Ataenius, *Aphotaenius*, and *Pseudataenius* of the United States and Canada (Coleoptera: Scarabaeidae: Aphodiinae)

OSCAR L. CARTWRIGHT

SMITHSONIAN CONTRIBUTIONS TO ZOOLOGY • NUMBER 154

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ABSTRACT

Oscar L. Cartwright. *Ataenius, Aphotaenius,* and *Pseudataenius* of the United States and Canada (Coleoptera: Scarabaeidae: Aphodiinae). *Smithsonian Contributions to Zoology,* number 154, 106 pages, 24 figures, 3 plates, 1974.—All known species are fully described; literature citations, synonyms, and a key to the species are provided; and known distribution is recorded and shown by map figures. All species previously ascribed to the area are listed, and the present status of each is presented. Twenty new species are added to the fauna.

Ataenius waltherhorni Balthasar is transferred to the genus *Pseudataenius.* The following are placed in synonymy: *A. fleutiaui* Paulian (=*havanensis* Balthasar), *A. cribratus* Van Dyke (=*confertus* Fall), *A. linelli* Cartwright (=*languidus* Schmidt), *A. oblongus* Horn (=*sculptor* Harold), *A. sulcatula* (Chevrolat) and *A. frankenbergeri* Balthasar (=*brevicollis* (Wollaston)), *A. floridanus* Brown and *A. solitarius* Blatchley (=*rhyticephalus* (Chevrolat)).

Lectotypes are designated for *Pseudataenius socialis* (Horn), *Ataenius insculptus* Horn, *A. ovatulus* Horn, *A. cylindrus* Horn, *A. aequalis* Harold, *A. sulcatulus* (Chevrolat), and *A. cognatus* (LeConte). Neotypes are established for *A. confertus* Fall, *A nocturnus* (Nomura), *A. texanus* Harold, and *A. strigatus* (Say).

New taxa are *Pseudataenius contortus* (Florida), *Ataenius edistoi* (South Carolina), *A. parkeri* (Arizona), *A. rugopygus* (Texas), *A. duncani* (Arizona), *A. superficialis* (Florida), *A. pseudohirsutus* (Texas), *A. sabinoi* (Arizona), *A. vandykei* (California), *A. barberi* (Arizona), *A. nunenmacheri* (Arizona), *A. stroheckeri* (Florida), *A. glaseri* (Maryland), *A. punctifrons* (Minnesota), *A. utahensis* (Utah), *A. hesperius* (Arizona), *A. sciurus* (Florida), *A. woodruffi* (Florida), *A. griffini* (Texas), and *A. stephani* (Arizona).

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Ataenius, *Aphotaenius*, and *Pseudataenius* of the United States and Canada (Coleoptera: Scarabaeidae: Aphodiinae)

Oscar L. Cartwright

Introduction

Ataenius includes many species of small, usually elongate, black or reddish brown (though sometimes gray or clay-colored), shining or dull, and smooth or rarely pubescent scarab beetles averaging about 4 mm or 5 mm in length. The smallest are about 2.5 mm long, the largest about 6.5 mm. Many but not all species are attracted to lights, sometimes in such numbers as to be a nuisance. Their life cycles are not well known but apparently they are humus feeders in the soil, with a few species attracted to decaying vegetation and to animal dung. A very few have been taken in ant nests and animal burrows. Larvae of seven species were described by Jerath (1960).

The genus is worldwide, but by far the largest numbers of species are found in the Western Hemisphere and Australia. Over 300 species have been described, with perhaps the greatest number from South America. Thus far only two species, *A. picinus* Harold and *A. simulator* Harold, are known to have worldwide distribution.

In this account I recognize 63 species of *Ataenius* from the continental United States, three species of *Pseudantaenius*, and one species of *Aphotaenius*. Species found in Hawaii are not included. Of the 20 species described as new, type-localities of 6 are in Arizona, 5 in Florida, 4 in Texas, and 1 each in South Carolina, Maryland, Minnesota, Utah, and California. Only 5 species—*abditus, gracilis, imbricatus, spretulus,* and *strigatus*—are recorded from Canada, but it seems likely that at least one or two more may occur there since several others are found in bordering American states. Within the United States, Texas records 34 species, Florida 29, South Carolina 23, and Arizona 23.

The genus *Ataenius* was named by E. von Harold (1867b:82) in describing *Ataenius scutellaris* from "Columbia." He placed the genus between "*Euparius*" and *Rhyssemus*. Since he mentioned "new genus" in this description of *A. scutellaris*, I consider that species to be the type of the genus. In the same paper, von Harold also placed in *Ataenius* the following four species: *opatrinus, capitosus, perforatus* and *hispidus*. In the same year von Harold (1867c:100) described the genus in a separate generic description and followed it with the description of a single species, *A. opacus*. The first reference takes precedence with *A. scutellaris* as the type of the genus.

Pseudataenius was proposed by Brown (1927) with *Ataenius socialis* Horn as the type of the genus. *Aphotaenius* was described by Cartwright (1952) with *Ataenius carolinus* Van Dyke as the type of the genus.

The genus *Ataenius* is placed in the aphodiine

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tribe Eupariini, as are *Aphotaenius* and *Pseudataenius*, along with several other genera—*Euparia, Euparixia, Myrmecaphodius,* and *Saprosites*—found in the United States. The Eupariini agree in having a moderately large, distinctly punctate head with very distinct genae usually bent downward; the pronotum rarely with impressed midline, always without transverse furrows; front tibiae usually with three teeth and anterior spur, middle and hind tibiae usually without transverse carinae; and the usually unexposed part of the pygidium furrowed basally with locking device for the tips of the elytra. *Ataenius* is distinguished from other genera of the Eupariini by a combination of characters, among them head narrower than pronotum, anterior clypeus visible from above, pronotum laterally without denticles and at most sparsely to moderately ciliate, sides of pronotum not explanate, elytra often with basal margination, front tibiae with slanted anterior margin, middle and hind tibiae not flattened, uniformly wider from base, hind tibiae straight with outer apical angle spiniformly prolonged, tarsi normal with first segment often as long as the following three segments combined.

Aphotaenius has distinct oblique carinae on the middle and hind tibiae and two triangular teeth instead of the usual fringe of setae; however, the pygidium has the basal furrow and other characters of the Eupariini. In *Pseudataenius* the middle and hind tarsi are one-third longer than their tibiae, the maxillary palpi are elongate, males have the head weakly convex, short, and wide, the pronotum weakly convex with widely arcuate sides conspicuously fringed with setae, and the anterior spur usually abnormal; females are normal. See remarks under *Pseudataenius socialis.*

The biology of *Ataenius* is practically unknown. Most of the ten or more species of this genus that I have reared have been humus feeders, apparently obtaining nourishment by ingesting the soil or sand in which the adults were found and the eggs were laid. One or two utilized old cow dung. Some successful rearings were obtained by placing adults in pint jars of moist sterile sand mixed with small amounts of finely ground, dry-cereal breakfast foods.

METHODS AND TERMINOLOGY.—All measurements were made through a binocular microscope (A&O) equipped with an ocular linear micrometer. Examinations were made with the same microscope equipped with × 9 oculars and × 3, × 6, and × 9 objectives.

The usual terminology, as indicated in Figure 1, is used in the descriptions. Two new terms, "fluting" and "metasternal triangle," are introduced. Fluting describes the structure of the anterior margin of the abdominal sterna. Metasternal triangle refers to the triangular depression in front of the posterior coxal plates. As used in this paper, the descriptive term "alutaceous" indicates surface sculpture of minute, shallow, contiguous pits or depressions as seen on the elytra of *Ataenius wenzelii* Horn and *A. abditus* (Haldeman).

Since in the past it has been practically impossible to be sure of an identification in *Ataenius* without an examination of the type, I have made a serious effort to locate and examine types, preferably the holotype. Where only cotypes were available a lectotype has been designated; and, for the same reason, four neotypes have been so labeled. The types of *Ataenius confertus* Fall, *A. nocturnus* (Nomura), *A. texanus* Harold, and *A. strigatus* (Say) have been lost and presumably destroyed. Except for these four species, I believe I have seen types of all the species I have listed from the United States and Canada (see listing of status of names used for *Ataenius,* below).

Unless otherwise indicated, all paratypes are in the National Museum of Natural History, Smithsonian Institution, Washington, D. C.

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I have examined specimens from practically every major museum, university, college, and private collection in the United States and Canada, as well as in many other countries. Nearly every fellow entomologist and colleague whom I have known over the past forty years has added to the study at some time.

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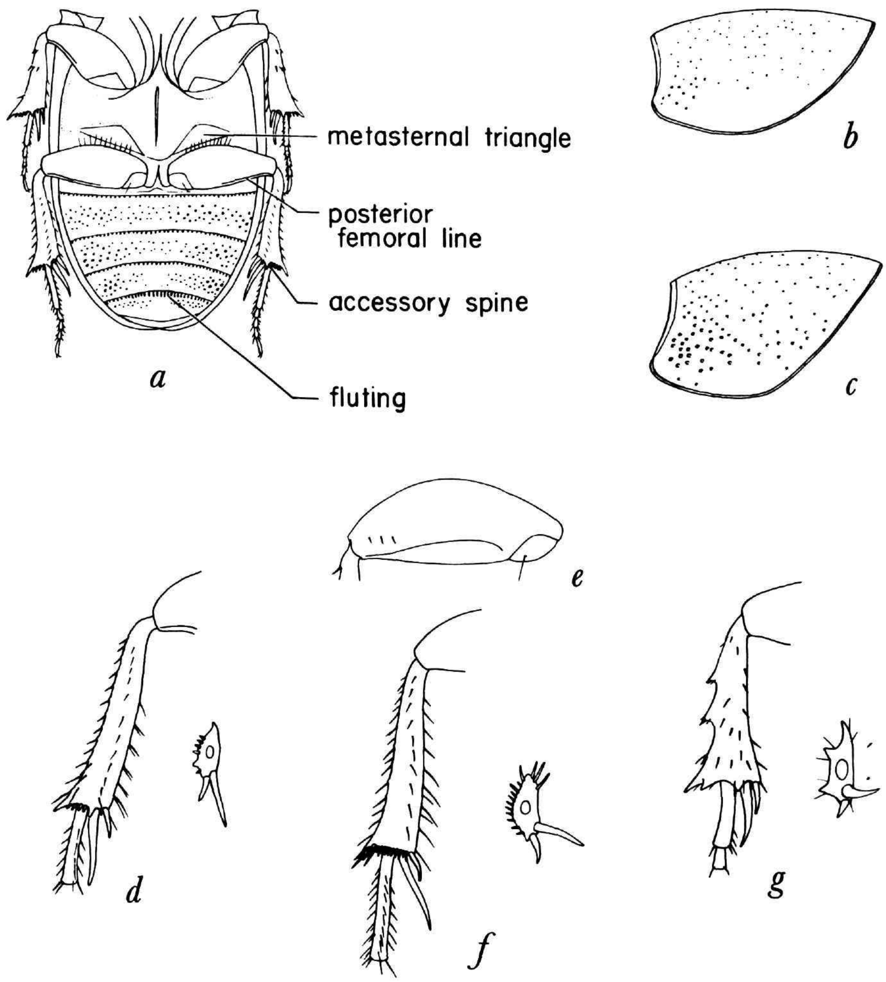

FIGURE 1.—*a*, Underside of *Ataenius strigatus* (Say). *b*, Lateral view of pronotum of *A. parkeri*, new species. *c*, Lateral view of pronotum of *A. duncani*, new species. *d*, Lateral and distal views of posterior tibia of *A. picinus* Harold. *e*, Middle femur of *A. erratus* Fall. *f*, Lateral and distal views of posterior tibia of *A. erratus* Fall. *g*, Lateral and distal views of posterior tibia of *Aphotaenius carolinus* (Van Dyke).

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Status of Names Used for *Ataenius*

Many names that have been used for *Ataenius* occurring in the United States and Canada are now recognized synonyms. Others have been used through misidentifications and should be removed from our lists. Lists and catalogs published by Melsheimer, Gemminger and Harold, Haldeman, LeConte, Crotch, Austin, Henshaw, Leng, and Blackwelder are among those consulted. My opinions regarding the present status of all the names used or now proposed are as follows:

Named used	*Present status*
abditus (Haldeman), 1848:106	valid
aequalis Harold, 1880:40	valid
alternans Dejean, 1836:163	?nomen nudum? = *alternatus* (Melsheimer)
alternatus (Melsheimer), 1844:137	valid
anticus Fall, 1930:105	synonym of *platensis* (Blanchard)
apicalis Hinton, 1937b:195	valid
attenuator Harold, 1874:22	ex Colombia; not in USA
barberi, new species	valid
brevicollis Wollaston, 1854:229	valid
brevinotus Chapin, 1940:39	ex Cuba; not in USA
brevis Fall, 1930:98	valid
brimleyi Wray, 1967:45	nomen nudum
californicus Horn, 1887:84	valid
carolinus Van Dyke, 1928:157	*Aphotaenius*
chiliensis Solier, 1851:72	synonym of *gracilis* (Melsheimer)
cognatus (LeConte), 1858:65	valid
confertus Fall, 1909:162	valid
consors Fall, 1930:104	synonym of *spretulus* (Haldeman)
contortus, new species	*Pseudataenius*
convexus Robinson, 1940:149	valid
crenatostriatus Sturm, 1843:111	?Mexico; not in USA
cribratus Van Dyke, 1928:156	synonym of *confertus* Fall
cylindricus Schmidt, 1922:454	misspelling of *cylindrus* Horn
cylindrus Horn, 1871:289	valid
darlingtoni Hinton, 1937b:179	synonym of *picinus* Harold
desertus Horn, 1871:289	valid
duncani, new species	valid
edistoi, new species	valid
erratus Fall, 1930:96	valid
exiguus Brown, 1932:10	valid
falli Hinton, 1934:119	synonym of *spretulus* (Haldeman)
fattigi Cartwright, 1948:151	valid
figurator Harold, 1874:24	valid
floridanus Brown, 1930:3	synonym of *rhyticephalus* (Chevrolat)
frankenbergeri Balthasar, 1938:56	synonym of *brevicollis* Wollaston
glaseri, new species	valid
gracilis (Melsheimer), 1844:137	valid
griffini, new species	valid
haroldi Steinheil, 1872:556	ex Argentina; not in USA
havanensis Balthasar, 1938:55	valid
hesperius, new species	valid
hirsutus Horn, 1871:288	valid
horni Harold, 1874:19	synonym of *cylindrus* Horn
imbricatus (Melsheimer), 1844:136	valid
inops Horn, 1887:73	synonym of *puncticollis* (LeConte)
inquietus Fall, 1930:94	lapsus for *inquisitus* Horn
inquisitus Horn, 1887:81	valid
insculptus Horn, 1887:70	valid
integer Harold, 1868:86	valid
laeviventris Horn, 1887:74	synonym of *lobatus* Horn
languidus Schmidt, 1910:31	valid
lecontei Harold, 1874:20	synonym of *ovatulus* Horn
linelli Cartwright, 1944:28	synonym of *languidus* Schmidt
lobatus *Horn*, 1871:287	valid
lucanus Horn, 1871:288	Baja California; not in USA
ludovicianus Fall, 1930:100	synonym of *wenzelii* Horn
miamii Cartwright, 1934:200	valid
nocturnus (Nomura), 1943:77	valid
nunenmacheri, new species	valid
oblongus Horn, 1871:286	synonym of *sculptor* Harold
oklahomensis Brown, 1930:4	valid
ovatulus Horn, 1871:286	valid
parkeri, new species	valid
picinus Harold, 1867a:281	valid
platensis (Blanchard), 1846:185	valid

Named used	*Present status*
pseudohirsutus, new species	valid
puncticollis (LeConte), 1858:65	valid
punctifrons, new species	valid
rhyticephalus (Chevrolat), 1864:413	valid
robustus Horn, 1871:285	valid
rudellus Fall, 1930:103	valid
rugopygus, new species	valid
sabinoi, new species	valid
salutator Fall, 1930:99	synonym of *picinus* Harold
saramari Cartwright, 1939:360	valid
saxatilis Cartwright, 1944:29	valid
schwarzi (Linell), 1896:721	synonym of *simulator* Harold
sciurus, new species	valid
sculptilis Harold, 1868:86	ex Venezuela; not in USA
sculptor Harold, 1868:85	valid
semipilosus Van Dyke, 1928:158	valid
simulator Harold, 1868:85	valid
socialis Horn, 1871:287	*Pseudataenius*
solitarius Blatchley, 1928:69	synonym of *rhyticephalus* (Chevrolat)
sordidus Harold, 1869:103	synonym of *imbricatus* (Melsheimer)
spretulus (Haldeman), 1848:106	valid
stephani, new species	valid
stercorator (Fabricius), 1775:20	South America; not in USA
strigatus (Say), 1823:212	valid
strigicauda Bates, 1887:96	ex Mexico; not in USA
stroheckeri, new species	valid
sulcatulus (Chevrolat), 1864:413	synonym of *brevicollis* Wollaston
superficialis, new species	valid
texanus Harold, 1874:23	valid
utahensis, new species	valid
vandykei, new species	valid
waltherhorni Balthasar, 1938:55	*Pseudataenius*
wenzelii Horn, 1887:77	valid
woodruffi, new species	valid

Key to Species of *Aphotaenius, Pseudataenius,* and *Ataenius* of the United States and Canada

1\. Middle and hind tibiae with distinct oblique carinae as in *Aphodius,* two triangular teeth instead of usual fringe of terminal setae. (Indiana, Ohio, Maryland to Florida .... 1. *Aphotaenius carolinus* (Van Dyke)

Middle and hind tibiae without oblique carinae, tibiae with usual fringe of terminal setae 2

2(1). Middle and hind tarsi one-third longer than their tibiae, maxillary palpi elongate; males with head weakly convex, short and wide, pronotum weakly convex, widely arcuate sides, conspicuous fringe of setae, anterior spur usually abnormal. (*Pseudataenius* spp.) 3

Tarsi normal. Other characters not as above. (*Ataenius* spp.) 5

3(2). Male anterior spur long, hooked or contorted, fore tibiae with one or two teeth, metasternal patch of setigerous punctures not conspicuous or nonexistent 4

Male with normal straight spur, tibiae with normal three teeth, a strong, conspicuous metasternal patch of setigerous punctures; female clypeus finely transversely wrinkled anteriorly only. (Florida, Louisiana, Pennsylvania) .... 2. *Pseudataenius waltherhorni* Balthasar

4(3). Male anterior spur long, parallel, hooked apically, two teeth on anterior tibia, posterior pronotal angles not emarginate; female clypeus strongly, transversely wrinkled throughout, pronotal punctures strong. (Louisiana, Texas to Nebraska) .... 3. *P. socialis* (Horn)

Male anterior spur long, twisted, widened anteriorly and bent inward, tibia with apical tooth only, metasternal setigerous punctures few or none, posterior pronotal angles very slightly emarginate; female clypeus not or sometimes weakly wrinkled on disc, pronotal punctures moderate. (Southeastern states) .... 4. *P. contortus,* new species

5(2). Pygidium smooth, polished, convex (a few moderate punctures in *Ataenius edistoi,* new species; some scabrous punctate rugosity in *A. rugopygus,* new species); integuments strongly shining; femora, metasternum, and abdominal sterna impunctate 6

Pygidium eroded, alutaceous, concave, or at least closely scabrously punctate basally 11

6(5). Clypeus broadly rounded each side of shallow median emargination, without trace of clypeal denticles; tip of hind tibia rather suddenly expanded; species broader than others in *figurator* complex 7

Clypeus with clypeal teeth, or at least slight but discernible angulations if broadly rounded each side 8

7(6). Pygidium with a few shallow, moderate punctures; strong, noticeably mixed pronotal punctures, close and evenly distributed throughout. (South Carolina) .... 5. ***Ataenius edistoi***, new species

Pygidium polished, only inconspicuous, fine, scattered punctures; pronotal punctures very moderate and widely scattered. (Georgia, South Carolina, North Carolina) .... 6. ***A. saxatilis*** Cartwright

8(6). Clypeus strongly dentate or angulate 9

Clypeus broadly rounded each side of shallow emargination with very weak to scarcely noticeable angulations. (Eastern states west to New Mexico, Texas, and Oklahoma) .... 7. ***A. figurator*** Harold

9(8). Very elongate, parallel, reddish, ratio width to length, 0.355:1.00, parallel-sided; posterior pronotal angles obliterated, very broadly rounded from sides into base; pronotal punctures few, scattered, almost completely lacking in anterior discal area and in posterior angles. (Arizona) .... 8. ***A. parkeri***, new species

Nearly black, ratio width to length, 0.383:1.00; pronotal punctures numerous 10

10(9). Pygidium scabrous-punctate at base; pronotal punctures numerous, close, moderately coarse; head punctures, close, moderate, extending down into rugosity of clypeus, the usual intervening band of fine punctures almost completely missing. (New Mexico, Arizona, Texas) .... 9. ***A. rugopygus***, new species

Pygidium smooth, polished but very finely punctate; pronotal punctures numerous, very moderate in size; frontal band of fine punctures between basal coarse band and clypeal rugosity. (Kansas, Arizona) .... 10. ***A. duncani***, new species

11(5). Elytra subopaque, opaque, argillaceous or pubescent (short and inconspicuous in *A. confertus* Fall) 12

Elytra shining (alutaceous in *A. wenzelii* Horn) 23

12(11). Intervals of elytra convex and alternately higher, at least on apical declivity 13

Elytral intervals usually flat or weakly convex, not alternately higher over apical fifth 14

13(12). Clypeal and frontal punctures moderately coarse, elongate-oval; pronotum moderately coarsely and uniformly punctate; distinctly opaque; elytral intervals alternately higher even on disc and apex. (Southeastern states, North Carolina to Texas) .... 11. ***A. alternatus*** Melsheimer

Clypeal punctures very fine, round; punctures of pronotum mixed, coarse and fine; subopaque; elytral intervals alternately higher only on apical fifth; first segment of posterior tarsus nearly twice as long as long spur. (New Jersey to Florida to Mississippi) .... 12. ***A. insculptus*** Horn

14(12). Alutaceous or argillaceous species 15

Pubescent, weakly shining species 18

15(14). Elytra elongate, twice as long as wide; intervals flat with row of short coarse setae. (Canada and eastern United States to South Dakota and Texas) .... 13. ***A. imbricatus*** Melsheimer

Elytra shorter, intervals weakly to strongly convex, setae frequently inconspicuous 16

16(15). Elytral intervals weakly convex, partly to completely argillaceous; striae usually in part quite wide and shiny. (Florida Keys) .... 14. ***A. superficialis***, new species

Elytral intervals subcarinately or tectiformly convex; one-third longer than wide; striae normal, not especially shining between fine punctures; without argillaceous coating 17

17(16). Basal punctures of pronotum only slightly larger than in anterior median area; elytral intervals subcarinate, the ridge usually rounded and not shining. (Illinois and coastal states from New York to Texas) .... 15. ***A. miamii*** Cartwright

Basal punctures crowded and twice the size of those in anterior median area; elytral intervals strongly tectiform with ridges shining. (Florida) .... 16. ***A. havanensis*** Balthasar

18(14). Pubescence long and fine 19

Pubescence short and usually inconspicuous 20

19(18). Pronotum more or less uniformly punctate, the punctures somewhat finer in front. (Arizona, Texas) .... 17. ***A. semipilosus*** Van Dyke

Pronotal punctures mixed, fine and very coarse. (Kansas, Texas to Arizona) .... 18. *A. hirsutus* Horn

20(18). Pronotal punctures closely spaced and more or less uniform in size 21

Pronotal punctures distinctly of two sizes, mixed coarse and fine; elytral intervals weakly convex, appearance smooth but very finely, not closely punctate. (Texas, Arizona) .... 19. *A. pseudohirsutus*, new species

21(20). Pronotum coarsely, closely punctate; elytral intervals subcarinate; clypeus not distinctly dentate. (Arizona) .... 20. *A. sabinoi*, new species

Pronotum densely, moderately punctate; clypeus dentate 22

22(21). Elytral intervals with median row of tubercles with alutaceous sculpture along each side. (California) .... 21. *A. vandykei*, new species

Elytral intervals convex with row of close, quite coarse punctures along outside edge. (New Mexico, Arizona) .... 22. *A. confertus* Fall

23(11). Margins of elytra noticeably fimbriate 24

Margins of elytra not noticeably fimbriate 25

24(23). Pronotum evenly moderately punctate; posterior femoral line deep and entire. (Florida) .... 23. *A. saramari* Cartwright

Larger pronotal punctures unevenly distributed, largely lacking medioanteriorly; posterior femoral line short or absent. (Texas) .... 24. *A. convexus* Robinson

25(23). Base of pronotum noticeably lobed; abdominal sterna nearly smooth; posterior tibia with strong heavy accessory spine; large species (5.5 mm). (Arizona and California) .... 25. *A. lobatus* Horn

Base of pronotum not noticeably lobed 26

26(25). Clypeal margin distinctly denticulate or strongly angulate each side of median emargination 27

Clypeal margin broadly rounded each side of median emargination, sometimes very weakly subdentate 42

27(26). Marginal line of posterior femur deep and entire 28

Marginal line short or absent, or weakly impressed if entire 30

28(27). Pronotum with intermixed fine punctures, the coarse punctures less dense anteriorly at middle 29

Pronotum densely punctate base to apex without intermixed fine punctures; elytral intervals frequently with traces of a groove each side along the striae. (Eastern states) .... 26. *A. cylindrus* Horn

29(28). Pronotum densely, uniformly punctate over outer third; elytral intervals subcarinate over posterior third, the intervals strongly eroded each side. (Oklahoma, Arkansas, Texas) .... 27. *A. oklahomensis* Brown

Pronotal punctures less dense, mixed, over outer third; elytral intervals convex over apical fourth. (Southeastern states) .... 28. *A. ovatulus* Horn

30(27). Posterior marginal femoral line weakly impressed; color ferruginous; pronotum coarsely, sparsely, irregularly punctate with fine punctures intermixed; abdomen with very few punctures. (Southwestern states) .... 29. *A. desertus* Horn

Posterior marginal line short or absent 31

31(30). Pronotal punctures dense, more or less uniform in size 32

Pronotal punctures mixed, disc with widely scattered, moderate to coarse punctures and intermixed, more closely spaced, fine punctures; abdominal sterna each side with three or four long semierect hairs. (Florida, Alabama) .... 30. *A. languidus* Schmidt

32(31). Clypeal punctures dense, elongate especially laterally, elytral intervals convexly higher along exterior margin, inner side flatter and alutaceous. (Arizona, Texas) .... 31. *A. barberi*, new species

Clypeal punctures round, not elongate 33

33(32). First segment of posterior tarsus noticeably narrowed from middle to base and shorter than long spur. (Texas to California) .... 32. *A. puncticollis* (LeConte)

First segment usually as long or longer than long spur, if not, then parallel-sided or gradually tapering from base to apex 34

34(33). Small shining species, 3.6 mm long, or less, lateral intervals noticeably and usually roughly punctate, outside rows of punctures on intervals 7 and 8 very close, separated by their diameter or less 35

Usually larger, frequently alutaceous, not roughly punctate; outside rows of punctures on intervals 7 and 8 usually separated by three or more times their diameters 36

35(34). Punctures of front and upper clypeus uniform in size. (Arizona) .... 33. *A. nunenmacheri,* new species

Punctures of front larger than on upper clypeus, appearing as a band of coarser punctures. (Florida) .... 34. *A. strohеckeri,* new species

36(34). Suture between 4th and 5th abdominal sterna deep, moderately wide, with edges parallel and extending completely from side to side; averaging about 3.7 mm in length. (Kansas, Oklahoma, Texas) .... 35. *A. texanus* Harold

Suture between 4th and 5th abdominal sterna not as wide at sides as at middle 37

37(36). Smooth, shining species 38

Surface usually alutaceous or microreticulate 41

38(37). Rugose sculpture of clypeus extending up over middle convexity; average size about 4 mm. (Maryland, Virginia) .... 36. *A. glaseri,* new species

Rugose sculpture of clypeus rarely to middle of the convexity 39

39(38). Punctures of upper clypeus and frontal area minute, very fine, or absent 40

Punctures of upper clypeus and frontal area dense, fine to moderate, same size as those of anterior pronotum. (Generally distributed except southeastern states) .... 37. *A. punctifrons,* new species

40(39). Punctures of anterior angles and lateral fovea of pronotum noticeably larger and closer than elsewhere; elytral intervals convex. (Utah) .... 38. *A. utahensis,* new species

Punctures of pronotum more or less uniform in size and distribution; elytral intervals only moderately convex. (Western and southwestern states) .... 39. *A. hesperius,* new species

41(37). Length 3.5 mm, basal punctures of head shading in size into those of clypeus, basal band of punctures rarely distinct; clypeus distinctly punctate at middle, clypeal rugae moderate. (Eastern states) .... 40. *A. abditus* Haldeman

Length 3.0 mm or less; basal band of closer, larger punctures distinct; clypeus relatively smooth at middle, clypeal rugae fine. (South Carolina to Florida to Mississippi) .... 41. *A. exiguus* Brown

42(26). Pronotum usually short, hardly more than one-third as long as elytra; anterior femur thin, oblong, with fine marginal groove; posterior femur slender. (Squirrel nests, Florida) .... 42. *A. sciurus,* new species

Pronotum not unusually short, almost one-half as long as elytra 43

43(42). Punctures of head united in short longitudinal lines; small, slender, elongate species; elytral intervals strongly convex 44

Head punctures simple 45

44(43). Middle femur with strong complete marginal line; elytral intervals almost carinate. (South Dakota to Texas and east to Atlantic coast) .... 43. *A. gracilis* (Melsheimer)

Middle femur with short, abbreviated marginal line; elytral intervals evenly rounded. (California, Arizona) .... 44. *A. nocturnus* (Nomura)

45(43). Large species, 5.3–6.4 mm; head and pronotum rather coarsely punctate; elytral striae strong, moderately wide, quite corasely, deeply punctate; elytral intervals cariniformly convex; posterior pronotal angles slightly emarginate 46

Size usually smaller (*A. stephani,* 4.8–5.8 mm), elytral characters different 47

46(45). Head and pronotum closely, evenly punctate; a row of close moderate punctures each side of the median convex carina of the elytral intervals. (Arizona, California) .... 45. *A. sculptor* Harold

Head with coarse punctures basally and extending downward as a patch each side on upper clypeus, clypeus weakly, transversly wrinkled anteriorly; median, smooth, strongly convex carina of intervals bordered each side by a fine groove which becomes minutely, noticeably alutaceous over apical declivity. (Florida) .... 46. *A. woodruffi,* new species

47(45). Elytral intervals flat, densely punctate, the punctures nearly as coarse as those of the pronotum. (North-central states) .... 47. *A. robustus* Horn

Intervals usually at least weakly convex; rarely noticeably punctate 48

48(47). Clypeus strongly rugose-granulate; posterior femora nearly half as wide as long and without marginal line. (Southeastern states) .... 48. *A. simulator* Harold

Clypeus sometimes weakly transversely wrinkled but not strongly so 49

49(48). Accessory spine of middle and hind tibiae closely adjacent to the shorter spur, without intervening setae of the terminal fringe 50

Accessory spine more removed from the spurs, one of the setae of the terminal fringe intervening 51

50(49). Abdominal sterna finely punctate at middle; posterior tibial fringe of ten or more setae; large species, length 4.5–5.8 mm. (South Carolina, Georgia, Florida) ..... 49. ***A. erratus*** Fall

Abdominal sterna coarsely punctate at middle; metasternum with an irregular series of coarse punctures extending inward from sides to the central flattened area; posterior tibia with fringe of five setae, accessory spine strongly developed; 4.5 mm or less. (Texas) ..... 50. ***A. inquisitus*** Horn

51(49). Base of head with fine or mixed fine and moderate scattered punctures 52

Base of head with transverse band of coarse punctures 56

52(51). Head smooth, with punctures all very fine, uniformly distributed throughout; small suboval species 3.5 mm in length. (Texas) ..... 51. ***A. griffini***, new species

Head transversely wrinkled anteriorly 53

53(52). Pronotal punctures close, mixed throughout, quite uniformly distributed but slightly closer in anterior and posterior angles and all finer at middle; posterior angles very slightly emarginate; accessory spine very short, one-half length of fringe; posterior femoral line best seen from rear; extreme lateral interval wider than usual and with row of shiny granules on alutaceous flat base; occipital punctures very fine. (Louisiana) ..... 52. ***A. aequalis*** Harold

Not as above 54

54(53). Base of head with mixed coarse and fine punctures; coarse pronotal punctures well separated, usually by one and one-half to two times their diameter, evenly distributed including anterior median area; abdominal sterna strongly punctate laterally, the median smooth area relatively narrower than in *A. platensis;* metasternal triangle deep, alutaceous; tip of anterior spur hooked downward in male. (Florida, Texas) ..... 53. ***A. integer*** Harold

Base of head with fine or very moderate punctures; coarse pronotal punctures absent or very few in anterior median area 55

55(54). Robust species, 4.8–5.8 mm in length; anterior femur smooth, very minutely punctate; middle and posterior femora without or rarely with traces of a marginal line. (Arizona) ..... 54. ***A. stephani***, new species

Slender species, about 4.2 mm in length; anterior femora with scattered, fine-to-moderate punctures; middle and hind femora with distinct marginal line at knee; tip of anterior spur bent downward in male. (Texas and Oklahoma eastward) ..... 55. ***A. platensis*** (Blanchard)

56(51). Ninth elytral interval finely, closely punctate; sides of pronotum crenate anteriorly; posterior tibial fringe invariably of four setae; anterior femur with a few coarse punctures at elbow. (South Carolina to Texas) ..... 56. ***A. picinus*** Harold

Ninth interval not differing from others 57

57(56). Posterior angles of pronotum sinuate-emarginate; clypeus smooth, polished, strongly convex; pronotal punctures moderate, well-separated everywhere; elytral intervals eroded and alutaceous each side over apical fifth. (Florida, Mississippi, Texas) ..... 57. ***A. brevicollis*** Wollaston

Posterior angles obtusely rounded 58

58(57). Metasternum with a small group of coarse punctures each side of median line close behind middle coxae; humerus and lateral elytral intervals coarsely roughly punctate. (South Carolina, Florida) ..... 58. ***A. rhyticephalus*** (Chevrolat)

Humeri not coarsely punctate 59

59(58). Elytra relatively short and convex, one-third longer than wide, sides distinctly arcuate; tenth elytral interval finely alutaceous, flat or slightly convex, not as convex as ninth; median metasternal line shorter than first two visible abdominal sterna at middle; length 3.5–4.3 mm. (Appalachian region) ..... 59. ***A. brevis*** Fall

Elytra more oblong-elongate, one-half longer than wide 60

60(59). Posterior face of profemur sparsely finely punctate and relatively smooth, rarely three or four shallow coarse punctures 61

Posterior face of profemur coarsely, often roughly punctate 65

61(60). Coarse punctures of pronotum generally distributed but everywhere sparse and very little closer laterally; strong posterior femoral line one-half distance from knee to trochanter; usually five setae in posterior tibial fringe. (All but seven states) .... 60. *A. spretulus* (Haldeman)

Coarse punctures of pronotum everywhere numerous, including anteromedial area 62

62(61). Elytral intervals usually flat, alutaceous on disc; male anterior spurs incurved at tip; posterior angles of pronotum very broadly rounded. (Coastal areas, Pennsylvania to Texas) .... 61. *A. wenzelii* Horn

Elytral intervals rarely alutaceous 63

63(62). Posterior femoral line absent or with a very short line at knee; abdominal sterna punctate at middle; male anterior spur not incurved at tip; length 4.0–5.8 mm. (Kansas, Oklahoma, Louisiana to California) .... 62. *A. cognatus* (LeConte)

Posterior femoral line weak but plainly visible from behind, at least one-third distance from knee to trochanter; anterior tibial spur of male incurved at tip 64

64(63). Small, narrow species, length 3.5 mm. (Florida) .... 63. *A. rudellus* Fall

Coarse punctures of pronotum relatively much larger, abdominal sterna nearly smooth at middle; length 4.0–4.7 mm. (California, Arizona, Utah) .... 64. *A. californicus* Horn

65(60). Clypeus with noticeable transverse rugulae; posterior tibia with fringe of four or five setae; usually at least a few coarse punctures coalescing in anterior angles of pronotum. (More northern distribution; all except far western states) ..... 65. *A. strigatus* (Say)

Clypeus finely punctate, transverse rugulae absent or very weakly developed; posterior tibial fringe of six to eight setae. (More southern distribution) 66

66(65). Apical declivity of elytra with intervals eroded each side; posterior femora with row of three or four noticeable, coarse setigerous punctures at knee. (Eastern states) .... 66. *A. apicalis* Hinton

Elytral intervals normal on apical declivity; posterior femora without coarse setigerous punctures at knee. (Wisconsin and Texas to east coast) .... 67. *A. fattigi* Cartwright

1. *Aphotaenius carolinus* (Van Dyke)

Ataenius carolinus Van Dyke, 1928:157.
Aphodius carolinus.—Hinton, 1937b:196.
Aphotaenius carolinus.—Cartwright, 1952:182; 1958:134; 1963: 49.

DESCRIPTION.—Length 2.5 to 3.1 mm; width 0.95 to 1.3 mm. Piceous black, shining, head anteriorly and legs reddish, antennae and palpi testaceous. Head three-fourths as wide as pronotum, strongly convex, basally with a band of coarse punctures, front finely punctate, anterior smooth, impunctate; clypeus with finely reflexed margin, bidentate, teeth strongly developed, acutely pointed and widely separated, slightly emarginate between teeth, margin flattened and dorsally angulately widened, this appearing as an angulate carina from directly above, the extreme ventral margin, invisible from above, with a small median angulation directed in the opposite direction. Pronotum convex, margined basally and laterally, surface with mixed coarse and very fine punctures, coarse punctures uniformly distributed, separated by less than one diameter to two diameters. Elytra convex, coarsely striate, striae strongly crenate punctate, intervals moderately convex, minutely punctate. Covered basal portion of pygidium deeply grooved under tips of elytra, exposed portion with depressed eroded area divided by a longitudinal carina. Posterior prosternal spine strongly developed, laterally compressed. Mesosternum closely, moderately punctate. Metasternum quite closely coarsely punctate, median longitudinal line deep. Second abdominal sternum closely, shallowly setigerously punctate along anterior margin, carinate between the coxae; remaining sterna smooth, coarsely, deeply fluted in front. Posterior femoral line obsolete, only faintly indicated, middle femoral line and anterior ventral line of profemur wide, deep, and noticeably alutaceous. Anterior tibiae tridentate externally. Middle and posterior tibiae with oblique carinae as in *Aphodius*, without fringe of spicules apically but with two well-separated triangular teeth, each tooth with a fine hairlike seta basally on each side, the outer apical angles prolonged, spinelike as in *Ataenius*, long spur, first tarsal segment, and three following segments combined, equal in length. Terminal tarsal segment about as long as two preceding segments combined, claws minute.

HOLOTYPE.—California Academy of Sciences, No. 2549.

TYPE-LOCALITY.—Black Mountains, North Carolina.

SPECIMENS EXAMINED.—109.

DATES COLLECTED.—April 29–September 10.

DISTRIBUTION (Figure 2).—*Florida:* Caverns State Park (Jackson County), Key West. *Georgia:* Pine Mtn. (Rabun County). *Indiana:* Crawford County. *Maryland:* Marlboro. *Ohio:* Cincinnati. *North Carolina:* Black Mts., Pisgah Forest. *South Carolina:* Eastatoe River (Pickens County), I'On Swamp (7 mi N of Awendaw, 15 mi NE of Charleston), Sassafras Mtn. *Virginia:* A. P. Hill Military Reservation (Caroline County), Duthet State Park (Bath County), Jefferson National Forest (Botetourt County), 5 mi S of Paris.

REMARKS.—In *Aphotaenius* the apical fringe of setae of the hind tibiae found in *Ataenius* is replaced by two triangular teeth, each bearing a very fine seta on each side, and the middle and hind tibiae have distinct oblique carinae as in *Aphodius* (Figure 1*f*). In all other characters *Aphotaenius* agrees with *Ataenius.* See original description of the genus for details.

Aphotaenius carolinus is a forest species, most frequently found in droppings of deer; however, it has been collected in cow dung and dog excrement in deep woods. Adults are frequently found under old deer dung of the previous year. Jerath (1960:68) described the larva.

2. *Pseudataenius waltherhorni* (Balthasar), new combination

Ataenius waltherhorni Balthasar, 1938:55.—Cartwright, 1968: 27.

DESCRIPTION.—Length 3.7 to 5:0 mm; width 1.5 to 2.0 mm.

Males: Elongate-oblong, shining, dark castaneous. Head wide, weakly convex, finely reflexed clypeal margin broadly rounded each side of wide, shallow, median emargination, sides weakly arcuate to angle of genae, prominent genae sharply rounded, right-angled, with three or four stiff, moderate setae at angle; surface punctures of head very fine, close throughout but a trifle less so at middle of disc; eyes large and not completely hidden with head bent down. Pronotum weakly convex, approximately three-fourths as long as wide, sides strongly arcuate from the widely rounded anterior angle to base with the posterior angles feebly emarginate, base slightly sinuate, edge fimbriate-crenate, the setae quite long and conspicuous, longest at anterior angles, separated by half their length or less, crenations weak; surface smooth with extremely minute alutaceous sculpture and close minute punctures throughout, laterally with close, very moderate punctures which decrease in size toward disc and base, larger punctures separated generally by their own diameters more or less. Elytra convex, subparallel, about three-fourths as wide as long, humeri finely dentate, elytral striae fine, moderately deep, very fine strial punctures slightly crenating inner margin of the evenly convex intervals, lateral intervals not different, apparently impunctate. Mesosternum shagreened as usual, without carina between the coxae. Metasternum shining, with a long, strong midline ending anteriorly in a deep pore, anterior disc each side with a large patch of dense, setigerous, moderate punctures, a few punctures trailing posteriorly, smooth toward sides which show noticeable alutaceous sculpture and a small scabrous area at extreme edge, metasternal triangle moderately deep, finely alutaceous within. First visible abdominal sternum with fine, posterior marginal line. Remaining sterna finely fluted along anterior margin, surface finely alutaceous, with scattered, very fine punctures from side to side and a cluster of very moderate punctures at extreme sides. Fourth abdominal sternum at middle about two-thirds as long as preceding sternum. Pygidium with a shining convex apical lip much longer at middle, about one-fourth the length of the eroded disc of the pygidium. Anterior femora with perimarginal line, disc smooth and shining, a few vague, scattered, very moderate punctures; fore tibiae normal with three sharp, triangular teeth, tarsus long, the first tarsal segment longer than second, terminal segment as long as preceding two segments combined. Middle and hind femora smooth and shining, with scattered, very minute punctures, without trace of posterior marginal line. Apical fringe of posterior tibia of five setae, a very short triangular accessory spine, and an intervening seta between spine and spurs, the middle two setae much shorter than those on each side.

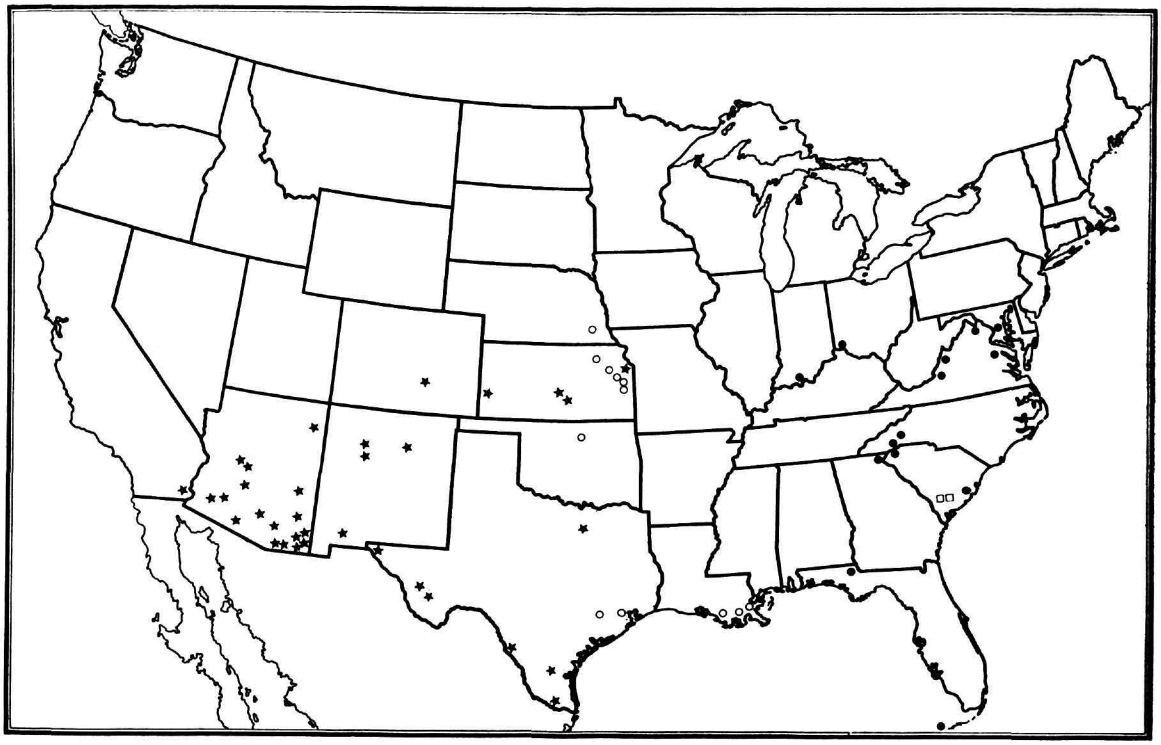

FIGURE 2.—Distribution of *Pseudataenius socialis* (Horn), *Ataenius duncani*, new species, *Aphotaenius carolinus* (Van Dyke), and *Ataenius edistoi*, new species.
○ *socialis* ★ *duncani* ● *carolinus* □ *edistoi*

Tarsi of middle and hind legs long and slender, posterior tarsus about three-tenths longer than tibia, metatarsus equal to long spur and to following three segments combined, terminal segment as long as preceding two segments combined.

Females: Compared to males, usually darker in color with head and pronotum more convex, the clypeus is more deeply emarginate, the genae are more rounded and less prominent, the clypeus is distinctly transversely wrinkled anteriorly and there is an occipital band of close, moderate punctures. Females lack the patch of moderate setigerous punctures on the metasternum, the 4th abdominal sternum is longer, and the pygidium is much shorter.

HOLOTYPE.—In Deutsches Entomologisches Institut.

TYPE-LOCALITY.—Havana, Cuba.

SPECIMENS EXAMINED.—Four from United States. (55 from Cuba.)

DATES COLLECTED.—May to August.

DISTRIBUTION (Figure 3).—*Florida:* Everglade, May 1912, Wm. T. Davis Coll. (Purdue University); Key West, July–August 1960, R. E. Woodruff Coll. *Louisiana:* "N. Amerik" (USNM). *Pennsylvania:* Swarthmore, Delaware County, 6 June 1940, Mark Robinson (USNM).

REMARKS.—This species is somewhat intermediate between *Ataenius* and *Pseudataenius* but I believe it should be placed in the latter genus because it resembles, and agrees in so many characters with, the two other species, *P. socialis* (Horn) and *P. contortus*, new species. The sexual dimorphism, the very weakly convex head and pronotum of the male, the strongly arcuate, conspicuously fimbriate sides of the male pronotum, the long slender tarsi, and large eyes are all more or less foreign to the genus *Ataenius*.

Males of *P. waltherhorni* differ from those of *P. socialis* and *P. contortus* in having fore tibiae

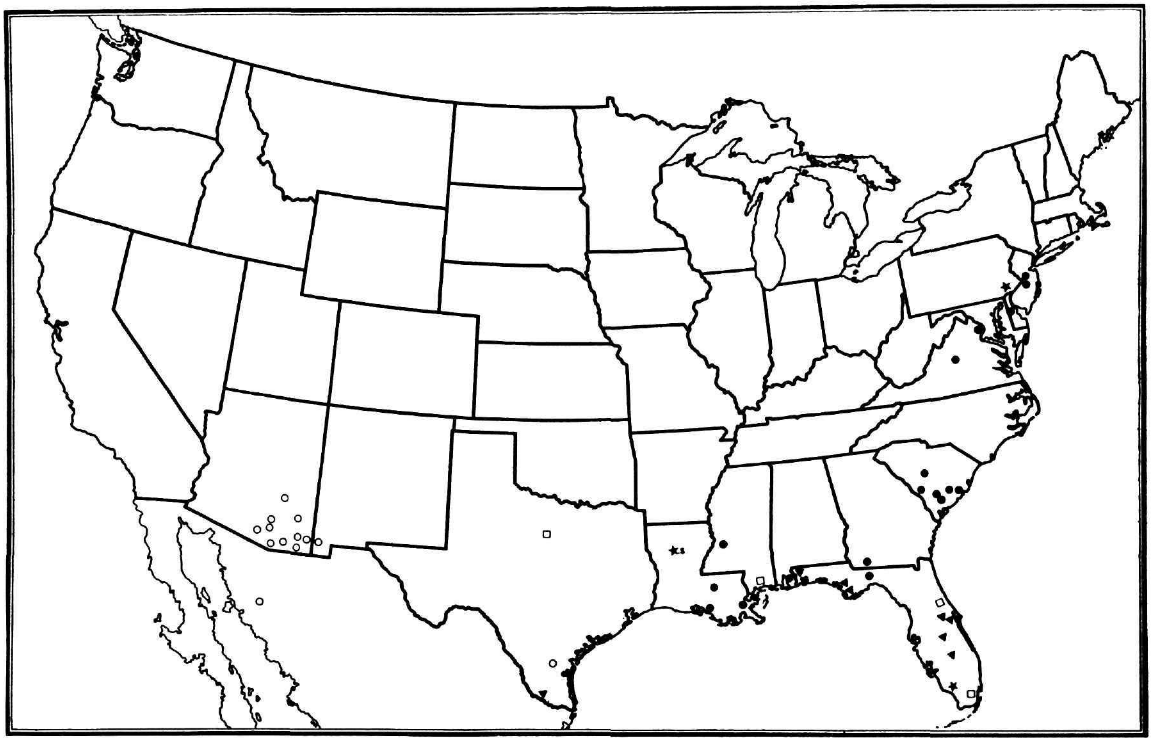

FIGURE 3.—Distribution of *Pseudataenius waltherhorni* (Balthasar), *P. contortus*, new species, *Ataenius parkeri*, new species, *A. brevicollis* (Wollaston), and *A. integer* Harold. (Letter "s" following symbol represents state label only.)
★ *waltherhorni* ● *contortus* o *parkeri* □ *brevicollis* ▲ *integer*

with the normal three large teeth and normal anterior spur, the genae not as strongly protruding laterally, the head a little longer, pronotal punctures coarser laterally, tarsi not quite as long, and a conspicuous metasternal patch of moderate, setigerous punctures. Females have fine, transverse, anterior wrinkles, a condition intermediate between *P. socialis* and *P. contortus*, and the pronotal punctures are finer with less disparity in size between the fine and moderate punctures than in the other species.

3. *Pseudataenius socialis* (Horn)

Ataenius socialis Horn, 1871:287; 1887:76.—Harold, 1874b:174.
Pseudataenius socialis.—Brown, 1927:290.

DESCRIPTION.—Length 4.2 to 5.0 mm; width 1.8 to 2.0 mm. Elongate-oblong, castaneous, shining. *Males:* Head short, broad, flat, only very weakly convex, wider through the prominent genae than through anterior angles of the pronotum; finely reflexed clypeal margin broadly rounded each side of shallow median emargination, sides nearly straight to sharply rounded, less than right-angled genae, the genae with a tuft of six to eight, close, moderately long, stiff setae; head surface uniformly, very finely punctate, the punctures separated by about twice their diameters. Pronotum two-thirds as long as wide, sides and base finely margined, fimbriate with long, conspicuous setae, the setae longest at anterior angles where they are separated by about one-third their length and gradually shorter to beyond posterior angles; sides widely arcuate into slightly sinuate base, sometimes with barely a trace of emargination at posterior angles; surface very moderately convex, with close, mixed, quite evenly spaced, very fine to very moderate punctures throughout, a little finer anteriorly at middle, the larger punctures separated in general by one to two or more times their diameters. Elytra convex, long, subparallel, not quite three-fourths as wide as long, humeri not dentate, elytral striae fine and not very deep, strial punctures weakly crenating sides of the feebly convex intervals, tenth interval flat, intervals with scattered, minute punctures more or less in two rows, separated by about four times their diameters. Mesosternum shagreened as usual in *Ataenius,* without noticeable carina between the coxae. Metasternum with seven or eight moderate punctures plus scattered, minute puncture on each side of long, fine, rather shallow midline, minutely alutaceous with a few close, fine punctures at sides, metasternal triangle shallow, very minutely alutaceous within. First visible abdominal sternum with fine posterior marginal line, second with a trace of a similar line at sides, middle three sterna with very fine fluting along anterior margin, sometimes invisible in some specimens, fluting of 5th sternum only about twice as long, surface of sterna minutely alutaceous with a few usually vague, scattered, fine punctures. Pygidium with wide, smooth apical lip, eroded area deep and rough. Anterior femora without marginal line, surface smooth with a few vague shallow fine punctures. Anterior tibiae narrow with only two large teeth, margin smooth above teeth, spur long, parallel, the tip bent inward. Middle and hind femora like anterior femora but with row of four, quite widely spaced, coarse setigerous punctures over outer half. Posterior tibial apical fringe of eight close setae, a short accessory spine, and an intervening setae between spine and spurs, the latter seta not easily seen. Tarsus of middle and hind legs very long and slender, approximately one-third longer than the tibia; metatarsus longer than long spur, approximately equal to following three segments combined.

Females: Compared with the male the head and pronotum are more convex and much more strongly punctate. Anterior two-thirds of the clypeus transversely wrinkled, posterior clypeus and front finely, closely punctate, the punctures separated by their diameters or a little more. Pronotum with mixed very fine and moderately coarse punctures throughout, the coarse punctures irregularly spaced and a little finer anteriorly at middle, separated generally by less than one to two or three times their diameter. The 4th abdominal sternum is a little larger and the apical lip of the pygidium is not as long at middle. The anterior femora have an anterior marginal line. The anterior tibia has the normal three large teeth and short straight spur.

LECTOTYPE (present designation).—In Academy of Natural Sciences of Philadelphia, presently labeled "Type No. 3609."

TYPE-LOCALITY.—"Georgia and Louisiana." The lectotype is labeled simply "La."

SPECIMENS EXAMINED.—34.

DATES COLLECTED.—May 31 to July 15.

DISTRIBUTION (Figure 2).—*Kansas:* Lawrence, Maple Hill, Ottawa, Topeka. *Louisiana:* Harahan, Morgan City, Raceland. *Nebraska:* Lancaster County, Lincoln. *Oklahoma:* Noble County (in *Cynomys* hole). *Texas:* Columbus, Houston.

REMARKS.—As indicated in the above descriptions, the sexes are dimorphic in *Pseudataenius.* Differences from the genus *Ataenius* have been pointed out by Harold (1874b) and Horn (1887). Horn (1887:77) gives the following translation of Harold's comments:

> The posterior tibiae are without transverse ridges, a character which forbids its association with *Aphodius,* and allies it with *Ataenius, Saprosites* and *Euparia.* On the middle tibia there is, however, a transverse ridge, in which it resembles *Saprosites. Saprosites* is characterized by the relatively short tarsi and the denticulate middle tibiae, characters to which the graceful and slender tibiae and tarsi of *A. socialis* are foreign. If, therefore, one does not desire to create a new genus for every aberrant form our choice of position must be between *Ataenius* and *Euparia.* The short and transverse head with the prominent genae suggest *Euparia;* the posterior tibiae straight and slender, the genae continuous with the clypeus, not separated by an incisure, give weight to an association with *Ataenius,* from which it however differs by the non-carinate mesosternum and remarkable characters which bespeak for it an isolated position in the genus. . . . The eyes are larger than usual in the genus and not concealed from the front when the head is deflexed. The maxillary palpi are also longer and the terminal joint slender, not thicker at the middle as usual in the other species. It will be observed that the terminal joint is fully twice as long as the penultimate in the ♀, the penultimate in the ♂ is two-thirds the length of the terminal.

