugulose; second tergite usually about 1.4 times as wide at base as long, finely rugulose over most of the basal half to two-thirds; the second suture very fine;

third and following tergites smooth and polished; ovipositor sheath about as long as abdomen, at most only very slightly longer.

Black, clypeus ferruginous below; mandibles yellow; palpi darkened; antennae yellow on basal half, darkened apically, the scape above somewhat darkened; legs yellow, hind tibiae very slightly darkened at bases and at apices, all tarsi a little darkened; tegulae blackish, the wing bases pale; wings hyaline or subhyaline; abdomen black or blackish, the tergites after the first often more or less suffused with red or brown; venter of abdomen, at least basally, yellow.

MALE.—Essentially like the female, but the abdomen is relatively a little more slender and the hind coxae are darkened.

TYPES.—The holotype of *mellipes* is apparently lost; the lectotype of *incognitus* is in the U.S. National Museum (USNM 2967).

DISTRIBUTION.—The type-locality of *mellipes* was given as "Indiana"; that of *incognitus* is Kirkwood, Missouri. Material identified as *mellipes* in the U.S. National Museum is from Virginia, Illinois, Michigan, Alabama, and Louisiana. Most of the specimens are recorded as having been reared from *Keiferia glochinella* (Zeller) but two are labeled as from *Phthorimaea operculella* (Zeller).

Orgilus mimicus, new species

This species appears to be most similar to *pratensis*, new species, but the second tergite is relatively a little broader and more extensively sculptured, the face and clypeus are more strongly punctate, the temples are flatter and the ovipositor sheath is somewhat shorter.

FEMALE.—Length about 3.8 mm. Head barely wider than thorax, in dorsal view about 0.6 as long as wide; face 1.15 times as wide as eye height, closely punctate; clypeus weakly punctate, not separated from the face medially; malar space just about half as long as eye height, shagreened and dull; cheeks largely smooth, shagreened only near lower margins; temples smooth and polished, 0.8 as wide as eyes, rather flat and receding only slightly; occipital carina broadly interrupted medially, very strong at the sides; ocellular line about twice as long as diameter of an ocellus; antennae 30-segmented in the holotype, none of the segments broader than long.

Mesoscutum smooth and shiny, not distinctly punctate even on the middle lobe; notauli very fine, sharply

impressed and minutely foveolate, the angle at their junction not rugose but with only a few large punctures; disc of scutellum convex, smooth and polished; propodeum rugulose, the stubs of longitudinal carinae that arise from the posterior margin rather prominent though short; side of pronotum rugulose over most of its surface but broadly smooth and shiny at upper margin; mesopleuron smooth and polished, the longitudinal furrow very weak and incompletely minutely foveolate, no punctures below the furrow; metapleuron rugulose at lower posterior margin, otherwise largely shiny and smooth except for some weak and very shallow punctures. Hind coxa rugulose above toward base, rather smooth on outer side below; hind femur twice as long as hind coxa and a little less than five times as long as broad; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa; nervulus postfurcal by about one-third its length; hind wing about 4.3 times as long as wide; lower abscissa of basella not longer than nervellus and less than one-third as long as mediella, also barely one-third as long as maximum width of hind wing.

Abdomen narrower than thorax, first tergite 1.35 times as long as broad at apex, largely finely rugulose but smooth and polished medially at base and polished also at apex, the basal dorsal keels not developed; second tergite in holotype a little shorter than broad at base, only slightly wider at apex than at base, smooth and polished except for a finely rugulose punctate area each side of the middle on basal half; the following tergites smooth and polished; ovipositor sheath as long as propodeum and abdomen combined.

Black; clypeus entirely black; mandibles reddish yellow; antenna with the flagellum brownish yellow toward base, the rest brownish black; legs testaceous, forefemur with a blackish streak above which widens basally, middle femur entirely yellow, hind femur blackish apically, more extensively so on inner side, hind tibia a little darkened basally and apically; all tarsi somewhat darkened; tegulae and wing bases yellow; wings nearly hyaline basally, a little infumated apically; venter of abdomen entirely blackish.

MALE.—Unknown.

HOLOTYPE.—USNM 70180.

DISTRIBUTION.—Known only from the holotype female that was taken on Mt. Pines, Ventura County, California, 7500 feet, 8 May 1959, by G. I. Stage.

Orgilus modicus, new species

FIGURE 47

This species is very similar to *mellipes* (Say) but is distinguished by shorter antennae, relatively narrower hind wings, a relatively longer ovipositor, usually yellow tegulae, and usually darker abdominal sternites.

FEMALE.—Length about 2.8 mm. Head distinctly a little wider than thorax, in dorsal view 0.6 as long as wide, weakly excavated behind; face in narrowest part barely broader than eye height, very shiny and largely smooth, with only scattered punctures and some weak rugulosity just below antennae; malar space not longer than clypeus, about 0.4 as long as eye height and not longer than longest segment of maxillary palpus; cheeks smooth and shiny except at lower margins; temples smooth and polished, gradually receding, 0.7 as wide as eyes; occipital carina broadly interrupted at the middle; ocellocular line twice as long as diameter of an ocellus; antennae 26- to 28-segmented in the available specimens, none of the flagellar segments as wide as long.

Thorax rather stout; mesoscutum smooth and shiny with only setigerous punctures; notauli sharply impressed and finely foveolate and meeting just before apex of scutum; disc of scutellum polished; propodeum evenly and rather strongly convex from base to apex, finely rugulose, except narrowly each side of the middle at extreme base, where it is smooth and polished, and in the poorly defined apical areas, which are more or less smooth; side of pronotum smooth along upper margin, elsewhere rugulose; mesopleuron polished, the longitudinal furrow virtually complete, sinuate and foveolate; metapleuron shiny, nearly smooth toward base, rugulose below and posteriorly. Hind coxa shiny, weakly rugulose above at base and on outer side, smooth outwardly below; hind femur less than twice as long as hind coxa and just about four times as long as broad; inner calcarium of hind tibia about half as long as metatarsus; tarsal claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long as second abscissa; nervulus barely postfurcal; hind wing barely five times as long as wide; lower abscissa of basella about half as long as mediella and about half as long as maximum width of hind wing.

Abdomen slightly longer than thorax; first tergite about 1.2 times as long as wide at apex, finely rugulose punctate, smooth medially toward base, the basal dor-

sal keels not distinct; second tergite about 1.3 times as wide at base as long, confluent punctate medially on basal half, smooth laterally and apically; second suture fine but sharply impressed; third and following tergites smooth and polished; ovipositor sheath about as long as distance from base of scutellum to apex of abdomen.

Black; lower part of clypeus, mandibles, antennal scape, pedicel, and basal part of flagellum usually reddish yellow; tegulae usually yellow but sometimes darkened, the wing bases always pale; wings hyaline or virtually so; radiella and cubitella not pigmented; legs reddish yellow, the hind coxae sometimes more or less darkened, the tarsi infuscated; third and following tergites usually tinged with dark brown.

MALE.—Like the female except that the hind coxae are usually more extensively darkened; the antennae of the available specimens are 27- to 29-segmented.

HOLOTYPE.—USNM 70181.

DISTRIBUTION.—The type-series consists of the following: 3 females (one the holotype) and 4 males collected in Polk County, Florida, on *Kuhnistera pinata* in November 1929, by J. L. Bottimer; 4 females and 4 males reared from *Stegasta bosquella* (Chambers) in Caddo County, Oklahoma, 1957 and 1959; 1 female from the same host, Spaulding County, Georgia, 14 October 1942; 1 female from the same host, Malone, Florida, September 1944, and 2 females collected from cotton, Waco, Texas, 19 August 1949 and 3 October 1939, by P. A. Glick.

Orgilus momphae, new species

FIGURES 29, 43

This species is very similar to *gelechia* (Ashmead) and *coleophorae*, new species, but it differs significantly from both in the form of the tarsal claw, which has a prominent subbasal tooth.

FEMALE.—Length around 3.5 mm. Head not or barely wider than thorax and in dorsal view about 0.6 as long as wide; face clearly wider than eye height, and, together with the clypeus, closely punctate on a shagreened and rather mat surface; anterior tentorial pits on a line with lower eye margins; malar space less than one-third as long as eye height; cheeks and temples shagreened and more or less mat; temples at mid-eye point about half as wide as eyes; frons and vertex finely granulose and dull; the carinate occipital margin sharp at the sides, broadly interrupted medially above; ocellocular line three times as long as

diameter of an ocellus; antennae usually 33- to 36-segmented (36-segmented in the holotype), even the shortest segments in apical third of the flagellum clearly longer than broad.

Mesoscutum finely granulose or shagreened; notauli sharply impressed and meeting just before apex of scutum; disc of scutellum flattened and weakly shagreened; propodeum finely rugulose except at base where it is granulose or shagreened; side of pronotum, and the mesopleuron and metapleuron shagreened; longitudinal furrow of mesopleuron very weak but usually distinct and with some poorly defined foveolae. Hind coxae shagreened, elongate, three-fourths as long as hind femora, the latter just about four times as long as wide; inner calcarium of hind tibia less than half as long as the metatarsus; tarsal claw with a prominent subbasal tooth. Radial cell on wing margin slightly longer than stigma, the latter emitting radius well beyond the middle; second abscissa of radius nearly on a line with intercubitus; cubitus ending at intercubitus, not even a punctiform spur of a third abscissa present; nervulus usually interstitial; hind wing usually about six times as long as wide; lower abscissa of basella twice as long as upper abscissa, at least half as long as mediella and more than half as long as maximum width of hind wing.

Abdomen about as broad as thorax, all tergites contiguously, in part confluent, punctate; the first nearly as broad at apex as long, its dorsal keels well developed and extending about to the middle of the tergite; second and following tergites strongly transverse; the second suture sharply impressed; ovipositor sheath a little shorter than the abdomen.

Yellow or brownish yellow; head largely or entirely black; antennae darkened, becoming blackish apically; thorax often varied with black, especially on the mesonotal lobes, propodeum and pleura, rarely almost entirely blackish except the pronotum, which is always pale; abdomen ranging from entirely yellowish to brownish yellow with a large blackish or piceous area on each tergite; legs pale, apices of hind femora and tibiae and all the tarsi darkened.

MALE.—Essentially like the female although the abdominal sculpture may be somewhat weaker, especially on the apical tergites.

HOLOTYPE.—USNM 70182.

DISTRIBUTION.—The type-series comprises the following: 3 females (one the holotype) and 1 male from Ottawa County, Ohio, 1 female from Mont-

gomery County, Ohio, and 1 female from Summit County, Ohio, all reared in June or July 1937, by R. B. Neiswander from *Mompha eloisella* Clemens, the holotype on 11 July; and the following additional material from the same host: 2 females and 3 males, St. David's, Ontario, 1933, G. G. Dustan; 1 female, New Brunswick, New Jersey, 1931, and 4 females and 2 males, Moorestown, New Jersey, 1933. Other paratypes include 2 females from primrose, Wayne County, Ohio, 16 May 1938; 2 females and 3 males, Progress, Pennsylvania, April and May 1909; 1 female and 1 male, Ithaca, New York; 1 female from primrose, Summit County, Ohio, July 1936; 1 female, Cold Spring Harbor, Long Island, New York, and 1 female from chicory, Pittsylvania County, Virginia, 1930.

Orgilus monticola, new species

This is closely similar to *mundus*, new species, but it may be distinguished by the differences noted in the description of *mundus*.

FEMALE.—Length about 4 mm. Head slightly wider than thorax, in front view not, or barely, wider than high, in dorsal view about 1.5 times as broad as long and rather strongly excavated behind; face slightly (1.1 times) broader than eye height, shiny, indefinitely sculptured laterally, smooth down the middle; malar space longer than clypeus and half as long as eye height; cheeks strongly convex, smooth and polished except near lower and posterior margins where they are finely shagreened; temples not distinctly receding, in side view bulging a little opposite middle of eyes and at this point very nearly as wide as eyes; carinate margin of occiput rather narrowly interrupted medially; ocellocular line more than twice as long as diameter of an ocellus; antennae of holotype 31-segmented, even the shortest flagellar segments distinctly a little longer than broad.

Thorax slender; mesoscutum smooth and shiny, weakly punctate on the middle lobe; notauli sharply impressed and strongly foveolate, a narrow triangular rugulose punctate area at their junction; propodeum irregularly rugulose, with a polished area each side of the middle at base, the anteriorly open median apical area poorly defined, the stubs of the longitudinal carinae that arise from the posterior margin being weak, an area each side of the median apical area smooth and shiny, apical margin of propodeum strongly reflexed; side of pronotum rugulose, more or less granu-

lose anteriorly; mesopleuron smooth, the longitudinal furrow foveolate; metapleuron smooth on basal half or more, rugulose apically. Hind coxa finely granularly rugulose above at base, very shiny and nearly smooth on outer side with only very shallow punctures; hind femur twice as long as hind coxa and about five times as long as broad; longer calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus postfurcal by one-third its length; hind wing only slightly more than four times as long as wide; lower abscissa of basella a little longer than nervellus but less than half as long as mediella and much less than half as long as maximum width of hind wing.

Abdomen as long as head and thorax combined; first tergite about 1.3 times as long as wide at apex, largely longitudinally striate, smooth medially toward base and with 2 very weak, convergent dorsal keels on basal half; second tergite virtually parallel-sided, as long as broad at base, largely faintly aciculate, rather transversely so toward base and longitudinally so posteriorly; third and following tergites smooth and polished; ovipositor sheath longer than head, thorax and abdomen combined.

Black; palpi blackish; scape entirely black, flagellum more or less yellowish brown toward base, black apically; legs brownish yellow; hind coxae black except at apices; fore- and middle femora somewhat darkened basally above, the anterior pair more extensively so than the middle pair; hind femora blackish on inner surface; tarsi a little dusky; tegulae and wing bases black; wings very weakly clouded.

MALES.—Unknown.

HOLOTYPE.—USNM 70183.

DISTRIBUTION.—Known only from the holotype female, which was collected at Bear Valley, Idaho, 6400 feet, 11 July 1926, by R. W. Haegle.

Orgilus morulus, new species

Although superficially rather similar to *coracinus*, new species, this form may be distinguished readily by its much narrower hind wings, stouter hind femora, shorter malar space, coarsely sculptured face and longer ovipositor.

FEMALE.—Length 4.5 mm. Slender; head slightly

wider than thorax, in dorsal view 0.6 as long as wide; face 1.1 times as wide as eye height, closely rugulose punctate except along the eyes where it is finely shagreened, rather mat; clypeus closely and strongly punctate; malar space barely longer than clypeus and a little less than half as long as eye height, finely granulose; cheeks smooth and shiny on upper parts, finely shagreened toward lower margins; temples smooth and shiny, about 0.8 as wide as eyes, flat but receding a little; ocellular line a little more than twice as long as diameter of an ocellus; occipital carina broadly interrupted medially; vertex smooth and shiny; antennae 34-segmented in the holotype, none of the segments broader than long.

Mesoscutum smooth and shiny, the middle lobe with a few weak, extremely shallow punctures, notauli sharply impressed and finely foveolate; propodeum closely rugulose on the dorsal face, smoother on the short posterior face which has the apical areas set off by prominent stubs of longitudinal carinae that arise from the posterior margin; side of pronotum rugulose in the impression, broadly nearly smooth below the upper margin; mesopleuron smooth and polished, even in the upper anterior angle, the longitudinal furrow strongly foveolate; metapleuron rugulose punctate except for a basal triangular area which is smooth and shiny. Hind coxa rugulose, strongly so above, weakly so on outer side, much more than half as long as hind femur, the latter barely four times as long as broad; inner calcarium of hind tibia more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long as second abscissa; nervulus postfurcal by one-third its length; hind wing more than five times as long as wide, the anterior and posterior margins nearly parallel; lower abscissa of basella a little longer than nervellus but less than half as long as mediella and not quite half as long as maximum width of hind wing.

Abdomen a little narrower than thorax; first tergite widening only very gradually caudad, 1.5 times as long as wide at apex, the spiracles hardly twice as far from apex as from base, the dorsal keels not developed, the surface of the tergite longitudinally rugulose except in the basal impression and medially at apex, where it is smooth and polished; second tergite as long as broad at base, broadening noticeably caudad, and very finely, confluent punctate over much of its

surface although smooth and polished medially at base and broadly across apex; second suture fine but rather sharply impressed; the following tergites smooth and polished except the third which, in the holotype at least, has a few weak punctures each side toward the base; ovipositor sheath about as long as the distance from the tegulae to the end of the abdomen.

Black; clypeus and antennae black; mandibles reddish; all coxae and trochanters black, otherwise the legs largely brown, the tarsi piceous; tegulae and wing bases black, the wings distinctly a little infumated; venter of abdomen entirely black.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female from Knoulton, Quebec, collected 4 August 1951, by A. P. Arthur.

Orgilus mundus, new species

This species is extremely similar to *monticola*, new species, and may easily be confused with it. It, however, seems to be distinct. The temples are narrower and recede more distinctly; the cheeks are strongly shagreened and dull, whereas they are largely smooth and polished in *monticola*; the clypeus is reddish anteriorly; the hind coxae are largely brownish yellow, and the abdomen, which is completely black in *monticola*, has some rufous markings in *mundus*.

FEMALE.—Length 4 mm. Head slightly wider than thorax, in front view rather round and not distinctly wider than high, in dorsal view less than one and one-half times as broad as long and rather strongly excavated medially behind; face 1.15 times as wide as eye height, strongly convex, shiny and finely punctate over most of its surface, the punctures well separated; malar space longer than clypeus and slightly more than half as long as eye height (in ratio of 35:60); cheeks strongly convex, bulging somewhat, and strongly shagreened and dull; temples 0.75 as wide as eyes, slightly receding; carinate margin of occiput narrowly interrupted medially; ocellular line more than twice as long as diameter of an ocellus; antennae incomplete in the holotype and only known specimen, 24 segments remaining, the last four of these about as broad as long.

Thorax rather slender; mesoscutum smooth and shiny, with only a few scattered and extremely shallow punctures on the middle lobe; notauli rather shallow and narrow, completely finely foveolate; disc of scutel-

lum rather large, convex and with a few very shallow punctures; propodeum closely rugulose, with a transverse polished area each side of the middle at base, the incomplete median apical area a little sculptured and not clearly defined laterally by stubs of carinae arising from posterior margin of propodeum; side of pronotum largely rugulose punctate, granulose anteriorly; mesopleuron smooth and polished, the longitudinal furrow completely foveolate, metapleuron smooth and shiny on upper anterior part, rugulose posteriorly below. Hind coxa finely rugulose at base above, largely smooth on outer side, hind femur about five times as long as broad and twice as long as hind coxa; longer calcarium of hind tibia more than half as long as metatarsus, tarsal claws simple. Stigma very narrow and just about as long as radial cell on wing margin; second abscissa of radius on a line with intercubitus, the first abscissa much longer than width of stigma; stub of third abscissa of cubitus at least as long as second abscissa; nervulus postfurcal by about one-third its length; hind wing about 4.5 times as long as wide; lower abscissa of basella longer than nervellus but less than half as long as mediella.

