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A REVISION OF THE APION SUBGENUS TRICHAPION WAGNER IN THE NEW WORLD (COLEOPTERA : CURCULIONIDAE)

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This paper [1] is one of a series in which the species of *Apion* occurring in the New World will be revised. Acknowledgments, explanation of measurements, and explanation of abbreviations used to designate deposition of specimens are given in the first paper in the series (Kissinger, 1957a).

Ninety-two species are treated; of these 17 are new, 11 were not seen by the author, and four are known to the author only from the female. Of the 11 species not seen, eight were originally included in the subgenus by Wagner, the other three species, *laminatum* Sharp, *peninsulare* Fall, and *tabogense* Sharp, were adequately described or figured so that it has been possible to place them in this subgenus.

A key to the males of the New World species of subgenus *Trichapion* is presented. The species either unknown to the author or represented by females only are not included in the key. The species treated are arranged in groups as shown in table 1. The structural characters of these groups are summarized in tables 2 and 3 and are discussed after the definition of the subgenus.

[1] Based on a thesis submitted in 1957 to the Graduate School of the University of Maryland in partial fulfillment of the requirements for the degree of Doctor of Philosophy. The research was aided by a grant from the Sigma Xi-RESA Research Fund.

Because the majority of the material seen was from Canada, the United States, and Mexico, the treatment of the species occurring in these regions is more complete than that for Central America and South America. In many cases only one or a few determined specimens of a species from the latter regions were seen. No doubt more described species of South American *Apion* will be found to belong to this subgenus when determined material is available for study.

Trichapion Wagner (1912) was proposed as a subgenus for 16 new species described from Mexico and Central America. No type species was designated. I hereby designate *Apion* (*Trichapion*) *aurichalceum* Wagner as the type species of subgenus *Trichapion* Wagner. This species is selected because it is relatively abundant. In addition I was able to study a pair of specimens determined by Wagner and I am informed by Mr. J. Balfour-Browne that the types of this species are in good order.

No previously described species were included by Wagner in the subgenus. With the exception of Voss (1955), whose paper is discussed below, the name *Trichapion* has not been used in the literature since it was first proposed. At the present time 92 of the approximately 425 New World species of *Apion* are known to belong to this subgenus. Fall (1898) divided the North American *Apion* into four groups. His group No. 3 corresponds quite closely to subgenus *Trichapion* Wagner.

Voss (1955) uses *Trichapion* Wagner as a subgenus for 18 species of *Apion* from Ruanda-Urundi, Belgian Congo. Because Voss does not mention the chief diagnostic character of the subgenus—the mucronate tibiae of the males—in the descriptions of the species he included in subgenus *Trichapion*, it may be that the African species are incorrectly assigned.

At the present time it is difficult to define a subgenus of *Apion*. The chief reason is the large number of species not assigned to subgenera. In the New World six subgenera have been erected, viz., *Bothryopteron* Wagner with four species, *Coelocephalapion* Wagner with six species, *Coleopterapion* Wagner with five species, *Heterapion* Sharp with two species, *Stenapion* Wagner with 18 species, and *Trichapion* Wagner with 92 species. In this region 127 out of about 425 species of *Apion* have been placed in subgenera. Previous to the present study no species of *Apion* from the United States were placed in a subgenus. The majority of *Apion* subgeneric names have been founded on European species, that is, 30 out of 42 subgenera founded on approximately 250 species of *Apion* from Europe. From a world-wide standpoint well over a thousand species of *Apion* have not been assigned to subgenera.

The mucronate tibiae of the male are the chief diagnostic character of the subgenus *Trichapion*. The middle and hind tibiae of the males of most species are mucronate; a few have all of the tibiae mucronate, while others have only the middle tibia mucronate. In the type species, *A. aurichalceum* Wagner, and closely allied species the front tibiae bear a flat, polished, striate area on the inner anterior surface. Other male secondary sexual modifications of the legs are swollen femora, spined tarsi, or enlarged tarsal segments.

The males of a few other species groups of *Apion* not belonging to the subgenus *Trichapion* have mucronate tibiae but lack one or more of the other characters that will be listed in the definition. The *A. coxale* group differs in that the front coxae of the male are tuberculate. The species of Fall's Group I differ, in addition to many other characters, by the smooth, polished area limited by a raised ridge on the apical ventral surface of the front femur of the male, the nearly simple claws, and the metasternal spicules. *Apion reclusum* Fall and *A. acrophilum* Fall also differ by their simple claws. The male of *A. opacicolle* Smith differs by having metasternal spicules similar to Fall's Group I. *A. tenuirostrum* Smith, *A. smithi* Wagner, *A. impexum* Fall, *A. metallicum* Gerstaecker, and *A. troglodytes* Mannerheim differ in that the prothorax is widest before the base, the sides not expanded laterally at the base.

The definition of the subgenus *Trichapion* Wagner is as follows:

Legs, coxae, and beak black (*evustum*, *rufipenne*, *subrufum*, *subtinctum*, and *vinosum* with rufescent legs); body not gibbose in outline, without transverse pattern of scales, not clothed with fine, suberect pubescence; beak curved, apex more slender than base, at most expanded laterally at tip, apical region more finely sculptured than basal region; anterior portion of the dorsal margin of the antennal scrobe may or may not be oblique; frons generally wider than dorsal top of beak (a few species with frons equal to or narrower than dorsal tip of beak especially of male), not depressed adjacent to eye, with a rather broad median area which may be flat, concave, or with an obvious, deep, longitudinal sulcus; prothorax expanded laterally at base, constricted apically (*perforicolle* not constricted), apex obviously narrower than base; middle coxae separated by a complete lamina; first segment of fore tarsus generally longer than wide (with exception of *rostrum*); third tarsal segment strongly bilobed; claws toothed.

Although some intermediate forms occur it is convenient to consider the species of *Trichapion* as falling into two sections, one related to the holarctic *Apion simile* Kirby and the other to such species as *Apion patruele* Smith, *A. reconditum* Gyllenhal, and *A. rostrum* Say. The first section related to *A. simile* is characterized by having two

TABLE 1.—*Species groups of subgenus* Trichapion *Wagner*

I. Species of uncertain position
   1. aequabile Fall
   2. aestimabile Wagner
   3. albidulum Fall
   4. alticola Wagner
   5. asellum Wagner
   6. auronitidum Wagner
   7. bettyae, new species
   8. chalybaeum Wagner
   9. grossulum Fall
   10. guatemalense Wagner
   11. laminatum Sharp
   12. peninsulare Fall
   13. persulcatum Wagner
   14. spiculiferum Wagner
   15. tabogense Sharp

II. Species groups related to *Apion simile* Kirby.
   A. SIMILE GROUP
      1. meorrhynchum Philippi
      2. modestum Smith
      3. propinquicorne Fall
      4. simile Kirby
   B. PROCLIVE GROUP
      1. acanonicum, new species
      2. adaetum, new species
      3. coryi, new species
      4. imitator Wagner
      5. plectrocolum, new species
      6. proclive LeConte
   C. GLYPHICUM GROUP
      1. chuparosae Fall
      2. glyphicum Sharp
      3. vinosum Sharp
   D. GRISEUM GROUP
      1. aurichalceum Wagner
      2. godmani Wagner
      3. griseum Smith
      4. nebraskense Fall
      5. novellum Fall
      6. oriotes, new species
      7. parcum, new species
      8. sayi Gyllenhal
   E. SPINITARSE GROUP
      1. brachycephalum Wagner
      2. caenum, new species
      3. calcaratipes Sharp
      4. enoplus, new species
      5. innocens, new species
      6. innocuum, new species
      7. latitator, new species
      8. mirandum, new species
      9. mirificum, new species
      10. sancti-felicis Sharp
      11. spinitarse Wagner
   F. PUNCTULIROSTRE GROUP
      1. brunnicornis Fall
      2. eccentricum Fall
      3. punctulirostre Sharp
   G. SUBMETALLICUM GROUP
      1. auriferum Wagner
      2. hadromerum Wagner
      3. perpilosum Wagner
      4. submetallicum Boheman

III. Species groups related to *Apion patruele* Smith
   A. PATRUELE GROUP
      1. abdominale Smith
      2. centrale Fall
      3. evustum, new species
      4. fusconitidum Wagner
      5. gulare Fall
      6. nitidum Kirsch
      7. patruele Smith
      8. perforicolle Fall
      9. porcatum Boheman
      10. rufipenne Gyllenhal
   B. RECONDITUM GROUP
      1. acupunctatum Sharp
      2. bicolor Gerstaecker
      3. davidis Sharp
      4. gracilirostre Sharp
      5. importunum Fall
      6. managuense Wagner
      7. minor Smith
      8. nanulum, new species
      9. nitidirostre Sharp
      10. oscillator Sharp
      11. pervicax Fall
      12. reconditum Gyllenhal
      13. subrufum Sharp
      14. subsequens, new species
      15. subtinctum Fall
   C. OBLITUM GROUP
      1. mediocre Sharp
      2. oblitum Smith
   D. NIGRUM GROUP
      1. cordatum Smith
      2. dolosum Fall
      3. heterogeneum Sharp
      4. lativentre Béguin-Billecocq
      5. nigrum Herbst

TABLE 1.—*Species groups of subgenus* Trichapion *Wagner*—Continued

III. Species groups related to *Apion patruele* Smith—Con.	3. confertum Smith
E. ROSTRUM GROUP	4. furtivum Fall
1. coloradense Fall	5. mexicanum Wagner
2. commodum Fall	6. rostrum Say

rows of scales on the elytral intervals, the beak of the male in dorsal view rather evenly attenuate slightly distad of the antennal insertion to the apical third, and the beak of the male noticeably pubescent in the basal two-thirds. The other section related to *A. patruele* is characterized by having a single row of generally inconspicuous scales on the elytral intervals, the beak of the male in dorsal view nearly parallel-sided in the apical half, and the beak of the male nearly glabrous distad of the insertion of the antennae. The uniserial or biserial pubescence is subject to some variation but the pattern in general falls into one of the two groups. The dorsal pubescence of the uniserial section is generally sparse and more inconspicuous than that of the other section.

The more notable intermediate forms are among the species whose males have all three tibiae mucronate. *Apion furtivum* Fall and *A. confertum* Smith have uniserially pubescent elytral intervals but the beak is attenuate to the apical third. *Apion commodum* Fall has biserially or triserially pubescent intervals and the beak is attenuate. These three species were considered by Fall (1898) to be allies of *A. rostrum* Say, a species with one row of inconspicuous scales on the elytral intervals, beak attenuate to apical third, and the male with two pairs of tibiae mucronate. The *A. rostrum* group may link the *A. patruele* section to the *A. simile* section through the *A. proclive* group, a member of which also has all three tibiae mucronate.

The key to species is based entirely upon the male. Generally the species of subgenus *Trichapion* are captured in a series and males are usually present. In most cases it is possible to match males and females of a species without too much difficulty by comparing the sculpture and vestiture of the dorsal surface.

The key is not based on the species groups as outlined in tables 2 and 3 because this would be too indefinite since these groups are based on rather tenuous differences of degree rather than upon concrete structural characters. The general plan of the key is as follows. First the species with one or three pairs of mucronate tibiae are split off. Then the *A. griseum* group with its modified front tibiae is eliminated. The position of the antennal insertion is then utilized to

remove those species with the antennae inserted rather far from the base of the beak. The remaining species are split into two groups based on uniserially or biserially pubescent elytral intervals.

Generally the beak and secondary sexual characters of the male are the best diagnostic specific characters. Other characters include the proportions of the prothorax and elytra, the sculpturing of these parts, and the flatness or convexity of the elytral intervals.

The following explains methods not included in Kissinger (1957b). In giving the measurements of the scutellum the length is always listed first; the same applies to measurements of the antennal club. In the description of the prothorax the approximate diameter of the punctures is given. This may vary somewhat on the same specimen. If the variance is great the range of variation is approximated; in general it is small so that the measurement given represents an average. To indicate approximate robustness of the legs the relation of width to length of the front femur is indicated. If the legs are slender the number of times the front femur is longer than wide will be about four, if the legs are stout it will be about three. The male of *A. brunnicornis* Fall is an example of very robust legs, in which case the middle femur is only 2.25 times as long as wide.

As an aid to identification, in the key are included the states or provinces of Canada, the United States, and Mexico from which the species are known. In the case of extensive distribution an attempt was made to indicate the extremes of the range.

Key to males of New World species of subgenus *Trichapion*

1. Integument nearly concealed by dense white scales; elytral intervals with three or four rows of scales; antennae inserted at basal fourth of beak (Southern California, Arizona) . . . . . **albidulum** Fall (p. 260)
   Integument not concealed by vestiture, dorsal surface of prothorax and elytra with fine pubescence; elytral intervals generally with one or two rows of fine scales or antennae inserted near middle of beak 2
2. Three pairs of tibiae mucronate, anterior pair sometimes minutely so; prothorax somewhat wider at middle than base 3
   Not more than two pairs of tibiae mucronate 9
3. Dorsal margin of antennal scrobe oblique, angulate above antennal insertion 4
   Dorsal margin of antennal scrobe evenly descending to below eye . . . 5
4. Mucrones denticulate; second elytral interval with two or more rows of fine scales; in dorsal view beak not strongly expanded at antennal insertion and slightly attenuate apically (Montana, Manitoba).
   commodum Fall (p. 380)
   Mucrones simple; second elytral interval with one row of fine scales; in dorsal view beak strongly expanded at antennal insertion, strongly attenuate to apex (Florida) . . . . . **confertum** Smith (p. 381)
5. Beak as long as head and prothorax combined, deflexed at apical fourth; mucrones 2 and 3 dentate (San Luis Potosí) . **coryi**, new species (p. 285)
   Beak shorter than head and prothorax combined 6

6. Beak in lateral view noticeably narrowed immediately beyond antennal insertion, apical half subcylindrical, polished, and subimpunctate . . 7
Beak in lateral view not abruptly attenuate, punctured to near apex; tip only shining 8
7. Prothorax deeply punctured; tibiae 2 and 3 with short mucrones; first segment of tarsus 1 shorter than segments 2 and 3 combined (Illinois, Nebraska, Colorado, Kansas, Texas, Arizona) . . . . . **oblitum** Smith (p. 368)
Prothorax shallowly punctured; tibiae 2 and 3 armed with long mucrones; first segment of tarsus 1 about as long as 2 and 3 combined (Guerrero, Puebla) . . . . . **mediocre** Sharp (p. 366)
8. Antennae inserted at basal fourth of beak at distance from eye equal to width of frons; elytra at base one-third wider than prothorax at base (Washington to Southern California) . . . . . **cordatum** Smith (p. 369)
Antennae inserted at basal third of beak at distance from eye one-half greater than width of frons; elytra at base one-half wider than prothorax at base (Georgia, Arkansas) . . . . . **furtivum** Fall (p. 382)
9. One pair of tibiae mucronate 10
Two pairs of tibiae mucronate 21
10. First segment of tarsus 1 with outer apical angle produced into a spine . . 11
First segment of tarsus 1 not so modified 13
11. Beak in dorsal view attenuate from antennal insertion to apical third . . 12
Beak in dorsal view nearly parallel-sided from antennal insertion to apex (Mexico) . . . . . **latitator,** new species (p. 317)
12. Antennae yellowish, inserted at distance from eye slightly less than width of frons; dorsal surface of beak clothed with scales coarser, shorter, and whiter than those on dorsal surface of prothorax, intervals in part with two rows of punctures (San Luis Potosí and Puebla) . **innocens,** new species (p. 314)
Antennae dark, inserted at distance from eye slightly greater than width of frons; dorsal surface of beak clothed with scales similar to those on dorsal surface of prothorax; intervals with one row of punctures (Guatemala, British Honduras) . . . . . **brachycephalum** Wagner (p. 310)
13. First segment of tarsus 1 elongate, four times as long as wide (Michoacán, Puebla) . . . . . **mirandum,** new species (p. 318)
First segment of tarsus 1 not elongate 14
14. Tarsus 1 with first segment with inner margin strongly rounded from base to apex, forming a broad, rounded lobe projecting distally beyond apex of segment, from above inner portion of segment much broader than outer half (Veracruz) . . . . . **mirificum,** new species (p. 319)
Tarsus 1 with first segment not so modified 15
15. Front femur distinctly swollen, antennae inserted at basal fourth of beak, at distance from eye equal to width of frons (Michoacán). **caenum,** new species (p. 312)
Front femur not swollen 16
16. First segment of tarsus 3 with inner angle produced into a short spine (Veracruz, Panama) . . . . . **sancti-felicis** Sharp (p. 320)
Tarsus 3 simple 17
17. Antennae inserted at not more than basal third of beak 18
Antennae inserted just behind middle of beak, yellowish; beak strongly deflexed at middle (Arizona) . . . . . **brunnicornis** Fall (p. 323)
18. Beak shorter than prothorax, stout; size greater than 3.5 mm. (Puebla). **bettyae,** new species (p. 263)
Beak longer than prothorax, slender; size less than 2.8 mm 19

19. Antennae inserted at basal fifth of beak, at distance from eye equal to width of frons (San Luis Potosí, Morelos) . . . **innocuum,** new species (p. 315)
Antennae inserted at basal third of beak, at distance from eye twice width of frons 20

20. Beak in lateral view attenuating from antennal insertion to apex (Arizona).
eccentricum Fall (p. 324)
Beak in lateral view nearly parallel beyond antennal insertion (Puebla, México, Morelos; Guatemala) . . . . **punctulirostre** Sharp (p. 325)

21. Fifth ventral segment with lateral apical angles produced into a pair of triangular processes projecting posteriorly slightly beyond tips of elytra (Tres Marías Island, Mexico) . . . . . **acanonicum,** new species (p. 282)
Fifth ventral segment not so modified 22

22. Front tibia more or less flattened on inner surface, this area devoid of scales, generally polished and noticeably striate; antennae generally inserted at distance from eye less than width of frons 23
Front tibia not so modified 33

23. First segment of tarsus 1 with outer apical angle produced into a spine . . 24
First segment of tarsus 1 simple 26

24. Size about 2.0 mm.; elytral intervals with two rows of scales which are coarse and pearly in color on basal margin of elytra and along basal third of suture; laterally and posteriorly coarse scales are bounded by a region of very fine, yellowish scales; elytra in posterior half and area lateral of interval 5 clothed with white, hairlike scales; tibiae yellowish (Guatemala).
calcaratipes Sharp (p. 312)
Size less than 1.5 mm., elytral intervals with one row of uniform, fine scales; tibiae nearly black 25

25. Spine on outer angle of first segment of tarsus 1 large, triangular in shape, as long as tarsal segment is wide at apex (Brazil, Nicaragua).
spinitarse Wagner (p. 321)
Spine on outer angle of first segment of tarsus 1 small, shorter than width of tarsal segment (Veracruz, Puebla) . . . . **enoplus,** new species (p. 314)

26. Tibia 1 with a short, flat area less than one-third its length, not or very slightly striate (New York-Florida-Texas-Wyoming).
sayi Gyllenhal (p. 306)
Tibia 1 with flat or concave area extending about one-half its length . . 27

27. Flat area on tibia 1 extremely densely and finely striate so that the area appears irridescent, individual striae not discernible 28
Flat area on tibia 1 with coarser, distinct, well separated striae, not irridescent. 29

28. Tibial mucrones projecting in line with long axis of tibiae; beak strongly attenuate toward apex (Nebraska, Colorado, Oklahoma).
nebraskense Fall (p. 301).
Tibial mucrones projecting at an angle with long axis of tibiae; beak slightly attenuate toward apex (District of Columbia, Tennessee).
novellum Fall (p. 303)

29. Tibia 1 straight in anterior view 30
Tibia 1 deflexed at apical two-fifths in anterior view (Mexico; Guatemala).
godmani Wagner (p. 297)

30. Beak in dorsal view distinctly expanded at apex (Guatemala; Puebla, México, Distrito Federal) . . . . . **aurichalceum** Wagner (p. 296)
Beak in dorsal view cylindrical at apex 31

31. Size about 1.6 mm.; metasternum comparatively coarsely, sparsely punctured; tibial mucrones fine, curved (Pueblo, México, Distrito Federal).
parcum, new species (p. 305)

Size about 2.0 mm.; metasternum comparatively finely, densely punctured; tibial mucrones stouter 32

32. Elytra not aeneous, pubescence nearly white; antennal club nearly three times as long as wide, covered with very sparse, long, suberect setae and shorter, more abundant, decumbent setae (Arizona, New Mexico).
oriotes, new species (p. 304)

Elytra moderately aeneous, pubescence on dorsal surface with faint yellowish cast, white laterally; antennal club slightly more than twice as long as wide, covered with nearly uniform, long, suberect setae (New York–Florida, Alabama) . . . . . **griseum** Smith (p. 300)

33. Antennae inserted at distance from eye less than width of frons; dorsal pubescence squamiform (Texas, México) . . **propinquicorne** Fall (p. 277)

Antennae inserted at distance from eye not less than width of frons . . 34

34. Prothorax much wider at middle than base, sides greatly rounded . . . 35

Prothorax at middle at most slightly wider than base, sides not greatly rounded 36

35. Elytral intervals strongly convex; tibia 1 dilated, curved, bearing long, yellowish pubescence on inner surface (Puebla, Distrito Federal, Michoacán, Guerrero) . . . . . **heterogeneum** Sharp (p. 372)

Elytral intervals slightly convex; tarsus 1 dilated (New Hampshire–Georgia, Louisiana, Iowa, Wisconsin) . . . . . **nigrum** Herbst (p. 376)

36. Antennae inserted at about the middle of the beak, scape longer than next five antennal segments (Chile) . . . . **meorrhynchum** Philippi (p. 275)

Antennae inserted distinctly behind middle of beak 37

37. Antennae inserted at distance from eye equal to or slightly greater than width of frons 38

Antennae inserted at distance from eye distinctly greater (one-third or more) than width of frons 61

38. Pubescence of dorsal surface generally scant, elytral intervals with one row of fine scales 39

Pubescence of dorsal surface conspicuous, elytral intervals with two rows of fine scales 57

39. Mucrones dentate 40

Mucrones simple, at most subangulate ventrally 46

40. Frons about as wide as dorsal tip of beak, appearing trisulcate; prothorax basal margin strongly expanded (?Arizona) . . . **grossulum** Fall (p. 269)

Frons wider than dorsal tip of beak (or elytra red), not trisulcate; prothorax basal margin at most slightly expanded 41

41. Elytra red, prothorax black 42

Elytra and prothorax black 43

42. Beak as long as head and prothorax combined; prothorax finely punctured, nearly glabrous; dorsal surface of elytra not at all striate; prothorax not constricted apically (Veracruz, Tabasco, Guerrero; British Honduras; Guatemala; Nicaragua; Panama; Colombia; Venezuela; Brazil).
rufipenne Gyllenhal (p. 346)

Beak shorter than head and prothorax combined; prothorax with rather coarse, deep punctures which bear hairlike setae; striae adjacent to suture distinctly impressed throughout; prothorax distinctly constricted at apex (Tamaulipas, San Luis Potosí) . . . . . **evustum**, new species (p. 337)