Brown (1927) decided that so many differences from Ataenius were sufficient to require a new genus for Horn's *socialis* and proposed the name *Pseudataenius.*

Ataenius socialis was described in 1871 from two specimens with the distribution listed as Georgia and Louisiana. The Horn collection now in the Academy of Natural Sciences of Philadelphia no longer includes a specimen from Georgia. The Louisiana specimen agrees perfectly with the original description and has been designated as the lectotype. Horn (1887) stated that the two original specimens were females and added the description of the male. The male description is that of the species occurring in Louisiana, Texas, Kansas, Nebraska, and Oklahoma and the lectotype female agrees with the female of that species. The Georgia specimen was very likely the species described below as *Pseudataenius contortus*, new species.

4. *Pseudataenius contortus*, new species

PLATE 1a

DESCRIPTION.—*Holotype Male:* Length 5.1 mm; width 2.1 mm. Elongate-oblong, shining, dark castaneous, antennae testaceous. Head short, broad, very weakly convex; finely reflexed clypeal margin broadly rounded each side of shallow median emargination, sides arcuate to sharply rounded right-angled genae, genae fimbriate with a close group of seven or eight moderately long, stiff setae; surface of head very minutely alutaceous with rather evenly spaced, minute to very fine punctures, generally separated by two or three diameters over middle disc, a trifle finer anteriorly, and a little closer basally. The genae flaring outward give the head a broad distinctive appearance. Pronotum 2.0 mm wide, and 1.4 mm long, rather weakly convex, sides strongly arcuate from the widely rounded anterior angles into the similarly arcuate base, sides and base finely margined, fimbriate with long, conspicuous setae which are very slightly longer at anterior angles, then very gradually decreasing in length around posterior margin to base, separated at anterior angles by approximately one-third their length; surface very minutely alutaceous throughout under high magnification, mixed very fine and fine, quite evenly distributed punctures throughout except for a narrow, impunctate, longitudinal midline, punctures a trifle smaller anteriorly, and little larger basally and laterally. Elytra 3.2 mm long and 2.1 mm wide, convex, subparallel, humeri not distinctly dentate, striae fine, not deep, very fine strial punctures weakly crenating inner margins of the moderately convex intervals, intervals with a medium row of very minute punctures, tenth interval flat and a little more strongly alutaceous. Mesosternum shagreened with dense fine punctures and very fine, short, decumbent hair, not distinctly carinate between the coxae. Shining metasternum with long midline weakly impressed at ends and barely traceable at middle, with a very irregular row of fine-to-moderate close punctures each side, smooth and shining outward to sides, a trace of fine, rough sculpture at extreme sides, the metasternal triangle weakly depressed and minutely alutaceous within. First visible abdominal sternum with posterior marginal line, next two sterna with similar line except at middle, sterna flattened at middle, very fine fluting along anterior margin, their surface minutely alutaceous with a few very fine to fine, scattered, shallow punctures more noticeable at sides. Fourth abdominal sternum about two-thirds as long as preceding sternum, 5th not quite as long. Apical lip of pygidium at middle about half as long as 5th sternum, convex, shining but minutely, densely punctate, eroded area finely roughened and about four times as long as the apical lip at middle. Anterior femora without marginal lines, surface shining, convex, with a few scattered, shallow, very moderate punctures. Anterior tibiae without lateral teeth, the terminal tooth elongate, subparallel-sided, and bluntly rounded; the spur long, gradually widened, and slightly twisted to anterior third then bent inward and slightly downward to sharp tip, at widest point it is at least twice as wide as at base; first tarsal segment larger than second, terminal segment as long as three preceding segments combined. Middle and hind femora minutely alutaceous, a few scattered, shallow, fine punctures and a row of four, moderate, setigerous, widely spaced punctures over outer half of femur, without marginal lines. Apical fringe of posterior tibia of nine fairly long setae, an accessory spine half as long, and an intervening seta between the spine and spur; tarsus very long and slender, the tibia only two-thirds as long; metatarsus one-fourth longer than long spur, as long as following three segments combined, terminal segment as long as two preceding segments combined.

Allotype Female: Length 4.6 mm; width 1.9 mm. Compared with the male, the clypeus is more deeply emarginate at middle, the sides are very slightly incurved or emarginate in outline, the genae are curved back, not continuing straight to angle of the genae; the head is more coarsely and closely punctate, the pronotum is more convex, much more coarsely punctate with close, mixed punctures showing much greater disparity in size but with same impunctate midline. The anterior femora have a perimarginal groove which is weak posteriorly. The anterior femora are normal with the usual three sharp, triangular teeth and a long, straight, slender spur. The middle femora have a shallow but complete posterior marginal line. The posterior femora have a slightly deeper posterior marginal line along the outer two-thirds. The abdominal sterna are convex from side to side with the 4th sternum comparatively longer. The pygidium is shorter, with a thin, shiny apical marginal lip.

HOLOTYPE.—USNM 71732.

TYPE-LOCALITY.—Florida, 17 miles north of Tallahassee, Tall Timbers Research Station, at light, 25 June to 4 July, 1967, L. Collins. Holotype, allotype, and 27 paratypes with same data.

SPECIMENS EXAMINED.—372.

DATES COLLECTED.—June 1 to July 23.

DISTRIBUTION (Figure 3).—Paratypes. *Alabama* (1): Daphne, 12 June. *?Delaware* (1): Delaware Bay, "14 foot Bank, L.H.," 17 July 1936. *Florida* (321): Monticello (199), black light, 12 June 1969, W. H. Whitcomb. Tallahassee (4), 29 June 1965, W. Suter. Tall Timbers Research Station, Leon County (118), black light, 1–8 June 1967, L. Collins. *Georgia* (20): Beachton, Birdsong Plantation, 4–7 July 1967, E. V. Komarek. *Louisiana* (11): Baton Rouge (2), June 1905, A. W. Merrill. New Orleans (1), 13 June, H. Soltau Coll. (USNM). Patterson, St. Mary Parish (4), 11 June 1959, W. Suter. Pearl River (4), 6 June 1893, H. Soltau Coll. (USNM). *Mississippi* (2): "Southern Mississippi" (1), 11 June 1893, H. Soltau Coll. Utica (1), trap light, 21 July 1964. *New Jersey* (1): "New Jersey," no date, J. B. Smith. *South Carolina* (11): Blackville, Edisto Exp. Sta. (2), trap light, 9 July 1938, O. L. Cartwright. Charleston (1), 15 June 1930, O. L. Cartwright. Hendersonville, Colleton County (2), 23 July 1936, M. Robinson. Summerville (1), 9 July 1936, O. L. Cartwright. Swansea (1), F. Knab. Yemassee (4), 3 June 1939, 6 June 1947, O. L. Cartwright. *Virginia* (3): Arlington (1), 20 July 1949. Nelson County (2), 30 June 1911, 3 July 1916, W. Robinson.

REMARKS.—The specimens vary in length from 4.0 to 5.1 mm and in width from 1.7 to 2.1 mm. Frequently a male will show a suspicion of a second tooth opposite the base of the spur on the anterior tibia. Sometimes the longitudinal, impunctate midline of the pronotum will be reduced, but usually at least a trace will remain.

Males of this species are easily separated from those of *P. socialis* (Horn) by the shape of the anterior spur and lack of a well-developed second tooth of the anterior tibiae. Females of *P. contortus* usually are without—or with very feeble—transverse clypeal wrinkles and are comparatively less strongly punctate over the pronotum. The transverse clypeal wrinkles are conspicuous and the pronotal punctures show greater disparity in *P. socialis.*

5. *Ataenius edistoi*, new species

DESCRIPTION.—*Holotype Female:* Length 3.9 mm; width 1.7 mm. Elongate-oblong, parallel, shining, polished, black with anterior margin of clypeus, anterior margin of pronotum, and legs reddish. Head convex. Finely reflexed margin of clypeus broadly rounded each side of a wide, shallow, median emargination, sides feebly arcuate to obtusely rounded, nearly right-angled genae; surface of clypeus transversely wrinkled over anterior half, upper half closely finely punctate gradually to a narrow transverse band of very fine punctures just in front of the coarser punctures of the frontal and basal areas, the latter generally separated by their diameters or a little less. Pronotum 1.5 mm wide and 1.1 mm long, quadrate with sides nearly straight and parallel, convex, anterior angles quite sharply rounded, posterior angles very broadly rounded, from sides with base, sides and base finely margined, not crenate, without marginal setae, surface with evenly distributed, close, mixed very fine and moderate punctures, the moderate punctures a trifle smaller anteriorly and more numerous in the anterior angles, generally separated more or less by about their diameters, very few close to posterior margin. Elytra 2.5 mm long and 1.7 mm wide, nearly parallel-sided, humeri finely dentate, striae moderately crenate-punctate, intervals nearly flat, with minute scattered punctures, lateral intervals not different. Mesosternum shagreened as usual, carinate between the coxae. Metasternum smooth, shining, with rather close, scattered, very minute punctures, midline long, not deeply impressed, vaguely microreticulate outward to sides, metasternal triangle similarly sculptured, not deeply impressed. Abdominal sterna convex, smooth, shining, with scattered, very fine punctures at middle, some very moderate punctures and a vaguely uneven surface at extreme sides, first visible sternum with very fine posterior marginal line, the following sterna very finely fluted along anterior margin, middle three sterna subequal in length, 5th sternum about three-fourths as long. Pygidium smooth, shining, with rather close, unevenly spaced, fine punctures mostly over basal half. Anterior femora with perimarginal groove, surface shining, with scattered, very fine punctures. Middle and hind femora smooth, polished, with minute, scattered punctures, without posterior marginal line. Posterior apical tibial fringe of seven setae, without accessory spine. First posterior tarsal segment slightly longer than long spur and slightly longer than following three segments combined.

Allotype Male: Length 3.5 mm; width 1.6 mm. Dissected and broken. The only differences noted between the holotype and allotype are that the latter has a longer, narrow pygidium with several close coarse punctures along the basal margin and a much shorter 5th abdominal sternum.

HOLOTYPE.—USNM 71733.

TYPE-LOCALITY.—South Carolina: Colleton County, 5 mi E of Canadys, State Highway 61, along Edisto River, 19–22 May 1968, O. L. Cartwright.

SPECIMENS EXAMINED.—Seven.

DATES COLLECTED.—May 19 to June 7.

DISTRIBUTION (Figure 2).—Allotype and four paratypes (three completely dissected) collected with the holotype. One paratype, South Carolina, Colleton County, 3 mi SW of Williams near junction of State Highways 64 and 645, 7 June 1945, O. L. Cartwright.

REMARKS.—*Ataenius edistoi* is another of a considerable group of species closely similar to *A. figurator* Harold. All have a black or dark brown, highly polished surface and a convex noneroded pygidium, although a few show some punctures or slightly roughened surface. *Ataenius edistoi* is slightly broader than *A. figurator* and not quite as broad as *A. saxatilis*. It is recognized by the punctate pygidium.

All of the specimens were collected under surface litter on sandy but hard ground along the roadsides. Apparently neither *A. edistoi* nor *A. saxatilis* are attracted to lights, at least under certain conditions, for I have run lights and light traps at the same time and place they were collected but failed to get either at the lights.

6. *Ataenius saxatilis* Cartwright

Ataenius saxatilis Cartwright, 1944:29.

DESCRIPTION.—Length 3.5 to 4.6 mm; width 1.6 to 2.1 mm. Oblong, convex, strongly shining, piceous; sides of pronotum, margin of clypeus, and legs dark castaneous, antennae pale testaceous. Head strongly convex, very finely reflexed margins of clypeus broadly, evenly rounded each side of rather shallow median emargination, sides weakly arcuate to genal suture, genae rounded, distinct; clypeal surface concave close behind median emargination, feebly wrinkled and very finely punctate over anterior third, very minutely punctate at middle and base, front with rather wide band of close, moderate punctures separated by one diameter or twice their diameters. Pronotum about one and one-half times as wide as long, sides and base finely margined, without marginal setae, anterior angles obtuse, posterior angles broadly, evenly rounded from sides into base, highly polished surface with generally distributed, sparse, irregularly spaced, moderately coarse punctures separated on disc by one to four or five diameters, slightly coarser and closer at sides, and with interspersed, similarly distributed, minute punctures throughout. Elytra about one and two-thirds as long as wide, humeri not noticeably dentate, sides not quite parallel, widest slightly beyond middle; striae fine, not deep, strial punctures finely crenating the intervals on each side, the intervals almost flat, highly polished, microscopically punctate, lateral intervals not different. Mesosternum shagreened, with fine sculpture and very fine, short, appressed hair; finely carinate between the coxae. Metasternum, abdomen, and legs shining, minutely punctate. Metasternal midline fine, shallow. The usual anterior marginal fluting of abdominal sterna so fine as to be invisible except under high magnification. Pygidium convex, smooth, polished with a few scattered, very fine punctures. Anterior femora with weak anterior groove, without posterior marginal groove. Middle and posterior femora without posterior marginal groove. Apical fringe of posterior tibia with nine close, uniform setae, without accessory spine; long spur, first tarsal segment, and following three segments combined all about equal in length. The male has the 4th and 5th abdominal sterna shortened, 4th sternum about two-thirds as long as the preceding and the 5th two-thirds as long as the 4th. In the female the 4th abdominal sternum not shortened, the pygidium less convex and not as long as in the male.

HOLOTYPE.—USNM 56942.

TYPE-LOCALITY.—Bogg's Rock, Liberty, South Carolina.

SPECIMENS EXAMINED.—450.

DATES COLLECTED.—June 14 to September 1.

DISTRIBUTION (Figure 4).—*Georgia:* Flat Rock (Flat Rock Creek, 7½ mi E of Columbus), Stone Mtn. *North Carolina:* Buck's Forest (Transylvania County), High Falls (Little River, Transylvania County). *South Carolina:* Bald Rock (4 mi S of Caesar's Head), Beverly, Forty Acre Rock (Lancaster County), Haile Gold Mine (Lancaster County), Jefferson, Lancaster, Liberty (Bogg's Rock), Pinnacle Mtn., Table Rock Mtn.

REMARKS.—*Ataenius saxatilis* is closely allied to *A. figurator* Harold; however, it is a more robust species and differs in general shape. *Ataenius saxatilis* increases noticeably in width from head to slightly beyond the middle of the elytra, whereas *A. figurator* is more slender and parallel. The clypeus is more widely rounded and without even a suspicion of angulation each side of the median emargination in *A. saxatilis.* In *A. figurator* the clypeus on each side of the median emargination is more sharply rounded, usually with an evident angulation, frequently with a noticeable denticle.

Ataenius saxatilis is found in the sand washed down to the edges of pockets or islands of soil and vegetation on outcroppings of bare, weathered areas of granite or gneissic rock, or in the sand and soil around the lower edges of such areas of rock. Jerath (1960:73) described the larva.

7. *Ataenius figurator* Harold

Ataenius figurator Harold, 1874a:24.—Horn, 1875:142; 1887: 79.—Schmidt, 1922:435.—Cartwright, 1964:103.

DESCRIPTION.—Length, 3.3 to 4.3 mm; width 1.3 to 1.7 mm. Polished, shining black, elongate-parallel, convex, legs and ventral side reddish. Head moderately convex, clypeus broadly rounded with only the barest trace or suspicion of an angulation or tooth each side of a broad, shallow, median emargination, sides nearly straight to rounded genae, edge finely reflexed; surface finely, transversely wrinkled anteriorly, a narrow, transverse, relatively smooth, minutely punctate band above greatest convexity and anterior to a basal band of close, moderate punctures, irregularly placed but generally separated by less than their diameters. Pronotum convex, two-fifths wider than long, anterior angles rather sharply rounded, posterior angles very broadly rounded, sides and base finely margined, edge entire without marginal setae; surface with scattered, moderately coarse punctures generally separated by their diameter or more, some intermixed, scarcely visible, minute punctures, narrowly impunctate basally and in posterior angles. Elytra convex, without humeral denticles, nearly parallel-sided, one-half longer than wide, nearly two and one-half times as long as pronotum; striae moderately fine, finely crenate-punctate, intervals weakly convex, not different laterally, surface with irregularly placed, moderately close, extremely minute punctures. Underside smooth and shining. Mesosternum weakly carinate between the coxae. Metasternum with fine, weakly impressed midline; disc with minute, scattered punctures, very slightly roughened at extreme sides and in the shallow metasternal triangle. Hind coxal plates similarly roughened. Abdominal sterna smooth and shining, slightly roughened at extreme sides, finely fluted along anterior margins. Pygidium smooth, polished, very minutely punctate, smoothly convex without trace of eroded surface. Anterior femora with barely a trace of marginal line anteriorly, none posteriorly. All femora smooth and shining but with extremely minute, scattered punctures. None with posterior femoral lines. Posterior tibia without accessory spine, tibial fringe of six setae. First posterior tarsal segment slightly longer than long spur and noticeably longer than following three segments combined. In the females the terminal abdominal sternum is nearly as long as the penultimate sternum but in the male the terminal sternum is much shorter, only about half as long as the preceding sternum.

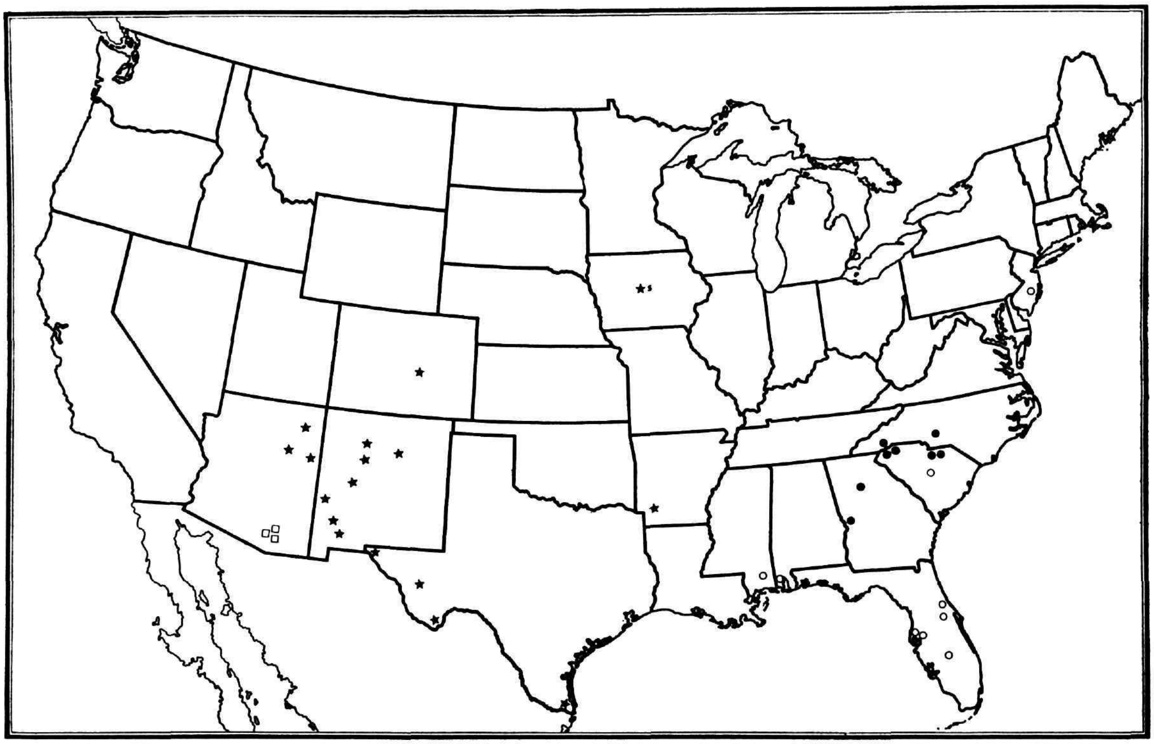

FIGURE 4.—Distribution of *Ataenius rugopygus*, new species, *A. saxatilis* Cartwright, *A. sabinoi*, new species, and *A. insculptus* Horn.
★ *rugopygus* ● *saxatilis* □ *sabinoi* ○ *insculptus*

LECTOTYPE.—In Muséum National d'Histoire Naturelle.

TYPE-LOCALITY.—Louisiana.

SPECIMENS EXAMINED.—459.

DATES COLLECTED.—May 15 to October 29.

DISTRIBUTION (Figure 5).—*Alabama:* Auburn, Dadeville, Florence, Helena, Killen. *Arkansas:* Drew County, Hope Experiment Station (Hempstead County), West Memphis, Taylor (Lafayette County), Tuckerman (Jackson County). *District of Columbia:* Washington. *Florida:* Blountstown, Tall Timbers Research Station (Leon County). *Georgia:* Arlington, Atlanta, Beachton, Cornelia, Demorest, Tifton. *Indiana:* Grantsburg, Hovey Lake. *Kansas:* Edwards County, Gray County, Hamilton County, Meade County, Medora, Mt. Hope, Mulvene, Reno County, Sedgewick County, Wallace County, Wichita County, Wyandotte County. *Kentucky:* Louisville, St. Mathews. *Louisiana:* Alexandria, Algiers, Baton Rouge, Calcasieu, Gueyden, Harahan, Morgan City, New Orleans, Patterson, St. Mary Parish, Sam Houston State Park, Slidell. *Maryland:* Beltsville, Breton Bay, College Park, Glen Burnie, Hebbville, Scotland, Silver Spring, Upper Marlboro. *Mississippi:* Grenada, Hinds County, Jackson, Leflore County, Ludlow, Utica. *Missouri:* Sikeston. *New Jersey:* Cape May. *New Mexico:* Bernalillo, Chaves County. *North Carolina:* Camp Lejeune, New River (Marine Corps Air Facility), Raleigh, Swan Quarter. *Oklahoma:* Broken Bow, Enid, Erick, Lake Texhoma (near Willis), Noble County, Oklahoma City, Payne County, Ponca City, Union City, Watts. *Pennsylvania:* Philadelphia. *South Carolina:* Anderson, Blackville, Camden, Charleston, Chester, Clemson, Columbia, Florence, Gramling, Greenville, Lancaster, Litchfield Beach, Little River (Salem), Myrtle Beach, Palmetto, Ritter, Seneca, Summerville, Tigerville, Yemassee, York. *Tennessee:* Backbone Rock, Burrville, Harrison Bay State

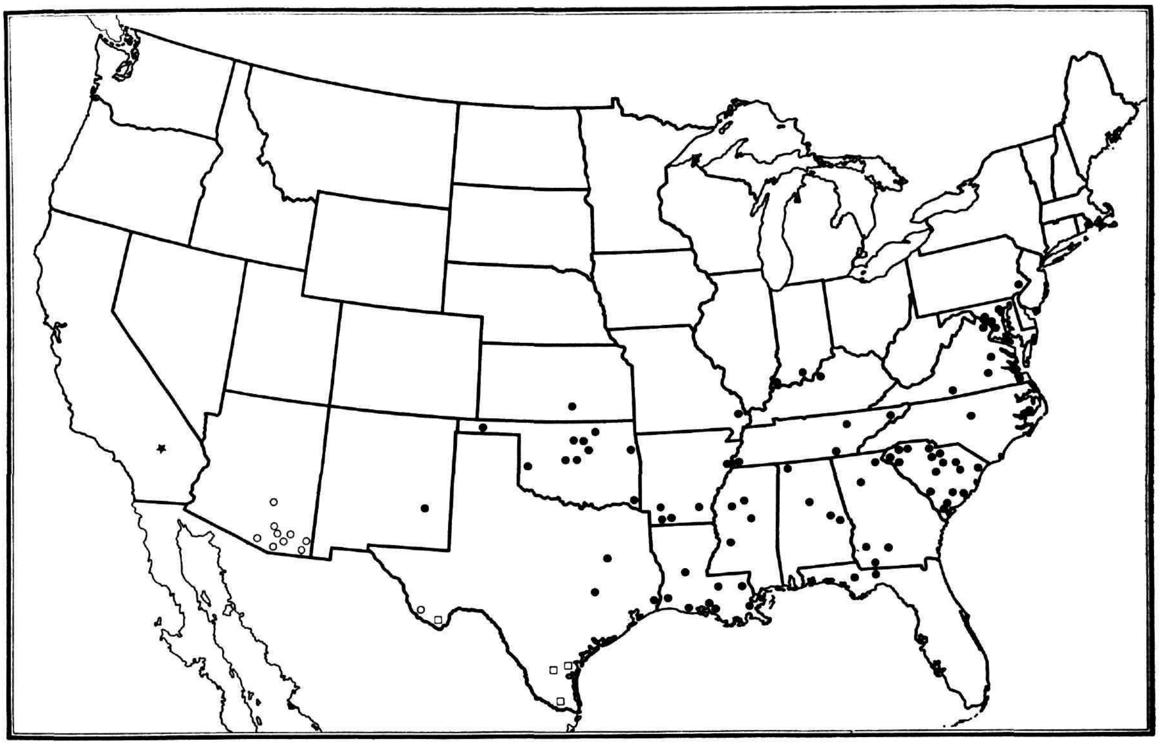

FIGURE 5.—Distribution of *Ataenius semipilosus* Van Dyke, *A. figurator* Harold, *A. vandykei*, new species, and *A. convexus* Robinson.
o *semipilosus* ● *figurator* ★ *vandykei* □ *convexus*

Park (Hamilton County), Memphis, Pulaski. *Texas:* Alice, Anahuac, Beeville, Brownsville, College Station (Brazos County), Columbus, Corpus Christi, Cotilla, Edna, Elkhart (10 mi SW), Harlingen, Hidalgo County, Houston, Kingsville, Lolita, Moore, Orange, San Diego, Sherman, Sinton, Victoria, Weslaco, Wharton. *Virginia:* Arlington, Chatham, Hampton, Lorton, Norfolk, Petersburg, Richmond.

REMARKS.—*Ataenius figurator* is one of a complex of very similar, closely related species occurring from the United States south to Argentina. These species are difficult to define and to separate in many cases. Several new species are described in the following pages and there may still be others included in the distribution given for *A. figurator.*

8. *Ataenius parkeri,* new species

DESCRIPTION.—*Holotype Male:* Length 4.3 mm; width 1.5 mm. Very elongate, parallel, piceous, anterior margin of pronotum, anterior margin of head, and legs reddish, strongly shining, polished. Head convex, a low, sharp, widely based tooth each side of the wide, shallow, median emargination, finely reflexed sides weakly arcuate to slightly depressed, rounded genae; clypeal surface narrowly, slightly concave, smooth around anterior margin, disc transversely wrinkled, frontal area with a somewhat irregular transverse band of very moderate punctures separated by their diameters or less, occiput smoother with fewer punctures. Pronotum convex, length 1.2 mm, width 1.4 mm, finely margined, edge entire without setae or crenations, anterior angles narrowly but obtusely rounded, hind angles obliterated, the arcuate sides smoothly rounded into base; surface with mixed, very moderate punctures and intermixed, extremely minute punctures, the moderate punctures are irregularly scattered over much of the surface but more numerous about halfway toward the sides, very few on middle disc and near the margins, noticeably absent posteriorly around sides and posterior angles. Elytra long, parallel, length 2.6 mm, width 1.5 mm, humeri very finely dentate, striae fine, moderately deep, strial punctures as wide as striae, slightly crenating sides of intervals on each side, separated by about three times their diameters; intervals almost flat, only slightly more convex over apical declivity, lateral intervals not different, surface shining, polished but with scattered, very inconspicuous, extremely minute punctures under high magnification. Mesosternum shagreened with fine, alutaceous sculpture and fine, short, appressed hair, a very fine, sharp carina between the coxae. Metasternum smooth, shining, midline fine, scarcely impressed. Abdominal sterna smooth, polished, anterior margin finely fluted, first two sterna with a few minute to fine punctures near sides, 4th sternum about half as long as preceding sternum, 5th about three-fourths as long as 4th. Pygidium convex, shining, polished. Anterior femora without marginal grooves, the anterior edge with two long setae near trochanter, separated by about their length, set in a noticeable pore, outer half of margin flared in a thin, arcuate, almost transparent plate, surface smooth and shining. Middle and hind femora smooth, shining, without posterior femoral lines. First hind tarsal segment slightly longer than following three tarsal segments combined, subequal to long spur. Posterior tibial, apical fringe of seven setae, slightly unequal in length.

Allotype Female: Length 4.4 mm; width 1.5 mm. The greatest difference is in the terminal sterna of the abdomen, the 4th sternum being nearly as long as the preceding sternum, the 5th sternum about three-fourths as long as the 4th and the pygidium relatively much shorter than in the male. The allotype has a relatively longer first segment of the posterior tarsi.

Paratypes vary from 3.5 to 4.4 mm in length and 1.2 to 1.6 mm in width. Many specimens are dark red brown but otherwise there seems to be little variation except in the number of pronotal punctures, some specimens having relatively very few.

HOLOTYPE.—USNM 71734 (also allotype).

TYPE-LOCALITY.—Douglas, Arizona, at black light, 10–16 July 1968, J. H. Russell.

SPECIMENS EXAMINED.—362.

DATES COLLECTED.—May 25 to September 30.

DISTRIBUTION (Figure 3).—Paratypes. *Arizona* (346): "Arizona" (1), no date, C. Shaeffer Coll. (USNM). Bear Valley Ranch, Santa Cruz Mts. (3), black light, 2 August 1910, S. L. Wood, J. B. Karren, H. B. Shurtleff. Chiricahua Mountains (7): 2 August 1952, 7 August 1957, D. J. and J. N. Knull (3, OSU); 2 August 1961, L. J. Bottimer (3); 28 July to 7 August 1966, Karl H. Stephan (1). Cochise County (5): Near Portal (1), 28 July to 7 August 1966, K. Stephan; San Bernardino Ranch (4), no date, 3750 ft, E. G. Smit (3, U. Kans.), 3600 ft, no date, W. Nutting (1, Werner Coll.). Coyote Mountains (1): 4–7 August 1916 (M. Robinson Coll.). Douglas (121): July-September 1963, 10–16 July 1968, 7, 15 July 1969, 10, 25 August 1969, J. H. Russell (103); 23 August 1952, B. Malkin and Vet (10); August, F. H. Snow (2); 30 September 1957, B. Benesh (2); 13, 20 September 1957, W. Rosenberg (4). Dragoon Mountains, Cochise Stronghold (2): 11 August 1954, F. G. Werner (1); 25–27 July 1955, G. D. Butler and F. G. Werner (1). Huachuca Mountains (3): Sunnyside Canyon, 8 August 1970, 1 September 1970, K. Stephan (2); no other data (1). Madera Canyon, Santa Rita Mtn. (1), 31 July 1954, F. G. Werner. Nogales (39): 23 July 1940, 8 August 1950, 7 August 1952, J. J. and J. N. Knull (3); 7 July 1949, 4 August 1953, 30 July 1957, D. J. and J. N. Knull (35, OSU); 17 August 1947, F. H. Parker (1, Howden Coll.). Oracle (1), 4500 ft, 25 July 1917, Wheeler (MCZ). Patagonia (33): 5 July 1936, M. Cazier (1); 10 July 1936, A. T. McClay Coll. (15); 21 August 1940, F. W. Nunenmacher (3); 11 August 1954, 21 July 1955, 8 August, R. Schmitt (8, Werner Coll.); 2 August 1954 (1); 3 August 1958, R. H. Arnett, Jr. (1); no date, E. S. Ross (2, Saylor Coll.); 2 August 1953, J. J. and J. N. Knull (1, OSU). Near Patagonia, Santa Cruz County (1), no date, R. H. Arnett, Jr. Patagonia Mountains, west slope (2): 4400 ft, 27 July 1949, F. W. Werner and W. Nutting (1); 2 August 1953, D. J. and J. N. Knull (1, OSU). Pena Blanca (9): black light, 5 August 1964, J. Stibick (7); 21 July 1969, R. H. Arnett (1); no date (Santa Cruz County), R. H. Arnett, Jr. (1). Pena Blanca Canyon (13), Pajarito Mountains, black light, 28 July 1970, K. Stephan. Pima County (51): Colossal Cave Park (11), 4–11 August 1970, K. Stephan;

Robles Ranch (40), 12 August 1947, Gillogly. Portal (12): 16 June 1956, Ellen Ordway (9); flood debris, 2 August 1961, L. J. Bottimer (3). Ruby (1), 7 August 1952, D. J. and J. N. Knull Knull (OSU). Safford (4), light trap, 23 June, 1 July 1954, F. G. Werner (Werner Coll.). San Carlos (1), 27 August 1935, Parker (M. Robinson Coll.). San Pedro River, Fairbanks (1), 6 September 1927, J. A. Kusche. Santa Catalina Mountains (6): Bear Canyon, 30 July 1970, K. Stephan (1); Sabino Canyon, July 1949, D. J. and J. N. Knull (1, OSU); Sabino Canyon, August 1955, F. G. Werner and G. D. Butler (3); foothills, 19 August 1970, K. Stephan (1). Sycamore Canyon (2), Santa Cruz County: 2 August 1958, R. H. Arnett, Jr. (1); near Ruby, 10 August 1955, F. G. Werner and G. D. Butler (1). Tucson (23): 21 July, 2 August 1970, K. Stephan (2); at light, 9 August 1928, R. B. Streets (1, Mank Coll., Cornell Univ.); 20 July, Hubbard and Schwarz (5); no date, Wickham (6); no date, H. Soltau Coll. (2, USNM); no date, Psota Coll. (6, Field Museum); no date, Cartwright Coll. (1, USNM). Tucson Mountains (1): 1 August 1950, D. J. and J. N. Knull (OSU). Wilcox (1): 24 July. Wilcox Playa, Cochise County (1), 29 August 1970, K. Stephan. *New Mexico* (13): Rodeo (13 mi N), 16 June 1956, H. and A. Howden (Howden Coll.). *Texas* (1): San Diego, 25 May, Hubbard and Schwarz. *Mexico:* Sonora (1): Hermosillo, 19–20 September 1952, B. Malkin.

REMARKS.—In lateral view the pronotum is evenly rounded into the base (Figure 1*b*), while *A. duncani* is more angulate, posteriorly (Figure 1*c*).

This species is named in honor of Mr. Frank H. Parker of Globe, Arizona, a well-known collector of Arizona Coleoptera with whom I have exchanged specimens since 1932.

9. *Ataenius rugopygus*, new species

DESCRIPTION.—*Holotype Male:* Length 4.0 mm; width 1.7 mm. Elongate, parallel, shining, dark reddish brown, only moderately convex. Head moderately convex, clypeal edge finely reflexed, sharply triangularly dentate each side of wide, shallow, median emargination, sides weakly arcuate to obtusely rounded, right-angled genae; surface finely but roughly, transversely wrinkled, the wrinkles broken into short segments, frontal area closely, moderately punctate, punctures separated by their diameter or less. Pronotum 1.5 mm wide by 1.0 mm long, anterior angles obtuse, posterior angles broadly rounded, sides straight, sides and base finely margined, not fimbriate or crenate; surface throughout with close, quite evenly distributed, mixed moderate and minute punctures, the moderate punctures separated by less than one to one or two times their diameters. Elytra 2.6 mm by 1.7 mm wide, humeri not dentate, elytral striae fine, moderately deep, strial punctures fine, weakly crenating both sides of the weakly convex intervals, lateral intervals not different, surface extremely minutely punctate. Mesosternum shagreened with fine alutaceous sculpture and short, very fine, appressed hair, carinate between the coxae. Metasternum shining, midline weakly impressed, disc with close, minute punctures, slightly roughened at sides; metasternal triangle quite shallow, very finely roughened. First visible abdominal sternum with barely a trace of posterior marginal line, remaining four sterna with fine, inconspicuous fluting along anterior margins, surface smooth, polished with barely a trace of a few scattered, very shallow, inconspicuous punctures near sides. Fourth sternum shortened at middle, about four-fifths as long as preceding sternum, the 5th sternum about half as long. Pygidium very convex, shining, but the surface very rough and uneven, not punctate. Anterior femora with indistinct anterior groove, posterior groove absent, surface smooth, shining, polished. Anterior tibia wide, short, upper surface shining, polished, spur long, opposite middle of second lateral tooth, tarsi unusually long, the first segment extending to tip of the spur and as long as following three segments combined. Middle femora smooth, polished, with some minute, scattered punctures, three coarse setigerous punctures at knee, without posterior marginal line. Posterior femora same as middle but lacking the coarse punctures at knee. Apex of posterior tibia with fringe of six, not-closely-spaced setae, without accessory spine. First posterior tarsal segment a little longer than long spur and equal to length of the following three segments combined.

Allotype Female: Length 4.2 mm; width 1.7 mm. The 4th abdominal sternum equally as long as the 2nd and 3rd sterna, and the pygidium is relatively not quite as long as in the male. No other differences were noted.

HOLOTYPE.—USNM 71735.

TYPE-LOCALITY.—Texas, Davis Mts., 27 May 1935, J. N. Knull (Cartwright Coll.).

SPECIMENS EXAMINED.—106.

DATES COLLECTED.—April 30 to August 14.

DISTRIBUTION (Figure 4).—Paratypes. *Arizona* (12): "Arizona" (2), H. Soltau Coll. (USNM). Chinle (3), 26 July 1935, Bruer Coll. (MCZ). Entrance, Chiricahua National Monument (2), Chiricahua Mts., horse dung, 2 July 1956, H. and A. Howden. Nogales (1), 17 August 1947, F. H. Parker (Howden Coll.). St. John, Apache County (3), at light, 29 May 1959, R. S. Beal (Beal Coll.). Winslow (1), 31 July, Barber and Schwarz. *Arkansas* (2): Hope, 30 April 1925, 7 May 1926, Gehring Coll. (MCZ). *Colorado* (1): Colorado Springs, 15–30 June 1896, 6000–7000 ft (Casey Coll., USNM). *Iowa* (5): "Iowa," Casey Coll. (USNM). *New Mexico* (24): "New Mexico" (2, includes allotype), T. Pergande (USNM). Albuquerque (3): July 1888, Wickham Coll. (1, USNM); no date, M. Robinson Coll. (1, USNM). City of Rocks State Park (1), 17 July 1959, K. V. Krombein. Deming (3), 22 July, Hubbard and Schwarz. Glenwood, Catron County (1), 22 June 1941, A. T. McClay. Jemez Mountains (3), 21 July, 8 August, Jos. Woodgate (J. W. Green Coll.). Las Vegas (7), 13, 14 August 1907, Barber and Schwarz. Magdalena (2), no date, Strickler (KSC). Socorro (2), 22 July 1933, W. Benedict (Snow Museum). *Texas* (61): "Texas" (3), no date, Casey Coll. (USNM). Big Bend National Park (14): Persimmon Gap (1), 2900 ft, 20 May 1959, Howden and Becker; Boquillas (7), 1850 ft, light, 13, 17, 23 May 1959, Howden and Becker; Nine Point Draw (5), 2600 ft, light, 20 May, Howden and Becker. Brownsville (1), light, 9 May 1904, H. S. Barber. Chisos Mountains (1): 23 July, J. W. Green (J. W. Green Coll.). Davis Mountains (16): 27 May 1935, J. N. Knull (5, USNM); 8 June 1939, D. J. and J. N. Knull (1, USNM); 24 June 1956, 14 July 1957, 19 June 1958, D. J. and J. N. Knull (4, OSU); Jeff Davis State Park (6), 19 July 1968, W. H. Tyson. Del Rio (1): 25–26 April 1959, Becker and Howden. El Paso (3): no date, Wickham Coll. (2, USNM); 19 July 1932, E. Ward Thompson (1, MCZ). Fort Davis (20): carrion, 13 July 1956, H. and A. Howden (2); 4 mi W, light, 15 July 1956, light, 30, 31 May 1959, Howden and Becker (18). Laredo (2): 22–23 July 1960, H. F. Howden.

REMARKS.—Paratypes vary from 3.8 to 5.0 mm in length and 1.6 to 1.9 mm in width. Some specimens show pygidial punctures as well as an uneven surface, and some are distinctly punctate with very little other sculpture. *Ataenius rugopygus* is placed in the *figurator* group of species, most of which have a convex, shining, polished pygidium.

10. *Ataenius duncani*, new species

FIGURE 1c

DESCRIPTION.—*Holotype Male:* Length 4.1 mm; width 1.5 mm. Elongate, parallel, moderately convex, polished, piceous, legs reddish. Head convex, margin strongly, sharply, triangularly dentate each side of shallow, arcuate emargination, sides straight to sharply rounded right-angled genae, edge finely reflexed; clypeus finely, transversely rugulose except for a band of fine, close punctures just in front of the frontal basal band of close, moderate punctures, generally separated by their diameters or less. Pronotum convex, 1.1 mm long, 1.5 mm wide, sides arcuate, sides and base finely margined, without marginal setae, anterior angles narrowly rounded, posterior angles very broadly, smoothly rounded, surface with scattered but rather evenly distributed, deep, moderate punctures, usually separated by one to three or four times their diameters. Scutellum normal. Elytra 2.5 mm long and 1.5 mm wide, humeri finely, not conspicuously dentate, striae moderately deep, finely crenate-punctate, the punctures separated by four or five times their diameters, the punctures as wide as the striae; intervals flat, the 10th interval slightly convex, surface smooth, impunctate. Mesosternum finely carinate between the coxae. Metasternum smooth, shining, midline fine, long, not deeply impressed, a trace of alutaceous sculpture at extreme sides, metasternal triangle each side not deeply impressed or sharply delineated. Abdominal sterna smooth, shining, very finely fluted along anterior margins, fluting slightly deeper and longer over lateral fourth; 4th sternum noticeably shorter at middle, 5th sternum deeply, finely fluted in front and only half as long as preceding sternum at middle; pygidium shining, polished, convex, twice as long as 4th abdominal sternum at middle. Anterior femur with fine marginal groove only along anterior margin, surface smooth, polished. Middle and hind femora similarly smooth, polished, and without marginal lines. Posterior tibial fringe of seven setae, without accessory spine, first posterior tarsal segment one-fourth longer than the long spur and about one-fourth longer than the following three segments combined.

Allotype Female: Length 4.6 mm; width 1.8 mm. About the only noticeable difference from the male is in the pygidium and 5th abdominal sternum, which are about equal in length and only slightly shorter than the 4th sternum.

HOLOTYPE.—USNM 71736.

TYPE-LOCALITY.—Arizona, Tucson. Collected at black light 11 August 1968 by K. Stephan.

SPECIMENS EXAMINED.—309.

DATES COLLECTED.—May 23 to November 10.

DISTRIBUTION (Figure 2).—Paratypes. *Arizona* (239): "Arizona" (12), no other data. "Ariz." (5): no date, J. W. Green (3), Knauss Coll. (2, KSU). "So. Ariz." (1), no date, Duncan. Agua Fria (2), 6 August 1917. Arlington (near), Gillespie Dam, Maricopa County (3), black light, J. Stibeck. Avondale Ranch, Agua Fria River (10), 7 August 1917, Wheeler (MCZ). Chinle (2), 26 July 1935, Brues Coll. (MCZ). Chiricahua Mountains (38): 9, 16 July 1929, 14 June 1936, 26 July, 2 August 1952, 15, 29 July 1953, 24 July 1955, 27 August 1957, 9, 16, 30 July 1959, 7, 15 August 1959, D. J. and J. N. Knull (36, OSU); Chiricahua National Monument (2), 17 August 1952, Leech and Green (Iowa State College). Douglas (3), 24 August 1952, B. Malkin. Florence (5): 3, 19 June, 26 July, C. R. Biederman (4); 28 July 1917, Wheeler (1, MCZ). Fort Apache (1), 6000 ft, 1 August 1928, R. B. Streets (Werner Coll.). Fort Grant (2), 23 July, Hubbard and Schwarz. Kirkland (2), 4500 ft, Peoples Valley, Yavapai County, 22–24 August 1927 (Cornell Univ.). Nogales (3), 4, 7 July 1949, 4 August 1954, D. J. and J. N. Knull (OSU). Palomas, Yuma County (1), 8 August 1917, "C. V. Biol. Exp." (Cornell Univ.). Patagonia (4): 6 August 1936, M. Cazier (1); 5 July 1954, 11 August 1951, light trap, R. Schmitt (3, Werner Coll.). Phoenix (60): 3 August 1917, no other data (3); no date, G. E. Ball (6); no other data (8, USNM; 1, Field Museum; 23 Rutgers Univ.); 3 August 1917 (14, Cornell Univ.); no date, H. W. Wenzel (5, Field Museum). Pima County (8): Organ Pipe Cactus National Monument (3), 11 August 1955, G. D. Butler and F. G. Werner (Werner Coll.); Robles Ranch (5), 12 July 1947, McClay. Portal (8): 2, 5 August 1965, B. K. Dozier (7, B. K. Dozier Coll.); 28 July to 6 August 1966, Karl H. Stephan (1, Stephan Coll.). Safford (1), light trap, 23 June 1954, F. G. Werner (Werner Coll.). San Simon (1), 19 September 1957, B. Benesh. Santa Cruz Village, Cobabi Mtn. (1), 10–12 August 1916. Southwest Research Station, near Portal, Cochise County (8): 7, 11 July 1961, B. Benesh (2); 5400 ft, 8 July 1956, O. L. Cartwright (1); 31 July 1966, J. W. Tilden (5). Sunnyside Canyon, Huachuca Mts. (2), 8 August, 1 September 1970, K. Stephan. Tempe (2), 7 August 1922, E. W. Walter. Texas Pass, Dragon Mtn. (1), 21 July 1917, "C. V. Biol. Exp." (Cornell Univ.). Tucson (8): no other data (2, Field Museum); 1 September 1947, R. S. Beal (2, W. F. Barr); 20 July, Hubbard and Schwarz (1, USNM); 12 July 1935, A. A. Nichol (1); 10 November 1937, Flora Sands (1, Werner Coll.); 11 August 1968, black light, K. Stephan (1). Wilcox (8, includes allotype), 24 July, Hubbard and Schwarz. Wilcox Playa, Cochise County (37), 24 July, 29 August, 12 September 1970, K. Stephan. *California* (19): "California" (1), no date, Casey Coll. Blythe, Riverside County (10), 27 June, 12, 26 July 1946, W. F. Barr (W. F. Barr Coll.). Ripley, Riverside County (8), 24 July, W. F. Barr and P. D. Hurd. *Colorado* (1): Pueblo, 30 August 1949, G. H. Nelson (Nelson Coll.). *Kansas* (5): Hamilton County (2), 3350 ft, F. H. Snow (Drury Coll.). Reno County (1), no date, J. C. Warren (Field Museum). Sedgwick County (1), no date, J. C. Warren (Field Museum). Wyandotte County (1), no date, J. C. Warren (Field Museum). *New Mexico* (13): Albuquerque (1), 11 July 1954, W. Downes (Iowa State College). Bernalillo (7), 16 July 1922, 15 July 1923, F. Psota (Field Museum). Deming (3), 22 July, Hubbard and Schwarz (USNM). Las Vegas (1), 14 August 1901, Barber and Schwarz. Rodeo (18 mi N), Peloncillo Mts. (1), 5 July 1956, H. and A. Howden. *Texas* (31): "Texas," no other data (1, MCZ). Alpine (5), 1–15 June 1926, O. C. Poling (Cornell Univ.). Brewster County, Sunny Glen Ranch (1), 5000–7000 ft, May 1926, C. C. Poling (USNM). Dallas (1), no other data. Davis Mountains (8), 14–24 June 1957, D. J. and J. N. Knull (OSU). Eagle Pass (8), 2 July 1947, B. Malkin. El Paso (1), no date, Wickham Coll. (USNM). Hidalgo County (1), 23 May 1951, D. J. and J. N. Knull (OSU). Limpia Canyon, Fort Davis, Jeff Davis County (1), at light, 28 July 1969, W. Suter. San Diego (4), 25 May, Hubbard and Schwarz (USNM).

REMARKS.—This species is very close to *A. parkeri* but usually is black and darker than that species. It is also more heavily punctate on the pronotum, and the side margin of the pronotum shows a slight angle and is not so smoothly arcuate as in *A. parkeri* (Figure 1). The paratypes vary in length from 3.4 to 4.9 mm.

Ataenius duncani is named in honor of Douglas K. Duncan of Globe, Arizona, a naturalist and collector with whom I have corresponded for nearly forty years.

11. *Ataenius alternatus* (Melsheimer)

Oxyomus alternatus Melsheimer, 1844:137.
Ataenius alternatus.—Harold, in Gemminger and Harold, 1869:1066.—Horn, 1887:75.—Schmidt, 1922:442.

DESCRIPTION.—Length 4.0 to 4.9 mm; width 1.8 to 2.0 mm. Oblong, moderately convex, surface covered with a grayish brown, argillaceous coating. Head moderately convex; clypeus broadly emarginate, rounded each side, margin narrowly depressed anteriorly at middle, sides weakly arcuate, very finely reflexed; except for fine, rounded punctures in the anterior depression, head closely, coarsely punctate, the punctures elongate especially at sides where they may form lines, long axis of those of clypeus longitudinal, those of pronotal area transverse in direction; genae rounded, distinct but not prominent. Pronotum about three-fifths as long as wide, sides subparallel, not completely visible from directly above, finely margined laterally but without basal bead, margins entire but with very short, widely spaced marginal setae under high magnification; surface closely, shallowly, coarsely punctate throughout, only slightly smaller along anterior margin, in vague, scarcely depressed midline over basal half and in a similar vague lateral depression diagonally backward from lateral fovea, anterior angles very obtusely rounded, posterior angles broadly rounded, base sinuate. Elytra about two and one-half times as long as pronotum, striae deep, with punctures separated by twice their diameter but striae and punctures usually more or less masked by argillaceous coating, sutural and alternate intervals more acutely elevated and cariniform along the middle, the carinae narrowly, shiny black and usually broken into close, elongate tubercles, the flatter intervals also show similar shiny tubercles much more noticeable over posterior declivity, under high magnification elytral margin with very fine, very short setae spaced about twice their length; humeri moderately dentate. Mesosternum shagreened, covered with fine, short, recurved hair, carinate between the coxae. Metasternal midline with deep pit or pore at each end, discal surface covered with shallow, coarse punctures separated usually by their diameter or less, widely scabriculate laterally, metasternal triangle shallow and often indistinct. Abdominal sterna with close, shallow, finely alutaceous punctures generally separated by twice their diameter or less, the punctures usually masked by alutaceous sculpture laterally; anterior segments fluted along margin, each succeeding segment with increasingly wider fluting, flutings of 5th sternum fully half as long as total length of sternum. Eroded area of pygidium finely scabriculate, apically with fine, shining margin. Anterior femora with perimarginal groove, surface completely covered by close, fine-to-moderate punctures, frequently masked by coating. Middle femora finely, closely punctate basally, outer half or less masked by coating, posterior femoral line shallow, complete. Posterior femora elongate, subparallel-sided, otherwise similar to middle femora but with less coating, postfemoral line complete; first tarsal segment one-fourth longer than long spur and one-fourth longer than following three segments combined; tibial fringe with seven to nine very short fimbriae; without accessory spine.

HOLOTYPE.—In Museum of Comparative Zoology.

TYPE-LOCALITY.—"Pennsylvania."

SPECIMENS EXAMINED.—400+.

DATES COLLECTED.—March 6 to November 15.

DISTRIBUTION (Figure 6).—*Alabama:* Mobile. *Florida:* Alachua County, Arcadia, Archbold Biological Station, Bartow, Boynton, Capra, Childs (Highland County), Crescent City, Dunedin, Dunellon, Enterprise, Everglades National Park, Fort Myers, Gainesville, Gold Head Beach, Highlands Hammock State Park, Hillsboro, Indian River, Jacksonville, Jupiter, Kissimmee, Korishan

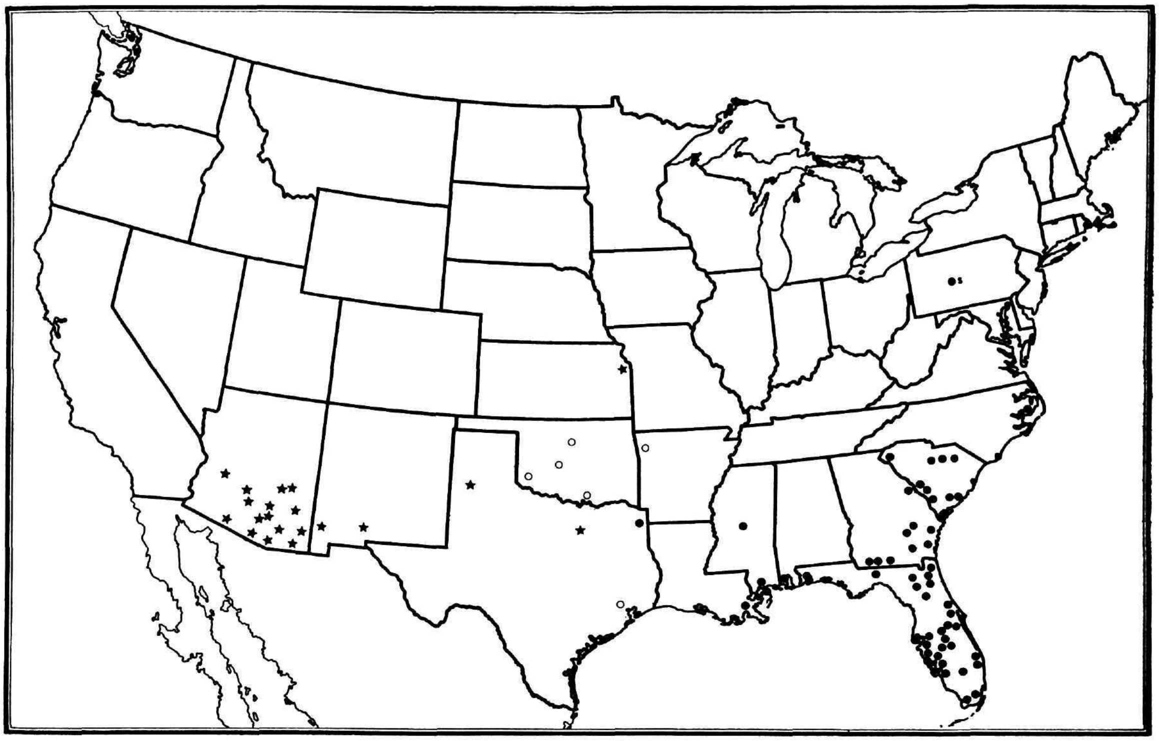

FIGURE 6.—Distribution of *Ataenius hirsutus* Horn, *A. alternatus* Melsheimer, and *A. oklahomensis* Brown.
★ *hirsutus* ● *alternatus* ○ *oklahomensis*

State Park, LaBelle, Lake Alfred, Lake City, Lakeland, Lake Letta (near Sebring), Lake Lucy, Lake Placid, Lake Wales, Mahogany Hammock, Marion County, Melbourne, Miami, Myakka River State Park (Sarasoto County), Oneco, Orlando, Pensacola, Punta Gorda, Sanford, Sarasota, Sebring, Silver Lake Recreational Area (Leon County), Tampa, Volusia County, Winter Park, Zolfo Springs. *Georgia:* Augusta, Beachton, Brunswick, Hazlehurst, Hinesville, Thomasville, Valdosta, Vidalia, Waycross. *Louisiana:* Harahan, Sam Houston State Park. *Mississippi:* Gulfport, Gulf View, Horn Island, near Ludlow (Leake County), Ocean City. *North Carolina:* Swan Quarter. *Pennsylvania* (type-locality). *South Carolina:* Aiken, Aiken State Park, Allendale, Blackville, Charleston, Clemson, Columbia, Florence, Hilton Head, Meredith, Summerville, Walterboro. *Texas:* Atlanta.

REMARKS.—The type of *A. alternatus* (Melsheimer) was collected in Pennsylvania, and the Blatchley Collection at Purdue University has a specimen labeled from Indiana. I have seen no other specimen from localities north of North Carolina. It is a common species in southeastern coastal states from North Carolina to Texas.

12. *Ataenius insculptus* Horn

PLATE 2*a*

Ataenius sculptilis.—LeConte, 1878:402 [not Harold, 1868: 86].