Abdomen fully as long as head and thorax combined; first tergite about 1.5 times as long as wide at apex, finely longitudinally rugulose, the dorsal longitudinal keels not developed, the spiracles three times as far from apex as from base; second tergite as long as broad at base, finely longitudinally sculptured on basal two thirds except laterally where it is smooth; third and following tergites smooth and polished; ovipositor sheath as long as head, thorax, and abdomen combined.

Black; lower half of clypeus reddish testaceous; mandibles testaceous; palpi piceous; scape black, pedicel and basal segments of flagellum yellowish, remainder of flagellum blackish; legs brownish yellow, hind coxae blackish at bases, all femora more or less darkened along upper edges, hind tibiae dusky toward apices and apical tarsal segments darkened; tegulae and wing bases black; wings weakly infumated; abdomen with a small reddish blotch in each apical corner of first and second tergites, the following tergites with some rufous shadings.

MALE.—Unknown.

HOLOTYPE.—USNM 70184.

DISTRIBUTION.—Known only from the holotype female, which was taken at Creede, Colorado, at 8000 feet, 9 June, by F. M. Carpenter.

Orgilus nitidus, new species

FIGURE 19

A very shiny species. It is most similar to *pratensis*, new species, from which it differs in its clear hyaline wings, more strongly sculptured face, longer antennae, largely black clypeus, and darker legs.

FEMALE.—Length about 3.5 mm. Head very slightly wider than thorax, in dorsal view about 0.6 as long as wide; face 1.2 times as wide as eye height, rugulose punctate at least on upper half, and with a low, more or less distinct, median longitudinal keel; clypeus smooth and shiny, with only a few weak punctures; malar space very slightly longer than clypeus and longest segment of maxillary palpus and very nearly half as long as eye height, shagreened; cheeks broad, weakly shagreened, and very shiny; temples largely smooth and polished, about 0.8 as wide as eyes, only very slightly receding; occipital carina narrowly interrupted at the middle; vertex smooth and shiny, with only a few weak punctures; ocellular line hardly twice as long as diameter of an ocellus; antennae 31- or 32-segmented in the available specimens, none of the flagellar segments as broad as long.

Mesoscutum smooth and shiny, with only a few minute, shallow punctures on the middle lobe; notauli sharply impressed and finely foveolate; propodeum largely finely rugulose but with a transverse smooth and polished area each side of the middle at base and broadly smooth and shiny medially at apex, the stubs of the apical longitudinal carinae not developed or very short and weak; side of pronotum rugulose punctate in the impression, finely granulate in front of this and nearly smooth along upper margin; mesopleuron smooth and polished, even in the upper anterior angle, the longitudinal furrow shallow and very finely foveolate, weakly so at each end; metapleuron rugulose at lower posterior margin, otherwise smooth and very shiny with only scattered minute punctures. Hind coxa very shiny, finely rugulose above, nearly smooth on outer side; hind femur about five times as long as wide and just about twice as long as hind coxa; inner calcarium of hind tibia half as long as metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus postfurcal by about one-third its length; hind wing about 4.7 times as long as wide; lower abscissa of basella a little longer than nervellus but less than half as long as mediella.

Abdomen very shiny; first tergite about one and one-half times as long as wide at apex, varying in the available specimens from largely finely rugulose to largely smooth and polished; second tergite as long as broad at base, smooth and polished laterally and apically and more or less finely rugulose punctate basally in the middle in some specimens, entirely smooth and polished in others; third and following tergites polished; ovipositor sheath nearly as long as thorax and abdomen combined.

Deep shining black; mandibles testaceous; clypeus black except very narrowly at lower margin; palpi black; antennae dark, more or less brownish below; hind coxae reddish brown, rather broadly black basally above and on inner side; basal trochanters, especially those of forelegs, darkened; fore- and middle femora blackish along dorsal edges; hind femur black on inner side and broadly black on outer side toward apex; fore- and middle tibiae weakly infuscated; hind tibiae largely blackish; all tarsi darkened; wings hyaline; tegulae and wing bases brownish yellow.

MALE.—Unknown.

HOLOTYPE.—USNM 70185.

DISTRIBUTION.—Known only from the type-series consisting of the following: 3 females (one the holotype) labeled as having been collected at light by J. H. Davidson, J. M. Davidson, and M. A. Cazier 1 mile south of Portal, Cochise County, Arizona, at 4800 feet, 19 June 1965; and 5 females collected in the Graham Mts., Arizona, at 7500 feet, in 1955 and 1957, by G. Butler and F. Werner.

Orgilus notabilis, new species

In some respects this species is very similar to *tenuis*, new species, but it is readily distinguished by the partly margined occiput, the extraordinarily long and narrow radial cell, the much longer calcaria of the hind tibiae, the annulate antennae in the female, and the general body color.

FEMALE.—Length about 3.2 mm. Head conspicuously wider than thorax, more than twice as wide as long in dorsal view; face a little narrower than eye height, finely granulate and rather mat; temples very narrow, receding sharply from the eye margins; occiput margined only laterally below level of the middle of the eyes; clypeus smooth and shiny; eyes very large; malar space about one-sixth as long as eye height and less than half as long as longest segment of maxillary palpus; maxillary palpi at least as long as width of

face; frons and vertex finely granulose; diameter of a lateral ocellus slightly less than distance between lateral ocelli and about half as long as ocellular line; antennae of holotype 35-segmented, even the shortest flagellar segments longer than broad.

Thorax very slender; mesoscutum finely granulose; notauli sharply impressed and finely foveolate; disc of scutellum shagreened; propodeum coriaceous and with very short spurs of longitudinal carinae arising from the posterior margin and setting off five apical areas that are open in front; side of pronotum, mesopleuron, and metapleuron coriaceous, the longitudinal furrow of mesopleuron weakly indicated. Hind coxa elongate, about half as long as thorax, its surface coriaceous; hind femur about five times as long as wide; inner calcarium of hind tibia fully half as long as metatarsus; tarsal claws simple. Radial cell going nearly to extreme apex of wing and on wing margin at least one and one-half times as long as stigma; radius arising from well beyond middle of stigma; second abscissa of radius more than eight times as long as first; not even a vestige of third abscissa of cubitus present; nervulus post-furcal by nearly half its length; hind wing about six times as long as wide; lower abscissa of basella twice as long as nervellus, three-fourths as long as mediella and at least four-fifths as long as maximum width of hind wing.

Abdomen very slender; first tergite twice as long as wide on posterior margin, finely rugulose and with the basal dorsal keels strong and extending to the middle of the tergite; second tergite longer than broad at base and about as long as broad at apex, finely rugulose punctate; third tergite wider than long, entirely confluent punctate; fourth and fifth tergites largely smooth and shiny but a little shagreened medially; ovipositor sheath a little longer than head, thorax, and abdomen combined.

Brownish yellow; antennal flagellum dark brown but with segments 9-16 white; second and third tergites slightly darkened medially; legs entirely, also tegulae and wing bases, brownish yellow; wings hyaline.

MALE.—Unknown.

HOLOTYPE.—USNM 70186.

DISTRIBUTION.—Known only from the holotype female which was collected in a black-light trap at Miami, Florida. This is the only Nearctic specimen with annulated antennae I have seen, although the U.S. National Museum collection contains specimens of

several apparently undescribed Neotropical species of *Orgilus* with conspicuously banded antennae. It is quite possible that the type of *notabilis* is a wanderer from the West Indies.

Orgilus obscurator (Nees)

FIGURES 31, 38, 57

Microdus obscurator Nees, 1814, p. 186, pl. 4: fig. 1.

Orgilus obscurator (Nees).—Haliday, 1833, p. 262.—Marshall, 1885, p. 278, pl. 6: fig. 6.—Thorpe, 1930, p. 401.

Ischius obscurator (Nees).—Wesmael, 1837, p. 21, fig. 10.—Ratzeburg, 1848, p. 46.

Eubadizon leptoccephalus Hartig, 1838, p. 268.

Macropalpus leptoccephalus (Hartig).—Ratzeburg, 1844, p. 57, pl. 7: fig. 9.

Macropalpus laticcephalus Kolenati, 1859, p. 47.

This species is most like *buccatus*, new species, and *longiceps* Muesebeck. From both it is readily distinguished, however, by its nonflaring temples. It differs further from *buccatus* in having well developed though short longitudinal carinae arising from the posterior margin of the propodeum, and from *longiceps* in its darker legs. *Orgilus dioryctriae* Ganan, which *obscurator* resembles superficially, has flaring temples and a wider face, and its propodeum lacks the apical carinae.

FEMALE.—Length around 4.5 mm. Head a little narrower than thorax, in dorsal view about 1.5 times as wide as long, rather strongly evenly excavated behind; face at narrowest point slightly narrower than eye height and coarsely punctate to rugose punctate; clypeus as long as malar space, more weakly punctate than face; malar space less than 0.4 as long as eye height; anterior tentorial pits clearly below level of lower eye margins; cheeks and temples smooth and shiny with only very minute setigerous punctures; temples neither flaring nor receding but evenly rounded and very slightly narrower than eyes; ocellular line hardly one and one-half times as long as diameter of an ocellus and shorter than the distance between lateral ocelli; antennae about as long as the body, 30- to 34-segmented in the specimens examined, even the segments of the apical fourth of flagellum slightly longer than broad; maxillary palpi short, hardly as long as height of head.

Thorax stout; mesoscutum with numerous minute and very shallow punctures on middle lobe; notauli sharp and completely, finely foveolate; propodeum strongly rugose, narrowly smooth and polished each

side of the middle at base, and with short longitudinal carinae arising from the posterior margin and setting off five apical areas that are open in front; lateral face of pronotum granular and dull anteriorly, rugulose below posteriorly and in the impression, punctate and shiny along the upper margin; mesopleuron smooth and polished, the longitudinal furrow coarsely foveolate; metapleuron rugose at lower posterior margin, smooth and shiny elsewhere although sometimes with scattered shallow punctures over most of its surface. Hind coxa strongly rugulose on upper edge, more weakly rugulose to granulose on outer side; hind femur hardly four times as long as wide; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa, which is about half as long as intercubitus; nervulus usually interstitial or nearly so; hind wing less than 4.5 times as long as wide; lower abscissa of basella longer than nervellus but less than half as long as mediella.

Abdomen nearly as broad as thorax; first tergite about 1.2 times as long as wide at apex, smooth at extreme base, usually closely finely rugulose behind the spiracles but occasionally with the smooth area extending caudad beyond the spiracles; second tergite much broader than long, finely rugulose or rugulose punctate, more weakly so apically, the apical third sometimes largely smooth; second suture fine but rather sharply impressed; third tergite sometimes with a little weak rugulosity or punctation on basal half but often entirely smooth and polished; ovipositor sheath about as long as the distance from base of scutellum to end of abdomen.

Black; antennae, palpi, tegulae, and wing bases black; apices of anterior and middle femora, their tibiae, the posterior tibiae except at apices, and bases of the posterior metatarsi, reddish; wings uniformly a little infumated.

MALE.—Like the female in essential characters.

DISTRIBUTION.—The foregoing redescription is based principally on numerous specimens in the U.S. National Museum that were reared from the pine-shoot moth, *Rhyacionia buoliana* (Schiff.), in Austria, and on long series of both sexes received from the Forest Insect Laboratory, Canada Department of Agriculture, at Sault Sainte Marie, Ontario, all of which had been reared from *R. buoliana* taken at Paris, Dunnville,

London, and Port Dover, Ontario. The U.S. National Museum also has specimens from Switzerland, Spain, France, Germany, and England, and United States specimens from Michigan, Ohio, Connecticut, and West Virginia. In addition I have seen material in the Canadian National Collections from Suffolk and Hampshire, England, and from Ottawa, Niagara Falls, and Cedar Bay, Ontario. The species is widely distributed in Europe. In 1928 it was introduced into Canada (McGugan and Coppel, 1962, p. 70) to aid in the control of *R. buoliana*, which had become a serious pest in parts of Ontario; and it has become well established there. Soon afterward (Dowden, 1934, p. 599) it was imported from Europe by the U.S. Department of Agriculture for liberation in infestations of the pine-shoot moth in New England, and it is now well established in the United States.

Thorpe (1930) lists ten species of Tineidae and Tortricidae, in addition to *R. buoliana*, as recorded hosts of *O. obscurator* in Europe; and the card index to published host-parasite associations, which is maintained by the Insect Identification and Parasite Introduction Branch of the United States Department of Agriculture, includes records of six additional host species not listed by Thorpe. I seriously doubt, however, that all, or even most, of these records are correct, for species of *Orgilus* are not easily identified accurately. I have seen no specimens of the parasite from any host other than *R. buoliana*.

Orgilus opacus, new species

This appears to be most similar to *cuneatus* (Provancher) but it differs in its minutely granulose or shagreened and mat head and mesonotum, more slender antennae, larger size and relatively somewhat shorter ovipositor.

FEMALE.—Length about 3.5 mm. Head a little wider than thorax, in dorsal view 0.6 as long as wide; face slightly wider (about 1.1 times) than eye height; face, clypeus, malar space, cheeks, temples, frons, vertex, and back of head above the line of the occipital carina all finely granulose or shagreened and rather mat; malar space longer than clypeus and very nearly half as long as eye height; temples at mideye point about 0.75 as wide as eyes; occiput carinately margined only at the sides; ocellular line twice as long as diameter of an ocellus; antennae of holotype 31-seg-

mented, even the segments of the apical fourth longer than broad.

Mesoscutum and disc of scutellum finely granulose or shagreened and rather dull; the notauli deeply impressed and finely foveolate; propodeum granulose and dull, with some irregular rugulae but with a small smooth and shining area each side at extreme base and with well developed stubs of longitudinal carinae arising from posterior margin and setting off five apical areas; side of pronotum finely rugulose in the impression, finely granulose above and below it; mesopleuron shagreened, more strongly so below the foveolate longitudinal furrow than above; metapleuron finely granulose and dull, a little rugulose at lower posterior margin. Hind coxa finely granulose and dull, about 0.6 as long as hind femur, which is about 4.4 times as long as broad and is granulose and subopaque; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Wings not or barely extending beyond end of abdomen; radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus about as long as second abscissa; nervulus barely post-furcal; hind wing five times as long as wide; lower abscissa of basella much longer than nervellus and about half as long as mediella or maximum width of hind wing.

First abdominal tergite at least 1.5 times as long as wide at apex, finely rugulose on a granulose surface and dull, the dorsal keels very weak and extending barely beyond the spiracles; second tergite about as long as broad, entirely finely confluent punctate; second suture sharply impressed; third tergite smooth and polished apically but basally sculptured like the second; fourth sometimes with a little faint shagreening medially; ovipositor sheath about as long as abdomen.

Head and thorax black, sometimes varied with rufous, extensively so in the holotype; antennae testaceous, darkened apically; palpi yellow to brown; all coxae testaceous, the hind femora darkened apically on the inner surfaces, and the hind tibiae and all tarsi slightly darkened; tegulae and wing bases yellow; wings weakly infumated apically; abdomen varying from largely rufous to black more or less suffused with rufous.

MALE.—Like the female except for being generally darker; head and thorax black in the available specimens; antennae brown, 30-segmented; legs darker than in the female, with the hind coxae more or less dark-

ened basally and the inner sides of the hind femora extensively darkened; dorsum of abdomen black, the apical segments somewhat brownish.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—The holotype female and a paratype male were reared from larvae of *Scythris* sp. on aster at Ottawa, Canada, 8 June 1944 and 14 June 1945, respectively, by J. McDunnough. The other known specimens are a paratype female collected at Highspire, Pennsylvania, 30 July 1910, by W. S. Fisher, and a paratype male taken at Great Falls, Virginia, 20 April 1913, by R. C. Shannon.

Orgilus oregonensis, new species

Although this species is rather similar to *impiger*, new species, it may be readily distinguished by its completely smooth and polished second tergite and its broader, hardly receding temples.

FEMALE.—Length 4.5 mm. Head not wider than thorax, in dorsal view 0.7 as long as wide; face 1.2 times as wide as eye height, shiny, and finely and rather closely punctate, the punctures small and shallow, face also with the median longitudinal line more or less keel-like in lateral view; clypeus very large and closely punctate; malar space a little longer than clypeus and slightly more than half as long as eye height (in ratio of 35:65), finely shagreened and mat, like the cheeks, which are as wide as the eyes; temples rather flat and only very slightly receding, at mideye point 0.9 as wide as eyes, smooth and polished but with a few very weak punctures; vertex smooth and shiny, with a few weak punctures; ocellular line considerably more than twice as long as diameter of an ocellus; occipital carina broadly interrupted medially; maxillary palpi fully as long as width of head; antennae of holotype 31-segmented, some segments in apical third of flagellum clearly broader than long.

Mesoscutum smooth and shiny, the middle lobe with some very weak setigerous punctures; notauli sharply impressed and foveolate, an area of very coarse, confluent punctures at their junction just before apex of scutum; disc of scutellum convex, smooth, and polished; propodeum rugose, with a very small, transverse, smooth and polished area each side of the middle at extreme base, and with the stubs of the longitudinal carinae that arise from the posterior margin developed but not very strong, the areas between them rugulose; side of pronotum rugulose in the impression, virtually

smooth above near upper margin; mesopleuron smooth and polished, the longitudinal furrow a little sinuate and strongly foveolate, a few confluent punctures below the furrow anteriorly; metapleuron finely rugulose except on a very small triangular area in the anterior upper angle. Hind coxa strongly rugulose on dorsal edge, weakly roughened on outer side; hind femur twice as long as hind coxa and nearly five times as long as wide; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus barely postfurcal; hind wing broad, only four times as long as its maximum width; lower abscissa of basella just about as long as nervellus and hardly one-third as long as mediella or maximum width of hind wing.

Abdomen rather stout and at least as long as head and thorax combined; first tergite 1.3 times as long as broad at apex, finely rugulose except at base and medially at apex where there is also a small broadly oval, shallow impression; second tergite 1.4 times as broad at base as long, completely smooth and polished; the following tergites also smooth and polished; second suture very fine, weakly impressed; ovipositor sheath just about as long as abdomen.

Black; clypeus, palpi, and antennae black; mandibles dark brown; legs yellowish brown, hind coxae black or blackish except outwardly on apical half where they are yellowish brown, hind femora blackish on inner sides; hind tibiae weakly darkened at apices, all tarsi dark; tegulae and wing bases blackish; wings distinctly a little infumated; venter of abdomen blackish, even basally.

MALE.—Unknown.

HOLOTYPE.—USNM 70187.

DISTRIBUTION.—Known only from the holotype female labeled as having been collected at Corvallis, Oregon, 2 June 1892.