43. Abdomen and metasternum finely, sparsely punctate 44
Abdomen and metasternum coarsely, closely, deeply punctate 45
44. In dorsal view beak not expanded over antennal insertion; beak distinctly shorter than head and prothorax combined (New England–Florida–Texas–Wisconsin) . . . . . **patruele** Smith (p. 341)
In dorsal view beak distinctly expanded over antennal insertion; beak about as long as head and prothorax combined (Peru; Amazonas).
nitidum Kirsch (p. 341)
45. Mucrones moderately long, slender; elytral intervals not much wider than striae (California, Arizona) . . . . . **abdominale** Smith (p. 333)
Mucrones short, blunt; elytral intervals nearly twice as wide as striae (Colorado, Idaho, Montana; British Columbia, Alberta, Hudson Bay Territory).
centrale Fall (p. 335)
46. Beak about as long as prothorax (Illinois, Nebraska, Colorado, Arizona).
modestum Smith (p. 276)
Beak distinctly longer than prothorax 47
47. Prothorax slightly wider at middle than base; elytral intervals strongly convex, slightly wider than striae (Massachusetts–Tennessee–Texas–Iowa).
porcatum Boheman (p. 344)
Prothorax at middle not wider than base; elytral intervals at most slightly convex, at least one-half wider than striae 48
48. Elytra at humeri at least two-fifths wider than prothorax at base; elytra more than two and three-fourths times as long as prothorax 49
Elytra at humeri one-third wider than prothorax at base; elytra less than two and three-fourths times as long as prothorax 55
49. In lateral view dorsal surface of head above eyes distinctly declivitous (Tamaulipas) . . . . . **nanulum,** new species (p. 357)
In lateral view dorsal surface of head is flat from eyes to base 50
50. Elytral intervals convex (Tabasco; British Honduras; Guatemala).
oscillator Sharp (p. 359)
Elytral intervals flat 51
51. Pubescence on side of prothorax about as coarse as that on dorsal surface or midline 52
Pubescence on side of prothorax about twice as coarse as that on dorsal surface; in dorsal view beak strongly expanded over antennal insertion (Tabasco; Guatemala; Nicaragua) . . . . . **managuense** Wagner (p. 354)
52. Prothorax with uniform, sparse pubescence on dorsal surface 53
Prothorax with scales along median line coarser than those on lateral portion of dorsal surface 54
53. Prothorax sparsely, finely, shallowly punctured dorsally and laterally; eyes acutely prominent; scales in elytral striae minute, not larger than those on intervals (Tamaulipas) . . . . . **subsequens,** new species (p. 364)
Prothorax moderately densely, finely, deeply punctured; eyes more rounded; scales in elytral striae distinctly larger than those on intervals (Ontario; New York, Virginia, Tennessee, Texas, Kansas, Iowa, Michigan).
reconditum Gyllenhal (p. 361)
54. Beak slightly shorter than head and prothorax combined; prothorax more deeply, uniformly punctured (Texas, Tamaulipas).
subtinctum Fall (p. 365)
Beak slightly longer than head and prothorax combined; prothorax more shallowly, irregularly punctured (Guatemala). **subrufum** Sharp (p. 363)

55. Mucrones minute; dorsal margin of antennal scrobe evenly descending to below eye (Florida) . . . . . **pervicax** Fall (p. 360)
Mucrones larger; dorsal margin of antennal scrobe somewhat angulate above antennal insertion 56
56. Mucrones short, subangulate (New Jersey, Florida, Mississippi, Indiana). **perforicolle** Fall (p. 343)
Mucrones long, simple (Georgia, Florida, Mississippi). **importunum** Fall (p. 353)
57. Pubescence noticeably denser at base of elytral interval 3; size generally less than 1.6 mm 58
Pubescence on elytra uniform; size greater than 1.6 mm 59
58. Mucrones projecting at an angle with tibiae; elytral intervals nearly flat (Guerrero; Guatemala) . . . . . **perpilosum** Wagner (p. 329)
Mucrones in basal half projecting in line with long axis of tibiae; apical half curved out laterally; elytral intervals moderately convex (Tabasco; Guatemala; Panama) . . . . . **auriferum** Wagner (p. 327)
59. Frons wider than dorsal tip of beak, not sulcate; prothorax at base one-fifth wider than long; elytral intervals moderately convex; size 1.6 to 2.0 mm. (Arizona; Baja California, Chihuahua, Guerrero). **aequabile** Fall (p. 259)
Frons as wide as dorsal tip of beak, with shallow median depression; prothorax at base one-third wider than long; elytral intervals nearly flat; size greater than 2.1 mm. 60
60. Middle and hind tibiae with similar mucrones, both acutely angulate ventrally (Guerrero; Guatemala). . . . . **imitator** Wagner (p. 286)
Middle tibia with a short, acutely angulate mucro, hind tibia with long, slender, straight mucro projecting at about 120° from tibia (Distrito Federal). . . . . **plectrocolum,** new species (p. 288)
61. Beak as long or longer than head and prothorax combined 62
Beak distinctly shorter than head and prothorax combined 67
62. Antennae inserted at distance from eye four times as great as width of frons; beak one-fourth longer than head and prothorax; mucro 2 short, subangulate; mucro 3 long, curved; size 2.25 to 2.50 mm. (Puebla, Michoacán, Guerrero; Guatemala; Honduras) . . . . . **gracilirostre** Sharp (p. 352)
Antennae inserted at distance from eye not more than twice as great as width of frons; beak at most slightly longer than head and prothorax combined. 63
63. Size 2.5 to 3.0 mm.; second tarsal segment as long as wide, not longer than lobes of third segment (New Hampshire, Florida, Texas, Wisconsin). **rostrum** Say (p. 384)
Size generally less than 2.5 mm.; second tarsal segment longer than wide, longer than lobes of third segment. 64
64. Head excavated and polished ventrally; elytral striae shallow; mucrones minute (Florida; Tamaulipas) . . . . . **gulare** Fall (p. 338)
Head not excavated ventrally; elytral striae deep; mucrones larger. . . 65
65. Elytra strongly bronzed, intervals polished, nearly impunctate, elytral pubescence nearly lacking, scales in striae larger than those on intervals (Guatemala; Honduras; Colombia; Venezuela; Bolivia). **bicolor** Gerstaecker (p. 350)
Elytra black, not bronzed, intervals with more or less distinct transverse minute rugae, intervals with distinct punctures bearing conspicuous scales as large as those in striae. 66

66. Apex of prothorax distinctly constricted; beak slightly punctured beyond middle (México, Distrito Federal) . . . . . **mexicanum** Wagner (p. 383)
Apex of prothorax slightly constricted; beak strongly punctured in rows, tip smoother (Illinois, Kansas, Colorado) . . . . . **coloradense** Fall (p. 378)

67. Mucrones simple 68
Mucrones dentate or angulate ventrally 70

68. Size 1.5 mm.; dorsal surface of prothorax deeply, closely, coarsely punctured (Iowa, Missouri, Kansas) . . . . . **minor** Smith (p. 355)
Size generally larger than 1.8 mm.; dorsal surface of prothorax more shallowly punctured 69

69. Antennae inserted at basal two-fifths of beak; beak in dorsal view nearly parallel-sided; prothorax little wider at base than apex (holarctic; North Carolina to New England, west to Washington, south to Utah).
simile Kirby (p. 278)
Antennae inserted at basal third of beak; in dorsal view beak attenuate toward apex; apex of prothorax seven-tenths as wide as base (Guerrero; Guatemala) . . . . . **hadromerum** Wagner (p. 328)

70. Beak shorter and stout, at most slightly longer than prothorax, in lateral view attenuating to apex, more or less sulcate laterally; frons not wider than dorsal tip of beak 17
Beak more slender and subparallel apically, distinctly longer than prothorax, not sulcate laterally; frons generally wider than dorsal tip of beak . . 73

71. Elytra reddish bronze, legs in part rufous (Veracruz; Guatemala).
vinosum Sharp (p. 294)
Elytra black, aeneous; legs black 72

72. Beak shorter than prothorax; frons slightly narrower than dorsal tip of beak (Veracruz, México, Morelos, Michoacán, Guerrero).
glyphicum Sharp (p. 292)
Beak slightly longer than prothorax; frons equal to dorsal tip of beak (Baja California) . . . . . **chuparosae** Fall (p. 291)

73. Prothorax black, elytra blue; prothorax with noticeable prominence on lateral basal region (Argentina; Brazil) . . . **lativentre** Béguin-Billecocq (p. 374)
Prothorax and elytra of same color, black; lateral basal region of prothorax not prominent 74

74. Antennae inserted at distance from eye one-third greater than width of frons; beak in side view nearly parallel-sided in apical third (Washington, Wyoming, Colorado, Utah, California, Durango, México).
proclive LeConte (p. 289)
Antennae inserted at distance from eye more than one-half greater than width of frons; beak in side view attenuate to apex 75

75. Antennae inserted in front of basal third of beak; elytral pubescence uniform; prothorax at middle not narrower than base (New Mexico, Arizona).
dolosum Fall (p. 370)
Antennae inserted behind basal third of beak; pubescence forming a more or less distinct spot at base of interval 3; prothorax widest at base . . . 76

76. Size larger than 2.50 mm.; mucrones dentate apically (Puebla, México, Distrito Federal, Guerrero) . . . . . **submetallicum** Boheman (p. 330)
Size about 1.75 mm.; mucrones angulate apically (Tabasco).
adaetum, new species (p. 284)

Species of Uncertain Position

Apion (Trichapion) aequabile Fall

FIGURE 1,*b,c,g,i.*

Apion aequabile Fall, Trans. Amer. Ent. Soc., vol. 25, p. 148, 1898.

DESCRIPTION: Length, 1.6 to 2.0 mm. Moderately robust. Black; pubescence conspicuous, coarse, white, sparse, coarser and denser laterally. Male beak one-eighth longer than prothorax; deflexed in apical third; in lateral view basal one-third parallel, attenuate through middle third, apical third nearly parallel, five-sixths as thick as basal region; from dorsal view widest in basal third at antennal insertion where it is one-fourth wider than base, attenuate to apex, there three-fourths as wide as base; sparsely pubescent in basal two-thirds, punctures there coarse, apical one-third with fine punctures, shining. Female beak as long as head and prothorax combined, one-half longer than prothorax, slightly curved, apical half nearly cylindrical, somewhat depressed near tip; strongly punctured laterally in basal half, fine scales in two short sulci above antennal insertion, shining and glabrous beyond antennal insertion. Antennae inserted at distance from eye equal to width of frons, of male in basal fourth of beak, of female at basal fifth of beak; first segment slightly shorter than next two, second segment a little longer than third, club 0.18 by 0.06 mm. Eyes moderately prominent; frons wider than dorsal tip of beak, with a wide, flat median area and one lateral row of punctures. Prothorax at base one-fifth wider than long, middle as wide as base, apex two-thirds to three-fourths as wide as base; sides with moderate lateral expansion at base, slightly diverging to middle, rounding to constricted apex; in profile dorsal surface very slightly arcuate from base to apex; punctation shallow, sparse, 0.03 mm. in diameter, interspaces about one-half as great as diameter of punctures; basal fovea nearly obsolete, elongate. Elytra at humeri one-third wider than prothorax at base, 2.5 times as long as prothorax, length to width as 10:7.5; intervals twice as wide as striae, moderately convex, with two rows of fine punctures bearing fine scales; striae deep. Scutellum narrow, elongate, 0.08 by 0.04 mm. Claws with strong, acute basal tooth. Front femora 3.3 times as long as wide.

Special male characters: Tibiae 2 and 3 armed with subdentate mucrones.

TYPES: I hereby designate the lectotype of this species as the male specimen (MCZ 25071) in the Fall Collection labeled La Chuparosa. Cotypes are in the J. L. LeConte Collection and in the California Academy of Sciences.

MATERIAL EXAMINED: Lectotype and 30 specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Arizona:* Chiricahua Mts., July 4, 1940, D. E. Hardy (UK); Globe (CU); Huachuca Mts., Ramsay Canyon, Cochise Co., July 16, 1948, C. and P. Vaurie (AMNH); Santa Rita Mts., Madera Canyon, beating oak (CU); Santa Rita Mts. (USNM); Whiteriver, July 4, 1950, D. E. Hardy (UK).

MEXICO: *Baja California:* La Chuparosa (MCZ, CAS). *Chihuahua:* Chihuahua, H. F. Wickham (MCZ). *Guerrero:* Río Balsas, H. F. Wickham (TLCC).

Apion (Trichapion) aestimabile Wagner

Apion (*Trichapion*) *aestimabile* Wagner, Arch. Naturg. Berlin, vol. 78, p. 115, 1912.

DESCRIPTION: This species was described from a single male in the Wagner Collection which was not seen by the author. The following notes are taken from the original description.

Length, 1.8 mm.

Very near *A. mexicanum* Wagner, head much smaller and narrower, frons flat with two rows of fine, scale-bearing punctures. Male beak a little longer than head and prothorax (*A. mexicanum* beak of male equal to head and prothorax combined), distinctly less curved than *A. mexicanum*, stouter, distinctly swollen at antennal insertion, thence slightly attenuate. Antennae of male inserted somewhat in front of middle of beak. Prothorax at base one fifth wider than long, sides nearly parallel to middle, strongly constricted at apex, there one-fifth narrower than base; punctation sparser and deeper than *A. mexicanum;* basal fovea continues on to near apex, but deep only at base.

TYPE LOCALITY: Veracruz, Mexico.

REMARKS: The insertion of the antennae somewhat in front of the middle of the beak will distinguish this species from all known members of the subgenus *Trichapion.*

Apion (Trichapion) albidulum Fall

FIGURE 1,*d,f,h.*

Apion albidulum Fall, Journ. New York Ent. Soc., vol. 26, p. 219, 1918.

DESCRIPTION: Length, 2.0 to 2.2 mm.; width, 1.00 to 1.12 mm.

Robust. Black; densely clothed with appressed white scales, scutellum and beak beyond basal one-fifth glabrous. Male beak slightly longer than prothorax, female beak shorter than head and prothorax combined, one-fourth longer than prothorax; moderately evenly curved; dilated at antennal insertion, attenuate to middle, cylindrical beyond middle; coarsely punctured in basal one-half, sparsely punctured apically. Antennae inserted at basal one-fourth, male, at basal one-fifth, female, at distance from eye equal

to width of frons; first segment a little shorter than next two, second equal to next three combined, club 0.18 by 0.09 mm. Eyes prominent; frons moderately wide, densely clothed with white scales on either side of bare median sulcus. Prothorax slightly wider at base than long, middle as wide as base, apex three-fourths as wide as base; sides with slight basal lateral expansion, slightly sinuate before base, apex moderately constricted; in profile dorsal surface slightly arcuate; punctation moderately deep, 0.03 mm. in diameter, interspaces about one-half as great as diameter of punctures; basal fovea deep, elongate, a slightly raised longitudinal median carina occurs in apical one-half. Elytra at humeri two-fifths wider than prothorax at base, about 2.5 times as long as prothorax, length to width as 11:8.5; intervals flat, more than twice as wide as striae, with three or four rows of punctures bearing scales; striae moderately deep, with a single row of scales. Scutellum elongate, twice as long as wide, 0.12 by 0.05 mm., with deep, median basal fovea. Front femora three times as long as wide. Claws with a large, acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, straight, denticulate mucrones.

Material examined: Type, male (MCZ 25073), labeled Coachella, Calif., in Fall Collection; and 25 specimens.

Known distribution:

United States: *California:* Riverside Co., Coachella (MCZ); Palm Springs (CU, UK, USNM). *Arizona:* Fort Yuma (USNM).

Apion (*Trichapion*) *alticola* Wagner

Apion (*Trichapion*) *alticola* Wagner, Arch. Naturg. Berlin, vol. 78, p. 107, 1912

Description: This species was described from a pair of specimens in the British Museum (Natural History) not seen by the author. The following notes are taken from the original description.

Length, 2.2 to 2.4 mm.

Very near *A. imitator* Wagner, with different beak and legs. Male beak equal to head and prothorax combined, stouter than *A. imitator*, more strongly curved, more distinctly widened at antennal insertion, more distinctly attenuate toward apex; female beak much stouter than in *A. imitator*, only a little longer than head and prothorax, more strongly curved, punctation deeper, denser; at antennal insertion beak of female of *A. imitator* more distinctly swollen than *A. alticola*. Frons striate, middle stria deeper. Legs, especially femora, stouter, tarsus longer as in *A. mediocre* Sharp. Male mucrones sharper than those of *A. imitator*, somewhat shorter than those of *A. mediocre*. Scutellum a little larger than that of *A. mediocre*, but distinctly smaller than that of *A. imitator*, deeply grooved, enclosed in a groove. Prothorax and elytra the same as *A. imitator*.

TYPE LOCALITY: Omilteme, Guerrero, Mexico, 8,000 feet (BMNH).

REMARKS: Wagner's statement that the elytra of *A. alticola* are the same as those of *A. imitator* is accepted literally. The elytral intervals of *A. imitator* are biserially pubescent. The apparently long beak of this species should distinguish it from related forms.

Apion (Trichapion) asellum Wagner

Apion (Trichapion) asellum Wagner, Arch. Naturg. Berlin, vol. 78, p. 102, 1912.

DESCRIPTION: This species was described from three males from Managua, Nicaragua, one in the Wagner Collection and two in the Solari Collection; this material was not seen by the author. The following notes are a translation of the original description.

Length, 1.7 to 1.9 mm.

Near preceding species [*godmani*], of same body size and general habitus, also same color; but has much larger and denser gray-white pubescence on head, prothorax, and elytra; and denser pubescence on ventral surface and following characters: eye of male distinctly larger; frons somewhat smaller, nearly smooth, indistinctly striate; eyes beneath with snow white cilia. Beak slightly shorter than head and prothorax combined, hardly curved; from above, base to antennal insertion with wrinkled sculpture and single punctures, rather dull; at antennal insertion slightly wider, from there to apex rather strongly attenuate; with rows of punctures on both sides of smooth middle line, gradually becoming finer toward apex; more shining and glabrous toward apex; from side angulately swollen under the antennal insertion, on dorsal line slightly angulate over antennal insertion. Antennae inserted at distance equal to long diameter of eye, otherwise much like *godmani*. The prothorax is larger in comparison to the elytra, at the bisinuate base only one-sixth wider than long, in front with a slightly uniform constriction, the constriction before the hind angle only a little stronger than that before the anterior margin and rather less than the same in *godmani;* the punctation is distinctly denser but finer and deeper, the interspaces smaller than the punctures; the basal stria is rather short but deep. The elytra hardly differ, a little wider and from the apex with less sinuation. The scutellum somewhat larger, triangular, deeply grooved. The legs—especially the femur—are similar in length but somewhat stouter; the first tarsal segment distinctly longer and narrower than the second, which is as long as broad; the claws are longer, widely spread, strongly toothed. The male with the second and third pair of tibiae mucronate.

Apion (Trichapion) auronitidum Wagner

Apion (Trichapion) auronitidum Wagner, Arch. Naturg. Berlin, vol. 78, p. 113, 1912.

DESCRIPTION: This species was described from a single female from Capetillo, Guatemala, in the British Museum (Natural History) that was not seen by the author. The following notes are a translation of the original description.

Length, 1.8 mm.

Closely related to *A. subrufum* Sharp, somewhat smaller and more compact in form, can be recognized by the following characters: beak of female somewhat shorter, at antennal insertion somewhat more widened and a little more strongly curved. The head is a little wider, the frons with a wide, shallow middle striae and finely, sparsely punctured; the prothorax is of the same general form, but the disc is nearly impunctate, the sides with large, shallow, distant punctures; in front of the scutellum is an indistinct, shallow impression. The elytra in comparison with the prothorax is distinctly shorter than in *subrufum*, widest point nearly at middle, with strong humeri; striae with finer, shallower punctures, intervals slightly convex, with fine hair-bearing punctures. Legs same as *subrufum*, only the tibia blackish, while in *subrufum* the tibia are rusty red. With yellowish pubescence especially on head and prothorax, where it is distinctly longer and somewhat denser than *subrufum*. Head, prothorax, and elytra with a bright metallic gold luster. Described from a specimen in Sharp's type series of *subrufum*, from which it differed by the rust red color of the elytra and prothorax with its slight metallic luster.

Apion (Trichapion) bettyae, new species

FIGURE 1,*e,j,k*

DESCRIPTION: Length, 3.90 mm.; width, 1.75 mm.

Moderately robust, depressed. Black; pubescence conspicuous, white, long, fine, somewhat coarser and denser on sides of mesothorax and metathorax. Male beak stout, shorter than prothorax, nearly straight; in lateral view nearly parallel-sided, upper surface abruptly deflexed downward toward tip; in dorsal view tapering from antennal insertion to apex, not expanded laterally at antennal insertion; coarsely, deeply, rather densely punctured, pubescence conspicuous to near tip, tip smoother; dorsal margin of antennal scrobe continues to apical third as a carina overhanging a series of deep punctures which appear to form a sulcus. Female beak equal in length to

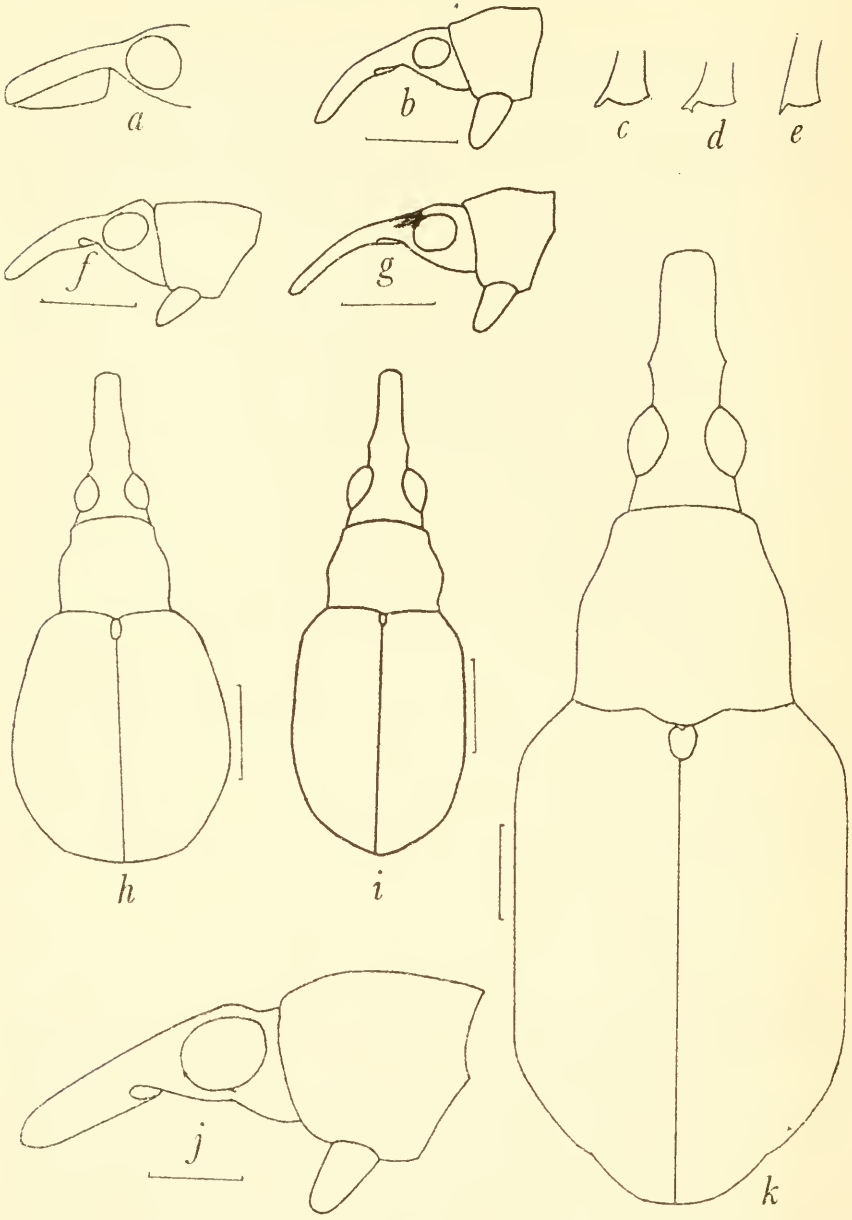

FIGURE 1.—*a*, *Apion laminatum* Sharp, lateral view of head (after Sharp, 1890). *b*, *c*, *g*, *i*, *A. aequabile* Fall: *b*, lateral view of head and prothorax of male; *c*, mucro of tibia 3 of male; *g*, lateral view of head and prothorax of female; *i*, entire dorsal view of male. *d*, *f*, *h*, *A. albidulum* Fall: *d*, mucro of tibia 3 of male; *f*, lateral view of head and prothorax of male; *h*, entire dorsal view of male. *e*, *j*, *k*, *A. bettyae*, new species: *e*, mucro of tibia 2 of male; *j*, lateral view of head and prothorax of male; *k*, entire dorsal view of male. Line equals 0.50 mm.

prothorax, stout, nearly straight; in lateral view ventral surface slopes upward slightly from antennal insertion to apical third, dorsal surface slopes strongly to apex; in dorsal view attenuate strongly from antennal insertion to middle, apical half nearly parallel; sculpture similar to male. Antennae inserted near basal third of beak, male, at basal fourth of beak, female, at distance from eye one-third greater than width of frons; first segment slightly shorter than next four, second equal to next two, club 0.24 by 0.12 mm. Eyes moderately prominent; frons narrower than dorsal tip of beak, with a fine, very deep median sulcus and one lateral row of coarser, more or less separated punctures. Prothorax at base slightly wider than long, middle narrower than base, apex two-thirds as wide as base; sides beyond basal lateral expansion moderately converging to distad of middle, rounded in apical third to constricted apex; in profile dorsal surface slightly arcuate toward base, strongly arcuate in apical third; punctation deep, 0.06 to 0.08 mm. in diameter, interspaces narrow, subcariniform, dull, strongly alutaceous; basal fovae linear, deep, extending one-third length of prothorax. Elytra at humeri one-third wider than prothorax at base, about 2.25 times as long as prothorax, length to width as 10:7; intervals about one-half wider than striae, concave, with one row of rather large, shallow punctures. Front femora 3.7 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 with a short, nearly simple mucro projecting in line with long axis of tibia.