Ataenius insculptus Horn, 1887:70.—Schmidt, 1922:454.—Robinson, 1947:150.

DESCRIPTION.—Length 3.7 to 4.9 mm; width 1.7 to 2.3 mm. Convex, oblong, moderately shining, black, legs dark reddish brown. Head convex; clypeus finely, triangularly dentate each side of broad, shallow emargination, sides arcuate, genae sharply rounded, slightly more than right-angled, margin finely reflexed; surface slightly concave at anterior margin between teeth, elsewhere very convex with very fine, close, evenly distributed punctures, generally separated by their diameters or slightly more; frontal area densely, quite coarsely punctate, punctures practically contiguous. Pronotum about one and one-half times as wide as long, slightly wider anteriorly, sides slightly arcuate, anterior angles quite broadly rounded; posterior angles weakly emarginate, base weakly sinuate, posterior angles noticeably crenate but without noticeable fringe setae; surface closely punctate, mixed fine and moderate over central anterior disc, laterally more uniform in size, still larger in and posterior to lateral fovae where they are contiguous, midline broadly, vaguely impressed basally with punctures closer than in surrounding area, punctures very fine along anterior margin at middle. Elytra convex, sides slightly arcuate, humeri strongly dentate, seven-tenths as wide as long, pronotum about two-fifths as long; elytral striae broad and deep; strial punctures coarse, very slightly crenating sides of intervals, separated by four times their diameters; intervals narrowly flattened along each side of convex median carina, alternate intervals higher over apical declivity, 10th interval flat and finely alutaceous. Mesosternum weakly carinate between coxae. Metasternum with fine median line, disc with close, moderate punctures separated by less than their diameters, surface scabrous outward to sides, metasternal triangle not well defined, finely scabrous within. Abdominal sterna coarsely fluted along anterior margins, fluting wider on each succeeding sternum, those of 5th sternum deeper and half the length of the sternum, otherwise with scattered moderate punctures from side to side generally separated by about their own diameters, strongly alutaceous at extreme sides. Eroded areas of pygidium scabrous. Anterior femora with perimarginal groove, surface closely punctate anteriorly with disc scabrous. Middle and hind femora with close, very moderate punctures near coxae, gradually closer into scabrous surface toward knee, posterior femoral lines strong, deep, and complete. Posterior tibial fringe of eight or nine close, short setae, a short accessory spine of same length and an intervening seta between spine and spurs. First posterior tarsal segment one-third longer than long spur and one-third longer than three following segments combined. The penultimate sternum shorter at middle and the pygidium longer than in the female.

LECTOTYPE (present designation).—In Academy of Natural Sciences of Philadelphia, Type No. 3604.

TYPE-LOCALITY.—Tampa, Florida.

SPECIMENS EXAMINED.—49.

DATES COLLECTED.—April 7 to September 11.

DISTRIBUTION (Figure 4).—*Alabama:* Mobile County (swamp forest, W side Mobile Bay). *Florida:* Dunedin, Enterprise, Highland Hammock State Park, Orlando, Tampa. *South Carolina:* Cayce (near Columbia). *Mississippi:* Red Creek Wildlife Area (George County). *New Jersey:* Martha.

REMARKS.—The South Carolina specimens were collected under cow dung in a seepage area in woods. All others were collected under deer droppings in wooded areas. *Ataenius insculptus* superficially resembles *A. alternatus* (Melsheimer) and *A. cylindrus* Horn.

13. *Ataenius imbricatus* (Melsheimer)

Aphodius imbricatus Melsheimer, 1844:136.
Ataenius imbricatus.—Harold, in Gemminger and Harold, 1869:1066.—Horn, 1887:75.—Schmidt, 1922:443.—Chapin, 1940:20.—Petrovitz, 1962:131.
Ataenius sordidus Harold, 1869:103.—Horn, 1887:75.

DESCRIPTION.—Length 3.3 to 4.3 mm; width 1.6 to 2.0 mm. Dull, grayish brown to grayish black, legs dark brown; oblong, moderately convex; surface finely alutaceous, usually with more or less argillaceous appearance, covered with short, stubby setae, those of the elytral intervals closely spaced in longitudinal rows. Head convex, clypeus broadly rounded each side of moderately deep anterior median emargination, sides weakly arcuate to nearly straight, the genae rounded, edge finely reflexed; surface narrowly shining, smooth, and concave along anterior margin in front of close, fine punctures which gradually merge into close lines of united punctures over greatest convexity, at sides and base of clypeus the lines long and close, separated usually by less than their width; frontal area well marked by dense, much larger punctures; head punctures bear extremely short, inconspicuous setae. Pronotum one and one-half times as wide as long, about one-half as long as elytra, sides almost straight and parallel, margined laterally and basally, the edge weakly crenate with short, stubby setae generally separated by more than their length, anterior angles obtusely rounded, posterior angles rounded but distinct; surface, except for a slightly depressed median basal area and one (or sometimes two) small, short diagonal area(s) on each side, smooth, sometimes conspicuous; the entire surface covered with dense, very moderate, frequently inconspicuously setose punctures. The anterior angles project forward slightly, the base usually noticeably arcuate. Humeri strongly dentate. Elytra about twice as long as wide, sides curved inward around shoulders, anteriorly nearly straight and parallel. In freshly emerged specimens the elytral striae are moderately wide and deep, shining, with deep, moderate punctures separated by about three times their diameters, the intervals slightly crenated along inner margin; intervals on disc flat, increasingly convex toward sides except 10th interval, which is nearly flat, all are distinctly alutaceous and have a row of close, short, stubby setae along the outside margin, occasionally a few setae widely scattered along the inner margin also. Mesosternum weakly carinate between coxae. Metasternum with an unusually long, moderately fine and deep midline, finely alutaceous disc with close, shallow, moderate punctures separated by their diameter or less, roughly scabrous outward to sides, the metasternal triangle weak, shallow, and not well defined. Abdominal sterna minutely alutaceous, fluted along anterior margin, the fluting longer on each succeeding sternum, flutings at middle of 5th sternum much deeper and half as long as the sternum, closely, quite coarsely, shallowly punctate from side to side. Eroded area of pygidium scabrous, alutaceous. Anterior femora with perimarginal groove, surface rough, closely, setigerously punctate. Middle femora closely, setigerously punctate, posterior femoral line complete. Posterior femora similar but not quite as closely punctate, femoral line strong and complete. Posterior tibial fringe of five setae but the middle seta opposite the tarsus greatly reduced and very short, accessory spine lacking, first tarsal segment longer than long spur, longer than following three segments combined. The male pygidium is longer than that of the female.

HOLOTYPE.—In Museum of Comparative Zoology.

TYPE-LOCALITY.—"Pennsylvania."

SPECIMENS EXAMINED.—400+.

DATES COLLECTED.—March 6 to November 13.

DISTRIBUTION (Figure 7).—*Alabama:* Auburn, Dadeville, Gulf State Park, Mobile, Salt Mtn. (Clarke County). *Arkansas:* Devils Dam State Park, Hartford, Hope, Monte Ne Br. (Benton County). *Delaware:* Georgetown, Rehoboth. *District of Columbia. Florida:* Archbold Biological Station, Chipley (5 mi E), Daytona, Dunedin, Edgewater, Enterprise, Fort Myers, Gainesville, Haulover, Highlands Hammock State Park, Indian River, Key West, Kissimmee, Korishan State Park (Lee County), LaBelle, Lakeland, Lake Letta, Lake Placid, Lake Wales, Melbourne, Naples (9 mi N), Orlando, Pensacola, Perrine, Punta Gorda, Sanford, Silver Lake Recreation Area (Leon County), Stock Island, Tampa, Wakulla County, Washington County, West Palm Beach, Zolfo Springs. *Georgia:* Atlanta, Augusta, Demorest (Habersham County), Hinesville, Milner, Waycross. *Illinois:* "Illinois" (Ulke Coll., Carnegie Museum). *Indiana:* Grantsburg, Lake County, Tremont. *Kentucky:* Louisville, Wolf Creek Lake (Wayne County). *Louisiana:* Covington, Gueydan, Harahan, Sam Houston State Park, Shreveport. *Maryland:* Glen Burnie, Hebbville, Hyattsville, Lanham, Marlboro, Sherwood Forest, Tacoma Park. *Massachusetts:* Chicopee, Tingsboro. *Michigan:* Detroit, Midland County, Oakland County, Port Huron. *Minnesota:* Alexandria, Minneapolis, St. Paul. *Mississippi:* Gulfport, Horn Island, Lucedale, Ocean Springs. *Missouri:* Nevada (Vernon County). *Nebraska:* Brown County (extreme NW corner), Halsey, Holt County, Neligh. *New Hampshire:* "New Hampshire." *New Jersey:* Anglesea, Atlantic City, Ocean County, Prosportown, Sea Island City, Wildwood. *New York:* Peekshill, Rosedale. *North Carolina:* Balsam, Black Mtns., Buck Forest, Cedar Mtn., Clarkton, Falsom, Raleigh, Swan Quarter. *Ohio:* Holgate, Marietta. *Oklahoma:* Broken Bow, McCurtain County, Texhoma (near Willis). *Pennsylvania:* Philadelphia, Scarlet Hills. *South Carolina:* Blackville, Charleston, Clemson, Columbia, Florence, Folley Beach, Jocassee, Liberty, Sullivans Island, Yemassee. *South Dakota:* Elk Point. *Tennessee:* Cookeville, Reelfoot Lake. *Texas:* Anderson County, Columbus, Corpus Christi, Galveston,

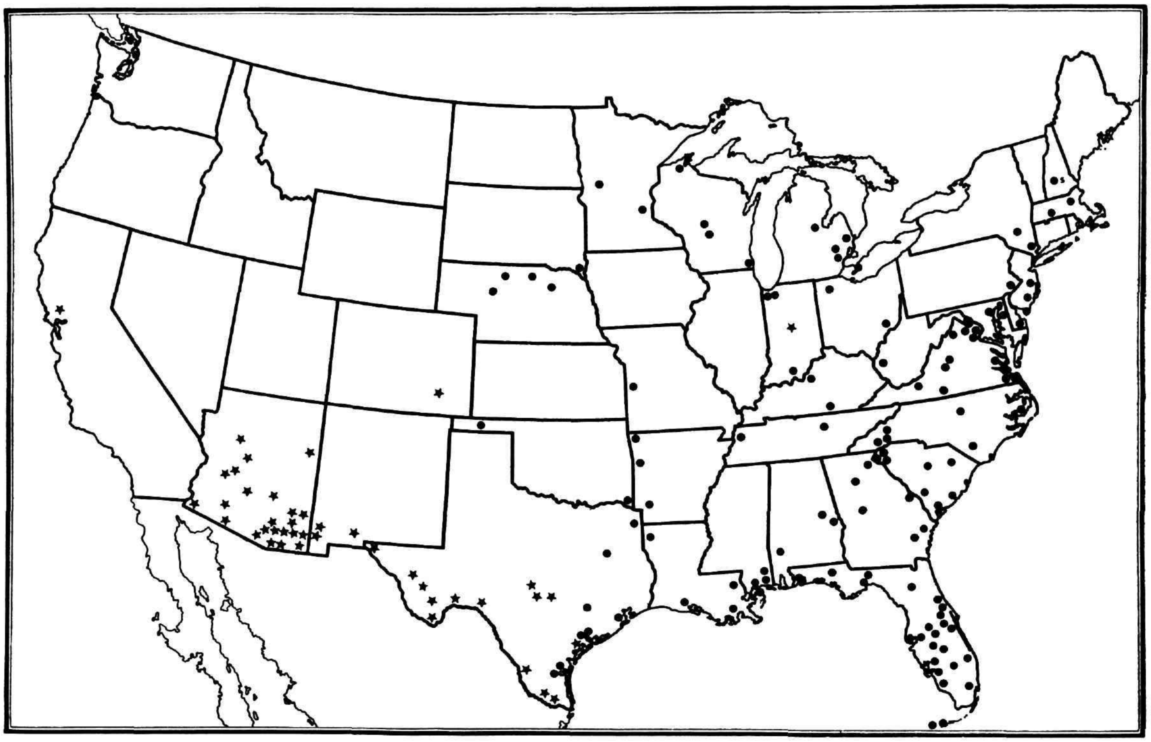

FIGURE 7.—Distribution of *Ataenius puncticollis* (LeConte) and *A. imbricatus* Melsheimer.
★ *puncticollis* ● *imbricatus*

Kingsville, Lake Refugio, Linden, Lolita, Victoria. *Virginia:* Big Cobbler Mtn. (Fauquier County), Blacksburg, Cape Henry, Chatham, Dumfries (Prince William State Park), Fort Myer, Fort Monroe, Middleburg, Nelson County, Norfolk, Rosslyn, Sweet Briar (Amhurst County), Suffolk (Dismal Swamp), Williamsburg. *West Virginia:* Hamlin, Orkway Springs. *Wisconsin:* Bayfield, Carol Beach (Kenosha County), Friendship (Adams County), Wood County. *Canada: Ontario:* Dunnville, Point Pelee.

REMARKS.—The most interesting feature of this species is the close resemblance of the posterior tibial fringe to that found in Australian species. Except for the known worldwide species obviously introduced into Australia, all Australian species I have examined have a fine hair in the tibial fringe opposite the first tarsal segment. In *A. imbricatus* the middle seta of the five setae in the fringe is opposite the tarsus, is much reduced, and is much shorter than the others. American species usually have the fringe setae all alike in size and length.

Ataenius imbricatus is placed in a group of very similar species, most of which occur in Central and South America.

Jerath (1960:78) described the larva of *A. imbricatus* (Melsheimer).

14. *Ataenius superficialis*, new species

PLATE 2*b*

DESCRIPTION.—*Holotype Male:* Length 3.6 mm; width 1.7 mm. Oblong-ovate, convex, covered with a gray argillaceous coating which does not adhere to the surface as tightly as in *imbricatus*, legs and anterior margin of clypeus reddish. Head convex, clypeal edge finely, not strongly reflexed, margin broadly rounded each side of a moderately deep median emargination, sides weakly arcuate to depressed, nearly right-angled genae; surface concave, smooth, shining, dark castaneous behind emargination, then above very quickly, closely from minute to shallowly coarsely punctate, the intervening spaces finely alutaceous, from middle of disc to sides and base the punctures are setigerous, larger, become elongate, crowded, many uniting to form lines, especially near front, the setae are very short and inconspicuous; front and occipital area densely covered with shallow, coarse, round punctures showing through the argillaceous coating, frontal-clypeal suture in part bare and unusually distinct. Pronotum 1.5 mm wide and 1.1 mm long, anterior angles obtuse, hind angles broadly rounded, sides feebly arcuate, sides and base without distinct marginal groove but sides very finely reflexed, sides and base with very short, stubby marginal setae separated at sides by twice their length, a little closer opposite humeri; surface everywhere with dense, coarse, setigerous punctures, the setae minute and inconspicuous, punctures a little finer near anterior margin; a flat, smooth, minutely alutaceous midline over posterior half and a short, dark, uncoated spot midway to sides, just posterior to midpoint between anterior and posterior margins. Elytra 2.4 mm long and 1.7 mm wide, convex, ovate, widest beyond middle, humeri finely dentate, striae deep, wide, mostly shining, except for deep strial punctures, the punctures not crenating the sides of the moderately convex intervals, each interval with a row of short, stubby setae along outside margin, occasionally a few setae along inner margin also, elytral margin with similar setae, the tenth interval not as convex. Mesosternum shagreened, with fine sculpture and the usual very fine, short, decumbent hair, sharply carinate between the coxae. Metasternal disc coarsely, closely, shallowly punctate, midline long, shallow, surface rough and scabrous outward to sides, metasternal triangle weakly developed, masked by rough sculpture. First visible abdominal sternum with fine posterior marginal line, remaining four sterna with fine fluting along anterior margin, longer on each following sternum, flutings of 5th sternum nearly half as long as sternum, surface very closely, shallowly, coarsely punctate with punctures within and surrounding area very finely alutaceous. All coarse punctures of underside minutely setigerous under high magnification. Pygidium with apical smooth margin very fine or possibly absent, surface otherwise finely, roughly alutaceous (covered by argillaceous coating in holotype). Fourth abdominal sternum half as long as preceding sternum; pygidium much longer than in female. Anterior femora with perimarginal groove, surface closely, very roughly sculptured, some setae visible in profile. Middle femora minutely alutaceous and coarsely, shallowly, setigerously punctate, the outer half closely, roughly punctate, posterior marginal line strong, deep, complete, with a marginal row of widely spaced, short, stubby setae. Posterior femora similar in every way except that the coarse punctures are generally separated by about twice their diameters and there are three or four long, stiff setae near the knee. Apical fringe of posterior tibia of four or five short, well-separated setae, without accessory spine. (The normal number of setae is five, with the middle one about half as long as the other four.) First segment of posterior tarsus noticeably longer than the long spur, the following three segments combined shorter than the long spur.

Allotype Female: Length 3.6 mm; width 1.7 mm. About the only differences from the male seem to be the longer 4th sternum and shorter pygidium. The allotype is almost completely denuded of the argillaceous coating, and surface sculpture can be seen much more clearly.

HOLOTYPE.—USNM 71737.

TYPE-LOCALITY.—Big Pine Key, Florida. Holotype, allotype, and five paratypes collected together under animal dropping (possibly from a racoon), 15 May 1959, O. L. Cartwright.

SPECIMENS EXAMINED.—Seven.

DATE COLLECTED.—May 15.

DISTRIBUTION (Figure 8).—Paratypes. *Florida:* Big Pine Key.

REMARKS.—*Ataenius superficialis* is closely related to *A. imbricatus* (Melsheimer) but is shorter, more oval in shape, and the argillaceous coating does not adhere so tightly.

15. *Ataenius miamii* Cartwright

Ataenius miamii Cartwright, 1934:200; 1941:33.

DESCRIPTION.—Length 3.2 to 4.2 mm; width 1.5 to 1.9 mm. Oblong-oval, convex, piceous, opaque, anterior margin of head and legs reddish, antennae testaceous. Head convex, clypeus broadly rounded

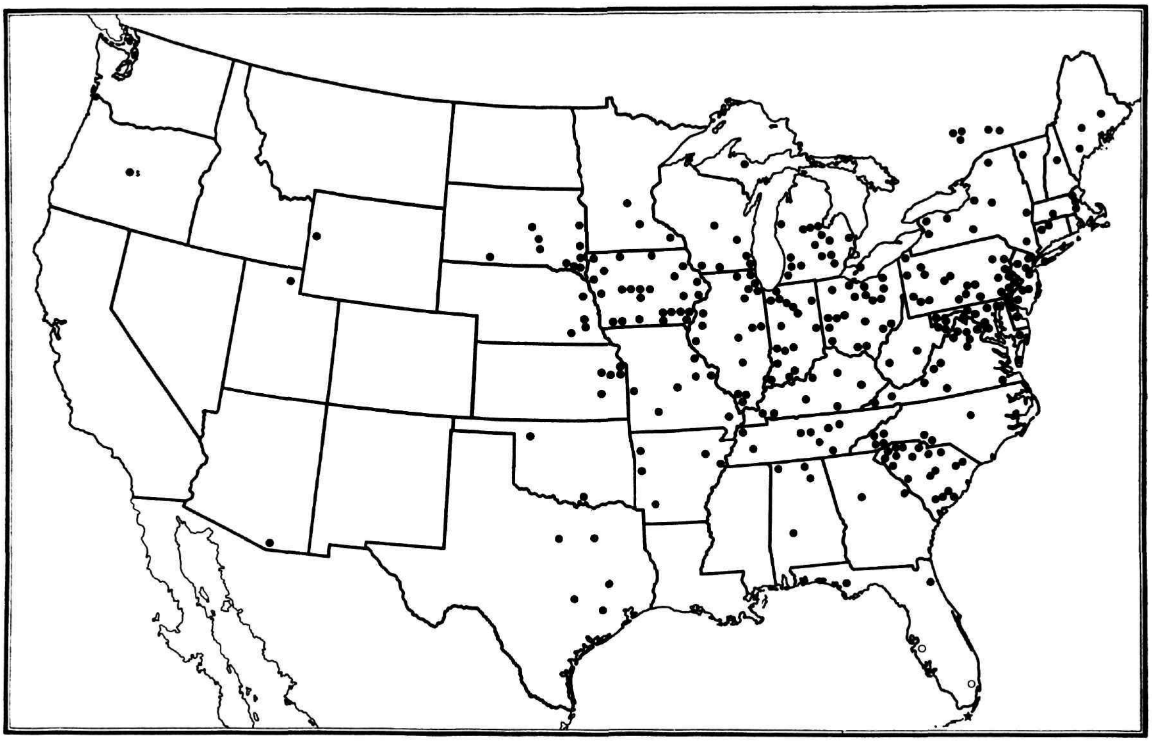

FIGURE 8.—Distribution of *Ataenius strigatus* (Say), *A. strohecker*i, new species, and *A. superficialis*, new species.
● *strigatus* ○ *strohecker*i ★ *superficialis*

each side of moderately deep, median emargination, sides arcuate to narrowly rounded genae, the genae greater than a right angle, clypeal margin weakly concave, more noticeably so at middle, edge very finely, inconspicuously reflexed; clypeal surface shining, narrowly impunctate around margin, elsewhere opaque, densely punctate, the punctures much finer anteriorly, outward from a few simple punctures at middle the very moderately coarse punctures coalesce into short, longitudinal lines, above the frontal suture the punctures round, slightly larger, practically contiguous. Pronotum averaging about 1.6 mm wide by 1.1 mm long, angles all obtusely rounded, sides subparallel, base evenly arcuate, sides and base finely margined, marginal setae very short and inconspicuous, surface densely, shallowly, moderately coarsely punctate throughout, slightly smaller over anterior disc, punctures minutely setigerous, especially at sides. Elytra convex, oval, averaging about 2.3 mm long by 1.7 mm wide, humeri strongly dentate, striae deep, strial punctures slightly crenating inner margin of intervals, subcarinately convex, outer margin of interval with row of shallow, moderate setigerous punctures, the setae short, semierect, lateral intervals not different from others, entire surface alutaceous. Mesosternum roughly alutaceous with short, recurved hair, sharply carinate between the coxae. Metasternum minutely alutaecous, midline long, moderately deep, disc with scattered, shallow, coarse punctures a little closer anteriorly but generally separated by about their diameter, scabrous outward to sides, metasternal triangle not deep or sharply defined. Abdominal sterna alutaceous, coarsely, shallowly, rather closely setigerously punctate, the setae very short, punctures separated by their diameter, fluting along anterior margin of 5th sternum nearly half as long as sternum. Pygidium with narrow, smooth apical lip, disc widely, roughly eroded. Anterior femora with perimarginal groove, surface finely scabrous with numerous, very short setae. Middle femora with numerous fine, setigerous punctures, the setae very short, postfemoral marginal line deep and complete. Posterior femora same as middle femora but with three to five coarse, setigerous punctures at knee, the conspicuous setae moderately long. Posterior tibial fringe of six setae, without accessory spine, first tarsal segment slightly longer than long spur, and longer than the following three segments combined. Fourth abdominal sternum shorter at middle in males and the pygidium relatively longer than in females.

HOLOTYPE.—USNM 50764.

TYPE-LOCALITY.—Miami, Florida.

SPECIMENS EXAMINED.—142+.

DATES COLLECTED.—March 20 to December 29.

DISTRIBUTION (Figure 9).—*Alabama:* Spring Hill. *District of Columbia. Florida:* Alachua County, Bell, Dunedin, Fort Myers, Gainesville, Miami, Pensacola, Punta Gorda, Sanford, Seminole County, Tampa. *Georgia:* Jekyll Island, St. Simons Island. *Illinois:* Olive Branch. *Maryland:* Flag Pond (Kenwood Beach). *Mississippi:* Biloxi (Keesler Field), Horn Island. *New Jersey:* Lakehurst. *New York:* Staten Island. *North Carolina:* Highlands (Satulah Mtn.). *South Carolina:* Aiken, Batesburg, Charleston, Clemson, Folly Beach, Isle of Palms, Lancaster, Nichols, Sullivans Island, Summerville. *Texas:* "Texas." *Virginia:* Fredericksburg.

REMARKS.—*Ataenius miamii* may be recognized by its dull surface, short suboval form with subcarinate elytral intervals, and very short inconspicuous pubescence. It may be confused with *A. imbricatus,* but *A. imbricatus* is longer and has flat elytral intervals and much more conspicuous pubescence. Although rather widely distributed in the eastern states it is usually not a common species.

16. *Ataenius havanensis* Balthasar

Ataenius havanensis Balthasar, 1938:56; 1952a:227.

Ataenius miamii.—Chapin, 1940:41 [not Cartwright, 1934: 200].

Ataenius fleutiauxi Paulian, 1947:42. [New synonomy.]

DESCRIPTION.—Length 3.5 to 4.2 mm; width 1.7 to 1.9 mm. Convex, elongate-oval, black or grayish black, anterior margin of clypeus and legs reddish brown. Head convex, clypeal margin finely reflexed, broadly rounded each side of strong, broad median emargination, sides moderately arcuate to rather sharply angled genae; surface of anterior fifth smooth and shining, middle convexity minutely, densely punctate anteriorly then gradually very finely punctate over a decreasing area to upper fourth, over basal fourth and down laterally to smooth margin densely covered with elongate punctures, many of which unite into long furrows especially toward sides basally; frontal and genal punctures dense, round, fine on genae, moderately coarse and shallow along front and base. Pronotum about two-thirds as long as wide, convex, sides and base slightly arcuate, fimbriate-crenate, moderately deeply margined, anterior angles obtusely angled, posteriorly the sides evenly rounded into base; surface densely, shallowly, minutely setigerously punctate, the punctures coarse, shallow, practically contiguous from anterior angles around and over basal half of pronotum, very gradually smaller and less close to anterior margin at middle but still separated by less than their diameters, those at anterior margin about half the size of those at base and about the same size as the frontal-basal punctures of the head but not as close. Elytra convex, oval, about three-fifths as wide as long, humeri dentate, elytral striae moderate, shining, strial punctures deep, intervals tectiform, the median ridge fine and shining, the flat slope each side minutely alutaceous, the outside slope with a row of short, recurved, quite inconspicuous setae, lateral intervals not noticeably different. Mesosternum shagreened with strong alutaceous sculpture and fine setigerous punctures, setae recurved as usual, strongly, sharply carinate between the coxae. Metasternum with strong, deep midline, disc with close, coarse, shallow setigerous punctures, scabriculate outward to sides, triangle moderate, scabriculate. First abdominal sternum margined posteriorly, remaining sterna fluted along anterior margin, increasingly wider posteriorly with fluting of terminal sternum half as long as sternum; surface of all sterna closely, shallowly, moderately coarsely, minutely setigerously punctate. Pygidium eroded, the margins finely cariniform, anterior femur with perimarginal groove, surface moderately closely setigerously punctate. Middle and hind femora not closely, shallowly, finely punctate, posterior marginal line strong and complete. Posterior tibial fringe of six short setae,

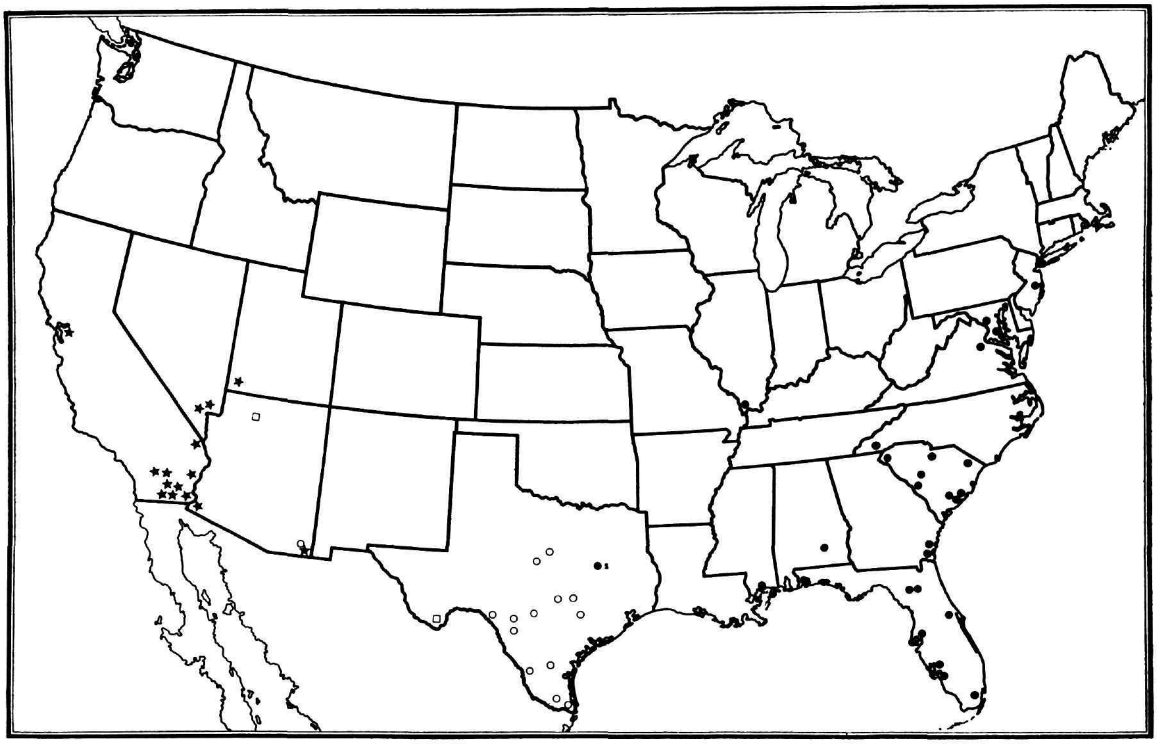

FIGURE 9.—Distribution of *Ataenius pseudohirsutus*, new species, *A. miamii* Cartwright, *A. barberi*, new species, and *A. californicus* Horn.
o *pseudohirsutus* • *miamii* □ *barberi* ★ *californicus*

without accessory spine; first tarsal segment longer than long spur and longer than the following three segments combined. Male pygidium relatively longer than in female.

HOLOTYPE.—In Deutsches Entomologisches Institut.

TYPE-LOCALITY.—Cuba: "Umgebung von Havana."

SPECIMENS EXAMINED.—10 from United States; many from West Indies.

DATES COLLECTED.—May 9 to August 9.

DISTRIBUTION (Figure 10).—*Florida:* Garden Key, Stock Island (Monroe County). *West Indies:* Barbados, Cuba, St. Croix. St. Kitts.

REMARKS.—*Ataenius havanensis* is superficially very close to *A. miamii* Cartwright but is noticeably different on direct comparison. The pronotal punctures of *A. miamii* are nearly uniform in size and smaller than in *A. havanensis,* in which the basal punctures of the pronotum are practically contiguous and twice the size of those anteriorly. In *A. havenensis* the elytral intervals are noticeably tectiform with the narrow ridge shining; in *A. miamii* the elytral intervals are rarely shining and always more evenly rounded.

The Stock Island specimens were taken in a blacklight trap by F. A. Buchanan on 9 August 1968. The Garden Key specimen was in sand and debris near the beach.

17. *Ataenius semipilosus* Van Dyke

Ataenius semipilosus Van Dyke, 1928:158.

DESCRIPTION.—Length 3.2 to 4.3 mm; width 1.4 to 1.8 mm. Oblong-oval, convex, shining, dark castaneous. Head strongly convex, clypeal margin finely reflexed, subdentate each side of moderately deep median emargination, sides feebly arcuate to rounded genae, the genae with four or five mod-

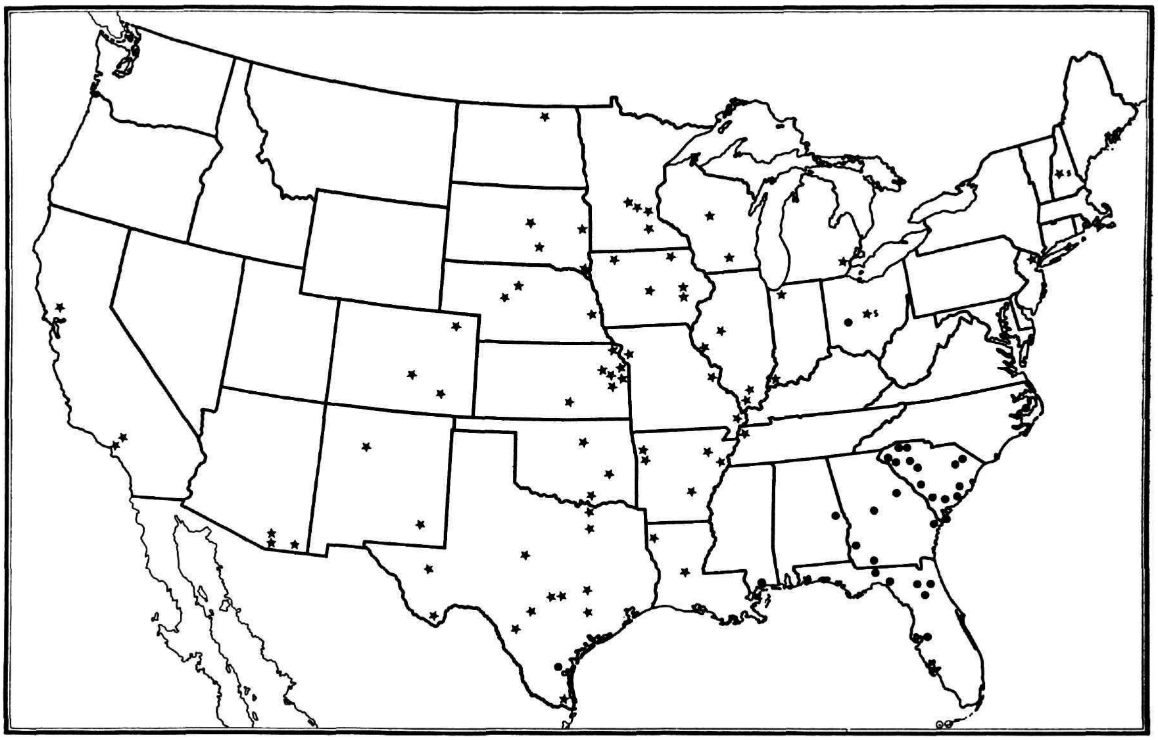

FIGURE 10.—Distribution of *Ataenius punctifrons*, new species, *A. erratus* Fall, and *A. havanensis* Balthasar.
★ *punctifrons* ● *erratus* o *havanensis*

erately long setae; clypeal surface finely, transversely wrinkled anteriorly, the wrinkles becoming obscure over and above median area, basally with indistinct very moderate punctures, front and occiput with wide transverse band of moderate punctures separated by one to four times their diameter. Pronotum convex, about three-fourths as long as wide, lateral edges hidden when viewed from directly above, all angles obtusely rounded, sides and base arcuate, strongly margined, laterally fimbriate with moderately long, fine setae, crenulations indistinct; surface quite evenly, coarsely punctate throughout, punctures separated by less than one to four times their diameters, a little smaller approaching anterior margin. Elytra elongate-oval, one-fourth longer than wide, convex, humeri sharply dentate, striae moderate, deep, strial punctures crenating sides of the moderately convex intervals, lateral intervals not different, outside margin of interval, occasionally inside, with row of fine, setigerous punctures, the setae very fine, nearly as long as width of the intervals but not very conspicuous, edge of elytra fimbriate, with the setae separated by their length or less. Mesosternum shagreened as usual, carinate between the coxae. Metasternum shining, midline moderately deep, disc punctate, the scattered punctures fine at middle, increasing in size outward to coarse at sides, close and rough at extreme sides, metasternal triangle deep, finely scabrous within. Abdominal sterna moderately and coarsely closely punctate from middle to sides, some setigerous at sides, 5th sternum with a row of very close setigerous punctures, the setae long and fine; first visible sternum with fine posterior marginal line, the other four sterna finely fluted along anterior margin, the fluting longer on each successive segment, that of the fifth sternum half as long as the sternum. Pygidium with narrow, shining, apical lip and marginal row of long, fine setae, disc roughly eroded. Anterior femora with perimarginal groove, surface smooth in front, coarsely, closely punctate posteriorly. Middle femora shining, with row of coarse setigerous punctures along anterior edge, and a group of similar punctures over outer third, posterior femoral line short, several setigerous punctures along posterior edge of femur. Posterior tibial apical fringe, six short, even setae, a strong triangular accessory spine, and an intervening seta between the spine and spurs; long spur, first tarsal segment, and following three segments combined about equal in length. The sexes are not easily separated but the pygidium in the male is longer than in the female.

HOLOTYPE.—In Van Dyke Collection, California Academy of Sciences.

TYPE-LOCALITY.—"Texas Pass, Dragon [Dragoon] Mountains, Arizona."

SPECIMENS EXAMINED.—84.

DATES COLLECTED.—June 8 to August 12.

DISTRIBUTION (Figure 5).—*Arizona:* Baboquivari Mts., Benson, Chiricahua Mts., Cobabi Mts., Douglas, Globe, Nogales, Portal (in *Neotoma* nest), Sabino Canyon (Catalina Mts., Pima County), Santa Cruz Village, Texas Pass (Dragoon Mts.), Tucson. *Texas:* 30 mi N of Presidio.

REMARKS.—Superficially, *A. semipilosus* resembles *A. hirsutus,* but the uniform size of the pronotal punctures of *A. semipilosus* clearly separate the two species.

18. *Ataenius hirsutus* Horn

Ataenius hirsutus Horn, 1871:288; 1887:86.—Schmidt, 1922: 428.

DESCRIPTION.—Length 3.5 to 4.8 mm; width 1.6 to 2.1 mm. Dark castaneous to piceous black, oblong, convex, shining, elytra pubescent. Head moderately convex; clypeus subangulate each side of deep median emargination, sides weakly arcuate, genae nearly right-angled, edge finely reflexed; surface transversely wrinkled anteriorly, posterior clypeus and frontal area closely, moderately punctate, the punctures generally separated by one diameter or less. Pronotum convex, two-thirds as long as wide, sides and base arcuate, strongly margined, crenate fimbriate, the crenations conspicuous, the setae moderately long, laterally separated by their own length, slightly longer at anterior angles, shorter and closer at middle of base, anterior angles obtusely rounded, posterior angles very broadly rounded into base; surface quite uniformly punctate throughout with mixed fine and rather shallow, very coarse punctures, the latter generally separated by their diameter or less. Elytra five-sevenths as wide as long, two and one-third times as long as pronotum; humeri slightly dentate, sides weakly arcuate, striae moderately fine and deep, fine strial punctures widely spaced; intervals convex with a row of moderate setigerous punctures each side along the striae, the setae conspicuous, erect, fine, and about three-fourths as long as width of the intervals, distance between setae variable but averaging about as far apart as their length; surface of intervals frequently minutely alutaceous under high magnification (× 54). Tenth interval slightly flatter, otherwise all intervals about the same. Mesosternum very weakly convex between the coxae. Metasternum with long, fine, weakly impressed midline ending in a slight pore anteriorly; disc with scattered, fine punctures separated by two or three times their diameters, a small group of very moderate punctures at extreme sides; metasternal triangle not sharply defined, sometimes with very fine alutaceous sculpture within. Abdominal sterna with the usual fluted anterior margin, the fluting of the 5th sternum deep and half as long as the sternum; surface of sterna with scattered, not numerous, fine to very shallow, coarse, close punctures at sides, the latter with fine hairs decumbent on anterior sterna and gradually more erect on posterior sterna, those of the terminal sternum from side to side and quite long; the rather wide apical lip and the eroded area of pygidium with similar, sparse, long hairs. Anterior femora with perimarginal groove, surface smooth, shining, with a few scattered fine-to-moderate punctures. Middle and hind femora shining, smooth, with scattered fine punctures, posterior femoral lines short, one-fourth to one-half length of femur. Posterior tibia with fringe of five setae, a very short accessory spine, and an intervening seta between spine and spurs, this latter not easy to see. First tarsal segment equal to length of long spur and very slightly longer than following three segments combined. The males have a longer pygidium and the spur of the anterior tibia is bent inward at the tip.

HOLOTYPE.—Academy of Natural Sciences of Philadelphia, No. 3615.

Type-Locality.—Camp Grant, Arizona.

Specimens Examined.—218+.

Dates Collected.—June 23 to September 1.

Distribution (Figure 6).—*Arizona:* Agua Fria, Benson (Black Dike Project), Sierritas, Buckeye, Colossal Cave Park, Cutter (Gila County), Douglas, Fort Grant, Globe, Huachuca Mts., Kits Peak Rincon (Baboquivari Mts.), Molino Canyon (Santa Catalina Mts.), Nogales, Oracle, Organ Pipe Cactus National Monument (Pima County), Pajarito Mts., Palo Alto, Pena Blanca (Pajarito Mts.), Phoenix, Pinal Mts. (Gila County), Portal (in nest of *Neotoma*), Sabino Canyon (Santa Catalina Mts.), Sacaton, Safford, Santa Cruz County, Tempe, Tucson, Wickenburg (Maricopa County). *Kansas:* Wyandotte County (Psota Coll., Field Museum). *New Mexico:* Las Cruces (near), Lordsburg. *Texas:* Dallas, Summerfield.

Remarks.—*Ataenius hirsutus* is identified by the very hairy elytra and the evenly distributed, mixed very coarse and fine punctures of the pronotum. It is sometimes attracted to lights in enormous numbers in northern Mexico.

19. *Ataenius pseudohirsutus*, new species

Description.—*Holotype Male:* Length 4.2 mm; width 1.9 mm. Oblong, convex, piceous, anterior margin of head and pronotum and legs reddish, moderately shining. Head convex, clypeal edge finely reflexed, somewhat angularly rounded each side of moderately deep median emargination, sides very slightly arcuate to nearly right-angled genae; clypeal surface transversely wrinkled anteriorly, finely, closely punctate above greatest convexity, frontal area not quite as closely punctate, the very slightly larger punctures separated by about their diameter, occipital area with more widely separated punctures. Pronotum moderately convex, 1.2 mm long by 1.7 mm wide, anterior angles obtusely rounded, posterior angles widely rounded, sides and base margined, slightly crenate, fimbriate with moderately long, almost transparent setae, longest at anterior angles where their length is twice the distance between the setae; surface punctures mixed fine and coarse, the latter shallow and more numerous from halfway outward to sides, those of discal area finer and less numerous, the evenly spaced fine punctures generally separated by about twice their diameters. Elytra convex, humeri finely dentate, 2.7 mm long, 1.9 mm wide, striae fine, deep, strial punctures crenating inner margins of the very weakly convex, minutely alutaceous intervals, lateral intervals not different, all with a row of close, minute punctures near each margin, laterally and over apical declivity the punctures bear very fine, short, erect setae, elytral margin with similar rather inconspicuous setae also. The sutural interval bears a single line of close, minute punctures without larger punctures near scutellum. Mesosternum shagreened with very fine alutaceous sculpture and fine, short, decumbent hair, finely carinate between the coxae. Metasternum smooth, shining, disc with evenly distributed minute punctures, midline long, moderately deep, ending in a deeper pore anteriorly between the bases of the coxae, smooth outward to sides and in the metasternal triangle, only a suspicion of a very shallow, roughened area at extreme sides. First visible abdominal sternum with posterior marginal line, following sterna fluted along anterior margin, fluting of all but 5th sternum become much longer at the sides, those of the 5th sternum deeper and half the length of the sternum, surface otherwise smooth and shining but with very fine punctures at middle and scattered, very shallow, moderate punctures outward to sides, 4th sternum at middle about half as long as preceding and with three or four long, erect setae in a transverse row near sides, 5th sternum with a similar row of long setae almost meeting at middle. Pygidium with rather wide, convex, shining, apical lip bearing three or four erect setae, disc deeply, roughly eroded. Anterior femora with perimarginal groove but it is weak and vague posteriorly, surface shining, vaguely uneven with a few shallow, fine punctures; anterior spur of foretibia hooked downward at apex. Middle and hind femora smooth, shining, with scattered, very minute punctures and two or three coarse setigerous punctures at knee, posterior marginal lines weak, extending inward about two-fifths of distance from knee. Posterior tibial apical fringe of five setae, accessory spine not quite as long, and an intervening seta between spine and spurs. First posterior tarsal segment and long spur about equal in length, longer than following three segments combined.

Allotype Female: Length 4.6 mm; width 2.6 mm. Collected at San Antonio, Texas. The spur of the anterior tibia is not apically curved downward and the pygidium is shorter, with a very narrow, transverse, eroded discal area. Otherwise there seems to be little to separate the two sexes.

HOLOTYPE.—USNM 71738.

TYPE-LOCALITY.—The holotype bears data as follows: "Austin, Texas, June 29, Collection H. Soltau."

SPECIMENS EXAMINED.—107.

DATES COLLECTED.—May to September.

DISTRIBUTION (Figure 9).—Paratypes. *Arizona* (11): Chiricahua Mountains (8), 17 July 1957, 2 June, 16 July 1959, D. J. and J. N. Knull (OSU). Pena Blanca Lake (3), 26 July 1963, G. H. Nelson and family. *Massachusetts* (1): Plymouth, C. T. Brues (MCZ) [a very doubtful record]. *Texas* (94): "Texas" (10): 1932, Wickham Coll. (3, USNM); no date, Ulke Coll. (2, Carnegie Museum); no other data (2, Oregon State College; 2, Casey Coll., USNM; 1, USNM). Austin (9), 29 June, H. Soltau Coll. (USNM). Brownsville (8): no date, Wickham (1, Casey Coll., USNM); no date, "Catalog 916" (1); no date, Townsend (4, USDA); 22 June 1895, Townsend (1, USDA); 24 May 1941, W. Goodpaster (1). Cameron County (2), September, Wickham Coll. (USNM). Columbus, (2), 8, 13 August, Hubbard and Schwarz. Devils River (1), Highway 90, 11 July 1941, W. F. Barr (Barr Coll.). Edinburg (3), no date, Chittenden Coll. (USNM). Hearne (1), 8 June, no other data. Lake Corpus Christi State Park (1), 15 June 1971, G. H. Nelson. Laredo (1), 2 July 1947, B. Malkin. Lee County (2), no other data (Casey Coll., USNM). New Braunfels (3): 27 June, Soltau (2); 25 July, Wickham (1, Wickham Coll., USNM). Pharr (1), at light, 25 May 1947, George B. Vogt. San Antonio (12): 22 June, Soltau (1); no other data (11, includes allotype). San Diego (4): 25 May (3, USDA); 26 June (1, USDA). San Patricio County (1), no date, "US 77 and Tex. 9, animal burrow," Griffin. Sharpsburg (2), 10 May, Hubbard and Schwarz. Sinton, Welder Wildlife Foundation (22), 3 May 1967, A. and M. E. Blanchard. Uvalde (2), 930 ft, 18–20 June, Wickham (Wickham Coll., USNM). Zavalla County, Nueces River (7): 4 July 1910, no other data (1); 1 July 1910, Pratt (6).

REMARKS.—*Ataenius pseudohirsutus*, as the name indicates, is very close to *A. hirsutus* Horn. It differs in having much less conspicuous elytral setae, in lacking the basal row of very coarse punctures on the sutural interval near the scutellum, as found in *A. hirsutus*, and the discal elytral intervals being nearly flat. Both *A. hirsutus* and *A. pseudohirsutus* are very similar to *A. setiger* Bates (1887:98), but *A. setiger* has a much less punctate pronotum and the elytra have long noticeable setae, as in *A. hirsutus*, except over the anterior disc, the area around the scutellum being practically devoid of setae.

20. *Ataenius sabinoi*, new species

DESCRIPTION.—*Holotype Male:* Length 3.4 mm; width 1.6 mm. Oblong-ovate, convex, shining, dark red-brown. Head convex, edge of clypeus very finely reflexed, finely dentate each side of moderately deep median emargination, sides arcuate to quite sharply rounded, almost right-angled genae; surface of clypeus narrowly concave back of median emargination, otherwise convex, faintly, transversely wrinkled with scattered, vague, minute punctures along basal sutural area, frontal occipital area with close, fine punctures separated by their diameters. Pronotum 1.45 mm wide and 1.0 mm long, convex, anterior angles obtusely rounded, posterior angles rounded but distinct, sides slightly arcuate, base arcuate, sides and base margined, edge fimbriate, inconspicuously crenate, the marginal setae very moderate in length, separated by about their own length; surface everywhere evenly, closely, coarsely punctate, generally separated by their diameter or less, only in the anterior, middle area do they gradually become very moderate in size. Elytra 2.3 mm long and 1.6 mm wide, convex, sides strongly arcuate, humeri finely dentate, striae strong and deep, strial punctures weakly crenating inner margins of the more or less carinately convex intervals, except near the scutellum the intervals are slightly concave and minutely alutaceous along each side and have a row of setigerous, rather coarse punctures, the row along the outside margin being especially noticeable, the 10th interval is a little flatter than the others, the fine, short setae are more noticeable laterally and over the apical declivity, posteriorly the edges of the elytra are noticeably crenate with the setae and crenations widely separated. Mesosternum shagreened with fine alutaceous sculpture and short appressed hair, sharply, finely carinate between the coxae. Metasternum shining but minutely alutaceous, midline strong and deep, disc and outward to sides fine to moderate punctures separated by about their diameter, the fine punctures are along the midline and on anterior and posterior areas; scabrous at extreme sides, metasternal triangle deep, well defined, finely scabrous and extending farther toward sides than in most species. First visible abdominal sternum with posterior marginal line, remaining four sterna with increasingly wider fluting along anterior margin, the fluting of the 5th sternum at middle half as long as the sternum, surface punctate from side to side, very moderate in size at middle to coarse and shallow at sides, generally separated by one or two diameters and in two very irregular transverse rows. The 4th sternum is shortened at middle to about three-fourths the length of the preceding sternum. Pygidium with very narrow, shining, apical lip, disc deeply eroded. Anterior femora with perimarginal groove, surface with fine setigerous punctures separated by two or three times their diameters. Middle and hind femora similarly punctate, posterior femoral lines deep and complete. Apical fringe of posterior tibia of six short setae, a strong accessory spine, and an intervening setae between the spurs and spine. Metatarsus and long spine equal, longer than following three segments combined.

HOLOTYPE.—USNM 71739.

TYPE-LOCALITY.—Arizona, Tucson (Catalina foothills), "Den #2, *Neotoma* sp.," Berlese funnel, 2 August 1962, W. L. Nutting, P. Mehringer.

SPECIMENS EXAMINED.—Four.

DATES COLLECTED.—July 30 to August 28.

DISTRIBUTION (Figure 4).—Paratypes. *Arizona* (2): Pima County, Tucson (10 m E), at light, 30 July 1969, W. Suter. Sabino Canyon (1), 9 August 1953, G. D. Butler. *Mexico* (1): *Baja California:* La Paz (25 mi W), light trap, 30 August 1959, K. W. Radford and G. F. Werner.

REMARKS.—Paratypes measure 3.7 and 3.8 mm in length. I found no differences otherwise. *Ataenius sabinoi* is very similar to *A. semipilosus* Van Dyke but these species are easily separated by differences in the elytra. *Ataenius semipilosus* has evenly convex elytral intervals and much longer, more conspicuous setae. The two species were collected together in the same *Neotoma* nest.

21. *Ataenius vandykei*, new species

DESCRIPTION.—*Holotype Female* (?): Length 3.5 mm; width 1.6 mm. Oblong, convex, moderately shining, head and pronotum dark castaneous, elytra darker, almost piceous, elytra rough, setigerous punctures with very fine, short setae. Head convex, clypeal margin finely reflexed, sharply, triangularly dentate each side of moderate median emargination, sides weakly arcuate to sharply rounded, almost right-angled genae; clypeal surface transversely wrinkled anteriorly, middle of disc narrow, minutely punctate, basal half closely, very finely punctate, the punctures elongate, generally twice their width, tending to form lines toward the sides; front and occiput evenly, densely, rather finely punctate, the punctures round at middle, slightly transversely elongate toward sides. Pronotum 1.5 mm wide and 0.9 mm long, convex, anterior angles rather widely, evenly rounded, posterior angles broadly, evenly rounded from sides into base, base slightly angular at middle, sides and base finely margined, edge with extremely minute, short setae and crenations under high magnification; surface everywhere densely, evenly, very moderately punctate. Elytra convex, 2.2 mm long, 1.6 mm at widest, slightly beyond middle, sides feebly arcuate, humeri sharply dentate, striae fine, moderately deep, deep strial punctures slightly crenating inner margins of the subcarinately convex intervals; the intervals are more or less flattened and alutaceous each side with the convex middle broken into round-to-elongate tubercles by a median row of fine, setigerous punctures, the punctures separated by two to three times their diameters, the setae very short and stubby; apically the striae become wider, the intervals narrow and more sharply convex; the lateral intervals not different. Mesosternum shagreened as usual, surface sculpture fine with very fine, short hair. Metasternum shining, midline strong and deep, disc closely, moderately punctate, finely roughened outward to sides where the sculpture is a little coarser, metasternal triangle transversely elongate, the very fine, rough sculpture within extending out to sides of sternum. First visible abdominal sternum strongly punctate with strong, deep posterior marginal line, next three sterna finely fluted along anterior margin, the last with fluting very long, half the length of the sternum, surface of middle three sterna closely, shallowly, setigerously, moderately punctate, the 5th sternum much more finely punctate, all setae very short and not very conspicuous. Pygidium with fine apical margin, eroded disc finely scabrous. Anterior femora with perimarginal groove, surface roughly punctate. Middle and hind femora with scattered, moderate, finely setigerous punctures, posterior marginal line fine, complete. Posterior tibial apical fringe of seven setae, longer at each side, without accessory spine. Long spur, first posterior tarsal segment, and following three segments combined about equal in length.

TYPE.—USNM 71740.

TYPE-LOCALITY.—"San Berdino [Bernardino] County, California. Collection Coquillett." The pin also bears the numbers 1804 and 3320, the meanings of which are unknown.

SPECIMENS EXAMINED.—The unique holotype.

DATE COLLECTED.—Unknown.

DISTRIBUTION.—See Figure 5.

REMARKS.—This species—named in honor of Dr. Edwin C. Van Dyke, a former well-known California coleopterist—is quite unique among *Ataenius* of United States and Canada. It is the only species having such rough, tuberculate elytral intervals; and the holotype (probably a female) is unusual in being almost bicolored, probably not the usual coloration. The hind tarsi were accidentally broken and lost after the description had been written.

22. *Ataenius confertus* Fall

Ataenius confertus Fall, 1909:162.
Ataenius cribratus Van Dyke, 1928:156. [New synonymy.]

DESCRIPTION.—Length 4.0 to 4.8 mm; width 1.8 to 2.0 mm. Dark reddish brown, elongate-oblong, moderately shining, convex. Head moderately convex, shining anteriorly, dull basally; clypeus sharply, triangularly dentate each side of wide, moderately deep emargination, sides arcuate to right-angled genae, margin finely reflexed; anterior surface and up over greatest convexity strongly, transversely rugose-tuberculate, mixing gradually with dense, very moderate punctures, frontal basal area densely, more coarsely punctate, the punctures contiguous, deep, alutaceous within. Pronotum convex, lateral margins hidden from directly above, about one-third wider than long, sides slightly arcuate, anterior angles obtuse, hind angles very broadly rounded sides to base, sides and base finely margined, finely crenate, marginal setae short and close, separated by a trifle more than their own length; surface densely, moderately coarsely punctate, the punctures practically contiguous and same size as occipital punctures of head. Elytra one-half longer than wide, humeri dentate, striae moderate, finely punctate, intervals convex, strongly crenate along inner margin, cutting into a row of close, moderate punctures, a row of similar closely placed punctures along outside margin, the punctures of the outside row separated by their own diameters or less, those of the inner side not as close, sutural interval with a single row, all but the sutural row become obscure over apical elytral declivity, laterally the intervals become alutaceous, the outside row of punctures moves up to the center of the convexity and produces a rough, confused surface; all of the dorsal coarse punctures of head, pronotum, and outside rows of the intervals are finely setigerous, the setae extremely short on the head, very gradually more noticeable posteriorly over the elytra. Underside shining, coarsely, setigerously punctate throughout, the setae extremely short. Metasternal midline fine, moderately deep, discal punctures coarse, separated by their own diameter which is greater than width of midline, punctures outward to sides larger, shallow, masked over outer fourth by alutaceous sculpture, metasternal triangle moderately deep, not sharply delimited, roughly alutaceous within. Abdominal sterna everywhere coarsely, closely punctate, separated at middle by their diameter or less, shallower, coalescing and masked by alutaceous sculpture at lateral margin; anterior margin closely fluted, the fluting slightly longer on each succeeding sternum posteriorly, fluting nearly half the length of the 5th sternum. Eroded area of pygidium extensive but not depressed, smooth apical margin very narrow. Anterior femora with perimarginal groove, surface coarsely, roughly, closely punctate. Middle and hind femora coarsely but not as closely punctate, punctures of hind femora less close and separated generally by more than their diameters, posterior femoral lines short, about one-fourth the distance from knee to trochanter. Posterior tibia without accessory spine, fringe of eight or nine coarse setae. Hind tarsus shorter than tibia, first tarsal segment slightly shorter than long spur, slightly longer than following three segments combined. The female pygidium is much wider than in the male.