Orgilus parallelus, new species

Structurally this species seems to be most similar to *medicaginis*, new species, although it differs in many details and conspicuously in its much longer ovipositor and largely testaceous abdomen.

FEMALE.—Length 3.5–4 mm. Head a little broader than thorax, in dorsal view about 0.6 as long as wide; face 1.2 as wide as eye height, rugulose punctate above

and punctate below, shiny; malar space longer than clypeus but hardly half as long as eye height; cheeks shagreened and subopaque; temples about 0.75 as wide as eyes, slightly receding, a little shagreened and with some minute punctures near occipital margin, smooth and shiny adjacent to eyes; occipital carina narrowly interrupted medially; ocellular line about twice as long as diameter of an ocellus; antennae 30- to 33-segmented in the available specimens, some of the segments in the apical fourth nearly or quite as broad as long.

Mesonotal lobes shiny and with minute, shallow punctures, especially on the middle lobe; notauli completely, finely foveolate; propodeum rugulose, the stubs of the carinae that originate at the posterior margin rather weak and irregular; side of pronotum completely rugulose; mesopleuron smooth and polished, the longitudinal furrow complete, sinuate, and evenly foveolate; metapleuron rugulose on posterior half, punctate on anterior part, shiny. Hind coxa rugulose dorsally toward base and on upper part of outer side, elsewhere on outer side rather granulose; hind femur just about twice as long as hind coxa and about five times as long as wide; inner calcarium of hind tibia not more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin not longer than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus just postfurcal; hind wing about 4.6 times as long as wide; lower abscissa of basella longer than nervellus and nearly or quite half as long as mediella.

Adomen slender; first tergite about 1.5 times as long as broad at apex, finely longitudinally rugulose, the dorsal keels not distinct; second tergite virtually parallel-sided and just about as long as broad at base, smooth and shiny laterally and on apical half, usually weakly rugulose medially on basal half; second suture fine but distinct; third and following tergites smooth and polished; ovipositor sheath a little longer than head, thorax, and abdomen combined.

Head usually largely black, the face more or less ferruginous; antennae dark brown, paler basally, especially below; thorax varied with red and black, usually darkest on dorsum; tegulae and wing bases yellow; wings hyaline; legs brownish yellow, the hind femora at the apices, the hind tibiae more or less and all the tarsi somewhat darkened; basal three abdominal tergites brownish yellow, apical tergites blackish, the basal sternites brownish.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from 4 female specimens comprising the type-series: 2 from Chatterton, Ontario, collected by J. C. Martin, the holotype 29 July 1951, the paratype 20 July 1948; 1 taken on *Vernonia interior* at Manhattan, Kansas, 15 June 1939, by R. Schwitzgebel; and 1 collected near Ft. Davis, Texas, 20 July 1956, by H. and A. Howden. Despite the wide distribution indicated by the four specimens all seem to be the same species.

Orgilus pedalis, new species

This species closely resembles *elasmopalpi*, new species, but it differs in its shorter malar space, relatively narrower face, more coarsely sculptured hind coxae, relatively broader hind wings and in certain other details.

FEMALE.—Length 3.8 mm. Head very slightly wider than thorax, in dorsal view 0.6 as long as wide; face about 1.1 times as wide as eye height, closely, confluent punctate over most of its surface, shagreened laterally, nearly smooth medially just above clypeus; clypeus shiny, smooth, with only a few shallow punctures, weakly separated from face by a very shallow impression; malar space a little longer than clypeus but slightly less than half as long as eye height, shagreened and mat like the cheeks; temples receding, about 0.75 as wide as eyes, largely smooth and polished; occipital carina rather broadly interrupted medially; ocellular line twice as long as diameter of an ocellus; maxillary palpi much shorter than width of head; antennae of holotype 30-segmented, a few of the preapical segments about as broad as long.

Mesoscutum smooth and shiny, with only some very shallow punctures; notauli sharply impressed, very finely punctate anteriorly, foveolate posteriorly; disc of scutellum strongly convex, smooth and shiny; propodeum largely rugulose, smoother medially on the posterior face, the stubs of the apical longitudinal carinae distinct though weak; side of pronotum largely finely rugulose but granulose at the anterior margin and nearly smooth below upper margin; mesopleuron smooth and polished, the longitudinal furrow sinuate and strongly foveolate; metapleuron rugulose on the lower posterior part but largely weakly, though closely, punctate and shiny. Hind coxa rugulose basally on dorsal edge and on upper part of outer side, very

shiny and nearly smooth elsewhere on outer side; hind femur twice as long as hind coxa and nearly five times as long as wide; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin slightly longer than stigma; second abscissa of radius nearly on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus just postfurcal; hind wing about 4.5 as long as wide; lower abscissa of basella hardly longer than nervellus and about one-third as long as maximum width of hind wing.

Abdomen a little narrower than thorax; first tergite about 1.4 times as long as wide at apex, weakly, rather irregularly aciculate laterally behind the spiracles, smooth and polished basally and also medially at apex, the spiracles barely farther from each other than from base of segment; second tergite very nearly as long as wide at base and together with the following tergites smooth and polished; ovipositor sheath about as long as distance from base of scutellum to end of abdomen.

Black; the clypeus largely and the mandibles reddish yellow; maxillary palpi pale except the apical segments which are more or less darkened; antennae yellowish on basal two-thirds, darkened apically and also on upper side of scape and pedicel; legs completely yellow, including even the tarsi except for slight darkening of the apical segments; tegulae yellowish brown, wing bases pale yellow; wings hyaline basally, a little infumated apically; first tergite of abdomen black except apically, second and third tergites reddish yellow, the fourth and following black.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female taken at Oldman River, Lethbridge, Alberta, 22 June 1956, by O. Peck.

Orgilus persimilis, new species

From *capsicola*, new species, which this form resembles very closely in structure it differs noticeably only in its darker color. In fact, the similarity between the two is so striking that it seems quite possible they may eventually prove to be the same species. On the basis of presently available material, however, I have considered it advisable to hold them distinct.

FEMALE.—Length about 3 mm. Head a little wider than thorax, in dorsal view twice as broad as long; face very slightly wider than eye height, smooth and

polished, with only a few scattered punctures on upper half; clypeus smooth and polished, impunctate; anterior tentorial pits slightly below level of lower eye margins; malar space about one-fourth as long as eye height; maxillary palpi decidedly shorter than width of head; cheeks smooth, at most with a little faint shagreening near malar line; temples rounded, receding very gradually, about half as wide as eyes, smooth and polished; vertex smooth; ocellular line about twice as long as diameter of an ocellus; occipital carina not strong but complete; antennae 23- or 24-segmented in the available specimens, even the shortest flagellar segments a little longer than broad, the apical segment with a barely visible terminal spicule.

Mesoscutum very shiny, with well-separated shallow punctures; notauli well impressed and finely foveolate; propodeum convex, rather strongly declivous caudad, closely rugulose; side of pronotum smooth and polished above the impression, weakly roughened below it; mesopleuron smooth and polished, the longitudinal furrow sinuate and foveolate; metapleuron largely smooth and shiny, sometimes faintly shagreened, and rugulose only at lower posterior margin. Hind coxa about 0.6 as long as hind femur, smooth and shiny, at most weakly shagreened on outer side; hind femur less than four times as long as wide; inner calcarium of hind tibia not more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin barely longer than stigma; second abscissa of radius about on a line with intercubitus; stub of third abscissa of cubitus punctiform; nervulus postfurcal by about half its length; hind wing about 4.7 times as long as wide; lower abscissa of basella about half as long as mediella.

Abdomen about as wide as thorax; first tergite about as broad at apex as long, confluent punctate or finely rugulose punctate, the dorsal keels indistinct, the spiracles almost twice as far from each other as from base of segment; second tergite about 0.6 as long as broad at base, sculptured like the first; third and fourth tergites similarly but somewhat more weakly sculptured; fifth tergite largely smooth; ovipositor sheath very slightly longer than abdomen.

Head dark brown to black; antennae and palpi darkened; thorax black; tegulae and wing bases usually darkened but sometimes brownish yellow, wings whitish hyaline; legs brownish yellow, the hind coxa and the hind tibia beyond its basal whitish annulus more or less darkened; abdomen black or blackish to largely dark brown.

MALE.—Similar to the female but usually darker, with the head black, the abdomen entirely black except for brownish shadings on the apical tergites, and the hind coxae black; also the abdomen narrower and less extensively sculptured, the first tergite noticeably longer than broad at apex, the third only partially and very weakly sculptured and the fourth and following smooth.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—California, Idaho. The type-series consists of 2 females (one the holotype) and 1 male collected at Helendale, California, in May 1955, by W. R. M. Mason; 1 female taken at Needles, California, in April 1918, by J. C. Bradley and 2 males collected near Grand View, Idaho, 17 June 1955, by W. F. Barr. One female, collected on *Eriogonum* in Inyo County, California, 1 July 1961, by G. I. Stage, seems to be this species but it is not included in the type-series since it is not as dark as the types and has 21-segmented antennae.

Orgilus politus, new species

This species resembles *levis*, new species, in its completely smooth and polished abdomen, but it differs in its relatively broader hind wings, longer hind femora, and rather strongly convex propodeum.

FEMALE.—Length about 4.5 mm. Head a little wider than thorax, in dorsal view about 0.6 as long as wide and rather strongly excavated behind; face slightly broader than eye height (in ratio of 70:65), moderately convex, minutely punctate and shiny; malar space and lower cheeks weakly shagreened; malar space less than 0.4 as long as eye height and not longer than clypeus; temples weakly convex, very slightly receding, about 0.75 as wide as eyes, very shiny but with some extremely minute punctures; occipital carina broadly interrupted medially; ocellular line about twice as long as diameter of an ocellus; antennae of holotype 36-segmented, some of the preapical segments as broad as long.

Thorax slender; smooth and very shiny, with some exceedingly minute and weak setigerous punctures, especially on the middle lobe; notauli deeply impressed, finely foveolate anteriorly, more coarsely so posteriorly; disc of scutellum longer than broad, polished; propodeum convex, largely smooth but a little rugulose punctate or confluent punctate laterally; side of

pronotum roughened in the impression and below it, largely smooth above; mesopleuron polished, impunctate, the longitudinal furrow strongly foveolate; metapleuron largely smooth and shiny, rugulose at lower posterior margin. Hind coxa completely smooth and shiny, 0.7 as long as hind femur, which is at least 4.5 times as long as wide; longer calcarium of hind tibia a little less than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin very slightly longer than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa; nervulus postfurcal by about one-third its length; hind wing about 4.6 times as long as wide; lower abscissa of basella longer than nervellus but less than half as long as mediella.

Abdomen slender, entirely smooth and polished; first tergite about 1.25 times as long as wide at apex, with no indication of the basal dorsal keels; second tergite not or barely wider at base than long; apical segments rather conspicuously hairy; second suture very weak; ovipositor sheath longer than head, thorax, and abdomen combined.

Black; antennae brownish black; palpi blackish; mandibles reddish yellow; tegulae and wing bases black or piceous; wings subhyaline; legs, including all coxae, bright testaceous, the forefemora basally above, extreme apices of hind femora and all the tibiae and tarsi more or less, darkened.

MALE.—Unknown.

HOLOTYPE.—USNM 70188.

DISTRIBUTION.—Known only from 2 females (one the holotype) collected in Riley County, Kansas, in the month of October by C. L. Marlatt, and 1 female taken at Halsey, Nebraska, 8 September 1957, by R. E. Henzlik.

Orgilus pratensis, new species

This species closely resembles *nitidus*, new species, from which it may be readily distinguished, however, as shown in the description of that species.

FEMALE.—Length about 3 mm. Head distinctly wider than thorax, in dorsal view 0.6 as long as wide; face only a little broader (1.1 times) than eye height, smooth and very shiny, with only a little weak sculpture immediately below antennae; malar space longer than clypeus and fully half as long as eye height; cheeks shagreened and dull below, smooth above; temples largely smooth and polished, at mideye point 0.75 as

wide as eyes, receding; ocellular line more than twice as long as diameter of an ocellus; occipital carina weak, broadly interrupted medially; antennae 28- or 29-segmented in the available specimens, some segments in apical fifth of flagellum fully as broad as long.

Mesoscutum very smooth and shiny, the lobes impunctate, notauli very fine, punctate; disc of scutellum small, smooth, and polished; propodeum rugulose dorsally, the short posterior face largely smooth and shiny and with the stubs of the longitudinal carinae that arise from the posterior margin poorly developed; side of pronotum finely rugulose; mesopleuron smooth and polished, the longitudinal furrow a little sinuate and finely foveolate; metapleuron largely smooth and shiny, rugulose at lower posterior margin. Hind coxa about half as long as hind femur, largely smooth on outer side, rugulose above, rather strongly so toward base; hind femur nearly five times as long as wide; inner calcarium of hind tibia a little more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin barely as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as second abscissa; nervulus clearly postfurcal; hind wing 4.5 times as long as wide; lower abscissa of basella fully as long as nervellus but considerably less than half as long as mediella or than maximum width of hind wing.

Abdomen slender but at widest point nearly or quite as wide as thorax; first tergite about 1.5 times as long as wide, more or less longitudinally rugulose but broadly smooth and polished at base and at apex; second tergite as long as broad at base, smooth and polished with only a very small shagreened area each side of the middle near base; third and following tergites smooth and polished; ovipositor sheath about as long as thorax and abdomen combined.

Black; clypeus ferruginous on lower half; palpi brownish; antennae testaceous, darkened on apical half; tegulae and wing bases yellow; wings distinctly a little infumated; legs testaceous, the hind coxae a little darkened basally.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the type-series, which consists of three females taken by Oswald Peck at Scandia, Alberta, the holotype and one paratype swept from grass range 26 June 1956, the other paratype swept from seed alfalfa 26 July 1956.

Orgilus prolixus, new species

This species is very similar to *fisheri*, new species, from which it may be distinguished, however, as shown in the description of that species.

FEMALE.—Length 4 mm. Head slightly wider than thorax, in dorsal view 0.55 as long as wide; face barely wider than eye height (in ratio of 62:60), finely rugulose immediately below antennae, laterally shagreened and subopaque, medially and below very shiny and weakly punctate; clypeus indistinctly separated from face at the middle, weakly punctate; malar space slightly longer than clypeus but not longer than longest segment of maxillary palpus, and 0.48 as long as eye height, finely granulose; cheeks shagreened and rather mat; temples receding, smooth and shiny, at mideye point about 0.6 as wide as eyes; ocellular line about twice as long as diameter of an ocellus; antennae of holotype broken, 27 segments remaining, even the shortest of these fully as long as wide.

Thorax slender; mesoscutum smooth and shiny, the lobes not distinctly punctate; notauli sharply impressed, strongly foveolate; propodeum rugulose, the areas at the posterior margin largely smooth and shiny and separated by short stubs of longitudinal carinae, the apical margin of the propodeum at the sides strongly reflexed; side of pronotum entirely finely rugulose, even just below the upper margin; mesopleuron smooth and polished, the longitudinal furrow rather coarsely foveolate; metapleuron entirely rugulose, rather weakly so in the upper anterior angle. Hind coxa finely rugulose basally above, virtually smooth on outer side below; hind femur about 4.5 times as long as wide and nearly twice as long as hind coxa; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Stigma not angled at origin or radius; radial cell just about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus postfurcal by less than one-fourth its length; hind wing about 4.5 times as long as its maximum width; lower abscissa of basella considerably longer than nervellus and nearly half as long as mediella but not nearly half as long as maximum width of hind wing.

Abdomen long and slender, as long as head and thorax combined; first tergite at least one and one-half times as long as wide at apex, longitudinally rugulose punctate but with some longitudinal striae laterally,

the basal dorsal keels weak but distinct to well beyond the spiracles, the spiracles three times as far from apex as from base of segment; second tergite as long as broad at base, broadening gradually caudad, finely rugulose punctate on basal half except for a triangular basal median polished area, the posterior half of the tergite smooth and polished like the following tergites; ovipositor sheath considerably longer than head, thorax, and abdomen combined.

Black; clypeus, except narrowly at lower margin, and palpi black; antennal scape blackish, the flagellum yellowish brown on basal half below but darkened apically, below as well as above; legs testaceous, only the hind coxae at their bases, the hind tibiae weakly at their apices, and the tarsi more or less, darkened; tegulae and wing bases dark; wings hyaline; first tergite and the second basally black or blackish, the remainder of the abdomen brownish.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female collected by J. C. Martin at Lake St. Peter, Ontario, 28 June 1955.

Orgilus proprius, new species

FIGURE 34

This species is superficially most similar to *infrequens*, new species, but it may be readily distinguished by its alutaceous coxae, its longer malar space and correspondingly smaller eyes, and by its much longer ovipositor.

FEMALE.—Length about 5 mm. Head, as seen from above, barely wider than thorax but twice as broad as long; temples strongly receding, a little more than half as wide as eyes; face rather flat, 1.2 times as wide as eye height and closely, finely punctate; malar space nearly one-third as long as eye height; cheeks finely shagreened; ocelli close together, the distance between the lateral ocelli less than the diameter of one of them; ocellular line more than twice as long as diameter of an ocellus; occipital carina complete; antennae 31-segmented, even the segments of the apical fourth considerably longer than wide, the apical segment acuminate and with a short, stout terminal spicule.

Mesoscutum shining, weakly punctate; notauli finely foveolate; propodeum smooth laterally but with some

irregular rugae medially, and with short longitudinal carinae arising from the posterior margin and setting off five apical areas that are open in front; side of pronotum and the mesopleuron smooth and shiny; the mesopleural furrow a little sinuate, foveolate; metapleuron faintly alutaceous. Hind coxa alutaceous; hind femur less than twice as long as hind coxa and 4.3 times as long as wide; longer calcarium of hind tibia hardly half as long as metatarsus; tarsal claw with a well-developed subbasal tooth. Stigma much shorter than radial cell measured on wing margin; second abscissa of radius not nearly on a line with intercubitus; stub of third abscissa of cubitus punctiform; nervulus interstitial; hind wing about 4.2 times as long as wide; lower abscissa of basella much longer than nervellus and more than half as long as mediella.

Abdomen about as wide as thorax; first tergite only a little longer than broad at apex, the surface largely shagreened but with some longitudinal rugulosity laterally, the dorsal keels prominent and extending to the apical third of the tergite; second tergite 1.4 times as broad at base as long, the surface coriaceous or shagreened but also with some very fine longitudinal rugulosity; third tergite sculptured like the second but more weakly so; remainder of abdomen smooth; ovipositor sheath one and one-half times as long as head, thorax, and abdomen combined.

Brownish yellow; antennae, including scapes, dark brown; palpi pale; tegulae and wing bases pale yellow; wings hyaline; legs yellow, the apices of the hind femora black, the hind tibiae blackish, except basally where they are whitish and on the middle part of the underside where they are brownish yellow, and the hind tarsi more or less infuscated.