Types: Holotype male (CAS), Atlixco, Puebla, Mexico, May, A. Fenyes Collection. Allotype female, same data as holotype; both mounted on same pin. One paratype, same data as holotype.

Remarks: The large size; short, stout beak; and male secondary sexual characters will distinguish this species.

I am pleased to name this outstanding species in honor of my wife, Betty, in acknowledgment of her understanding interest during the course of this research.

Apion (Trichapion) chalybaeum Wagner

Apion (Trichapion) chalybaeum Wagner, Arch. Naturg. Berlin, vol. 78, p. 111, 1912.

Description: This species was described from a few specimens in the Solari Collection that were not seen by the author. The following notes are taken from the original description.

Length, 1.8 to 1.9 mm.

Closely related to *A. oscillator* Sharp, of same size, shape of prothorax and elytra, and color; differs markedly in form of rostrum, which in both sexes is nearly cylindrical, only at the antennal insertion slightly angulate, somewhat stouter especially in female, less strongly

TABLE 2.—*Characters of species groups related to* Apion simile *Kirby*

Group	*Legs of male*	*Rostrum*	*Frons*	*Dorsum of head*
simile	Tibiae 2, 3, mucronate.	Male: Slender, longer than prothorax. Female: Slightly curved, not expanded distally.	Wider than dorsal tip of beak.	Slightly constricted above eyes.
proclive	Tibiae 2, 3 mucronate (*coryi* with all mucronate).	Male: Moderately stout, longer than prothorax. Female: Curved, strongly expanded apically.	About as wide as dorsal tip of beak.	Moderately constricted above eyes.
glyphicum	Tibiae 2, 3 mucronate.	Male: Very stout, not longer than prothorax. Female: Curved, strongly expanded distally.	Not wider than dorsal tip of beak.	Strongly constricted above eyes.
griseum	Tibiae 2, 3 mucronate, tibiae 1 with polished striate area.	Male: Slender, longer than prothorax. Female: Curved, expanded or not distally.	Much wider than dorsal tip of beak.	Slightly constricted above eyes.
spinitarse	Tibia 2 mucronate (*calcaratipes*, *enoplus*, *spinitarse* with 2, 3 mucronate), leg 1 modified variously.	Male: Moderately slender, not much longer than prothorax. Female: Moderately long, curved, expanded or not apically.	Wider than dorsal tip of beak; antennae inserted close to eyes.	Slightly constricted above eyes.

punctulirostre	Tibia 2 mucronate.	Male: Moderately stout, longer than prothorax. Female: Greatly elongate, sometimes expanded distally.	Wider than dorsal tip of beak, antennae inserted at twice width of frons.	Slightly constricted.
submetallicum	Tibiae 2, 3 mucronate.	Male: Attenuate and pubescent to near apex. Female: Elongate and attenuate apically.	Wider than dorsal tip of beak.	Slightly constricted.

TABLE 3.—*Characters of species groups related to* Apion patruele *Smith*

Group	*Legs of male*	*Rostrum*	*Prothorax*	*Body shape*
patruele	Tibiae 2, 3 mucronate.	Strongly expanded over antennal insertion.	Base somewhat wider than middle, with deep, elongate basal fovea.	Rather stout.
reconditum	Tibiae 2, 3 mucronate.	Slightly expanded over antennal insertion.	Base much wider than middle, with short basal fovea.	Moderately slender.
oblitum	All tibiae mucronate.	Abruptly constricted beyond antennal insertion, nearly cylindrical to tip.	Base as wide as middle.	Stout.
nigrum	Tibiae 2, 3 mucronate (*cordatum* with all mucronate), leg 1 variously modified.	Strongly expanded at antennal insertion.	Base narrower than middle, sides strongly rounded.	Moderately stout.
rostrum	Tibiae 2, 3 mucronate (*commodum*, *confertum*, *furtivum* all mucronate).	Expanded over antennal insertion, attenuate to near tip.	Base and middle about equal, sides not strongly rounded.	Moderately stout.

curved, in both sexes more strongly punctate, duller, and especially in the male with punctures arranged in rows above antennal insertion. Head shorter and wider, eyes (especially of male) differently rounded, widest well behind middle; the wide frons furcate, interspace between middle and lateral stria moderately closely and extremely finely punctured. Antennae are somewhat stouter, especially the club noticeably larger. Prothorax same general shape but a little wider, punctures more scattered and on disc and base distinctly sparser than at foremargin (in *oscillator* punctures denser and less pronounced); the smooth middle line is more distinct and the basal fovea shallower than in *oscillator*. The intervals are nearly flat, extremely finely and sparsely punctured; scutellum is nearly twice as large, elongate-triangular; unfurcate. Legs as in *oscillator*, male with four hind tibiae mucronate with shorter, fine spine pointed more toward inner angle. Body color slightly shining black, elytra with a dark blue metallic luster. Pubescence of mesothorax and metathorax is not denser than *oscillator*, that of elytra and prothorax somewhat finer.

TYPE LOCALITY: Managua, Nicaragua.

Apion (Trichapion) grossulum Fall

Apion grossulum Fall, Trans. Amer. Ent. Soc., vol. 25, p. 141, 1898.

DESCRIPTION: Length, 2.37 mm.; width, 1.67 mm.

Robust. Black, antennae in part piceous; pubescence of dorsal surface white, fine, very sparse, slightly coarser and more evident laterally but not especially denser. Male beak slightly shorter than head and prothorax, a little less than one-half longer than prothorax, moderately, evenly curved especially on dorsal margin; in lateral view stoutly parallel in basal third, attenuate to tip; in dorsal view expanded laterally at antennal insertion, attenuate from antennal insertion to near tip, tip slightly expanded; punctures rather coarse, close, arranged in rows, tip smoother; sparsely pubescent in basal two-thirds. Antennae inserted at basal fifth of beak at distance from eye equal to width of frons; first segment equals next two, second segment slightly longer than third. Eyes prominent; frons about equal to dorsal tip of beak, with a median, moderately deep, narrow sulcus and one lateral row of confluent punctures, appearing trisulcate. Prothorax one-sixth wider than long at base, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion slightly converging, rounded to constricted apex, apex slightly flared out; punctation moderately deep, 0.04 mm. in diameter, interspaces generally less than diameter of punctures; basal fovea deep, short, nearly punctiform. Elytra at humeri one-third wider than prothorax at base; 2.5 times as long as prothorax;

length to width as 13:10.5; intervals twice as wide as striae, slightly convex, with two rows of minute punctures bearing fine scales. Scutellum elongate-triangular, 0.12 by 0.06 mm.

Special male characters: Tibiae 2 and 3 armed with moderately long, triangular mucrones which are acutely dentellate ventrally; mucrones project almost at right angle to long axis of tibiae.

MATERIAL EXAMINED: Holotype male (MCZ 25099) in J. L. LeConte Collection.

KNOWN DISTRIBUTION: Type is not labeled but is thought to be from Arizona according to Fall (1898).

Apion (Trichapion) guatemalense Wagner

Apion (*Trichapion*) *guatemalense* Wagner, Arch. Naturg. Berlin, vol. 78, p. 112, 1912.

DESCRIPTION: This species was described from two females from Guatemala City and Retalhuleu, Guatemala, in the Wagner Collection and in the British Museum (Natural History) that were not seen by the author. The following notes are a translation of the original description.

Length, 1.9 to 2.0 mm.

Near *A. oscillator* Sharp. Body pitchy brown, with a rather strong though nearly dull copper luster, especially on head, prothorax, and elytra; with fine sparse white pubescence, pubescence on sides of mesothorax and metathorax not dense. Beak blackish, legs dark reddish brown. Head wider than long, of female slightly conical, with rather strongly convex though hardly prominent eyes, with a square depression between, vertex with microscopic sculpture, more brassy; frons somewhat smaller than beak at base, with two rows of moderately fine, close, deep punctures; behind eyes head with stronger punctures less densely placed. Beak of female one-fourth longer than head and prothorax combined, relatively slender, slightly curved. From base to antennal insertion hardly widened, from there to tip slightly attenuate, nearly cylindrical at tip; at base with fine punctures, otherwise with very fine sculpture, nearly dull, glabrous. Antennae long and slender, of female inserted in basal third or fourth of beak, scape equals first three funicular segments; first slightly longer but distinctly stouter than next, elliptical; second barrel-shaped; 3–7 gradually diminishing in length. Prothorax is somewhat wider than long, its base bisinuate, hind angles not prominent, nearly rectangular; at base slightly, at apex feebly sinuate, between uniformly, moderately rounded; widest at middle, only slightly narrowed toward front, at slightly concave foremargin about one-half narrower than base; in side view slightly, uniformly convex; with fine, not dense punctures, shallow, becoming larger and shallower towards sides,

interspaces as wide or slightly narrower than punctures, finely sculptured; in front of scutellum with a short but deep basal fovea. Elytra rather shortly egg-shaped, base much wider than prothorax, with prominent humeri, sides gently widening toward rear, widest point somewhat behind middle, then widely rounded to rear, slightly sinuate at apex; moderately large punctures in striae, flat intervals twice as wide as striae, in middle striae are finer, with fine sculpture of transverse wrinkles. Scutellum rounded, unfurcate, enclosed in a sharp furrow. Legs moderately long, femora rather stout; first tarsal segment about as long as second, as long as wide, fourth longer than third by one-half, claws distinctly toothed.

Apion (Trichapion) laminatum Sharp

FIGURE 1,*a*

Apion laminatum Sharp, Biologia Centrali-Americana. Coleoptera, vol. 4, pt. 3, p. 58, pl. 3, figs. 6, 6a, 1890.

DESCRIPTION: This species was described from a single specimen in the British Museum (Natural History) that was not seen by the author. The following descriptive notes were taken from the original description.

Length, 2.25 mm.

Black, opaque; very sparsely pubescent. Male beak not quite as long as head and prothorax combined, with a large ventral lamina extending from antennal insertion to apex. Antennae inserted very near to eyes.

Special male characters: Middle tibiae bear a minute mucro at apex, laminate beak is probably a male secondary sexual character.

TYPE LOCALITY: Amula, Guerrero, Mexico.

Apion (Trichapion) peninsulare Fall

Apion peninsulare Fall, Trans. Amer. Ent. Soc., vol. 25, p. 149, pl. 5, fig. 2, 2a, 1898.

DESCRIPTION: The type of this species is in the California Academy of Sciences and was not seen by the author. The following notes are taken from the original description.

Length, 2.0 mm.

Black; sparsely pubescent. Male beak shorter than head and prothorax combined, stout, strongly dilated a little behind the middle, rugosely punctate laterally, more finely and sparsely punctured dorsally. Antennae rather short, first segment scarcely as long as next two, second globose, barely reaching eye. Frons slightly sulcate; eyes not prominent. Prothorax about as long as wide; base one-fourth wider than apex; sides divergent to middle, subparallel in basal half. Elytra one-third longer than wide; humeri moderately

prominent; sides subparallel, very slightly arcuate; intervals wide, moderately convex. Rather strongly uniformly punctate ventrally.

Special male characters: Tibiae 2 and 3 armed with short mucrones.

Female unknown.

TYPE LOCALITY: La Chuparosa, Baja California, Mexico.

Apion (Trichapion) persulcatum Wagner

Apion persulcatum Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 22; pl. 2, figs. 3a, 3b, 1911.

DESCRIPTION: This species was described from a male in the Wagner Collection and a pair in the British Museum (Natural History) that were not seen by the author. The following notes are taken from the original description.

Length, 2.8 to 2.9 mm.

Close to *Apion subnudum* Wagner [which does not seem to belong to the subgenus *Trichapion*]. The body is black, only slightly shining, the elytra are bright as in *subnudum* but are more grayish blue. Beak in both sexes distinctly longer than *subnudum* and of the female more slender, about one-third longer than head and prothorax combined, of the male somewhat shorter; in both sexes somewhat more curved than *subnudum*. The prothorax is somewhat shorter than *subnudum*, sides between hind angle and anterior margin uniformly rounded; with large, shallow punctures rather densely placed, microscopically finely chagrined interspaces not wider than punctures; with a rather strong, short basal fovea. Elytra behind well developed humeri strongly widened posteriorly, widest behind the middle. Scutellum like *subnudum*. The tarsi are more slender; the first segment of the front leg is about one-half longer and narrower than second; the four posterior legs are shorter; the last two pairs of legs of the male are mucronate.

KNOWN DISTRIBUTION:

GUATEMALA: Capetillo; Retalhuleu.

Apion (Trichapion) spiculiferum Wagner

Apion (Trichapion) spiculiferum Wagner, Arch. Naturg. Berlin, vol. 78, p. 104, 1912.

DESCRIPTION: This species was described from a few specimens in the British Museum (Natural History) that were not seen by the author. The following notes are taken from the original description.

Length, 1.9 to 2.2 mm.

Closely related to *A. aurichalceum* Wagner, which has a larger body and bright sheen and gloss, finer, sparser pubescence especially on the beak. Female beak a little longer than head and prothorax, strongly curved, brightly shining, with single, fine punctures, a little denser over the antennae; male beak somewhat shorter than that of female,

less strongly curved, basal one-half with deep, but not dense punctures, finely pubescent, apical one-half nearly glabrous, bare, nearly cylindrical, feebly swollen at antennal insertion. Antennae inserted in basal one-third of beak of male, of female at long diameter of eye. Prothorax in form and sculpture as in *A. aurichalceum*, with the exception of the less constricted front. Elytra are only a little shorter, about 2.5 times as long as prothorax (*A. aurichalceum* about three times as long as prothorax); striae strongly punctured; intervals somewhat convex, as in *A. aurichalceum*. Legs a little more slender, especially the tibiae. Male as *A. aurichalceum* with tibiae 2 and 3 mucronate, but spine somewhat longer and pointing more to the rear.

KNOWN DISTRIBUTION:

MEXICO: *Veracruz*: Jalapa. Guanajuato.
GUATEMALA: San Gerónimo.

REMARKS: Mr. J. Balfour-Browne (personal communication) has studied the type and is of the opinion that this species is a synonym of *A. godmani* Wagner.

Apion (Trichapion) tabogense Sharp

Apion tabogense Sharp, Biologia Centrali-Americana. Coleoptera, vol. 4, pt. 3, p. 52, 1890.

DESCRIPTION: This species was described from two males in the British Museum (Natural History) that were not seen by the author. The following notes are taken from the original description.

Length, 2.00 mm.

Middle and hind tibiae mucronate, mucrones are slender spurs directed straight downwards, not inwards as in most of the other species. Rostrum is rather thick, curvate, densely sculptured except at tip, antennae are inserted not very far from eyes, being separated from them by not quite one-fourth length of rostrum; eyes rather large and prominent, placed close to the prothorax, frons moderately broad. Thorax rather broad, much narrowed towards front, scarcely impressed at sides, moderately closely and coarsely but obsoletely punctured, with a small fovea in front of scutellum. Elytra short and broad, coarsely striate, though striae are scarcely deep enough to be called sulci, intervals rather broad, flat. White setosity is not quite so scanty on undersurface as above, under orbits more conspicuous.

TYPE LOCALITY: Taboga Island, Panama.

Apion simile Group

Three species grouped with *A. simile* Kirby agree in general characters as outlined above. In addition the density and pattern of the pubescence is similar and the femora of the male tend to be stouter

than those of the female, except in *A. meorrhynchum* Philippi. The four species apparently do not overlap in range. It is possible that *A. modestum* Smith overlaps *A. simile* in Nebraska or Iowa. *A. propinquicorne* Fall is more southern in distribution, occurring in southern Texas and Mexico. *A. meorrhynchum* Philippi occurs in Chile.

A. simile differs from *A. modestum* and *A. propinquicorne* by the longer beak of both sexes and more distally inserted antennae. The latter two species are closely allied—small, densely pubescent, with antennae inserted near the base of the beak. The male of *A. propinquicorne* has a beak which is slightly longer than the prothorax; the antennae in both sexes are inserted close to the base of the beak at a distance from the eye less than the width of the frons; and the elytral intervals are biserially pubescent. The male of *A. modestum* has a beak which is as long as the prothorax; antennae of male are inserted at distance from eye equal to width of frons; and the elytral intervals are generally uniserially pubescent, but the scales may be confused, appearing in part as two rows. *A. meorrhynchum* is well distinguished by the antennae which are inserted at about the middle of the beak, the antennal scape is longer than the next five segments, and the elytral intervals are clothed with four to six rows of scales.

Two lines of species groups seem to be related to the holaretic species, *Apion simile*. One line is composed of the *A. proclive* and *A. glyphicum* groups. They have been differentiated from *A. simile* along the following lines: the male mucrones are generally strongly dentate, the frons is narrow, in some cases narrower than the dorsal tip of the beak, head is much more strongly constricted dorsally behind the eyes, and the female beak, while elongate, is not cylindrical but gradually attenuate toward the apical region and the apex is generally expanded laterally. The *A. proclive* group overlaps the range of the *A. simile* group in the western portion of the United States and extends well into Mexico. The *A. glyphicum* group overlaps the range of the *A. proclive* group in Mexico and extends into Central America.

The other line is composed of the *A. griseum*, *A. spinitarse*, *A. punctulirostre*, and *A. submetallicum* groups. They have become differentiated from *A. simile* along the following lines: the *A. griseum* group exhibits additional male secondary sexual modifications of the fore tibiae; in both sexes the beak is more attenuate toward the apical third; generally the female beak is expanded laterally at the tip; the frons is comparatively broader, and in general the antennae of the male are inserted closer to the eyes at a distance less than the width of the frons; the males of the *A. spinitarse* and *A. punctulirostre* groups have only the middle tibiae mucronate; the *A. submetallicum* group exhibits modification of the beak in that it is more attenuate to the

tip; in the male it is pubescent to the tip and in the female is pubescent to a point well in front of the antennal insertion. The *A. griseum* group overlaps the range of the *A. simile* group particularly in Eastern North America and extends into South America. It is interesting to note that the superficial resemblance of *A. sayi* Gyllenhal (of the *A. griseum* group) to *A. simile* is great enough that in at least two cases in the material studied the two species were confused by competent coleopterists.

Apion (*Trichapion*) *meorrhynchum* Philippi

Apion meorrhynchum Philippi, Stettiner Ent. Zeit., vol. 25, p. 364, 1864.—Kuschel, Agr. Tecn. Chile, vol. 10, p. 16, 1950.

Apion tenebricosum Gemminger, Coleopterologische Hefte, No. 8, p. 123, 1871.—Kuschel, Agr. Tecn. Chile, vol. 10, p. 16, 1950 (new name for *Apion obscurum* Blanchard, *in* Gay, Historia física y politica de Chile, vol. 5, p. 309, 1851; *nec* Kirby, 1811).

Description: Length, 2.75 to 3.25 mm.; width, 1.33 to 1.50 mm.

Moderately robust. Black; pubescence white, silvery, fine, long, dense. Male beak equal to, to slightly longer than, head and prothorax combined, three-fifths to four-fifths longer than prothorax, slightly curved; subcylindrical throughout, slightly expanded laterally at antennal insertion; rather densely, finely punctured, with minute scales to near apex, tip slightly smoother. Female beak one-ninth to two-fifths longer than head and prothorax combined, four-fifths to 2.25 times as long as prothorax, slightly curved, subcylindrical, slightly expanded laterally at antennal insertion and at apex; punctation and pubescence similar to male, tip polished, bare. Antennae of male inserted at distance from eye 2.5 times width of frons, at middle to slightly basad of middle; of female at distance from eye three times width of frons, slightly basad of middle; first segment equals next five, second segment slightly longer than third; club 0.27 by 0.10 mm. Eyes prominent; frons of male slightly narrower than dorsal tip of beak, of female equal to dorsal tip of beak, with slightly concave area medially. Prothorax at base about one-fifth wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond acute basal lateral expansion subparallel to middle, rounded to slightly constricted apex; in profile dorsal surface nearly flat (slightly convex in some females); punctation fine, moderately deep, dense, uniform; basal fovea shallow, broad, short. Elytra at humeri one-third wider than prothorax at base, about three times as long as prothorax, length to width as 15:11 to 3:2; intervals convex, about twice as wide as striae, with four to six rows of fine scales; striae deep, coarse, scales in striae similar to those on interval. Scutellum 0.06 by 0.06 mm., subquadrate, with slight median longi-

tudinal depression basally, with a more or less distinct apical transverse pit. Front femora about four times as long as wide. Claws with large, blunt basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, nearly simple mucrones.

MATERIAL EXAMINED: 14 examples including material determined by Wagner.

KNOWN DISTRIBUTION:

CHILE: Caramavida, Feb. 5–10, 1953, Luis E. Peña (DGK); Pichinahuel, February 1953, Luis E. Peña (DGK); Recinto, Jan. 16, 1953, Luis E. Peña (DGK).

Apion (Trichapion) modestum Smith

FIGURE 2,*a*

Apion modestum Smith, Trans. Amer. Ent. Soc., vol. 11, p. 58, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 138, pl. 4, figs. 8, 8a, 1898.—Blatchley and Leng, Rhynchophora or weevils of northeastern America, p. 78, 1916.

DESCRIPTION: Length, 1.36 to 1.62 mm.; width, 0.67 to 0.77 mm. Moderately robust; black, antennae piceous at base. Pubescence conspicuous, white, on dorsal surface rather coarse, coarser and denser laterally and ventrally. Male beak about as long as prothorax, nearly straight, nearly cylindrical, slightly expanded laterally at antennal insertion, punctured and pubescent in basal two-thirds, apical third smooth, bare, shining. Female beak as long as head and prothorax combined, one-half longer than prothorax, slightly curved; slightly attenuate beyond antennal insertion, slightly expanded laterally at tip; scantily pubescent behind antennal insertion, with sparse, moderate punctures laterally, smoother at tip. Antennae of male inserted at distance from eye equal to width of frons, at basal one-fourth of beak, of female inserted at distance from eye slightly less than width of frons, at basal one-sixth of beak; first segment and second segment each as long as next two, dimensions of club from 0.14 by 0.06 mm. to 0.16 by 0.07 mm. Eyes prominent; frons wider than dorsal tip of beak. Prothorax one-fourth wider at base than long, middle slightly narrower than base, apex four-fifths as wide as

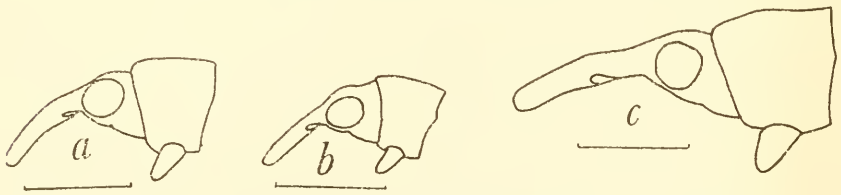

FIGURE 2.—*a*, *Apion modestum* Smith, lateral view of head and prothorax of male. *b*, *A. propinquicorne* Fall, lateral view of head and prothorax of male. *c*, *A. simile* Kirby lateral view of head and prothorax of male. Line equals 0.50 mm.

base; sides beyond basal lateral expansion nearly parallel to middle, rounded to moderately constricted apex; in profile dorsal surface nearly flat; punctures deep, 0.03 mm. in diameter, interspaces less than diameter of punctures, generally one-half as wide, alutaceous; basal fovea punctiform, moderately deep. Elytra at humeri one-third wider than prothorax at base, 2.75 to 3.00 times as long as prothorax, length to width as 11:8; intervals about twice as wide as striae, nearly flat on disc, generally with one row of scales, these sometimes confused and appear in part as two rows of scales; striae fine, deep. Scutellum triangular, 0.06 by 0.06 mm., with slight median furrow. Front femora about three times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, subangulate mucrones.