NEOTYPE (present designation).—In California Academy of Sciences.

TYPE-LOCALITY.—5 mi W of San Bartolo, Lower California. Collected by Michelbacher and Ross, 13 July 1938. (Neotype.)

SPECIMENS EXAMINED.—107.

DATES COLLECTED.—June 24 to September 27.

DISTRIBUTION (Figure 11).—*Arizona:* Brown Canyon (Baboquivari Mts.), Bear Valley Ranch (Santa Cruz County), Chiricahua Mts., Cochise Stronghold (Dragoon Mts.), Douglas, Globe, Kits Peak Rincon (Baboquivari Mts.), Madera Canyon, Nogales, Patagonia, Pena Blanca (Santa Cruz County), Sabino Canyon, foothills Santa Catalina Mts., Texas Pass, Tucson, Wilcox. *New Mexico:* Las Cruces.

REMARKS.—Type of *Ataenius confertus*, a unique specimen from San Jose del Cabo, Baja California; type of *A. cribratus* Van Dyke, San Xavier Mission, near Tucson, Arizona. Dr. Fall (1909:163) stated the type of *A. confertus* was in the California Academy of Sciences collection; however, neither this nor the types of other species mentioned in the same paper are now in that collection. In the same paper Fall (1909:161) states "these descriptions were written some eight or nine years ago," in other words about the year 1900, and since none of the types can now be found it is quite possible, according to Mr. Hugh B. Leech, that the lot had been received but not accessioned before the great earthquake and fire in 1906, and that they were lost in that catastrophe. Since the type is not in the Fall collection it is presumably lost. The nearest locality represented at present is San Bartolo, about 50 miles north of San Jose del Cabo. The Museum of Comparative Zoology has a series of specimens from Tucson, Arizona, determined by Dr. Fall as being *A. confertus.*

23. *Ataenius saramari* Cartwright

Ataenius saramari Cartwright, 1939:360.

DESCRIPTION.—Length 3.0 to 3.2 mm; width 1.4 to 1.5 mm. Oblong-ovate, convex, piceous, shining. Head convex, clypeal margin very finely reflexed, with just a trace of angulation each side of a moderately deep median emargination, sides moderately arcuate to obtusely rounded genae, the genae with three or four noticeable lateral setae; surface of clypeus weakly concave near margin, especially behind median emargination, also a vague shallow depression each side at about anterior fourth in most specimens, surface otherwise with scattered minute to very fine punctures generally separated by two to four times their diameters, front and occiput with widely scattered, moderate punctures from side to side. Pronotum convex, sides partly invisible from directly above, about 1.2 mm wide and 0.8 mm long, angles obtusely rounded, sides and base margined, edge fimbriate-crenate, the setae club-shaped, their length rather short, about twice the diameter of largest pronotal punctures, usually separated by more than their length, crenations inconspicuous except at posterior angles; surface quite evenly punctate with mixed variable punctures, fine to coarse, those over anterior disc generally smaller than elsewhere. Elytra convex, oval, 1.9 mm long and 1.4 mm wide, humeri very finely dentate, elytral striae strong and deep, strial punctures deep, separated by three-fourths the width of the intervals, slightly crenating the weakly convex intervals, some scattered, very fine punctures which are more noticeable on lateral intervals and over the apical declivity where the intervals become narrow and convex, the striae wider; edge of elytra fimbriate-crenate with noticeable setae quite similar to the pronotal fringe. Mesosternum as usual with fine sculpture and very fine, short, decumbent hair, sharply carinate between the coxae. Metasternum shining, strong deep midline, a few scattered, fine punctures, punctate-rugose at extreme sides, an eroded line anteriorly around the middle coxae, metasternal triangle deep, elongate, scabrous within. First abdominal sternum with posterior marginal line, the following four sterna finely fluted along anterior margin, the fluting becoming longer at the sides on middle three sterna and longer at middle on the 5th, surface punctate, scattered and finer at middle, close and coarser at sides. Disc of pygidium roughly eroded. Anterior femora with perimarginal groove, smooth anteriorly, rough posteriorly. Middle and hind femora smooth, shining, two or three coarse setigerous punctures at knee, posterior marginal lines strong, complete. Ten short, close, equal setae in apical fringe of hind tibiae, without

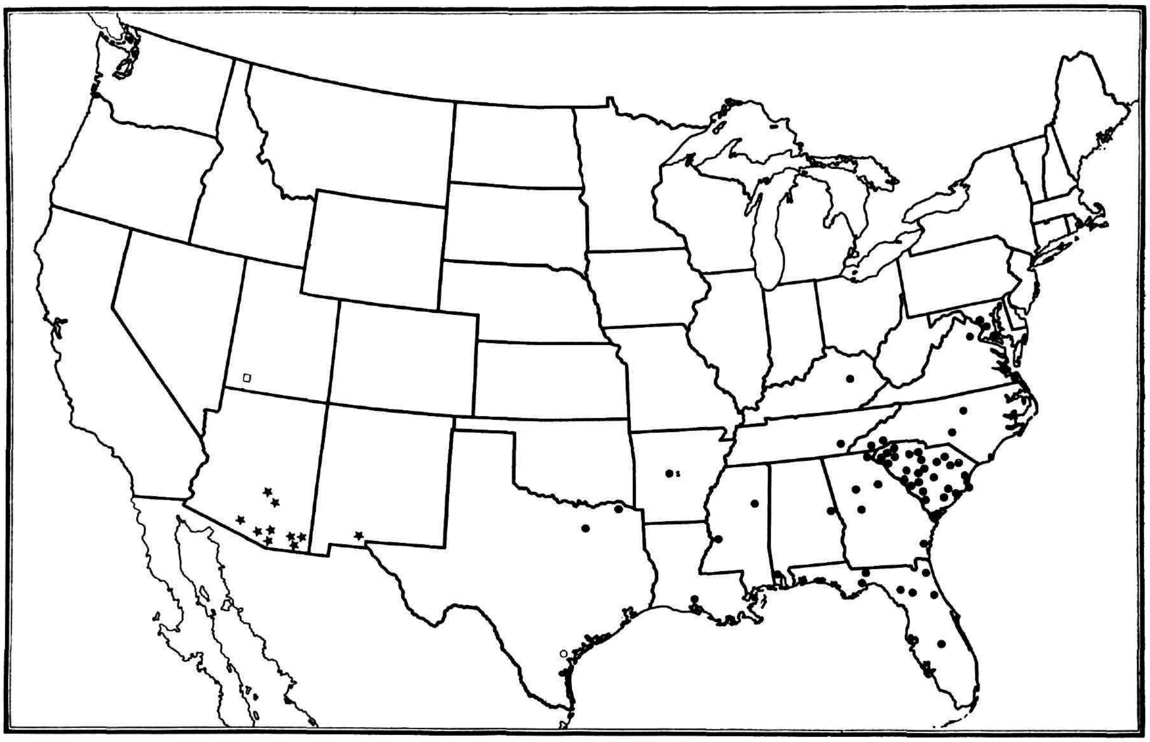

FIGURE 11.—Distribution of *Ataenius confertus* Fall, *A. ovatulus* Horn, *A. utahensis*, new species, and *A. griffini*, new species.
★ *confertus* ● *ovatulus* □ *utahensis* o *griffini*

accessory spine. Metatarsus and long spur equal, slightly longer than next three tarsal segments combined. In the male the penultimate abdominal sternum is about two-thirds as long as the preceding sternum and the pygidium is relatively longer. The 5th abdominal sternum and the pygidium have a transverse row of stiff moderate setae, those of the 5th sternum a little longer than those of the elytral fringe, those of the pygidium finer and still longer.

HOLOTYPE.—Male, USNM 53423.

TYPE-LOCALITY.—St. Cloud, Florida. (Collected in *Geomys* burrow.)

SPECIMENS EXAMINED.—Six.

DATES COLLECTED.—July 17 to September 12.

DISTRIBUTION (Figure 12).—*Florida:* Near Alligator Lake (Osceola County), Juniper Springs (Marion County), Wiersdale (Marion County).

REMARKS.—This is one of the few species having fimbriate elytral margins. Its small size, oval shape, transverse row of stiff setae on the 5th abdominal sternum, and concave margin of the clypeus help distinguish it from other species. All known specimens have been collected in Florida, most of them under leaf debris of *Pinus clausa*.

24. *Ataenius convexus* Robinson

Ataenius convexus Robinson, 1940:149.

DESCRIPTION.—*Holotype:* Length 3.2 mm; width 1.5 mm. Dark red-brown, shining, convex, oblong-oval. Antennae testaceous. Head convex, clypeus rounded and slightly angulate but not distinctly dentate each side of deep median emargination, sides weakly arcuate to right-angled genae, margin very finely reflexed, arched upward at middle leaving a flat, closely, minutely punctate surface between the two edges; entire head surface smooth except for very fine, uniformly distributed punc-

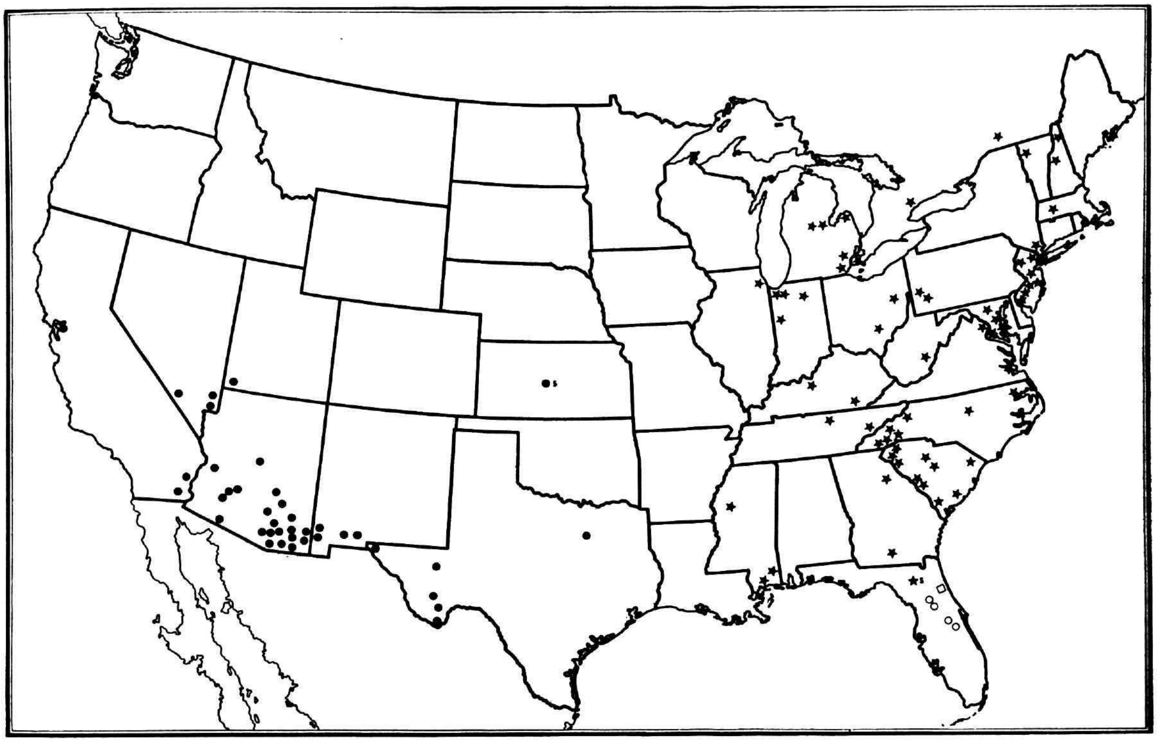

FIGURE 12.—Distribution of *Ataenius abditus* Haldeman, *A. desertus* Horn, *A. saramari* Cartwright, and *A. woodruffi*, new species.
★ *abditus* ● *desertus* ○ *saramari* □ *woodruffi*

tures throughout, the punctures separated by about three times their diameters. Pronotum convex, the side margins invisible from directly above, about one-third wider than long, anterior angles obtuse, hind angles not widely rounded, sides and base strongly margined, very weakly crenate, marginal setae conspicuous but moderate, generally separated by about their own length; surface with mixed coarse and fine punctures, coarse punctures irregularly spaced, separated by less than their diameter to less than twice their diameter, lacking over anterior fourth at middle. Elytra convex, oval, one-fourth longer than wide, humeri finely dentate; striae fine, fine punctures weakly crenating the strongly convex intervals, intervals have a median row of minute punctures, lateral intervals not different; lateral and apical elytral margins noticeably fimbriate, the setae about as long as those of the pronotum but generally separated by twice their length. Mesosternum finely carinate between the coxae. Metasternum with fine, moderately deep midline, disc smooth but with minute sculpture of scattered punctures and alutaceous surface, a few scattered, coarse, shallow punctures at sides, metasternal triangle deep and elongate. Abdominal sterna smooth and shining but with scattered, minute punctures at sides, fluted along anterior margins as usual, the fluting of the 5th sternum deep and at middle about half the length of the sternum, the 5th sternum with a row of coarse, shallow, contiguous punctures bearing long, conspicuous hairs. Eroded area of pygidium strongly alutaceous and roughened by similar hair-bearing coarse punctures. Anterior femora with perimarginal groove, smooth shiny surface. Middle and hind femora similarly smooth but with two moderate, setigerous punctures at knee, middle femora with a single, strong marginal seta at middle, posterior femoral line absent. Posterior tibial fringe of six setae, strong accessory spine and intervening seta between accessory spine and spurs. Hind tarsus shorter than tibia, first tarsal segment slightly shorter than long spur, longer than following three segments combined.

HOLOTYPE.—Robinson Collection, USNM 65614.

TYPE-LOCALITY.—Hidalgo, Texas.

SPECIMENS EXAMINED.—Seven.

DATES COLLECTED.—April 24 to August 16.

DISTRIBUTION (Figure 5).—*Texas:* Big Bend National Park, Corpus Christi, Hidalgo, San Diego.

REMARKS.—Two of the Corpus Christi specimens were collected by Charles W. Griffin in nests of wood rats, probably *Neotoma micropus micropus* Baird. Another was taken in an armadillo burrow.

One of the Robinson paratypes of *A. convexus*, with Texas state label only, from the collection of Charles Schaeffer and labeled as new by him, is not *A. convexus* but a species very close to it that is described in this paper as *A. griffini*, new species. The genitalia of the two species are different.

Ataenius convexus varies in length from 3.1 mm to 4.2 mm, with the larger specimens being from Big Bend National Park. The pygidium is longer in the male than in the female.

25. *Ataenius lobatus* Horn

PLATE 3*b*

Ataenius lobatus Horn, 1871:287.
Ataenius laeviventris Horn, 1887:74.—Cartwright, 1951:29.

DESCRIPTION.—Length 4.9 to 5.8 mm; width 2.2 to 2.6 mm. Oblong-elongate, dark red-brown to piceous, shining, moderately convex, antennae light yellow. Head convex, clypeus rounded each side of wide, moderately deep, median emargination, or in freshly emerged specimen the reflexed margin high and forming a low, wide, triangular angulation or tooth each side of emargination, finely reflexed sides weakly arcuate to sharply rounded right-angled genae; surface of anterior half of clypeus transversely wrinkled, finely punctate above greatest convexity, the punctures separated by their diameters, frontal area with close, moderate-to-coarse punctures. Pronotum convex, averaging about 2.0 mm wide by 1.5 mm long, all angles broadly rounded, strongly lobed basally, sides and base margined, crenate, fimbriate, the setae moderately long, separated by less than their length, longest at anterior angles, very gradually diminishing in length to near the basal lobe then suddenly becoming longer opposite the scutellum, surface with evenly distributed, very fine punctures mixed with less evenly distributed coarse punctures which are less numerous over central disc then closer and more numerous halfway to sides. Elytra about 3.6 mm long by 2.3 mm wide, humeri finely dentate, sides weakly arcuate, striae fine, not deep, very fine strial punctures very weakly crenating inner margins of the very moderately convex intervals, striae much wider, deeper with much longer, deeper strial punctures over the apical declivity, the intervals here more noticeably convex, intervals with minute, scattered punctures, lateral intervals not differing from the others. Mesosternum shagreened with fine alutaceous sculpture and short, fine, appressed hair, weakly carinate between the coxae. Metasternum everywhere smooth and shining, midline fine, shallow, deeper at ends, disc and outward to sides minutely punctate, the punctures usually separated by three or four times their diameters, slightly roughened at extreme sides. Abdominal sterna smooth and shining but with scattered, minute punctures from side to side, slightly larger and very shallow near sides, a few of them setigerous, the setae moderately long and appressed, sterna fluted along anterior margin, deeper and one-third the length of the 5th sternum. Pygidium with smooth apical lip, disc deeply eroded with rough, tuberculate, alutaceous sculpture. Anterior femora with perimarginal groove, surface smooth, shining, with rather widely scattered, very fine punctures. Middle and hind femora surface as in anterior femora but with three or four coarse setigerous punctures at the knee, the setae long and conspicuous, posterior marginal lines about three-fourths the length of the femora but not sharply defined and best seen from the rear. Posterior trochanters with two conspicuous setae. Posterior tibial apical fringe of five fine setae, a very strong accessory spine, and a single seta between accessory spine and the spurs; long spur longer than first tarsal segment which equals the length of the following three segments combined. In the male the 4th abdominal sternum is shorter at middle, the 5th sternum is shorter, and the pygidium is longer than in the female.

HOLOTYPE.—Academy of Natural Sciences of Philadelphia, No. 3614.

TYPE-LOCALITY.—"Peninsula of Lower California."

SPECIMENS EXAMINED.—29.

DATES COLLECTED.—July 26 to October 4.

DISTRIBUTION (Figure 13).—*Arizona:* Arlington, Catalina Mts. (Pima County), Fort Yuma, 36 mi E of Gila Bend, Hope, Marijilda Canyon (Graham Mts.), Organ Pipe Cactus National Monument (Pima County), Phoenix, Sabino Canyon, Tucson. *California:* Blythe, Gila Bend, La Puerta (Imperial County), Maricopa County. *Nevada:* Las Vegas, 30 mi NW of Logandale. *Mexico:* Baja California: Purissima, San José del Cabo, Santa Rosa.

REMARKS.—The color, size, distribution, and especially the very strongly lobed pronotum distinguish *A. lobatus* Horn.

26. *Ataenius cylindrus* Horn

Ataenius cylindrus Horn, 1871:289; 1875:142.
Ataenius horni Harold, 1874a:19.
Ataenius cylindricus Schmidt, 1922:454.

DESCRIPTION.—Length 3.3 to 4 mm; width 1.2 to 1.8 mm. Oblong, convex, black, moderately shining. Head convex; clypeus sharply dentate each side of moderately broad, moderately deep, triangular emargination, sides weakly arcuate to nearly right-angled genae, edge finely reflexed; surface concave behind emargination, elsewhere convex and finely, closely, evenly punctate; front and occipital area densely, moderately punctate, the practically contiguous punctures twice the size of the clypeal punctures. Pronotum convex, the sides not completely visible viewed from directly above, about one-fourth wider than long, anterior angles obtusely rounded, posterior angles slightly emarginate, sides and base margined, posterior angles and base distinctly crenate-fimbriate, the setae separated by more than their length, those of the sides anteriorly extremely short and inconspicuous, surface densely, shallowly, moderately punctate throughout, the punctures minutely setigerous and general surface minutely alutaceous under high magnification, punctures gradually a little finer anteriorly at middle. Elytra elongate-oval, humeri dentate, one-third longer than wide, margin without noticeable setae; elytral striae wide, deep, rather coarsely punctate, the punctures slightly crenating the inner side of the intervals, intervals usually subcarinately convex with a minutely alutaceous, more or less distinct shoulder each side of the middle convexity, each interval with two rows of widely spaced, minute punctures, the inside row high up on the shoulder or over the middle of the convexity, the outside row about the middle of the shoulder, extreme lateral interval flat and finely alutaceous. Mesosternum narrowly carinate between the coxae. Metasternum with strong, deep midline, disc with numerous moderate punctures generally separated by their diameters or two times their diameters, the punctures extending outward to the wide, scabrous surface at sides, the scabrous area extending into the metasternal triangle; abdominal sterna finely punctate from side to side, the punctures generally separated by their diameters or two times their diameters, a little finer at middle; sterna fluted anteriorly as usual, the middle fluting of the 5th sternum about one-half its total length; pygidium longer in the male, the median area eroded as usual. Anterior femur with perimarginal groove, punctate and shining along anterior margin, remainder of surface scabrous. Middle and posterior femora punctate throughout, the punctures a little finer and closer than on disc of metasternum, postfemoral lines deep and entire. Posterior tibial fringe a group of seven or eight short, close setae, a short accessory spine of same length, and an intervening seta between the accessory spine and spurs. Long spur, first posterior tarsal segment, and the three following segments combined are about equal in length.

LECTOTYPE (present designation).—Academy of Natural Sciences of Philadelphia, No. 3605.

TYPE-LOCALITY.—Florida. Original description also mentions South Carolina and Georgia.

SPECIMENS EXAMINED.—450+.

DATES COLLECTED.—January 28 to November 6.

DISTRIBUTION (Figure 14).—*Alabama:* Auburn, near Helena, Mobile, Monroeville, Montgomery, Selma, Spring Hill, Storrsland. *District of Columbia. Florida:* Alachua County, Archbold Biological Station (Lake Placid), Buck Key, Capron, Centerville, Clewiston, Crescent City, Dunedin, Dunnellon, Enterprise, Fort Lauderdale, Fort Myers, Fort Ogden, Gainesville, Goldhead, Haw Creek, Highlands Hammock State Park, Jacksonville, Jungle Road (Taylor County), Jupiter, Kissimmee, Korishan State Park, La Belle, Lacooche, Lake Harney, Lake Letta, Lake Wales, Levy County, Marion County, McIntosh, Miami, Moore Haven, Myakka River State Park, Ocala, Oneco (Manatee County),

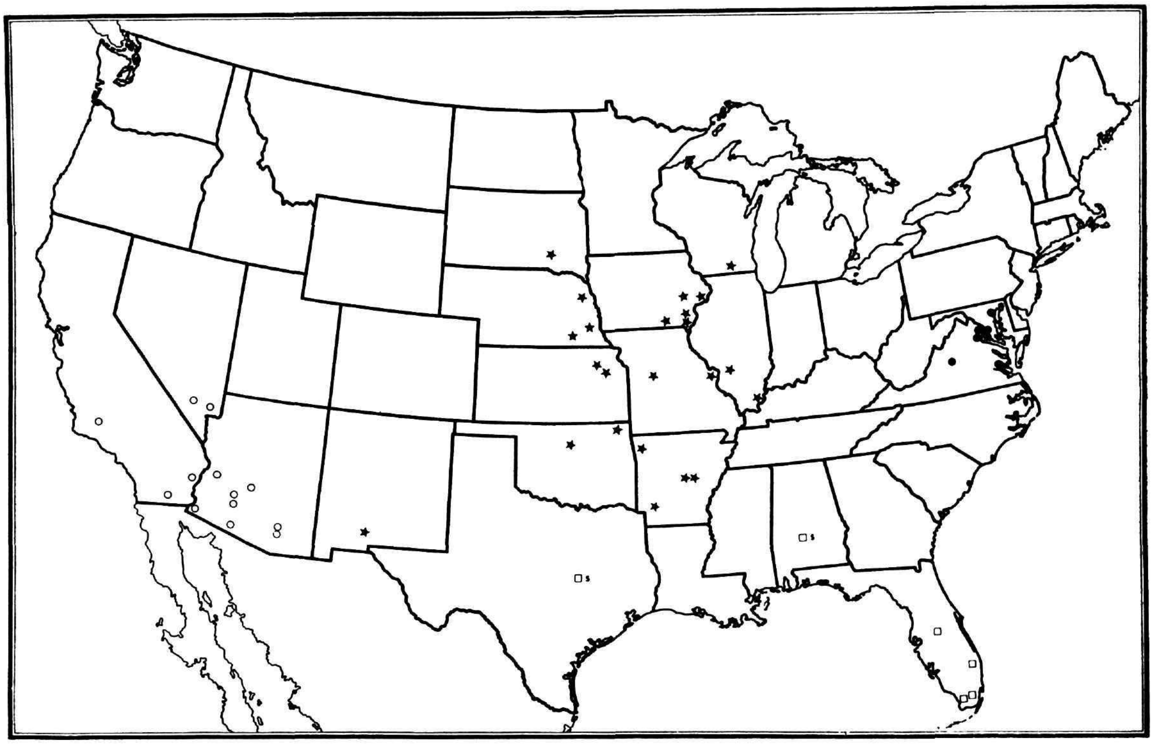

FIGURE 13.—Distribution of *Ataenius lobatus* Horn, *A. languidus* Schmidt, *A, glaseri*, new species, and *A. robustus* Horn.
o *lobatus* □ *languidus* • *glaseri* ★ *robustus*

Pablo Beach, Palatka, Pensacola, Punta Gorda, Sânford, Sarasota, Tallahassee, Tampa, Winter Park. *Georgia:* Beachton, Demarest, Hazelhurst, Hinesville, Milner, Nashville, Okefenokee Swamp, Pine Mt., Prattsburg, Tifton, Ware County (S. L. Walker State Park), Waycross. *Kentucky:* Wolf Creek Lake (Wayne County). *Louisiana:* Covington. *Maryland:* "Maryland," Pocomoke Swamp. *Mississippi:* Camp Shelby, George County, Gulfport, Horn Island. *New Jersey:* Martha. *North Carolina:* Carthage, Southern Pines, Swan Quarter, Tryon. *Pennsylvania:* "Pennsylvania." *South Carolina:* Beaufort, Berkeley County, Blackville, Blaney, Cameron, Cayce, Charleston, Clemson, Colleton County, Columbia, Congaree, Edisto Island, Florence, Folly Beach, Georgetown County, Hampton, I'on Swamp, Lugoff, Marion, Moncks Corner, Mount Pleasant, Oconee CCC Camp, Orangeburg, Pelion, Pontiac, Pritchardville, Ritter, Seabrooks Island, Summerville, Sumter, Walterboro, White Pond, Williamsburg County, Yemassee, York County (Route 91 at Chester County line). *Tennessee:* "Tennessee." *Texas:* Willis. *Virginia:* Accomac, Arlington, Camp Picket, Chatham, Fort Monroe, Nelson County, Virginia Beach.

REMARKS.—Occasionally the elytral intervals do not show the flattened shoulders and the intervals appear evenly convex. In such cases the sharply dentate clypeus with the concave surface behind the emargination, the emarginate posterior angles, and the close even punctation of the pronotum together with locality data should suffice for accurate determination.

I have frequently taken this species under quite old cow dung. It is not usually found under fresh dung but seems to prefer the ground surface under dung almost completely dry. It has been collected in every month except December. The earliest record is 28 January at Miami and the latest is 6 November in Oconee County, South Carolina.

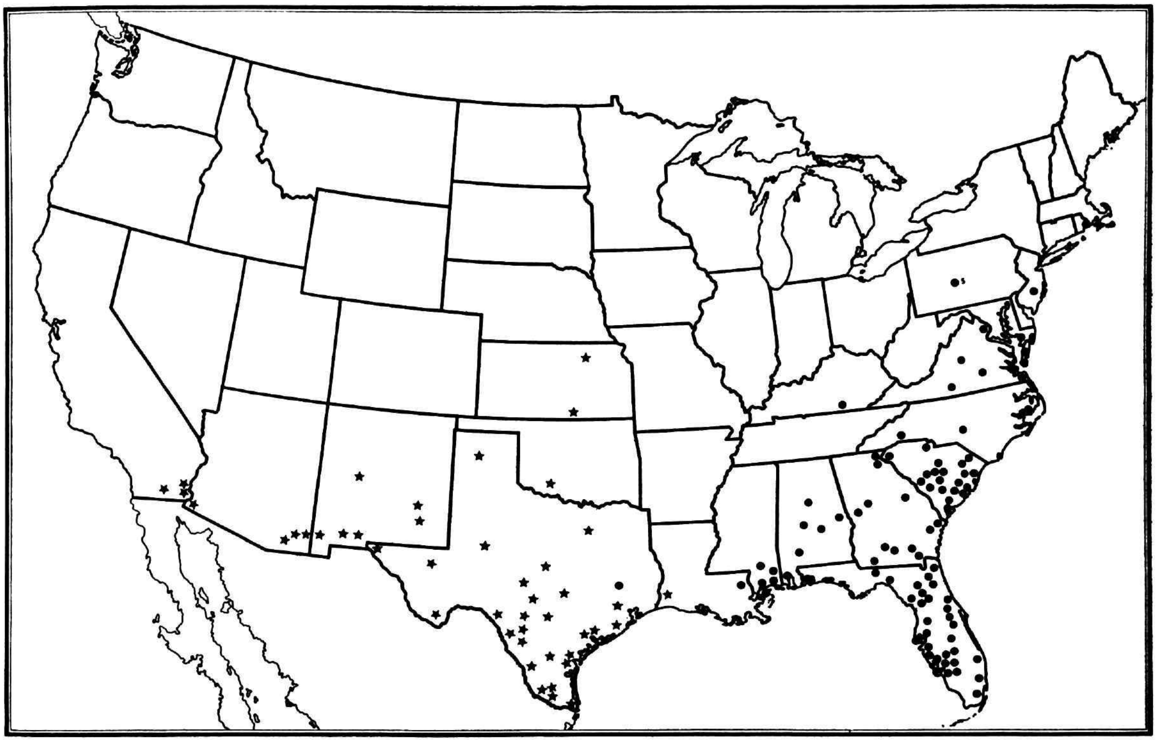

FIGURE 14.—Distribution of *Ataenius cognatus* (LeConte) and *A. cylindrus* Horn.
★ *cognatus* ● *cylindrus*

27. *Ataenius oklahomensis* Brown

Ataenius oklahomensis Brown, 1930:4.

DESCRIPTION.—Length 3.5 to 4.4 mm; width 1.6 to 1.8 mm. Oblong, subparallel, convex, shining, black, sometimes anterior of clypeus and legs reddish. Head convex, clypeus with small, sharp, triangular tooth each side of moderately deep emargination, sides narrowly reflexed, slightly arcuate to nearly right-angled genae; surface strongly shining, narrowly, transversely wrinkled and concave behind median emargination; smooth, minutely, closely punctate over convex disc, then gradually finely, closely punctate, separated by their diameter or less, to base of clypeus; punctures still larger but moderate across frontal-basal area of head. Pronotum convex, averaging about 1.2 mm long by 1.7 mm wide, anterior angles obtusely rounded, sides nearly straight, posterior angles slightly excised, base arcuate, sides and base margined, crenate-fimbriate, the setae very short, the crenations and setae most conspicuous at posterior angles; surface with mixed very fine and moderately coarse punctures, coarse punctures a little smaller, scattered and not as close over middle of anterior disc, coarser and much closer, practically contiguous beginning midway and outward to sides. Elytra convex, 2.3 to 2.8 mm in length and 1.6 to 1.8 mm in width, sides arcuate, striae moderate, strial punctures deep, separated by three or four times their diameter, crenating inner margins of weakly to moderately convex intervals, disc with a row of minute punctures along each side of the interval, the striae become wider, the intervals strongly convex and eroded each side (over the apical declivity), the humeri peculiarly doubly dentate with a strong, noticeable tooth at basal end of the 7th intervals. Mesosternum shagreened as usual with very fine, alutaceous sculpture and very fine, short, appressed hair; strongly carinate between the coxae. Metasternum shining, midline strong and deep, disc and part way to sides with close punctures variable in size from fine to coarse, roughly scabrous at sides, deep, well-defined metasternal triangle finely alutaceous.. First visible abdominal sternum with a deep posterior marginal line, remaining four visible sterna fluted along anterior margin, the fluting gradually longer on each segment with flutings of 5th sternum half as long as the sternum, all sterna closely, moderately punctate between scabrous areas at sides, pygidium convex at apex, gradually concave at base, the surface rough and alutaceous, apical lip very narrow and inconspicuous. Anterior femora with perimarginal groove, surface rough except for small, smooth spaces in inner anterior angle. Middle femora closely, finely punctate, two or three larger setigerous punctures at knee, a complete, strong posterior marginal line. Posterior femora with finer, more scattered punctures, two or three coarser punctures at base, strong, complete posterior marginal line. Posterior apical tibial fringe of six short setae, a strong accessory spine with an intervening seta between spine and spurs. First posterior tarsal segment one-fifth longer than the long spur and about same length longer than the following three segments combined. Males with 4th abdominal sternum much shorter at middle and the pygidium relatively longer than in the female.

HOLOTYPE.—Canadian National Collection, No. 3038.

TYPE-LOCALITY.—Payne County, Oklahoma.

SPECIMENS EXAMINED.—Eleven.

DATES COLLECTED.—September 5 to October 20.

DISTRIBUTION (Figure 6).—*Arkansas:* Washington County. *Oklahoma:* Cleveland County, Mangum, Payne County, Willis. *Texas:* Harrisburg.

REMARKS.—The doubly dentate humeri are unusual in this uncommon species. See remarks following *A. ovatulus* Horn.

28. *Ataenius ovatulus* Horn

Ataenius ovatulus Horn, 1871:286; 1875:142, 1887:78.—Schmidt, 1922:431.

Ataenius lecontei Harold, 1874a:20.—Horn, 1875:142.—Schmidt, 1922:447.—Robinson, 1948:177.

Ataenius cylindrus.—Horn, 1875:142 [not Horn, 1871:289].

DESCRIPTION.—Length 3.0 to 4.0 mm; width 1.4 to 1.7 mm. Elongate-oval, convex, shining, dark reddish brown to piceous, anterior margin of clypeus and legs usually reddish brown. Head convex, clypeus with small, sharp, triangular tooth each side of a wide, moderate, median emargination, margin very finely reflexed, sides arcuate to sharply rounded, right-angled genae; surface slightly wrinkled, narrowly concave behind median emargination, apparently smooth but actually minutely punctate, more noticeably so toward sides where they are very fine and separated generally by their own diameters; punctures of frontal-occipital area gradually minute to very moderate, separated by their own diameters or less. Pronotum convex, averaging about 1.5 mm wide by 1.1 mm long, sides and base margined, very finely fimbriate-crenate, setae fine, short, inconspicuous, crenations noticeable at slightly emarginate hind angles, base evenly arcuate, anterior angles obtusely rounded; surface with mixed minute and moderately coarse punctures, discal coarse punctures irregularly spaced from less than one to four or more diameters, close to dense over outer third, the coarse punctures in area of lateral fovea variable in size, some twice the size of others. Elytra convex, ovate, averaging about 1.6 mm wide by 2.3 mm long, sides arcuate, 7th interval with distinct tooth basally, making the humeri doubly dentate, elytral striae moderately wide and deep, deep punctures separated by four or five times their diameter, crenating inner margins of the moderately convex intervals, lateral intervals 7, 8, and 9 subcarinately convex, 10th flat and alutaceous, over apical fourth or less the interval becomes strongly convex to subcarinate, sometimes slightly eroded each side, intervals with some very minute punctures under high magnification. Mesosternum shagreened with fine, alutaceous sculpture and fine, short, decumbent setae, sharply carinate between coxae. Metasternum shining, midline deep, disc and halfway to sides with scattered, mixed fine to moderately coarse punctures, generally separated by one diameter or less, a fine, eroded curving line close around middle coxae, sides and metasternal triangle roughly scabriculate-alutaceous. Abdominal sterna frequently transversely convex, first visible sternum with posterior marginal line, remaining four sterna fluted along anterior margin, the fluting progressively longer posteriorly, those of 5th sternum half the total length, sterna quite closely punctate from side to side, punctures separated generally by one or two times their diameters, very moderate in size over anterior sterna and finer posteriorly, a little scabrous sculpture at extreme sides. Pygidium with narrow, smooth apical lip, disc scabrous. Anterior femora with perimarginal groove, narrowly smooth anteriorly, disc finely scabrous. Middle femora finely punctate near trochanter, gradually coarser, finely, minutely setigerous and closer outward, two or three longer setae at knee, posterior marginal line strong and complete. Hind femora with scattered, fine punctures, three or four coarse setigerous punctures at knee, posterior marginal line deep and entire. Posterior tibial fringe of six or seven short, close setae, a short accessory spine and an intervening seta between the spine and spurs. First posterior tarsal segment about one-fifth longer than the long spur, following three segments combined shorter than the long spur. Males have 4th abdominal sternum greatly shortened at middle to half the length of the preceding sternum, pygidium comparatively longer than in female.

LECTOTYPE (present designation).—Type No. 3611 in Horn Collection, Philadelphia Academy of Natural Sciences.

TYPE-LOCALITY.—Louisiana.

SPECIMENS EXAMINED.—260+.

DATES COLLECTED.—January 18 to October 2.

DISTRIBUTION (Figure 11).—*Alabama:* Chickasaw, Langdale. *Arkansas:* "Arkansas." *District of Columbia. Florida:* Crescent City, Gainesville, Highlands, Jacksonville, Sopchoppy (Wachula County), Tall Timbers Research Station, Wilcox (Gilchrist County). *Georgia:* Athens, Atlanta, Currahee Mtn., Jekyll Island, Milner. *Illinois:* Grant City State Park, Herod. *Kentucky:* Natural Bridge. *Louisiana:* New Iberia. *Maryland:* Anne Arundel County (S. I. Java Farm), Flag Pond (3 mi S Kenwood Beach), Piney Point, Plummers Island, Takoma Park. *Mississippi:* Starkeville, Vicksburg. *North Carolina:* Highlands, Pisgah Forest, Raleigh, Southern Pines. *South Carolina:* Aiken, Allendale County, Anderson County, Bishopville, Blaney, Brook Green, Bulls Island, Cayce, Charleston, Chester, Clemson, Columbia, Combahee River (Beaufort County), Edgefield, Fairfax, Florence, Green Pond, Greenville, Hartsville, Jenkinsville, Kline, Liberty, Marion, North Augusta, Pickens County, Pinnacle Mtn., River Falls, St. Andrews Church, St. Matthews, Saluda County, Sandy Springs, Sassafras Mtn., Six Mile, Summerville, Tigerville, Union County, Yemassee. *Tennessee:* Athens (McMinn County). *Texas:* Avery, Dallas. *Virginia:* Belvoir (Fauquier County), Falls Church, Fort Monroe, Norfolk.

REMARKS.—*Ataenius ovatulus* Horn and *A. oklahomensis* Brown are very closely related. In *A. oklahomensis* the pronotum is densely, uniformly punctate over the outer third and the posterior angles of the pronotum are distinctly excised or emarginate with the base slightly sinuate; the elytral intervals are strongly convex to subcarinate over the posterior third, with the sides of the intervals here noticeably eroded and alutaceous. *Ataenius ovatulus* is closely but not densely, not uniformly punctate over outer third, the posterior angles of the pronotum weakly or not excised, base not sinuate or very inconspicuouly so; elytral intervals convex over apical fourth or less, not noticeably eroded or alutaceous though sometimes slightly so. Both species have doubly dentate humeri.

Ataenius ovatulus is rarely if ever attracted to lights. Jerath (1960:74) described the larva.

I have examined the holotype of *Ataenius lecontei* Harold now in the Germar collection in the Museum für Naturkunde, Berlin, Deutsche Demokratische Republik. It is labeled "Carolina, Zimmermann." Many of Zimmerman's specimens were collected near Charleston, South Carolina.

29. *Ataenius desertus* Horn

Ataenius desertus Horn, 1871:289; 1887:72.—Schmidt, 1922: 453.

DESCRIPTION.—Length 3.3 to 4.7 mm; width 1.5 to 2 mm. Oblong, castaneous, shining. Head strongly convex; clypeus with strong, sharp, triangular teeth each side of moderately deep, median, anterior emargination, sides arcuate to nearly right-angled genae, edge finely reflexed; surface transversely granulate-rugose, front and occipital area with close punctures of very moderate size separated generally by about their own diameters. Pronotum convex, one-third wider than long, anterior angles obtuse, posterior angles broadly, evenly rounded from middle of sides, strongly margined laterally and basally, fimbriate, crenate, the setae moderate in length, separated by their own length or less; surface with mixed coarse and fine punctures throughout, the coarse punctures shallow, numerous, irregularly spaced from contiguous to four times their diameter, a little less numerous at middle and a little smaller anteriorly. Elytra convex, elongate-oval, about one-third longer than wide, humeri finely dentate; elytral striae fine, moderately deep, strial punctures fine, separated by four or five times their diameters, weakly crenating the moderately convex intervals, intervals with scattered, very fine punctures generally separated by four times their diameters, lateral intervals not noticeably different. Mesosternum with a broad, low carina between the coxae. Metasternum with fine midline gradually deeper and wider at anterior end, disc very finely punctate, the punctures evenly distributed, separated by four times their diameters, a few vague indistinct moderate punctures at sides, metasternal triangle smooth, shallow, not sharply defined. Abdominal sterna with very shallow, indistinct, moderate punctures from side to side, those at sides bearing very fine, semierect hairs, somewhat reminiscent of abdominal hairs of *Ataenius languidus* Harold but more numerous and less regularly placed, sterna finely fluted along anterior margin and fluting gradually longer on successive segments, flutings of 5th sternum deeper and half as long as the sternum. Pygidium eroded as usual, the apical lip shining, with a transverse row of ten or more fine setigerous punctures, the setae or hairs very fine and longer than the length of the lip at middle. Anterior femur lacking posterior marginal line, surface convex, shining, smooth, but in some light with a few scattered, extremely fine, short hairs. Middle and hind femora smooth and shining, usually without or with only a very short trace of postfemoral line at knee, three stout bristles at knee. Posterior tibial fringe with a group of four to six well-separated setae, a very short, triangular accessory spine and one intervening seta between accessory spine and the spurs; first tarsal segment slightly shorter than the long spur and shorter than following three segments combined.

TYPE.—Academy of Natural Sciences of Philadelphia, No. 3606.

TYPE-LOCALITY.—"Not rare in the desert regions around and to the eastward of Fort Yuma, California."

SPECIMENS EXAMINED.—300.

DATES COLLECTED.—April 25 to August 24.

DISTRIBUTION (Figure 12).—*Arizona:* Agua Fria, Ajo (15 mi S), Benson, Bisbee, Brown Canyon (Baboquivari Mts.), Buckeye, Chiricahua Mts., Coconino County, Colossal Cave Park, Cutter (Gila County), Douglas, Florence, Florida Canyon (Santa Rita Mts.), Fort Grant, Gila Bend, Globe, Hope, Kits Peak Rincon (Baboquivari Mts.), Liberty, Madera Canyon (Santa Rita Mts.), Mesa (19 mi NE), Nogales, Oracle, Organ Pipe Cactus Monument, Phoenix, Portal, Rimrock, Roosevelt Lake, Sabino Canyon (Catalina Mts.), Sacaton, Safford, Temple, Tucson, Wickenberg (Maricopa County), Wilcox. *California:* Banneu (San Diego County), Berkeley, Blythe, Desert Center, Elsinore, Glamis (Imperial County), Ripley. *Kansas:* "Kansas." *New Mexico:* Deming, Granite Pass, Hidalgo County, Las Cruces, Lordsburg, Magdalena, Rodeo (18 mi NE). *Nevada:* Logandale, Mercury, Mesquite. *Texas:* Big Bend National Park, Brewster County, Dallas, El Paso, Lajitas, Pecos (Reeves County). *Utah:* St. George.

REMARKS.—The dark red color, sharp, noticeable clypeal teeth, mixed very coarse and fine pronotal punctures, lack of posterior marginal line on the anterior femora, anteriorly deepened midline of the metasternum, and semierect hairs at sides of the abdominal sterna distinguish *Ataenius desertus* Horn.

30. *Ataenius languidus* Schmidt

Ataenius languidus Schmidt, 1910:31.
Ataenius linelli Cartwright, 1944:28. [New synonymy.]

DESCRIPTION.—Length 4.1 to 4.5 mm; width 1.8 to 2.0 mm. Oblong, moderately elongate, convex, shining, dark reddish brown to piceous, legs usually reddish, antennae pale yellow. Head moderately convex, clypeus finely dentate each side of broad, moderate median emargination, sides weakly arcuate to obtusely rounded genae, edge finely reflexed; surface transversely wrinkled anteriorly, above greatest convexity sparsely, very finely punctate, the punctures generally separated by about four times their diameters, punctures slightly larger in occipital area. Pronotum convex shining, averaging about 1.7 mm wide by 1.2 mm long, all angles obtusely rounded, sides weakly arcuate, sides and base strongly margined, marginal setae moderately long, separated by less than their length, shorter around basal margin; surface with mixed coarse and very fine punctures, the fine punctures quite close and evenly distributed, the coarse punctures very irregularly distributed, generally rather widely separated on disc and closer laterally where they are separated by their diameter or more. Elytra convex, averaging about 2.7 mm long by 1.9 mm wide, sides slightly arcuate, humeri finely dentate, striae moderately deep, strial punctures crenating inner sides of moderately convex intervals, the latter with scattered, minute punctures, striae a little wider and intervals more convex over apical declivity, lateral intervals not noticeably different. Mesosternum shagreened with very fine, alutaceous sculpture and decumbent hair, very weakly carinate between the coxae. Metasternum shining, midline strong, long, deeper at each end, disc very smooth but with some extremely minute punctures, occasionally with a few fine punctures also, a small rugose area at extreme sides, the metasternal triangle moderately deep but not sharply defined. Abdominal sterna fluted along anterior margin, smooth at middle, a transverse row of three or four well-separated, coarse, shallow setigerous punctures outward at sides, the setae long, fine, conspicuous, recumbent on first two sterna, semierect on last two. Pygidium finely but roughly eroded over disc with up to eight or ten scattered, fine, moderate setae. Anterior femora with perimarginal grooves, surface smooth, shining, minutely punctulate. Middle and hind femora similar but with three or four coarse setigerous punctures at knee; middle femora with well-defined posterior marginal groove half the length of the femur, the posterior femora identical except that the line or groove is indefinitely continued over the other half. Posterior tibial fringe with four or five setae, an accessory spine of about equal length, and in intervening seta between the spine and the spurs. First posterior tarsal segment slightly shorter than the long spur, equal to following three segments combined. In the males the penultimate sternum is comparatively shorter at the middle, the terminal also shorter, and the pygidium relatively longer than in the female.

HOLOTYPE.—In Riksmuseum, Stockholm.

TYPE-LOCALITY.—"S. Madre de Durango, Mexico."

SPECIMENS EXAMINED.—500+.

DATES COLLECTED.—May to July 13.

DISTRIBUTION (Figure 13).—*Alabama:* "Alabama." *Florida:* Coconut Grove, Dade County, Knights Key (Monroe County), Lake Wales, Lake Worth, Miami, West Palm Beach. *Texas:* "Texas."

REMARKS.—I also have seen this species from the Bahama Islands, West Indies, and Mexico. The conspicuous lateral rows of abdominal setae distinguish it from most other species.

31. *Ataenius barberi*, new species

DESCRIPTION.—*Holotype:* Length 4.0 mm; width 1.7 mm. Elongate, subparallel, black, the elytra with slight reddish tinge, anterior margins of clypeus and pronotum and legs reddish; feebly shining, the elytra alutaceous, only moderately convex. Head moderately convex; clypeal margin very finely reflexed, sharply dentate each side of wide, shallow median emargination, sides arcuate to obtusely rounded genae; depressed anterior area behind emargination wrinkled and more shining than remainder of head which is densely, moderately punctate; clypeal punctures slightly finer anteriorly, tending laterally to become elongate, twice as wide as long but not forming lines as in *A. gracilis*, the punctures of the frontal and basal areas are round and very dense across the base, practically touching but remaining distinct. Pronotum 1.6 mm wide by 1.0 mm long, sides weakly arcuate anteriorly, slightly sinuate at the broadly rounded posterior angles; sides and base finely margined, edge minutely crenate, anteriorly becoming increasingly and distinctly so posteriorly with an extremely fine, short seta between the crenations under high magnification; surface everywhere densely, evenly, moderately punctate, the punctures slightly finer at extreme anterior margin and noticeably shallower at sides, median longitudinal line very vaguely indicated. Scutellum normal. Elytra 2.7 mm long by 1.7 mm wide, humeri strongly dentate, striae shining, deep, crenate punctate; intervals subangularly, moderately convex, the ridge at outer third with a row of very fine punctures, separated by about four times their diameters, and more or less masked by fine alutaceous sculpture throughout; sutural interval with row of close, very fine punctures, tenth interval much flatter than others; under high magnification the punctures of the intervals over the apical declivity become setigerous, showing median rows of very fine, very short setae; the striae are somewhat wider apically also. Mesosternum carinate between the coxae. Metasternum shining, midline long, strong; discal area evenly, closely, rather coarsely punctate, separated by about their diameter, finely scabriculate outward to sides, metasternal triangle large, well defined, scabriculate. Abdominal sterna finely fluted in front, suture between very deep and not longer at middle but equally wide from side to side; punctate throughout as on disc of metasternum but 4th and 5th sterna slightly shallower and minutely setigerous; pygidium finely scabrous. Profemur with perimarginal groove, surface scabrous with close, coarse, shallow, finely setigerous punctures and alutaceous sculpture. Punctures of mesofemora and metafemora as on metasternum. Postfemoral line of middle femur complete, strong, deep, and alutaceous. Postfemoral line of hind femur over one-fourth distance from knee. Posterior tibial fringe of eight close, short setae; without accessory spine. First segment of posterior tarsus one-fourth longer than long spur and longer than following three segments combined. Hind tarsus shorter than tibia.

HOLOTYPE.—USNM 71741.

TYPE-LOCALITY.—Arizona, Bright Angel, Colorado Canyon, 3500 ft, 13 July 1901, H. S. Barber.

SPECIMENS EXAMINED.—Seventeen.

DATES COLLECTED.—July 13–16.

DISTRIBUTION (Figure 9).—Paratypes. *Arizona* (13): Colorado Canyon, 13 July, H. S. Barber and E. A. Schwarz. *Texas* (3): Chisos Mountains, 16 July, J. W. Green.

REMARKS.—The specimens vary from 2.5 to 4.1 mm in length. Some show the punctures of the metasternal disc gradually smaller posteriorly, and in some the femoral punctures are a trifle smaller than those of the metasternum, otherwise no differences were observed.

Ataenius barberi is reminiscent of *A. abditus*, *A. texanus*, and *A. scalptifrons* Bates (1887:100); however, it differs from the first two by the elongate clypeal punctures and in being broader, less convex, and much more noticeably alutaceous. It is much closer to *A. scalptifrons*, but that species, in average, is smaller in size, is more convex, and has much more noticeably ridged intervals.

The species is named after the late H. S. Barber, one of the best field collectors and keenest observers I have ever known. E. A. Schwarz had recognized this beetle as an undescribed species and labeled it "n. sp." Paratypes will be deposited in the collection of the California Academy of Sciences.

32. *Ataenius puncticollis* (LeConte)

Euparia puncticollis LeConte, 1858:66.
Ataenius puncticollis.—Harold, in Gemminger and Harold, 1869:1067.—Horn, 1887:77.—Schmidt, 1922:434.—Cartwright, 1951:29.
Ataenius inops Horn, 1887:72.—Schmidt, 1922:449.—Cartwright, 1951:29.

DESCRIPTION.—Length 3.1 to 4.2 mm; width 1.2 to 1.7 mm. Oblong, subparallel, moderately convex, shining, dark red-brown, sometimes pronotum and head darker. Head convex, edge finely reflexed, clypeus sharply, triangularly dentate each side of moderately deep median emargination, sides weakly arcuate, right-angled genae sharply rounded; clypeal surface strongly, coarsely, transversely wrinkled, a few close, minute punctures at base, frontal and occipital area closely, very finely punctate. Pronotum convex, two-thirds as long as wide, anterior angles obtusely rounded, posterior angles broadly rounded, base slightly sinuate before middle, sides and base margined, very minutely crenate-fimbriate; surface closely, evenly, very moderately punctate throughout, punctures usually separated by their diameters on disc, smaller and closer along anterior margin. Elytra convex, about seven-tenths as wide as long, humeri very finely, inconspicuously dentate; striae fine, deep, strial punctures fine, crenating inner margins of nearly flat intervals, a row of close, very fine punctures along outside margin. Mesosternum shagreened with fine, alutaceous sculpture and very fine, short, appressed hair, carinate between the coxae. Metasternum smooth, shining, disc with scattered, very minute punctures, midline fine, moderately deep, lateral scabrous area at sides extending inward almost to disc where it breaks up into fine punctures close to middle coxae, metasternal triangle slightly roughened in anterior angle. First visible abdominal sternum with posterior marginal line, remaining four sterna finely fluted along anterior margin, surface very moderately punctate from side to side, finer at middle, coarser toward sides where the punctures are generally separated by their diameter or less, finer and closer on 5th sternum. Pygidium very finely punctate and convex at apex, concave and eroded basally. Anterior femora with perimarginal groove, surface shining, some scattered, very minute punctures. Middle femora smooth, shining, posterior marginal line at knee a little less than half femur length. Posterior femora similar but with a very short line at knee. Posterior apical tibial fringe of eight short, close setae, without accessory spine. First posterior tarsal segment short, enlarged apically and narrowed basally, about three-fourths as long as long spur, a trifle shorter than following three segments combined. The males have the 4th sternum slightly shorter at middle and the pygidium comparatively longer than in the female.

HOLOTYPE.—Museum of Comparative Zoology, No. 3731. (Type of *A. inops* Horn in Academy of Sciences of Philadelphia, No. 3607.)

TYPE-LOCALITY.—El Paso, Texas. (*A. inops*, Horn, "Arizona."

SPECIMENS EXAMINED.—456+.

DATES COLLECTED.—January 25 to November 8.

DISTRIBUTION (Figure 7).—*Arizona:* Arivaca, Blake Dike Project (Sierrita Mts.), Browns Canyon (Baboquivari Mts.), Carr Canyon (Huachuca Mts.), Chiricahua Mts., Clifton, Cochise Stronghold (Dragoon Mts.), Colossal Cave Park, Continental (Pima County), Douglas, Florence, Fort Grant, Fort Yuma, Gila Bend (Maricopa County), Globe, Guadelupe Canyon (Cochise County), Hot Springs, Kits Peak Rincon (Baboquivari Mts.), Madera Canyon, Marjilda Canyon (Graham Mt.), Mesa (19 mi NE, Maricopa County), Nogales, Noon Creek Mt. (Graham County), Oracle, Organ Pipe Cactus National Monument (Pima County), Pajarita Mts., Palmerlee (Cochise County), Patagonia Mts., Pena Blanca, Piney Canyon (Chiricahua Mts.), Portal (Southwest Research Station), Rimrock, Robles Ranch (20 mi SW of Tucson), Sabino Canyon (Catalina Mts., Pima County), St. Johns (Apache County), Santa Cruz County, Santa Rita Mts., Santa Rosa Mts., San Xavier (near Tucson), Sycamore Canyon (Santa Cruz County), Texas Pass, Tucson, Wickenberg, Wilcox, Williams. *California:* Napa County. *Colorado:* Rocky Ford. *Indiana:* Marion County. *New Mexico:* Las Cruces, Lordsburg, Mesilla Park, Rodeo (18 mi N). *Texas:* Alpine, Austin, Big Bend National Park, Cypress Mills, Davis Mts., Del Rio, El Paso, Enchanted Rock, Fort Davis, Lajitas, Laredo, Round Mts., Sanderson, Stockley, Terlingua Creek, Victoria, Weslaco.