MALE.—Unknown.

HOLOTYPE.—In the collection of Cornell University.

DISTRIBUTION.—Known only from the holotype, which was collected by J. C. Bradley on St. Simon's Island, Georgia, between 22 April and 12 May 1911.

Orgilus pumilus, new species

A small yellowish species very similar to *cerinus*, new species, but the ovipositor is much longer, the face is relatively narrower, the cheeks are more strongly and more extensively shagreened, the malar space is relatively shorter and the wings are more uniformly smoky.

FEMALE.—Length about 2.7 mm. Head broader than thorax, in dorsal view 0.6 as long as broad; face a little broader than eye height (in ratio of 52:45), a low median longitudinal keel on upper third, the surface largely smooth and shiny; malar space a little longer than clypeus but a little less than half (0.45) as long as eye height; cheeks shagreened and rather mat; temples smooth and polished, 0.8 as wide as eyes; anterior tentorial pits only slightly below level of lower eye margins; occiput carinately margined only at the sides; antennae of holotype 29-segmented, none of the flagellar segments as wide as long.

Mesoscutum smooth and shiny, with only scattered, extremely shallow, barely distinct punctures; notauli sharply impressed, foveolate; disc of scutellum nearly flat, impunctate and polished; propodeum rugulose, the stubs of the carinae that arise from the posterior margin rather prominent but short; side of pronotum rugulose in the impression, finely granulose along anterior margin, smooth and shiny below upper margin; mesopleuron smooth and shiny, the longitudinal furrow nearly straight, foveolate; metapleuron rugulose posteriorly below, smooth and shiny anteriorly; hind coxa a little shagreened but shiny on upper edge toward base and on upper part of outer side; hind femur about 4.8 times as long as wide; inner calcarium of hind tibia half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; nervulus postfurcal by half its length; hind wing about 4.4 times as long as wide; lower abscissa of basella about half as long as mediella.

Abdomen about as wide as thorax; first tergite 1.2 times as long as wide at apex, minutely rugulose; second tergite just about as long as wide at base, broadening noticeably caudad, finely shagreened on basal half; remainder of dorsum of abdomen smooth and shiny; ovipositor sheath nearly as long as the body.

Dirty honey yellow; scape and apical half of antenna darkened; legs concolorous with the body, the femora along the dorsal edges and the tibiae and tarsi more or less darkened; tegulae and wing bases concolorous with thorax; wings uniformly a little infumated; abdomen blackish beyond second tergite.

MALE.—Unknown.

HOLOTYPE.—USNM 70189.

DISTRIBUTION.—Known only from the holotype female taken at Seneca, South Carolina, 18 May 1962, on a small pine tree by R. D. Eikenbary.

Orgilus rasilis, new species

Superficially this species somewhat resembles *levis*, new species, but the malar space is relatively longer, the tegulae and mandibles are yellow and the wings are only very faintly infumated; also, the calcaria of the hind tibiae are relatively a little longer, the abdomen is more slender and the temples recede more strongly.

FEMALE.—Length 3.2 mm. Head clearly wider than thorax (in ratio of 5:4), in dorsal view 0.6 as long as wide; face a little (1.1 times) broader than eye height, rather strongly convex, shiny, weakly punctate; malar space longer than clypeus and about 0.45 as long as eye height, granulose; cheeks largely smooth, weakly shagreened below; temples smooth and polished, gradually receding, about 0.75 as wide as eyes; ocellular line more than twice as long as diameter of an ocellus; occipital carina broadly interrupted medially; antennae 29-segmented in the holotype, even the shortest flagellar segments a little longer than broad.

Mesoscutum smooth, a few weak punctures anteriorly on the middle lobe, the lateral lobes impunctate; disc of scutellum polished, slightly convex; propodeum rather strongly declivous, rugulose on basal half except for a small transverse, smooth and polished area each side of the middle at extreme base, the posterior face with five large, rather smooth apical areas separated by rather weak stubs of longitudinal carinae that arise from the posterior margin; side of pronotum entirely rugulose; mesopleuron smooth and polished, the longitudinal furrow slightly sinuate and strongly foveolate; metapleuron largely smooth and shiny, rugulose at the lower posterior margin. Hind coxa very finely rugulose above toward base, somewhat granulose on upper part of outer side; hind femur less than twice as long as hind coxa and about 4.2 times as long as wide; inner calcarium of hind tibia half as long as metatarsus; claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus about as long as second abscissa; nervulus barely postfurcal; hind wing about 4.6 times as long as wide; lower abscissa of basella much longer than nervellus and about half as long as mediella or maximum width of hind wing.

Abdomen very narrow, only about two-thirds as wide as thorax at tegulae; first tergite at least one and one-half times as long as wide at apex, smooth and polished, with only a very little weak longitudinal sculp-

ture laterally near the middle; second tergite as long as broad at base, parallel-sided and entirely smooth and polished, the suture between second and third tergites indistinct; third and following tergites polished; ovipositor sheath longer than head, thorax, and abdomen combined.

Black; scape and pedicel blackish, the antennal flagellum yellowish on basal half but becoming gradually darker apically; mandibles and anterior part of clypeus testaceous; palpi piceous; tegulae and wing bases yellow; wings subhyaline; legs testaceous, only slightly darkened at the apices of the hind femora and tibiae and on the tarsi; the middle part of the dorsum of the abdomen tinged with reddish brown.

MALE.—Unknown.

HOLOTYPE.—USNM 70190.

DISTRIBUTION.—Known only from the holotype female from the Huachuca Mts., Arizona, collected 20 September 1940, by R. H. Crandall.

Orgilus rostratus, new species

FIGURES 3, 3a, 3b

The rostriform head distinguishes this form from all other known species with a long stub of the third abscissa of cubitus except *dreisbachi*, new species, from which *rostratus* differs in its rather strongly infumated wings, longer malar space and receding temples.

FEMALE.—Length around 3.3 mm. Head barely wider than thorax, a little excavated behind, in front view higher than its greatest width, and in dorsal view nearly twice as wide as long; face minutely punctate, its straight-line width just about equal to eye height; malar space fully 0.6 as long as eye height and nearly twice as long as longest segment of maxillary palpus, which is about as long as the exposed part of the galea; maxillary palpi considerably shorter than height of head; anterior tentorial pits much below level of lower eye margins; temples and cheeks gradually receding, the former at mideye point about half as wide as eyes, smooth and shining; ocellular line a little less than twice as long as diameter of an ocellus; occipital carina broadly interrupted medially; antennae hardly as long as the body, 25- to 27-segmented in the available specimens, none of the preapical segments wider than long, the apical segment without a terminal spicule.

Lobes of mesoscutum only weakly convex, the middle lobe completely minutely punctate like the face; the lateral lobes smoother; notauli completely and very

finely foveolate; scutellar disc small, finely and sparsely punctate; propodeum gradually declivous, coarsely rugose, the apical areas set off by very prominent stubs of longitudinal carinae that arise from posterior margin, which is very strongly reflexed at the lateral angles; lateral face of pronotum rugose or rugose punctate in the impression, finely rugulose before the impression and nearly smooth above and behind it; mesopleuron polished, the longitudinal furrow coarsely foveolate; metapleuron rugose posteriorly, usually coarsely punctate anteriorly. Hind coxa 0.75 as long as hind femur, weakly roughened above basally, otherwise smooth; hind femur only about three times as long as its maximum width; longer calcarium of hind tibia hardly half as long as metatarsus, tarsal claws simple. Radial cell on wing margin just about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus longer than second abscissa, which is not more, usually less, than half as long as intercubitus; nervulus slightly postfurcal; hind wing 4.5 times as long as wide; lower abscissa of basella much longer than nervellus and about half as long as mediella.

Abdomen not longer, and at its widest point a little wider, than thorax; first tergite barely longer than wide at apex, and with two very prominent dorsal keels extending from the base to the middle, the surface of the tergite largely rugulose punctate; second tergite twice as broad on posterior margin as long and closely punctate or granulate; third and fourth tergites usually partly punctate or granulate; the following usually smooth and shiny but sometimes a little roughened; ovipositor sheath just about as long as the abdomen, the ovipositor strongly decurved at the apex.

Head and thorax brown to black, usually largely or entirely black; wings rather uniformly infumated; legs brownish, the apices of the hind femora, and the tibiae and tarsi sometimes, more or less darkened; abdomen usually brown.

MALE.—In essential characters like the female.

HOLOTYPE.—USNM 70191.

DISTRIBUTION.—Colorado, Wyoming, Ohio, Maryland. The type-series consists of the following: Holotype female from Steamboat Springs, Colorado, collected 21 July 1896, by C. Liebeck; 2 females taken at the Jackson Hole Biological Station, Moran, Wyoming, August 1961, by H. E. Evans; 1 female from Hyattsville, Maryland, collected 1 September 1912, by "Knab and Malloch"; and 2 males, in the Canadian National

Collection, taken at Steubenville, Ohio, 4 September 1950.

Orgilus scaber, new species

FIGURES 15, 26, 41

This species is distinguished from related species especially by combining a completely sculptured abdomen, unusually prominent dorsal keels on the first tergite and a very short ovipositor.

FEMALE.—Length around 3.5 mm. Head not or barely wider than thorax, in dorsal view about 0.7 as long as wide; face very prominent, strongly convex, its straight-line width hardly equal to eye height, rugulose punctate and shiny; clypeus punctate, its basal margin on a line with the lower eye margins; malar space about one-third as long as eye height; cheeks strongly shagreened and dull; temples smooth and shiny, gradually receding, and at mideye point slightly more than half as wide as eyes; vertex smooth and shiny; ocellular line about 1.5 times as long as diameter of an ocellus and a little shorter than the distance between the lateral ocelli; occiput carinately margined only at the sides; antennae usually 29- to 31-segmented, even the shortest of the preapical segments slightly longer than broad.

Mesoscutum shiny, closely and rather strongly punctate, especially on the middle lobe; notauli shallow but foveolate; disc of scutellum rather flat, shiny, with some scattered punctures; propodeum entirely coarsely rugose, almost horizontal down the median line; lateral face of pronotum rugose on lower two-thirds, largely smooth and shiny on upper third; mesopleuron smooth and shiny, its longitudinal furrow complete and weakly sinuate and foveolate; metapleuron completely strongly rugulose. Hind coxa rugose above, finely rugulose on outer side, dull; hind femur about 3.5 times as long as broad; hind tibia with a compact cluster of short stout spines on outer side just before apex, the inner calcarium half as long as metatarsus; tarsal claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus subequal in length with the second abscissa; nervulus very slightly postfurcal; hind wing about 4.5 times as long as wide; lower abscissa of basella usually a little longer than nervellus but not half as long as mediella or maximum width of hind wing.

Abdomen fully as broad as thorax and a little longer; tergites 1–6 sculptured, the first coarsely rugose with the dorsal keels unusually prominent and extending back to apical third of the tergite; the following tergites successively more weakly sculptured; ovipositor sheath about as long as abdomen beyond first segment.

Head and thorax black; lower part of clypeus and the mandibles brownish; antennae brownish black, a little lighter below toward bases; first tergite of abdomen black, the following usually more or less piceous to brownish, becoming successively lighter posteriorly, the sixth and seventh being brownish yellow; tegulae and wing bases black or blackish; wings uniformly infumated; coxae black or blackish; trochanters, especially of the fore- and middle legs, partly darkened; all femora and tibiae brownish yellow, all tarsi dark.

MALE.—In essential characters like the female. The antennae are more slender and the legs are inclined to be somewhat darker.

HOLOTYPE.—USNM 70192.

DISTRIBUTION.—Washington, British Columbia, Ontario, Quebec, and New Brunswick. The type-series consists of the following: 9 females (one the holotype) and 12 males reared from unidentified coleophorid larvae at Seattle, Washington, in July and August 1942; 6 females and 3 males reared from *Coleophora* sp., Langford, British Columbia; 1 female, Harwood, Ontario, and 1 male, Brampton, Ontario, reared from *Coleophora* sp.; 3 females and 1 male, Glen Morris, Ontario, 1 male, Owen Sound, Ontario, 1 female, Gore Bay, Ontario, 2 females, Ottawa, Ontario, 1 female, Rougemont, Quebec, 1 female and 1 male, Bass River, Kent County, New Brunswick, and 1 female, Shale Hill, Albert County, New Brunswick, all reared from *Coleophora serratella* (L.). There are also 1 female from Simcoe, Ontario, labeled as having been reared "with the red-banded leaf roller," and 1 male from St. Vallier, Quebec, labeled "ex *Alsophila pometaria* Harris"; these two indicated rearing records are probably incorrect.

Orgilus simulator, new species

This species is very similar to *alacer*, new species, but it has the cheeks completely shagreened, the temples narrower and not so smooth as in *alacer*, the first tergite much smoother than in that form, and the first and second tergites with reddish markings.

FEMALE.—Length about 5 mm. Head very slightly wider than thorax and very nearly twice as broad as

long (in ratio of 130:70) in dorsal view; face convex, finely and closely punctate on lower half, finely rugulose punctate above, especially laterally, its straight-line width just about equal to eye height; clypeus minutely punctate, separated from face by an impression; malar space not distinctly longer than clypeus, a little shorter than longest segment of maxillary palpus, and 0.35 as long as eye height, shagreened and dull; cheeks completely strongly shagreened and dull; temples about 0.75 as wide as eyes, rather strongly receding, smooth and shiny adjacent to eyes but broadly shagreened along occipital margins; frons confluent punctate to finely rugulose and rather opaque except medially below median ocellus where it is smooth and polished; ocellular line less than twice as long as diameter of an ocellus; occipital carina narrowly interrupted medially; antennae 37-segmented in the holotype, a few of the preapical segments about as broad as long.

Mesoscutum shiny, rather closely hairy, largely smooth, only faintly punctate posteriorly on middle lobe; notauli sharp, fine, minutely foveolate, meeting in a rather deep and almost smooth medial impression at apex of scutum; prescutellar furrow very finely foveolate; disc of scutellum longer than wide at base, weakly convex, smooth, with only scattered minute and faint punctures; propodeum rugulose, rather weakly so medially at base, the stubs of the carinae that arise from the posterior margin short but prominent, especially the sublateral ones; side of pronotum anteriorly finely aciculate on a granulose ground, rugulose punctate in the impression, smooth and shiny below the upper margin; mesopleuron smooth and polished, the longitudinal furrow foveolate, weakly so anteriorly; metapleuron rugose at posterior margin, elsewhere smooth and shiny with only extremely shallow punctures. Hind coxa about 0.7 as long as hind femur, largely smooth but a little shagreened on upper part of outer side; hind femur almost 4.5 times as long as broad; inner calcarium of hind tibia a little less than half as long as metatarsus, the outer one much shorter than second tarsal segment; tarsal claws simple. Radial cell on wing margin as long as stigma, which is very narrow; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus a little longer than second abscissa, which is less than half as long as recurrent vein; nervulus slightly post-furcal; hind wing nearly five times as long as wide; lower abscissa of basella much longer than nervellus

and nearly half as long as maximum width of hind wing but considerably less than half as long as mediella.

Abdomen narrower than thorax; first tergite about 0.7 as broad at apex as long, very largely smooth and shiny, only weakly sculptured laterally, the dorsal keels not developed, the spiracles more than twice as far from apex as from base; second tergite completely smooth and polished, a little broader at base than long and widening noticeably caudad, a deep impression at base each side of the middle; remainder of abdomen smooth; ovipositor sheath clearly longer than head, thorax, and abdomen combined.

Black; clypeus narrowly ferruginous at lower margin; mandibles yellowish; antennae black, the flagella dark brown below on basal third; palpi dark; tegulae black; wing bases brownish yellow; wings distinctly somewhat infumated; legs yellow, all tarsi black, and extreme apices of hind femora and tibiae above a little darkened; abdomen black or blackish but with a yellowish spot in each apical corner of the first tergite and a similar but much larger spot in each apical corner of the second tergite.

MALE.—Unknown.

HOLOTYPE.—USNM 70224.

DISTRIBUTION.—Known only from the holotype female, which was collected in Bay County, Michigan, 5 September 1937, by R. R. Dreisbach.

Orgilus solidus, new species

This species is very similar to *detectus* (Provancher), but it may be distinguished from that form by its finely shagreened face, more slender antennae, relatively shorter malar space and shorter ovipositor.

FEMALE.—Length about 3 mm. Head 1.2 times as wide as thorax, in dorsal view nearly twice as wide as long; face just wider than eye height, minutely shagreened and rather mat, and with some fine punctures; clypeus very shiny, with sparse, shallow punctures; labial palpi thick; malar space not longer than clypeus and hardly 0.4 as long as eye height, also just about as long as longest segment of maxillary palpus, and finely granulose or shagreened; cheeks shagreened and rather mat; temples about 0.75 as wide as eyes, rounded and rather strongly receding, smooth and shiny except along occipital carina where they are weakly shagreened; occipital carina narrowly interrupted medially; ocellular line a little more than twice as long as diameter of an ocellus; antennae of holotype 31-

segmented, none of the flagellar segments quite as broad as long.

Mesoscutum very shiny, the lobes with only very shallow, indistinct, setigerous punctures; notauli sharply impressed, finely foveolate, meeting in a very acute angle, a few irregular punctures in the junction area; disc of scutellum convex, smooth, and shiny; propodeum rugulose, the stubs of the apical longitudinal carinae prominent, setting off three shiny, weakly rugulose areas; side of pronotum rugulose; mesopleuron smooth and polished, the longitudinal furrow coarsely foveolate; metapleuron largely rugulose, weakly so in the anterior angle. Hind coxa rugulose above, nearly smooth below on the outer side; hind femur less than twice as long as hind coxa and about four times as long as broad; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long as second abscissa; nervulus postfurcal by one-third its length; hind wing less than 4.5 times as long as wide; lower abscissa of basella much longer than nervellus and about half as long as mediella but less than half as long as maximum width of hind wing.

Abdomen stout, not quite as long as head and thorax combined and about as wide as thorax; first tergite more than 0.8 as wide at apex as long, the spiracles twice as far from each other as from base of segment, the surface of the tergite longitudinally rugulose striate; second tergite about 1.3 times as broad at base as long, nearly parallel-sided, finely punctate on the greater part of the basal two-thirds, smooth and polished laterally and apically; second suture fine but sharply impressed; third and following tergites smooth and polished, the third at least as long as the following tergites combined; ovipositor sheath hardly as long as abdomen.

Black; clypeus reddish black; palpi piceous; scape of antenna entirely blackish, flagellum yellowish brown below toward base, otherwise dark; legs yellowish brown, the foretrochanters and the forefemora dorsally, the hind coxae basally, the hind femora at apices and both middle and hind femora on inner side, all the tibiae apically, and all the tarsi, more or less darkened; tegulae blackish, wing bases piceous; wings slightly infumated; venter of abdomen dark.