Material examined: 10 specimens including material determined by Fall.

Known distribution:

United States: *Arizona:* Chiricahua Mts. (USNM). Colorado (Fall, 1898). Illinois (MCZ). Nebraska (MCZ).

Remarks: No type specimens were seen in either the U. S. National Museum Collection or in the J. L. LeConte Collection, the two collections containing most of Smith's types. I am following Fall (1898) in the definition of this species.

Apion (Trichapion) propinquicorne Fall

Figure 2,*b*

Apion propinquicorne Fall, Trans. Amer. Ent. Soc., vol. 25, p. 138, pl. 4, figs. 7, 7a, 1898.

Description: Length, 1.67 mm.; width, 0.92 mm.

Robust; black. Pubescence conspicuous, white, rather coarse, denser on ventral surface. Male beak shorter than head and prothorax combined, one-fifth longer than prothorax, slightly, evenly curved; expanded laterally at antennal insertion, apical half nearly cylindrical; basal half sparsely punctured and pubescent, apical half smoother, bare, shining. Female beak as long as head and prothorax combined, two-fifths longer than prothorax, moderately, evenly curved; apical two-thirds nearly cylindrical; shining beyond antennal insertion, basal half with strong, lateral punctures. Antennae inserted at distance from eye less than width of frons, of male inserted at basal sixth of beak, of female at basal one-seventh; first segment shorter than next two, second segment equal to next two, club 0.17 by 0.06 mm. Eyes prominent; frons wider than dorsal tip of beak. Prothorax at base one-fifth wider than long, middle slightly narrower

than base, apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctures moderately deep, 0.03 mm. in diameter, interspaces less than diameter of punctures; basal fovea punctiform, moderately deep. Elytra at humeri one-half wider than prothorax at base, 2.8 times as long as prothorax, length to width as 7 : 5; intervals twice as wide as striae, nearly flat, with two rows of scales; striae moderately deep, fine. Scutellum triangular, 0.05 by 0.04 mm., with a slight median furrow. Front femora 3.4 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 with moderately long, nearly simple mucrones.

TYPES: I hereby designate the lectotype of this species as the female specimen (USNM 4233) labeled San Diego, Tex. A male cotype (MCZ 25117) in the Fall Collection has the same data as lectotype. Fall (1898) states that the material on which the species was based was collected by Mr. Schwarz and was in the collection of the U. S. Department of Agriculture, hence the selection of the National Museum specimen as lectotype.

MATERIAL EXAMINED: Lectotype, cotype, and five specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Texas:* Del Rio (MCZ); San Diego (MCZ, USNM).

MEXICO: *Mexico:* 30 miles southeast of Mexico City, July 1954, D. G. Kissinger.

REMARKS: The material from Mexico was taken while beating scrubby oak and acacia bushes.

Apion (*Trichapion*) *simile* Kirby

FIGURE 2,*c*

Apion simile Kirby, Trans. Linn. Soc. London, vol. 10, p. 351, 1811.—Germar, Mag. Ent., vol. 2, p. 208, 1817.—Gyllenhal, *in* Schoenherr, Genera et species curculionidum, vol. 1, p. 424, 1833.—Wencker, L'Abeille, vol. 1, p. 181, 1864.—Bedel, Faune des Coléoptères du bassin de la Seine, vol. 6, p. 377, 1885.—Desbrochers, Le Frelon, vol. 5, p. 244, 1895–1896.—Schilsky, *in* Küster and Kraatz, Die Käfer Europa's, vol. 39, p. 89, 1902.—Wagner, Genera insectorum, Coleoptera, fam. Curculionidae: subfam. Apioninae, fasc. 130, p. 84, 1912.—Hustache, Famille LXXIX Curculionidae, Tribu: Apioninae. Tableaux analytiques des Coléoptères de la Faune Franco-Rhenane, p. 268, 1931.—Bartoszynski, Polaski Pismo Ent., vol. 14–15, p. 120, 1935.—Donisthorpe, Ent. Monthly Mag., vol. 74, p. 171, 1938.—Walhgren, Ent. Tidskr., vol. 72, p. 140, 1951.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957.

Apion superciliosum Gyllenhal, Fauna Suecica, vol. 3, p. 58, 1813.—Wagner, Genera insectorum, Coleoptera, fam. Curculionidae: subfam. Apioninae, fasc. 130, p. 84, 1912.—Kissinger, Proc. Ent. Soc. Washington, vol. 59 p. 40, 1957.

Apion triste Germar, Mag. Ent., vol. 2, p. 233, pl. 3, fig. 2, 1817.—Wagner, Genera insectorum, Coleoptera, fam. Curculionidae: subfam. Apioninae, fasc. 130, p. 84, 1912.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957.

Apion walshii Smith, Trans. Amer. Ent. Soc., vol. 11, p. 57, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 142, pl. 4, figs. 12, 12a, 18, 1898.—Blatchley and Leng, Rhynchophora or weevils of northeastern America, p. 79, fig. 37r, 1916.—Wolcott and Montgomery, Amer. Midl. Nat., vol. 14, p. 161, 1933.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957. [New name for *Apion lanuginosum* Walsh, Proc. Ent. Soc. Philadelphia, 1866, vol. 6, p. 269, 1867, *nec* Gerstaecker, 1854.]

Apion vicinum Smith, Trans. Amer. Ent. Soc., vol. 11, p. 58, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 143, 180, 1898.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957.

Apion eppelsheimi Faust, Deutsche Ent. Zeitschr., 1887, p. 179, 1887.—Wagner, Genera insectorum, Coleoptera, fam. Curculionidae: subfam. Apioninae, fasc. 130, p. 84, 1912.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957.

DESCRIPTION: Length, 1.70 to 2.20 mm.; width, 0.70 to 1.00 mm.

Elongate, moderately slender. Black; pubescence conspicuous, fine, long, whitish to yellowish white, sparse, uniform. Male beak one-fourth longer than prothorax, nearly straight, cylindrical, slightly dilated laterally over antennal insertion; basal two-thirds moderately punctured and with sparse pubescence, apex smooth, more shining. Female beak equal to, to much longer than, head and prothorax, one-half to twice as long as prothorax, slightly curved, nearly cylindrical throughout; finely punctured throughout, tip slightly more shining. Antennae of male inserted at distance from eye twice as great as width of frons, at basal two-fifths of beak; of female inserted at distance from eye one-half greater than width of frons, at basal third of beak; first segment about equal to next three; second segment longer than third, shorter than next two; club 0.16 by 0.08 to 0.21 by 0.10 mm. Eyes moderately prominent; frons moderately wide, shallowly punctured, alutaceous. Prothorax one-seventh to one-fourth wider at base than long, middle a little wider than base, apex from three-fourths to four-fifths as wide as base; sides with very slight lateral expansion at base, diverging slightly to middle, rounding to slightly constricted apex; in profile dorsal surface slightly arcuate, flatter at apex and base; punctation 0.03 mm. in diameter, moderately deep, interspaces variable, less than, to equal to, diameter of punctures; basal fovea shallow, rounded. Elytra one-fourth to one-third wider at humeri than base of prothorax, from 3.2 to 3.5 times as long as prothorax, length to width varies from 11 : 7 to 14 : 8.5; intervals nearly twice as wide as striae, variable but convex, with one or two rows of fine punctures bearing fine scales; striae deep, with one row of fine scales. Scutellum triangular, 0.06 by 0.04 mm., with median furrow or not. Front femora of male 3.2, of female 3.8 times as long as wide. Claws with acute basal tooth.

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Special male characters: Tibiae 2 and 3 armed with simple, moderately long mucrones.

TYPES: I hereby designate as lectotype of *A. walshii* Smith the female specimen (USNM 1256) labeled White Mts., N. H. Cotypes labeled Marquette, Mich., are in the J. L. LeConte Collection (MCZ 369).

I hereby designate as the lectotype of *A. vicinum* Smith the female specimen (USNM 1255) labeled Garland, Colo. Cotypes with the same data are in the J. L. LeConte Collection (MCZ 370).

MATERIAL EXAMINED: Lectotypes of *A. walshii* and *A. vicinum*, specimens of *A. simile* from Europe determined by Hans Wagner in the Bovie Collection of the U. S. National Museum, and 150 specimens from the United States and Canada.

BIOLOGY: *Apion lanuginosum* Walsh was described from material taken from galls made by a *Cecidomya* sp. on *Salix strobiloides*. Donisthorpe (1938) records *A. simile* from Windsor Forest, England, by sweeping and under faggots in a willow swamp. Fall (1898) states that in New England *A. walshii* occurs abundantly on white birch, *Betula alba*. Hustache (1931) records *A. simile* as occurring on *Betula alba*, stating that the species is common in France. I have taken a large series from birch leaves in New Hampshire. Wahlgren (1951) cites *A. simile* as a gall maker on *Betula verrucosa*. Wolcott and Montgomery (1933) took *A. walshii* by sweeping in the maple zone of a Tamarack swamp in Porter Co., Ind.

KNOWN DISTRIBUTION:

Europe, Algeria, Asia Minor, and Siberia according to Hustache (1931).

CANADA: *Newfoundland:* Lomond, Bonne Bay, July 15, 1949, E. Palmen (CNC); Stead Bank, Humber, July 10, 1949, E. Palmen (CNC). *Nova Scotia:* Annapolis Royal, July 4, 1928, W. J. Brown (CNC). *New Brunswick:* Boiestown, July 13, 1928, W. J. Brown (CNC). *Quebec:* Knowlton, Aug. 1, 1929, L. J. Milne (CNC); Queens Park, Aytmer, July 23, 1926, C. B. Hutchings (CNC). *Ontario:* Merivale, June 16, 1931, W. J. Brown (CNC); Ottawa (CNC). *Manitoba:* Aweme, June 9, 1930, R. M. White (CNC); Onah, June 19, 1930, R. M. White (CNC).

UNITED STATES: *North Carolina:* Mt. Mitchell, 4,000–6,000 ft., June 1939, Quirsfeld (CAF). *Maryland:* Beltsville (USNM); Branchville (USNM). *New York:* Colden, May 1885, E. P. Van Duzee (CIS); Ithaca (USNM); Lancaster, May 9, 1888, E. P. Van Duzee (CIS); Portage, May 30, 1888, E. P. Van Duzee (CIS). *Rhode Island* (TLCC). *New Hampshire:* Manchester (INHS); Mt. Washington, Ammonoosuc Ravine, 4,000 ft., June 4, 1940, M. A. Hanson (CAF), Great Gulf Trail, 1,500 ft., June 1, 1940, J. F. Hanson (CAF), Pinkham Notch, July 3, 1951, common on birch leaves, D. G. Kissinger (DGK), Tuckerman's Ravine, 2,000 ft., June 2, 1940, J. F. Hanson (CAF). *Vermont:* Lake Willoughby, 1,400 ft., June 17–29, 1945, C. P. Alexander (CAF). *Ohio:* Champaign Co., Cedar Swamp, May 22, 1954, R. E. Woodruff (ELS); Hocking Co., March 21, 1951, May 1, 1954, Sept. 10, 1953, N. J. and E. L. Sleeper (ELS); Vinton Co., June 5, 1953, N. J. and E. L. Sleeper (ELS). *Indiana:* Porter Co. *Michigan:*

Marquette (MCZ). *Iowa:* Iowa City, L. L. Buchanan (USNM); Lake Okoboji, July 22, 1916, L. L. Buchanan (USNM). *South Dakota:* Custer, Aug. 28, 1935, M. W. Sanderson (UK). *Washington:* Deeplake, May 5, 1949, G. H. Nelson (DGK). *California:* Siskiyou Co. (TLCC). *Utah:* Cedar City, Aug. 13, 1929, P. W. Oman (UK); Emery, Aug. 16, 1929, P. W. Oman (UK). *Colorado* (MCZ, USNM).

Remarks: This is the first time an *Apion* species is recorded as being holarctic in distribution. I am indebted to Dr. W. J. Brown for informing me (personal communication) about the new record of a European species of *Apion* being found in Newfoundland by Dr. Palmen.

Apion proclive Group

The six species grouped here agree in general characters as mentioned above. In addition the beak of the male in dorsal view is attenuate distad of the antennal insertion, generally to the apical third, and there is marked sexual dimorphism in the structure of the beak; in the female this part is slender, elongate, and more strongly attenuate. The ranges of the Mexican species are incompletely known due to lack of collections. The ranges of *A. coryi*, new species, and *A. proclive* LeConte probably do not overlap.

A comparison shows that the males of two species, *A. proclive* and *A. coryi*, have dentate mucrones, while the mucrones of the males of the remaining species are nearly simple. The former two species are apparently closely allied. The male of *A. coryi* has all three pairs of tibiae mucronate while *A. proclive* has only two pairs of tibiae mucronate. However under the discussion of *A. proclive* an interesting series from Arizona is noted which is apparently identical to *A. proclive* but the front tibiae of the male are minutely mucronate. The main differences between the two species are as follows: *A. coryi* has the elytra comparatively short and more robust, being only 2.5 times as long as the prothorax, the elytral intervals are more convex, the prothorax is more coarsely and closely punctured, the basal fovea of the prothorax extends one-third its length, the beak of the male is as long as the head and prothorax combined, more noticeably deflexed at the apical fourth, the beak of the female is more strongly deflexed at the apical third, and the eyes are more prominent. The elytra of *A. proclive* are comparatively longer, being 2.8 times as long as the prothorax, the elytral intervals are flatter, the basal fovea of the prothorax short, the beak of the male is shorter than the head and prothorax combined, the beak of both sexes is evenly curved, the eyes are not prominent, and the species is generally larger in size.

Of the other species, *A. acanonicum*, new species, is immediately distinct because of the unusual male characters. *Apion imitator*

Wagner has tibiae 2 and 3 of the male armed with similar, simple mucrones. The male of *A. plectrocolum*, new species, has the mucro on tibia 3 much longer than that on tibia 2. *A. adaetum*, new species, has the frons distinctly wider than the dorsal tip of the beak; *A. imitator* and *A. plectrocolum* have the frons equal to the width of the dorsal tip of the beak.

The affinites of *A. proclive* and *A. coryi* are close to the *A. glyphicum* group. The main difference between the *A. proclive* and *A. glyphicum* groups is that the characters of *A. proclive* which separate it from *A. simile* Kirby are more strongly developed in the *A. glyphicum* group, namely the more strongly dentate mucrones of the male; the shorter, stouter beak; the larger, more protruding eyes; the narrower frons; and the much more strongly constricted dorsal portion of the head above the hind margin of the eyes.

An interesting character shared by the members of this group is a more or less evident row of punctures extending about one-fourth the length of the beak above the antennal insertion in the male. In *A. proclive* this row of punctures generally appears as a definite sulcus above the antennal insertion. In the *A. glyphicum* group the beak of the male has a deep lateral sulcus limited by an upper and lower raised carina. This sulcus is apparently a development of the row of punctures above the antennal insertion noted in *A. proclive*.

***Apion* (*Trichapion*) *acanonicum*, new species**

FIGURE 3,*a-e*

DESCRIPTION: Length, 1.94 to 2.00 mm.; width, 0.09 to 1.00 mm.

Robust. Black, base of antennae piceous; pubescence white, on dorsal surface very fine, sparse, much coarser and somewhat denser on sides of prothorax, mesothorax, and metathorax. Male beak moderately slender, five-sixths as long as head and prothorax, one-fourth longer than prothorax, slightly curved; in lateral view apical third nearly parallel; in dorsal view slightly expanded laterally at antennal insertion, attenuate to middle, there somewhat compressed, expanding to apical third which is nearly parallel sided to apex; basal two-thirds dull, punctured, sparsely pubescent, a coalesced row of punctures forming a vague sulcus above antennal insertion in basal third, apical third shining, finely, more sparsely punctured. Female beak one-third longer than head and prothorax combined, twice as long as prothorax, in lateral view nearly parallel-sided to tip, tip somewhat depressed; in dorsal view attenuate beyond antennal insertion, nearly parallel-sided beyond basal third, definitely expanding toward apex; not pubescent beyond antennal insertion, basal three-fourths finely, moderately densely punctate, apical fourth smoother, more shining. Antennae of male inserted at basal fourth of beak, at distance from eye

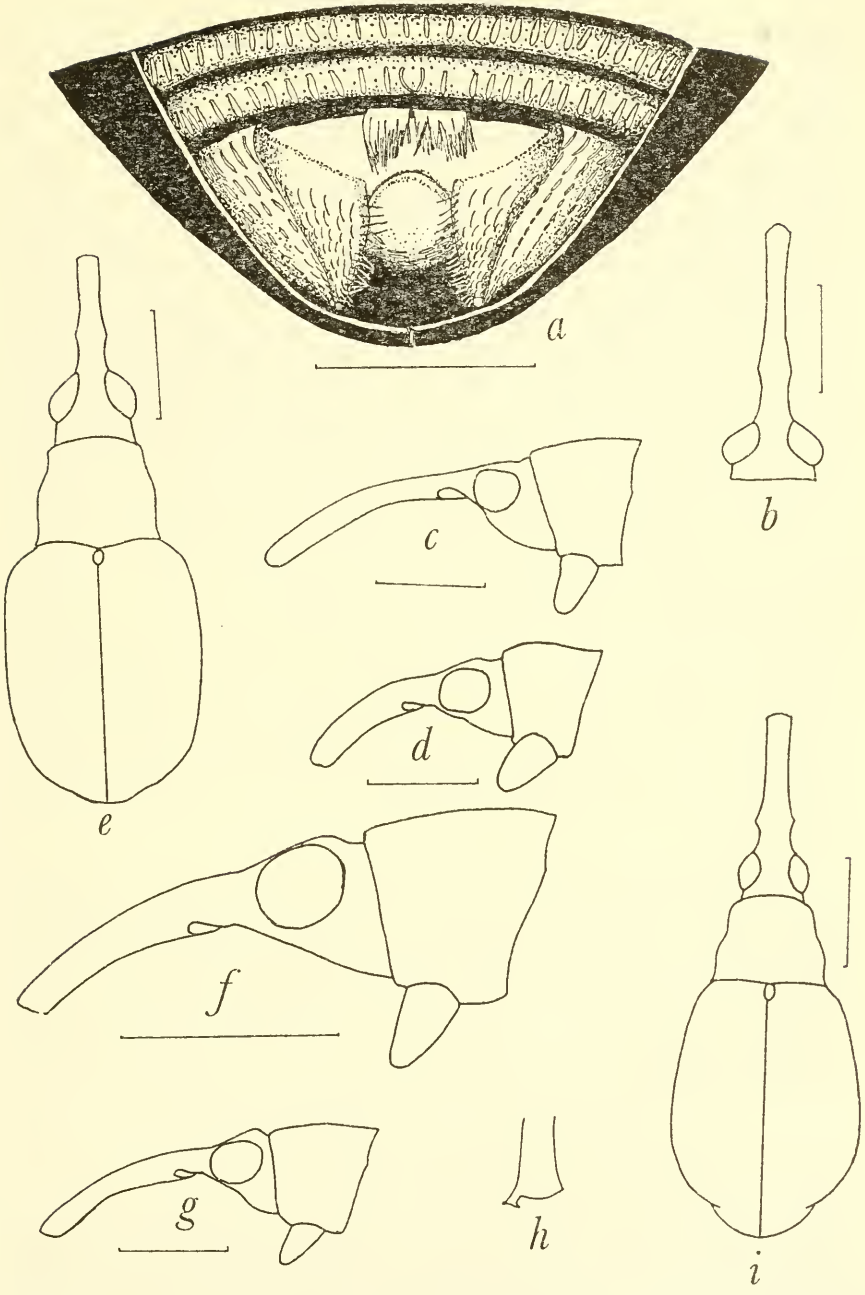

FIGURE 3.—*a–e*, *Apion acanonicum*, new species: *a*, fifth ventrite of male; *b*, dorsal view of head of female; *c*, lateral view of head and prothorax of female; *d*, lateral view of head and prothorax of male; *e*, entire dorsal view of male. *f–i*, *A. coryi*, new species: *f*, lateral view of head and prothorax of male; *g*, lateral view of head and prothorax of female; *h*, mucro of tibia 3 of male; *i*, entire dorsal view of male. Line equals 0.50 mm.

equal to width of frons; of female inserted at basal fifth of beak at distance from eye one-half greater than width of frons; first segment equal to next three, second segment equals next two, club 0.21 by 0.08 mm. Eyes prominent; frons slightly wider than dorsal tip of beak, with a shallow linear median sulcus and two lateral rows of fine punctures. Prothorax at base one-fourth wider than long, middle narrower than base, apex 0.7 as wide as base; sides beyond basal lateral expansion slightly, roundly expanding to middle, rounding to constricted apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, moderately deep, interspaces generally less than the diameter of punctures, there is a narrow, nearly impunctate median area; basal fovea moderately shallow, rounded. Elytra at humeri one-third wider than prothorax at base, 2.5 times as long as prothorax, length to width as 10 : 7.5; intervals twice as wide as striae, somewhat convex, with one row of minute punctures bearing very fine scales; striae moderately deep, fine. Scutellum triangular, 0.06 by 0.06 mm., with very slightly median furrow. Front femora 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, nearly simple mucrones, femora 2 and 3 incrassate, first segment of tarsus 1 clothed beneath with moderately long setae, fifth ventral segment modified as follows: raised and convex transversely at base; in median third with brush of dense, very fine long cilia; lateral apical angles produced into a pair of triangular processes projecting posteriorly and downward slightly beyond elytral tips, processes not visible in dorsal view.

Types: Holotype male (CAS) from village on María Madre Island, Tres Marías Islands, Mexico, May 15, 1925, H. H. Keifer. Allotype female (CAS), same data as holotype. Female paratype (DGK) from Tapanatepec, Oaxaca, Mexico, Jan. 22, 1953, D. G. Kissinger.

Remarks: The extraordinary characters of the male will readily distinguish this species. The long beak of the female and its rather broad head will help to recognize that sex.

Apion (*Trichapion*) *adaetum*, new species

Figure 4,*h*

Description: Length, 1.87 mm.; width, 0.87 mm.

Moderately robust. Black, legs piceous; pubescence of dorsal surface fine, yellowish, sparse, on sides of prothorax, mesothorax, and metathorax white, much coarser and somewhat denser, a few whitish scales at base of interval 3. Beak of male shorter than head and prothorax combined, two-fifths longer than prothorax, moderately curved; in lateral view more or less attenuate to tip; in dorsal view moderately

expanded at antennal insertion, attenuate to apical two-fifths, nearly parallel to tip; basal two-fifths sparsely pubescent, moderately punctured, a line of punctures appears as a slight sulcus above antennal insertion and extends to apical two-fifths; tip smoother, bare. Antennae inserted at basal fifth of beak, at distance from eye one-third greater than width of frons; first segment equals next two, second segment shorter than next two; club 0.18 by 0.06 mm. Eyes prominent; frons wider than dorsal tip of beak, with a shallow median sulcus and two lateral rows of punctures. Prothorax at base one-fourth wider than long, middle narrower than base; apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation moderately deep, 0.03 mm. in diameter, interspaces generally narrower than punctures; basal fovea shallow, punctiform. Elytra at humeri one-third wider than prothorax at base, nearly three times as long as prothorax, length to width as 10:7; intervals twice as wide as striae, slightly convex, with two rows of punctures bearing scales. Scutellum elongate-triangular, 0.07 by 0.04 mm. Front femora 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, subangulate mucrones.