REMARKS.—Among United States species, *Ataenius puncticollis* is recognized by the clypeal teeth, transverse coarse wrinkles covering practically the entire clypeus, close, evenly spaced, moderate pronotal punctures, and the first segment of the short posterior tarsus being much thicker apically than at base. The holotype, badly worn and without clypeal teeth, for many years was thought to be distinct from *A. inops* Horn which has distinct clypeal teeth. Comparison of the two showed them to be the same species.

33. *Ataenius nunenmacheri*, new species

DESCRIPTION.—*Holotype Male:* Length 3.2 mm; width 1.3 mm. Elongate, parallel, slender, dark red-brown, shining, very moderately convex. Head moderately convex; clypeal margin very finely reflexed, a small, sharp triangular tooth each side of a moderate, angulate, median emargination, sides weakly arcuate to right-angled genae; anterior third of clypeus transversely rugose, the rugae short, broken, and more or less tuberculate, remainder of head closely, finely, evenly punctate, the punctures separated by less than their diameters. Pronotum quadrate, 1.2 mm wide by 0.9 mm long, anterior angles obtusely rounded, sides straight over anterior three-fifths then arcuate to posterior angles, sides and base finely margined, very minutely fimbriate-crenate, evenly, densely, finely punctate throughout, punctures generally separated by their diameter, shallow, larger and running together in the anterior angles, a trifle smaller anteriorly, vaguely impressed midline. Elytra 2.1 mm long and 1.3 mm wide, humeri very finely dentate, striae moderately deep, strial punctures slightly crenating sides of very weakly convex intervals, outside margin of intervals with a row of fine punctures, slightly more noticeable on lateral intervals, the punctures of intervals 6, 7, and 8 separated by their diameter or less, 10th interval flatter than 9th, intervals slightly more convex over apical declivity. Mesosternum shagreened as usual, a strong, broad-based, elongate-triangular carina between the coxae. Metasternum shining, midline unusually long, strong and deep, disc and halfway to sides with fine and very moderate mixed punctures, finer posteriorly, scabrous at sides, metasternal triangle small, deep, roughened within. First visible abdominal sternum with strong posterior marginal line, remaining sterna finely fluted along anterior margin, those of the 5th sternum longer over middle half of total width of segment, the fluting of this section about equal in length so that anterior and posterior borders are approximately parallel, surface of middle three visible sterna otherwise closely, moderately punctate, a little closer and larger at extreme sides; punctures of 5th sternum closer and smaller; pygidium with fine apical margin, roughened disc convex apically, concave basally, slightly more than one-fifth as long as wide. Anterior femora with perimarginal groove, surface with about 30 scattered, fine to moderately coarse punctures, the coarse punctures on outer posterior surface. Middle and hind femora shining, with scattered fine punctures; middle femur with posterior marginal line along outer third of total length, posterior femur with barely a trace of marginal line at knee. Posterior tibial apical fringe of seven short setae, without accessory spine. First posterior tarsal segment subequal to long spur and following three segments combined.

Allotype Female: Length 3.2 mm; width 1.3 mm. The only noticeable difference from the male is the shorter pygidium, the length being about one-fourth the width.

HOLOTYPE.—USNM 71742.

TYPE-LOCALITY.—Arizona.

SPECIMENS EXAMINED.—Sixteen.

DATES COLLECTED.—November.

DISTRIBUTION (Figure 15).—Paratypes. Holotype, allotype, and two paratypes bear identical labels: "Arizona, A. Koebele, 18 November 1907." In addition to the type series I have seen specimens from Mexico: 10 mi N of Culiacan, Sinaloa; 20 mi W of Compostila; and 2 mi E of Concordia, Sinaloa.

REMARKS.—*Ataenius nunenmacheri* is probably more closely similar to *A. strohecke̱ri* than any other species but it is more slender than *A. strohecker*i, has uniform punctures over upper clypeus and front, the intervals are not as convex, the lateral intervals are not as coarsely or roughly punctate, the sides of the pronotum are less evenly arcuate, and the fluting of the 5th abdominal sternum is longer over the middle half.

The species is named in honor of F. W. Nunenmacher, from whom the four specimens in the type-series were received many years ago.

34. *Ataenius strohecker*i, new species

DESCRIPTION.—*Holotype Male:* Length 3.2 mm; width 1.3 mm. Elongate, parallel, narrow, shining, moderately convex, black, clypeal margin and legs with reddish tinge. Head moderately convex, very finely reflexed clypeal margin sharply, triangularly dentate each side of wide, shallow median emargination, sides weakly arcuate to rounded slightly more than right-angled genae; clypeus transversely wrinkled over anterior half, closely, minutely punctate at middle, gradually very slightly larger laterally and basally, very gradually still larger and closer over frontal area to base, forming a denser transverse band of fine or very moderate punctures, extreme occiput less densely punctate. Pronotum quadrate, width 1.2 mm, length 0.9 mm, the sides diverging very slightly from base to obtusely rounded anterior angles, in lateral view the sides are very evenly arcuate, sides and base finely margined, minutely fimbriate, crenate under moderate magnification; surface densely, evenly, very moderately punctate throughout, the punctures a trifle finer anteriorly. Elytra 2.0 mm long and 1.3 mm wide, humeri very finely dentate, striae fine, deep, strial punctures slightly crenating inner sides of the rather strongly convex intervals, outside margin of intervals with a row of closely spaced punctures which become larger on the lateral intervals where their diameter nearly equals the width of the striae and giving the last three intervals a rough surface, the punctures along the outside margins of intervals 7 and 8 separated by their diameter or less, over the apical declivity the striae become wider and the intervals more convex. Mesosternum shagreened as usual, strongly carinate between the coxae. Metasternum shining, midline long, strong, and deep, a few fine punctures anteriorly, gradually becoming minute posteriorly, scabrous outward from disc to sides, metasternal triangle deep with a little alutaceous sculpture in anterior angle. First visible abdominal sternum with posterior marginal line. Remaining sterna fluted along anterior margin. Suture between 4th and 5th sterna deep, the fluting nearly half the length of the 5th sternum at middle but not especially long at middle. Fourth sternum at middle about two-thirds as long as the preceding

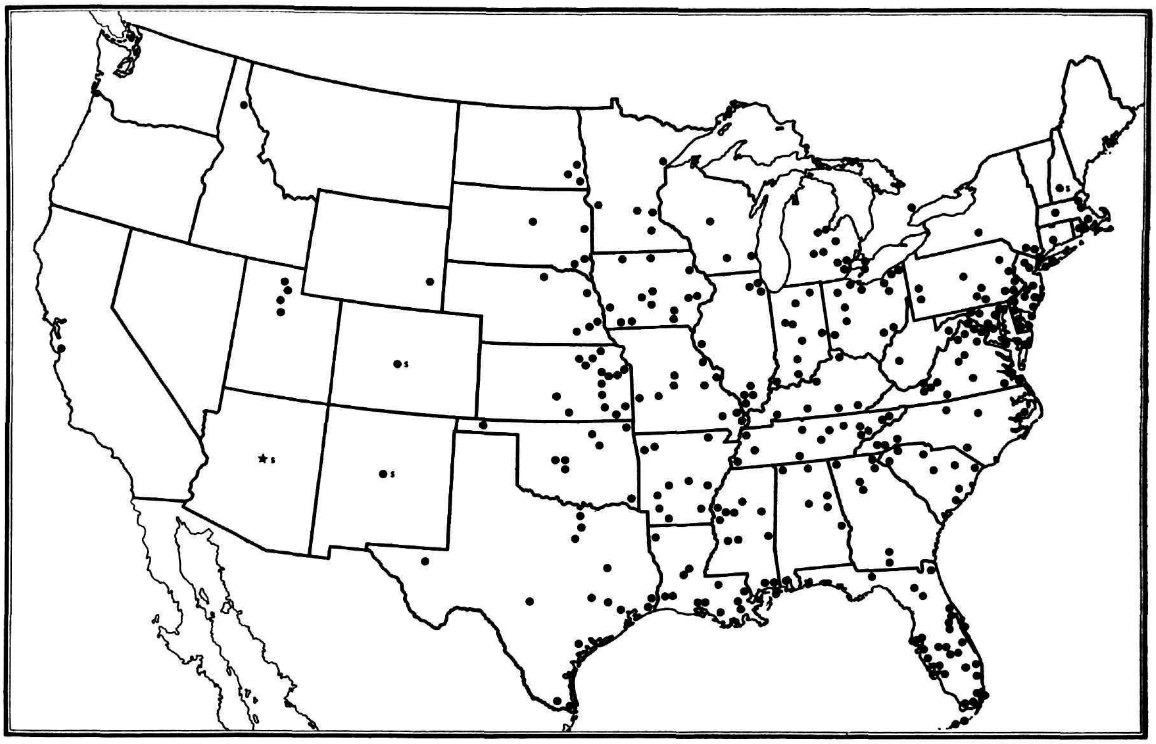

FIGURE 15.—Distribution of *Ataenius spretulus* (Haldeman) and *A. nunenmacheri*, new species.
● *spretulus* ★ *nunenmacheri*

sternum, 5th sternum including fluting about same length. All sterna closely, moderately punctate everywhere except for small area of scabrous sculpture at extreme sides. Pygidium about one-third as long as wide, with very narrow, shining apical rim, disc roughly scabrous-alutaceous. Anterior femora with strong perimarginal groove, surface posteriorly with eight to ten coarse, shallow punctures. Middle and hind femora shining, scattered, fine punctures, weak, posterior femoral line of middle femora extending about one-third distance from knee, posterior femoral line of posterior femur very short. Apical fringe of posterior tibia with seven setae, without accessory spine. First posterior tarsal segment subequal to long spur and to following three segments combined.

Allotype Female: 3.3 mm long; 1.3 mm wide. Apparently as in the male except that the pygidium is noticeably wider, being about one-fourth as long as wide.

HOLOTYPE.—USNM 71743.

TYPE-LOCALITY.—Dade County, Florida, June 1948, Strohecker.

SPECIMENS EXAMINED.—23.

DATES COLLECTED.—May and June.

DISTRIBUTION (Figure 8).—Paratypes. *Florida* (22): Biscayne Bay (7), no other data. "Dade County" (8): June 1948 (6, includes allotype), September 1949 (2), Strohecker. Miami, Dade County (6): 18 May, June 1948, Strohecker. Oneco, Manatee County (1), no date, Paula Dillman.

REMARKS.—The 21 paratypes vary from 3.0 to 3.6 mm in length.

*Ataenius strohecker*i is one of a difficult complex of species closely allied to *A. abditus* (Haldeman) and *A. texanus* Harold. It is a very small species like *A. exiguus* Brown but differs in lacking the alutaceous sculpture of that species, has more evenly rounded hind pronotal angles, has larger punctures on the elytral intervals, in good light those on lateral intervals are approximately as wide as the striae, the four lateral intervals are roughly punctate, and the outside rows of punctures on intervals 7 and 8 are separated by their diameters or less.

Most of the specimens were received many years ago from Dr. H. F. Strohecker, for whom the species is named.

35. *Ataenius texanus* Harold

Ataenius texanus Harold, 1874a:23.—Horn, 1875:142; 1887:71.
Ataenius abditus texanus.—Schmidt, 1922:450.

DESCRIPTION.—Length 3.2 to 4.0 mm; width 1.4 to 1.5 mm. Elongate, parallel, moderately convex, shining, black, legs and clypeal margin reddish. Head moderately convex, clypeal margin very finely reflexed, with a small, sharp, triangular tooth each side of a wide, median, moderately deep, angulate emargination, sides weakly arcuate to nearly right-angled genae; surface of clypeus concave behind median emargination; transversely wrinkled to middle of greatest convexity, basal half of clypeus smooth and practically impunctate, front closely, gradually, very finely to very moderately punctate from clypeus to occiput, the punctures dense, separated by less than half their diameters. Pronotum 1.4 mm wide and 1.0 mm long, angles all obtusely rounded, the posterior angles less rounded than in *A. hesperius*, new species, the weakly arcuate sides and base margined, the edge inconspicuously, minutely fimbriate-crenate under high magnification; surface everywhere evenly, densely, moderately punctate, the punctures over the anterior one-third of the disc noticeably finer. Elytra about 2.3 mm long and 1.4 mm wide, humeri moderately dentate, sides straight, parallel, striae fine, moderately deep, strial punctures crenating inner sides of the very weakly convex, minutely alutaceous intervals, a row of close, minute punctures along outer margin of the intervals, 9th and 10th intervals slightly more convex and slightly roughly punctate. Mesosternum shagreened with fine, alutaceous sculpture and very fine, short, decumbent hair; broadly, triangularly carinate between the coxae. Metasternum shining, midline strong and deep, disc closely, moderately punctate anteriorly, gradually slightly finer posteriorly, finely, scabrously roughened outward to sides, metasternal triangle deep, large, well-defined, roughened within. First visible abdominal sternum margined, the next three sterna finely fluted along anterior margin, the fluting gradually wider on successive segments, the 5th sternum separated away by a deep suture almost equally wide from side to side, not wider at middle, the anterior edge of the sternum roughly broken by coarse punctures which go down over the edge; all sterna with very moderate, rather shallow punctures from side to side, generally separated by about their diameters. Fourth sternum two-thirds as long as the preceding segment. Pygidium with disc roughly, not deeply eroded. Anterior femora with perimarginal groove, surface smooth anteriorly, moderately punctate posteriorly, a little closer along posterior edge where the punctures are separated by less than their diameters. Middle and hind femora with minute-to-fine, scattered punctures over disc; posterior marginal line of middle femur distinct over outer one-third, broken and indistinct over inner two-thirds; marginal line of posterior femora very short at knee. Apical fringe of posterior tibiae of eight setae longer at each end, without accessory spine. First posterior tarsal segment equal in length to long spur and to following three segments combined.

Female similar in every way to the male except that the three middle abdominal sterna are about equal in length, the pygidium is much shorter, with the apical half finely, densely punctate and the eroded area reduced to a basal marginal line.

NEOTYPE (present designation).—USNM 72185.

TYPE-LOCALITY.—Cypress Mills, Texas.

SPECIMENS EXAMINED.—213.

DATES COLLECTED.—April 1 to August 17.

DISTRIBUTION (Figure 16).—*Kansas:* Topeka. *Oklahoma:* Payne County. *Texas:* Austin, Columbus, Cypress Mills, Dallas, Del Rio, Devils River, Enchanted Rock, Houston, Kerrville, La Grange, Menard, New Braunfels, Nueces River (Zavalla County), Sabinal, San Antonio, Uvalde County, Victoria.

REMARKS.—I did not find Harold's type in the Paris Museum. One specimen labeled *A. texanus* in Harold's collection does not fit the original description. I found it to be *A. puncticollis* (LeConte). In his original description and remarks Harold (1874:23) described the head as very finely punctulate posteriorly, smooth medianly, finely granulate anteriorly; pronotum finely, densely punctate, anterior margin subsmooth, the punctures gradually somewhat larger toward the base;

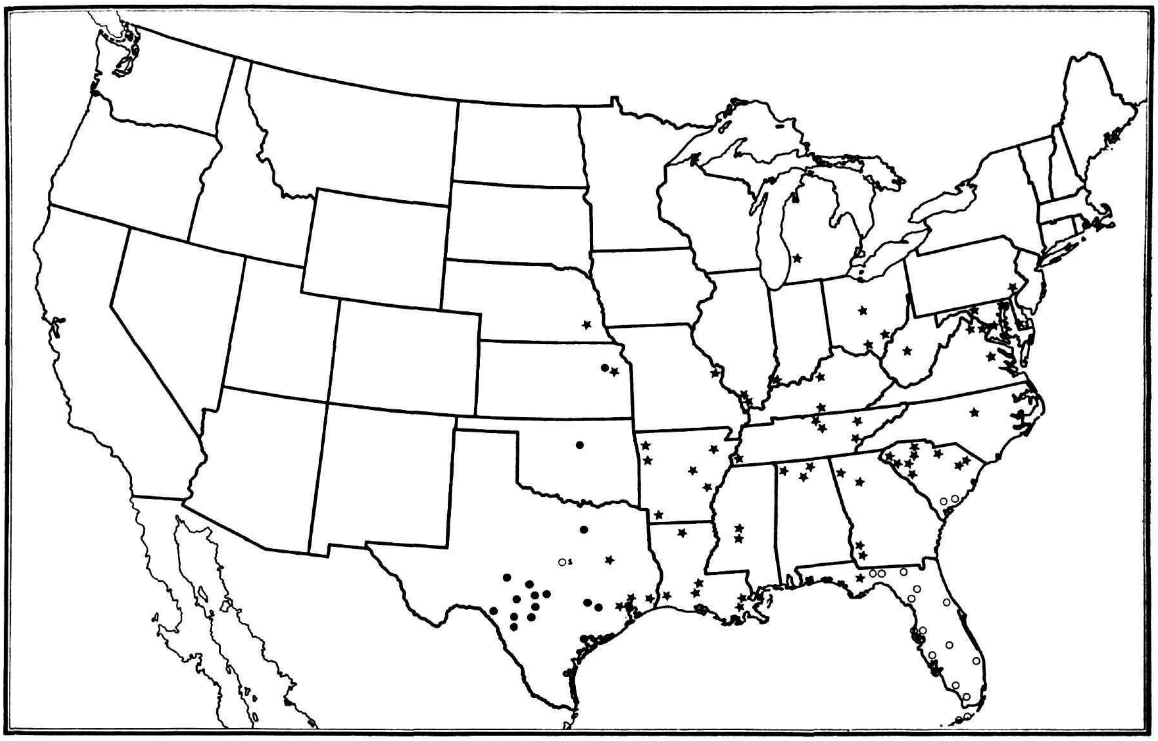

FIGURE 16.—Distribution of *Ataenius apicalis* Hinton, *A. texanus* Harold, and *A. rhyticephalus* (Chevrolat).
★ *apicalis* ● *texanus* o *rhyticephalus*

color pitchy black. One other species, *A. hesperius*, new species, approaches this description but most localities are west of Texas and that species is usually a dark reddish brown to black.

As recognized here, *A. texanus* is easily separated from other close relatives by the deep suture between the 4th and 5th sterna being equally wide from side to side, not wider at the middle. *A. barberi*, new species, has a similar suture equally wide from side to side, while in *A. glaseri*, new species, the suture is equally wide only over the middle two-thirds, not reaching the sides.

36. *Ataenius glaseri*, new species

DESCRIPTION.—*Holotype Male:* Length 4.1 mm; width 1.7 mm. Black, shining, elongate, parallel, moderately convex, legs reddish. Head moderately convex, clypeus dentate each side of wide, moderately deep emargination, sides slightly arcuate to right-angled genae, edge finely reflexed; surface rather coarsely, transversely wrinkled up over greatest convexity, posterior clypeus finely, densely punctate with minute, alutaceous sculpture intermixed, the punctures generally separated by slightly more than their diameters, frontal area with transverse band of close, fine-to-moderate punctures, finer anteriorly and blending into those of clypeus, generally separated by less than their diameters; occiput smooth. Pronotum quadrate, base arcuate, length 1.2 mm and width 1.6 mm, moderately convex, the sides almost invisible when viewed from directly above, anterior angles obtusely rounded, posterior angles very broadly, evenly rounded from sides into base, sides and base margined, margin apparently entire but under high magnification minutely crenate-fimbriate, the setae extremely short and separated by four or five times their length; surface closely punctate throughout, punctures of posterior disc moderately coarse, separated by about their diameters, gradually finer anteriorly and approaching sides and base. Elytra 2.6 mm long and 1.7 mm wide, humeri dentate, elytral striae moderately deep, strial punctures fine, separated by about four times their diameters, crenating inner margin of intervals; intervals flat on disc, weakly convex laterally, strongly so over apical declivity, each interval with a row of fine punctures along outside margin except laterally and apically where the punctures form a median row. Mesosternum broadly, weakly carinate between the coxae. Metasternum shining, midline long, strong, sharply impressed, disc with a few scattered, very fine punctures, finely scabrous at sides, metasternal triangle rather weak, slightly roughened within. Abdominal sterna finely fluted in front, surface with evenly spaced, shallow, very moderate punctures generally separated by about twice their diameters, 5th sternum half the length of the 4th sternum, separated from 4th by a deep, parallel-sided groove or suture, not longer at middle, the widened middle section over middle two-thirds of the suture. Pygidium uneven, convex apically, concave basally, closely punctate, very fine and close apically, very coarse basally, close, shallow, and strongly alutaceous within. Anterior femora with perimarginal groove, surface smooth in front near trochanter, elsewhere with five well-separated, setigerous punctures. Middle and hind femora smooth and shining, posterior femoral line of middle femur about one-third total length inward from knee, barely a trace on posterior femur. Posterior tibial fringe worn away in holotype but paratypes show nine very short, closely spaced setae, without accessory spine; long spur subequal to first tarsal segment and to the following three segments combined.

Allotype Female: Length 4.1 mm; width 1.6 mm. The more noticeable differences from the male are the longer pygidium and 5th abdominal sternum. The 5th sternum almost equals the length of the 4th sternum. The posterior femoral lines are slightly longer on both middle and posterior femora, one-half on the middle and one-fifth on the posterior.

HOLOTYPE.—USNM 71744.

TYPE-LOCALITY.—The holotype was collected at Marshall Hall, Maryland, 19 July 1967, by Jan Foster. The allotype was taken at the same place 13 July 1965, under logs on sand shore of the Potomac River by O. L. Cartwright.

SPECIMENS EXAMINED.—252.

DATES COLLECTED.—June 13 to August 20.

DISTRIBUTION (Figure 13).—Paratypes. *District of Columbia* (1): no date, Ulke Coll. (Carnegie Museum). *Maryland* (204): Elk Neck (16), 9, 16 July 1963, John D. Glaser. Fort Washington (47): 4 July 1965, R. D. Gordon (42); 13 July 1965, O. L. Cartwright (5). Marshall Hall (117): 4 July 1965, R. D. Gordon (1); 13 July 1965, O. L. Cartwright and R. D. Gordon (88); 19 July 1967, Jan Foster and O. L. Cartwright (28). Prince Georges County, NE of Wilson Bridge (24), under driftwood, 13 June 1971, W. H. Tyson. *Virginia* (47): Dumfries, Prince William State Park (2), 7 July 1965, R. D. Gordon. Jamestown (2), 7 July 1967, B. K. Dozier. Mount Vernon (41): 29 July 1967, August 1968, Jan Foster (40); 19 August 1963, J. D. Glaser (1). Nelson County (1), 23 June 1911, W. Robinson. Wide Water Beach (1), 20 August 1963, J. D. Glaser.

REMARKS.—Paratypes vary from 3.2 to 4.3 mm in length. Color varies from dark reddish, dark brown through reddish black to piceous. Rarely, the long spur of the hind tibia is slightly longer than the first tarsal segment. Otherwise I found very little variation.

Ataenius glaseri resembles *A. puncticollis* (LeConte) very closely; however, in *A. glaseri* the pronotum is more quadrate, with less arcuate sides, is frequently widest through the anterior angles, and the first segment of the posterior tarsus practically always is subequal to the long spur and to the following three segments combined. In *A. puncticollis* the first segment of the posterior tarsus is noticeably shorter than the long spur, more swollen apically, and noticeably shorter than three following segments combined. In *A. puncticollis* the sutural interval has a noticeable median row of close, fine punctures. A similar row in *A. glaseri* is much finer and less noticeable. Other elytral punctures, especially at shoulders, also are more noticeable in *A. puncticollis.*

Nearly all specimens of *A. glaseri* have been collected under logs and in debris on the sandy shores of the Potomac River and upper Chesapeake Bay.

The species is named for John D. Glaser, who first collected specimens which were recognized as a new species.

37. *Ataenius punctifrons*, new species

DESCRIPTION.—*Holotype Male:* Length 3.6 mm; width 1.5 mm. Elongate, parallel, dark reddish brown, legs and clypeal margin slightly lighter in color. Head moderately convex, clypeal margin finely, sharply dentate each side of slightly angulate, moderate median emargination, lateral margin weakly arcuate, finely reflexed, genae distinct, obtusely rounded; clypeal surface transversely rugose below median convexity which is very finely punctate, punctures of upper clypeus and to sides gradually very slightly larger, gradually still larger and closer over front, becoming contiguous and moderate in size. Pronotum convex, the arcuate lateral margins hidden when viewed from directly above, width 1.4 mm and length 1.0 mm, anterior angles obtusely rounded, posterior angles very broadly rounded, sides and base finely margined, marginal setae minute and barely visible, surface very uniformly densely moderately punctate, narrowly, gradually, finely punctate along anterior margin, finer than frontal punctures. Elytra convex with lateral margins slightly arcuate, length 2.3 mm and width 1.5 mm, humeri finely dentate, elytral striae moderately deep, fine punctures crenating inner side of moderately convex intervals, a row of close minute punctures along outside edge of intervals, shoulders closely finely punctate, lateral intervals slightly more convex. Mesosternum finely shagreened, rather broadly carinate between coxae. Metasternum shining, midline long and deep, moderately, not very closely punctate anteriorly and outward to sides, punctures gradually finer posteriorly, finely scabrous at extreme sides, metasternal triangle moderately deep with a small eroded pit at anterior angle. Abdominal sterna shining, moderate punctures from side to side separated by one to two or more times their diameter, first visible sternum with marginal line, remaining sterna fluted along posterior margin, the fluting of terminal sternum about one-third length of the preceding sternum, which is shorter at middle than at sides. Pygidium smooth apically, upper two-thirds eroded. Anterior tibia with perimarginal groove, smooth anteriorly, scattered, fine punctures along posterior margin. Middle and posterior femora shining, smooth, barely a trace of posterior marginal line at knee; seven setae in terminal tibial fringe, without accessory spine; first tarsal segment equal to following three segments together, and slightly shorter than long spur.

Allotype Female: Length 3.8 mm; width 1.5 mm. Penultimate sternum not noticeably shortened at middle, pygidium wider and not as long as in male.

HOLOTYPE.—USNM 71749.

TYPE-LOCALITY.—Minneapolis, Minnesota, 22 May 1875, R. J. Mendenhall.

SPECIMENS EXAMINED.—306.

DATES COLLECTED.—January 27 to October 10.

DISTRIBUTION (Figure 10).—Paratypes. *Arizona* (18): Douglas (1), 15 July 1969, J. H. Russell. Harshaw (1), 29 July 1941, F. H. Parker. Madera Canyon, Santa Rita Mountains (1), 27 August 1952, B. Malkin. Patagonia (15): 5, 10 July 1936, M. Cazier (13); 21 August 1940, F. W. Nunenmacker (1); 15 July 1955, F. G. Werner and G. D. Butler (1). *Arkansas* (6): Devils Den State Park (1), 1966, R. W. Hodges. Hope (1), 30 July 1926, L. Knoble (M. Robinson Coll., USNM). Jackson County (1), 1 September 1960, Tuckerman. Pine Bluff (1), 10 October, H. Soltau Coll. (USNM). Washington County (1), 6 April 1938. West Memphis (1), 5 August 1946, O. L. Cartwright. *California* (4): Covina (1), 21 July 1934 (M. Robinson Coll., USNM). Napa (2), no date (M. Robinson Coll., USNM). Pasadena (1), 4 April, Dr. A. Fenyes. *Colorado* (8): Canon City (2), 14 April, H. Soltau Coll. (1, USNM); no date, Wickham (1, Horn Duplicate No. 302–1891). Logan County (2), 1923, Sandhouse Coll. Rocky Ford (3), under squash vine, 12 July 1910, McMillan. Stirling (1), no date, Sandhouse (M. Robinson Coll., USNM). *Illinois* (10): Cartersville, Williamson County (1), 15 May 1957, V. Cole. Chicago (5): 26 May 1912 (3, W. Robinson Coll., USNM); bred from onion (1), 1 July 1911; on onion (1), 29 June 1916. Havana (1), 18 August 1907, J. D. Hood. "N. Illinois" (1), no date, Charles W. Leng. Pittsfield, Pike County (2), 15 August 1946, A. T. McClay. *Indiana* (1): Hovey (1), 3 June 1964, Charles E. White. Hovey Lake (6), blacklight, 24 June, 9 July, 1965, Charles White. Porter County (2), lakedrift of Lake Michigan, H. Dybas. Tremont (2), 20 May 1934, H. Dybas. *Iowa* (20): Ames (9): 12 May 1947, R. L. Collins (1); 26 April 1948, W. H. Tate (2); 20 May 1934, G. L. McNew (1); 30 April 1934, H. K. Chen (1); 18 April 1934, Don E. Ellis (1); May 1943, L. Dalencour (1); 26 May 1948, R. E. Cleary (1); 14 May 1950, A. R. Garlin (1).

Cedar Rapids (2), 4 May, Wickham. "County #12" (1), 5 July 1934, W. E. Dodds. Elma (2): 16 May, George M. Green (1); 16 May 1902, no other data (1). Iowa City (5): 12 May 1895 (1, Wickham Coll. USNM); 24–25 May 1916, L. L. Buchanan (2); 25 May, Wickham (1); 27 January 1895 (1, Wickham Coll., USNM). Lake Okaboji (1), 24 July 1917, L. L. Buchanan. *Kansas* (21): Douglas County (3): April, E. S. Tucker (1); 21 May 1921, 5 May 1923, W. J. Brown (2). Gardiner Lake, Johnson County (1), 3 May 1952, Bell and Spangler. Lawrence (5): 21 July 1930, M. W. Sanderson (1); no date, H. Soltau (2); electric light, W. J. Brown (2). Mount Hope (2), 20 June (Wickham Coll., USNM). Muncie (1), 9 July 1926, George M. Green. Ottawa (1), 15 July 1923, W. J. Brown. Topeka (7): 23 July, C. V. Riley (1, USNM); 1 June, 19 July, Popenoe (4); 7, 8 July, no other data (2). Walthena (1), no date, W. M. Mann. *Louisiana* (8): Alexandria (6): in dry corn stalks, 26, 27 February 1909, Hunter Coll. (4); corn field, 5 April 1911, G. D. Smith (2). Houma (1), 1958, S. D. Hensley. Shreveport (1), 3 July 1891, F. W. Mally. *Michigan* (5): Detroit, no date, Hubbard and Schwarz (3); August, Hubbard and Schwarz (2). *Minnesota* (19): Buffalo (5), 30 July, 5, 10 August, 6 September 1947, S. I. Parfin. Faribault (2), at light, 14 June 1934, A. A. Granovsky. Minneapolis (8, includes allotype), 12 May 1875, R. J. Mendenhall. St. Paul (4), at light, 1 May 1934, A. A. Granovsky. *Missouri* (9): "Mo." (1), no date, T. Pergande. Black Jack (1), on *Helianthus tuberosa*, 30 October 1930, Satterthwate. Charleston (1), trap light, 18 April 1917, Satterthwate. Parkville (1), 25 May 1947, J. H. Laffoon. St. Louis, (1), George M. Green. Webster Groves (4), 16 August 1928, 12 July 1930, Satterthwate. *Nebraska* (3): Ainsworth, 2 mi S Brown County (1), 5 July 1946, R. G. Schmidt. West Point (2), 16 May, May 1888. *New Hampshire* (1): "N. H.," no date, Roland Hayward. *New Jersey* (8): Hillsdale, 4 July 1919, Shoemaker. *New Mexico* (2): Artesia (1), 29 July 1937, D. J. and J. N. Knull (M. Robinson Coll., USNM). Bernalillo (1), 15 July 1923, F. Psota. *North Dakota* (3): Cavalier County (1), 7 July 1916, Larry Kotchman. Slope County (2), black light, 30 June 1966, Robert Gordon. *Ohio* (1): "Ohio," no other data. *Oklahoma* (11): Lake Texhoma, Marshall (1), 16 June 1968, W. Suter. Hinton (1), 26 July 1966, W. Rosenberg. Okmulgee (1), at light, 24 June, J. D. Mitchell. Payne County (7), 3, 13 May 1924, 7 April 1925, 21 August 1926, W. J. Brown. South McAllister (1), 11 June, Wickham. *South Dakota* (14): Brookings (7): 8 July 1943, H. C. Severin (1, Cartwright Coll., USNM); 21 June, 7, 8, July 1943, 15 June 1944, 23 July 1948, H. C. Severin (6). Chamberlain (2), 13 June 1940, H. C. Severin. Elk Point (1), 17 June 1946, H. C. Severin. Highmore (4), light trap, 22 June, 1, 8, 16 July 1944, H. C. Severin. *Tennessee* (36): Reelfoot Lake, 10 June 1946, O. L. Cartwright. *Texas* (51): "Texas," no other data (3). Austin (1), 29 June, H. Soltau Coll. (USNM). Big Bend National Park (21): Brewster County (1), 28 August 1937, Rollin H. Baker; Boquillas (13), 1850 ft, 17, 23 May 1959, Howden and Becker; Glen Springs (1), 5 mi N, 3000 ft, 24 May 1959, Howden and Becker; Santa Elena (6), 2200 ft, 4, 21 May 1959, Howden and Becker. Brownsville (5): 3 May 1904, H. S. Barber (1); 24 April 1908, McMillan (4), Brownwood (4), 5 October 1905, W. D. Pierce. College Station (1), 22 April 1930, H. J. Reinhard. Columbus (3), 9 July, 17 August, Hubbard and Schwarz. Cypress Mills (1), no date, Hubbard and Schwarz. Dallas (1, Wickham Coll. USNM). Devils River (1), 4 May 1907, E. A. Schwarz. Enchanted Rock, Llamo County (1), light trap, 18 April 1959, H. F. Howden. Fort Davis (3), at light, 10, 31 May 1959, Howden and Becker. Grayson County, Jupiter Point, Lake Texhoma, 12 mi N of Whitesboro (1), 16 April 1968, W. Suter. Kerrville (2): 1 April 1959, Becker and Howden (1), at light, 30 May 1906, F. C. Pratt (1). Lajitas, SW Brewster County (1); 19 May 1959, Howden and Becker. Sabinal (2): April 1910, Pierce and Pratt (1); June 1910, no other data (1). *Wisconsin* (36): Dane County (1), 12 April 1897. Griffith State Nursery, Wood County (29), 20, 22 May, 10, 14, 26 June, 6 July 1948, 4 May, 2, 12 June 1949, R. D. Shenefelt. Nekoosa, Wood County (5), 25, 28 August 1948, 28 July, 10 August 1949, R. D. Shenefelt. Port Edwards, Wood County (1), 6 August 1949, R. D. Shenefelt. *Mexico* (3): Coahuila: Boquillas del Carmen, 1850 ft, 29 May 1959, Howden and Becker.

REMARKS.—*Ataenius punctifrons* differs from *A. texanus* in the noticeably punctate front and upper clypeus and in punctures of the anterior femora being along the posterior half, leaving the anterior part nearly smooth. The clypeus and front of *A. texanus* are smooth, sometimes with minute frontal punctures, and the anterior femora are more widely and distinctly punctate. Abdominal fluting of 5th sternum in *A. punctifrons* is longer at middle than at sides.

38. *Ataenius utahensis*, new species

DESCRIPTION.—*Holotype Male:* Length 3.9 mm; width 1.6 mm. Elongate, parallel, shining, dark reddish brown. Head convex, finely reflexed clypeal margin, sharply, triangularly dentate each side of moderate median emargination, sides weakly arcuate, genae obtusely right-angled; surface coarsely, transversely rugose anteriorly below greatest convexity, upper clypeus smooth to minutely punctate shading to very fine across upper front. Pronotum quadrate, 1.5 mm wide and 1.1 mm long, convex lateral margin not visible from directly above, anterior angles obtusely rounded, posterior angles very broadly rounded, sides and base finely margined, lateral setae very minute, scarcely discernible; surface closely punctate throughout, the punctures moderate at middle of disc, separated by a little less than their diameter, very gradually finer away in all directions especially anteriorly, except in the lateral foveae and anterior angles where the punctures become noticeably larger and practically contiguous. Elytra 2.5 mm long and 1.6 mm wide, convex, humeri finely dentate, striae moderately deep, fine strial punctures weakly crenating the inner margin of the convex intervals, a row of very fine punctures along outside margin, those of the outside intervals slightly more noticeable, shoulders noticeably punctate, outside intervals otherwise not different. Mesosternum shagreened as usual with fine, close punctures and short, fine, decumbent hairs, broadly carinate between the coxae. Metasternal midline long and deep, disc with scattered, very moderate punctures, slightly smaller posteriorly, separated by about one diameter, finely scabrous from halfway to sides, metasternal triangle with a small scabrous spot at anterior angle. First visible abdominal sternum with posterior marginal line, remaining sterna very finely, narrowly fluted along anterior margin, the fluting much wider on penultimate sternum, middle three sterna evenly, moderately punctate from side to side, the punctures separated by one or two diameters, punctures of terminal sternum much closer and smaller, penultimate sternum shortened at middle, about two-thirds as long as at sides. Pygidium very finely punctate at apex, eroded gradually more deeply to base. Anterior femur with perimarginal groove, anteriorly with minute, scattered punctures, gradually larger and transversely elongate posteriorly. Middle and posterior femora shining, with scattered, minute punctures, posterior marginal line reduced to a mere trace at knee. Apical fringe of posterior tibia of seven or eight fine setae, without accessory spine, first tarsal segment shorter than long spur and three following segments combined.

Allotype Female: Length 3.4 mm; width 1.4 mm. Differs from the male in penultimate abdominal sternum not shortened at middle and the pygidium wider.

Paratypes vary in length from 3.4 to 4.1 mm. The clypeus appears impunctate or very minutely punctate.

HOLOTYPE.—USNM 71750.

TYPE-LOCALITY.—St. George, Utah, A. M. Woodbury collector (Wickham Collection).

SPECIMENS EXAMINED.—Six.

DATE COLLECTED.—October 1.

DISTRIBUTION (Figure 11).—Paratypes and allotype. Zion Park, Utah (5), 1 October 1934, Bryant.

REMARKS.—*Ataenius utahensis* resembles *A. texanus* very closely in the practically smooth upper clypeus, but *A. utahensis* is shorter, more convex, with more noticeably punctate shoulders, and lateral intervals which are more convex with weaker crenations. The larger, closer punctures in the lateral pronotal fovea and anterior angles are especially noticeable.

39. *Ataenius hesperius*, new species

DESCRIPTION.—*Holotype Male:* Length 3.9 mm; width 1.6 mm. Piceous, elongate, parallel, moderately convex, shining; anterior pronotal angles, margins of head, and legs dark reddish brown. Head convex; clypeus anteriorly broadly, moderately emarginate between small, sharp teeth, anterior fourth of clypeus strongly shining, granulate-rugose, median convexity smooth, actually extremely minutely punctate under high magnification, the punctures upward gradually more noticeable and slightly increasing in size but still fine and dense across the occiput where they are separated by about their own diameters; margin of clypeus finely reflexed, sides weakly arcuate, genae not prominent, nearly right-angled. Pronotum 1.0 mm long and 1.5 mm wide, approximately quadrate viewed from directly above, viewed laterally sides arcuate to very obtuse, rounded posterior angles, sides and base margined, the edge apparently entire but under high magnification actually minutely crenate and fimbriate with very fine, short, widely spaced setae; surface everywhere evenly, densely, moderately punctate, narrowly finer along middle anterior margin, punctures generally separated by less than their diameter on disc, closer in anterior angles. Elytra 2.6 mm long and 1.6 mm wide, smooth, shining, humeri finely dentate, striae moderately deep, crenate-punctate, the crenations cutting the inner margins of the slightly convex intervals, a row of fine punctures along outside of intervals, lateral intervals, especially last two, somewhat roughened by strial crenations and more medially placed row of punctures, humeri also roughened, sutural interval with median row of close, fine punctures which become much closer at apex. Mesosternum shagreened, with moderately dense, short, decumbent hair; strongly carinate between the coxae. Metasternum with strong deep midline; flat discal area with scattered, fine punctures, finer posteriorly, separated by two times their diameters or more, punctures gradually larger outward to scabriculate area at sides, metasternal triangle moderate and scabriculate within. Abdominal sterna closely punctate, the punctures moderate and separated by about their diameter at middle, gradually becoming slightly larger outward to sides, sterna finely, closely fluted along anterior margin. Suture deep between 4th and 5th sterna, not noticeably suddenly wider at middle but from side to side gradually wider to middle then decreasing to opposite side. Pygidium eroded medially, posterior or apical edge finely punctate. Anterior femora with perimarginal groove, surface finely to moderately punctate, punctures closer and more numerous over posterior half. Middle femora with scattered, very fine punctures, postfemoral line about two-fifths total femoral length. Posterior femora similarly punctate, posterior femoral line very short at knee, less than width of femur at knee; tibiae without accessory spine, eight fimbriae in terminal fringe; first tarsal segment slightly shorter than long spur, about equal in length to following three segments combined.

Allotype Female: Very similar to the holotype male except that its pygidium is not as long, the 4th sternum is not as short at middle, and the 5th sternum is longer.

HOLOTYPE.—USNM 71757.

TYPE-LOCALITY.—Arizona: Huachuca Mts., Sunnyside Canyon, 8 August 1970, K. Stephan.

SPECIMENS EXAMINED.—153.

DATES COLLECTED.—February 17 to October 26.

DISTRIBUTION (Figure 17).—Paratypes. *Arizona* (85): "Arizona" (1), no date, Morrison (Hubbard and Schwarz Coll.). Chiricahua Mountains (12): 20 July 1953, 2 July, D. J. and J. N. Knull (6, Cartwright Coll., USNM); 26 July 1952, 13, 22 July 1953, D. J. and J. N. Knull (4, Cartwright Coll.); 2, 4 July, Hubbard and Schwarz (2, USNM). Fort Grant (1), 12 July, Hubbard and Schwarz. Fort Yuma (1), 27 June, Hubbard and Schwarz (USNM). Huachuca Mountains (13): Sunnyside Canyon (6, includes allotype), 8 August 1970, K. Stephan Coll.; no other data (7, Brooklyn Museum Coll.). Oak Creek (10), 12 July 1937, W. F. Turner, C-2586. Pajarito Mountains, Pena Blanca Canyon (16), 11, 28 July 1970, K. Stephan Coll. Patagonia (5): 5 July 1936, M. Cazier (4); 21 August 1940, F. W. Nunenmacker (1, Cartwright Coll., USNM). Pinal Mountains (2), no date (Wickham Coll., USNM). Portal, Southwest Research Station (5): 15 July 1961, B. Benesh (2); 13 August 1951, R. H. Arnett (2); 5400 ft, 1–3 July 1956, O. L. Cartwright (1). St. Johns, Apache County (1), at light, 29 July 1959, R. S. Beal. Santa Catalina Mountains (9): Bear Canyon (2), 6 August 1970, K. Stephan Coll.; Molino Canyon (6), 23 June, 10 July 1968, 26 June, 26 August 1969, 2 July 1970, K. Stephan Coll.; Sabino Canyon (1), lights, 30 July 1954, F. G. Werner. Santa Rita Mountains (18): Madera Canyon (9): 24 July 1968, 6 August 1970, K. Stephan (3); 27–28 August 1952, B. Malkin and W. J. Tilden (6). *California* (41): Fresno (2), 8, 26 May, E. A. Schwarz. Independence (2), 17 July, Wickham (Wickham Coll., USNM). Lone Pine (1), no other data. Los Angeles County (6): no date (4, Coquillet Coll., USNM); July, A. Koebele (1); "Ulke 62" (1, Wickham Coll., USNM). Napa (3), no date (M. Robinson Coll., USNM). Palm Springs (3): "15 J," Hubbard and Schwarz (1); 27 August.

no other data (1); 2 October, Hubbard and Schwarz (1). Pasadena (6): 17 August, no other data (4); 7 April 1877 (2, Los Angeles County Museum). San Bernardino County (10): no date, Coquillet (8); no other data (2). San Diego (5), no date, G. H. Field (Chittenden Coll., USNM). Santa Rosa Mountains (2), 5, 25 June 1946, D. J. and J. N. Knull (Cartwright Coll., USNM). Sunol (5 mi S), Alameda County (1), no other data. *Colorado* (1): Canon City, 16 April (Soltau Coll., USNM). *Kansas* (1): Seneca, 11 July 1964, K. Stephan. *Louisiana* (3): Montgomery (1); 26 October 1892 (H. Soltau Coll., USNM). New Orleans (2), no date, "Shufeldt from USDA." *Nebraska* (1): Lincoln, 5 May (H. Soltau Coll., USNM). *New Mexico* (5): Aztec (3), 28 July 1895, gift of C. T. Brues (Cartwright Coll., USNM). City of Rocks State Park (1), 17 July 1959, K. V. Krombien. Las Vegas (1), 12 August (Barber and Schwarz Coll., USNM). *Oklahoma* (3): Ardmore, 5 April 1908, "Hunter No. 1486," C. R. Jones. *South Dakota* (1): Spearfish, light trap, 16 July 1944, H. C. Severin (Cartwright Coll., USNM). *Texas* (11): "Texas," no date (1, C. V. Riley Coll., USNM). Austin (1), 29 June, H. Soltau. Columbus (3): "Horn dupl. No. 62, 1892" (1 Wickham Coll., USNM); 22 May, C. V. Riley (1); 20 June, Hubbard and Schwarz (1). Dallas (1), at light, "Hunter No. 318," F. C. Bishopp. Sabrinal (1), 7 September 1910, F. C. Pratt. San Diego (2), 25 May (Hubbard and Schwarz Coll., USNM). Victoria (1), 31 March, E. A. Schwarz. Wolfe City (1), 17 February 1908, "Hunter No. 1465," C. R. Jones.

REMARKS.—*Ataenius hesperius* is very closely similar to *A. texanus;* however, the pronotum is more uniformly punctate with fewer fine punctures anteriorly at middle and the deep suture between the 4th and 5th sterna decreases in width at sides. Its distribution is farther west than that of *A. texanus.*

40. *Ataenius abditus* (Haldeman)

Aphodius (Oxyomus) abditus Haldeman, 1848:106.
Ataenius abditus.—Harold, in Gamminger and Harold, 1869: 1066.—Horn, 1875:142; 1887:72.—Schmidt, 1922:449.
Ataenius attenuator Harold, 1874:22.—Horn, 1875:142.

DESCRIPTION.—Length 3.3 to 4.0 mm; width 1.4 to 1.5 mm. Black or brownish black, elongate-parallel, only moderately convex, weakly shining. Head moderately convex; clypeus broadly, shallowly emarginate with a small, sharp tooth each side of emargination, anterior third strongly shining and transversely rugose, the rugae not over greatest clypeal convexity which is very finely, closely, distinctly punctate, the punctures gradually larger upward over front and occiput; margin of clypeus very finely reflexed, sides weakly arcuate before genae, genae not prominent, approximately right-angled. Pronotum nearly rectangular from directly above, from the side posterior angles broadly rounded; lateral and basal margin apparently entire but very finely crenate with widely spaced, extremely short, minute setae under high magnification; surface densely, moderately, uniformly punctate everywhere, slightly closer laterally, especially in the anterior angles where the punctures tend to coalesce. Elytra microreticulate, humeri finely dentate, striae fine, deeply, finely punctate, intervals very moderately convex, the lateral intervals more noticeably roughened by microreticulate or alutaceous sculpture and an outside row of fine punctures, humeri noticeably alutaceous, sutural intervals with row of close, fine punctures, striae noticeably widened over posterior declivity, lateral margin and intervals over declivity show very minute, short, closely spaced setae under high magnification. Mesosternum shagreened, with moderately dense, short, decumbent, fine hairs; strongly carinate between the coxae. Metasternum with strong, deep midline; flattened discal area moderately, closely punctate, punctures separated by about their diameter, the punctures extending out laterally to the finely scabriculate area of the outer third, metasternal triangle deep and scabriculate within. Abdominal sterna moderately, closely, shallowly, uniformly punctate from side to side, finely, very closely fluted along anterior margin. Pygidium medially eroded and alutaceous, bordered by shiny posterior margin. Anterior femora with perimarginal groove, surface moderately, closely punctate. Middle femora with moderate punctures throughout separated by about their diameter, deep posterior marginal line inward from knee over half length of femur. Posterior femora more finely punctate, the punctures separated by two or more times their diameter, and posterior femoral line short, about equal to width of femur at knee; tibiae without accessory spine, terminal fimbriae 8 to 10 in number, first tarsal segment slightly shorter than long spur and equal to following three segments combined.

HOLOTYPE.—Museum of Comparative Zoology, in LeConte collection, No. 8359.

TYPE-LOCALITY.—"Middle States" (i.e., Middle Atlantic States).

SPECIMENS EXAMINED.—325 +.

DATES COLLECTED.—March 20 to November 3.

DISTRIBUTION (Figure 12).—*District of Columbia. Florida:* Neshamy. *Georgia:* Alapaha River (17 mi E of Nashville), Athens (Horshoe Bend, Clarke County). *Illinois:* Riverside. *Indiana:* Kosciusko County, Lake County, Porter County, Tippecanoe County. *Kentucky:* Cumberland Falls (Whitley County), Summit. *Maryland:* Anne Arundel County (S. I. Java Farm), Baltimore, Beltsville, Chesapeake Beach, College Park, Kenwood Beach, Laurel, Marlboro, Marshall Hall, Plummers Island, Takoma Park. *Massachusetts:* Amherst. *Michigan:* Detroit, Isabella County, La Salle, Midland County, Monroe, Port Huron. *Mississippi:* Greenwood, Gulfport, Lucedale. *New Hampshire:* Wentworth. *New Jersey:* Atko, Ballingers Mill, Camden, Colonia, Hadden Heights, Hartford, Hillsdale, Lavalette, Phillipsburg, Westville. *New York:* Douglaston (Long Island), Peekskill, Staten Island. *North Carolina:* Balsam, Black Mountain, Edenton, Highlands, Hot Spring (French Broad River), Looking Glass Mts., Melrose, Mitchell County, Pisgah National Forest, Raleigh, Retreat, Sunburst. *Ohio:* Hocking County, Ottawa County, Schoenbrun (Tuscarawas County), Toledo. *Pennsylvania:* Jeannette, Manayvick, Pittsburgh. *South Carolina:* Aiken, Anderson County, Belton, Cayce, CCC Camp No. 2, Clemson, Columbia, Eastatoe River, Edgefield, Greenville County, Hampton, Jenkinsville, Jocassee, Marion, Salem, Sandy Springs, Sassafras Mtn., Summerville, Walhalla. *Tennessee:* Central, Cummins Mill (Jackson County), Green Branch Cove (Great Smoky Park). *Vermont:* Duxbury (Winooski River), Jonesville (Winooski River). *Virginia:* Fairfax, Falls Church, Fort Monroe. *West Virginia:* White Sulphur Springs. *Canada: Ontario:* Hemmingford, La Salle, Lexington, Long Point, Point Pelee, Tilbury, Toronto, Turkey Point. *New Brunswick:* French Lake.

REMARKS.—*Ataenius abditus* (Haldeman) is close to *A. texanus* Harold and *A. exiguus* Brown. It is black and usually noticeably alutaceous, as is the smaller *exiguus* Brown, while *texanus* is smooth and shining. *Ataenius abditus* is often found among the roots of grasses on the sandy banks of streams. *Ataenius exiguus* is slender and smaller with redder legs than *A. abditus* and occurs from North Carolina to Mississippi, usually near the seashore. *Ataenius abditus* is generally distributed east of the Mississippi River.

41. *Ataenius exiguus* Brown

Ataenius abditus exiguus Brown, 1932:10.

DESCRIPTION.—Length, 2.7–3.2 mm; width 1.1–1.2 mm. Black, elongate, parallel, moderately convex, weakly shining; legs reddish brown. Head moderately convex; clypeus broadly, shallowly emarginate between small, sharp, triangular teeth; sides very finely reflexed, arcuate; genae not prominent, distinctly angled, more than right-angled; clypeus finely, transversely rugose in front below greatest convexity; middle very finely to minutely punctate, head basally with a rather broad band of closer, larger punctures. Pronotum nearly rectangular from directly above, very slightly wider in front, moderately convex, anterior angles obtusely rounded, posterior angles broadly rounded; surface in general closely, evenly, uniformly punctate throughout, sometimes closer in anterior angle, elsewhere, under high magnification, smooth to minutely microreticulate or alutaceous; fine lateral and basal bead showing extremely minute crenulations and setae under high magnification. Elytra finely to minutely microreticulate or alutaceous, humeri finely dentate, striae fine, crenate-punctate, intervals convex with row of punctures separated by three or four times their diameters along inner margin and a row of fine punctures along outer side, alternate intervals with punctures closer and more numerous, sutural intervals flat, extreme lateral interval not, or very slightly, crenate on inner margin, otherwise not different, humeral area distinctly punctate, epiplurae flat or slightly concave, alutaceous, striae not noticeably widened apically; punctures of elytral margin and apical declivity with minute, extremely short setae under high magnification. Mesosternum shagreened, with minute, fine, decumbent hairs, carinate between the coxae. Metasternum with strong, deep midline, disc coarsely punctate, the punctures separated by one or two times their diameters, coarse punctures outward to finely rugose area at sides, metasternal triangle deep and finely, closely, rugosely punctate. Abdominal sterna shallowly, evenly, coarsely punctate as on metasternum, finely fluted in front. Eroded area of pygidium scabriculate. Anterior femora with perimarginal groove, surface punctate throughout, punctures separated by one or two diameters. Middle femora similarly strongly punctate, postfemoral line about half femoral length. Punctures of posterior femora somewhat finer and not as close, postfemoral line very short, not as long as width of femur at knee; apical fringe of eight or nine short fimbriae, no accessory spine, long spur subequal to first tarsal segment, first tarsal segment equal to combined length of the following three segments.

TYPE.—In Museum of Comparative Zoology.

TYPE-LOCALITY.—Homestead, Florida.

SPECIMENS EXAMINED.—80+.

DATES COLLECTED.—January 19 to October 15.

DISTRIBUTION (Figure 17).—*Florida:* Arcadia, Archbold Biological Station, Biscayne Bay, Boynton, Bradenton, Dunedin, Fort Lauderdale, Gainesville, Hernando County, Highlands Hammock State Park, Homestead, Jacksonville, Jupiter, La Belle, Lake Letta, Levy County, Mayport, Miami, Naples, Oneco (Manatee County), Otter Creek, Pablo Beach, Panacea, Punta Gorda, St. Augustine, St. Petersburg, Sebring, Titusville, Vilano Beach, West Palm Beach, Winter Haven, Winter Park, Zolfo Springs. *Georgia:* Savannah, Tybee Beach. *Mississippi:* Gulfport, Keesler Field. *North Carolina:* Balsam (doubtful locality). *South Carolina:* Charleston, Folly Beach, Hilton Head, Mount Pleasant, Myrtle Beach, Sullivans Island.

REMARKS.—*Ataenius exiguus* is noticeably smaller than *A. abditus,* with a wide, distinct band of closer larger punctures basally above a nearly smooth middle convexity of the clypeus. Compared to the length of the pronotum, the elytra are relatively shorter in *A. exiguus.* In *A. exiguus* the elytra and the elytral intervals are more convex than in *A. abditus.*

Most specimens have been taken in sandy coastal areas in the southeastern states. I collected long series under rings of fine debris left behind the dunes around temporary rain pools after a heavy rain at Folly Beach, South Carolina.