MALE.—Unknown.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the holotype female that was collected by W. R. M. Mason at Ottawa, Canada, 29 June 1954.

Orgilus striatus, new species

This species seems to be most similar to *vallis*, new species, the type of which is from the same locality, but it is distinguished especially by its closely longitudinally striate first tergite and its more extensively sculptured second tergite.

FEMALE.—Length about 4 mm. Head slightly wider than thorax, 0.7 as long as wide in dorsal view; face 1.2 times as wide as eye height, closely and sharply punctate, a little rugulose just below antennae; malar space longer than clypeus and fully half as long as eye height, finely granulose and dull; cheeks shagreened and mat; temples at mideye point nearly as wide as eyes (in ratio of 39:43), only slightly receding, finely shagreened and mat along occipital carina, smooth and polished adjacent to eyes; vertex with some punctures in and around ocellar triangle, the area on occiput immediately below lateral ocelli a little rugulose; antennae of holotype 31-segmented, the last 5 segments longer than broad, several immediately preceding these about as broad as long.

Thorax rather slender; mesoscutum very shiny and smooth with only very shallow setigerous punctures, which are most noticeable on the middle lobe; notauli sharply impressed, deep and foveolate, and meeting in a rugulose area; propodeum evenly convex from front to back, rugulose, the stubs of the two median carinae that arise from the posterior margin rather prominent, the others very weak; side of pronotum finely rugulose, nearly smooth on a narrow strip along upper margin; mesopleuron smooth and polished, the longitudinal furrow rather weak; metapleuron largely rugulose but shiny and nearly smooth on a small area at the upper anterior angle. Hind coxa rugulose above; hind femur just about twice as long as hind coxa and about five times as long as broad; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus postfurcal by at least one-third its length; hind wing 4.3 times as long as wide; lower abscissa of basella longer than nervellus but less than half as long as mediella.

Abdomen hardly as wide as thorax; first tergite about 1.5 times as long as wide at apex, finely and closely longitudinally striate, the basal dorsal keels not developed; second tergite virtually as long as broad at base, shiny, with some delicate, curved, transverse rugulae near base, and beyond these finely longitudinally rugulose aciculate up to the apical fourth, which is smooth; remainder of abdomen smooth and polished; ovipositor sheath as long as propodeum and abdomen combined.

Black; clypeus ferruginous on lower half; mandibles testaceous, also the antennae on the basal two-thirds, the scape, however, a little darkened above; palpi piceous; tegulae brown, wing bases brownish yellow; wings a little infumated, indistinctly so basally but clearly so on apical half; legs yellowish, the hind tibiae apically and the hind tarsi a little darkened.

MALE.—Unknown.

HOLOTYPE.—USNM 70193.

DISTRIBUTION.—Known only from the female holotype that was collected at Apple Valley, California, in 1951, by P. H. Timberlake.

Orgilus strigosus, new species

This species is most similar to *mundus*, new species, with which it is easily confused. It differs, however, in its smooth and polished cheeks, relatively longer head and less receding temples, less extensively sculptured second tergite and completely black abdomen.

FEMALE.—Length about 4 mm. Slender, head in dorsal view at least 0.7 as long as wide, not wider than thorax; straight-line width of face hardly exceeding eye height; face largely smooth and shiny but with some well-separated sharp punctures; malar space hardly 0.5 as long as eye height, shagreened and dull; cheeks smooth and polished except near lower and posterior margins where they are shagreened; temples 0.85 as wide as eyes, receding only very slightly, largely smooth and polished; antennae 31-segmented in both known specimens, a few segments in apical third of flagellum a little wider than long.

Mesoscutum shiny, weakly punctate; notauli not deep, finely foveolate and meeting in a very acute angle; disc of scutellum polished but with a few very shallow punctures; propodeum rugulose but with a narrow, triangular, smooth and polished area each side at extreme base, the anteriorly open median apical area rugulose, defined laterally by very short stubs of

carinae that arise from the posterior margin; side of pronotum entirely finely rugulose and rather dull; mesopleuron smooth and polished, the longitudinal furrow evenly finely foveolate; metapleuron very shiny and smooth except posteriorly and below where it is finely rugulose. Hind coxa decidedly more than half as long as hind femur, rugulose above, smooth on outer side below; hind femur barely four times as long as broad; inner calcarium of hind tibia fully half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma, which is very narrow; second abscissa of radius nearly on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus postfurcal by about one-third its length; hind wing about 4.3 times as long as wide; lower abscissa of basella longer than nervellus but less than half as long as mediella.

Abdomen slender, narrower than thorax; first tergite largely closely, longitudinally striate, 1.5 times as long as broad at apex, the spiracles three times as far from apex as from base; second tergite fully as long as wide at base, smooth and polished except for a small, finely rugulose area each side at base, a broad polished median space between the rugulose patches; remainder of dorsum of abdomen polished; ovipositor sheath a little longer than head, thorax, and abdomen combined.

Black; mandibles and lower third of clypeus ferruginous; scape entirely black, the flagellum dark brown on basal half below, black apically; legs brownish yellow, the hind coxae blackish on basal half, all femora more or less darkened on the inner sides, also hind tibiae at apices and the tarsi more or less, darkened; tegulae and wing bases brownish black; wings lightly infumated; abdomen entirely black.

MALE.—Unknown.

HOLOTYPE.—USNM 70194.

DISTRIBUTION.—Known from two females: The holotype from Sagehen nr. Hobart Mills, California, 21 July 1951, R. H. Goodwin; the paratype from Hope Valley, Alpine County, California, 18 July 1948, R. C. Bynum.

Orgilus tenuis, new species

In habitus and in various details this species is most similar to *notabilis*, new species. It is immediately distinguishable from *notabilis*, however, as from all other species of this group of *Orgilus* I have seen, by its ex-

traordinarily short calcaria of the hind tibia, the inner of which is only one-third as long as the metatarsus.

FEMALE.—Length about 4.2 mm. A very slender species. Head wider than thorax and in dorsal view about twice as broad as long; face not quite as wide as eye height, shagreened and finely punctate; eyes very large; malar space about one-fourth as long as eye height; maxillary palpi long, longer than width of head; anterior tentorial pits on a line with lower eye margins; cheeks shagreened; temples flat, receding sharply from eye margins, finely shagreened; occiput immargined; frons and vertex coriaceous; diameter of lateral ocelli nearly equal to the distance between them and more than half as long as ocellular line; antennae of the holotype and only known specimen 33-segmented, very slender, even the shortest flagellar segments longer than broad.

Mesoscutum finely granulate and somewhat mat; notauli complete, sharp, weakly foveolate; propodeum evenly convex, uniformly granulate and with short stubs of longitudinal carinae arising from the posterior margin and setting off five apical areas that are open in front; lateral face of pronotum, mesopleuron, and metapleuron completely shagreened and rather dull; the longitudinal mesopleural furrow indicated but very weak. Hind coxa half as long as thorax and three-fourths as long as hind femur, uniformly shagreened; hind femur at least four times as long as broad; inner calcarium of hind tibia only one-third as long as metatarsus; tarsal claws simple. Radial cell on wing margin much longer than stigma (in ratio of 50:38); stigma large and broad, emitting radius from its middle; second abscissa of cubitus less than half as long as recurrent vein; not even a vestige of third abscissa of cubitus present; nervulus interstitial; hind wing about six times as long as wide; lower abscissa of basella more than twice as long as nervellus, more than half as long as mediella and three-fourths as long as maximum width of hind wing.

Abdomen very slender, much narrower than thorax; first tergite more than twice as long as wide at apex, a little rugulose basally and finely granulate apically, the basal dorsal keels distinct but short; second tergite much longer than broad at base or apex, confluent punctate, almost rugulose basally; third tergite very nearly as long as broad at base, also largely confluent punctate but smooth and shining in the apical corners; second suture sharply impressed; fourth and following tergites smooth; ovipositor sheath considerably longer than head, thorax, and abdomen combined.

Brownish black; head in front, including clypeus, mandibles and cheeks, brownish yellow; palpi yellow; antennae pale brown basally, darkened apically; fore- and middle legs yellow, their tibiae and tarsi a little darkened; hind coxae blackish brown, hind trochanters and femora pale, their tibiae and tarsi darkened; tegulae and wing bases testaceous; wings subhyaline; abdomen blackish brown but with the second tergite and the base of the third pale brown.

MALE.—Unknown.

HOLOTYPE.—USNM 70195.

DISTRIBUTION.—Known only from the holotype female collected 9 August 1950, at Patuxent Refuge, Bowie, Maryland, by R. T. Mitchell.

Orgilus tersus, new species

This species is suggestive of *elasmopalpi*, which it closely resembles in color, but *tersus* is more slender, the face is narrower, the metapleura, sides of the pronotum, face and second tergite are differently sculptured, and the hind coxae and the lower abscissa of the basella are relatively longer; in addition, the ovipositor is shorter.

FEMALE.—Length 3.5 mm. Head a little wider than thorax, in dorsal view about 0.6 as long as wide; face prominent, only very slightly (in ratio of 60:55) wider than eye height, and finely punctate, even below; clypeus weakly punctate, indistinctly separated from face medially; malar space shagreened, much longer than clypeus and a little more than half as long as eye height; cheeks shagreened and mat; temples largely smooth, even adjacent to the occipital carina, and at mideye point about 0.7 as wide as eyes; frons, except for a narrow shagreened strip beside each eye, smooth and polished; occipital carina broadly interrupted medially; ocellular line more than twice as long as diameter of an ocellus; antennae 31-segmented in the holotype, even the shortest flagellar segments as long as broad.

Mesoscutum smooth and shiny, with only a few shallow and faint punctures; notauli rather shallow, evenly foveolate, no rugose area at their junction; disc of scutellum convex, impunctate; propodeum coarsely rugulose, even at apex, the stubs of the longitudinal carinae that arise from the posterior margin short, and not very distinct because of the coarse rugosity along the apical margin; side of pronotum completely rugose (not granulose anteriorly as in *elasmopalpi*); mesopleuron smooth and polished, the

longitudinal furrow consisting of a row of large, contiguous punctures, the largest of these near the anterior end; metapleuron rugose posteriorly but largely finely shagreened and mat. Hind coxa more than half as long as hind femur, finely granulose above and on outer side; hind femur 4.7 times as long as wide; inner calcarium of hind tibia more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus as long as second abscissa; nervulus very slightly post-furcal; hind wing five times as long as wide; lower abscissa of basella half as long as mediella and fully half as long as maximum width of hind wing.

Abdomen only slightly narrower than thorax; first tergite 1.4 times as long as wide at apex, finely longitudinally rugulose, the spiracles only slightly farther from each other than from base of segment; second tergite barely wider at base than long in the holotype, finely rugulose punctate on basal half, smooth and polished apically; the following tergites entirely smooth and polished; ovipositor sheath about as long as abdomen.

Head and thorax black; lower part of clypeus and the mandibles testaceous; antennae yellow above as well as below on basal half, darkened apically; legs yellow, hind femora apically, apices of hind tibiae and the hind tarsi a little darkened; tegulae and wing bases yellow; wings a little infumated; abdomen yellow, darkened apically beginning with the apex of the third tergite.

MALE.—Unknown.

HOLOTYPE.—USNM 70196.

DISTRIBUTION.—Known only from the holotype female reared from wheat stems and roots at Pendleton, South Carolina, 24 June 1946, by D. Duncan.

Orgilus utahensis, new species

This species is very similar to *coracinus*, new species, but it differs in its relatively broader and more extensively sculptured second tergite, more sharply impressed second suture of the abdomen, the unusually prominent occipital carina, the absence of punctures below the longitudinal furrow of the mesopleuron, and the somewhat paler antennae.

FEMALE.—Length about 4 mm. Head barely wider than thorax, in dorsal view 0.6 as long as wide; face about 1.2 times as wide as eye height, rugulose punctate; clypeus with numerous small, irregular punctures;

malar space much longer than clypeus and fully half as long as eye height, finely granulose and dull; cheeks shagreened or finely granulose and dull; temples rather flat, only very slightly receding, 0.8 as wide as eyes, smooth and polished except narrowly adjacent to occipital carina where they are weakly shagreened and punctate; occipital carina broadly interrupted medially, unusually prominent at the sides; vertex and frons smooth and shiny; back of head just below ocelli a little roughened; ocellular line nearly three times as long as diameter of an ocellus; antennae of holotype 30-segmented, some segments of the apical third of flagellum distinctly broader than long.

Mesoscutum very shiny, the middle lobe closely punctate; notauli deep, foveolate; disc of scutellum very shiny but with some small and very shallow punctures; dorsal face of propodeum rather short, and rugose except for a very narrow, transverse, smooth and polished area each side of the middle at extreme base; posterior face of propodeum with the stubs of the longitudinal carinae rather prominent and setting off the largely smooth apical areas; side of pronotum finely rugulose but broadly smooth at upper margin; mesopleuron smooth and polished, the longitudinal furrow weakly foveolate; metapleuron smooth and shiny, rugulose below. Hind coxa rugose on dorsal edge, largely smooth on lower part of outer side; hind femur a little less than twice as long as hind coxa and barely four times as long as wide; tarsal claws simple. Radial cell on wing margin a little shorter than stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus fully as long as second abscissa; nervulus postfurcal by at least one-third its length; hind wing about four times as long as wide; lower abscissa of basella hardly as long as nervellus.

Abdomen at widest point about as wide as thorax; first tergite 0.8 as wide at apex as long, the spiracles hardly twice as far from apex as from base and nearly twice as far from each other as from base, the surface of the first tergite largely rugulose; second tergite 1.3 times as wide at base as long, finely rugulose punctate on basal two-thirds except laterally where it is smooth and polished, broadly smooth and polished at apex; second suture fine but sharply impressed; remainder of dorsum of abdomen smooth and shiny; ovipositor sheath as long as propodeum and abdomen combined.

Black; clypeus black; palpi blackish; mandibles dark reddish brown; scape of antenna entirely black, the flagellum yellowish brown below on basal half, dark-

ened above, blackish apically; tegulae black, wing bases reddish brown; wings a little infumated; all coxae and basal trochanters black, remainder of legs largely dark brown except all femora which are more or less blackish inwardly and along dorsal edges; abdomen black above and below.

MALE.—Unknown.

HOLOTYPE.—USNM 70197.

DISTRIBUTION.—Known only from the holotype female labeled as having been collected at Alta, Utah, on 30 June.

Orgilus validus, new species

This species is extremely similar to *erythropus*, new species, and it may prove to be that species, but for the present it seems necessary to hold it distinct since it differs in having the metapleuron completely rugulose and the frons irregularly rugulose rather than transversely striate just above antennal foramina.

FEMALE.—Length about 4.3 mm. Head barely wider than thorax, in dorsal view about 1.8 times as wide as long; face about 1.25 times as wide as eye height; closely and strongly punctate just below antennae; clypeus closely punctate, shiny and separated from face by a shallow impression; malar space just about half as long as eye height, shagreened and mat; cheeks shagreened and dull; temples rather flat, gradually receding, about 0.8 as wide as eyes, broadly shagreened along occipital carina, rather narrowly smooth and polished adjacent to eyes; frons irregularly rugulose just above antennal foramina; vertex and upper part of back of head punctate, in part confluent so; occipital carina broadly interrupted medially; ocellular line hardly twice as long as diameter of an ocellus; antennae of holotype incomplete.

Mesonotal lobes very shiny, covered with small and extremely shallow punctures; notauli sharply impressed and foveolate, meeting in a coarsely rugose area at apex of scutum; disc of scutellum strongly convex, minutely punctate and shiny; propodeum rather coarsely rugose except for a small subtriangular smooth and polished area each side at extreme base, the posterior declivity abrupt and with very prominent and long stubs of longitudinal carinae setting off several large areas that are more or less roughened; side of pronotum rugulose; mesopleuron smooth and polished above the irregularly foveolate longitudinal furrow except for a rather large rugulose area below

tegula, below the furrow rather strongly, more or less confluent, punctate; metapleuron completely rugulose. Hind coxa rugulose above and on upper part of outer side, very weakly so on lower part; hind femur just about twice as long as hind coxa but a little less than five times as long as wide; inner calcarium of hind tibia about half as long as metatarsus; tarsal claws simple. Radial cell on wing margin about as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus much longer than second abscissa which is hardly half as long as intercubitus; nervulus slightly postfurcal; hind wing 4.4 times as long as wide; lower abscissa of basella just about as long as nervellus and much less than half as long as mediella.

Abdomen stout and fully as long as head and thorax combined; first tergite 1.3 times as long as wide at apex, rugulose, smooth and polished at base before spiracles and very narrowly at apex, the dorsal keels very weak and only apparent before spiracles, the spiracles about twice as far from apex as from base of segment; second tergite 1.2 times as broad at base as long, smooth and polished; second suture very faint; third and following tergites smooth and polished; ovipositor sheath fully as long as propodeum and abdomen combined.

Black; clypeus ferruginous except at base; mandibles ferruginous; palpi blackish; antennae brownish yellow beneath toward bases, darker above; tegulae black, wing bases brownish yellow; wings hyaline basally, distinctly a little infumated apically; legs reddish yellow, tarsi a little darkened.

MALE.—Unknown.

HOLOTYPE.—USNM 70198.

DISTRIBUTION.—Known only from the holotype female collected at Wellsville, Utah, 22 July 1929, by G. F. Knowlton.

Orgilus vallis, new species

This species rather closely resembles *medicaginis* in structure, but it differs especially in its relatively narrower head and less well-defined apical areas of the propodeum and in having some rugulose punctate sculpture on the upper occiput; in color it differs in lacking the reddish-yellow markings of the head and thorax that are usually present, at least in the female in *medicaginis*.

FEMALE.—Length usually 4 to 4.5 mm. Head

barely wider than thorax, in dorsal view 0.6 as long as broad; face about 1.3 times as wide as eye height, closely, strongly punctate and shiny, finely rugulose below the antennal foramina; clypeus weakly punctate and shiny; malar space longer than clypeus and just about half as long as eye height; cheeks completely finely granulose or strongly shagreened and mat; temples slightly receding, at mideye point about 0.75 as wide as eyes, shagreened and mat along occipital carina, smooth and polished adjacent to eyes; occipital carina broadly interrupted medially; frons granulose laterally and a little rugulose between anterior ocellus and eyes; ocellular line about twice as long as diameter of an ocellus; upper occiput somewhat rugosely sculptured; antennae 31- to 33-segmented in the available specimens, most of the segments beyond the eighteenth fully as wide as long.