Holotype: Male (USNM 63419) from Frontera, Tabasco, Mexico, in Thomas Lincoln Casey Collection.

Apion (*Trichapion*) *coryi*, new species

Figure 3,*f–i*

Description: Length, 1.75 to 1.94 mm.; width, 0.87 to 1.05 mm.

Moderately robust. Black, elytra slightly aeneous. Pubescence white, fine, scant on dorsal surface, denser on mesothorax. Male beak equal in length to head and prothorax combined, two-fifths longer than prothorax; slightly curved, more noticeably deflexed at apical fourth; apical third is nearly cylindrical; in dorsal view moderately expanded laterally at antennal insertion, attenuate to apical third; somewhat alutaceous, punctures arranged in rows, a moderately strong series of punctures above antennal insertion, tip somewhat more shining; basal two-thirds sparsely pubescent. Female beak longer than head and prothorax combined, four-fifths longer than prothorax; more strongly deflexed at apical third; in lateral view subparallel throughout, in dorsal view moderately strongly expanded laterally at antennal insertion, attenuate to middle, tip strongly expanded; dull, alutaceous, shallow punctures arranged in rows similar to male, tip smoother, slightly more shining, glabrous distad of antennal insertion. Antennae inserted at basal fourth of beak at distance from eye one-half

greater than width of frons; first segment equal in length to next three; second segment of male shorter than next two, of female more elongate, equal to next four segments combined; club 0.18 by 0.07 mm. Eyes moderately prominent; frons slightly wider than dorsal tip of beak, with a shallow median depression and one lateral row of punctures. Prothorax slightly wider at base than long, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion slightly diverging to middle, rounded to constricted apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, moderately deep, interspaces appear convex, alutaceous, range in width from one-half to equal to diameter of punctures; basal fovea moderately deep, extending one-third the length of the prothorax. Elytra at humeri slightly more than one-third wider than prothorax at base, 2.5 times as long as prothorax, length to width as 9:7; elytral intervals somewhat convex, equal in width to two striae, with one row of punctures, punctures somewhat confused at base of interval 3, intervals smooth; striae fine, moderately deep. Scutellum elongate-triangular, 0.09 by 0.05 mm., with a moderate median furrow. Front femora 3.2 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 1 armed with minute, blunt micro; tibiae 2 and 3 armed with moderate, acutely dentate mucrones.

Types: Holotype male (USNM 63416) from San Luis Potosí (near the town of Antiguo Morelos in Tamaulipas), Mexico, July 1954, D. G. Kissinger. Allotype female (USNM), same data as holotype. Forty-six paratypes, same data as holotype (24 in the collection of the author and 2 in each of the following: AMNH, BMNH, CAS, CIS, CNC, CU, INHS, UC, UK, UM, UMD).

Remarks: It gives me much pleasure to name this species in honor of Dr. Ernest N. Cory in recognition of his years of service to entomology.

Apion (*Trichapion*) *imitator* Wagner

Figure 4,*a–c*

Apion (*Trichapion*) *imitator* Wagner, Arch. Naturg. Berlin, vol. 78, p. 106, 1912.

Description: Length, 2.25 mm.; width, 1.10 mm.

Robust, black. Pubescence fine, white, sparse on dorsal surface, coarser and denser on sides of prothorax, mesothorax, and metathorax. Male beak shorter than head and prothorax, one-third longer than prothorax, slightly, evenly curved; in lateral view attenuate from antennal insertion to apex; in dorsal view expanded laterally at antennal insertion, strongly attenuate to apical third, tip slightly expanded, somewhat compressed in apical third; punctured and sparsely pubescent to near apex, tip smoother, bare, a line of confluent punctures above antennal insertion appears as a sulcus, extends

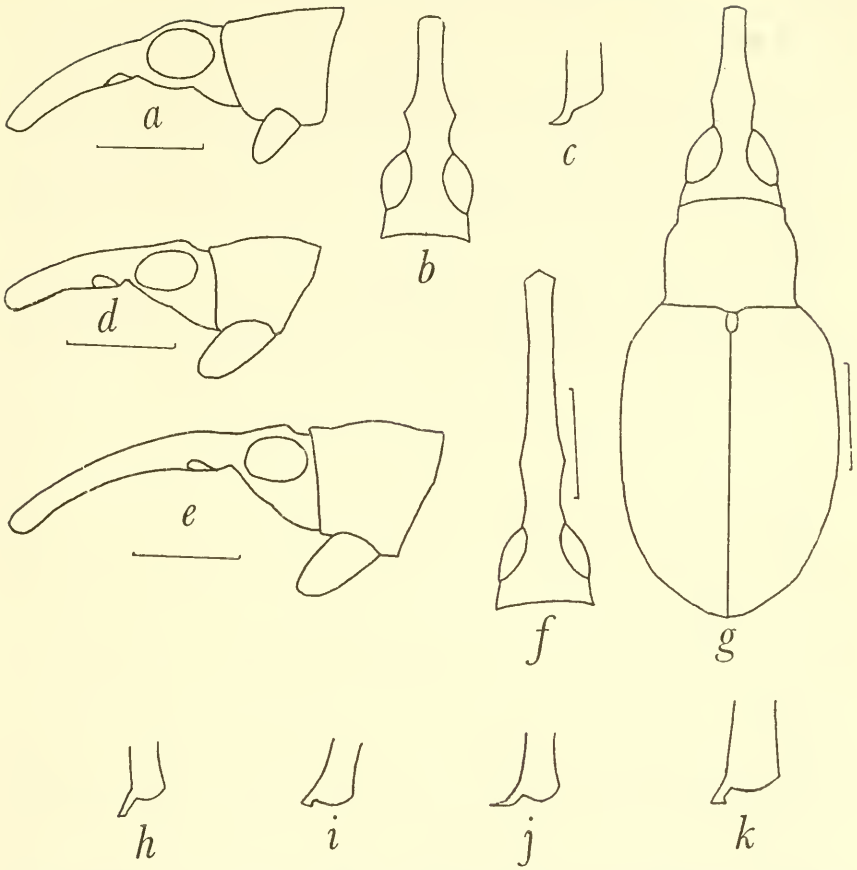

FIGURE 4.—*a–c*, *Apion imitator* Wagner: *a*, lateral view of head and prothorax of male; *b*, dorsal view of head of male; *c*, mucro of tibia 3 of male. *d–g*, *k*, *A. proclive* LeConte: *d*, lateral view of head and prothorax of male; *e*, lateral view of head and prothorax of female; *f*, dorsal view of head of female; *g*, entire dorsal view of male, *k*, mucro of tibia 3 of male. *h*, *A. adaetum*, new species, mucro of tibia 3 of male. *i*, *j*, *A. plectrocolum*, new species: *i*, mucro of tibia 2 of male; *j*, mucro of tibia 3 of male. Line equals 0.50 mm.

about one-third length of beak. Male antennae inserted at basal fourth of beak at distance from eye one-half greater than width of frons; first segment longer than next three, slightly shorter than next four; second segment about equal to next two; club 0.21 by 0.08 mm. Eyes large, prominent; frons slightly narrower than dorsal tip of beak. Prothorax at base one-third wider than long, middle narrower than base, apex two-thirds as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface flat; punctation moderately deep, 0.03 mm. in diameter, interspaces less than diameter of punctures, alutaceous;

basal fovea deep, punctiform. Elytra at humeri one-half wider than prothorax at base, nearly three times as long as prothorax, length to width as 3:2; intervals twice as wide as striae, nearly flat, with two rows of fine scales; striae moderately deep, fine. Scutellum elongate-triangular, 0.12 by 0.08 mm. Front femora 3.4 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with dentate mucrones.

MATERIAL EXAMINED: One male determined by Hans Wagner.

TYPE LOCALITY: Chilpancingo, Guerrero, Mexico (BMNH). This locality was erroneously attributed to Guatemala by Wagner in his description.

***Apion (Trichapion) plectrocolum*, new species**

FIGURE 4,*i,j*

DESCRIPTION: Length, 2.12 mm.; width, 1.06 mm.

Moderately robust. Black; pubescence white, moderately fine, sparse, coarser and denser on sides of mesothorax and metathorax. Beak of male shorter than head and prothorax combined, one-third longer than prothorax, slightly curved; in lateral view apical three-fifths nearly parallel-sided; in dorsal view moderately expanded at antennal insertion, attenuate to basal three-fifths, here somewhat compressed, expanded slightly, tip subparallel; basal four-fifths pubescent, punctured, a distinct sulcus in basal half above antennal insertion, tip bare, smoother. Antennae of male inserted slightly distad of basal fourth, at distance from eye one-fourth greater than width of frons; first segment slightly longer than next three, second segment shorter than next two, club 0.20 by 0.08 mm. Eyes large, moderately prominent; frons about as wide as dorsal tip of beak, with a moderately broad, shallow, median sulcus and one lateral row of punctures. Prothorax at base one-fourth wider than long, middle narrower than base, apex seven-tenths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation about 0.03 to 0.04 mm. in diameter, moderately deep, interspaces generally about one-half diameter of punctures, finely alutaceous; basal fovea moderately deep, broader at base, extends about one-third length of prothorax. Elytra at humeri two-fifths wider than prothorax at base, 2.75 times as long as prothorax, length to width as 11:8.5; intervals slightly convex, twice as wide as striae, on disc of elytra with two more or less distinct rows of scales, on declivity with one row of slightly coarser scales; striae moderately deep, fine. Scutellum elongate-triangular, 0.12 by 0.06 mm., with a moderate, median

furrow. Front femora 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with a short, blunt mucro; tibia 3 armed with a long, slender, curved mucro.

Holotype: Male (USNM 63420) from Guadalupe, Distrito Federal, Mexico, in Thomas Lincoln Casey Collection.

Apion (Trichapion) proclive LeConte

Figure 4,*d–g,k*

Apion proclive, LeConte, Rep. Expl. Surv. Mississippi to Pacific, vol. 12, pt. 3, 1860, p. 53, 1857.—Smith, Trans. Amer. Ent. Soc., vol. 11, p. 58, fig. 14, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 140, pl. 4, figs. 9, 9a, 9b, 15, 1898.

Apion crassinasum LeConte, Rep. Expl. Surv. Mississippi to Pacific, vol. 12, pt. 3, 1860, p. 53, 1857.—Smith, Trans. Amer. Ent. Soc., vol. 11, p. 58, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 141, 1898.

Apion nunenmacheri Wagner, Nov. Zool, Tring, vol. 19, p. 97, figs. 1, 2, 1912.—Fall, Journ. New York Ent. Soc., vol. 26, p. 223, 1918.

Description: Length, 1.70 to 2.75 mm.; width, 0.75 to 1.30 mm. Moderately robust. Black; pubescence conspicuous, fine, white, sparse, denser on sides of mesothorax and metathorax. Male beak slightly shorter than head and prothorax, slightly, evenly curved, moderately dilated laterally and ventrally at antennal insertion, attenuate to apical third, there nearly cylindrical; basal two-thirds punctured and pubescent, apex smoother, glabrous, shining. Female beak one-half longer than head and prothorax combined, moderately, evenly curved; slightly expanded laterally and ventrally at antennal insertion, attenuating to apical third, slightly expanded laterally at apex; finely punctured and alutaceous, nearly glabrous in front of antennal insertion. Antennae of male inserted at distance from eye one-third greater than width of frons, slightly distad of basal third; of female inserted at distance from eye about twice as great as width of frons, at basal fourth of beak; first segment as long as next three; second segment one-half longer than third, shorter than next two; club 0.24 by 0.10 mm.; dorsal margin of antennal scrobe subangulate. Eyes not prominent; frons of male as wide as dorsal tip of beak, of female wider than dorsal tip of beak; with moderate median sulcus and two lateral rows of punctures. Prothorax at base one-tenth to one-fifth wider than long, middle about as wide as base, apex two-thirds to three-fourths as wide as base; sides beyond slightly basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface slightly arcuate, flatter basally and apically; punctation deep, 0.02 to 0.03 mm. in diameter, interspaces less than diameter of punctures, alutaceous; basal fovea shallow, short.

Elytra at humeri one-third to two-fifths wider than prothorax at base, 2.8 times as long as prothorax, length to width as 5:4; intervals twice as wide as striae, nearly flat, with one or two rows of punctures bearing fine scales; striae deep. Scutellum elongate-triangular, 0.06 by 0.02 mm. Front femora 3.75 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, dentate mucrones.

MATERIAL EXAMINED: 200 specimens including types of *A. proclive* (female, MCZ 365, with gold disc signifying California, No. 1775), and *A. crassinasum* (male, MCZ 366, with dark blue disc signifying Oregon, No. 1774), and material determined by Hans Wagner as *A. nunenmacheri.*

KNOWN DISTRIBUTION:

UNITED STATES: *Washington:* Mt. Adams (USNM). *Oregon:* Orenco (USNM); 15 miles southeast of Weston (GHN). *Idaho:* Cassia Co., City of Rocks (UC). *Wyoming:* Yellow Stone National Park (USNM). *Colorado*: Mesa Verde (AMNH); Raymonds (UK). *Utah:* Ogden (USNM); Pintura (UK); Wasatch (USNM); Wellsville (UK). *Nevada:* Elko Co., Pequops Summit, 6,900 ft., 22 miles east of Wells (BVD, DGK). *California:* Many records throughout the State. *Arizona:* Coconimo Co., 6 miles north of Jacobs Lake, 7,600 ft. (AMNH); 11 miles north of Jacobs Lake, 5,500–6,500 ft. (AMNH). Cochise Co., Chiricahua Mts., Rustlers Park (AMNH). Flagstaff (USNM); Grand Canyon, 7,600 ft. (AMNH); Phoenix (AMNH); Prescott (AMNH); Santa Rita Mts. (USNM).

MEXICO: *Durango:* Tepehuanes (TLCC). *Mexico:* 23 miles south of Toluca (DGK). *Puebla:* 10 miles east of Puebla, 7,400 ft. (CIS).

BIOLOGY: Material in the U. S. National Museum from Mt. Adams, Wash., and Orenco, Oreg., was reared from lupine seed pods. In the California Insect Survey Collection there is material associated with *Lupinus* sp.

The geographical distribution of this species may seem unusual. Goldman (1951) classifies the Mexican localities as Upper Austral in character. Fall (1898) suggests that this species may range northward along the coast to Alaska but no material was seen from that area.

A small series from near Jacobs Lake, Coconimo Co., Arizona, exhibits an interesting aberration of the male secondary sexual characters. The front tibiae bear a minute but distinct mucro. While it is possible that this series represents another species it does not seem to because the principal characters of the male and female are those of this species.

REMARKS: Regarding the synonymy, *A. crassinasum* has line priority over *A. proclive;* they were described on the same page. Fall (1898) noted that the types represented male and female of the same species and chose to use *proclive* instead of *crassinasum* because "I have chosen to supress the latter name as being less characteristic of

the two." Since Fall (1898) is the first reviser, his choice of *A. proclive* will stand.

According to Fall (1918), *A. nunenmacheri* Wagner is only a minor variation of the typical *A. proclive*. Specimens determined by Wagner in the Nunenmacher Collection in the Chicago Museum of Natural History are typical *A. proclive*.

Apion glyphicum Group

Three very closely allied species comprise this group. Relationship of this group to the *A. simile* and *A. proclive* groups has already been discussed. The range of two species, *A. glyphicum* Sharp and *A. vinosum* Sharp, overlaps in southern Mexico. The third species, *A. chuparosae* Fall, is apparently confined to Baja California.

As mentioned above the species are very close to each other and are hard to separate, however there is insufficient evidence to warrant synonymizing the names. *A. vinosum* is distinct because of the light reddish brown elytra and the yellowish pubescence on the dorsal surface. The other two species are black, the elytra have a more or less distinct aeneous luster, and the pubescence of the dorsal surface is white. The beak of the male of *A. chuparosae* is a little more slender and elongate and is slightly longer than the prothorax. The beak of the male of *A. glyphicum* is shorter than the prothorax.

Apion (Trichapion) chuparosae Fall

FIGURE 5,*e*

Apion chuparosae Fall, Trans. Amer. Ent. Soc., vol. 25, p. 141, pl. 4, fig. 16, 1898.

DESCRIPTION: Length, 2.0 to 2.4 mm.

Robust; black, elytra with slight aeneous luster. Pubescence fine, white, sparse, somewhat coarser and denser ventrally. Male beak slightly longer than prothorax, slightly, evenly curved, stout, attenuate from antennal insertion to tip; punctured and sparsely pubescent to apical fifth, with deep sulcus above antennal insertion in basal half. Antennae of male inserted at distance from eye one-half greater than width of frons, between basal fourth and third of beak; first and second segments each shorter than next two segments, club 0.21 by 0.09 mm. Eyes large, prominent; frons narrow, about as wide as dorsal tip of beak. Prothorax at base one-third wider than long, middle narrower than base, apex two-thirds as wide as base; sides beyond marked basal lateral expansion slightly converging to middle, rounded to constricted apex; in profile dorsal surface slightly arcuate in front of middle; punctation shallow, 0.03 mm. in diameter, interspaces generally less than diameter of punctures, alutaceous; basal fovea extending one-third length of prothorax, narrow, deep at middle. Elytra at humeri

two-fifths wider than prothorax at base, 2.75 times as long as prothorax, length to width as 4:3; intervals twice as wide as striae, moderately convex, without transverse rugae, with two rows of fine punctures; striae deep, fine. Scutellum triangular, 0.08 by 0.06 mm. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with dentate mucrones similar to those of *A. glyphicum*.

TYPES: I hereby designate the lectotype of this species as the male specimen labeled La Chuparosa in the Fall Collection (MCZ 25084). Cotypes are in the California Academy of Sciences.

MATERIAL EXAMINED: Lectotype and one male.

KNOWN DISTRIBUTION:

MEXICO: *Baja California:* La Chuparosa; La Laguna, Sierra Laguna, Oct. 14, 1941, Ross and Bohart (CAS).

Apion (Trichapion) glyphicum Sharp

FIGURE 5,*a–d*

Apion glyphicum Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 52, 1890.

DESCRIPTION: Length, 2.5 to 2.75 mm.

Robust. Black, elytra and prothorax slightly aeneous; pubescence fine, white, sparse, on ventral surface and on sides of prothorax, mesothorax, and metathorax pubescence much coarser and denser, especially on the male. Male beak shorter than prothorax, slightly, evenly curved, moderately expanded laterally and ventrally at antennal insertion; in dorsal view attenuate to apical third, sides slightly diverging at apex; in lateral view attenuating from antennal insertion to apex; in basal two-thirds beak with a deep, lateral, longitudinal channel with finer punctures bearing fine scales, median dorsal line impunctate, tip smooth, slightly shining. Female beak about as long as head and prothorax, slightly, evenly curved, dorsally nearly parallel-sided throughout; in lateral view ventrally with slight expansion at antennal insertion, thence slightly attenuate to apex; supraantennal groove evident in basal two-thirds, apical third smooth, impunctate, hardly shining. Antennae inserted at distance from eye one-half greater than width of frons, of male at basal third, of female at basal fourth of beak; first segment of male shorter than next two, of female equal to next two segments; second segment shorter than next two; club 0.24 by 0.10 mm. Eyes moderately prominent, of male slightly larger and more prominent; frons narrow, of female equal to width of dorsal tip of beak, of male about five-sixths as wide as tip of beak; trisulcate, with a deep median impunctate sulcus and a deep intermediate lateral sulcus with shallow punctures bearing scales, separated from median sulcus by a narrow, convex interval, and with a

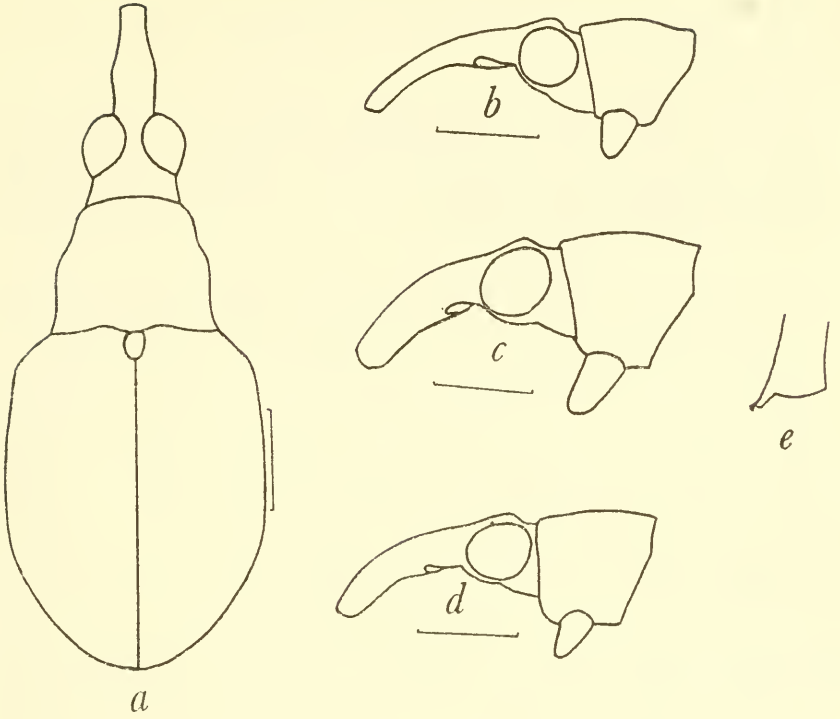

FIGURE 5.—*a–d*, *Apion glyphicum* Sharp: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of female; *c*, lateral view of head and prothorax of male; *d*, mucro of tibia 3 of male. *e*, *A. chuparosae* Fall, lateral view of head and prothorax of male. Line equals 0.50 mm.

lateral raised convex interval bearing scales; frons abruptly declivitous behind eyes. Prothorax at base about one-fifth wider than long, middle slightly narrower than base, apex three-fourths as wide as base; base expanded laterally, sides from there to middle nearly parallel, then rounded to constricted apex; in profile dorsal surface nearly flat; punctation moderately deep, 0.03 mm. in diameter, interspaces irregular, usually less than diameter of punctures, alutaceous; basal fovea moderately deep, wider toward middle, extending one-third length of prothorax. Elytra at humeri one-third to two-fifths wider than prothorax at base, 2.3 times as long as prothorax, length to width as 13 : 10; intervals about 2.5 to three times as wide as striae, smooth, with two irregular rows of punctures bearing fine scales; striae moderately deep. Scutellum triangular, about as long as wide, 0.08 by 0.08 mm., with a median, longitudinal sulcus. Front femora from 3.0 to 3.3 times as long as wide. Claws with moderate, acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, broad mucrones which have an apical angulation.

MATERIAL EXAMINED: One female determined by Sharp and 25 other specimens.

KNOWN DISTRIBUTION:

MEXICO: *Veracruz*: Jalapa (type BMNH); Córdoba, Feb. 3, 1953, D. G. Kissinger (DGK). *Morelos:* Cuernavaca, June, Fenyes Collection (CAS). *México:* Temescaltepec, Bejucos, July 2, 1932, Hinton and Usinger (CAS). *Michoacán:* 20 miles east of Morelia, Mar. 7, 1953, D. G. Kissinger (DGK). *Guerrero:* Río Balsas, Wickham (TLCC).

Apion (*Trichapion*) *vinosum* Sharp

Apion vinosum Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 70, 1890.

DESCRIPTION: Length, 2.17 to 2.50 mm.