42. *Ataenius sciurus,* new species

DESCRIPTION.—*Holotype Male:* Length 6.4 mm; width 3.0 mm. Elongate-oblong, convex, shining, dark castaneous. Head convex, clypeal margin finely reflexed, broadly rounded each side of rather shallow median emargination, sides arcuate to broadly rounded genae; clypeus minutely wrinkled, minutely punctate, moderately shining and concave behind median emargination; gradually very fine, to fine, to very moderately coarse punctures upward over median convexity to base of clypeus, a trifle larger laterally where they are slightly elongate, and deeper posteriorly, generally separated by their diameter or less; frontal punctures dense, round, and about the same size as adjacent clypeal punctures but closer, practically contiguous at suture, gradually more widely separated toward base. Pronotum unusually short and wide, length 1.5 mm and width 2.5 mm, anterior angles very obtusely rounded, sides nearly straight, hind angles feebly emarginate, base faintly sinuate and weakly lobed at middle, base margined but sides not distinctly so, edge fimbriate-crenate under moderate magnification, the crenations distinct but the setae minute and not easily seen; disc with mixed, very fine and very moderate, scattered punctures, laterally the fine punctures disappear, and moderately coarse punctures become quite dense, separated by half their diameters or less. Elytra convex, sides arcuate, length 4.2 mm, width posterior to middle 3.0 mm, humeri finely, sharply dentate, striae fine, moderately deep, deep strial punctures separated by about five times their diameter, slightly crenating sides of moderately convex intervals, intervals, including sutural, with scattered, fine, very minutely setigerous punctures more or less in two rows, the extreme edges of the interval with a fine alutaceous line, 10th interval flat, alutaceous with a median row of low, indefinite, shiny tubercles, shoulders coarsely punctate; striae become much wider and the intervals subcarinately convex over apical declivity; strongly convex apical edge of elytra closely, noticeably very moderately punctate. Mesosternum shagreened as usual, low, wide, shining carina between the coxae. Metasternum shining, midline long, fine, moderately deep, deeper at each end, surface with rather scattered, very fine punctures, finely scabrous out to sides, rather shallow metasternal triangle very finely scabrous within.

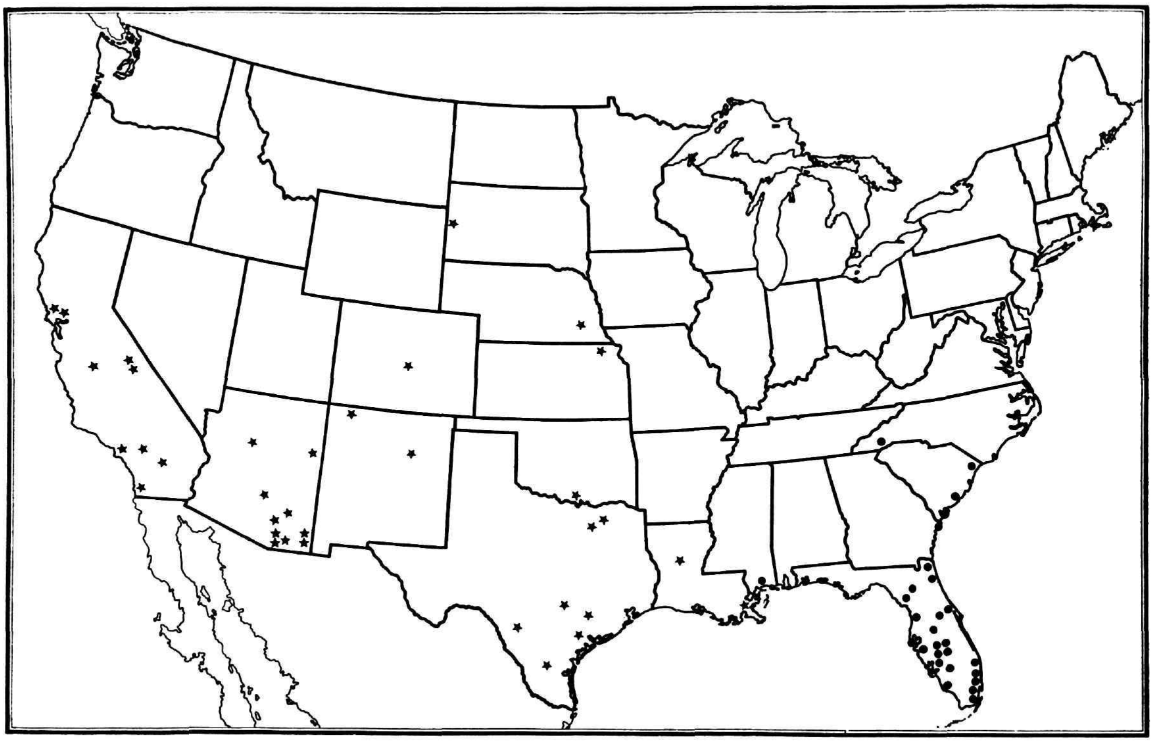

FIGURE 17.—Distribution of *Ataenius exiguus* Brown and *A. hesperius*, new species.
● *exiguus* ★ *hesperius*

First visible abdominal sternum with strong posterior marginal line. Remaining sterna fluted along anterior margin, the fluting increasingly longer on successive sterna, those of 5th sternum at middle nearly half the length of the sternum; surface everywhere very finely alutaceous, the sterna weakly convex, strongly, closely punctate from side to side, punctures at middle finer and less close, toward sides coarser, closer, shallower, becoming noticeably elongate at extreme sides. Pygidium with shiny, convex, coarsely punctate, wide apical lip connected to base by a sharp median carina, the eroded disc finely alutaceous with a few fine, scattered tubercles, the alutaceous surface slopes gradually from the apical lip to the deepest point at the high carina-like basal edge. Anterior femora with perimarginal groove, surface densely, scabrously punctate anteriorly, less scabrous and punctures well-separated posteriorly. Middle femora coarsely, closely punctate along anterior margin, the punctures noticeably elongate, end to end, similarly punctate over outer fourth, discal area gradually more finely and less closely punctate toward base, posterior marginal line deep and entire. Posterior femora very similar but the punctures round and fewer in number, three or four coarse setigerous punctures at knee, posterior marginal line deep and entire. Apical fringe of posterior tibia with nine close, short, even setae, a long, strong, triangular accessory spine and without an intervening seta. Metatarsus nearly one-third longer than long spur and equal to the following four segments combined. The 4th abdominal sternum is shorter at middle and the pygidium much longer than in the female.

Allotype Female: Length 6.0 mm; width 2.8 mm. I noticed no differences from the holotype other than the longer 4th abdominal sternum and shorter pygidium.

HOLOTYPE.—USNM 71745.

TYPE-LOCALITY.—7 mi N of Gainesville, Florida. Collected 22 January 1947, in nest of Florida fox squirrel, *Sciurus niger* L., by J. C. Moore.

SPECIMENS EXAMINED.—20.

DATES COLLECTED.—March 12 to December 23.

DISTRIBUTION (Figure 18).—Paratypes. *Florida* (19): Archbold Biological Station, Highlands County, near Lake Placid (1), at light, 16 May 1968, O. L. Cartwright. Dunedin (2), at lights, 14 May 1959, O. L. Cartwright. Gainesville (4): 22 January 1947, J. C. Moore (2, includes allotype, collected with holotype); 21 May 1970, blacklight, F. W. Meade (1); 30 May to 2 June 1968, blacklight, R. E. Woodruff (1). Merritt Island (1), horned owl nest, 12 March 1956, Howden and Howell. Oneco, Manatee County (1), no date, Paula Dillman. Welaka, Putnam County (10), in fox squirrel nests, various dates, 24 March to 23 December 1947, J. C. Moore.

REMARKS.—*Ataenius sciurus* is very close to *A. brevinotus* Chapin (1940:37) described from Cuba, but posterior angles are not so distinctly emarginate, the base is distinctly lobed or subangulate at middle, the coarse punctures extend over the anterior disc of the pronotum, the head punctures are not as fine, the elytral punctures are larger and more noticeable, the lateral elytral striae are wider, the pronotum is more convex, and the punctures of upper clypeus and front are of equal size and larger than in *A. brevinotus*, with the lateral clypeal punctures longitudinally elongate in *A. sciurus*.

The large size and wide, short pronotum separate this species from others found in the United States and Canada.

43. *Ataenius gracilis* (Melsheimer)

Oxyomus gracilis Melsheimer, 1844:137.
Aphodius chilensis Solier, 1851:72.
Ataenius gracilis.—Harold, 1867a:281.—Horn, 1887:79.—Arrow, 1903:513.—Schmidt, 1922:436.—Chapin, 1940:25.

DESCRIPTION.—Length 2.8 to 3.5 mm; width 1.0 to 1.3 mm. Elongate, parallel, only weakly convex, moderately shining; piceus; legs, anterior margin of clypeus, and pronotum frequently reddish. Head weakly convex, margin of clypeus rounded each side of moderate emargination, sides straight to somewhat depressed, nearly right-angled genae, edge very finely reflexed; surface slightly concave and rough with close, round, fine, shallow punctures immediately behind median anterior emargination, the round punctures extending up to greatest convexity of clypeus, elsewhere with close elongate punctures or lines of three or four combined punctures, the lines in some specimens having a tendency basally to curve slightly around the greatest convexity and appear diagonal in direction. Above the clypeal frontal suture, which can be traced easily, the punctures are larger, elongate but shorter, and even more dense, and are round and smaller in front of the eyes. Pronotum nearly quadrate, a typical specimen measures 1.1 mm wide and 0.9 mm long, with the elytra 2.0 mm in length. Base of pronotum arcuate, sides nearly straight, anterior angles obtusely rounded, posterior angles very broadly rounded from sides into base, sides and base finely margined, apparently entire without marginal setae but under high magnification appear very minutely crenate-fimbriate, the setae about as broad as long and widely separated; surface everywhere densely punctate, the punctures moderate in size, very slightly smaller and closer toward the sides; slightly depressed in anterior angles and two foveae are vaguely discernible each side. Elytra finely dentate at shoulders, striae moderately deep, strial punctures as wide as striae, slightly crenating edges of the intervals; intervals medially carinately convex, the inner side slightly concave and alutaceous, the outside slope similar but with a row of very fine punctures near vertex of carina, laterally the punctures are median and break the carina, otherwise all intervals are about the same. The shouders show numerous very moderate punctures. Mesosternum broadly carinate between the coxae. Metasternum shining, midline long, deep, and strong, disc with numerous, close, moderate punctures separated generally by one diameter or less, fine to very fine posteriorly, finely scabrous laterally, metasternal triangle conspicuous, the finely scabrous area within uniting with the similar lateral sculpture. Abdominal sterna finely fluted along anterior margin and with a bordering row of very close punctures along posterior margin, otherwise with dense, very moderate punctures generally separated by their own diameters or less, at extreme sides the punctures frequently become larger, shallower, alutaceous within and even run

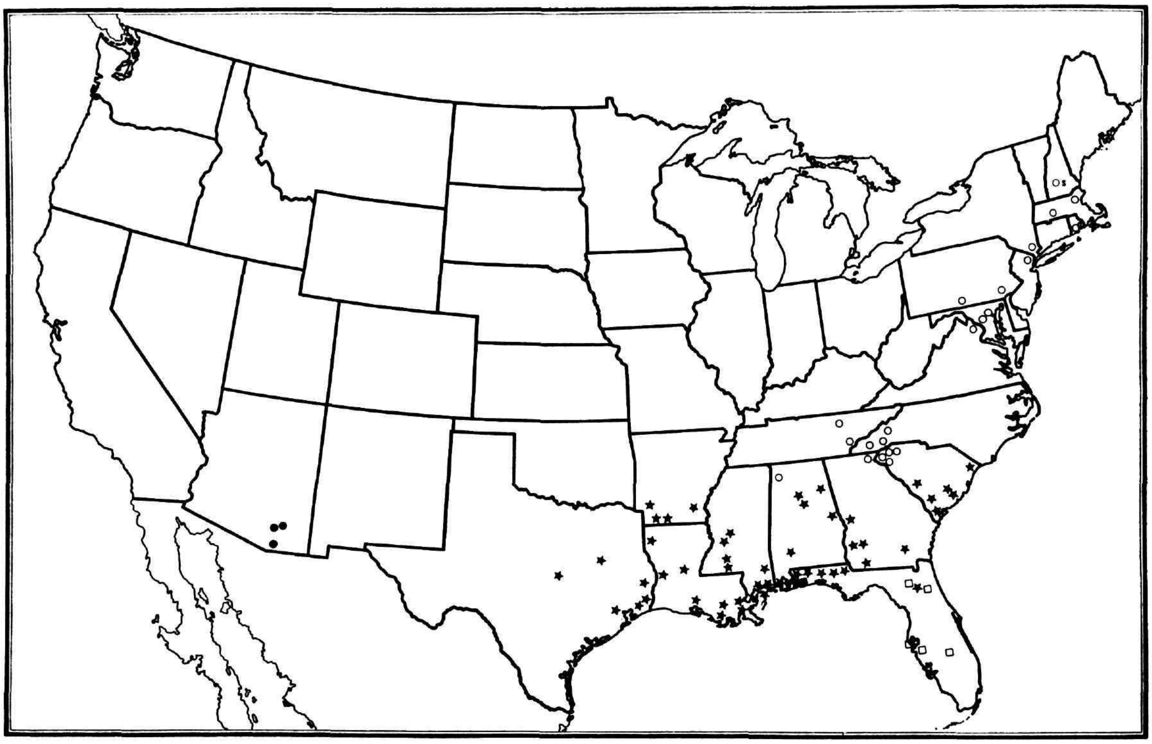

FIGURE 18.—Distribution of *Ataenius stephani*, new species, *A. picinus* Harold, *A. brevis* Fall, and *A. sciurus*, new species.
● *stephani* ★ *picinus* o *brevis* □ *sciurus*

together, punctures of 5th sternum are noticeably finer. Pygidium, over apical half at least, convex, densely and finely punctate, eroded concave area frequently reduced to a basal line. Anterior femora with perimarginal groove, punctate everywhere, punctures very moderate in size, generally separated by their own diameters, some uniting in short diagonal lines. Middle and hind femora with fine, uniformly distributed punctures separated by about twice their diameters. Posterior femoral line complete on middle femora, about half femoral length on posterior femora. Posterior tibia without accessory spine, apical fringe of seven short, close, uniform setae and three longer setae at outer angle; first tarsal segment longer than long spur, and longer than following three segments combined. As is generally the case, the 5th abdominal sternum is much shorter than the preceding sternum, usually about half as long, and the pygidium is longer than in the female.

TYPE.—In Museum of Comparative Zoology.

TYPE-LOCALITY.—"Pennsylvania."

SPECIMENS EXAMINED.—450+.

DATES COLLECTED.—January 19 to December 20.

DISTRIBUTION (Figure 19).—*Alabama:* Birmingham, Mobile, Selma. *Arkansas:* Monte Ne Br. (Benton County), Washington County. *Connecticut:* Cromwell. *South Dakota:* Elk Point. *Delaware:* Bridgeville, Laurel, Newark, Ship John Light House. *District of Columbia:* near Riverdale. *Florida:* Archbold Biological Station, Avon Park, Coconut Grove, Crescent City, Dade County, Dunedin, Gainesville, Gold Head Beach, Highlands State Park, Hillsborough County, Homestead, Kissimmee, Lake Letta, Lake Placid, Manatee Springs State Park, Marion County, Miami, Myakka City, Ocala, Oneco, Palm Beach County, Putnam County, Sarasota, Tall Timbers Research Station, Tampa, Winter Haven, Winter Park. *Georgia:* Atlanta, Beachton, Emory University, Heards Pond (Thomas

County), Milner, Newton, Okefenokee Swamp, Savannah, Ware County, Waycross. *Illinois:* Carbondale, Dongola, Evanston, Heyworth, La Grange, Starved Rock State Park, Urbana. *Indiana:* Grantsburg, Hovey Lake, Indianapolis, Knox County, Miller, Putnam County, Starke County, Vermillion County. *Iowa:* Atwood, Des Moines, Iowa City, Mount Pleasant. *Kansas:* Argentine, Douglas County, Lawrence, Osage, Topeka, Wellington. *Kentucky:* Anchorage (Jefferson County), Barbourville, Cazier, Henderson, Louisville. *Louisiana:* Covington, Gueydan, New Orleans, Raceland, Sam Houston State Park, Tallulah. *Maryland:* Baltimore, Bladensburg, Chesapeake Beach, Cobb Island, College Park, Hancock, Hebbville, Marlboro, Marshall Hall, Plummers Island, Reisterstown, Takoma Park, Upper Marlboro. *Michigan:* Detroit, Galien, George Reserve, Gold Lodge, Paw Paw. *Mississippi:* Biloxi, Gulfport, Vicksburg. *Missouri:* St. Louis, Stanton. *Nebraska:* Brown County, Lincoln, Plattsmouth. *New Jersey:* Avenel, Brown Mill, Clifton, Collingswood, Emerson, Gloucester, Great Peace Meadow, Hillsdale, Lakaway, Lakehurst, Medford, New Lisbon, Ocean City, Prospertown, Riverdale, Sea Island City, Troy Hills, West Creek, Westville, Wildwood, Woodbury. *New York:* Catskill Mts., Ithaca, Peekskill. *North Carolina:* Bryson City, Hot Springs (French Broad River), Raleigh, Robeson County, Tryon, Valley of Black Mountains. *Ohio:* Adams County, Cleveland, Washington County. *Oklahoma:* Lake Texhoma (Willis), Marshall County. *Pennsylvania:* Allegheny, Boyertown, Philadelphia Neck, Pittsburgh, Tinicum. *South Carolina:* Aiken State Park, Bennettsville, Charleston, Clemson, Colleton County, Columbia, Earls Ford, Fish Hatchery (Oconee County), Florence, Gramling, Pickens, Poinsett State Park, Summerville, Walterboro. *Tennessee:* Benton County, Dyersburg, Knoxville, Memphis, Reelfoot Lake. *Texas:* Atlanta, Brownsville, College Station, Limpia Creek Canyon (Davis Mts.), Waring. *Virginia:* Arlington, Camp Pickett, Mount Vernon, Nelson County, Norfolk. *West Virginia:* Kanawa, White Sulphur. *Wisconsin:* Nekoosa (Wood County). *Canada: Quebec:* Barthierville, Granby, Joliette, La Trappe, Rigaud. *Ontario:* Ottawa.

REMARKS.—This very small, slender species is identified by the clypeus being rounded each side of the median emargination, the elongate lines of punctures of the head, the cariniform intervals of the elytra, and the complete posterior femoral line of the middle femora. *Ataenius nocturnus* is very closely allied but has only a short posterior line on the middle femora and evenly rounded elytral intervals. *Ataenius nocturnus* is a western and southwestern species, occurring in California, Arizona, New Mexico, and Texas. *Ataenius gracilis* occurs in states north of Texas into South Dakota and in all eastern states north into Canada.

44. *Ataenius nocturnus* (Nomura)

Saprosites nocturnus Nomura, 1943:77.
Ataenius gracilis.—Nakane, 1961:26 [not Melsheimer, 1844: 137].
Ataenius nocturnus.—Cartwright and Gordon, 1971:271.

DESCRIPTION.—Length 2.8 to 3.6 mm; width 1.0 to 1.3 mm. Moderately shining, piceous, legs and sometimes anterior margins of head and pronotum reddish, elongate, parallel, only weakly convex. Antennae testaceous. Head convex, clypeal margin very finely reflexed, rounded each side of broad, shallow, median emargination, sides very weakly arcuate to right-angled genae; surface shining and slightly uneven close to median emargination, elsewhere with close, elongate punctures united in lines except at middle of occipital area where the somewhat larger punctures are round in shape, punctures dense everywhere, separated by less than their diameters. Pronotum nearly quadrate, averaging about 1.1 mm wide, 0.8 mm long; base and sides finely margined, without marginal setae, anterior angles rounded, posterior angles very broadly rounded; surface closely punctate, the punctures generally moderate in size, a little finer near lateral and anterior margins, a trifle larger and shallower near lateral foveae, midline distinct and deeper over basal half, the punctures here practically uniting in a narrow row. Elytra averaging about 2.0 mm long and 1.2 mm wide, humeri finely dentate, striae deep, finely crenate-punctate intervals convex with median row of minute punctures, minutely alutaceous along inner edge, sutural interval flat with row of close, fine punctures, lateral intervals not noticeably different. Mesosternum broadly carinate between the coxae. Metasternum smooth and shining on disc, midline strong and deep, punctures moderately coarse and close anteriorly, much finer posteriorly, scabriculate at sides. Metasternal triangle deep, sharply defined anteriorly, finely alutaceous within. Abdonimal sterna finely fluted along anterior margin, surface with scattered, fine to very moderate, evenly spaced punctures generally separated by one or two diameters, suture in front of 5th sternum unusually and noticeably deep. Pygidium with deep basal line, disc and apical area very finely, closely punctate. Anterior femora with perimarginal groove, surface with scattered, coarse, shallow punctures separated by one diameter or less. Middle femora shining; scattered, very fine punctures, posterior marginal line short, one-third length of femur. Posterior femora similiar but with marginal line still shorter. Hind tibia without accessory spine, fringe of nine short, close setae, tarsus shorter than tibia, first tarsal segment one-fourth longer than long spur, equal to following three segments combined. The male pygidium is longer and the 5th abdominal sternum is shorter than in the female. The male 5th sternum also tips inward anteriorly.

NEOTYPE MALE (present designation).—Male, USNM No. 71443. Original holotype and type series were destroyed during World War II.

TYPE-LOCALITY.—Saipan. The neotype bears the following data: "Saipan I., Marianas, As Mahetog area, 1:I;45. Col. & Pres. by Henry S. Dybas. Lot 449."

SPECIMENS EXAMINED.—175+.

DATES COLLECTED.—March 8 to December 14.

DISTRIBUTION (Figure 19).—*Arizona:* Arlington, Arivaca, Buckeye, Cochise County, Colossal Cave Park (Pima County), Douglas, Fort Yuma, Gila Valley, Globe, Graham Mts., Granite Reef Dam, Hot Springs, Madera Canyon (Santa Rita Mts.), Patagonia, Phoenix, Portal, Riverside, Roosevelt Lake, Sabino Canyon (Santa Catalina Mts.), Safford, Tortolita Mts. (Cottonwood Canyon), Willcox, Playa, Yuma. *California:* Berkeley, Colorado Desert, Fresno, Holtville, Kaweah, Kern County, Los Angeles, San Bernardino, Sonoma County, Three Rivers, Visalia, Willows, Yuma. *New Mexico:* Albuquerque. *Texas:* Big Bend National Park, Lajitas, Limpia Creek Canyon (Davis Mts.).

REMARKS.—Superficially, *A. nocturnus* (Nomura) is very close to *A. gracilis* but differs in having the elytral intervals rounded, not subangulate as in *A. gracilis,* in having the marginal line of the middle femur abbreviated, rarely over half the distance from the knee, not complete as in *A. gracilis,* and the 5th abdominal sternum smooth in front, the fine punctures sometimes only in a narrow terminal band while in *A. gracilis* the punctures are scattered all over the segment.

Ataenius nocturnus is widely distributed over Pacific Islands.

45. *Ataenius sculptor* Harold

Ataenius sculptor Harold, 1868:85.—Schmidt, 1922:426.
Ataenius oblongus Horn, 1871:286; 1887:81.—Schmidt, 1922: 426. [New synonymy.]

DESCRIPTION.—Length 5.2 to 6.1 mm; width 2.4 to 2.6 mm. Elongate-oblong, moderately convex, shining, black, clypeal margin and legs slightly reddish. Head only moderately convex, finely reflexed anterior clypeal margin broadly rounded each side of wide, moderately deep median emargination, sides weakly arcuate to nearly right-angled genae; clypeal surface smooth, shining, narrowly concave at middle along anterior margin; densely punctate over remainder of clypeus and front, minutely punctate along smooth anterior margin but very quickly becoming moderately coarse, a little smaller over median convexity, very dense and a little larger between middle and genae, very moderate along edge in front of the eye. Pronotum approximately two-thirds as long as wide, sides and base margined, minutely fimbriate-crenate under moderate magnification, the setae extremely short and widely spaced, very inconspicuous, anterior angles very obtusely rounded, sides practically straight, hind angles slightly emarginate, base not quite evenly arcuate; surface closely, coarsely punctate everywhere except along anterior margin where the punctures are gradually finer, separated on disc by one diameter generally, very dense laterally. Elytra approximately two-thirds as wide as long, humeri strongly, sharply dentate, sides slightly but noticeably arcuate, striae strong and deep, strial punctures crenating inner sides of intervals, the strial punctures separated by about five times their diameters; intervals on disc moderately convex, laterally more carinately convex, with a row of very noticeable, moderate, minutely setigerous punctures along each margin of the interval, closer on outside edge on disc and very close on both sides on lateral intervals, 10th interval flat, alutaceous, with a median row of small, close, shiny tubercles; shoulders closely moderately punctate; striae becoming wider and the intervals

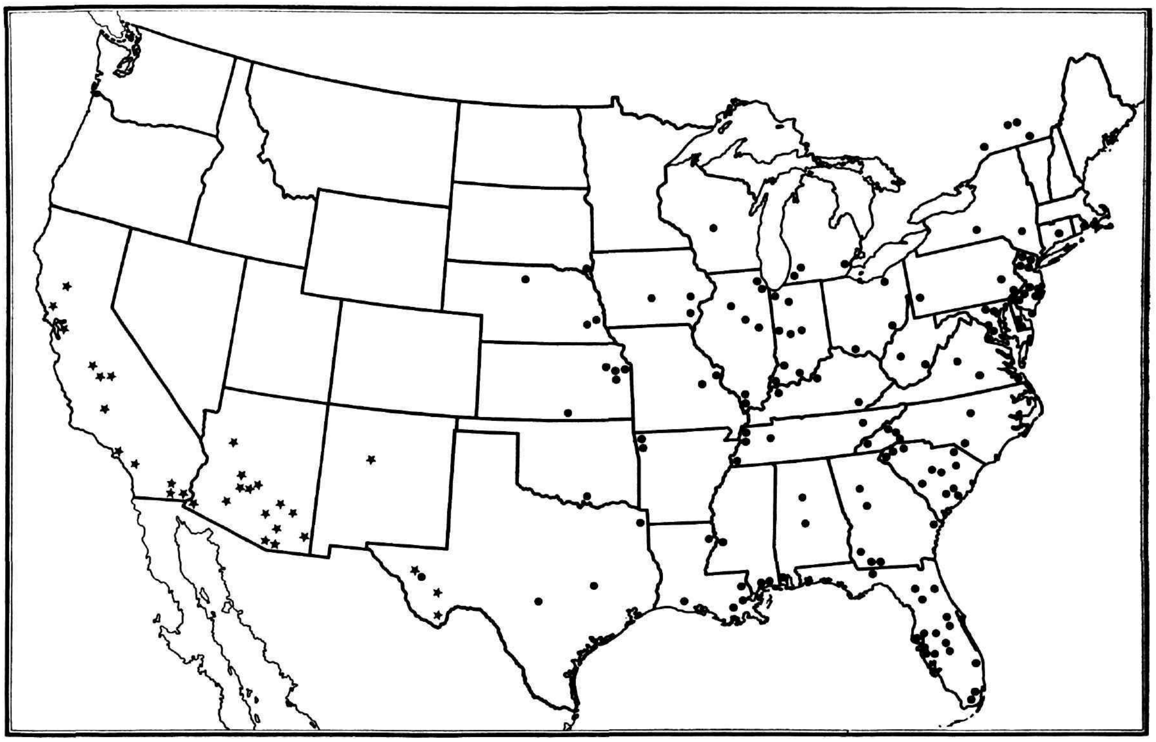

FIGURE 19.—Distribution of *Ataenius nocturnus* (Nomura) and *A. gracilis* Melsheimer.
★ *nocturnus* ● *gracilis*

carinately convex with narrow alutaceous shoulder over the apical declivity. The alutaceous shoulders are traceable forward as very thin marginal lines to near the middle of the elytra. Mesosternum shagreened as in most species, finely carinate between coxae. Metasternum with long, fine, rather shallow midline, disc densely, moderately coarsely punctate, the punctures extending outward to wide, scabrous area at sides, metasternal triangle rather shallow, finely scabrous within. First visible abdominal sternum with rather wide, alutaceous, posterior marginal lines. All remaining sterna fluted along anterior margin, the fluting of the first very fine, of the next quite long, of the 4th sternum very wide and long and longer at sides, those of the 5th sternum at middle as long as at sides on 4th; surface of the two widest sterna convex, densely punctate from side to side, very moderate in front to moderately coarse along posterior where they almost touch and form a marginal line; punctures of 4th sternum more moderate in size with marginal row very close and smaller; punctures of 5th sternum close and a little smaller, with an alutaceous groove along outer third of posterior margin. Pygidium with shining, finely, closely punctate apical lip, the disc rough and unusually deeply eroded. Anterior femora with perimarginal groove, surface densely, scabrously punctate. Middle femora densely, moderately punctate with three or four coarse setigerous punctures at knee and complete, strong posterior marginal line. The posterior femora as in the middle femora but the punctures not dense, separated by one to two diameters, posterior line strong, deep, and complete. Posterior tibial apical fringe of eight short, close, heavy setae, a very strong accessory spine, and an intervening seta between spine and spurs. Long spur about one-fourth shorter than the very long metatarsus which is as long as the following four segments combined. The 4th and 5th sterna are relatively shorter and the pygidium longer in the male.

HOLOTYPE.—In Harold collection, Muséum National d'Histoire Naturelle. [Type of *A. oblongus*

Horn in the Leconte Collection, Museum of Comparative Zoology, No. 8097.]

TYPE-LOCALITY.—Colombia. [Type-locality of *oblongus:* California.]

SPECIMENS EXAMINED.—Two, plus numerous Mexican specimens.

DATES COLLECTED.—August 17 to September 21, in Mexico.

DISTRIBUTION (Figure 20).—*Arizona:* Nogales. *California:* "California."

REMARKS.—This species is easily recognized among United States specimens by its large size, emarginate posterior pronotal angles, and dense punctures of head and pronotum with rather roughly sculptured elytra.

46. *Ataenius woodruffi*, new species

DESCRIPTION.—*Holotype:* Length 6.4 mm; width 2.9 mm. Oblong, moderately convex, shining, black with faint tinge of red, clypeus and legs only slightly more reddish. Head moderately convex, finely reflexed clypeal margin broadly rounded each side of moderate median emargination, sides nearly straight to wide-angled genae, about 125°; surface feebly, transversely wrinkled anteriorly, clypeus over and above convexity very finely, closely punctate throughout, punctures generally separated by their diameters, and with a group of about twenty coarse, close, intermixed punctures extending down from base on each side of convexity, separated by one to two times their diameters; front with transverse band of close, coarse punctures mostly separated by half their diameters or less; the genae are unusual, being flat, finely alutaceous, and extending posteriorly into a deep hole or pit to the eye. Pronotum weakly convex, length 1.8 mm, width 2.6 mm, anterior angles widely obtuse, posterior angles slightly emarginate, base somewhat angularly arcuate, sides and base margined, edge entire at sides, posterior angles and base fimbriate-crenate, the crenations fine, the setae fine and short, mostly separated by more than their length; surface with mixed minute and coarse punctures, the coarse punctures crowded approaching the angles from middle, disc much less crowded, irregularly separated on disc by less than one to several times their diameters, a little finer at anterior margin. Elytra 4.1 mm long and 2.9 mm wide, humeri sharply dentate, elytral striae wide, deep, shining, with deep strial punctures slightly crenating the intervals; intervals with very narrow, flat, alutaceous shoulder, the middle evenly, strongly convex on disc, more sharply convex over apical declivity and carinately convex over lateral intervals; intervals very minutely, closely punctate under high magnification; humeri coarsely closely punctate, as in most species the crenations of the intervals are always a little posterior to the strial punctures rather than exactly opposite. Mesosternum shagreened, surface finely alutaceous, with close, fine, short, appressed hair; carinate between the coxae. Metasternum with long, strong, deep midline, deeper at ends, especially at anterior end; disc shining, closely, moderately punctate, separated by their diameters or less, a little finer anteriorly, outward to sides quickly scabrously punctate, the poorly developed metasternal triangle more finely scabrous. First two visible abdominal sterna with fine posterior marginal lines, last four with fluting along anterior margin, the fluting longer on each following sternum, that of 5th sternum half as long as sternum at middle; surface otherwise closely, coarsely, shallowly punctate from side to side and very finely alutaceous even in the shallow punctures. Pygidium with narrow, shining apical margin; disc deeply eroded. Anterior femora with perimarginal groove, surface densely punctate with moderately coarse punctures. Middle and hind femora closely, moderately coarsely punctate, posterior marginal lines deep and complete. Apical fringe of posterior tibia with a close group of five short setae and a strong accessory spine. Long spur shorter than metatarsus but longer than the middle three tarsal segments combined. Sex not determined but probably a female.

HOLOTYPE.—USNM 71746.

TYPE-LOCALITY.—The unique holotype taken at Flagler Beach, Flagler County, Florida, 18 May 1954, in mosquito light trap, R. E. Woodruff collection.

DISTRIBUTION.—See Figure 12.

REMARKS.—The elytra of *Ataenius woodruffi* are similar to those of *A. impiger* Schmidt (1916:104) and *A. laterigranulatus* Balthasar (1941:166), but the very peculiar and unique form of the genae will determine the species at once. It is also our largest species. I name it in honor of R. E. Woodruff, who obtained the only known specimen.

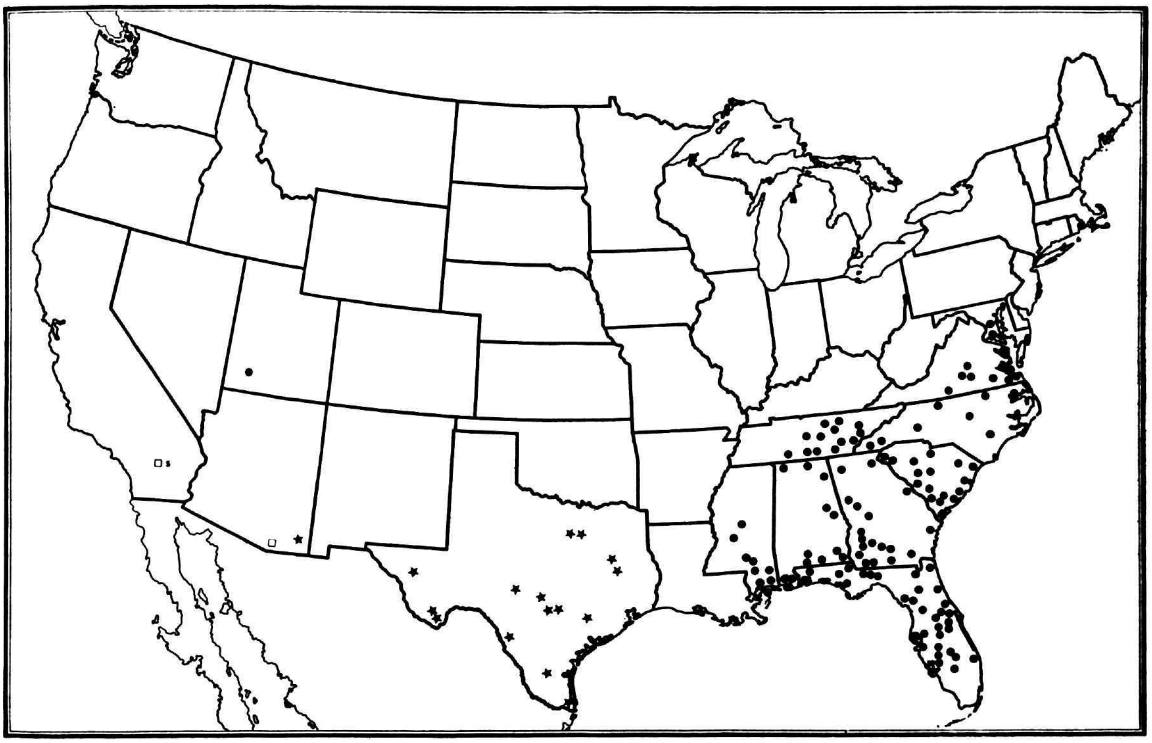

FIGURE 20.—Distribution of *Ataenius simulator* Harold, *A. inquisitus* Horn, and *A. sculptor* Harold
● *simulator* ★ *inquisitus* □ *sculptor*

47. *Ataenius robustus* Horn

Ataenius robustus Horn, 1871:285; 1887:80.—Schmidt, 1922: 427.

DESCRIPTION.—Length 3.8 to 4.7 mm; width 1.9 to 2.4 mm. Oblong-ovate, convex, shining, black, legs reddish. Head moderately convex, edge of clypeus finely reflexed, broadly rounded each side of shallow median emargination, sides feebly arcuate to sharply rounded, right-angled genae; surface of clypeus everywhere closely, uniformly, moderately punctate, the punctures generally separated by less than their diameters, those of the frontal-occipital area a trifle smaller and a little closer. Pronotum about three-fifths as long as wide, anterior angles obtusely rounded, posterior angles broadly, evenly rounded, sides and base margined, the edge minutely crenate-fimbriate, the setae a little more conspicuous around posterior angles; surface everywhere densely, moderately punctate, punctures on the disc sometimes elongate. Elytra convex, short, sides arcuate, four-fifths as wide as long, humeri strongly dentate, striae strong, intervals flat, densely, moderately punctate as on head and pronotum, 9th interval strongly convex, punctures minutely setigerous with the setae most noticeable laterally and over the apical declivity. Mesosternum shagreened with fine, alutaceous sculpture and very fine, short, appressed hair, rarely broadly, weakly convex between the coxae. Metasternum short, midline moderately deep, disc frequently transversely depressed, especially in males, surface shining, punctures variable in size, usually separated by one or two times their diameters, similar but closer punctures outward to scabriculate area at sides, the metasternal triangle shallow, more transverse than in most species, sometimes absent. First visible abdominal sternum with posterior marginal line, remaining four sterna finely fluted along anterior margin, punctate from side to side, 2nd sternum with close, very moderate punctures over anterior two-thirds, the punctures fine at middle, smooth and impunctate posteriorly, punctures of remaining sterna finer and less close. Pygidium with shining apical lip, disc roughly alutaecous, flattened to somewhat convex, not deeply eroded. Anterior femora with perimarginal groove, surface shiny, finely, closely punctate. Middle and hind femora with scattered, fine punctures, fewer along anterior margin, two or three coarse, setigerus punctures at the knee, posterior marginal line, fine, not deep, but seen from rear, slightly less than half the length of the femur. Posterior tibial apical fringe of four setae, accessory spine, and an intervening seta between spine and spurs. Males have the anterior spur hooked at apex, the 4th and 5th abdominal sterna about half as long as the preceding sternum, and the pygidium comparatively much longer than in the female.

HOLOTYPE.—In Museum of Comparative Zoology, LeConte Collection.

TYPE-LOCALITY.—"Missouri."

SPECIMENS EXAMINED.—35.

DATES COLLECTED.—March 9 to June 27.

DISTRIBUTION (Figure 13).—*Arkansas:* Carlisle, Hope, Little Rock, Washington County. *Illinois:* Bond County, Elizabethtown. *Iowa:* Davis County, Iowa City, Keokuk, Mt. Pleasant, Scott County. *Kansas:* Onaga, Topeka. *Missouri:* Dardene Prairie, St. Louis, Sedalia. *Nebraska:* Fairmont, Lincoln, West Point. *New Mexico:* Mesilla (listed by Fall and Cockerell, 1907:186). *Oklahoma:* Stillwater, Vinita. *South Dakota:* White Lake. *Wisconsin:* Lamont.

REMARKS.—*Ataenius robustus* is unusual in having the entire upper surface—head, pronotum, and elytra—practically uniformly, closely, moderately punctate. The very short metasternum is notable also.

48. *Ataenius simulator* Harold

PLATE 1*b*

Ataenius simulator Harold, 1868:85.—Cartwright, 1964:103.
Psammodius schwarzi Linell, 1896:721.—Cartwright, 1964:103.
Ataenius schwarzi.—Brown, 1928:307.

DESCRIPTION.—Length 3.7 to 4.9 mm; width 1.6 to 2.3 mm. Oblong, convex, shining, dark castaneous to piceous. Head convex, finely reflexed clypeal margin slightly angulate to subdentate but often appearing rounded each side of wide, moderate, median emargination, sides straight or weakly arcuate to right-angled genae; clypeal surface transversely, coarsely wrinkled, the wrinkles usually broken in part into elongate tubercles, front with transverse band of very moderate punctures separated in general by about their diameters; genae with four or five noticeable setae. Pronotum convex, three-fourths as long as wide, anterior angles obtusely rounded, posterior angles more broadly rounded, the slightly arcuate sides usually slightly sinuate, base strongly margined, edges fimbriate-crenate, the crenations weak, the setae moderately long, separated laterally by a little less than their length; surface with mixed punctures, everywhere with fine, evenly distributed punctures separated by one or two diameters and very coarse punctures unevenly distributed, mostly in the anterior and posterior angles with a few scattered across the base and above a smooth space at middle of sides. Elytral width about two-thirds the length, convex, sides slightly arcuate, humeri finely, weakly dentate; striae strong, the deep strial punctures slightly crenating the inner margins of the moderately convex intervals, surface with irregular, marginal row of minute punctures along each side, lateral intervals not different. Mesosternum shagreened, with very fine surface sculpture and extremely fine, short, decumbent hair, not strongly carinate between the coxae. Metasternum shining, midline fine, only moderately impressed, very finely punctate, with punctures generally separated by about two or three times their diameters, a little rough sculpture at extreme sides, metasternal triangle elongate and deepest along posterior margin. First visible abdominal sternum with fine posterior marginal line, remaining four sterna finely fluted along anterior margin, the fluting longer on successive sterna, that of middle sternum slightly longer at sides, of the 5th sternum longer at middle; surface almost impunctate at middle, a few coarse, shallow, setigerous punctures at sides; 5th sternum with a row of three or four close, moderate, more conspicuously setigerous punctures each side. Pygidium with smooth, apically wide lip, disc finely, scabrously eroded, with a few scattered, long hairs. Anterior femora with perimarginal groove, anterior and posterior margins bearing long, fine setae, surface shining, finely punctate, the punctures separated by two or more diameters; anterior tibiae broader than usual. Middle and hind femora smooth, shining, very finely punctate, three or four coarse setigerous punctures at knee, without posterior femoral line. Posterior apical tibial fringe, seven or eight rather short setae, short, triangular accessory spine and an intervening seta between spine and spurs. Posterior metatarsal segment shorter than long spur, longer than following three segments combined. Male pygidium much longer than that of the female.

HOLOTYPE.—In Muséum National d'Histoire Naturelle.

TYPE-LOCALITY.—Mendoza, Argentina.

SPECIMENS EXAMINED.—1000+.

DATES COLLECTED.—January 12 to December 25.

DISTRIBUTION (Figure 20).—*Alabama:* Auburn, Crossville, Dadeville, Dale County, Dothan, Escambia County, Fairhope, Florala, Florence, Grand Bay, Gulf State Park, Mobile, Monte Sano State Park, Repton (near Helena), Theodore. *Florida:* Arcadia, Archbold Biological Station, Archer, Bradenton, Chipley, Clermont, Daytona Beach, Dunedin, Dunnellon, Flagler Beach, Gadsden County, Gainesville, Glen St. Mary, Highland Hammock State Park, Inglis, Jackson County, Jacksonville, Jay, Jefferson County, Kissimmee, La Belle, Lake Alfred, Lake County, Lake Letta, Lake Wales, Loch Harbor, Longwood, Manatee Springs State Park, Marion County, Mayport, Monticello, Ocala, Oneco, Orlando, Pensacola, Punta Gorda, Quincy, Saint Andrews State Park, Sanford, Santa Rosa County, Seminole County, Silver Lake Recreation Area (Leon County), Tallahassee, Tall Timbers Research Station, Tampa, Wachulla, West Palm Beach, Winter Haven, Winter Park, Zolfo Springs. *Georgia:* Americus Ashburn, Atlanta, Augusta, Beachton, Brookhaven (De Kalb County), Demorest, Dougherty County, Experiment, F. D. Roosevelt State Park, Hinesville, Manchester, Monticello, Nashville, Newton, Peach County, Ranger, Smithville, Thomas County, Tifton, Upson County, Valdosta, Ware County, Waycross. *Maryland:* Beltsville, Marlboro, Scotland (St. Marys County). *Mississippi:* Brooklyn, Camp Shelby, Gulfport, Horn Island, Keesler Field, Lucedale, near Ludlow (Leake County), Mount Olive, Pearl (Rankin County). *North Carolina:* Balsam, Camp Lejeune, Catawba County, Duplin County near Calypso, Edenton, Faison, Franklin, Geston Lake, Hanging Rock State Park, Raleigh, Shell Landing (Carteret County). *South Carolina:* Aiken, Allendale, Blackville, Charleston, Clemson, Clinton, Colleton County, Columbia, Florence, Folly Beach, Hunting Island, Isle of Palms, Lancaster, Litchfield Beach, Myrtle Beach, Paris Island, Pickens, Ridgeland, Ritter, Saluda County, Sandy Springs, Summerton, Walterboro, Yemassee. *Tennessee:* Burrville, Cardwell Mtn. (Warren County), Citco, Cookeville, Crossville, Franklin County, Harrison Bay State Park (Hamilton County), Knoxville, Lincoln County, Loretto, Meigs County, Monroe County, Ooltewah, Smyrna. *Utah:* Cedar City. *Virginia:* Camp Pickett, Chatham, Cumberland County, Gloucester, Hampton, Holland, Jamestown, Langley Field, Norfolk, Prince Edward County, Sussex, Williamsburg.

REMARKS.—This species is rarely if ever a dung feeder. It is attracted to light, sometimes in enormous numbers. I once collected about 275,000 specimens in a trap light in a single night. The species seems to be spreading westward and northward from southeastern United States. I have seen specimens from several countries in South America and from Australia.

Diagnostic characters include the very distinct, coarse transverse granules covering the clypeus, the few very coarse punctures near pronotal angles and base of pronotum, and the wide middle and hind femora without posterior marginal lines.

Jerath (1960:77) described the larva under the name *A. schwarzi* (Linell).

49. *Ataenius erratus* Fall

Ataenius erratus Fall, 1930:96.—Cartwright, 1948:149.

DESCRIPTION.—Length 4.4 to 5.9 mm; width 1.9 to 2.5 mm. Elongate, oblong, piceous-black, shining, more convex posteriorly. Head weakly convex, clypeus broadly rounded each side of wide, shallow, median emargination, sides nearly straight to right-angled genae, edge finely reflexed, clypeal surface finely, evenly punctate, the punctures separated by about twice their diameters, in some individuals more or less vague transverse rugulae anteriorly, front with band of scattered, slightly larger punctures usually less close at middle. Pronotum only slightly convex, one-third wider than long, anterior angles rounded, posterior angles broadly rounded from arcuate sides into the slightly sinuate base, lateral and basal margin moderate, fringe of moderately long setae slightly crenating the edge, the setae separated by less than their lengths; surface with mixed moderately coarse and very fine punctures throughout, discal area with irregularly spaced, coarse punctures separated by less than one to several times their diameters, closer, more evenly spaced at sides. Elytra slightly more than two and one-half times as long as pronotum, humeri not noticeably dentate, convex, the margins not visible from directly above, slightly wider than pronotum; striae fine, finely punctate, weakly crenating the moderately convex intervals, surface of intervals with scattered, very fine punctures and minute, alutaceous sculpture, lateral intervals not different from others. Mesosternum without noticeable carina between coxae. Metasternum with disc shallowly, widely concave, midline not impressed, surface shining, smooth, with scattered fine punctures separated usually by three or four times their diameters, minutely alutaceous outward to a little scabrous sculpture at extreme sides, metasternal triangle weak and inconspicuous. Abdominal sterna flattened medially, minutely alutaceous, with scattered, very fine punctures, generally separated by three or four times their diameters, slightly larger laterally, the last two sterna narrowly scabrous at extreme sides, very finely fluted along anterior margins as usual, 5th sternum about two-thirds as long at middle on preceding sternum. Pygidium with rather wide, convex, apical lip, eroded area roughly sculptured. Anterior femora with perimarginal groove, surface finely alutaceous with scattered, fine-to-moderate punctures; tibial spur of male incurved at tip. Mesofemora minutely alutaceous, scattered, very fine punctures, three setae at knee, posterior marginal line complete, decreasing in depth to trochanter and arching forward and widening in an unusual way. Metafemora similar to middle femora but posterior femoral line only one-half to two-thirds distance to trochanter and not arching forward at inner end. Middle and posterior tarsi longer than tibiae. Posterior tibial fringe of eight to ten close, moderately long setae, accessory spine very short, close to spurs without intervening seta. First segment of posterior tarsus longer than long spur, about equal to following three segments combined.

The female anterior tibial spur is straight, not incurved, the abdominal sterna are convex, and the pygidium is relatively shorter.

HOLOTYPE.—Museum of Comparative Zoology, No. 24769.

TYPE-LOCALITY.—Enterprise, Florida.

SPECIMENS EXAMINED.—375+.

DATES COLLECTED.—May 31 to August 22.

DISTRIBUTION (Figure 10).—*Alabama:* Auburn. *Florida:* Crescent City, Gainesville, Haw Creek, Hillsborough County, Marion County, Ocala, Tallahassee, Tall Timber Research Station, Williams Landing (Taylor County). *Georgia:* Arlington, Beachton, Macon, Norwood, Savannah. *Mississippi:* Gulfport. *North Carolina:* Swan Quarter. *Ohio:* Champaign County. *South Carolina:* Aiken, Anderson, Beaufort County, Blackville, Charleston, Clemson, Clinton, Florence, Gramling, Hilton Head, Marion, Moncks Corner, Sandy Springs, Silverstreet, Tigerville, Yemassee. *Texas:* Bishop (Nueces County).

REMARKS.—*Ataenius erratus* Fall is a little above average in length, has relatively short pronotum and long elytra, has unusually long tarsi, has more setae in the posterior tibial fringe, and is one of the few species with the accessory spine close to the spurs without an intervening seta. The posterior femoral line of the middle femora is very unusual in arching forward away from the margin. Most specimens have been collected in South Carolina, Georgia, and Florida.

The larva of *A. erratus* was described by Jerath (1960:77).

50. *Ataenius inquisitus* Horn

Ataenius inquisitus Horn, 1887:81.—Schmidt, 1922:424.—Fall, 1930:97.—Cartwright, 1948:149.

DESCRIPTION.—Length 3.9 to 4.9 mm; width 1.7 to 2.0 mm. Oblong, moderately convex, shining, dark red-brown to piceous, anterior of head and legs reddish, antennae testaceous. Head moderately convex, clypeus broadly rounded each side of wide, shallow, median emargination, sides weakly arcuate to sharply rounded genae, the genae a trifle more than right-angled, edge very finely reflexed; surface transversely wrinkled anteriorly, usually over the greatest convexity, very finely, closely punctate above the wrinkles, punctures generally separated by about twice their diameters. Pronotum moderately convex, averaging about 1.8 mm wide by 1.1 mm long, all angles obtusely rounded, sides weakly arcuate, sides and base strongly margined, fimbriate-crenate, the setae short to minute, longest at anterior angles, basally minute, crenations distinct around posterior angles and base; surface punctures mixed, very fine everywhere, larger punctures scattered over anterior disc where they may be fine to very moderate, outward to sides and base gradually closer and much coarser, practically contiguous in the anterior and posterior angles. Elytra convex, averaging about 2.8 mm long by 1.9 mm wide, humeri moderately dentate, striae moderately deep, strial punctures crenating inner margin of weakly convex intervals, intervals with a row of minute punctures along each side, intervals a little more convex and striae wider over apical declivity. Mesosternum shagreened with fine alutaceous sculpture and fine, short, appressed hair, very weakly carinate between the coxae. Metasternum shining, midline strong and deep, disc smooth but with minute, scattered punctures, bordered posteriorly by a row of close coarse punctures which turns outward to sides behind the middle coxae, becoming two or three punctures wide near side where they merge with very shallow punctures and rough alutaceous sculpture, metasternal triangle smooth, not deep or well defined. Abdominal sterna closely, coarsely punctate from side to side, a little finer at middle and on 5th sternum, fluted along anterior margins. Pygidium with shining apical lip, disc roughly eroded. Anterior femora with perimarginal groove, surface smooth in front, posteriorly with well-separated, moderate, elongate punctures. Middle and hind femora smooth, shining, minutely punctate, one or two finely setigerous, coarse punctures at knee, strong posterior marginal line half length of femur inward from knee, middle femora have also a few coarse punctures along anterior margin at knee. Posterior tibiae with fringe of five setae in a group, strong accessory spine close to spurs without an intervening seta. First posterior tarsal segment longer than the long spur, longer than following three segments combined. Males have the terminal segment and the pygidium relatively longer than in the female.

HOLOTYPE.—No. 3612, Academy of Natural Sciences of Philadelphia, Horn Collection.

TYPE-LOCALITY.—"Southwestern Texas."

SPECIMENS EXAMINED.—22+.

DATES COLLECTED.—April 26 to November 15.

DISTRIBUTION (Figure 20).—*Arizona:* Paradise. *Wisconsin:* "Wisconsin." *Texas:* Alpine, Austin, Big Bend National Park, Brownsville, Chisos Mts., Columbus, Cypress Mills, Dallas, Davis Mts., Devils River, Enchanted Rock, Handly, Houston, Juniper Canyon, Limpia Canyon (Fort Davis), Menard, Nueces River (Zavalla County), San Diego.

REMARKS.—The pattern of punctures on the head, pronotum, and metasternum and the lack of a fringe seta between the accessory spine and spurs separate this species from related species in the United States. *Ataenius chapini* Hinton (1937a:3), from Panama, is very closely related, the two species having an uncommon form of male aedeagus (see Figure 24*a–d*). It also bears a very close superficial similarity with *A. nugator* Harold (1880:41).

51. *Ataenius griffini*, new species

DESCRIPTION.—*Holotype Male:* Length 3.5 mm; width 1.5 mm. Dark reddish brown, shining, convex, oblong. Antennae dark castaneous. Head convex; clypeus rounded and slightly angulate but not dentate each side of deep median emargination, sides weakly arcuate to right-angled genae, margin very finely reflexed, arched upward at middle leaving a flat, closely, minutely punctate surface between the two edges; entire head surface smooth except for very fine, uniformly distributed punctures throughout, the punctures separated by about three to five times their diameters. Pronotum convex, middle of side margins not visible from directly above, length 0.9 mm and width 1.4 mm, anterior angles obtuse, hind angles distinct, not broadly rounded, sides and base strongly margined, not distinctly crenate, marginal setae very moderate, separated by their own length; surface with mixed fine and scattered moderate punctures, the latter separated by one to four or five times their diameters, absent over median anterior third of disc. Elytra convex, elongate-oval, width 1.5 mm, length 3.5 mm, humeri finely dentate, striae fine, moderately deep, fine strial punctures widely separated, very weakly crenating the convex intervals, some minute, scattered punctures visible only under high magnification, lateral intervals not different; lateral and apical elytral margins with very inconspicuous, extremely fine, extremely short, widely separated setae. Mesosternum carinate between the coxae. Metasternum smooth, shining, midline fine, deeper at anterior end, disc with scattered, widely separated, minute punctures, a few shallow, moderate punctures at sides, metasternal triangle large, deep, alutaceous within. Abdominal sterna shining, punctate from side to side, the punctures moderate in size, slightly smaller at middle, generally separated by three or four times their diameters, finely fluted along anterior margins as usual, fluting of 5th sternum at middle much deeper and one-third the length of sternum, 4th sternum strongly narrowed at middle, about half as long as at sides, 5th sternum with posterior row of close, shallow, coarse punctures bearing long, fine hair. Eroded area of pygidium also bearing ten long, mostly marginal, hairs. Anterior femur with perimarginal groove, surface smooth and shining. Middle and hind femora similarly smooth and shining, without posterior marginal groove. Hind tibial fringe of eight close, short setae; short, triangular accessory spine and single seta between accessory spine and spurs; first tarsal segment a trifle shorter than long spur, longer than following three segments combined.

HOLOTYPE.—USNM 71747.

TYPE-LOCALITY.—San Patricio County, Texas, near junction of Texas Highway 9 and U.S. 77.

SPECIMENS EXAMINED.—Eight.

DATE COLLECTED.—August 16.

DISTRIBUTION (Figure 11).—Paratypes. *Texas* (7): "Texas" (1, from Charles Schaeffer Collection and mistakenly designated as a paratype of *Ataenius convexus* by Mark Robinson). San Patricio County (6): collected with holotype in an animal burrow, probably of an armadillo, 16 August 1969, Chas. W. Griffin (5); same locality and date, under cow dung (1).