Thorax stout; mesoscutum smooth and shiny, the middle lobe weakly punctate; notauli deeply impressed and foveolate; disc of scutellum smooth and shiny; propodeum closely rugulose, but with a smooth and polished area each side of the middle at base, the posterior face not abruptly declivous and rather strongly rugulose, the stubs of the two median longitudinal carinae that arise from the posterior margin well developed and setting off an apical median area, the others indistinct or very weak; side of pronotum strongly rugulose; mesopleuron smooth and polished, the longitudinal furrow foveolate and a few scattered punctures below the furrow anteriorly; metapleuron rugulose, weakly so in the anterior upper angle. Hind coxa about half as long as hind femur, weakly rugulose above at base and punctate on upper part of outer side, shiny; hind femur about 4.5 times as long as wide; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claws simple. Radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as second abscissa; nervulus usually postfurcal by about one-third its length; hind wing about 4.4 times as long as wide; lower abscissa of basella usually not clearly longer than nervellus, less than half as long as mediella and not more than one-third as long as maximum width of hind wing.

Abdomen only slightly narrower than thorax; first tergite about 1.3 times as long as wide at apex, finely longitudinally rugulose, the dorsal keels usually weak and very short, the spiracles at least twice as far from

the apex of the segment as from the base; second tergite very nearly as long as broad at base, smooth and polished but sometimes with a little weak punctation on basal half; remainder of abdomen smooth; ovipositor sheath as long as propodeum and abdomen combined.

Black; clypeus at the lower margin and the mandibles reddish; maxillary palpi somewhat darkened, the middle segments a little lighter than the rest; antennae brownish yellow on basal half, darkened apically; tegulae and wing bases yellow; wings hyaline on at least basal third, a little infumated apically; legs testaceous, all tarsi fuscous, hind femora darkened along upper edges, and hind tibiae more or less infuscated apically; first tergite sometimes reddish in the apical corners; abdominal sternites piceous.

MALE.—In the single male with complete antennae these are 32-segmented, and black except the scapes which are reddish brown beneath; tegulae brown; hind coxae largely blackish; otherwise the male agrees essentially with the female.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Known only from the type-series, which consists of 2 females (one the holotype) and 2 males collected 10 May 1955, by W. R. M. Mason at Apple Valley, California, and 4 females taken at the same locality 9 May 1958, by P. D. Hurd.

Orgilus walleyi, new species

This species is very similar to *lateralis* (Cresson), with which it is easily confused; but it is larger, with a somewhat longer ovipositor, and with the abdomen more completely sculptured; in addition the second tergite is usually relatively longer, the hind wings are usually relatively narrower, the hind femora relatively longer, and the palpi darker.

FEMALE.—Length 4 mm. Head in dorsal view just about twice as wide as long and slightly wider than thorax; face about 1.15 times as wide as eye height and closely punctate; lower level of eye margins on a line with anterior tentorial pits; clypeus smooth and shiny, virtually impunctate; malar space hardly one-third as long as eye height, smooth and shiny; cheeks finely shagreened and somewhat dull; lower temples sculptured like the cheeks, upper temples smooth and shiny; at mideye point temples 0.6 as wide as eyes; occipital carina complete although weak medially; vertex smooth, with only a few faint punctures; ocellular line twice as long as diameter of an ocellus;

distance between lateral ocelli only slightly greater than the diameter of one of them; antennae of available specimens 31- or 32-segmented, even the shortest flagellar segments slightly longer than broad, the apical segment with a short terminal spicule.

Mesoscutum smooth and shiny, the median lobe with some well separated and very shallow punctures, the lateral lobes sometimes virtually impunctate; notauli sharply impressed, finely foveolate; propodeum largely finely granulose but a little rugulose punctate medially behind; side of pronotum largely smooth and shiny, the impression with a row of a few weak foveolae above, the anterior part finely shagreened; mesopleuron smooth and polished, the longitudinal furrow strongly sinuate and finely foveolate; metapleuron faintly alutaceous. Hind coxa 0.6 as long as hind femur, finely granulose or shagreened and mat; hind femur 4 times as long as broad, and also finely shagreened and somewhat mat; inner calcarium of hind tibia slightly more than half as long as metatarsus; tarsal claw with a well-developed subbasal tooth. Radial cell on wing margin about 1.4 times as long as stigma; second abscissa of radius not nearly on a line with intercubitus; spur of third abscissa of cubitus punctiform; nervulus usually slightly postfurcal, sometimes virtually interstitial, very rarely postfurcal by as much as one-third its length; hind wing usually somewhat more than five times as long as wide; lower abscissa of basella more than half as long as mediella or maximum width of hind wing.

Abdomen longer than thorax; first tergite at least one and one-half times as long as wide at apex, the dorsal keels well developed at base but not extending to the middle of the tergite; second tergite parallel-sided and usually about as long as wide at base, the second suture deep; tergites 1-5 completely strongly granulose and rather dull; the following tergites smooth and shiny; ovipositor sheath a little longer than head, thorax, and abdomen combined.

Brownish yellow; head with a blackish spot enclosing the ocelli and extending back on occiput; palpi blackish; antennae dark brown below toward bases, otherwise black; pronotum black dorsally; mesoscutal lobes each with a black marking; disc of scutellum brownish yellow; propodeum sometimes more or less darkened; mesopectus black; legs testaceous; hind femur black at apex; hind tibia with a narrow white annulus at extreme base, a more or less distinct subbasal dark band and a broad dark band at the apex, all tarsi

more or less darkened; tegulae and wing bases yellow; wings hyaline.

MALE.—In general like the female, but the abdomen is often much darker, and the sixth tergite, which is smooth in the female, is extensively, usually completely, shagreened; the dorsal keels of the first tergite are sometimes developed to the middle of the tergite; in the available males the antennae are 29- to 31-segmented.

HOLOTYPE.—In the Canadian National Collections.

DISTRIBUTION.—Quebec, Ontario, New York, Michigan. The type-series consists of the following: 3 females (one the holotype) and 10 males collected at Kazubazu, Quebec, in June and July 1933, by G. S. Walley, the holotype on 25 July; 4 females and 2 males taken at Constance Bay, Ontario, in July 1933, by G. S. Walley and 1 female, same locality and collector, 30 August 1932; 1 male from Lake St. Peter, Ontario, taken 28 July 1955, by J. C. Martin; 2 females and 1 male collected in Roscommon County, Michigan, 2 July 1939, by D. S. Bullock and R. R. Dreisbach; 1 female from Oswego, New York, 7 July 1896; 1 female taken at Babylon, Long Island, New York, 2 August 1938, by F. S. Blanton, and 1 female and 1 male collected by Blanton at Bethpage, Long Island, New York, in July 1938.

Orgilus zonalis, new species

This species is most similar to *indagator* Muesebeck, but it may be readily distinguished by its largely testaceous or brownish-yellow head and second and third abdominal tergites and its somewhat longer ovipositor.

FEMALE.—Length about 4 mm. Head very slightly wider than thorax, in dorsal view 1.5 times as wide as long; face at narrowest point about 1.2 times as wide as eye height, its surface largely minutely granulose or shagreened and with some scattered shallow punctures; clypeus similarly sculptured; malar space very slightly longer than clypeus and about 0.43 as long as eye height; anterior tentorial pits below level of lower eye margins; cheeks broad and finely reticulate; temples largely smooth, at mideye point nearly as broad as eyes (in ratio of 35:40); occiput carinately margined only at the sides; ocellular line more than twice as long as diameter of an ocellus; vertex and frons largely weakly shagreened or alutaceous; antennae of holotype broken, 25 segments remaining, the shortest of the flagellar segments at least as long as broad.

Mesoscutum largely smooth and shiny but sha-

greened adjacent to notauli, which are sharply impressed and foveolate and meet in an acute angle in a very small rugose area; propodeum granulose with some irregular rugulosity, the very short stubs of the longitudinal carinae that arise from the posterior margin setting off five small apical areas; side of pronotum granulose over most of its surface, rugulose in the impression; mesopleuron smooth and shiny, the longitudinal furrow finely foveolate; metapleuron minutely granulose and dull, rugulose along the lower posterior margin. Hind coxa 0.6 as long as hind femur, finely granulose and dull above and on outer face; hind femur about 4.3 times as long as broad; hind tibia very slender, its longer calcarium hardly half as long as metatarsus; tarsal claws simple. Stigma narrow, not angled at origin of radius, which is beyond the middle; radial cell on wing margin hardly as long as stigma; second abscissa of radius on a line with intercubitus; stub of third abscissa of cubitus at least as long as second abscissa; nervulus slightly postfurcal; hind wing five times as long as wide; lower abscissa of basella much longer than nervellus, about half as long as mediella and more than half as long as maximum width of hind wing.

Abdomen longer than thorax; first tergite one and one-half times as long as wide at apex, its surface partly rugulose, partly granulose, the basal dorsal keels not distinct; second tergite as long as broad at base, rather uniformly finely granulose; the suture between second and third tergites sharply impressed; third tergite very weakly granulose, smooth laterally and at apex; fourth tergite in part faintly alutaceous; remainder of dorsum of abdomen smooth; ovipositor sheath as long as propodeum and abdomen combined.

Black; face brownish yellow, also the cheeks and temples in part, the clypeus and the mandibles; palpi piceous; antennae blackish, the scape and basal two-thirds of flagellum beneath brownish yellow; tegulae yellow; wings slightly infumated; legs reddish yellow, the hind femora above at apices, the hind tibiae apically, and all the tarsi, darkened; second and third tergites, as well as the first, second, and most of the third sternites, brownish yellow or testaceous.

MALE.—Essentially like the female; antennae 32-segmented.

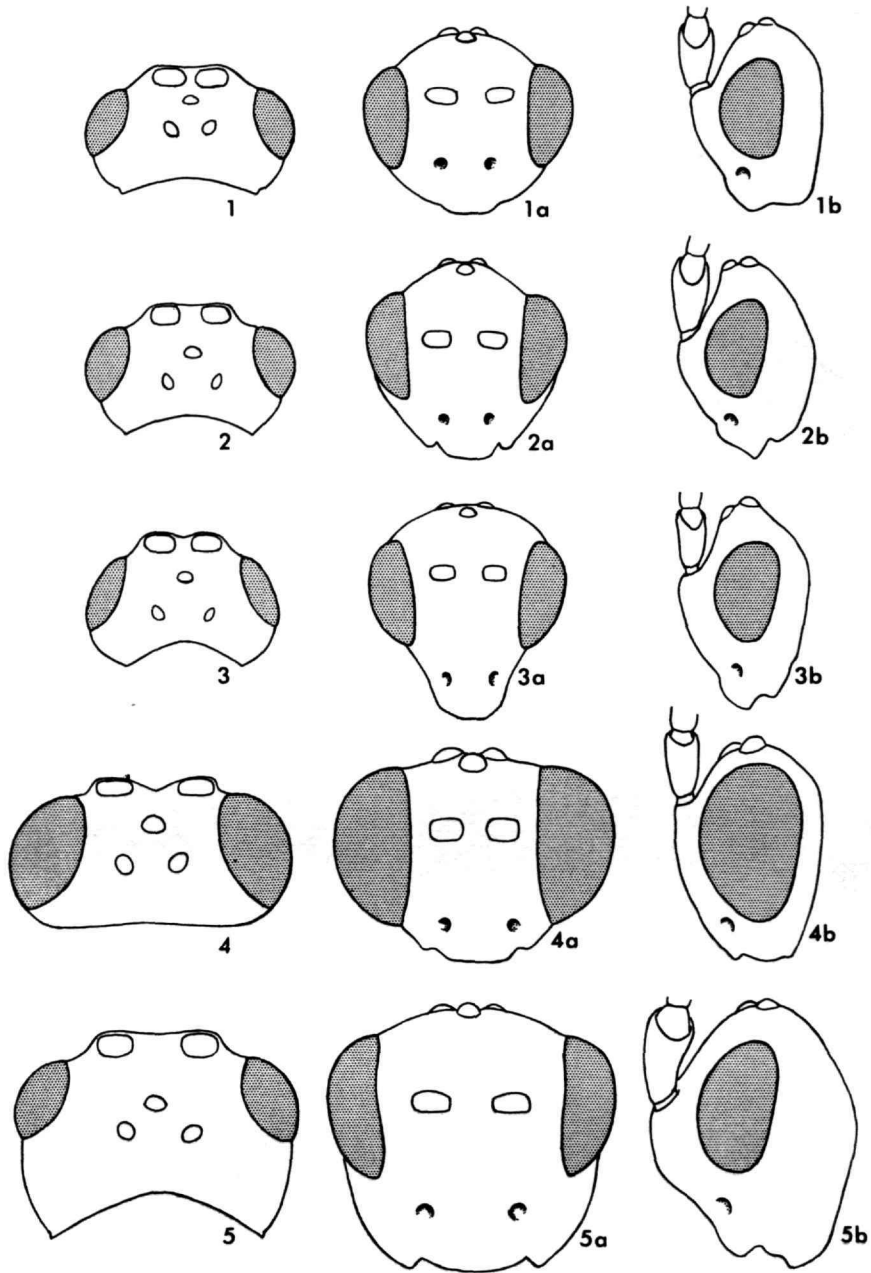
HOLOTYPE.—USNM 70345.

DISTRIBUTION.—Known only from the holotype female and a paratype male, both reared from *Aristotelia absconditella* Walker, in Washington Township, Porter County, Indiana, 22 April 1931, by L. G. Jones.