Moderately robust. Head, prothorax, scutellum, and antennae dark reddish brown; elytra, femora, tibiae, and tarsi lighter reddish brown; pubescence somewhat conspicuous, fine, yellow on dorsal surface, white laterally, on disc of prothorax and elytra sparse, slightly denser at base of elytral interval 3, moderately dense on sides of mesothorax and metathorax. Male beak short, stout, much shorter than head and prothorax, one-third longer than prothorax, moderately, evenly curved; in lateral view expanded ventrally at antennal insertion, more or less attentuate to tip; in dorsal view expanded laterally over antennal insertion, attenuate to apical third, slightly expanding to tip; punctures arranged in rows, deeper laterally, basal three-fourths sparsely pubescent, apical fourth bare, smoother, moderately shining. Female beak one-fifth longer than head and prothorax, seven-tenths longer than prothorax, moderately, evenly curved; in lateral view stouter in basal sixth, attenuate to apical two-thirds, there nearly parallel-sided; in dorsal view moderately stout to antennal insertion, attenuate to apical third, expanding to apex; finely punctured in rows, deeper laterally, very sparsely pubescent in basal third, apical two-thirds bare, apical third smoother, subimpunctate; beak moderately shining throughout. Antennae inserted at distance from eye equal to width of frons, of male at basal fourth of beak, of female at basal sixth; first segment slightly shorter than next two, second segment slightly shorter than next two, club 0.28 by 0.10 mm. Eyes moderately prominent; frons narrow, slightly wider than dorsal tip of beak, abruptly declivitous behind eyes. Prothorax at base three-tenths wider than long, middle narrower than base, apex three-fourths as wide as base, slightly converging to middle, roundly narrowing to constricted apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, moderately shallow, interspaces rather convex, slightly less than, to equal to, diameter of punctures; basal fovea moderately deep at middle, narrow, one-third length of prothorax.

Elytra two-fifths wider at humeri than prothorax at base, 2.4 to 2.8 times as long as prothorax, length to width as 5 : 4; intervals twice as wide as striae, nearly flat, with one or two rows of fine punctures bearing fine scales; striae moderately coarse, deep. Scutellum triangular, 0.10 by 0.10 mm., with slight median depression. Fore femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with broad, short, angulate mucrones.

Material examined: Male and female determined by Sharp, male and female determined by Hans Wagner, and three other specimens.

Known distribution:

Mexico: *Veracruz:* Córdoba; Orizaba (CAS). *Guatemala:* Chiacam; Zapote (BMNH); Guatemala City; Duenas (BMNH).

Apion griseum Group

The males of eight species grouped here have the front tibiae modified with a smooth, more or less polished area. The range of three species overlaps on the Atlantic Coast of the United States, they are *A. sayi* Gyllenhal, *A. griseum* Smith, and *A. novellum* Fall. *A. sayi* and *A. nebraskense* Fall overlap in the midwestern portion of the United States. In Mexico *A. aurichalceum* Wagner, *A. godmani* Wagner, and *A. parcum*, new species, have been collected in large series in the same area at the same time by the author.

To aid in identifying these important weevils, a key to females is appended at the end of the discussion of the group. The male of *A. godmani* is distinctive because the front tibiae are abruptly deflexed near the apical third. The front tibiae of the males of the other species are straight. The males, with the exception of *A. sayi*, have a smooth polished area extending at least one-half the length of the front tibiae. The smooth area of *A. sayi* is about one-third as long as the tibia and bears a few, irregular striae. The modified area of the males of two species, *A. nebraskense* and *A. novellum*, is extremely finely and densely striate, the striations are so close together that the area appears opaque or irridescent. The modified area of the males of the other species exhibits distinct, separated striations. The tibial mucrones of *A. nebraskense* project in line with the long axis of the tibiae and the beak is strongly attenuate toward the apex; the tibial mucrones of *A. novellum* project at an angle with the tibiae and the beak is less strongly attenuate. *Apion parcum*, new species, is distinct because of its small size and the relatively coarse, sparse punctures on the metasternum. The beak of *A. aurichalceum* is distinctly expanded laterally at the tip and is more closely punctured laterally than the remaining two species. The dorsal pubescence of *A. griseum*

Smith is slightly yellowish; laterally it is white, also the antennal club of the male is about twice as long as wide and is clothed with nearly uniform, long, erect pubescence. The pubescence of *A. oriotes*, new species, is unicolorous, nearly white throughout, and the antennal club is about three times as long as wide and is clothed with short and long pubescence intermixed.

The *A. griseum* group is closely related to the *A. simile* and *A. proclive* groups but is very distinct because of the male secondary sexual modifications of the front tibiae. The *A. spinitarse*, *A. punctulirostre*, and *A. submetallicum* groups may have been derived from this group.

The females of *A. nebraskense* and *A. novellum* are unknown.

Key to females of *Apion griseum* group

1. Beak distinctly pubescent distad of antennal insertion 2
   Beak nearly glabrous beyond antennal insertion . . . . . **godmani** Wagner
2. Beak in dorsal view distinctly expanded at tip 3
   Beak in dorsal view not expanded at tip 4
3. Beak moderately, densely pubescent to near middle; dorsal surface of prothorax and elytra clothed with yellowish pubescence becoming white laterally . . . . . **aurichalceum** Wagner
   Beak sparsely pubescent in basal third; pubescence unicolorous, whitish to grayish . . . . . **sayi** Gyllenhal
4. Beak moderately densely pubescent to near middle . . . **oriotes**, new species
   Beak sparsely pubescent in basal third 5
5. Size 1.60 mm.; metasternum comparatively coarsely, sparsely punctured. **parcum**, new species
   Size 2.00 mm. or more; metasternum comparatively finely, densely punctured . . . . . **griseum** Smith

Apion (*Trichapion*) *aurichalceum* Wagner

FIGURE 6,*a–d,l*

Apion (*Trichapion*) *aurichalceum* Wagner, Arch. Naturg. Berlin, vol. 78, p. 103, 1912.—McKelvy, et al., Mexico Sec. Agr. Ganad. Foll. Tech., vol. 8, p. 37, 1951.

DESCRIPTION: Length, 2.0 to 2.4 mm.

Moderately robust; black, elytra strongly aeneous. Pubescence long, fine, yellow on dorsal surface, coarser and whitish laterally, somewhat denser at base of elytral interval 3, much denser on sides of mesothorax and metathorax. Male beak slightly shorter than head and prothorax, one-third longer than prothorax; moderately curved; in lateral view apical two-fifths nearly parallel; in dorsal view moderately expanded at antennal insertion, attenuate to apical third where it is somewhat compressed, slightly expanded toward tip; sculpture laterally in basal two-thirds deeply, coarsely punctured, finely punctured dorsally, pubescent, moderately dull, slightly alutaceous, apical

third shining, finely punctured, glabrous. Female beak one-fourth longer than head and prothorax, slightly curved, subcylindrical, expanded laterally at tip, in basal three-fifths sparsely punctate in rows, sparsely pubescent, apex smoother. Antennae of male inserted at basal sixth of beak at distance from eye slightly less than width of frons, of female at distance from eye slightly less than width of frons at basal sixth of beak; first segment of male equals next two, of female slightly longer than next two; second segment equals next two; club 0.21 by 0.09 mm. Eyes moderately prominent; frons wider than dorsal tip of beak, with two lateral rows of punctures on either side of median sulcus. Prothorax one-fourth to one-third wider at base than long, middle not as wide as base, apex two-thirds as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation moderately deep, 0.04 mm. in diameter, interspaces less than diameter of punctures; basal fovea shallow, broad, about one-third length of prothorax. Elytra at humeri one-third wider than prothorax at base, between 2.75 and 3.00 times as long as prothorax, length to width as 4:3; intervals twice as wide as striae, nearly flat, smooth, with two rows of fine punctures; striae deep, fine. Scutellum triangular, 0.08 by 0.06 mm. Front femora 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, slender, simple mucrones; tibia 1 with anterior inner face flattened, polished, longitudinally striate area along two-thirds of its length; tibia 1 not deflexed apically.

Material examined: Male and female determined by Hans Wagner and 125 other specimens.

Known distribution:

Mexico: In beans intercepted at Phoenix, Ariz., Brownsville, Tex., and Laredo, Tex. (USNM). *Guerrero:* Chilpancingo; Omilteme. *Puebla:* Huauchinango, June 1954, D. G. Kissinger (DGK); Puebla, Sept. 2, 1949, A. C. Smith (USNM). *México:* Tenancingo, Sept. 11, 1948, A. C. Smith (BMNH). *Distrito Federal:* Atzacapatalco, August 1921, H. F. Wickham, on bean (USNM); Contreras, May 30, 1946, J. and D. Pallister (AMNH); San Jerónimo, June 11, 1946, J. and D. Pallister (AMNH); Tacuba, September 1921, H. F. Wickham, on bean (USNM); 30 miles southeast of Mexico City, June 1954, D. G. Kissinger (DGK).

Guatemala: In black beans intercepted at Brownsville, Tex. (USNM); Aceituno; Capetillo; Chiacam.

Remarks: This species apparently is a serious pest of the bean crop in Mexico.

Apion (*Trichapion*) *godmani* Wagner

Figure 6,*g-j*

Apion (*Trichapion*) *godmani* Wagner, Arch. Naturg. Berlin, vol. 78, p. 101, 1912.—Estados Unidos Mexicanos, Secretaria de Agricultura y Fomento, Principales

plagas y enfermedades de los cultivos de la Republica, Mexicana, pp. 84–85, 1930.— Anon., Fitofilo, vol. 1, no. 2, p. 54, 1942; Fitofilo, vol. 2, no. 3, p. 111, 1943.—McKelvey, et al., Mexico, Secr. Agri. Ganad. Foll. Tec., vol. 8, p. 11, figs. 1–5, 1951.—Smith, Coleopt. Bull., vol. 5; pp. 61–62, 1951.

DESCRIPTION: Length, 1.75 to 2.21 mm.; width, 0.87 to 1.00 mm.

Moderately robust. Black, elytra and prothorax with strong golden bronze luster; pubescence conspicuous, fine, yellow on dorsal surface, becoming white laterally and ventrally, sparse, coarser and denser laterally and ventrally. Male beak as long as head and prothorax combined, slightly, evenly curved; slightly expanded ventrally at antennal insertion, attenuate from there to apical third where it is nearly cylindrical; moderately punctate and pubescent in basal two-thirds, apical third smooth, shining. Female beak moderately strongly, evenly curved, about two-fifths longer than head and prothorax, nearly cylindrical throughout, with ventromedian angulation behind antennal insertion; moderately punctured and pubescent in basal fourth, smooth and dull to apex. Antennae of male inserted at distance from eye slightly less than width of frons at basal fifth of beak, of female at distance from eye equal to width of frons at basal fourth; first segment of male longer than next two, of female a little longer than next three combined; second segment a little longer than third; club 0.21 by 0.09 mm. Eyes moderately prominent; frons moderately wide, median sulcus lacking, with about six faint longitudinal rows of fine, nearly contiguous punctures and appearing faintly striate. Prothorax at base one-fourth wider than long, middle slightly narrower than base, apex two-thirds to three-fourths as wide as base; sides expanded laterally at base, nearly parallel to middle then rounded to constricted apex; in profile dorsal surface slightly, evenly convex; punctation moderate, 0.03 mm. in diameter, shallow, interspaces about equal to diameter of punctures, flat, alutaceous; basal fovea short, shallow, rounded. Elytra at humeri two-fifths wider than prothorax at base, 2.75 times as long as prothorax, length to width as 8.5 : 11; intervals about twice as wide as striae, flat or slightly convex, finely alutaceous, with one or two irregular rows of fine punctures; striae deep, fine. Scutellum elongate, linear, about twice as long as wide, 0.15 by 0.07 mm., with median furrow. Front femora about 3.7 times as long as wide. Claws with moderate basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderate, simple mucrones; tibia 1 on inner side with a flat, smooth, longitudinally striate area extending from near base to apical one-fourth, from anterior view front tibiae appear to be compressed especially on inner side and are deflexed distad of apical two-fifths.

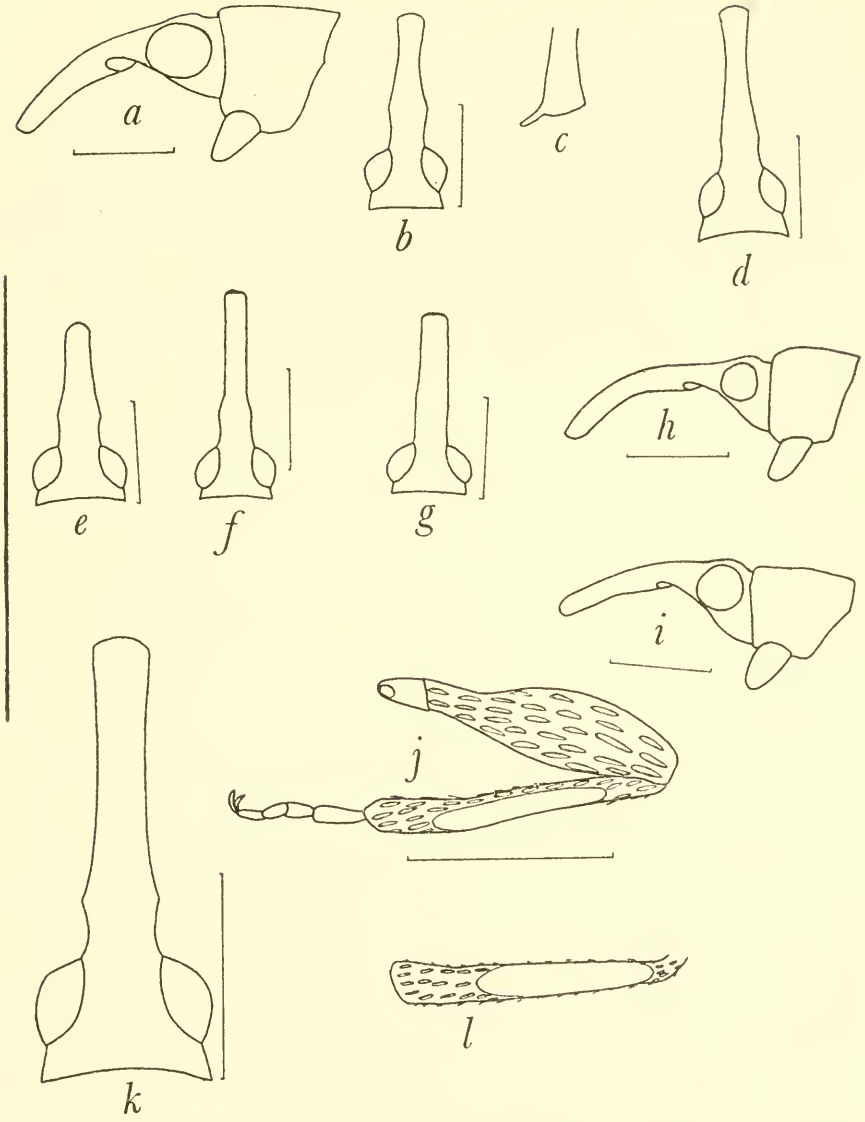

FIGURE 6.—*a–d*, *l*, *Apion aurichalceum* Wagner; *a*, lateral view of head and prothorax of male; *b*, dorsal view of head of male; *c*, mucro of tibia 3 of male; *d*, dorsal view of head of female; *l*, tibia 1 of male. *e*, *A. oriotes*, new species, dorsal view of head of male. *f*, *A. griseum* Smith, dorsal view of head of female. *g*, *–j*, *A. godmani* Wagner: *g*, dorsal view of head of female; *h*, lateral view of head and prothorax of male; *i*, lateral view of head and thorax of male; *j*, front leg of male. *k*, *A. sayi* Gyllenhal, dorsal view of head of female. Line equals 0.50 mm.

MATERIAL EXAMINED: Material determined by J. Balfour-Browne and 150 other specimens.

KNOWN DISTRIBUTION:

MEXICO: On lima beans taken at Phoenix, Ariz., June 9, 1922, A. H. Caldwell, Jr. (USNM). *Guerrero:* Amula, 6,000 ft. (BMNH). *Puebla:* Near Huauchinango, June 1954, D. G. Kissinger (DGK); 14 miles west of Texmelucan, July 14, 1953, 8,600 ft., University of Kansas expedition (UK). *Hidalgo:* 24 miles northeast of Jacala, June 22, 1953, University of Kansas expedition (UK). *Veracruz:* 38 miles northeast of Córdoba, June 30, 1953, University of Kansas expedition (UK). *México:* 7 miles south of Manzamitla, July 1, 1948, E. S. Ross (CAS); Real de Arriba, Temescaltepec, June 11, 1933, 8,000 ft., E. Hinton and R. L. Usinger (CAS). *Distrito Federal:* Guadalupe, H. F. Wickham (TLCC); in string beans from Mexico City taken at Brownsville, Tex., Sept. 14, 1946 (USNM); Atzcapotxalco, Aug. 16, 1921, on bean, H. F. Wickham (USNM); Tacuba, on bean (USNM).

GUATEMALA: Aceituno; Calderas; Quezaltenango, 7,800 ft., Volcán de Agua; Zapote (BMNH).

REMARKS: This species is a serious pest on bean crops near Mexico City.

Apion (Trichapion) griseum Smith

FIGURE 6,*f*

Apion griseum Smith, Trans. Amer. Ent. Soc., vol. 11, p. 59, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 147, 1898.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957.

Many references in the literature to this species actually refer to *Apion sayi* Gyllenhal. These will be listed and reviewed under the biology of the appropriate species.

DESCRIPTION: Length, 2.00 to 2.35 mm.; width, 0.93 to 1.12 mm. Moderately robust. Black, aeneous; pubescence conspicuous, fine, white, with yellowish tinge on dorsal surface, sparse, denser on sides of mesothorax and metepisternum. Male beak equal to head and prothorax in length, slightly, evenly curved, moderately expanded laterally and slightly expanded ventrally at antennal insertion, attenuate to apical third which is nearly cylindrical; coarsely, sparsely, punctured, basal two-thirds with bristling pubescence, apex glabrous, shining. Female beak about one-sixth longer than head and prothorax, moderately, evenly curved, slightly angulate laterally at antennal insertion, attenuate to middle, apical half nearly cylindrical; basal third with coarse sparse punctures and short pubescence, apical two-thirds smoother, dull, glabrous. Antennae inserted at distance from eye slightly less than width of frons, of male at basal fourth, of female at basal fifth; first segment as long as next two, second segment slightly (female) to much (male) shorter than next two, club 0.21 by 0.10 mm. Eyes moderately prominent; frons moderately wide, with deep, median sulcus and two lateral rows of fine, nearly or quite

contiguous punctures. Prothorax one-third wider at base than long, middle slightly narrower than base, apex two-thirds to three-fourths as wide as base, sides expanded laterally at base, slightly converging to middle, rounded to constricted apex; in profile dorsal surface slightly convex, flattened basally and apically; punctures moderate, 0.03 mm. in diameter, deep, interspaces about two-thirds as great as diameter of punctures, flat, alutaceous, wider and flatter in lateral basal third, basal fovea deep, short, rounded. Elytra at humeri one-third wider than base of prothorax, 2.75 to 3.00 times as long as prothorax, length to width as 12:9; intervals twice as wide as striae, flat, with two rows of fine punctures; striae deep, fine. Scutellum elongate-triangular, about twice as long as wide, 0.12 by 0.06 mm., with a shallow, median furrow. Front femora about 3.75 times as long as wide. Claws with moderate basal tooth.

Special male characters: Tibiae 2 and 3 armed with small, simple mucrones; tibia 1 slightly flattened on the anterior inside surface, area polished with moderately close striations.

Lectotype: Kissinger (1957) designated as lectotype of this species a male specimen (USNM 1253) labeled New Jersey.

Material examined: Lectotype and 50 other specimens.

Known distribution:

United States: *Alabama:* Selma, Dec. 18, 1895, H. Soltau (USNM). *District of Columbia* (USNM). *Florida:* Crescent City, Hubbard and Schwarz (USNM). *Georgia:* Atlanta, Nov. 3, 1937, P. W. Fattig (USNM); Experiment, Nov. 12, 1936, T. L. Bissell (USNM). *Maryland:* Plummers Island, June 17, 1906, W. L. McAtee (USNM). *New Jersey* (USNM). *New York:* Ithaca (USNM), Peekskill, on rhododendron flowers in July, Sherman (USNM). *North Carolina:* Round Knob, Hubbard and Schwarz (USNM). *Virginia:* Alexandria, Oct. 30, 1955, A. W. Vazquez; Barcroft, September 1931, J. C. Bridwell, ex seeds of *Phaseolus polystachys* (USNM); Bull Run, ex *Phaseolus polystachys* (USNM); Pennington Gap, Hubbard and Schwarz (USNM).

Remarks: This species has been reared several times from the seed pods of *Phaseolus polystachys.* Pierce (1908), Chittenden (1908), Blatchley and Leng (1916), Wickham (1922), Bissell (1938), and Tuttle (1954) cite various species of *Phaseolus* as the host plants of this species. All except western records probably refer to *A. griseum.* The records of *A. griseum* developing in beans of the genus *Strophostyles* doubtless refer to *A. sayi* Gyllenhal.

Apion (Trichapion) nebraskense Fall

Figure 7,*d,e*

Apion nebraskense Fall, Trans. Amer. Ent. Soc., vol. 25, p. 145, pl. 4, fig. 20, 1898.

Description: Length, 1.75 mm.; width, 0.89 mm.

Moderately robust. Black; pubescence fine, white, sparse, a little more conspicuous ventrally. Male beak shorter than head and pro-

thorax combined, two-fifths longer than prothorax, deflexed at basal third, in dorsal view attenuate from laterally expanded antennal insertion to near apex; basal two-thirds dull, alutaceous, sparsely punctured, apical third smooth, shining. Antennae of male inserted at basal third of beak at distance from eye one-third greater than width of frons; first and second segments each shorter than next two, club 0.17 by 0.07 mm. Eyes moderately prominent; frons wider than dorsal tip of beak. Prothorax at base one-fifth wider than long, middle narrower than base, apex three-fourths as wide as base; sides beyond slight basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation moderately deep, 0.02 mm. in diameter, interspaces about equal to diameter of punctures; basal fovea shallow, punctiform. Elytra at

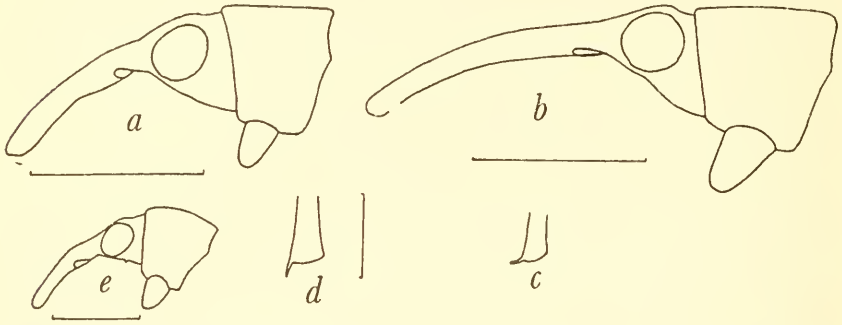

FIGURE 7.—*a–c*, *Apion parcum*, new species: *a*, lateral view of head and prothorax of male; *b*, lateral view of head and prothorax of female; *c*, mucro of tibia 3 of male. *d*, *e*, *A. nebraskense* Fall; *d*, mucro of tibia 3 of male; *e*, lateral view of head and prothorax of male. Line equals 0.50 mm.

humeri one-third wider than prothorax at base; nearly three times as long as prothorax, length to width as 15 : 12.5; intervals about twice as wide as striae, nearly flat, with one row of fine scales; striae moderately deep, fine. Scutellum triangular, 0.07 by 0.06 mm., with a shallow median furrow. Front femora about 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, slender, simple mucrones that project in line with the long axis of the tibiae; tibia 1 with a smooth area extending two-thirds its length on front inner surface, area iridiscent in certain light because of extremely fine, densely placed striations.

Female is unknown.

MATERIAL EXAMINED: Type (MCZ 25109, in Fall Collection labeled Nebraska) and four specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Nebraska:* No exact locality (MCZ), Platte River southeast of Grand Isle, June 21, 1953, B. and B. Valentine (BDV). *Colorado:* Boulder, T. D. A. Cockerell (MCZ). *Oklahoma* (AMNH).

Apion (Trichapion) novellum Fall

Apion novellum Fall, Trans. Amer. Ent. Soc., vol. 25, p. 144, pl. 4, fig. 19, 1898.