REMARKS.—*Ataenius griffini* resembles *A. convexus* Robinson very closely, and the two may be found together—one specimen of *A. convexus* was taken in the same burrow with six specimens of *A. griffini*. *Ataenius convexus*, however, has larger, closer, more evenly distributed pronotal punctures, shorter elytra with a conspicuous fringe of setae, and the abdominal sterna are smooth and practically impunctate at middle. The male aedeagi are very similar also (Figure 24*e–h*).

The species is named after its collector, Charles W. Griffin of Corpus Christi, Texas, who has collected several other rare and interesting scarabs in wood-rat nests and animal burrows.

52. *Ataenius aequalis* Harold

Ataenius aequalis Harold, 1880:40.—Schmidt, 1922:435.

DESCRIPTION.—Length 3.6 to 5.0 mm; width 1.7 to 2.0 mm. Oblong-oval, convex, moderately shining. Head moderately convex; clypeus broadly, moderately emarginate anteriorly, rounded each side of emargination, sides nearly straight to right-angled genae, margin finely reflexed, noticeably slightly wider each side of emargination; clypeus with weak, transverse rugulae, the rugulae smaller but still visible over greatest convexity to frontal area, which is closely, very finely to finely punctate basally. Pronotum rectangular, convex, anterior and posterior angles obtusely rounded, very slightly emarginate or sinuate behind posterior angles, sides and base margined, crenate-fimbriate, crenations more noticeable laterally, setae noticeable, twice as long as distance between them; surface with close, mixed moderate and very fine punctures throughout, the larger punctures generally separated by their diameters or less, a little smaller anteriorly, a little closer in pronotal angles. Scutellum without punctures. Elytra two and one-half times length of pronotum, convex, weakly shining, minutely alutaceous under high magnification; humeri finely dentate; striae fine, deep, crenate-punctate, crenations about width of striae, intervals evenly convex, especially convex over apical declivity where striae are wider, intervals not differing laterally except that the 9th is higher and more prominent posteriorly than the 10th, the latter is flatter with a median row of very fine punctures and intervening tubercles near posterior end. Mesosternum shagreened, with very fine, short, decumbent hair, carinate between coxae. Metasternum with moderately deep midline, disc shining, punctures very fine, uniformly distributed, separated by two to four times their diameters, finely scabriculate at extreme sides, metasternal triangle nearly smooth, moderately deep. Abdominal sterna shining but finely alutaceous under high magnification, quite uniformly, shallowly, moderately punctate, the punctures separated by their diameters, fluted along anterior margins, fluting of 5th sternum about one-third total length, surface very finely punctate over remaining area. Pygidium in most cases with a fine longitudinal carina dividing the eroded area, apical borders convex, shining, minutely punctate, wider at middle. Profemora with perimarginal groove, shining but with close, coarse punctures except at inner anterior angle. Middle and hind femora shining, very finely punctate, the punctures separated by three or four times their diameters, posterior femoral line apparently lacking, but actually visible about half the length of the femur when viewed from behind. Posterior tibial fringe with a group of five setae, a very short accessory spine one-half the length of the fringe setae, and an intervening setae between spine and spurs; first tarsal segment subequal to long spur and a trifle longer than following three segments combined.

LECTOTYPE (present designation)—In Muséum National d'Histoire Naturelle.

TYPE-LOCALITY.—Colombia, "Ambalema."

SPECIMEN EXAMINED.—One.

DATE COLLECTED.—Unknown.

DISTRIBUTION (Figure 21).—"Louisiana."

REMARKS.—This species is included in the present paper on the basis of a single specimen in the Naturhistorisches Museum, Vienna, Austria, bearing the label "Louisiana, N. America." It is very similar to *A. integer* and *A. platensis* but may be separated by characters given in the key. The male aedeagus is quite different from *A. platensis*, as shown in Figure 24*i–l*.

53. *Ataenius integer* Harold

Ataenius integer Harold, 1868:86.
Ataenius platensis.—Schmidt, 1922:434 [not Blanchard, 1846: 185].

DESCRIPTION.—Length 3.6 to 4.8 mm; width 1.5 to 1.9 mm. Oblong, shining, black with anterior margins of pronotum, legs and usually most of the clypeus reddish brown. Antennae light yellow. Head moderately convex, clypeus broadly rounded each side of moderate, median emargination, sides slightly arcuate to sharply rounded, slightly more than right-angled genae, head margin finely reflexed, very slightly wider and higher each side of median emargination; surface finely, transversely wrinkled anteriorly, finely, closely punctate above greatest convexity, the punctures generally separated by about their own diameters, frontal area with a transverse scattering of very moderate punctures two or three times as large as the fine clypeal punctures. Pronotum approximately one-third wider than long, moderately convex, base very weakly sinuate, sides and base with strong marginal line, edge crenate-fimbriate, the crenations scarcely visible, the setae moderately long anteriorly, the length decreasing slightly to basal sinuation, suddenly extremely short then gradually longer again opposite the scutellum; surface with mixed very fine and moderately coarse punctures, the fine punctures quite uniformly distributed throughout, the coarse punctures everywhere but a little smaller anteriorly at middle, somewhat fewer in number at sides and on middle disc lengthwise front to base, separated by about their diameters in areas of greatest density. Elytra about one-third longer than wide, moderately convex, sides subparallel, humeri very moderately dentate; striae strong, strial punctures deep, slightly crenating inner margins of the very weakly convex intervals, intervals with minute, scattered punctures, lateral intervals not noticeably different from the others. Mesosternum shagreened with minute alutaceous sculpture and fine, short, recumbent hairs, weakly carinate between the coxae. Metasternum smooth and shining, midline long, strong, deep, ending anteriorly in a deeper pore, some rather widely scattered, minute punctures over disc and outward to sides, extreme sides with narrow rugose area of coarse, shallow, ill-defined punctures, metasternal triangle smooth and not sharply defined. Abdominal sterna finely fluted along anterior margin, more widely and deeply so on posterior sternum, coarsely, closely punctate at sides, gradually finer toward middle where the punctures may be very fine or even absent; pygidium with wide, convex, shining apical lip, minutely punctate; remainder of surface deeply, roughly eroded. Anterior femora with perimarginal groove, shining, finely but not closely punctate anteriorly, much more coarsely punctate posteriorly; first tarsal segment as long as next two segments combined. Middle and hind femora with scattered, minute punctures, shining, posterior femoral line about half the length of the femur on middle femora, about one-fourth on the posterior femora. Posterior tibial fringe a group

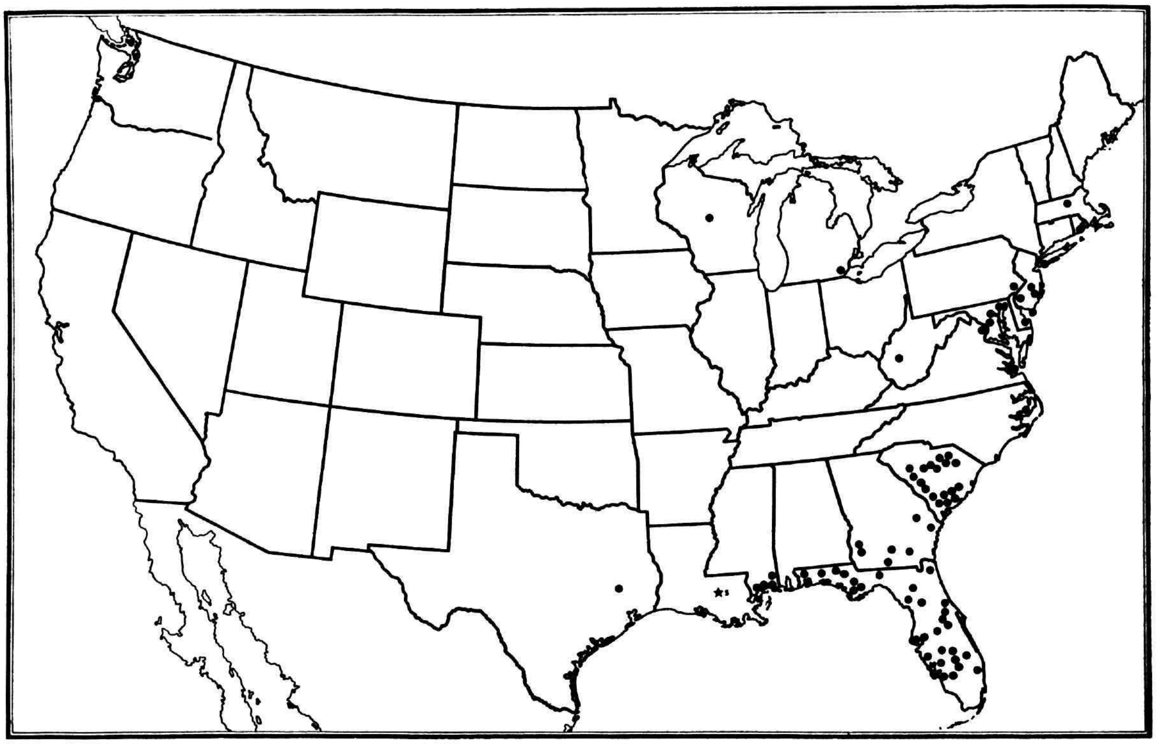

FIGURE 21.—Distribution of *Ataenius fattigi* Cartwright and *A. aequalis* Harold.
● *fattigi* ★ *aequalis*

of four close, moderate setae, an accessory spine nearly as long, and a single seta intervening between the spine and spurs; first tarsal segment longer than long spur, about equal to following three segments combined. The spur of the anterior tibia is bent downward at the tip in the male, the 4th abdominal sternum is narrowed and much shorter at the middle, and the pygidium is longer with a wider apical lip than in the female.

LECTOTYPE.—In Muséum National d'Histoire Naturelle.

TYPE-LOCALITY.—Brasilia.

SPECIMENS EXAMINED.—16.

DATES COLLECTED.—May 10 to August 22.

DISTRIBUTION (Figure 3).—*Florida:* Apopka, Archbold Biological Station (Lake Placid), Avon Park, Blatt (3½ mi SE), Chipley, Gainesville, Hillsborough, Miami, Orlando, Panama City, Parrish, Tallahassee, Wewahitchka, Winter Haven. *Texas:* Houston, Kerrville.

REMARKS.—*Ataenius integer* Harold is very similar to *A. platensis,* and some authors consider them the same. *Ataenius integer,* however, has mixed coarse and fine occipital punctures and the larger pronotal punctures are quite evenly distributed even in the anterior angles. They are a little smaller in the anterior discal area of the pronotum but still noticeable. In *A. platensis* the punctures of the occipital band are fine and uniform in size, about as in the anterior discal area of the pronotum where coarser punctures are lacking. Some specimens of *A. spretulus* could be confused with *A. integer* but may be recognized by the smooth profemur and patch of metasternal setae in the male. *Ataenius integer* has the profemur strongly punctate, the punctures doubled or crescent-shaped and more elongate than in *A. platensis.* The fovea on the ventral side of the front tibia in *A. integer* is larger and deeper than in *A. platensis* and parallels the outside edge, i.e., is directed inward toward the middle of the tibia.

54. *Ataenius stephani*, new species

PLATE 3a

DESCRIPTION.—*Holotype Male:* Length 5.1 mm; width 2.2 mm. Oblong, piceous, shining, moderately convex, legs reddish brown. Head very moderately convex; clypeus rounded each side of moderately deep emargination, sides finely reflexed, straight to obtusely rounded, nearly right-angled genae, surface very finely, transversely wrinkled anteriorly, upper clypeus and frontal area evenly, very finely punctate, the punctures separated by twice their diameters, occipital area with scattered, slightly larger punctures separated by one to six or more times their diameters. Pronotum 2 mm wide and 1.4 mm long, moderately convex, sides mostly invisible from directly above, anterior angles rounded, posterior angles very broadly rounded, sides and base arcuate, marginal line strong and deep, marginal setae moderately long, separated laterally by about their own lengths, gradually shorter and closer posteriorly and around base, only very slightly crenating the edge; surface with mixed punctures, very finely, evenly punctate over anterior medial area and narrowly so inside marginal groove, elsewhere with additional scattered, very coarse punctures, these fewer and more irregularly spaced in middle basal area, more concentrated laterally. Scutellum normal. Elytra 3.2 mm long and 2.2 mm wide, sides convex, humeri finely dentate, striae strong, deep, finely punctate, weakly crenating the weakly convex intervals, surface shining with scattered, minute punctures separated generally by about three times their diameters, lateral intervals not different. Mesosternum carinate between the coxae. Metasternum shining, midline strong, ending in a deeper pore at each end, disc with scattered, minute punctures anteriorly and laterally, posteriorly with a patch of close, very slightly larger punctures; smooth, shining, impunctate outward to sides, metasternal triangle deep and smooth, extreme sides minutely alutaceous. Abdominal sterna smooth and shining, closely fluted along anterior margins, punctures very minute and scattered at middle, then gradually fine to coarse at sides where they are separated by their diameters or less. Eroded area of pygidium about as wide as apical lip which is longitudinally nearly as long as 5th sternum. Anterior femora smooth, shining, with very minute punctures, perimarginal groove; tibiae crenate above the three strong, evenly spaced lateral teeth; anterior spur bent inward at tip. Middle and hind femora smooth, shining, with scattered, very minute punctures, without posterior marginal line. Middle tarsi slightly longer than tibiae, posterior tibiae and tarsi about equal in length. Posterior tibial fringe with a group of five setae, short accessory spine, and an intervening seta between spurs and accessory spine. Long spur, first tarsal segment, and three following segments combined are subequal in length.

Allotype Female: Length 5.1 mm; width 2.2 mm. I find practically no sexual differences except that the spur of the anterior tibia is not bent inward at the tip, the 5th sternum is comparatively longer, the lip of the pygidium only half as long as the 5th sternum, and the eroded area of the pygidium narrower at middle than in the male.

HOLOTYPE.—USNM 71748, collected with allotype female at black light between 2 and 16 September 1969 by K. Stephan.

TYPE-LOCALITY.—Tucson, Arizona.

SPECIMENS EXAMINED.—365.

DATES COLLECTED.—April 9 to September 19.

DISTRIBUTION (Figure 18).—Paratypes, all except a single specimen collected by K. Stephan, mostly at black light. *Arizona* (364): Colossal Cave Park, Pima County (12), 4 August 1970. Nogales (1), 7 September 1957, T. R. Haig. Santa Catalina Mountains (199): Bear Canyon (1), 6 August 1970; foothills (183), 21 June, 6 July, 19 August 1970; Molino Canyon (1), 26 August 1969; Pima Canyon (14), 28 August 1970. Tucson (152), 6 April, 19 May, 11, 21 August 1968, 11 July, 26 August, 2 to 19 September, 1969, 1 May, 21, 28 July, 2 August 1970.

REMARKS.—The paratypes show only slight variation; length 4.8 to 5.8 mm. The metasternum outside the discal area may show very minute alutaceus sculpture throughout. The slightly larger occipital punctures of the head vary slightly in size and number. Very few males were found among the specimens. A few specimens show traces of a posterior marginal line on middle and posterior femora. This shiny black species with bright reddish legs is a very handsome beetle. The coarse pronotal punctures around the smoother, finely punctate anterior medial area give it a striking appearance. *Ataenius platensis* has a similarly punctate pronotum but shows less disparity in the size of the punctures and is more slender, less robust than *A. stephani.*

The species is named in honor of Karl Stephan of Tucson, Arizona, who collected all the specimens except one.

55. *Ataenius platensis* (Blanchard)

Oxyomus platensis Blanchard, 1846:185.
Ataenius platensis.—Harold, 1876:95.—A. Schmidt, 1922: 434.—Hinton, 1937b:177.—Cartwright, 1948:149.
Ataenius anticus Fall, 1930:105.—Hinton, 1937b:179.—Cartwright, 1948:149.

Description.—Length 3.6 to 4.9 mm; width 1.5 to 2.0 mm. Oblong-elongate, shining, piceous, legs and anterior margin of pronotum and head frequently reddish. Clypeal edge finely reflexed, the edge slightly higher but not angulate and broadly rounded each side of a very moderate median emargination, sides slightly arcuate to sharply rounded, nearly right-angled genae; surface transversely wrinkled except for a few very fine, close punctures at upper edge of clypeus at middle; frontal area similarly finely punctate, separated by about their diameters, not quite so numerous at base of head. Pronotum normally convex, three-fourths as long as wide, sides and base strongly margined, edge noticeably crenate at posterior angles, fimbriate, the setae moderately long and noticeable except across the base where they are very short, longest at anterior angles where they are twice as long as the distance between them; anterior angles obtusely rounded, posterior angles broadly rounded; surface with mixed punctures, evenly distributed, very fine punctures everywhere, and very moderately coarse punctures less regularly and usually not closely spaced toward sides and base, a few coarse punctures gradually smaller toward anterior disc at middle where they are usually lacking entirely. Elytra moderately convex, two-thirds as wide as long, humeri finely dentate, striae moderately fine and deep, fine strial punctures crenating inner margins of the weakly convex intervals, lateral intervals not different, intervals with minute punctures more or less in a row along each margin, slightly more convex over apical declivity. Mesosternum shagreened with fine alutaceous sculpture and fine, short, decumbent hair, without strong carina between coxae, only slightly convex. Metasternum with minute punctures, shining, midline strong and deep, a little rugosely punctate sculpture at extreme sides, metasternal triangle shining, without definite punctures but surface very slightly uneven. First visible abdominal sternum with posterior marginal line, remaining four sterna finely fluted along anterior margin, 2nd, 3rd, and 5th sterna with posterior marginal line at sides, very finely punctate at middle to coarsely, deeply, closely punctate to sides. Pygidium with very finely punctate, shining apical lip, disc deeply, roughly eroded. Anterior femora with perimarginal groove, surface shining, minutely punctate anteriorly, posteriorly with ten or twelve scattered moderate punctures. Middle and hind femora smooth, shining, minutely punctate, two or three coarse setigerous punctures at knee, posterior femoral line of middle femora half or more of the femoral length, occasionally complete, posterior femoral line of hind femora usually half or less than half the length of the femur. Apical fringe of posterior tibiae five setae in a group, a short accessory spine half their lengths and an intervening seta between spine and spurs. First posterior tarsal segment slightly longer than long spur, and longer than the following three segments combined. The 4th abdominal sternum is relatively shorter at middle and the pygidium longer in the males.

Holotype.—In Muséum National d'Histoire Naturelle.

Type-Locality.—Buenos Aires.

Specimens Examined.—969.

Dates Collected.—January 29 to December 30.

Distribution (Figure 22).—*Alabama:* Auburn, Birmingham, Cheaha State Park, Crossville, Escambia County, Greenbriar, near Helena, Longdale (Chambers County), Lawrence County, Lee County, Mobile, Monte Sano State Park, Pyziton (Clay County), Russell, Storrsland, Trinity, Tuscaloosa. *Arizona:* Tucson. *Arkansas:* Crawford County, Hope, Johnson County, Magazine Mts. (Logan County), Pike County, Washington County. *California:* Alhambra (Los Angeles County), Colton, San Diego County, San Bernardino, San Marino. *Florida:* Avon Park, Black Warrior State Park, Bradenton, Bratt (Escambia County), Chipley, Dade City, Dunedin, Gainesville, Glen St. Mary, Homestead, Key Largo, Knights (Hillsborough County), Miami, Ocala, Oneco (Manatee County),

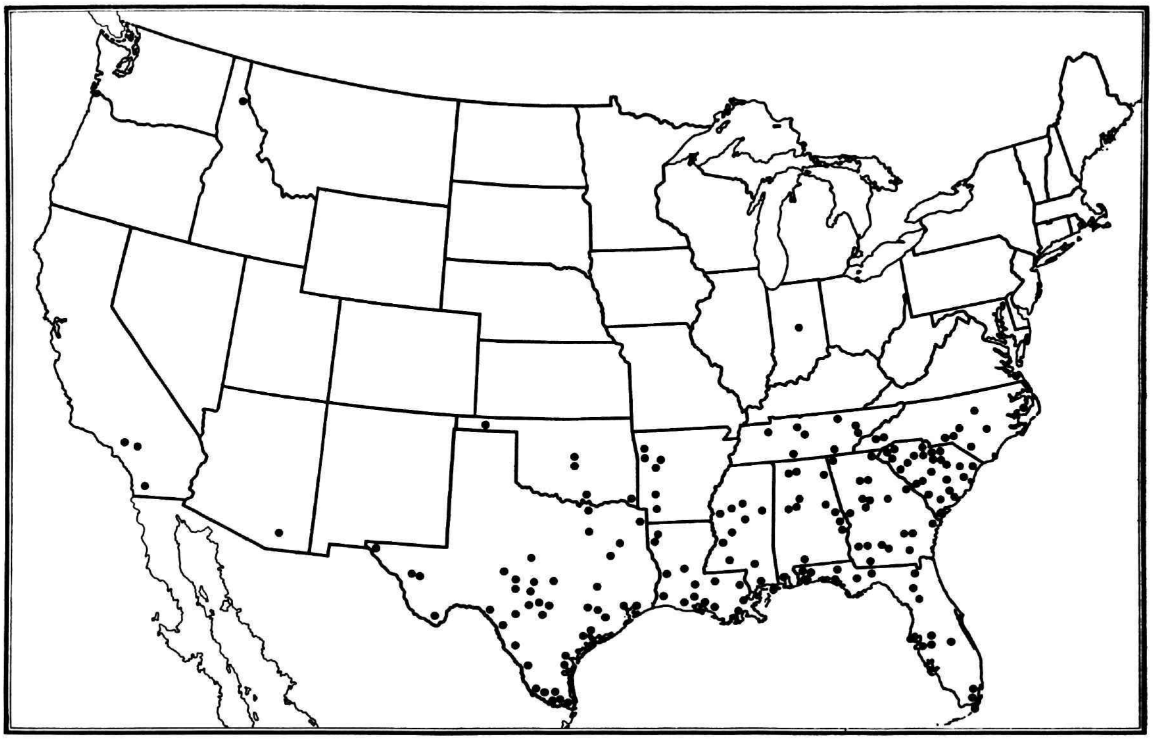

FIGURE 22.—Distribution of *Ataenius platensis* (Blanchard).

Parish, Pensacola, Saint Andrews State Park, Santa Rosa County, Sheffield, Silver Lake Recreational Area (Leon County), Surf Panacea, Tallahassee, Tall Timbers Research Station, Torreya State Park (Liberty County), Trinity, Washington County, Wewahitchka. *Georgia:* Arlington, Atlanta, Augusta, Barnesville, Baxley, Beachton, Berwick, Brookhaven (De Kalb County), Dougherty County, Experiment, Fort Benning, Franklin D. Roosevelt State Park (Chipley, Harris County), Hazelhurst, Head River, Hinesville, Milledgeville, Milner, Nashville, Peach County, Pine Mtn., Savannah, Stone Mtn., Tifton, Upson County, Ware County (L. S. Walker State Park). *Indiana:* Marion County. *Louisiana:* Alexandria, Avery Island, Baton Rouge, Bossier Parish, Calcasieu Parish, Gueydan, Lafayette, Leesville, New Orleans, Opalousas, Patterson, Raceland, St. Mary Parish, Sam Houston State Park, Shreveport, Slidell (6 mi W, in St. Tammany Parish). *Mississippi:* Brooklyn, Camp Shelby, Greenwood, Grenada, Gulfport, Hinds County, Horn Island, Keesler Field (Biloxi), Kosciusko, Lincoln County, Madison County, Starkville, State College, Washington County. *North Carolina:* Anson County, Apex, Balsam, Camp Lejeune, Carthage, Duplin County, Raleigh, Richmond County, Robeson County, Southern Pines, Sunburst, Swan Quarter. *Oklahoma:* Beaver Bend State Park, McCurtain County, Norman, Oklahoma City, Oklahoma County, Texhoma (near Willis). *South Carolina:* Aiken, Allendale, Antreville, Bethune, Blaney, CCC Camp F2, Charleston, Chester (4 m N), Clemson, Clinton, Columbia, Eutawville, Florence, Georgetown County, Gramling, Haile Gold Mine (Lancaster County), Hilton Head, Hunting Island, Jefferson, Jocassee, Liberty Hill (in tree hole, Kershaw County), Meredith, Myrtle Beach, North Augusta, Okeegee River (Beaufort County), Pelion, Pinnacle Mtn., Pontiac, Pritchardville, Ritter, St. Paul, Sandy Springs, Santuck, Sassafras Mtn., Seabrooks Island, Summerville, Swansea, Tigerville, Walhalla, White Pond, Yemassee, York (4 mi S). *Tennessee:* Benton County, Burrville, Cades Cove (Great Smoky Mts.), Chilhowee Mtn., Harrison Bay State Park (Hamilton County), Knoxville, Nashville, Pulaski, Smyrna. *Texas:* Anahuac, Anderson County, Bastrop State Park, Bexar County, Big Bend National Park, Brown County, Brownsville, Brownwood, College Station, Columbus, Comfort, Corpus Christi, Dallas County, Davis Mtns., Del Rio, Denison, Eagle Pass, Edinburg, El Paso, Enchanted, Fort Davis, Fredericksburg, Georgetown, Gillespie County, Harlingen, Harrisburg, Hildalgo County, Houston, Junction (Kimble County), Kerrville, Laredo, Linden, Lolita, Menard, New Braunfels, Richardson, Rio Grande City, Santa Rosa, Schulenberg, Sinton, Starr County, Tennessee Colony (Anderson County), Tom Green County, Tyler, Uvalde, Victoria, Weslaco, Western Cameron County, Wharton, Winter Haven. *Virginia:* Ashgrove, Norfolk.

REMARKS.—*Ataenius platensis* is one of a group of very similar-appearing species that includes *A. aequalis* Harold, *A. nugator* Harold, *A. integer* Harold, and *A. heyrovski* Balthasar (1960:5). Characters used in the key will separate the United States species. *Ataenius platensis* has the middle anterior disc of the pronotum and the basal area of the head devoid of moderate and coarse punctunes and with only fine or minute punctures in these areas. The species is commonly found under partly dried or day-old cow dung and is attracted to lights. The larva was described by Jerath (1960: 79).

56. *Ataenius picinus* Harold

Ataenius picinus Harold, 1867a:281.—Schmidt, 1922:422.—Cartwright, 1964:103.
Ataenius salutator Fall, 1930:99.—Cartwright, 1948:149; 1964: 103.
Ataenius darlingtoni Hinton, 1937b:179.—Cartwright, 1945: 47; 1948:149; 1964:103.

DESCRIPTION.—Length 4.8 to 5.8 mm; width 2.0 to 2.5 mm. Oblong-elongate, moderately convex, shining, black, sometimes with anterior margins of pronotum and clypeus, and legs reddish. Clypeus with finely reflexed margin, broadly rounded each side of moderately deep median emargination, sides slightly arcuate to nearly right-angled genae; surface finely, transversely wrinkled over anterior two-thirds with moderately fine, close punctures medially to frontal area where they merge with a band of punctures twice their size, separated by about their own diameters, fewer and not so close at base of head. Pronotum convex, slightly narrower in front, about one-fourth wider than long, sides and base strongly margined, edge crenate, fimbriate, crenations noticeable at anterior angles, the setae fine, long, conspicuous, generally separated by less than their lengths laterally, very short basally; surface with mixed punctures throughout, the very fine, evenly spaced punctures separated by about twice their diameters, the coarse punctures somewhat irregularly spaced but numerous, gradually much finer and less numerous over median anterior third of disc. Elytra one-third longer than wide, humeri not strongly dentate, striae deep, punctures strongly crenating inner margins of the very moderately convex intervals, which show scattered, minute punctures more or less in marginal rows, lateral intervals not different except for the 9th, which is densely, very finely punctate. Mesosternum shagreened with fine, alutaceous sculpture and fine, short appressed hairs, carinate between the coxae. Metasternum smooth and shining but with moderately close, minute punctures over disc and fewer outward to scabrous area at extreme sides, midline long and deep, metasternal triangle smooth, deep, but sides not sharply defined. Abdominal sterna strongly, closely punctate from side to side, fine at middle to coarse at sides, first visible sternum with posterior marginal line, the remaining four sterna fluted along anterior margin and the 2nd, 3rd, and 5th sternum with a posterior marginal row of very close punctures forming a line along outer third. Pygidium with strong, shining apical lip and roughly eroded disc. Anterior femora with perimarginal groove, surface shining but with very fine, irregularly placed, minute punctures and five or six coarse, crescent-shaped punctures at the knee. Middle and hind femora similarly minutely punctate, with one or two coarse, setigerous punctures at knee, and a strong, posterior marginal line over outer half of femur. Posterior apical fringe of hind tibia invariably a group of four setae, a strong accessory spine, and an intervening seta between the spine and spurs. The first posterior tarsal segment, the following three segments combined, and the long spur all equal in length. Males have the 4th abdominal sternum about two-thirds as long as the preceding sternum, the 5th relatively shorter, and the pygidium longer with a wider apical lip than is found in females.

LECTOTYPE.—In Muséum National d'Histoire Naturelle. Holotype of *A. salutator* Fall in Museum of Comparative Zoology.

TYPE-LOCALITY.—Chile, South America. Type-locality of *A. salutator* Fall, Pensacola, Florida.

SPECIMENS EXAMINED.—150+.

DATES COLLECTED.—January 3 to September 27.

DISTRIBUTION (Figure 18).—*Alabama:* Anniston, Auburn, Birmingham, Claiborne, Fairhope (Baldwin County), Gulf State Park, near Helena (Shelby County), Lee County, Mobile, Storrsland. *Arkansas:* Drew County, (College Heights), Hope Experiment Station (Hempstead County), Magnolia (Columbia County), Taylor (3 mi W, in Lafayette County). *Florida:* Bratt (Escambia County), Crestview (Okaloosa County), Gainesville, Marianna (Jackson County), Molino (Escambia County), Pensacola, Santa Rosa County, Walnut Hill (Escambia County), Westville (Holms County). *Georgia:* Arlington, Beachton, Columbus, Dougherty County, L. S. Walker State Park (Ware County). *Louisiana:* Alexandria, Avery Island, Harahan, Leesville, New Orleans, Pineville, Raceland, St. Mary Parish, Sam Houton State Park, Shreveport. *Mississippi:* Biloxi, Gulfport, Hinds County, Horn Island, Jackson, Lincoln County, Long Beach, Lucedale, Madison County, McComb, Moss Point, Ocean Springs. *South Carolina:* Blackville, Charleston, Combahee River, Myrtle Beach, Pritchardville, Summerville, Yemassee. *Texas:* Beaumont, College Station, Elkhart (10 mi SW, in Anderson County), Houston, Jasper, Mother Neff State Park, Orange, Vidor (Orange County).

REMARKS.—The combination of size, crenate, anterior lateral margin of the pronotum, densely, finely punctate 9th elytral interval, and group of four setae on apical margin of the posterior tibia will identify this worldwide species (Figure 1*d*). It is known from southern United States, West Indies, South America, Australia, New Zealand, Fiji, New Caledonia, and New Hebrides.

57. *Ataenius brevicollis* (Wollaston)

Oxyomus brevicollis Wollaston, 1854:229.

Ataenius brevicollis.—Harold, in Gemminger and Harold, 1869:1066.

Auperia sulcatula Chevrolat, 1864:413. [New synonymy.]

Ataenius sulcatula.—Harold, in Gemminger and Harold, 1869:1067.—Schmidt, 1922:459.

Ataenius sulcatulus.—Chapin, 1940:41 [not Chevrolat, 1864: 413].

Ataenius frankenbergeri Balthasar, 1938:56.—Cartwright, 1968:27. [New synonymy.]

DESCRIPTION.—Length 3.6 to 4.5 mm; width 1.6 to 1.9 mm. Piceous or black, shining, oblong, convex, sides of pronotum and elytra not visible from directly above. Head convex; clypeus slightly angulate each side of moderate median anterior emargination, sides arcuate to inconspicuous, slightly more than right-angled genae, edge finely reflexed, concave, smooth, very minutely punctate back of emargination, surface elsewhere very finely punctate with the punctures separated by about twice their diameters, front with band of very moderate punctures, generally separated by less than their diameters, which are smaller anteriorly and blend smoothly with upper clypeal punctures, those of posterior edge about equal in size to those of pronotum. Pronotum convex, about one-third wider than long, base somewhat angularly arcuate, anterior angles obtusely rounded, sides slightly arcuate in front, shallowly emarginate before the rounded posterior angles, sides and base strongly margined, crenate-fimbriate, the setae short, separated by more than their length; surface moderately coarsely punctate throughout, slightly smaller in front, punctures rather evenly distributed but more irregularly so and less close over middle where they may be separated by one to four diameters, usually by about their diameters over lateral third. Elytra convex, slightly more than twice as long as wide, humeri weakly dentate, striae deep and strong, strial punctures deep, separated by about four times their diameters, crenating inner side of slightly convex intervals, the intervals minutely punctate, some scattered but mostly in rows along margins; over the apical declivity the striae become much wider, the intervals become strongly carinate with margins eroded; laterally the intervals become more convex and the rows of punctures more distinct and noticeable, the 10th interval alutaceous and nearly flat, the punctures apically and laterally are minutely setigerous. Mesosternum carinate between the coxae. Metasternum with strong, deep midline, disc with numerous mixed minute and very fine punctures, increasingly roughly, closely punctate outward to scabrous surface at sides, metasternal triangle finely scabrous within. Abdominal sterna finely fluted along anterior margin, deeper posteriorly, the fluting of the 5th sternum much deeper and at middle half as long as the sternum, all sterna quite coarsely, closely punctate, punctures generally separated by their diameters, slightly closer and coarser at sides, punctures of 5th sternum noticeably finer. Pygidium deeply, roughly eroded; apical lip convex, shining, very finely, closely punctate. Male pygidium relatively longer than in female. Anterior femora with deep perimarginal groove, surface roughly punctate, finer in front, coarser, closer and united in close diagonal lines posteriorly. Middle femora with scattered, elongate, finely setigerous, moderate to coarse punctures separated by one to three diameters, slightly larger outward to knee, three strong setae at knee, posterior marginal line deep and complete. Posterior femora with relatively few fine to moderate punctures, a row of coarse punctures along anterior edge, three or four coarse, setigerous punctures at the knee, the posterior femoral line deep, inward one-third or more from the knee and usually continued on by disconnected elongate segments or punctures toward coxae. Posterior tibial fringe of six setae, accessory spine of same length and an intervening seta between spine and spurs. First segment of posterior tarsus longer than long spur, subequal to following four segments combined.

HOLOTYPE.—In British Museum (Natural History).

TYPE-LOCALITY.—Madeira Islands.

SPECIMENS EXAMINED.—26.

DATES COLLECTED.—March 18 to June 7.

DISTRIBUTION (Figure 3).—*Florida:* Dade County, Key Largo, New Smyrna. *Mississippi:* Gulfport. *Texas:* Brazos.

REMARKS.—*Ataenius brevicollis* is quite similar to *A. rhyticephalus* in apical and lateral characters but is smaller and much more convex. It has been collected in dung in the nests of the wood rat *Neotoma floridana smalli* Sherman on Key Largo, Florida, by L. J. Bottimer and R. E. Woodruff. Wollaston reported it as "Rather common around Funchal in Medeira proper, occurring beneath damp garden refuse and under putrid substances near the beach."

I have examined the lectotype (present designation) of *Ataenius sulcatulus* (Chevrolat), which is now in the Staatliches Museum für Tierkunde, Dresden. Dr. Rudolf Petrovitz of Vienna called my attention to the synonomy of *A. frankenbergeri* Balthasar with *A. brevicollis* Wollaston. I had examined the types of both at different times and designated homotypes which prove the synonymy is correct. The type-locality of *A. sulcatulus* was Cuba, Ungebung von Havana. The type of *A. frankenbergeri* was also from Havana, Cuba.

58. *Ataenius rhyticephalus* (Chevrolat)

Auperia rhyticephalus Chevrolat, 1864:413.
Ataenius rhyticephalus.—Harold in Gemminger and Harold, 1869:1067.
Ataenius floridanus Brown, 1930:3.—Fall, 1930:97. [New synonymy.]
Ataenius strigicauda.—Cartwright, 1948:149 [not Bates, 1881: 96].
Ataenius solitarius Blatchley, 1928:69.—Cartwright, 1948:149. [New synonymy.]

DESCRIPTION.—Length 4.3 to 5.6 mm; width 2.0 to 2.3 mm. Piceous or black, shining, oblong, subparallel, moderately convex. Head moderately convex, clypeus very broadly rounded each side of moderate median emargination, sides arcuate to sharp, right-angled genae, edge finely reflexed; surface transversely wrinkled upward from small median, marginal concavity to middle of greatest convexity, finely, closely punctate between wrinkles and transverse band of close, coarse punctures of frontal-occipital area, the coarse punctures generally separated by less than their diameters; a sharp deep groove upward from genae around curvature of eye. Pronotum convex, base arcuate, one-fourth wider than long, anterior angles obtusely rounded, hind angles broadly rounded, sides and base strongly margined, fimbriate-crenate, the setae slightly longer anteriorly, separated by their own lengths at posterior angles; surface with mixed punctures, the disc with very fine and coarse punctures (separated by 2 to 4 diameters), laterally over outer third much more closely set with coarse and very fine to fine punctures, crowded and practically contiguous in anterior and posterior angles, otherwise the coarse punctures separated up to their diameters. Elytra about one-half longer than wide, more than twice the length of the pronotum, sides slightly crenate, humeri dentate; elytral striae strong, strial punctures deep, quite close, crenating inner margin of intervals on disc where the intervals are flat to very weakly convex with scattered, minute punctures; over apical declivity the striae become much wider, the intervals strongly convex, and the punctures larger and much more noticeable, laterally the intervals are more convex and the outer three strongly, closely punctate, the shoulders are very closely and quite coarsely punctate; posteriorly under high magnification the coarser punctures are minutely setigerous. Mesosternum weakly carinate between the coxae. Metasternum with strong, deep midline slightly deeper at ends, disc smooth with some very minute punctures and usually six to eight coarse punctures at base of middle legs, roughly, closely punctate at extreme sides, smooth otherwise, moderately deep metasernal triangle with some minute sculpture within. Abdominal sterna finely fluted along anterior margin, surface coarsely, closely punctate throughout, only at middle finer and less close, the first two completely visible sterna also have a posterior marginal row of very close punctures; the anterior flutings of the 5th sternum are much deeper and up to half the length of the sternum at middle. Pygidium deeply eroded, rough, with moderately wide, minutely punctate, convex apical lip. Anterior femora with deep perimarginal groove, trochanter and adjacent femoral surface smooth and shining, remaining flattened surface rough with moderately coarse punctures tending to form diagonal lines. Middle and hind femora inwardly smooth, minutely punctate, outwardly especially along anterior margin near the knee with scattered, coarse punctures, posterior marginal lines deep, usually complete on middle femur and about three-fourths total length from the knee on hind femur. Posterior tibia with strong accessory spine, fringe of setae in a group of four but, although the accessory spine is remote from the spurs, I find only a very short intervening seta, not half the length of the group of four. First tarsal segment of hind legs longer than the long spur and almost as long as the following four segments combined. Abdomen slightly flatter and the pygidium relatively longer in the male.

HOLOTYPE.—In Staatliches Museum für Tierkunde, Dresden.

TYPE-LOCALITY.—Cuba.

SPECIMENS EXAMINED.—50.

DATES COLLECTED.—February 21 to September 15.

DISTRIBUTION (Figure 16).—*Florida:* Big Pine Key, Collier-Seminole State Park, Dunedin, Enterprise, Everglades National Park, Gainesville, Highlands Hammock, Key West, Levy County, Marion, Monticello, Myakka State Park, Paradise Key, Royal Palm Park, Tall Timbers Research Station, Tampa, Timms Hammock, West Palm Beach. *South Carolina:* Charleston, Gardens Corner, Runnymede, Yemassee. *Texas:* "Texas."

REMARKS.—*Ataenius rhyticephalus* is closely related to *A. heinekeni* Wollaston (1854:228) and *A. strigicauda* Bates (1887:96). In fact, I once synonymized *A. rhyticephalus* (*floridanus*) with *A. strigicauda* but I now believe they are quite distinct. In *A. strigicauda* from Mexico, the basal frontal punctures gradually become slightly smaller down over the clypeus as opposed to a distinct band in *A. rhyticephalus*, the base of the pronotum is distinctly emarginate opposite the humerus, the crenations of the elytral intervals are coarser and more noticeable, and over the apical declivity the intervals are noticeably margined or eroded along each side. In *A. heinekeni*, from Madeira Islands, the pronotal angles are shallowly, densely punctate, many of the punctures running together, the base of the pronotum is slightly emarginate at the posterior angles, the lateral elytral intervals are less coarsely and conspicuously punctate, the crenations of the elytral intervals are finer and less noticeable, and the upper surface of the pronotum and elytra is minutely but distinctly alutaceous. I have examined the types of all three species.

Although I have seen *A. rhyticephalus* only from South Carolina, Florida, and Texas, I suspect it occurs in all the intervening states as well. I have not seen it in light-trap material. My own collections were made under leaves on hard ground under live-oak trees on old rice-field dams, in church yards, and under roadside debris. Some Florida specimens were taken in forest litter. Jerath (1960:75) described the larva under the name *Ataenius strigicauda* Bates.

59. *Ataenius brevis* Fall

Ataenius brevis Fall, 1930:98.—Cartwright, 1948:150.

DESCRIPTION.—Length 3.4 to 5.1 mm; width 1.6 to 2.3 mm. Black, shining, moderately convex, short, oblong-oval, legs dark rufous. Head moderately convex; clypeal margin very finely reflexed, broadly rounded each side of wide, shallow median emargination, sides arcuate to sharply rounded, right-angled genae; surface very finely, evenly punctate, punctures separated by two diameters, sometimes weakly but perceptibly transversely wrinkled anteriorly below median convexity; occipital area with crossband of moderately coarse punctures slightly closer toward sides. Pronotum about one-fourth wider than long, sides parallel; anterior angles obtuse, hind angles broadly rounded, sides and base margined, minutely to very finely crenate, more noticeably so around posterior angles where the short marginal setae are separated usually by more than their own lengths; surface with mixed very fine and numerous irregularly placed, moderately coarse punctures, usually closer toward sides. Elytra short and convex, about one-half longer than wide, sides arcuate, humeri strongly dentate; striae strong, crenately punctate; intervals weakly convex, smooth and shining but with scattered, minute punctures, 10th interval flat or less convex than 9th interval. Mesosternum carinate between coxae. Metasternum shining, middle line strong and deep, slightly shorter than length of first two abdominal segments combined, discal area of male with very fine punctures anteriorly, moderate punctures over posterior half, generally separated by their diameters or less, similar punctures outward to scabrous area at sides, female lacking the larger punctures, metasternal triangle moderate, not sharply defined. Abdominal sterna shining, punctate throughout, fine medially to moderately coarse at sides where they are separated by one or two times their diameters; finely fluted along anterior margins, the fluting increasingly longer on each sternum posteriorly; pygidial eroded area longer in males. Anterior femora with perimarginal groove; surface narrowly smooth along anterior margin, elsewhere roughly, closely punctate with mixed fine and moderate punctures. Middle and hind femora shining, with very fine, scattered punctures separated by three or four times their diameters; posterior marginal line strong, extending about half the distance from the knee to the trochanter. Hind tibia with strong accessory spine with intervening seta between spine and spurs and a fringe group of five setae, rarely four or six; spurs fine and slender, the long spur much shorter than first segment of tarsus which is also much longer than the following three segments combined.

HOLOTYPE.—Fall Collection, Museum of Comparative Zoology, No. 24767.

TYPE-LOCALITY.—"Pennsylvania." Dr. Fall states that the two cotypes were collected by Henry Ulke—probably in the Blue Ridge Mountains where Ulke had a summer home or camp at Pen Mar, Pennsylvania.

SPECIMENS EXAMINED.—160+.

DATES COLLECTED.—April 18 to September 8.

DISTRIBUTION (Figure 18).—*Alabama:* Franklin County (The Dismals). *District of Columbia. Georgia:* Billys Island (Okefenokee Swamp), Pine Mtn., Satolah. *Maryland:* Cove Point, S. I. Java Farm (Anne Arundel County). *Massachusetts:* Chicopee, Sherborn. *New Hampshire:* "New Hampshire," Three Mile Island. *New Jersey:* Fort Lee. *New York:* New York City, Peekskill. *North Carolina:* Black Mountains, Buck Forest, Highlands, Pisgah Forest. *Pennsylvania:* Frazer, Pen Mar, Pocono Mts. *Rhode Island:* North Kingston (Boston Neck). *South Carolina:* CCC Camp F2 (Oconee County), Clemson, Earl's Ford (Oconee County), Fish Hatchery (Oconee County), Mountain Rest, Pinnacle Mtn., River Falls, Sassafras Mtn. (Pickens County). *Tennessee:* Burrville, Citico, Venore (11 mi W). *Virginia:* Falls Church.

REMARKS.—The habitus of this species is quite distinct and quickly separates it from others of the *strigatus* group to which it belongs. The short, oval elytra with normal, almost quadrate pronotum give a quite distinctive appearance. From *A. strigatus* it may be separated also by the flat or weakly convex 10th elytral interval, by the posterior femoral line being one-half or less the distance from knee to trochanter, and the transverse wrinkles of the clypeus lacking, very weak, or the median convexity simply punctate. Small specimens of *A. fattigi* are sometimes difficult to separate, but in *A. brevis* the elytral strial punctures are usually fine and more widely spaced, the eroded posterior marginal line of the first visible abdominal sternum angles forward at middle leaving a smooth, more or less triangular area at the edge, and the anterior prosternal lobe has the center convex; in *A. fattigi* the strial punctures are more closely spaced, the eroded marginal line of the first visible abdominal sternum may angle forward at middle but its posterior edge remains straight along the edge of the sternum, and the anterior prosternal lobe has the center concave.

Jerath (1960:76) described the larva of *A. brevis.*

60. *Ataenius spretulus* (Haldeman)

Aphodius spretulus Haldeman, 1848:106.
Ataenius spretulus.—Harold [as a synonym of *strigatus* Say], in Gemminger and Harold, 1869:1067.—Horn, 1887:109.
Ataenius consors Fall, 1930:104 [not Blackburn, 1904:161].—Cartwright, 1943:108.
Ataenius falli Hinton, 1934:119.—Cartwright, 1943:108.
Ataenius spretulus.—Cartwright, 1943:108; 1948:150.

DESCRIPTION.—Length 3.6 to 5.5 mm; width 1.7 to 2.4 mm. Elongate-oblong, moderately convex, shining black, legs and clypeal margin reddish. Head convex, finely reflexed edge of clypeus broadly rounded each side of wide, shallow median emargination, sides nearly straight to sharply rounded, right-angled genae; surface feebly, transversely wrinkled anteriorly, finely, closely punctate above middle, the punctures separated by twice their diameters or less, front with transverse band of moderate punctures, unevenly distributed but generally separated by about their diameters, more or less. Pronotum about three-fourths as long as wide, convex, anterior angles obtusely rounded, posterior angles rather broadly rounded, sides and base strongly margined, sides fimbriate-crenate at anterior and posterior angles, the crenations barely visible, the setae short and inconspicuous, separated by a little more than their lengths, middle third or more of margin without setae; surface with evenly spaced, minute to fine punctures throughout and very irregularly placed, scattered, coarse punctures intermixed, usually relatively few, sometimes in scattered groups. Elytra approximately one-third longer than wide, humeri finely dentate, sides very weakly arcuate, striae fine, moderately convex intervals, surface smooth, shining, but with scattered, extremely minute punctures, lateral intervals not different. Mesosternum shagreened as usual, with very fine surface sculpture and short, fine, decumbent hair, carinate between the coxae. Metasternum with long, strong, deep midline, smooth and shining but with very fine, scattered punctures, some shallow, rough sculpture at extreme sides, metasternal triangle strong, faintly roughened within. First visible abdominal sternum with fine posterior marginal line, the remaining four sterna finely fluted along anterior margin, fluting of 5th sternum a little longer but not greatly longer at middle, possibly twice as long at middle as at sides; elsewhere the surface punctate from side to side, finely so at middle, gradually coarser to sides where they are moderately coarse and separated by their diameters or less, 5th sternum with only very fine punctures and a single, very large, deep, elongate puncture or pore at extreme sides. Pygidium with shining, convex apical lip and disc finely, roughly eroded. Anterior femora with strong perimarignal groove, surface smooth and shining, with scattered, minute punctures, occasionally a few very shallow, indistinct moderate punctures posteriorly. Middle and hind femora smooth, shining, with scattered, very fine punctures, strong posterior marginal line along outer half. Apical fringe of posterior tibia usually a group of five setae, a strong accessory spine of equal length, and an intervening seta between the spine and spurs. First segment of hind tarsus longer than long spur, and longer than following three tarsal segments combined. Males have a patch of close, moderate, setigerous punctures at middle each side of metasternal midline, the 4th abdominal sternum is shorter at middle and the pygidium longer with much wider apical lip than in the female.

HOLOTYPE—Museum of Comparative Zoology, No. 8358.

TYPE-LOCALITY.—"Middle States," i.e., middle Atlantic states.

SPECIMENS EXAMINED.—1252+.

DATES COLLECTED.—February 17 to November 11.

DISTRIBUTION (Figure 15).—*Alabama:* Anniston, Auburn, Birmingham, Florence, Huntsville, Mobile, Pyziton (Clay County). *Arkansas:* Arkansas County, Beaver Lake (Madison County), Cave Creek Valley (Washington County), Devils Den State Park, Drew County, Fayetteville, Hope, Hot Springs National Park, Little Rock, Magnolia (Columbia County), Pike County, Randolph County, Taylor, Washington County. *California:* Big Basin State Park (Santa Cruz County). *Colorado:* "Colorado," Pueblo. *Connecticut:* Hamden, Meriden, New Haven. *Delaware:* Bethany Beach, Bridgeville, Delaware Beach, Dover, Farmington (Kent County), Georgetown, Lewes, Milton, Newark, Rehoboth Beach, Smyrna, Sussex County, Wilmington. *District of Columbia:* Washington. *Florida:* Archbold Biological Station, Belle Glade, Biscayne, Bradenton, Capron, Chicopee, Clewiston, Colliersville, Coral Gables, Daytona, Dunedin, Enterprise (Volusia County), Flamingo, Florida City, Fort Lauderdale, Fort Myers, Gainesville, Goulds, Haw Creek, Highlands Hammock State Park, Holly Hill, Homestead, Immokalee, Jacksonville, Key West, Kissimmee, Lake Letta (Avon Park), Lake Marion, Long Pine Key, Marion County, Mayport, Merritt Island, Miami, Miami Beach, Miami Springs, Monkey Jungle, Moore Haven, Myakka River State Park, Ochopee (Collier County), Okeechobee, Oneco (Manatee County), Orange County, Palms Vista Hammock (Everglades National Park), Paradise Key, Parrish, Perrine, Punta Gorda, Royal Palm Park, Sanford, Sarasota, Stock Island, Tallahassee, Tampa, Venus (Highland County), Vero Beach, West Palm Beach, Zolfo Springs. *Georgia:* Atlanta, Bald Mtn., Brookhaven (De Kalb County), Clarkston, Demorest, Franklin D. Roosevelt State Park, Nashville, Pine Mtn., Rossville, Stone Mtn., Valdosta. *Idaho:* Kellogg. *Illinois:* Argonne National Laboratory (Du Page County), Beverly Hill, Carbondale, Caterville (Williamson County), Crab Orchard (Williamson County), Evanston, Highland Park, Murphrysboro (Jackson County), Olympia Field, Quincy, Union County, Zeigler. *Indiana:* Athens, Dunes Park Beach, Forestville, Grantsburg, Hovey Lake, Indianapolis, Lafayette, Lawrence County, Richmond, Wolf Lake. *Iowa:* Ames, Bedford, Cedar County, Council Bluffs, Davis County, Eddyville, Guttenburg, Indianola, Iowa City, Manwell, Okeeboji, Redfield, Shenandoah, Silver Lake. *Kansas:* Chetopa, Coffee County, Douglas County, Gardner Lake (Johnson County), Kansas City, Lawrence, Manhattan (5 mi N), Osage, Pittsburg, Pottawatamie County, Reno County, Riley County, Seneca, Topeka, Wellington, Wilson County. *Kentucky:* Barbourville, Bowling Green, Cadiz (Trigg County), Fairdale, Jefferson County, Louisville, Newport, Old Hanco, St. Matthews, Wolf Creek Lake (Wayne County). *Louisiana:* Alexandria, Avery Island, Baton Rouge, Calcasieu Parish, Harahan, Jamesville, Kenner, Loanoke, Morgan City, New Orleans, Olivier, Opelousas, Pearl River, Pineville, Raceland, Shreveport, Vinton (14 mi E). *Maryland:* Baltimore, Beltsville, Boonsboro, College Park, Crisfield, Edgewood, Forest Glen, Glen Burnie, Greenbelt, Hagerstown, Hancock, Hebbville, Hyattsville, Pocomoke Swamp, Point Lookout, Reisterstown, Salisbury, Scotland (St. Marys County), Shelton, Takoma Park, Thurmont, Upper Marlboro. *Massachusetts:* Amherst, Boston, Brookline, Fall River, Framingham, Groton, Newton, Ramsey, Waban, Waltham. *Michigan:* Agricultural College, Bay County, Bellevue, Chelsea (Washtenaw County), Detroit, East Lansing, Flint, Midland County, Selbridge Field, Wayne County, Whitmore Lake. *Minnesota:* Big Stone County, Buffalo, Duluth, Fairbault, St. Paul. *Mississippi:* Grenada, Gulfport, Horn Island, Indianola, Itta Bena, Keesler Field-Biloxi, LeFlore County, Leland, Long Beach, Meridian, Moss Point, Pearl (Jackson), Rankin County, Raymond (Hinds County), Scott (Bolivar County), Starkville, State College. *Missouri:* Bagwell, Centerville, Charleston, Clarksville, Clayton, Cole County, Columbia, Dardene Prairie, Everton, Hayti, Ironton, Jefferson City, Louisiana, Newberg, Pacific, St. Joseph, St. Louis, Scott County, Springfield, Stanton, Vernon County, Webster Groves, W. Quincy, Williamsville. *Nebraska:* Bennett, Fairmont, Halsey, Holt County, Lincoln, McCook, South Bend, West Point. *New Hampshire:* "New Hampshire." *New Jersey:* Anglesea, Atlantic City, Avalon, Avenel, Bamber Lake, Blenheim, Boonton, Cape May, Chelsea, Clementon, Hadden Heights, Hoboken, New Brunswick, New Lisbon, Sea Island, Wildwood, Woodbury, Wrightstown. *New Mexico:* "New Mexico." *New York:* Brooklyn, Ithaca, Jericho, New York City, Peekskill, Putnam Valley, Roslyn (Long Island), West Point. *North Carolina:* Apex, Greensboro, Judaculla Rock, Pisgah Forest, Raleigh, Robeson County, Swan Quarter, Tryon. *North Dakota:* Cass County, Ransom County, Richland County. *Ohio:* Ada, Athens, Champaign County, Cleveland, Conneaut, Erie County, Franklin County, Holgate, Hudson, Ottawa County, Painesville, Washington County, West Alexandria. *Oklahoma:* El Reno, Miami, Norman, Oklahoma City, Ponca City, Texhoma (near Willis), Tulsa, Union City. *Pennsylvania:* Bucks County, Castle Rock (Delaware County), Conshohocken, Davidsburg, Downington, Easton, Eddystone, Evansburg, Germantown, Harrisburg, Lansdowne, Lima, Mount Airy, Norwood, Oaklane, Philadelphia, Pittsburgh, State College, Wilkes Barre, Wormleysburg, York, Zelionople. *Rhode Island:* Newport. *South Carolina:* Charleston, Chester, Clemson, Columbia, Florence, Monks Corner, Myrtle Beach, Tigerville. *South Dakota:* Brookings, Highmore, Lake Sinai, Paulson (Lincoln County), Yankton. *Tennessee:* Burrville, Cookeville, Friendsville, Greeneville, Jackson, Johnson City, Knoxville, Madison, Memphis, Morrison, Nashville, Oak Ridge, Pulaski, Reelfoot Lake, Sevierville. *Texas:* Anderson County, Beaumont, Brazos, Brownsville, College Station, Dallas, Devils River, Edinburg, Galveston, Houston, Kerrville, La Marque (Galveston County), Orange County, Plano, Reeves County, Victoria, Whitesboro, Willis. *Utah:* Ogden, Salt Lake County, Spanish Fork, Utah County, Weber County. *Virginia:* Arlington, Basye, Belvoir, Blacksburg, Camp Pickett, Charlottesville, Chatham, Dumfries, Falls Church, Fort Monroe, Franklin, Hampton, Herndon, Middleburg, Mountain Lake, Mount Vernon, Montgomery County, Nelson County, Norfolk, Paris, Roaches Run, Roanoke, Salem, Shenandoah County, Virginia Beach. *West Virginia:* Kanawha, Kearneysville, Wardensville. *Wisconsin:* Madison, Milwaukee County, Nekoosa, Wood County. *Wyoming:* Platte County. *Canada: Ontario:* Ancaster, Forestville, Hamilton County, Leamington, Ottawa, Point Pelee, Simcoe, Walsingham, Wentworth, Wheatley.