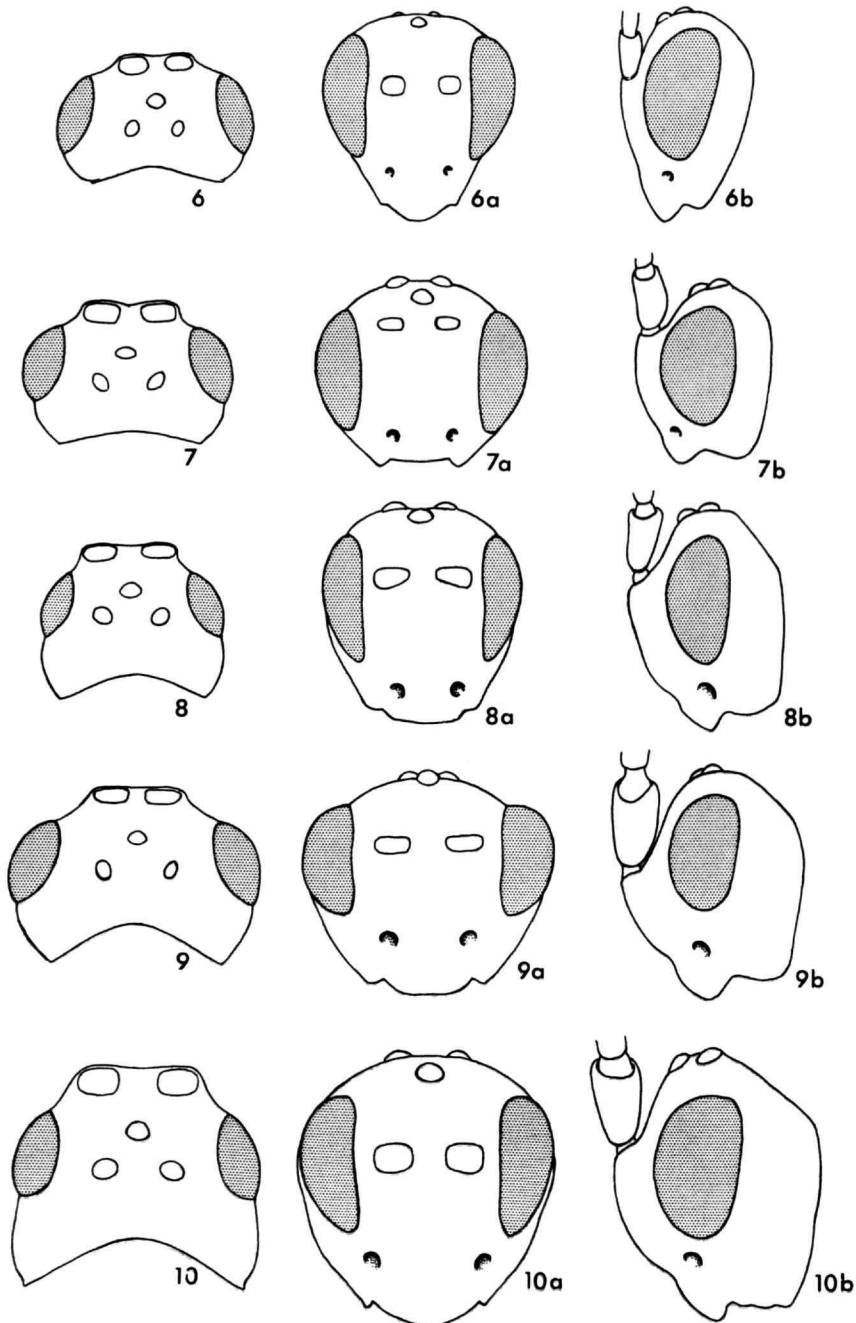
Literature Cited

- Allen, H. W.
1962. Parasites of the Oriental Fruit Moth in the Eastern United States. *United States Department of Agriculture, Technical Bulletin*, 1265:1-139, 28 figures.
- Ashmead, W. H.
1889 (1888). Descriptions of New Braconidae in the Collection of the U.S. National Museum. *Proceedings of the United States National Museum*, 11:611-671.
1900. Classification of the Ichneumon Flies, or the Superfamily Ichneumonoidea. *Proceedings of the United States National Museum*, 23:1-220.
1903. Two New Hymenopterous Parasites. *Journal of the New York Entomological Society*, 11:144.
- Bohart, R. M.
1947. Sod Webworms and Other Lawn Pests in California. *Hilgardia*, 17:267-308, 20 figures.
- Brues, C. T.
1908. Notes and Descriptions of North American Parasitic Hymenoptera, VI. *Bulletin of the Wisconsin Natural History Society*, 6:48-56.
- Chittenden, F. H.
1900. Some Insects Injurious to Garden Crops. *United States Department of Agriculture, Division of Entomology Bulletin*, 23:1-92, 23 figures.
- Cresson, E. T.
1872a. Descriptions of North American Hymenoptera, No. 4. *The Canadian Entomologist*, 4:226-231.
1872b. Hymenoptera Texana. *Transactions of the American Entomological Society*, 4:153-292.
1887. Synopsis of the Families and Genera of Hymenoptera of America, North of Mexico, Together with a Catalogue of the Described Species, and Bibliography. *Transactions of the American Entomological Society*, Supplement 1887:1-350, 13 figures.
- Cushman, R. A.
1920. North American Ichneumon-Flies, New and Described, with Taxonomic and Nomenclatorial Notes. *Proceedings of the United States National Museum*, 58:251-292, 1 figure.
- Dalla Torre, C. G. de
1898. Braconidae. *Catalogus Hymenopterorum*, 4:1-323.
- Dohanian, S. M.
1942. Parasites of the Filbert Worm. *Journal of Economic Entomology*, 35:836-841.
- Dowden, P. B.
1934. Recently Introduced Parasites of Three Important Forest Insects. *Annals of the Entomological Society of America*, 27:599-600.
- Enderlein, G.
1905. Die Braconiden-Subfamilie Mimagathidinae m. *Zoologischer Anzeiger*, 28:449-454, 7 figures.
1920. Zur Kenntnis der aussereuropäischen Braconiden. *Archiv für Naturgeschichte*, 84(A):51-224, 11 figures.
- Fahringer, J.
1937. *Opuscula braconologica*, 4(29-31):257-520.
- Foerster, A.
1862. Synopsis der Familien und Gattungen der Braconen. *Verhandlungen des naturhistorischen Vereines preussischen Rheinlande und Westphalens*, 19:225-288, 1 plate.
- Gahan, A. B.
1919. New Reared Parasitic Hymenoptera with Some Notes on Synonymy. *Proceedings of the United States National Museum*, 55:113-128.
- Granger, C.
1949. Braconides de Madagascar. *Mémoires de l'Institut Scientifique de Madagascar, Série A*, 2:1-428, 426 figures.
- Haliday, A. H.
1833. An Essay on the Classification of the Parasitic Hymenoptera of Britain Which Correspond with the Ichneumones Minuti of Linnaeus. *The Entomological Magazine*, 1:259-276.
- Hartig, T.
1838. *Jahresberichte über die Fortschritte der Forstwissenschaft und forstlichen Naturkunde nebst Original-Abhandlungen aus dem Gebiete dieser Wissenschaften*, 1:174-210 (Insecta). Berlin.
- Hellén, W.
1958. Zur Kenntnis der Braconiden (Hym.) Finnlands: II, Subfamilie Helconinae (part.). *Societas pro Fauna et Flora Fennica. Fauna Fennica*, 4:3-37.
- Kolenati, F. A.
1859. Naturhistorische Durchforschung des Altvatergebirges. *Jahresheft der naturwissenschaftlichen Sektion der Mährisch-Schlesischen Gesellschaft für Ackerbau und Naturkunde*, (1858) 1859:1-83.
- Lyle, T. G.
1920-1921. Contributions to Our Knowledge of the British Braconidae, No. 6, Agathidae. *The Entomologist*, 53:177-186, 227-230, 248-250; 54:6-8.
- Marshall, T. A.
1885. Monograph of the British Braconidae, Part I. *Transactions of the Entomological Society of London*, 1885:3-280, 6 plates.
- Martin, J. C.
1956. A Taxonomic Revision of the Triaspidine Braconid Wasps of Nearctic America (Hymenoptera). *Canada Department of Agriculture Publication*, 965:1-157, 74 figures.
- McGugan, B. M., and H. C. Copple
1962. A Review of the Biological Control Attempts Against Insects and Weeds in Canada: Part II, Biological Control of Forest Insects, 1910-1958. *Commonwealth Institute of Biological Control, Trinidad, Technical Communication*, 2:35-115.
- Morley, C.
1907. Notes on the Hymenopterous Family Agathididae. *The Entomologist*, 40:217-220.
- Muesebeck, C. F. W.
1933. Five New Hymenopterous Parasites of the Oriental Fruit Moth. *Proceedings of the Entomological Society of Washington*, 35:48-54.

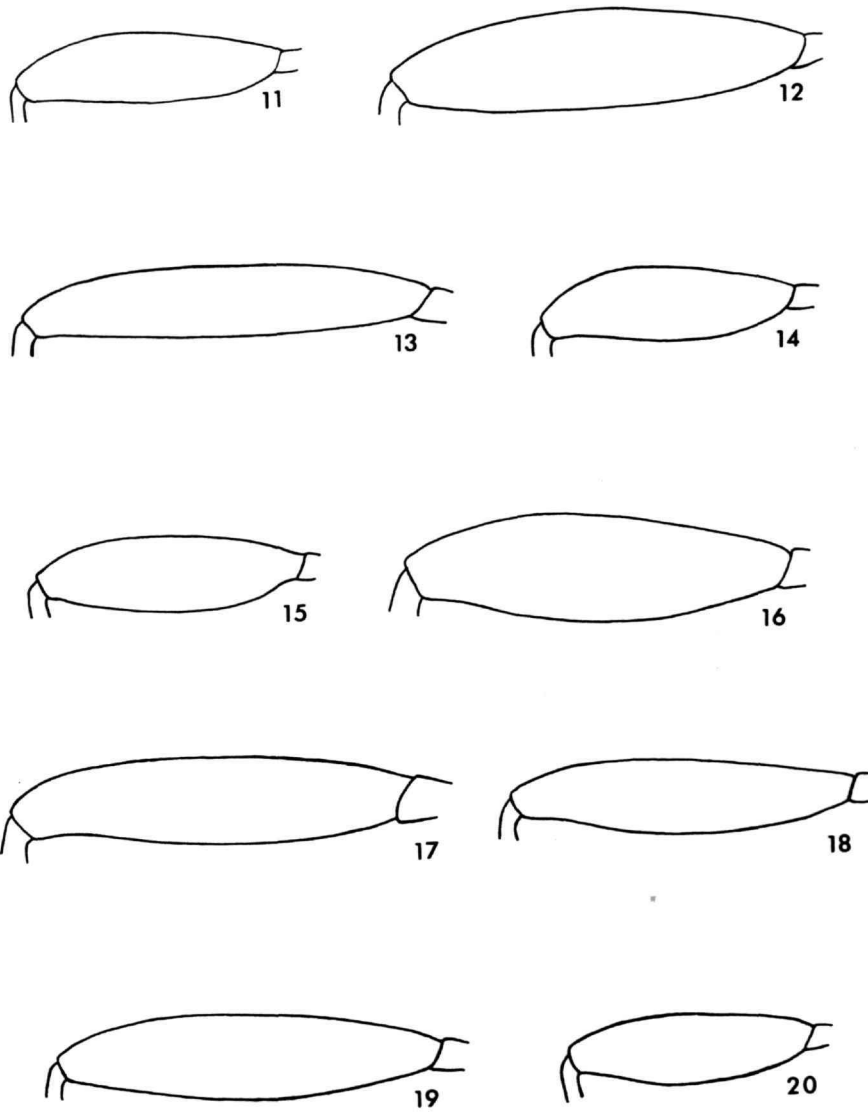
1957. Four New Species of *Eubadizon* Nees from Western United States (Hymenoptera: Braconidae). *Bulletin of the Brooklyn Entomological Society*, 52:51-56.
- 1967a. Three New Reared Braconidae (Hymenoptera). *Entomological News*, 78:135-139.
- 1967b. A New Braconid Parasite of the Potato Tuberworm. *Proceedings of the Entomological Society of Washington*, 69:177-178, 2 figures.
- Muesebeck, C. F. W., and Luella M. Walkley
1951. Family Braconidae. In Muesebeck et al., Hymenoptera of America North of Mexico—Synoptic Catalog. *United States Department of Agriculture, Agriculture Monograph*, 2:90-184.
- Nees von Esenbeck, C. G.
1814. *Ichneumonides adsciti in genera et familias divisi. Magazin der Gesellschaft naturforschender Freunde zu Berlin*, 6:183-221, 1 plate.
- Nickels, C. B., W. C. Pierce, and C. C. Pinkney
1950. Parasites of the Pecan Nut Casebearer in Texas. *United States Department of Agriculture, Technical Bulletin*, 1011:1-21, 7 figures.
- Provancher, L.
1886. *Additions et Corrections au Volume II de la Faune entomologique du Canada, Hyménoptères Fam. V*, pages 121-157, 16 figures.
1888. *Additions et Corrections au Volume II de la Faune entomologique du Canada, Hyménoptères Supplément*, pages 346-438.
- Ratzeburg, J. T. C.
1844. *Die Ichneumoniden der Forstinsecten*, 1:1-224.
1848. *Die Ichneumoniden der Forstinsecten*, 2:1-238, 3 plates.
- Reinhard, H.
1865. Beiträge zur Kenntniss einiger Braconiden-Gattungen. *Berliner Entomologische Zeitschrift*, 9: 243-267, plate 3: figures 6 and 7.
- Say, T.
1836. Descriptions of New North American Hymenoptera and Observations on Some Already Described. *Boston Journal of Natural History*, 1:210-305.
- Schuster, M. F.
1959. A Pepper-Flower Budworm, *Gnorimoschema gudmanella* (Wlsm.). *Journal of Economic Entomology*, 52:117-118.
- Szepliget, V.
1904. Hymenoptera, Fam. Braconidae. In Wytzman, *Genera Insectorum*, 22a-b:1-253, 3 plates.
1908. Braconiden aus der Sammlung des Ungarischen National-Museums. *Annales Musei Nationalis Hungarici*, 6:398-427.
- Telenga, N. A.
1933. Einige neue Agathididae-Arten aus USSR. *Konowia*, 12:245-247.
- Thorpe, W. H.
1930. Observations on the Parasites of the Pine-Shoot Moth, *Rhyacionia buoliana*, Schiff. *Bulletin of Entomological Research*, 21:387-412, 8 figures.
- Tobias, V. I.
1965. Generic Groups and Evolution of the Subfamily Euphorinae (Hymenoptera, Braconidae), Part I. *Entomologicheskoye obozreniye*, 44:841-865, 61 figures.
1967. A Review of the Classification, Phylogeny and Evolution of the Family Braconidae (Hymenoptera). *Entomologicheskoye obozreniye*, 46:645-669, 43 figures.
- Viereck, H. L.
1912. Contributions to Our Knowledge of Bees and Ichneumon-Flies, Including the Descriptions of Twenty-One New Genera and Fifty-seven New Species of Ichneumon-Flies. *Proceedings of the United States National Museum*, 42:613-648.
1917 (1916). The Hymenoptera, or Wasp-like insects, of Connecticut. State of Connecticut. *State Geological and Natural History Survey, Bulletin*, 22: 1-824, 15 figures, 10 plates.
- Watanabe, C.
1937. A Contribution to the Knowledge of the Braconid Fauna of the Empire of Japan. *Journal of the Faculty of Agriculture, Hokkaido Imperial University*, 42:1-188, 5 plates.
- Wesmael, C.
1837. Monographie des Braconides de Belgique. *Nouveaux Mémoires Académie Royale des Sciences Bruxelles*, 10:1-70, 1 plate.



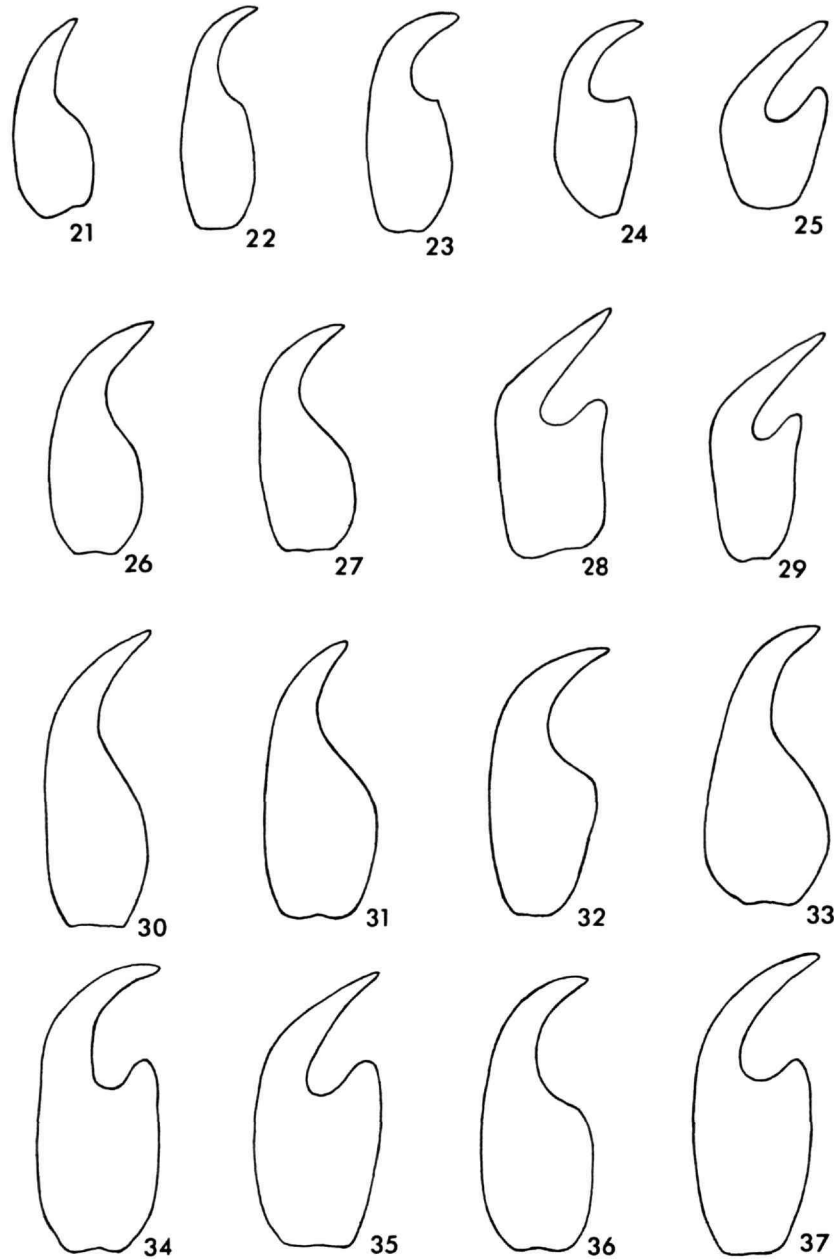
FIGURES 1-5.—Heads (dorsal, front, and lateral views): 1, 1a, 1b, *Orgilus lateralis* (Cresson); 2, 2a, 2b, *O. gelechiaevorus* Cushman; 3, 3a, 3b, *O. rostratus*, new species; 4, 4a, 4b, *O. immarginatus*, new species; 5, 5a, 5b, *O. coloradensis*, new species.



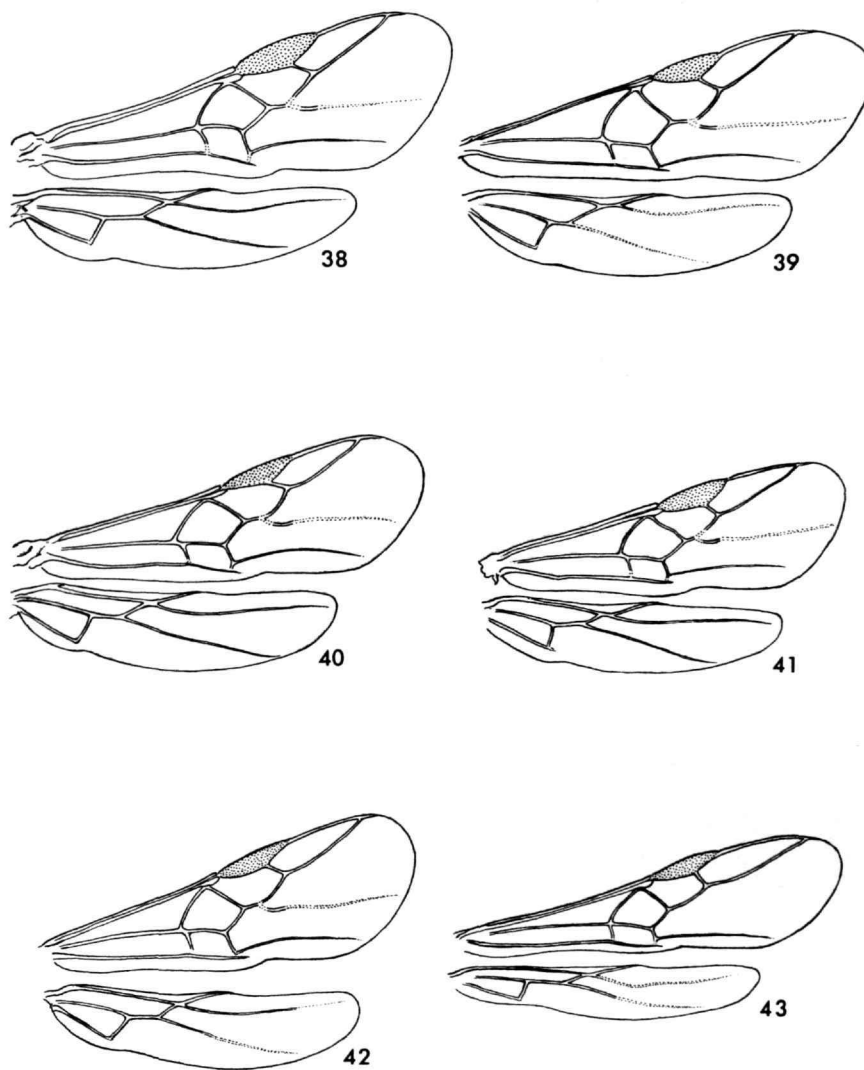
FIGURES 6-10.—Heads (dorsal, front, and lateral views): 6, 6a, 6b, *Orgilus absonus*, new species; 7, 7a, 7b, *O. coleophorae*, new species; 8, 8a, 8b, *O. comptanae*, new species; 9, 9a, 9b, *O. medicaginis*, new species; 10, 10a, 10b, *O. buccatus*, new species.



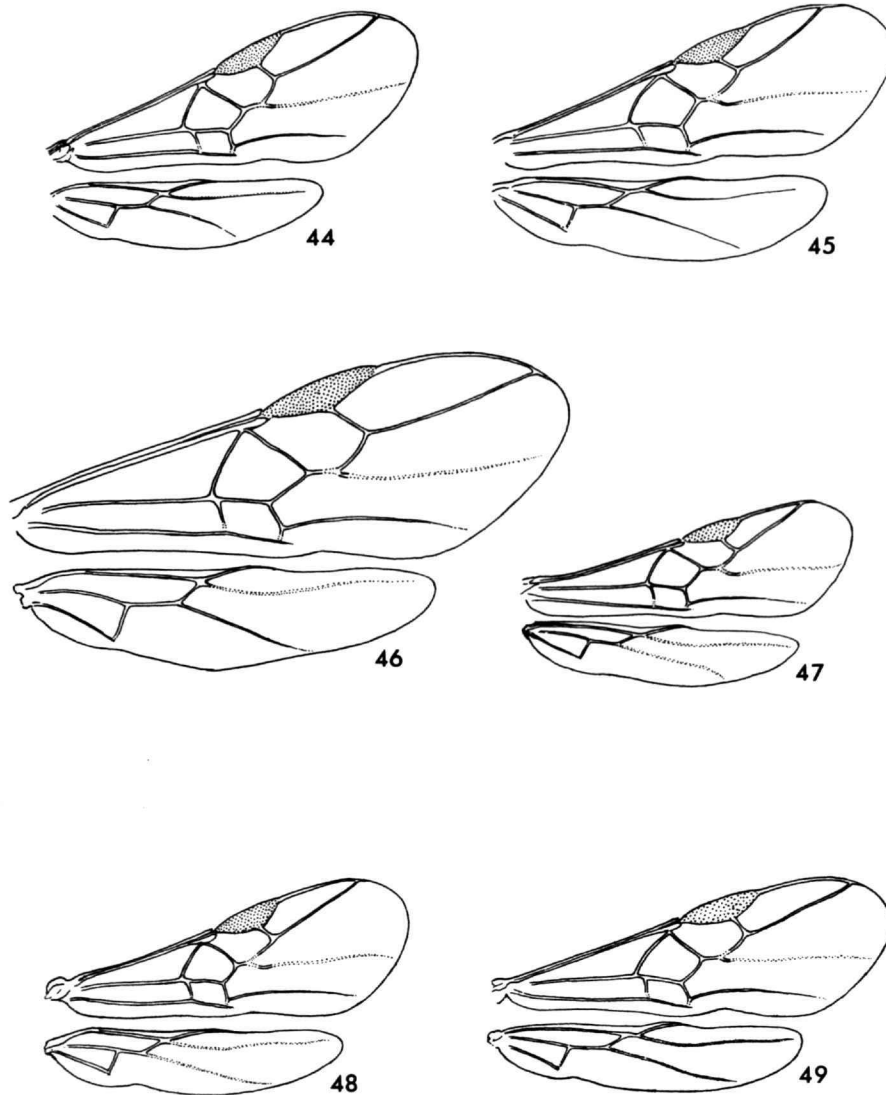
FIGURES 11-20.—Hind femora: 11, *Orgilus capsicola*, new species; 12, *O. dioryctriæ* Gahan; 13, *O. femoralis*, new species; 14, *O. coleophoræ*, new species; 15, *O. scaber*, new species; 16, *O. melissopi*, new species; 17, *O. detectiformis* Viereck; 18, *O. indagator* Muesebeck; 19, *O. nitidus*, new species; 20, *O. absonus*, new species.