DESCRIPTION: Length, 1.50 mm.; width, 0.75 mm.

Moderately robust. Black; pubescence white, moderately fine, conspicuous, much coarser and scale-like on sides of prothorax, mesothorax and metathorax. Male beak slightly shorter than head and prothorax combined, one-third longer than prothorax, moderately, evenly curved; slightly expanded laterally and ventrally at antennal insertion, attenuate to apical third which is nearly cylindrical; basal two-thirds sparsely punctured and pubescent; apical third smoother, shining. Antennae of male inserted at distance from eye equal to width of frons, at basal one-fourth of beak; first segment equals next two, second segment slightly longer than third, club 0.15 by 0.06 mm. Eyes moderately prominent; frons wider than dorsal tip of beak. Prothorax at base one-third wider than long, middle narrower than base, apex three-fourths as wide as base, sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation moderately deep, 0.03 mm. in diameter, interspaces less than diameter of punctures; basal fovea shallow, short. Elytra at base one-third wider than prothorax at base; 2.5 times as long as prothorax, length to width as 7.5 : 6; intervals moderately convex, twice as wide as striae, with one row of scales and with minute transverse rugae; striae deep, fine. Scutellum triangular, 0.06 by 0.04 mm., with slight median furrow. Front femora 3.5 times long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with a long, fine mucro which is turned inward in apical half, tibia 3 armed with a long, straight, nearly simple mucro, tibia 1 with long, narrow, flattened polished area on anterior inner surface; area shines with silky luster due to extremely fine, densely placed striations.

Female not available for study.

TYPES: I hereby designate the lectotype of this species as the male specimen in the Fall Collection labeled Washington, D. C. (MCZ 25110). A cotype with the same data is in the U. S. National Museum (USNM 4236).

MATERIAL EXAMINED: Lectotype, cotype, and one specimen.

KNOWN DISTRIBUTION:

UNITED STATES: *District of Columbia. Tennessee:* East Ridge, Chapin Sanctuary, May 8, 1952, C. Peck (CNC).

REMARKS: The mucro of the second pair of tibiae is similar to that of *A. innocens*, new species, from Mexico.

Apion (Trichapion) oriotes, new species

FIGURE 6,*e*

DESCRIPTION: Length, 1.75 to 2.37 mm.; width, 0.75 to 1.12 mm Moderately robust. Black, not aeneous; pubescence conspicuous unicolorous, white, fine, somewhat coarser laterally and ventrally denser on mesothorax and metathorax. Male beak as long as head and prothorax combined, one-half longer than prothorax, slightly, evenly curved; apical one-third nearly cylindrical, in dorsal view attenuate from moderately expanded antennal insertion to near apical third; basal two-thirds dull, alutaceous, punctured, pubescent, apical third shining, subimpunctate, glabrous. Female beak one-third longer than head and prothorax combined, about twice as long as prothorax, moderately, evenly curved; apical half nearly cylindrical, in dorsal view attenuate in front of antennal insertion; dull, alutaceous, basal half pubescent, more strongly punctured, apical half shallowly, sparsely punctured. Antennae of male inserted at basal sixth of beak at distance from eye slightly less than width of frons, of female at basal fifth at distance from eye slightly greater than width of frons; first segment of male equals next two, of female next three; second segment shorter than next two; club 0.21 by 0.08 mm. Eyes prominent; frons wider than dorsal tip of beak, with slight median furrow and three irregular lateral rows of fine punctures. Prothorax at base one-third wider than long, middle narrower than base, apex about two-thirds as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, moderately deep, interspaces generally narrower than diameter of punctures, alutaceous; basal fovea moderately deep, about one-third length of prothorax. Elytra at humeri one-third wider than prothorax at base, three times as long as prothorax, length to width as 12:8.5; intervals twice as wide as striae, nearly flat, with two rows of fine punctures, surface rather dull, with fine transverse rugae; striae moderately deep, fine. Scutellum triangular, 0.09 by 0.06 mm., with slight median furrow. Front femora 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, nearly simple mucrones, tibia 1 with inner anterior face bearing a flattened, polished, striate area extending two-thirds of its length.

TYPES: Holotype male (USNM 63417), Silver City, N. Mex., Sept. 25, 1899, Metcalfe, in seeds of *Phaseolus retusa*. Allotype female (USNM), same data as holotype. Sixty paratypes: 25, same

data as holotype (USNM); 4, Chiricahua Mts., Ariz., Hubbard and Schwarz (USNM); 1, Fort Grant, Ariz. (USNM); 1, Huachuca Mts., Ariz. (USNM); 9, Arizona (USNM); 20, Sunnyside Canyon, Huachuca Mts., Ariz., July 9, 1940, D. E. Hardy (UK).

Remarks: The host plant of this species is evidently *Phaseolus retusa*.

***Apion (Trichapion) parcum*, new species**

Figure 7,*a–c*

Description: Length, 1.44 to 1.75 mm.; width, 0.68 to 0.87 mm. Moderately robust. Black, elytra somewhat aeneous; pubescence on dorsal surface yellowish, fine, sparse, somewhat coarser and white at base of interval 3, laterally and ventrally white, slightly coarser there, not noticeably denser than on dorsal surface. Male beak slightly shorter than head and prothorax combined, one half longer than prothorax, moderately, evenly curved; in lateral view apical half nearly parallel-sided; dorsal view with moderate lateral expansion over antennal insertion, attenuate to beyond middle, slightly compressed, then expanding slightly, apical fourth parallel-sided; basal half dull, alutaceous, sparsely pubescent, sparsely punctured, with slight furrow above antennal insertion, apical half shining, glabrous, very sparsely punctured. Female beak nearly one-half longer than head and prothorax combined, twice as long as prothorax; moderately, evenly curved; nearly cylindrical throughout, slightly expanded laterally at antennal insertion, dull, alutaceous, with a row of punctures above antennal insertion, with fine, sparse scales in front of antennal insertion. Antennae inserted at basal fifth of beak at distance from eye slightly less than width of frons of male, of female inserted at basal sixth of beak at distance from eye equal to width of frons; first segment of male equals next two, of female equals next three; second segment of male shorter than next two, of female equal to next two; club 0.15 by 0.06 mm. Eyes moderately prominent; frons wider than dorsal tip of beak, with slight median furrow and two irregular lateral rows of fine punctures. Prothorax at base one-fourth wider than long, middle narrower than base, apex five-sevenths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounding to constricted apex; in profile dorsal surface nearly flat; punctation 0.02 to 0.03 mm. in diameter, moderately deep, interspaces generally narrower than diameter of punctures, alutaceous; basal fovea moderately deep, short. Elytra at humeri one-third wider than prothorax at base, 2.75 times as long as prothorax, length to width as 15 : 11; intervals nearly flat, somewhat convex toward base, in part with two rows of fine punctures bearing scales, smooth, transverse rugae fine, sparse, not conspicuous; striae fine, moderately deep.

Scutellum triangular, 0.06 by 0.04 mm., with slight median furrow. Front femora 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with slender, moderately long, nearly simple mucrones; tibia 1 with smooth, polished, striate area along five-eighths of its length, anterior margin of front tibia somewhat convex.

TYPES: Holotype male (USNM 63418), near Huauchinango, Puebla, Mexico, June 1954, D. G. Kissinger. Allotype female (USNM), same data as holotype. Paratypes (405): 100, same data as holotype (USNM); 287, same data as holotype (DGK); 2, 30 miles southeast of Mexico City, in México, July 1954, D. G. Kissinger (DGK); 7, Tacuba, México, on bean, H. F. Wickham (USNM); 2, Tlalpam, México, July 14, 1923, on bean, E. G. Smyth (USNM); 3, Atzcapotzalco, México, Aug. 17, 1921, on bean, H. F. Wickham (USNM); 1, Mexico City, Distrito Federal, June 12, 1922, E. G. Smyth (USNM).

REMARKS: This is *Apion* sp. No. 3 of the series determined by H. C. Fall referred to by Wickham (1922).

This species was abundant on the foliage of pine and a scrubby oak near Huauchinango, Puebla, Mexico, in June, at an altitude of about 5,000 feet.

Apion (*Trichapion*) *sayi* Gyllenhal

FIGURE 6,*k*

Apion sayi Gyllenhal, *in* Schoenherr, Genera et species curculionidum, vol. 1, p. 252, 1833.

Apion fraternum Smith, Trans. Amer. Ent. Soc. vol. 11, p. 60, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 147, 1898.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957. New synonymy.

Many references in the literature to *Apion griseum* Smith actually should refer to this species. These will be mentioned below in the discussion of the biology of this species.

DESCRIPTION: Length, 1.88 to 2.44 mm.; width, 0.94 to 1.25 mm.

Moderately robust. Black, elytra with more or less aeneous luster; pubescence white, fine, evident, coarser and more apparent on sides of prothorax, mesothorax, and metathorax. Male beak shorter than head and prothorax combined, one-third longer than prothorax, moderately, evenly curved; in lateral view stout and parallel at base, attenuate to apical third, thence parallel-sided to apex; in dorsal view stout and parallel at base, not expanded laterally at antennal insertion, attenuate to apical third, slightly expanded toward tip; punctured and pubescent in basal two-thirds, apical third glabrous, smooth, shining. Female beak generally longer than head and prothorax combined, ranges from one-half to two-thirds longer than prothorax, moderately strongly, evenly curved; in lateral view apical half nearly

parallel-sided; in dorsal view stout and parallel at base, attenuate to apical third, distinctly expanded to tip; dull and alutaceous throughout, basal half punctured, more or less sparsely pubescent, apical third smoother, more shining. Antennae inserted at distance from eye less than width of frons, of male at basal fifth of beak, of female at basal seventh; first segment equals next two, second segment shorter than next two; club of male 0.18 by 0.09 mm.; of female 0.20 by 0.08 mm. Eyes prominent; frons much wider than dorsal tip of beak, with shallow median furrow and two lateral rows of punctures. Prothorax at base one-fourth wider than long, middle narrower than base, apex ranges from 0.67 to 0.70 as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to strongly constricted apex; in profile dorsal surface slightly arcuate; punctation moderately deep, 0.03 mm. in diameter, interspaces about one-half diameter of punctures; basal fovea moderately deep, short. Elytra at humeri two-fifths wider than prothorax at base, 2.8 times as long as prothorax, length to width ranges from 10 : 7 to 11 : 8.5; intervals nearly flat, twice as wide as striae, rather smooth and polished, with two rows of fine punctures; striae moderately deep, fine. Scutellum triangular, 0.08 by 0.06 mm. Front femora about 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with small, simple mucrones, tibia 1 slightly flattened for about one-third its length on anterior inner surface, area devoid of scales and at most slightly striate.

Types: Kissinger (1957) designated as lectotype of *A. fraternum* the female specimen (USNM 1252) labeled Columbus, Tex. Cotypes (MCZ 375) are in the J. L. LeConte Collection with the same data.

Material examined: Lectotype of *A. fraternum;* type of *A. sayi* in Riksmuseum labeled "male, *Ap. rostrum* Say, Am. bor. Say; Typus"; the "allotype" of *A. sayi*, which is also a male labeled "female, *Ap. rostrum*?, Say, N. Carolina, Harris; Allotypus"; and more than 500 specimens.

Known distribution:

United States: *Alabama:* Chambers Co., Langdale, H. H. Smith (USNM). *Arkansas:* Dardanelle, Apr. 8, 1905, on wheat, G. I. Reeves, Webster No. 2907 (USNM); Fayetteville, Aug. 16, 1901 (USNM). District of Columbia, J. B. Smith Collection, cotype of *A. griseum* (USNM). *Florida:* Chittenden Collection (USNM). *Illinois:* Many records throughout the State. *Indiana:* Tippecanoe Co., July 4, 1952, N. M. Downie (DGK). *Iowa:* Independence, May 15, H. F. Wickham (USNM); Iowa City, May 19, 1917, L. L. Buchanan (USNM); Lake Okobija, July 1916, L. L. Buchanan (USNM). *Kansas:* Coffeyville, June 22, 1939, L. W. Hepnor (UK); Douglas Co., 900 ft., F. H. Snow (UK); Hutchinson, May 2, 1948, R. H. Beamer (UK); Lawrence, June, twilight and night, J. S. Tucker (USNM); Reno Co., Aug. 13–20, 1917 (UK); Sedgwick Co.,

1,291 ft., R. H. Beamer (UK); Topeka, Popenoe (USNM). *Kentucky:* Fulton, G. I. Reeves (USNM). *Louisiana:* Shreveport, Mar. 25, 1908, R. A. Cushman (USNM). *Maryland:* Beltsville, June 6, 1920, L. L. Buchanan (USNM); Dorchester Co., near Lloyds, July 10, 1907, H. S. Barber (USNM); Glen Echo, summer 1922, J. C. Bridwell (USNM); southern Anne Arundel Co., October 1931, J. C. Bridwell, ex *Strophostyles helvola* seeds (USNM). *Missouri:* Kansas City, June 16, 1920, Warwick Benedict (UK). *Nebraska:* Aurora, Hamilton Co., June 21, 1953, B. D. Valentine, roadside sweeping (BDV); Lincoln Co., Brady, June 21, 1953, B. D. Valentine, on *Helianthus* (BDV); Grand Island, June 21, 1953, B. D. Valentine, sweeping *Helianthus* (BDV). *New Jersey:* Many records throughout the State. *New York:* Oakwood, Sept. 8, 1944, Tuthill and Mills, ex *Strophostyles helvola* seeds (USNM). *Ohio:* Athens, May 13, 1935, W. Stehr (ELS); Hocking Co., May 27, 1950, N. J. and E. L. Sleeper (ELS). *Oklahoma:* Harrah, May 23, 1916, W. D. Pierce, on oak (USNM); Lake Texoma, July 15, 1954, University of Kansas expedition (UK); Randlett, May 25, 1916, W. D. Pierce, on *Hicoria* (USNM). *Pennsylvania:* Angora, June 15, G. M. Greene (USNM); Glenolden, June 16, G. M. Greene (USNM). *South Carolina:* Isle of Palms, Sept. 14, 1944, in seed pods of *Strophostyles umbellata* (USNM). *Tennessee:* Memphis, May 20, 1916, on *Ostrya*, W. D. Pierce (USNM). *Texas:* Columbus, Schwarz collector (USNM). *Wyoming:* 8 miles east of Cheyenne, 6,100 ft., June 22, 1953, B. D. Valentine, sweeping roadside (BDV).

Remarks: There are several series in the U. S. National Museum reared from the seed pods of *Strophostyles helvola;* also two small series from *Strophostyles umbellata.* All *Apion* material seen from the United States that was reared from seed pods of beans of the genus *Strophostyles* belonged to this species.

Tuttle (1954) cites *A. griseum* Smith in association with *Strophostyles leiosperma*, in Illinois, but this should probably be *A. sayi.* None of Tuttle's material was seen. Several hundred specimens of *A. sayi* were seen from Illinois; no specimens of *A. griseum* were seen from that State. Chittenden (1908) cites *Strophostyles pauciflora* as a host of *A. griseum* but this certainly refers to *A. sayi.* Material has been seen from Nebraska and Wyoming that was collected while sweeping *Helianthus* sp.

The name *A. sayi* has erroneously been considered a synonym of *A. rostrum* Say and is listed as such in the Leng catalog. I have not been able to locate the authority for this synonymy but it is probably LeConte (1876). I have been privileged to see the type of this species through the kindness of Dr. René Malaise.

Apion spinitarse Group

This group is based on the unusual secondary male sexual modifications of the front legs of its members. Generally only the middle tibia of the male is mucronate. The geographical range of the species is very incompletely known. It is thought that most of the species

overlap in range or occur in the same area. The group ranges from central Mexico into Brazil.

The male of *Apion sancti-felicis* Sharp has the inner margin of the first segment of tarsus 3 produced into a short spine; the front legs are simple. The front tarsi of the males of two species, *A. caenum*, new species, and *A. innocuum*, new species, are not modified. The front femur of the former is distinctly swollen. The front legs of the latter are not modified; the species is grouped here because its general facies are similar to those of the other species and because only tibia 2 is mucronate.

The male of *A. mirandum*, new species, is distinct because the first segment of tarsus 1 is dilated and greatly elongate being about four times as long as wide. The male of *A. mirificum*, new species, has the inner margin of the first segment of tarsus 1 produced into a large, rounded lobe.

The first segment of tarsus 1 of the males of the following species has the inner margin produced into a spine: *A. brachycephalum* Wagner, *A. calcaratipes* Sharp, *A. enoplus*, new species, *A. innocens*, new species, *A. latitator*, new species, and *A. spinitarse* Wagner.

Together with *A. spinitarse*, the males of *A. enoplus* and *A. calcaratipes* have tibia 3 mucronate. The spine on the first segment of tarsus 1 of the latter two species is much smaller and not flat as in *A. spinitarse*. *A. enoplus* is smaller and the elytral intervals are clothed with a single row of uniform scales. *A. calcaratipes* is larger than *A. enoplus* and the elytral intervals are clothed with two rows of scales which vary in coarseness and color along the length of the elytra.

The males of the remaining three species have tibia 3 unarmed and the spine on the first segment of tarsus 1 much smaller than *A. spinitarse*. *A. latitator* is distinct with its parallel-sided beak. The beak of *A. innocens* and *A. brachycephalum* is attenuate toward the apical third. The dorsal surface of the beak of *A. innocens* is clothed with scales that are shorter and coarser than those on the dorsal surface of the prothorax. The dorsal surface of the beak of *A. brachycephalum* is clothed with scales similar to those on the dorsal surface of the prothorax.

This group is very closely allied to the *A. griseum* group. The species *A. enoplus* supports this veiw because of its intermediate male characters. One difference is that the frons of this group tends to be comparatively narrower than that of the *A. griseum* group, but it is never narrower than the dorsal tip of the beak. Also the size is smaller, always under 2.0 mm. and the general facies are somewhat more compact.

Apion (Trichapion) brachycephalum Wagner

FIGURE 8,*a*,*b*

Apion (*Trichapion*) *brachycephalum* Wagner, Arch. Naturg. Berlin, vol. 78, p. 109, 1912.

DESCRIPTION: Length, 1.94 mm.

Moderately robust. Black, with slight brassy luster, antennae piceous; pubescence white, on dorsal surface of prothorax and elytra very fine and sparse, coarse and dense on sides of mesothorax and metathorax. Male beak stout, shorter than head and prothorax combined, one-fifth longer than prothorax, moderately strongly, evenly curved; in lateral view very slightly attenuate to tip; in dorsal view slightly expanded at antennal insertion, attenuate to apical two-fifths, tip slightly expanded; with dorsal median, narrow, impunctate line extending from base to apical two-fifths, at basal two-fifths dilated into a diamond-shaped ridge thence attenuating to a fine, raised line; slightly shining, laterally with several rows of coarse punctures, tip smoother, pubescent to near tip. Antennae inserted at distance from eye equal to width of frons; first segment equals next two, second segment shorter than next two, club 0.24 by 0.09 mm. Eyes moderately prominent; frons narrow, as wide as dorsal tip of beak, with a shallow, wide, median sulcus, top of frons with several coarse punctures. Prothorax at base one-fourth wider than long, middle narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion rounding to constricted apex; in profile dorsal surface is nearly flat; punctation on dorsal surface moderately deep, 0.03 to 0.04 mm. in diameter; interspaces irregular, narrower than diameter of punctures; basal fovea moderately deep, punctiform. Elytra at humeri one-third wider than prothorax at base, 2.5 times as long as prothorax, length to width as 10 : 7.5; intervals nearly flat, twice as wide as striae, with a single row of fine punctures bearing fine scales; striae deep. Scutellum triangular, 0.12 by 0.06 mm. Front femora three times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with short, blunt mucro; tibia 1 with anterior inside surface bearing polished, nonstriate area; first segment of tarsus 1 with inner margin produced into a short spine.

MATERIAL EXAMINED: One male determined as a female by Hans Wagner.

Known distribution:

BRITISH HONDURAS: Belize and Blancaneaux (BMNH).
GUATEMALA: Zapote (BMNH).

REMARKS: There is some question regarding the correctness of Wagner's determination of the specimen seen. The species was

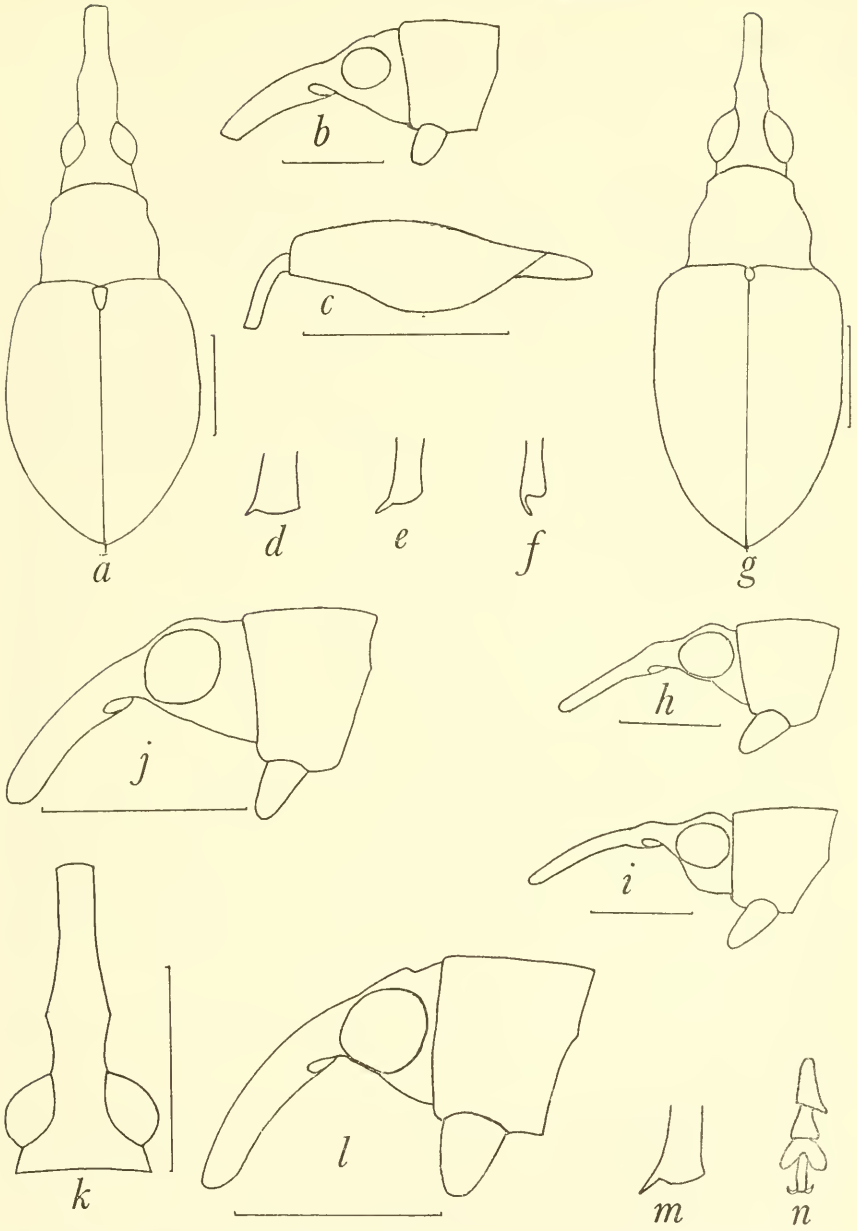

FIGURE 8.—*a*, *b*, *Apion brachycephalum* Wagner: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of male. *c*, *d*, *A. caenum*, new species: *c*, front femur of male; *d*, mucro of tibia 2 of male. *e*, *f*, *j*, *A. enoplus*, new species: *e*, mucro of tibia 3 of male; *f*, mucro of tibia 2 of male; *j*, lateral view of head and prothorax of male. *g–i*, *A. calcaratipes* Sharp: *g*, entire dorsal view of male; *h*, lateral view of head and prothorax of male; *i*, lateral view of head and prothorax of female. *k–n*, *A. innocens*, new species: *k*, dorsal view of head of male; *l*, lateral view of head and prothorax of male; *m*, mucro of tibia 2 of male; *n*, tarsus 1 of male. Line equals 0.50 mm.