REMARKS.—The type, bearing a small pink circle indicating "Middle States," was placed in the LeConte series of *A. strigatus* Say, which it resembles very closely. *Ataenius strigatus* differs in having coarsely, roughly punctate anterior femora and dense, coarse pronotal punctures at sides. Both species were frequently identified as *A. cognatus* LeConte in earlier publications.

Ataenius spretulus has been collected in all but seven states in continental United States.

61. *Ataenius wenzelii* Horn

Ataenius wenzelii Horn, 1887:77.—Robinson, 1947:150.—Cartwright, 1948:150.
Ataenius ludovicianus Fall, 1930:100.—Cartwright, 1948:150.

DESCRIPTION.—Length 4.2 to 5.5 mm; width 1.9 to 2.3 mm. Elongate-oblong, moderately convex, dull to moderately shining, black, edge of clypeus and legs reddish. Head convex, margin of clypeus finely reflexed, broadly, evenly rounded each side of shallow to moderate median emargination, sides usually slightly arcuate to right-angled genae; surface anteriorly transversely weakly wrinkled, median convexity and above finely punctate, the punctures separated by their diameters generally, front with transverse band of close, moderate punctures with a few scattered, fine punctures intermixed. Pronotum approximately two-thirds as long as wide, anterior angles obtuse, sides very broadly, evenly rounded into base, sides and base arcuate, strongly margined, the edges fimbriate-crenate, the crenations scarcely visible, the setae moderately short, not very conspicuous, separated generally by about their lengths; surface densely punctate with mixed fine and moderately coarse punctures, the coarse punctures a little closer toward anterior and posterior angles. Elytra three-fourths as wide as long, humeri sharply dentate, sides weakly arcuate, striae fine, moderately deep, strial punctures slightly crenating the flat to very weakly convex, usually strongly alutaceous intervals, apical declivity and lateral intervals more noticeably convex, surface of intervals with scattered, minute punctures more or less in lateral rows also. Mesosternum shagreened as usual, carinate between the coxae. Metasternum smooth, shining, midline strong, disc anteriorly minutely punctate to finely punctate posteriorly in the male (only slight difference in female), smooth outward to the small scabrous area at extreme sides, metasternal triangle usually smooth and shining. First visible abdominal sternum with fine posterior marginal line, remaining four sterna with progressively longer fluting along anterior margin, a little longer at sides on middle sterna, longer at middle on 5th sternum, sterna punctate from side to side, punctures very fine at middle to very moderate and closer at sides. Pygidium longer in male, apical lip convex, shining, minutely punctate, disc eroded, very finely scabrous. Anterior femora with perimarginal groove, surface shining, some scattered, minute to fine punctures, anterior spur of male strongly bent inward apically. Middle and hind femora smooth, shining, with scattered, very minute punctures and two or three coarse, finely setigerous punctures at knee; fine posterior marginal line along outer half best seen from behind. Posterior tibial apical fringe of five, sometimes six, setae, a short, triangular accessory spine and an intervening seta between spine and spurs. The relative length of the long spur, first tarsal segment, and following three segments of the posterior tarsus combined slightly variable but generally about equal in length.

HOLOTYPE.—Academy of Natural Sciences of Philadelphia, No. 3610.

TYPE-LOCALITY.—Atlantic City, New Jersey.

SPECIMENS EXAMINED.—100+.

DATES COLLECTED.—March 2 to October 23.

DISTRIBUTION (Figure 23).—*Alabama:* Mobile. *Arkansas:* Hope. *Florida:* Wewahitchka. *Iowa:* Guttenberg. *Louisiana:* Alexandria, Gueydan, New Orleans. *Maryland:* Cambridge (10 mi S), Plum Point. *Mississippi:* Gulfport, Horn Island, Ocean City. *New Jersey:* Anglesea, Atlantic City, Beesleys Point, Brigantine, Sea Island City. *North Carolina:* Swan Quarter. *Oklahoma:* Willis. *Pennsylvania:* Pocono Lake. *South Carolina:* Charleston. *Texas:* Anderson County, Brazos, Brownsville, Corpus Christi, Houston, La Marque (Galveston County), Whitesboro. *Virginia:* Norfolk, Virginia Beach.

REMARKS.—Horn's original description was in error on at least three important characters. *Ataenius wenzelii* does have an intercoxal carina, the tibiae have an accessory spine, and the posterior femoral line, though weak, is visible from behind, extending over the outer half to one-third of the distance to the knee. The single specimen mounted ventral side up in the Horn series apparently lacks the intercoxal carina; however, this specimen is exceptional as others in the series have a distinct carina.

Ataenius wenzelii can usually be identified by the flat, alutaceous elytral intervals.

62. *Ataenius cognatus* (LeConte)

Euparia cognata LeConte, 1858:65.
Ataenius cognatus.—Harold, in Gemminger and Harold, 1869: 1066.—Horn, 1887:83.—Schmidt, 1922:424.—Fall, 1930: 106.—Cartwright, 1948:150.

DESCRIPTION.—Length 4.0 to 5.9 mm; width 1.9 to 2.5 mm. Black, shining, elongate-oblong, legs slightly reddish. Head weakly convex; clypeus broadly rounded each side of moderate median emargination, sides slightly arcuate to right-angled genae, margin finely reflexed; surface lightly transversely wrinkled anteriorly, finely punctate between wrinkles and basal band of moderately coarse punctures, the fine punctures separated by one to two times their diameters, the coarse punctures by their diameter or less in the band but much more separated in occipital area. Pronotum about one-half wider than long, moderately convex, sides nearly straight, sides and base margined, edge not perceptively crenate, marginal setae very moderate in length, generally separated by their own lengths; anterior angles obtusely rounded, posterior angles broadly rounded, surface with mixed coarse and very fine punctures throughout, scattered in some specimens, evenly distributed in others, separated by less than one to several times their diameters, the punctures a trifle smaller along anterior margin, a little closer in anterior angles. Elytra one-third longer than wide, humeri dentate, sides nearly parallel, striae deep, crenate-punctate, the crenations much deeper on inner margin of interval; intervals weakly convex, lateral intervals not different, surface with scattered, barely visible, minute punctures and a line of the same along outside margin where they are separated by four or five times their diameters. Mesosternum finely carinate between the coxae. Disc of metasternum slightly depressed medially, the midline deep and strong, a few scattered, very fine punctures anteriorly and outward to sides, male with a patch of moderate, setigerous punctures just back of middle, a few fine to moderate punctures at extreme sides, metasternal triangle deep but not sharply defined, minutely alutaceous within; abdominal sterna with fine punctures at middle to moderate punctures at sides, anterior margins fluted as usual. Eroded area of pygidium deep with strong, convex apical margin. Anterior femora with perimarginal groove, smooth and shining, with scattered minute punctures. Middle and hind femora similar but without posterior marginal line. Anterior tibial spur of male not incurved at tip. Posterior tibia and tarsus equal in length; tibial fringe a group of five close setae, short accessory spine, and an intervening seta between accessory spine and the fine, slender spurs. First tarsal segment longer than long spur and longer than the following three segments combined.

LECTOTYPE (present designation).—LeConte Collection, Museum of Comparative Zoology, No. 3732.

TYPE-LOCALITY.—"Texas." The original description listed "Texas and Sonora." The lectotype bears a red disc indicating Texas.

SPECIMENS EXAMINED.—720+.

DATES COLLECTED.—February 16 to November 22.

DISTRIBUTION (Figure 14).—*Arizona:* Chiricahua Mts., Huachuca Mts., Paradise, Portal, Yuma. *Cali-*

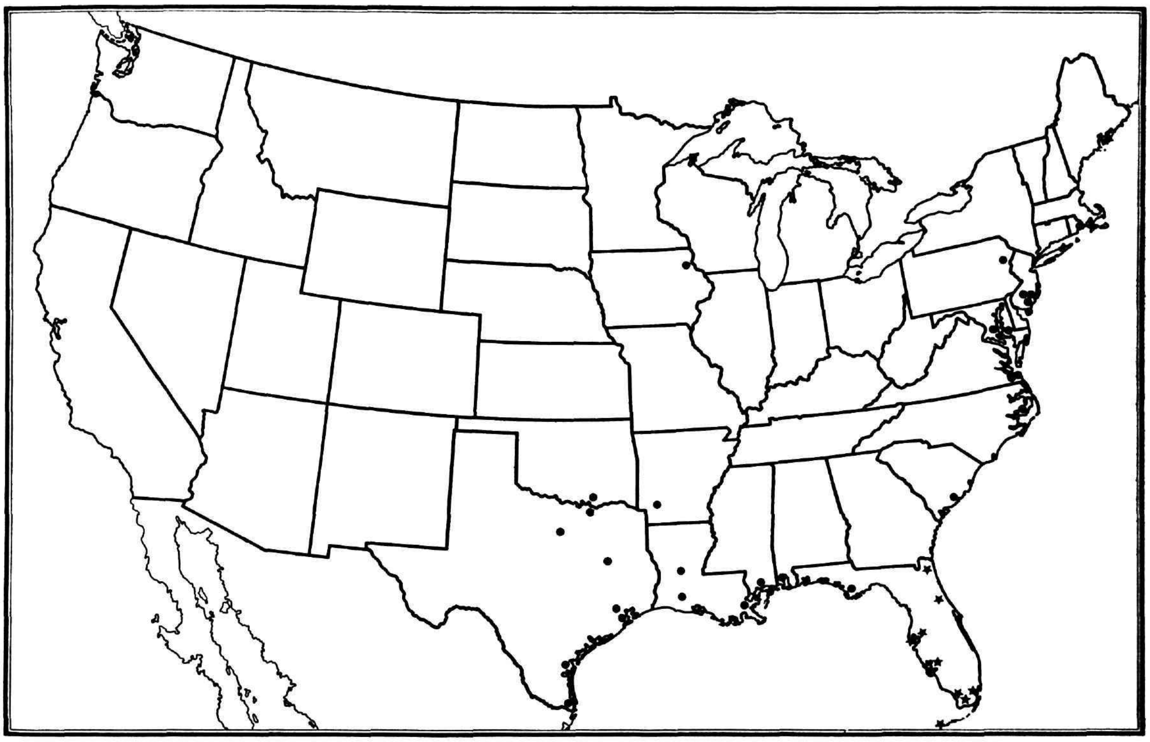

FIGURE 23.—Distribution of *Ataenius wenzelii* Horn and *A. rudellus* Fall.
● *wenzelii* ★ *rudellus*

fornia: Blythe, Brawley, Calexico (15 mi E), Palo Verde, Ripley. *Kansas:* Manhattan, Wellington. *Louisiana:* Calcasieu Parish. *New Mexico:* Artesia, Cienega Lake, Delhart, Deming, Las Cruces, Mesilla, Rodeo (18 mi N), Roswell, Socorro, State College. *Oklahoma:* Lawton. *Texas:* Amarillo, Austin, Bentsen State Park, Big Bend National Park, Big Springs, Boca Chica, Brazoria County, Brownsville, Brownwood, Cameron County, Corpus Christi, Cotilla, Cypress Mills, Dallas, Del Rio, Eagle Pass, Edna, El Paso, Gurley, Harlingen, Hidalgo County, Horkley, Houston, Kerrville, Kingville, Laredo, Lolita, McAllen, Menard, Mission, Mountain Home, Nueces River (Zavella County), Pecos, Rio Grande City, San Antonio, San Diego, Santa Ava Wildlife Refuge (near Alamo), Sharpsburg, Starr County, Uvalde, Val Verde County, Victoria, Weslaco, Winter Haven.

REMARKS.—Specimens from northern and eastern localities previously considered to be *Ataenius cognatus* are usually *A. spretulus* or *A. strigatus.* The lack of posterior femoral line and locality data will quickly distinguish *A. cognatus.* The male has a patch of moderate, setigerous punctures posteriorly on disc of metasternum, lacking in the female, and the male pygidium is relatively longer than that of the female.

Biological notes on this species by Hoffman (1935) almost certainly refer to *A. spretulus* or *A. strigatus.*

63. *Ataenius rudellus* Fall

Ataenius rudellus Fall, 1930:103.—Cartwright, 1948:150.

DESCRIPTION.—Length 3.9 to 4.5 mm; width 1.7 to 1.9 mm. Elongate, parallel, shining, black with dark reddish legs, only moderately convex. Head quite strongly convex, clypeal edge very finely reflexed, broadly rounded each side of shallow median emargination, sides feebly transversely wrinkled anteriorly, very finely, closely punctate over greatest convexity to base, frontal-occipital area with transverse band of close, moderate punctures at least twice the size of the clypeal punctures, separated by less than their diameters, the band of fine clypeal punctures at least as wide as the band of much coarser punctures of the front. Pronotum about two-thirds as long as wide, sides and base strongly margined, crenate at anterior angles, fimbriate all around, the setae moderate in length anteriorly to short basally, separated by about their own lengths; surface everywhere with mixed very fine and moderate punctures, the latter irregularly spaced, closest halfway to sides where they may be practically contiguous, to a few areas on disc where they may be separated by five or six times their diameters, the very fine punctures are evenly distributed. Elytra two-thirds as wide as long, sides nearly straight, humeri very moderately dentate, striae fine, moderately deep, strial punctures deeply crenating inner margin and very slightly the outer margin of the adjacent intervals; intervals slightly convex, surface minutely alutaceous, and with scattered minute punctures usually separated by three or four times their diameters; lateral intervals not different. Mesosternum shagreened with fine alutaceous sculpture and fine, short, close, decumbent hair; weakly carinate between the coxae. Metasternum shining, smooth, disc with minute punctures separated by four or more diameters anteriorly, closer posteriorly, a little scabrous at extreme sides, midline long and deep, metasternal triangle moderate, not sharply defined, shining. First visible abdominal sternum with posterior marginal line, remaining four sterna finely fluted along anterior margin, the fluting noticeably longer at sides of sterna 2 and 3 and middle of 5th sternum, surface punctate from side to side, very finely at middle to very moderately at sides. Pygidium with shiny apical lip, disc deeply, roughly eroded. Anterior femora with perimarginal groove, surface smooth, shining, not closely minutely punctate, occasionally with two or three moderate punctures also. Middle and hind femora smooth, shining, very minutely punctate, posterior marginal line (best seen from rear) extending inward from the knee a little less than half the length of the femur. Apical tibial fringe of hind tibia with five setae, a short accessory spine about half the length of the setae, and an intervening seta between the spine and spurs. First tarsal segment of hind leg and long spur equal in length, slightly longer than next three segments combined. Males are recognized by the apically hooked spur of the anterior tibia, the 4th abdominal sternum shortened at middle to half that of the preceding sternum, and by the pygidium being relatively longer than in the female.

HOLOTYPE.—Male, in Fall collection at Museum of Comparative Zoology, No. 24771.

TYPE-LOCALITY.—St. Petersburg, Florida.

SPECIMENS EXAMINED.—58.

DATES COLLECTED.—April 15 to November 14.

DISTRIBUTION (Figure 23).—*Florida:* Cleveland, Dade County, Daytona, Everglades National Park, Jacksonville, Key West, Punta Gorda, St. Petersburg, Stock Island (Monroe County), Tampa.

REMARKS.—*Ataenius rudellus* is very close to *A. wenzelii* but is smaller, narrower, always has red legs, the intervals are slightly convex and not alutaceous or very minutely so.

64. *Ataenius californicus* Horn

Ataenius californicus Horn, 1887:84.—Fall, 1930:107.—Cartwright, 1948:151.

DESCRIPTION.—Length 3.7 to 5.2 mm; width 1.6 to 2.1 mm. Piceous, shining, legs rufous, elongate-oblong, parallel, moderately convex. Head moderately convex; clypeus broadly rounded each side of wide, moderately deep anterior emargination, sides nearly straight to slightly more than right-angled genae, edge finely reflexed; surface transversely wrinkled anteriorly, very finely punctate above median convexity, basal band of close, moderate punctures separated by their diameters or less. Pronotum about one-third wider than long, sides arcuate, sides and base strongly margined, crenations more noticeable around widely rounded posterior angles, marginal setae moderately long, more widely separated anteriorly, shorter and closer across the base where they are separated by about their own lengths; surface with scattered, mixed, very fine and very coarse punctures throughout, the coarse punctures may be separated by one-half to four or more times their diameters, their diameters about the width of the marginal groove, those along anterior margin becoming a little smaller. Elytra convex, one-third longer than wide, sides nearly parallel, humeri only moderately dentate; striae deep, crenate-punctate, punctures separated by four times the width of striae, crenations about one-fifth width of interval and only on inner side; intervals very moderately convex, slightly more strongly convex over apical declivity where the striae become wider, strongly shining but with minute, scattered punctures, lateral intervals not different from others. Mesosternum carinate between coxae. Metasternum smooth and shining, midline strong and deep, discal area finely punctate with the posterior punctures very slightly larger and closer, here separated by their diameters, a few scattered, barely perceptible, minute punctures outward to sides and in the not sharply defined, depressed triangle, a little scabriculate sculpture at extreme sides. Abdominal sterna with widely scattered, very fine punctures at middle, outer third with increasingly close, coarse punctures to sides where they are separated by their diameters or less, anterior margins fluted, the fluting gradually wider on each sternum to the 5th sternum where they are nearly half as long as the sternum. Pygidial median eroded area scabrous over alutaceous surface. Anterior femora with perimarginal groove; surface shining, smooth, with a few scattered, fine to very moderate punctures. Middle and hind femora smooth, shining, with scattered fine punctures separated by four or five times their diameters, posterior femoral line fine one-fourth to one-third distance from knee to trochanter and usually best seen from rear. Posterior tibial fringe a group of five setae, a short accessory spine, an intervening seta, and very slender spurs. Long spur, first tarsal segment, and following three segments combined subequal in length. Hind tarsus subequal to tibia, middle tarsus slightly longer than its tibia. Males have the spur of the anterior tibia hooked inward, the 5th abdominal sternum shortened medially and the pygidium longer dorsoventrally.

HOLOTYPE.—Academy of Natural Sciences of Philadelphia, No. 3613.

TYPE-LOCALITY.—San Bernardino, California.

SPECIMENS EXAMINED.—160+.

DATES COLLECTED.—January 23 to October 28.

DISTRIBUTION (Figure 9).—*Arizona:* Cibola (Yuma County), Douglas, East Bridge, Gila Bend, Maricopa County, San Luis, Yuma. *California:* Berkeley, Blythe, Brawley, Calexico, Calipatria, Deep Canyon (Riverside County), El Centro, Holtville, Indio, Needles, Palm Springs, Salton, Simi (Ventura County), Thousand Palms Oasis, Westmorland. *Nevada:* Las Vegas, Logandale. *Utah:* Washington.

REMARKS.—The very coarse pronotal punctures, incurved spur, and the anterior tibia, together with far western distribution will help in determining this species.

This species has been reported as damaging roots of seedling sugar beets in California (*Cooperative Economic Insect Report,* USDA 1968, 18 (10): 15). It has also been reported as "very active as a casual feeder on immature flies and excavator of animal dung" (*California Agriculture,* 1968, 22 (6):1–4).

65. *Ataenius strigatus* (Say)

Aphodius strigatus Say, 1823:212.—Haldeman, 1848:106.
Ataenius strigatus.—Harold, in Gemminger and Harold, 1869: 1067.—Horn, 1887:82.—Schmidt, 1922:428.—Fall, 1930: 101.—Cartwright, 1948:151.

DESCRIPTION.—Length 3.6 to 5.5 mm; width 1.6 to 2.4 mm. Elongate-oblong, shining, black, legs and margin of clypeus reddish black, moderately convex. Head convex, finely reflexed margin of clypeus broadly rounded each side of wide, shallow median emargination, sides nearly straight to sharply rounded, right-angled genae; anterior three-fourths of clypeal surface finely transversely wrinkled, very finely punctate above, the punctures separated generally by about twice their diameters; front with transverse band of moderate punctures separated by their diameters, a little less numerous on occiput. Pronotum about three-fourths as long as wide, sides nearly straight and parallel, anterior angles obtusely rounded, posterior angles widely rounded, sides and base strongly margined, edge fimbriate-crenate at anterior and posterior angles, the short, inconspicuous setae separated by more than their lengths, crenations noticeable only at posterior angles, middle of sides without setae, base arcuate; surface with mixed very fine and coarse punctures, the fine punctures everywhere evenly distributed, the coarse punctures finer over middle anterior disc, larger and denser outward to sides and base where they may be practically contiguous, generally separated by their diameters more or less on disc. Elytra approximately five-eighths as wide as long, humeri strongly dentate, striae fine, deep, the strial punctures crenating the sides of the weakly convex intervals, more strongly on inner sides, lateral intervals not different, surface with very fine, scattered punctures. Mesosternum shagreened, finely, closely sculptured, with very fine, short, appressed inconspicuous hair, carinate between the coxae. Metasternum shining, midline strong and deep, disc and outward to sides with scattered, very fine punctures separated by four or more diameters, fine rough sculpture at extreme sides, metasternal triangle strong with rounded edges, minutely roughened within. First visible abdominal sternum with fine posterior marginal line, next four sterna with successively longer, fine fluting along anterior margins, fluting of 5th sternum only slightly longer than preceding and not much longer at middle, nearly even from side to side; surface of middle sternum moderately finely, closely punctate at middle, gradually coarse and shallow outward to sides where the punctures are separated by less than their diameters, 5th sternum with slightly larger, fine punctures at sides and with a large elongate puncture or pore at extreme side. Pygidium with shining, convex, apical lip, disc finely, roughly eroded. Anterior femora with strong perimarginal groove, surface smooth, shining anteriorly, posteriorly closely, roughly, moderately punctate, the punctures tending to form short, irregular, transverse lines. Middle and hind femora shining, smooth, with scattered, very fine punctures separated by three or four times their diameters, strong posterior marginal line over slightly more than half of the femur to knee. Coarse setigerous punctures usually lacking at knee, rarely a single puncture. Apical fringe of posterior tibia a group of five setae, a strong accessory spine, and an intervening setae between spine and spurs. Metatarsal segment longer than long spur and longer than following three segments combined. Males have a group of moderate, setigerous punctures at middle each side of midline of the metasternum, the pygidium is longer, with the median part of the apical lip much wider than in the female.

Neotype (present designation).—Male, USNM No. 71751.

Type-Locality.—Pennsylvania, 5 mi NW of Davidsburg; 9 September 1968, Paul J. Spangler.

Specimens Examined.—1500+.

Dates Collected.—February 9 to December 28.

Distribution (Figure 8).—*Alabama:* Florence, Grant, Marshall County, Monte Sano State Park, near River Cave, Selma. *Arizona:* Pajarita Mts., Pena Blanca, Santa Cruz County. *Arkansas:* Devils Den State Park, Fayetteville, Hartford, Hope, Tuckerman (Jackson County), Washington County, West Memphis. *Connecticut:* Cornwall, Suffield. *Delaware:* Delaware City, Dover, Glasgow, Middletown, Newark, New Castle County, Ship John Light House, Smyrna, Sussex County, Wilmington. *District of Columbia:* Washington. *Florida:* Daytona Beach, Wewahitchka. *Georgia:* Augusta, Griffin. *Illinois:* Blue Mound, Bridgeview, Caledonia, Carbondale, Carterville, Champaign, Chicago, Crab Orchard, Crete, Des Plaines, Dongola, Du Page County, Evanston, Farina, Glenview, Grayslake, Havana, Illinois Beach State Park, Kickapoo State Park, Lake Michigan Beach, Lorenzo Rd. Prairie (Grundy County), McBride, New Lennox, Peacock Prairie, Quincy, Roseville, Union County, Urbana, Vandalia, Wailanda. *Indiana:* Athens, Bear Willow, Beverly Shores, Bog, Clayton, Dune Acres, Dunes Park Beach, Fort Wayne, Grantsburg, Hamlet, Hovey Lake, Indianapolis, Knox County, Lafayette, Marion County, Menominee, Miller, Owen County, Perry County, Porter County, Putman County, Richmond, Starke County, Tippecanoe County, Tremount, Turkey Run State Park, Vigo County, Vincennes, Wabash County, Whiting. *Iowa:* Ames, Bedford, Boone, Burlington, Cherokee, Davenport, Davis County, Des Moines, Eddyville, Estherville, Floris, Gilbert, Grand Junction, Guttenberg, Henry County, Independence, Iowa City, Jackson County, Jefferson County, Keokuk, Lake Okaboji, Ledges State Park, Leon, Lyon County, Marshall County, Mount Pleasant, Osage, Polk City, Scott County, Shenandoah, Shimek, Solon, Store State Park. *Kansas:* Argentine, Coffee County, Douglas County, Lawrence, T. Gardner Lake (Johnson County), Topeka. *Kentucky:* Anchorage (Jefferson County), Bee Spring, Benton, Cadiz, Corbin, Fort Knox, Hodgenville, Jackson, Lexington, Louisville, Mammoth Cave National Park, Wolf Creek Lake (Wayne County). *Maine:* Anson, Monmouth, Orono. *Maryland:* Baltimore, Beltsville, Cabin John, Chesapeake Beach, Chevy Chase, Colesville, College Park, Contee, Deer Park, East Riverdale, Edgewood, Gambrelles, Glen Echo, Glover, Hancock, Hebbville, Hyattsville, Jackson's Island, Kenwood Beach, Largo, Marlboro, Patuxent Wildlife Research Center, Plummers Island, Plum Point, Reisterstown, Salisbury, Shelltown, Tacoma Park, Thurmont, Timonium, Upper Marlboro. *Massachusetts:* Billerica, Brookline, Groton, Montgomery. *Michigan:* Agricultural College, Allegan County, Bay County, Berrien County, Bridgeman Warren Dunes, Clinton County, East Lansing, Galen, Genessee County, Haitland (Lexington County), Ingham County, Isabella County, Kalamazoo County, Lakeside, Marquette, Mason County, Midland County, Port Huron, Saginaw, Saugatuck, Selfridge Field, Van Buren County, Washtenaw County, Whitmore Lake. *Minnesota:* Buffalo, Faribault, Whitewater State Park (Winona County). *Missouri:* Clarksville, Columbia, Devils Elbow, Jefferson City, Louisiana, Midway, Pawnee, Poplar Bluff, St. Joseph, St. Louis, Steelville, Stoddard County, Vernon County, Warrenton, Willard. *Nebraska:* Bennet, Fairmont, Lancaster County, Lincoln, Malcolm, West Point. *New Hampshire:* Rumney. *New Jersey:* Arny Mtn., Avenel, Boonton, Browns Mills, Five Mile Beach, Hadden Heights, Hillside Manor, Medford, Morristown, Montvale, New Brunswick, New Lisbon, Prospertown, Riverton, Salem, Upper Plains, Woodbury. *New York:* Chafee, Dryden, Ithaca, Olcott, Oswego, Potsdam, Rochester, Rockaway Beach, Utica, West Point, Wyers Point. *North Carolina:* Balsam, Black Mtns. Cataloochee Divide, Cedar Mtn., Charlotte, Raleigh, Sunburst, Waynesville. *Ohio:* Ada, Adams County, Ashland, Athens County, Champaign County, Cincinnati, Cleveland, Columbus, East Harbor State Park, Erie County, Franklin County, Greenville, Heidelberg, Holgate, Hudson, Marietta, Miami County, Ottawa County, Portsmouth, Preble County, West Alexandria, Wooster. *Oklahoma:* Willis, Woodward. *Oregon:* "Or." *Pennsylvania:* Arcola, Bellefonte, Broomall, Buena Vista Springs (Franklin County), Canadensis, Chester, Clarks Valley, Davidsburg (5 mi W), Delaware Water Gap, Easton, Erie, Forest County, Germantown, Harrisburg, Hecton Mills, Howard, Hummelstown, Jeanette, Jefferson County, Lake Merion, Lima, Long Pond, Maryville, Media, Nanticoke, New Alexandria, New Cumberland, Nottingham, Olney, Parkasie, Pen Mar, Philadelphia, Pittsburgh, Pocono Mts., Secane, Sharpsville, State College, Stony Creek Mills, Sumneytown, West Fairview, Wilmerding, York, Youngstown, Upper Darby. *South Dakota:* Brookings, Chamberlin, Elk Point, Fort Thomson, Highmore, Martin, Oak Lake, Paulson (Lincoln County), Pumpkin Center (Minnehaha County), Vermilion, Yankton. *South Carolina:* Belton, Cayce, Charleston, Chesterfield County, Clemson, Columbia, Florence, Gramling, Greenville, Jenkinsville, Lancaster, Marion, McCormick, Mountain Rest, Ritter, Summerville, Tigerville, Union County, Winnsboro, Yemassee, York. *Tennessee:* Burrville, Cardwell Mtn., Cookeville, Harrison Bay State Park, Jackson, Lebanon, Nashville, Reelfoot Lake. *Texas:* Austin, Brazos, College Station, Columbus, Dallas. *Utah:* Logan County. *Vermont:* Burlington, Shelburne, South Burlington. *Virginia:* Accomac, Arlington, Ash Grove, Basye, Blacksburg, Chatham, Delaplane, Detrick (Shenandoah County), Dumfries, Falls Church, Holland, Hunters Station (Fairfax County), Lignum, Maryland, Middleburg, Natural Bridge, Newark, Paris, Pennington Gap, Piney Run, Powell Gap (Jefferson National Forest), St. Paul, Straight Creek, Trammells Landing, Westmoreland State Park, Westville, Wildcat Mountain (Fauquier County). *West Virginia:* Kanawha, Kearneysville, Maysville (5 mi SE), Orkney Springs, Wardensville. *Wisconsin:* Albany, Fond du Lac, Kenosha, Madison, Milwaukee, Nekoosa (Wood County), Platteville, Racine, Somers. *Wyoming:* Bridge Basin. *Canada: Ontario:* Hamilton County, East View, Hull, Point Pelee, Jeanpettles Creek (Kent County), Leamington, Long Point, Norfolk County, Ottawa, Rondeau Prov. Park, Tillbury, Wentworth, Wheatley, Windsor. *Quebec:* Berthierville, Como, La Trappe, Laval Rap, Lonquenil, Montebello, Montreal, Mount St. Bruno (Chambly Pr.), Oka, Regaud, "St. J. Chrisost," St. Placids.

REMARKS.—*Ataenius strigatus* (Say) is the first described American *Ataenius* and has the second widest distribution. I have seen specimens from all but ten—mostly far western—states. The roughly punctate anterior femora together with dense punctures at sides of the pronotum distinguish the species.

Say's type, presumably lost, probably came from Pennsylvania. See Fall (1930:101) for discussion concerning identity of the species. I agree fully with Fall's conclusion and select as neotype a specimen from the area in which Melsheimer and others made many early collections.

66. *Ataenius apicalis* Hinton

Ataenius apicalis Hinton, 1937b:195.—Cartwright, 1948:151.

DESCRIPTION.—Length 4.1 to 4.9 mm; width 1.7 to 2.4 mm. Oblong, moderately convex, shining, black. Head slightly convex, clypeus broadly, shallowly emarginate, rounded each side of emargination, sides nearly straight to right-angled genae, margin finely recurved, surface weakly transversely rugulose over anterior third, middle finely punctate, punctures separated by slightly more than their diameters, gradually finer and closer just in front of basal band of close moderate punctures which are generally separated by less than their diameters. Pronotum rectangular, anterior angles obtusely rounded, posterior angles broadly rounded, margined laterally and basally, marginal setae rather short, about as long as width of marginal groove and separated by two or more times their lengths; surface throughout with close, mixed punctures, the larger punctures closer laterally, especially in the angles where separated by less than their diameters, scattered on disc where separated by one to several times their diameter, gradually slightly finer anteriorly; fine punctures noticeable throughout. Elytra 2.6 times length of pronotum, moderately convex, basally margined, humeri weakly dentate, sides subparallel; striae fine, crenate-punctate, slightly wider apically; intervals moderately convex, minutely punctate, apically eroded each side; lateral intervals not different. Mesosternum shagreened, close, fine, short decumbent hair, carinate between the coxae. Metasternum smooth, shining, midline fine, moderately deep, with scattered, minute punctures except for a few occasionally moderate punctures posteriorly, a little scabriculate sculpture at extreme sides, metasternal triangle smooth, very moderate in depth. Abdominal sterna with rather close, fine to moderate punctures from side to side, deeper at sides, separated by about their diameters, sterna finely fluted in front. Eroded area of pygidium roughly scabriculate, apical margin smooth, convex, shining. Anterior femora with perimarginal groove, shining, quite evenly punctate, the punctures finer in front, posteriorly separated by their diameters, three large elongate punctures along edge below tibial insertion. Middle and hind femora much alike with very fine, scattered, numerous punctures, hind femora with a row of three or four coarse punctures at knee, and postfemoral line half the distance from knee to trochanter. Posterior tibiae with strong accessory spine, fringe of six setae together and another between accessory spine and spurs, first tarsal segment about one-fourth longer than long spur, about same length longer than following three segments combined.

HOLOTYPE.—USNM 68188.

TYPE-LOCALITY.—Mexico: Vera Cruz, Minatitlan.

SPECIMENS EXAMINED.—150+.

DATES COLLECTED.—March 16 to December 10.

DISTRIBUTION (Figure 16).—*Alabama:* Black Warrior National Forest, Monte Sano State Park, Sheffield, Trinity. *Arkansas:* Cohan Plant, Devils Den State Park, Hart Ford, Little Rock, Stuttgart, Taylor, Tuckerman, Washington County. *Delaware:* "Delaware." *Florida:* Torreya State Park (Liberty County). *Georgia:* Arlington, Atlanta, Mount Berry, Newton. *Illinois:* Dongola (Union County), Olive Branch. *Indiana:* Hovey Lake (Posey County). *Kansas:* Lawrence. *Kentucky:* Anchorage (Jefferson County), Arora (Monroe County). *Louisiana:* Calcasieu, Copley, Fount, Harahan, Lafayette, New Orleans, Pilate Opelousas, Simsboro (Lincoln Parish). *Maryland:* Beltsville, College Park, Edgewood, Hancock. *Michigan:* Allegan. *Mississippi:* Madison County, Pearl. *Missouri:* Dardene Prairie. *Nebraska:* Lincoln. *North Carolina:* Wake County. *Ohio:* Athens, Franklin County, Scioto County. *Pennsylvania:* Philadelphia Neck. *South Carolina:* Anderson County, Cherokee County, Clemson, Clinton, Florence, Lancaster, McCormick, Pee Dee, Union County. *Tennessee:* Citico, Cookeville, Jackson, Memphis, Oak Ridge. *Texas:* Anderson County, Devers, Harris County, Liberty County, Orange County, Seabrook. *Virginia:* Arlington, Paris, Richmond. *West Virginia:* Kanawha.

REMARKS.—*Ataenius apicalis* Hinton is one of the *strigatus* complex of species and may easily be misidentified; however, it is larger than *A. strigatus,* the anterior femur has three large, strong, elongate punctures at extreme edge below the tibial insertion, the posterior femur has a row of three or four coarse setigerous punctures at the knee, usually has six setae in the posterior tibial fringe, and apically the elytral intervals are noticeably eroded on each side. *Ataenius strigatus* is usually without coarse setigerous punctures at the knee, rarely with single punctures, and rarely shows a trace of apical erosion on elytral intervals over the elytral declivity. *Ataenius apicalis* is widely distributed in eastern states but is not a very common species.

67. *Ataenius fattigi* Cartwright

Ataenius fattigi Cartwright, 1948:151.

DESCRIPTION.—*Holotype Male:* Length 4.8 mm; width 2.25 mm. Oblong, shining, black, legs brownish piceous. Head moderately convex, a wide band of coarse, closely placed punctures across the base, very fine, close punctures over front and clypeus, very faint traces of transverse rugulosity perceptible at anterior edge of clypeus. Clypeus widely shallowly emarginate, broadly rounded each side, the edge finely reflexed. Pronotum rectangular, three-tenths wider than long, marginal line of sides and base deep and entire, edge not crenate, anterior angles obtusely rounded, posterior angles obtuse but distinct, surface with intermixed coarse and very fine punctures throughout, the coarse punctures slightly smaller and less closely placed anteriorly at middle, dense at sides, especially in anterior angles where they are separated by less than their diameters but are not confluent. Elytra one-fourth longer than wide, sides parallel, humeri strongly dentate, striae strong, crenately punctate, intervals almost flat on disc, only strongly convex at apex, all intervals similarly sparsely, minutely, rather irregularly punctate. Mesosternum with a moderately long intercoxal carina. Metasternum with a little coarse, rugose sculpture at extreme sides, otherwise shining and finely punctate, a group of a dozen or so coarse punctures posteriorly each side of the deeply impressed longitudinal median line, the median line deeper at each end and not abruptly terminated. Abdominal sterna fluted in front, coarsely punctate at sides, the punctures gradually finer across the middle. Profemurs with perimarginal groove, the posterior face closely, coarsely punctate, the punctures becoming rapidly finer toward the base and lower edge. Anterior tibiae weakly crenate above upper tooth, which is nearer apex than base; first tarsal joint subequal to following two joints combined, first two tarsal joints together and spur equal in length. Middle and posterior femurs finely punctate, marginal line deep, half the length of the femur. Posterior tibia with intervening seta between spurs and the strongly developed accessory spine, six setae in terminal fringe between accessory spine and outer apical angle, first joint of posterior tarsus longer than long spur and subequal to remaining four joints combined.

Female: Length 5.4 mm; width 2.4 mm. Similar to holotype male except that the coarse punctures of the pronotum are not quite so numerous, the metasternum is finely punctate without the group of coarse punctures, the pygidium is not as long, and the hind tibiae bear a fringe of seven setae on one and eight on the other.

HOLOTYPE.—USNM 58821.

TYPE-LOCALITY.—Georgetown County, South Carolina, at junction of highways U. S. 17 and South Carolina 786 to Belle Isle Gardens.

SPECIMENS EXAMINED.—318.

DATES COLLECTED.—February 8 to November 1.

DISTRIBUTION (Figure 21).—*Delaware:* Rehoboth Beach. *District of Columbia:* Washington. *Florida:* Archbold Biological Station, Austin Carey Memorial Forest, Avon Park, Blountstown, Canal Point, Chipley (5 mi E), Crestview, Dunedin, Enterprise, Fort Myers, Gainesville, Gunntown, Highlands State Park, Jacksonville, Kissimmee, Knights Key, La Belle, Lake Alfred, Lake Lucy, Levy County, Little Manatee River, Marianna, Merritt Island, Molino, Monticello, Moore Haven, Ocala National Forest, Ochopee, Okeechobee, Oldtown, Olustee, Orlando, Punta Gorda, Sanford, Sarasota, Tampa, Torreya State Park, Volusia County, West Palm Beach, Westville, Wewahitchka, Zolfo Springs. *Georgia:* Calhoun County, Hinesville, Nashville (17 mi E on Alapaha River), Newton, Valdosta, Vidalia, Waycross. *Maryland:* Edgewood, Glen Burnie, Shelltown. *Massachusetts:* Billerica. *Michigan:* Detroit. *Mississippi:* Keesler Field (Biloxi), Long Beach, Lucedale, Ocean Springs. *New Jersey:* Anglesea, Atlantic City, Atsion, Prosperton, Salem, Sea Island City, Wildwood. *New York:* Rockaway Beach. *North Carolina:* Swan Quarter. *Pennsylvania:* Philadelphia. *Rhode Island:* North Kingston. *South Carolina:* Aiken State Park, Berkeley County, Bethune, Blackville, Blaney, Cayce, Charleston, Columbia, Darlington County, Florence, Georgetown County, Green Pond, Hampton, Kline, Meredith, Ritter, Saluda County, Seabrooks Island, Summerville, Walterboro, Yemassee.

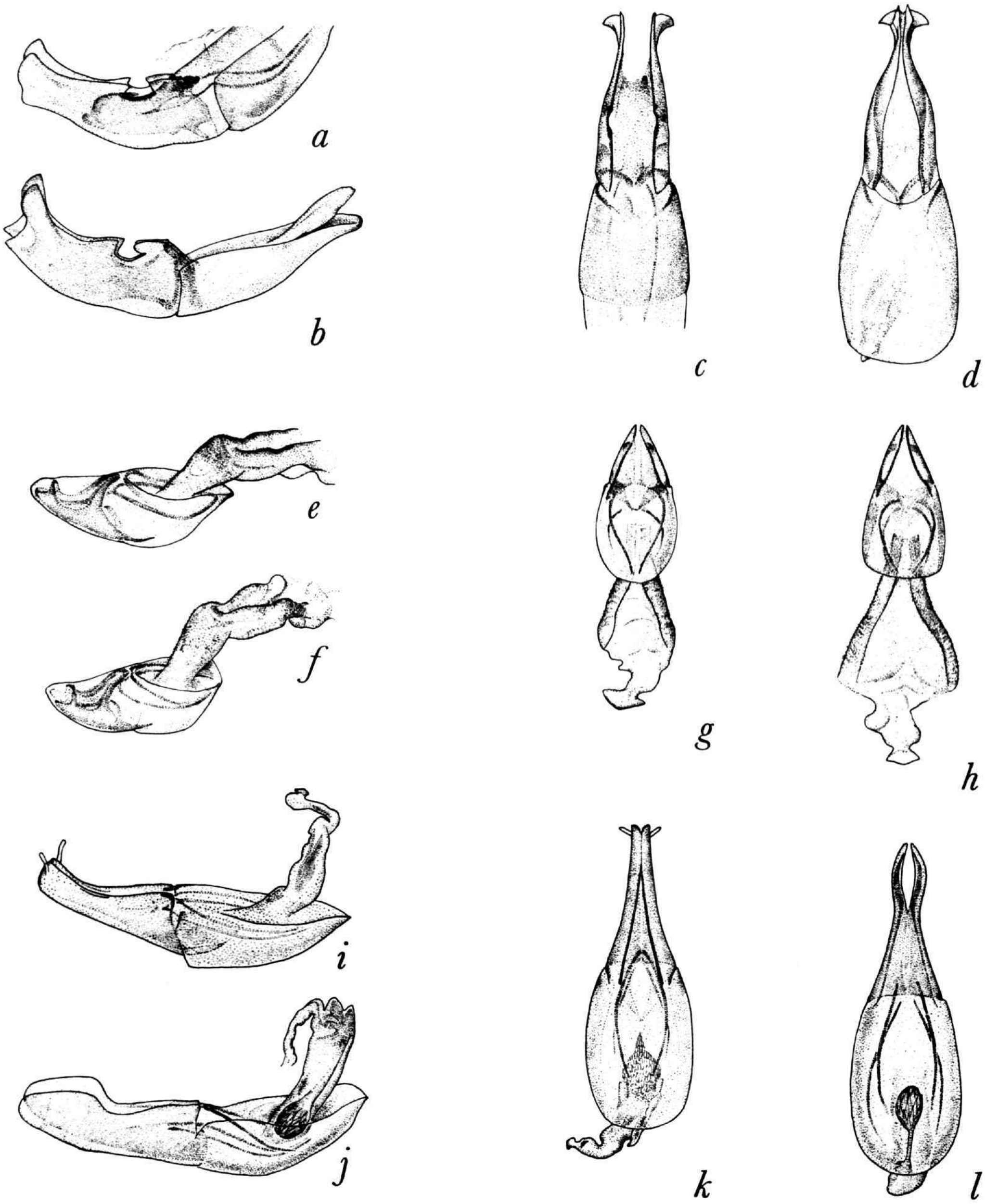

FIGURE 24.—Aedeagi of six species of *Ataenius:* ***a, c, A. inquisitus*** **Horn;** ***b, d, A. chapini*** **Hinton;** ***e, g, A. griffini,*** **new species;** ***f, h, A. convexus*** **Robinson;** ***i, j, A. aequalis*** **Harold;** ***k, l, A. platensis*** **(Blanchard).**

Texas: Conroe. *Virginia:* Fort Monroe, Mount Vernon. *West Virginia:* Kanawha. *Wisconsin:* Wood County.

REMARKS.—*Ataenius fattigi* is very close to *A. strigatus* (Say) but is usually larger, the transverse wrinkles of the clypeus are very weak or absent, the coarse punctures in the anterior angles of the pronotum are close but rarely confluent, the setae between the accessory spine and outer angle of the posterior tibia number six or seven, and most of the specimens seen have been from southern states. *Ataenius strigatus* is smaller, clypeal rugulosity is more extensive and noticeable, at least a few coarse punctures in the anterior angles of the pronotum are confluent, the setae of the posterior tibia number four or five, and the species has a more northern distribution.

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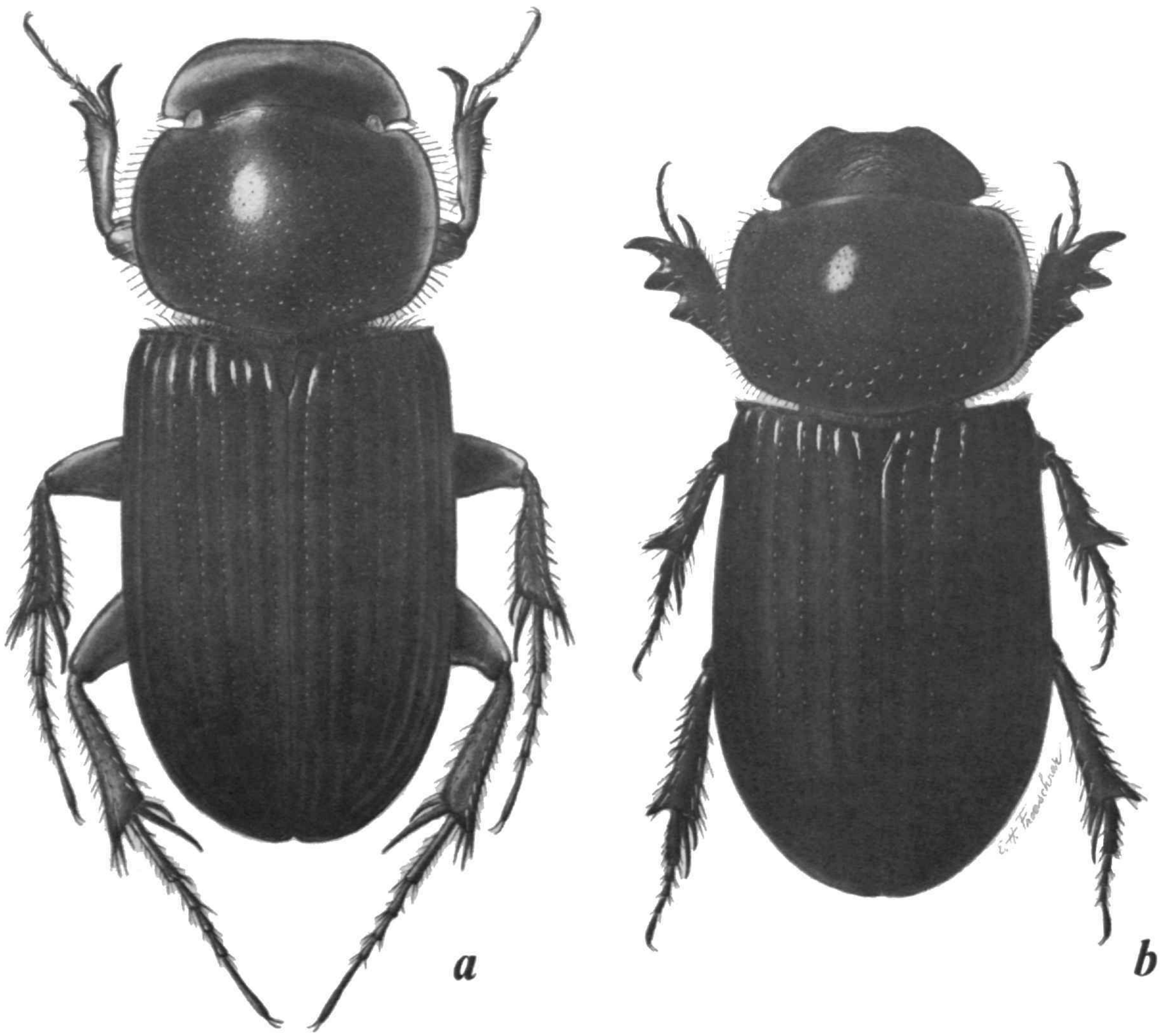

PLATE 1.—Dorsal views: *a*, *Pseudataenius contortus*, new species; *b*, *Ataenius simulator* Harold.

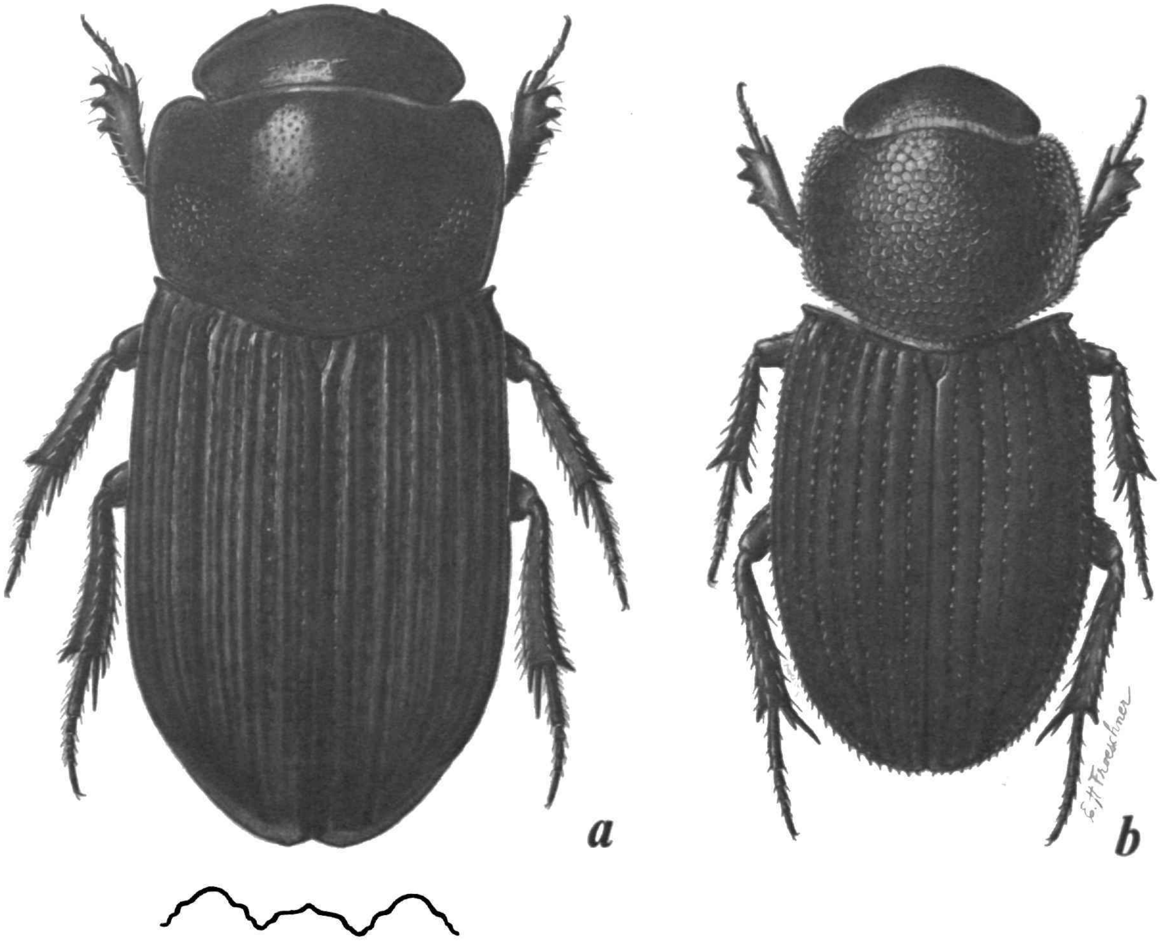

PLATE 2.—Dorsal views: *a, Ataenius insculptus* Horn (wavy line at bottom represents surface of elytrae in cross section); *b, Ataenius superficialis,* new species.

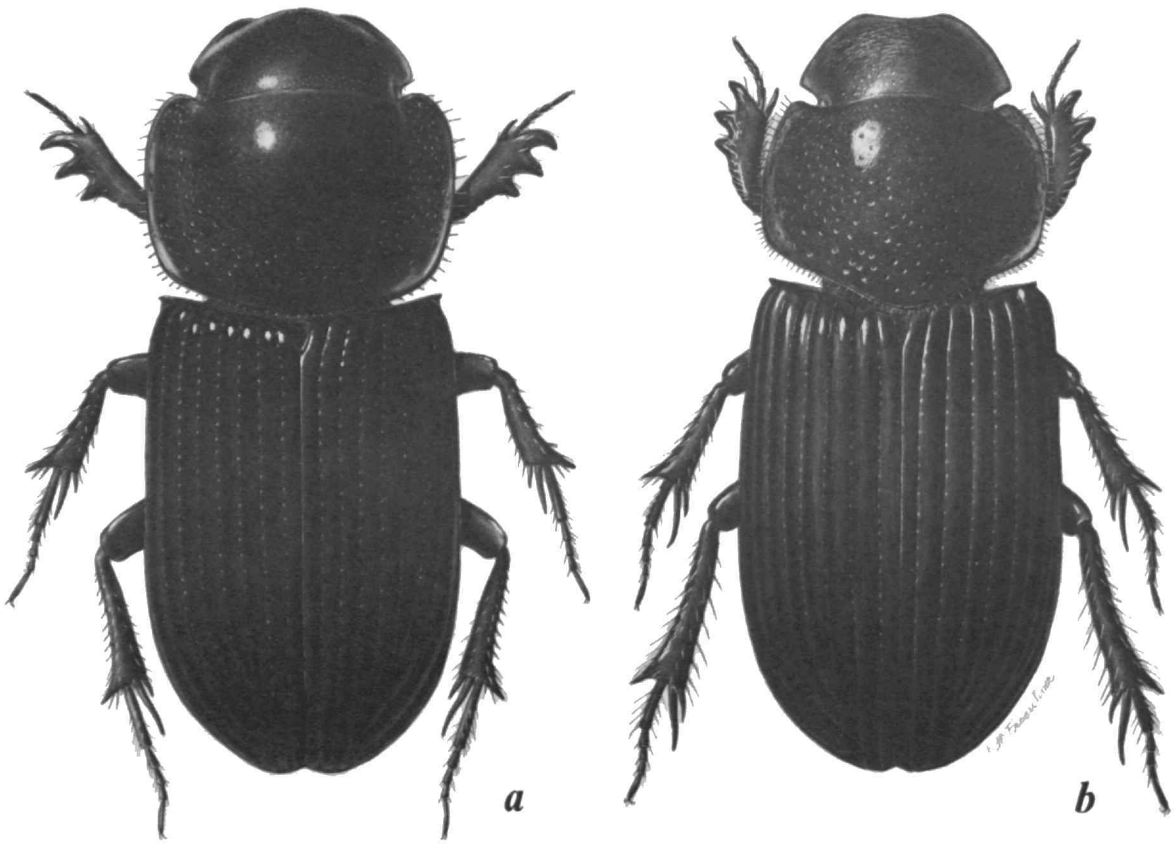

PLATE 3.—Dorsal views: *a, Ataenius stephani,* new species; *b, Ataenius lobatus* Horn.

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