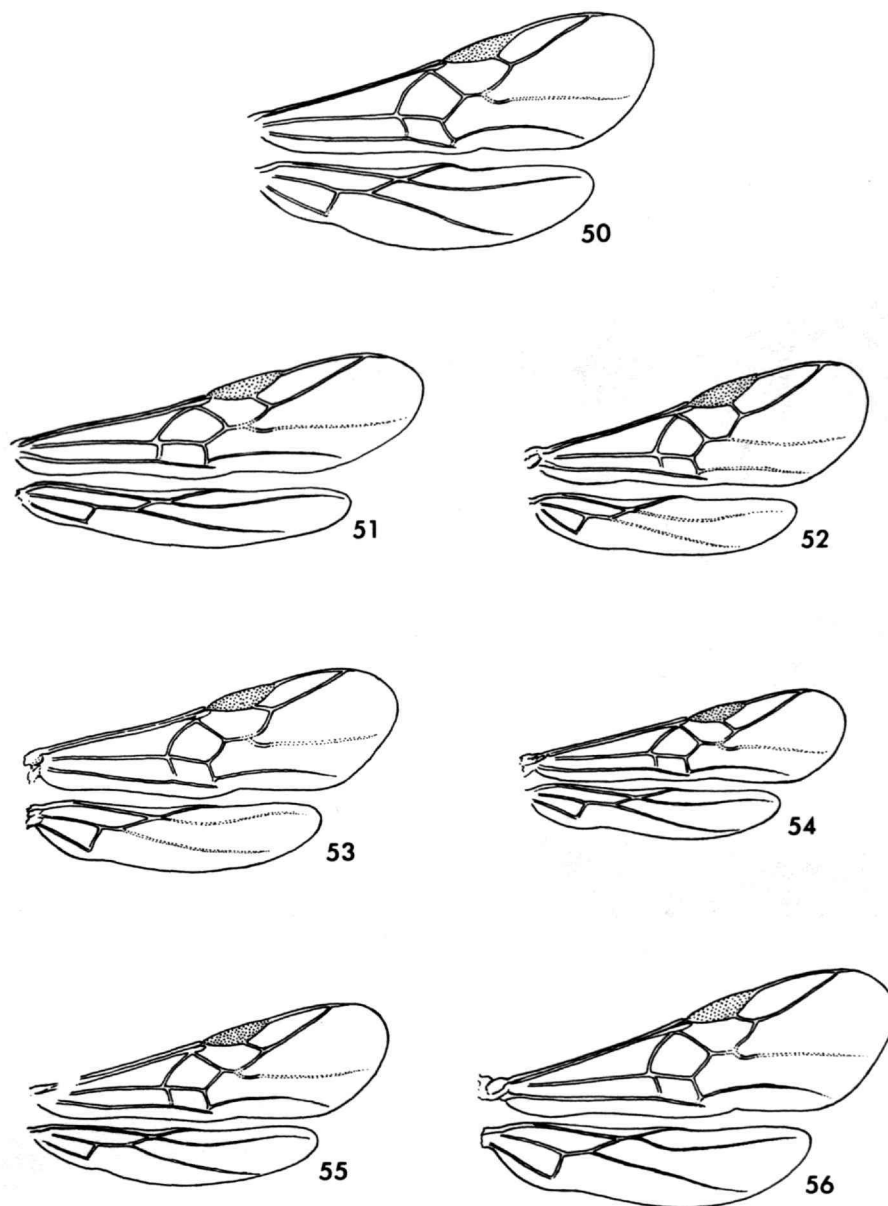
FIGURES 21-37.—Tarsal claws: 21, *Orgilus capsicola*, new species; 22, *O. coleophorae*, new species; 23, *O. gelechiae* (Ashmead); 24, *O. lepidus* Muesebeck; 25, *O. discrepans*, new species; 26, *O. scaber*, new species; 27, *O. macrurus*, new species; 28, *O. melissopi*, new species; 29, *O. momphae*, new species; 30, *O. medicaginis*, new species; 31, *O. obscurator* (Nees); 32, *O. longiceps* Muesebeck; 33, *O. dioryctriae* Gahan; 34, *O. proprius*, new species; 35, *O. lateralis* (Cresson); 36, *O. disparilis*, new species; 37, *O. immarginatus*, new species.



FIGURES 38-43.—Wings: 38, *Orgilus obscurator* (Nees); 39, *O. ferus*, new species; 40, *O. medicaginis*, new species; 41, *O. scaber*, new species; 42, *O. anthracinus*, new species; 43, *O. momphae*, new species.



FIGURES 44-49.—Wings: 44, *Orgilus lateralis* (Cresson); 45, *O. impiger*, new species; 46, *O. maculiventris* (Cresson); 47, *O. modicus*, new species; 48, *O. dreisbachi*, new species; 49, *O. macrurus*, new species.



FIGURES 50-56.—Wings: 50, *Orgilus detectiformis* Viereck; 51, *O. ejuncidus*, new species; 52, *O. absonus*, new species; 53, *O. elasmopalpi*, new species; 54, *O. gelechiaevorus* Cushman; 55, *O. citus*, new species; 56, *O. boharti*, new species.



FIGURE 57.—*Orgilus obscurator* (Nees). Dorsal view of propodeum and of the first three abdominal segments in detail at right.

Index

(Page numbers of principal accounts are in *italics*.)

SPECIES

- ablusus, Orgilus, 10, 11
absonus, Orgilus, 5, 12, 96, 97, 101
agrestis, Orgilus, 7, 13
alacer, Orgilus, 8, 13, 84
anthracinus, Orgilus, 7, 14, 99
arcticus, Orgilus, 6, 15, 48
balsameae, Orgilus, 8, 16
boharti, Orgilus, 10, 17, 31, 32, 101
buccatus, Orgilus, 6, 18, 61, 73, 96
burksi, Orgilus, 11, 18, 28
californicus, Eubadizon, 19
californicus, Orgilus, 7, 19
capsicola, Orgilus, 3, 4, 20, 77, 97, 98
cerinus, Orgilus, 8, 21, 55, 81
cinctus, Orgilus, 6, 21, 43
citus, Orgilus, 7, 22, 49, 101
clivicola, Orgilus, 9, 23, 24
cognatus, Orgilus, 9, 24, 26
coleophorae, Orgilus, 5, 24, 68, 96, 97, 98
coloradensis, Orgilus, 8, 10, 25, 95
compactus, Orgilus, 9, 23, 24, 26, 49
comptanae, Orgilus, 6, 27, 47, 96
conflictanae, Orgilus, 11, 18, 28
consuetus, Orgilus, 7, 28
coracinus, Orgilus, 8, 29, 70, 88
cristatus, Orgilus, 7, 30
cuneatus, Blacus, 31
cuneatus, Orgilus, 7, 19, 28, 31, 74
detectiformis, Orgilus, 10, 17, 31, 38, 64, 97, 101
detectus, Orgilus, 9, 32, 85
dioryctriae, Orgilus, 8, 33, 73, 97, 98
discrepans, Orgilus, 4, 34, 98
disparilis, Orgilus, 4, 35, 52, 98
dissidens, Orgilus, 7, 35, 36
dolosus, Orgilus, 7, 35, 36
dreisbachi, Orgilus, 5, 12, 37, 82, 100
ejuncidus, Orgilus, 6, 38, 101
elasmopalpi, Orgilus, 11, 31, 38, 77, 88, 101
erythropus, Orgilus, 9, 39, 89
exilis, Orgilus, 10, 11, 40
fallax, Orgilus, 7, 41, 45
femoralis, Orgilus, 10, 11, 40, 42, 97
ferus, Orgilus, 7, 42, 61, 99
fictus, Orgilus, 6, 21, 43
fisheri, Orgilus, 10, 44, 80
frigidus, Orgilus, 7, 41, 45, 57
fulgens, Orgilus, 6, 45, 60
gelechia, Blacus, 46
gelechia, Ganychorus, 2, 46
gelechia, Orgilomorpha, 46
gelechia, Orgilus, 5, 24, 46, 47, 68, 98
gelechiaevorus, Orgilus, 6, 47, 95, 101
glacialis, Orgilus, 7, 48
gracilis, Blacus, 49
gracilis, Orgilus, 7, 22, 49
gramineus, Orgilus, 9, 49
grapholithae, Orgilus, 8, 10, 50
hyalinus, Orgilus, 5, 51
imitator, Orgilus, 4, 52
immarginatus, Orgilus, 4, 35, 52, 95, 98
impiger, Orgilus, 9, 53, 75, 100
incognitus, Eubadizon, 66
indagator, Orgilus, 7, 28, 31, 54, 92, 97
infrequens, Orgilus, 4, 54, 65, 80
inopinus, Orgilus, 7, 55
insularis, Orgilus, 6, 55
intermedius, Orgilus, 6, 56
invictus, Orgilus, 7, 15, 57
kearfotti, Orgilus, 58
laeviventris, Ischius, 58
laeviventris, Orgilus, 58
lateralis, Eubadizon, 58
lateralis, Orgilus, 5, 20, 34, 58, 63, 91, 95, 98, 100
laticephalus, Macropalpus, 73
lautus, Orgilus, 4, 59
lepidus, Orgilus, 1, 5, 60, 98
leptocephalus, Eubadizon, 2, 73
levis, Orgilus, 8, 60, 78, 82
lissus, Orgilus, 6, 45, 61
lithocolletidis, Eubadizon, 46, 47
longiceps, Orgilus, 1, 6, 18, 45, 61, 73, 98
lunaris, Orgilus, 7, 30, 42, 61
macrurus, Orgilus, 3, 4, 62, 98, 100
maculiventris, Eubadizon, 63
maculiventris, Orgilus, 4, 58, 63, 100
medicaginis, Orgilus, 8, 10, 29, 64, 76, 90, 96, 98, 99
melissopi, Orgilus, 4, 54, 59, 65, 97, 98
mellipes, Microgaster, 66
mellipes, Orgilus, 9, 39, 58, 66, 68
mimicus, Orgilus, 11, 67
modicus, Orgilus, 9, 16, 66, 68, 100
momphae, Orgilus, 5, 24, 46, 68, 98, 99
monticola, Orgilus, 10, 69, 71
morulus, Orgilus, 8, 70
mundus, Orgilus, 10, 42, 69, 71, 86
nitidus, Orgilus, 11, 72, 79, 97
notabilis, Orgilus, 5, 18, 72, 87
obscurator, Ischius, 73
obscurator, Microdus, 2, 73

obscurator, *Orgilus*, 1, 6, 56, 61, 73, 98, 99, 102
 opacus, *Orgilus*, 6, 74
 oregonensis, *Orgilus*, 9, 53, 75
 parallelus, *Orgilus*, 8, 76
 pedalis, *Orgilus*, 11, 77
 persimilis, *Orgilus*, 4, 77
 politus, *Orgilus*, 8, 13, 60, 78
 pratensis, *Orgilus*, 11, 50, 67, 72, 79
 prolixus, *Orgilus*, 10, 44, 80
 proprius, *Orgilus*, 5, 80, 98
 pumilus, *Orgilus*, 9, 21, 81
 rasilis, *Orgilus*, 10, 82
 rostratus, *Orgilus*, 5, 12, 37, 82, 95

rugosus, *Microgaster*, 2
 scaber, *Orgilus*, 5, 51, 83, 97, 98, 99
 simulator, *Orgilus*, 8, 84
 solidus, *Orgilus*, 9, 32, 85
 striatus, *Orgilus*, 10, 86
 strigosus, *Orgilus*, 10, 86
 tenuis, *Orgilus*, 5, 72, 87
 tersus, *Orgilus*, 7, 35, 88
 utahensis, *Orgilus*, 8, 88
 validus, *Orgilus*, 9, 39, 89
 vallis, *Orgilus*, 10, 17, 86, 90
 walleyi, *Orgilus*, 5, 58, 91
 zonalis, *Orgilus*, 6, 56, 92

INSECT HOSTS

Acrobasis caryae, 59
Acrobasis comptoniella, 59
Acrobasis indiginella, 59
Acrobasis juglandis, 53, 59
Ancylis comptana, 27, 28
Antaeotricha humilis, 64
Aristotelia absconditella, 92
Aroga trialbamaculella, 48
Choristoneura conflictana, 28
Choristoneura fumiferana, 59
Choristoneura lambertiana ponderosana, 34
Coleophora caryaefoliella, 59
Coleophora cretaticostella, 25
Coleophora laricella, 25
Coleophora limosipenella, 25
Coleophora monardella, 25
Coleophora salmani, 25
Coleophora serratella, 84
Coleophora ulmifoliella, 25, 59
Coleophora sp., 25, 59, 84
Coleotechnites mackiei, 59
Coleotechnites milleri, 34
Crambus sp., 18, 32
Diatraea saccharalis, 39
Dioryctria xanthaenobares, 34
Elasmopalpus lignosellus, 39

Evagora sp., 16
Evippe prunifoliella, 47
Gnorimoschema gudmanella, 21
Gracilaria sp., 47
Grapholitha conversana, 51
Grapholitha molesta, 1, 61
Gretchena bolliana, 53
Keiferia glochinella, 67
Laspeyresia caryana, 29, 48, 53
Lithocolletes hamadryadella, 47
Melissopus latiferreanus, 66
Melissopus sp., 66
Mompha eloisella, 69
Mompha sp., 59
Petrova albicapitana, 59
Phthorimaea operculella, 1, 60, 67
Pulicalvaria piceaella, 16, 59
Pulicalvaria thujaella, 59
Recurvaria juniperella, 59
Recurvaria thujaella, 25
Recurvaria sp., 16
Rhyacionia buoliana, 1, 74
Stegasta bosquella, 68
Symmetischema capsicum, 20
Zeiraphera sp., 16

Publication in *Smithsonian Contributions to Zoology*

Manuscripts for serial publications are accepted by the Smithsonian Institution Press, subject to substantive review, only through departments of the various Smithsonian museums. Non-Smithsonian authors should address inquiries to the appropriate department. If submission is invited, the following format requirements of the Press will govern the preparation of copy. (An instruction sheet for the preparation of illustrations is available from the Press on request.)

Copy must be typewritten, double-spaced, on one side of standard white bond paper, with 1½" top and left margins, submitted in ribbon copy with a carbon or duplicate and accompanied by the original artwork. Duplicate copies of all material, including illustrations, should be retained by the author. There may be several paragraphs to a page, but each page should begin with a new paragraph. Number consecutively all pages, including title page, abstract, text, literature cited, legends, and tables. The minimum length is 30 pages of typescript and illustrations.

The *title* should be complete and clear for easy indexing by abstracting services. Taxonomic titles will carry a final line indicating the higher categories to which the taxon is referable: "(Hymenoptera: Sphecidae)." Include an *abstract* as an introductory part of the text. Identify the *author* on the first page of text with an unnumbered footnote that includes his professional mailing address. A *table of contents* is optional. An *index*, if required, may be supplied by the author when he returns page proof.

Two *headings* are used: (1) text heads (boldface in print) for major sections and chapters and (2) paragraph sideheads (caps and small caps in print) for subdivisions. Further headings may be worked out with the editor.

In *taxonomic keys*, number only the first item of each couplet; if there is only one couplet, omit the number. For easy reference, number also the taxa and their corresponding headings throughout the text; do not incorporate page references in the key.

In *synonymy*, use the short form (taxon, author, date, page) with a full reference at the end of the paper under "Literature Cited." Begin each taxon at the left margin with subsequent lines indented about three spaces. Within a taxon, use a period-dash (.—) to separate each reference. Enclose with square brackets any annotation in or at the end of the taxon. For *references within the text*, use the author-date system: "(Jones, 1910)" or "Jones (1910)." If the reference is expanded, abbreviate the data: "Jones (1910, p. 122, pl. 20: fig. 1)."

Simple *tabulations* in the text (e.g., columns of data) may carry headings or not, but they should not contain rules. Formal *tables* must be submitted as pages separate from the text, and each table, no matter how large, should be pasted up as a single sheet of copy.

Illustrations (line drawings, maps, photographs, shaded drawings) can be intermixed throughout the printed text. They will be termed *Figures* and should be numbered consecutively; however, if a group of figures is treated as a single figure, the individual components should be indicated by lowercase italic letters on the illustration, in the legend, and in text references: "Figure 9b." If illustrations (usually tone photographs) are printed separately from the text as full pages on a different stock of paper, they will be termed *Plates*, and individual components should be lettered (Plate 9b) but may be numbered (Plate 9: figure 2). Never combine the numbering system of text illustrations with that of plate illustrations. Submit all legends on pages separate from the text and not attached to the artwork.

In the *bibliography* (usually called "Literature Cited"), spell out book, journal, and article titles, using initial caps with all words except minor terms such as "and, of, the." (For capitalization of titles in foreign languages, follow the national practice of each language.) Underscore (for italics) book and journal titles. Use the colon-parentheses system for volume, number, and page citations: "10(2):5-9." Spell out such words as "figures" and "plates" (or "pages" when used alone).

For *free copies* of his own paper, a Smithsonian author should indicate his requirements on "Form 36" (submitted to the Press with the manuscript). A non-Smithsonian author will receive 50 free copies; order forms for quantities above this amount with instructions for payment will be supplied when page proof is forwarded.