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described as having tibiae 2 and 3 mucronate but the specimen seen did not appear to have tibia 3 mucronate.

Apion (Trichapion) caenum, new species

FIGURE 8,*c,d*

DESCRIPTION: Length, 1.92 mm.; width, 0.92 mm.

Moderately robust. Black, antennae piceous, especially at base; pubescence white, on dorsal surface fine, moderately sparse, under eye, on sides of prothorax, mesothorax, and metathorax coarse, somewhat denser. Beak of male shorter than head and prothorax combined, slightly less than one-third longer than prothorax, moderately, evenly curved; in lateral view attenuate from antennal insertion to middle, apical half nearly parallel, in dorsal view slightly expanded laterally at antennal insertion, attenuate to middle, slightly expanded at tip; rather dull, alutaceous, scantily pubescent and sparsely, shallowly punctate in basal two-thirds. Antennae inserted at basal fourth of beak, at distance from eye equal to width of frons; first segment equals next two, second segment equals next two, club 0.22 by 0.08 mm. Eyes prominent; frons slightly wider than dorsal tip of beak. Prothorax at base one-sixth wider than long, middle narrower than base, apex five-sevenths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation moderately deep, 0.03 mm. in diameter, interspaces slightly less than diameter of punctures; basal fovea shallow, punctiform. Elytra at base three-sevenths wider than prothorax at base, 2.6 times as long as prothorax, length to width as 14 : 11.5; intervals nearly flat, equal to two striae, generally with one row of scales, in part with two rows; striae deep, fine. Scutellum elongate, triangular, 0.10 by 0.07 mm. Front femora 2.9 times as long as wide. Claws armed with acute basal tooth.

Special male characters: Tibia 2 armed with fine mucrones, front femora swollen.

Female is unknown.

TYPES: Holotype male (USNM 63421), 20 miles east of Morelia, Michoacán, Mexico, Mar. 7, 1953, D. G. Kissinger. One male paratype, same data as holotype.

REMARKS: This species was taken on oak leaves.

Apion (Trichapion) calcaratipes Sharp

FIGURE 8,*g–i*

Apion calcaratipes Sharp, Biologia Centrali-Americana, Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 67.

DESCRIPTION: Length, 2.06 mm.

Moderately robust. Black; tibiae, tarsi, and antennae dark reddish yellow; pubescence conspicuous, elytral suture in basal third behind scutellum clothed with broad, dense, pearly scales, these finer at base of intervals; circular area from humeri to apical third clothed with fine, yellow scales, giving area darker appearance, remainder of elytra clothed with moderately coarse, sparse, white scales; head and base of beak with sparse, coarse, pearly scales. Male beak one-fourth longer than prothorax, nearly straight; in dorsal view moderately expanded at antennal insertion, attenuate strongly to middle, thence cylindrical to tip, in lateral view expanded ventrally at antennal insertion, attenuate to middle; dull, punctured and scaly in basal half, apical half bare, polished, and subimpunctate. Female beak as long as head and prothorax combined, one-half longer than prothorax, slightly curved; apical two-thirds cylindrical, in dorsal view strongly dilated at antennal insertion, in lateral view basal sixth stout, slightly humped dorsally at antennal insertion; basal sixth dull, punctured, and scaly, remainder bare, polished and subimpunctate. Antennae inserted at distance from eye slightly less than width of frons, of male at basal fifth, of female at basal sixth; first segment equals next two; second segment nearly equals next two; club 0.21 by 0.08 mm. Eyes large, prominent; frons wide, with two irregular rows of punctures separated by a wide area with an indistinct median sulcus, base of frons with moderate punctures. Prothorax at base one-third wider than long, middle narrower than base, apex two-thirds as wide as base; sides beyond basal lateral expansion slightly converging to middle, then rounding to constricted apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, deep, interspaces generally one-half as wide as punctures; basal fovea short, shallow, wide. Elytra at humeri one-third wider than prothorax at base; 2.5 times as long as prothorax, length to width as 5:4; intervals convex, twice as wide as striae, with two or three irregular rows of fine punctures bearing scales; striae deep, with a row of scales similar to those on adjacent portion of interval. Scutellum triangular, 0.06 by 0.06 mm., with slight median sulcus in basal half. Front femora 3.3 times as long as wide. Claws with broad basal tooth.

Special male characters: Tibiae 2 and 3 armed with small, curved mucrones which are slightly angulate ventrally at middle; tibia 1 with inner anterior surface with a flattened, striate area; tarsus 1 with outer apical angle of first segment produced into a short, blunt spine.

Material examined: Male and female determined by Sharp.

Type locality: Panajachel, Guatemala.

Apion (Trichapion) enoplus, new species

FIGURE 8,*e, f, j*

DESCRIPTION: Length, 1.42 mm.; width, 0.71 mm.

Robust. Black; pubescence on dorsal surface white, moderately conspicuous, coarser and denser on sides of prothorax, mesothorax, and metathorax. Male beak shorter than head and prothorax combined, three-sevenths longer than prothorax; slightly, evenly curved; apical third nearly cylindrical; in dorsal view moderately expanded laterally over antennal insertion, attenuate to apical third, slightly compressed in front of apical third; basal two-thirds dull, alutaceous, moderately punctured, sparsely pubescent; apical third shining, finely punctured. Antennae inserted at basal fourth of beak at distance from eye about equal to width of frons; first segment and second segment each shorter than next two segments; club 0.12 by 0.05 mm. Eyes prominent; frons wider than dorsal tip of beak. Prothorax at base three-eighths wider than long, middle slightly narrower than base, apex eight-elevenths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation moderately shallow, 0.03 mm. in diameter, interspaces about equal to diameter of punctures; basal fovea shallow, broadly punctiform. Elytra at humeri about one-half wider than prothorax at base; 2.8 times as wide as prothorax; length to width as 11:8.5; intervals nearly flat, twice as wide as striae, generally with one row of scales; striae moderately deep, fine. Scutellum triangular, 0.06 by 0.05 mm., with slight median furrow. Front femora 3.7 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, slender, curved mucrones; front tibiae with flattened, finely striate area extending two-thirds its length on inner anterior face; first segment of fore tarsi with outer apical angle produced into a short spine.

Female is not known.

TYPES: Holotype male (CAS), Jalapa, Veracruz, Mexico, July, Barrett collector, A. Fenyes Collection. One male paratype (DGK), near Huauchinango, Puebla, Mexico, June 1954, D. G. Kissinger.

REMARKS: The specimen from Huauchinango, Puebla, was taken while beating in a pine and scrubby oak forest at about 5,000 feet elevation.

Apion (Trichapion) innocens, new species

FIGURE 8,*k–n*

DESCRIPTION: Length, 1.59 mm.; width, 0.79 mm.

Moderately robust. Black; antennae, tibiae in part, and tarsi piceous; pubescence dorsally very fine, long, yellowish, moderately

sparse, white and slightly coarser on sides and apex of elytra, on sides of prothorax, mesothorax, and metathorax still coarser and somewhat more conspicuous. Beak shorter than head and prothorax combined, one-third longer than prothorax, moderately, evenly curved; in lateral view attenuate from antennal insertion, apical third nearly parallel-sided, in dorsal view attenuate from antennal insertion to apical third, there slightly compressed then expanded, apical third nearly parallel; basal three-fourths pubescent, basal two-thirds dull, alutaceous, punctured, apical third shining, sparsely punctured. Antennae inserted at basal fifth of beak at distance from eye about equal to width of frons; first segment and second segment each equal to next two segments combined, club 0.20 by 0.07 mm. Eyes prominent; frons slightly wider than dorsal tip of beak. Prothorax at base one-third wider than long, middle narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation 0.03 mm. in diameter, moderately deep, interspaces narrower than diameter of punctures; basal fovea shallow, punctiform. Elytra at humeri one-third wider than prothorax at base, 2.65 times as long as prothorax, length to width as 4:3; intervals nearly flat, twice as wide as striae, generally with two rows of fine scales; striae deep, fine. Scutellum elongate-triangular, 0.08 by 0.05 mm. Front femora 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with long, thin, curved mucro; first segment of fore tarsi with outer apical angle produced into a short spine.

Female is not known.

Types: Holotype male (USNM 63422), Huauchinango, Puebla, Mexico, June 1954, D. G. Kissinger. Four male paratypes: 3 (BMNH, CAS, DGK) with same data as holotype and 1 (DGK) from El Salto, San Luis Potosí, Mexico, Jan. 22, 1953, D. G. Kissinger.

Remarks: Specimens from Huauchinango, Puebla, were taken while beating in a scrub oak and pine forest at about 5,000 feet elevation.

***Apion* (*Trichapion*) *innocuum*, new species**

Figure 9,*d*,*f*,*g*

Description: Length, 1.56 mm.; width, 0.77 mm.

Moderately robust. Black; base of antennae yellow; pubescence white, on dorsal surface of prothorax and elytra fine, moderately sparse, on head, basal two-thirds of beak, sides of prothorax, mesothorax, and metathorax very coarse, more conspicuous. Beak shorter than head and prothorax combined, one-sixth longer than pro-

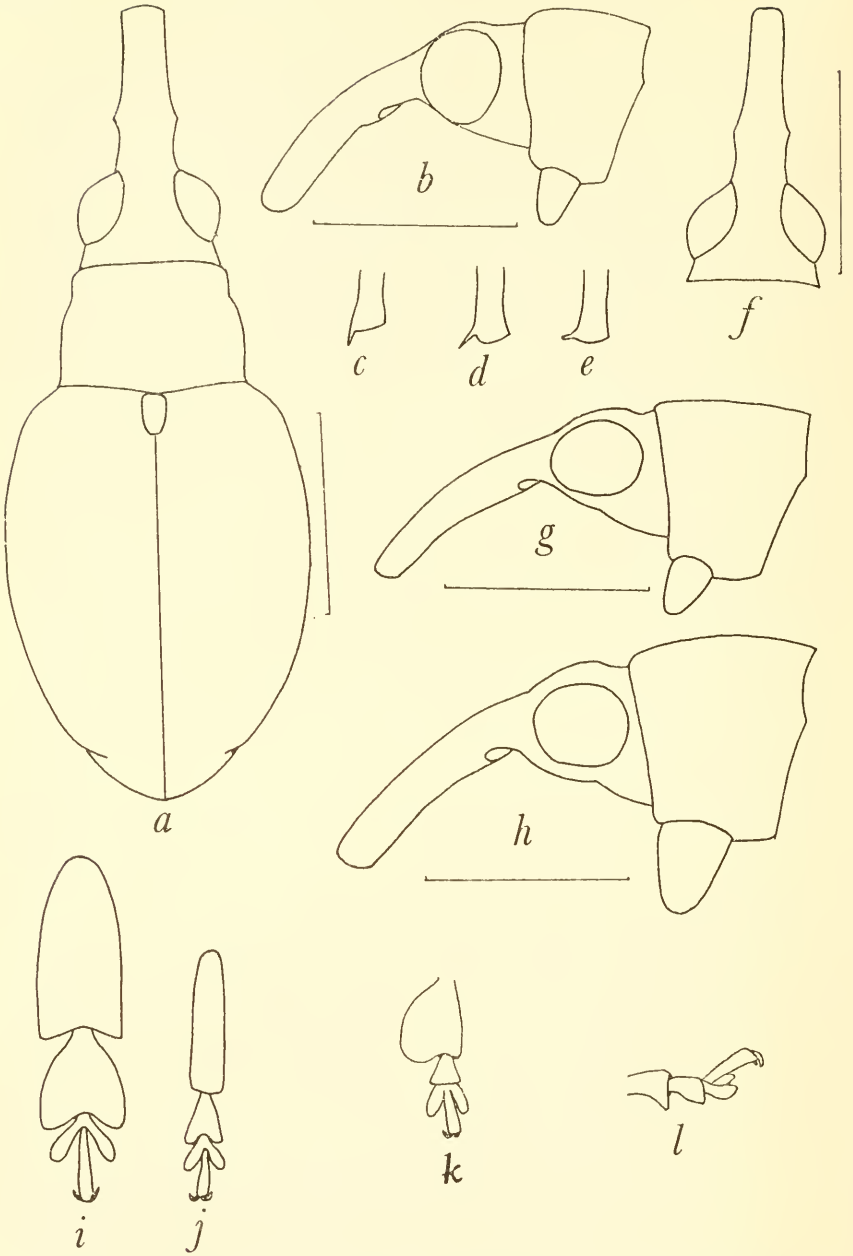

FIGURE 9.—*a–c*, *Apion latitator*, new species: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of male; *c*, mucro of tibia 2 of male. *d*, *f*, *g*, *A. innocuum*, new species: *d*, mucro of tibia 2 of male; *f*, dorsal view of head of male; *g*, lateral view of head and prothorax of male. *e*, *h–j*, *A. mirandum*, new species: *e*, mucro of tibia 2 of male; *h*, lateral view of head and prothorax of male; *i*, tarsus 1 of male of variant form; *j*, tarsus 1 of male of typical form. *k*, *A. mirificum*, new species, tarsus 1 of male. *l*, *A. sanctifelicis* Sharp, tarsus 3 of male. Line equals 0.50 mm.

thorax, slightly curved; in lateral view apical third nearly parallel, in dorsal view slightly expanded laterally at antennal insertion, attenuate to slightly past middle, beak not compressed or expanded toward tip; basal two-thirds punctured and densely covered with squamose pubescence, apical third shining, glabrous, nearly impunctate. Antennae inserted at basal fifth of beak, at distance from eye equal to width of frons; first segment equal in length to next two, second segment shorter than next two, club 0.15 by 0.07 mm. Eyes prominent; frons wider than dorsal tip of beak, with slight median furrow, and two irregular, lateral rows of fine punctures. Prothorax at base one-third wider than long, middle narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, moderately deep, interspaces somewhat narrower than diameter of punctures; basal fovea shallow, punctiform. Elytra at humeri one-third wider than base of prothorax, 2.5 times as long as prothorax, length to width as 15:12.5; intervals twice as wide as striae, somewhat convex, with one row of fine punctures bearing fine scales; striae deep, fine. Scutellum elongate-triangular, 0.08 by 0.06 mm., with obscure median furrow. Front femora 3.75 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with moderately long, slender mucro.

Types: Holotype male (CAS), Cuernavaca, Morelos, Mexico, June, A. Fenyes Collection. One male paratype (DGK), near Antiguo Morelos (in Tamaulipas), San Luis Potosí, Mexico, July 1954, D. G. Kissinger.

***Apion (Trichapion) latitator*, new species**

Figure 9,*a–c*

Description: Described from a unique specimen.

Length, 1.50 mm.; width, 0.75 mm.

Moderately robust. Specimen teneral, antennae and apices of tibiae and tarsi paler; pubescence white, fine, inconspicuous on dorsal surface of elytra, somewhat longer and very sparse on dorsal surface of prothorax, somewhat denser on sides of mesothorax and metepisternum. Beak slightly shorter than head and prothorax combined, three-fifths longer than prothorax, moderately, evenly curved; apical half nearly cylindrical, in dorsal view not attenuate beyond slight lateral expansion over antennal insertion; basal two-thirds dull, very sparsely pubescent, finely, shallowly punctured in rows, apical third more shining. Antennae inserted at basal fifth of beak, at distance from eye about equal to width of frons; first segment equal to next

two; second shorter than next two; club 0.18 by 0.08 mm. Eyes prominent; frons slightly wider than dorsal tip of beak. Prothorax at base two-fifths wider than long, middle narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion slightly expanded to middle, rounded to apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, moderately shallow, interspaces less than diameter of punctures; basal fovea lacking. Elytra at humeri one-third wider than prothorax at base, nearly three times as long as prothorax, length to width as 4 : 3; intervals moderately convex, twice as wide as striae, with one row of minute scales; striae moderately deep, fine. Scutellum triangular, 0.05 by 0.05 mm., nearly smooth. Front femora 3.6 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with moderately short, subangulate mucro projecting in line with long axis of tibia, first segment of fore tarsus with outer apical angle produced into a spine.

Female is not known.

HOLOTYPE: Male (USNM 63423), on banana leaf from Mexico, intercepted at Brownsville, Tex., Feb. 22, 1938, No. 38–2705.

***Apion* (*Trichapion*) *mirandum*, new species**

FIGURE 9,*e*,*h*–*j*

DESCRIPTION: Length, 1.75 mm.; width, 0.84 mm.

Moderately robust. Black; antennae yellow, apices of tibiae and tarsi dark yellow; pubescence white, on dorsal surface fine, moderately sparse, on sides of prothorax, mesothorax and metathorax, under eyes, and base of beak denser, coarser, conspicuous. Beak of male shorter than head and prothorax combined, one-fourth longer than prothorax, slightly curved; in dorsal view slightly expanded laterally at antennal insertion, strongly attenuate to apical two-thirds, apical third strongly expanded; basal two-thirds dull, alutaceous, punctured, pubescent, apical third shining, sparsely punctured. Antennae inserted at basal fourth of beak, at distance from eye equal to width of frons; first segment nearly equal to next three, second segment equal to next two, club 0.21 by 0.08 mm. Eyes prominent; frons slightly wider than dorsal tip of beak. Prothorax at base one-fifth wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation shallow, 0.03 mm. in diameter, interspaces slightly less than diameter of punctures; basal fovea shallow, punctiform. Elytra at humeri one-half wider than prothorax at base, 2.6 times as long as prothorax, length to width as 13 : 10; intervals nearly flat, equal in width to two striae, with one row of scales;

striae moderately deep, fine. Scutellum elongate-triangular, 0.08 by 0.04 mm. Front femora 4.5 times as long as wide, claws with acute basal tooth.

Special male characters: Tibia 2 armed with fine mucro; first segment of fore tarsus elongate, nearly four times as long as wide, ventral surface clothed with long cilia.

Female is not known.

Types: Holotype, male (USNM 63424), 20 miles east of Morelia, Michoacán, Mexico, Mar. 7, 1953, D. G. Kissinger. Five male paratypes: 4 (BMNH, CAS, AMNH, DGK) with same data as holotype and 1 (DGK) from near Huauchinango, Puebla, Mexico, June 1954, D. G. Kissinger.

Remarks: Material from 20 miles east of Morelia, Michoacán, was taken on oak leaves. The specimen from Huauchinango, Puebla, was taken while beating in a scrubby oak and pine forest at about 5,000 feet elevation.

A specimen taken with the type series from Morelia shows (fig. 9,*i*) even stronger development of the male secondary sexual modification of the fore tarsus. The first segment is slightly longer and about twice as broad as that of the typical specimens and the second segment is much longer and broader. This specimen is thought to be an individual variant and is not included in the paratype series.

Apion (*Trichapion*) *mirificum*, new species

Figure 9,*k*

Description: Length, 2.00 mm.; width, 0.87 mm.

Moderately robust. Black; pubescence white, on dorsal surface fine, inconspicuous, under eyes, on sides of prothorax, mesothorax and metathorax coarser and more conspicuous. Beak of male shorter than head and prothorax combined, one-seventh longer than prothorax, slightly curved; in lateral view attenuate from antennal insertion to apex; in dorsal view apical half nearly parallel-sided; with sparse, fine punctures and scales in basal two-thirds. Antennae inserted at basal fourth, at distance from eyes equal to width of frons; first segment shorter than next two, second segment slightly longer than third; club lacking on specimen. Eyes prominent; frons wider than dorsal tip of beak, with rather deep, narrow median sulcus and one lateral row of subconfluent punctures. Prothorax at base one-fourth wider than long, middle slightly wider than base, apex three-fourths as wide as base; sides beyond acute basal lateral expansion rather strongly diverging to middle, rather strongly rounded from base to constricted apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, moderately deep, interspaces narrower than punctures; basal fovea moderately deep, wider at

base, extends one-third length of prothorax. Elytra at humeri one-third wider than prothorax at base, 2.6 times as long as prothorax, length to width as 10 : 7; intervals flat, more convex toward base, twice as wide as striae, with a single row of punctures; striae fine, deep. Scutellum 0.06 by 0.06 mm., with slight median furrow. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with long, fine, curved mucro; tarsus 1 with inner margin of first segment produced into a flat lobe projecting anteriorly slightly beyond tip of segment; tibia 1 a little stouter than other tibiae.

HOLOTYPE: Male (USNM 63428), Coyame, on Lago de Catemaco, Veracruz, Mexico, June 1954, D. G. Kissinger.

Apion (*Trichapion*) *sancti-felicis* Sharp

FIGURE 9,*l*

Apion sancti-felicis Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 77, 1890.

DESCRIPTION: Length; 1.50 to 1.83 mm.

Robust. Black; base of antennae and fore femora and tibiae reddish brown; middle and hind femora and tibiae piceous; pubescence on dorsal surface of prothorax and elytra fine, yellowish, very sparse; white, coarser and denser laterally. Beak of male much shorter than head and prothorax combined, slightly longer than prothorax, slightly curved; in side view attenuate to apex, ventral margin nearly straight; in dorsal view slightly expanded at basal fourth, apical two-thirds nearly parallel-sided; moderately shining, with fine punctures arranged in rows, becoming sulciform laterally; basal three-fourths sparsely pubescent. Beak of female as long as head and prothorax combined, one-half longer than prothorax, moderately, evenly curved; in side view attenuating to apex; in dorsal view nearly parallel-sided to apex, antennal insertion minutely prominent; with sparse, fine punctures throughout, moderately shining. Antennae inserted at basal fourth of beak at distance from eye slightly greater than width of frons; first segment equals next three, second slightly shorter than next two; club 0.21 by 0.07 mm. Eyes prominent; frons narrow, not as wide as dorsal tip of beak, with one lateral row of moderately coarse punctures and a moderately wide, flat median interval. Prothorax at base one-third wider than long, middle slightly narrower than base, apex two-thirds to three-sevenths as wide as base; sides beyond basal lateral expansion slightly converging to middle, rounding to constricted apex; in profile dorsal surface slightly arcuate, apical margin slightly raised; punctation 0.03 mm. in diameter, moderately deep, interspaces narrower than diameter of punctures; basal fovea short, moderately deep, narrow. Elytra at humeri one-third to two-fifths wider than pro-

thorax at base, from 2.25 to 2.50 times as long as prothorax, length to width as 10 : 9; intervals nearly flat, twice as wide as striae, with one occasionally irregular row of fine punctures with fine scales, interval 2 with two rows of punctures, smooth, without transverse rugae; striae moderately deep, coarse. Scutellum rounded, 0.06 by 0.06 mm., with broad, shallow median sulcus. Front femora 3.8 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with short mucro, first segment of tarsus 3 with inner apical margin produced into a short spine.

Material examined: 50 specimens including material determined by Sharp.

Known distribution:

Mexico: *Veracruz:* Coyame, Lago de Catemaco, June 1954, D. G. Kissinger; 18 miles north of San Andrés Tuxtla, Feb. 6–12, 1953, and June 1954, D. G. Kissinger.

Panama: "San Feliz."

Apion (*Trichapion*) *spinitarse* Wagner

Apion spinitarse Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 18, 1911.

Description: Length, 1.42 to 1.50 mm.

Moderately robust. Black; base of antennae piceous or yellow; pubescence on dorsal surface of prothorax and elytra fine, white, very sparse, denser and coarser on sides of mesothorax and metathorax; male with ventral surface covered with scales much coarser than those of female. Beak of male moderately stout, strongly attenuate, much shorter than head and prothorax combined, one-third longer than prothorax, moderately curved; moderately expanded at antennal insertion, attenuate in middle third, parallel-sided in apical third, apical third slightly compressed, tip slightly expanded; sparse pubescence in basal two-thirds, punctures slight, sparse, mainly in basal two-thirds, apical region smoother; moderately shining beyond antennal insertion. Beak of female slightly longer than head and prothorax combined, three-fourths longer than prothorax, moderately curved, more strongly deflexed in apical third; in lateral view attenuate beyond antennal insertion to apical third which is nearly parallel-sided; in dorsal view stout at base, slightly expanded over antennal insertion, slightly attenuate to tip; dull, alutaceous throughout, with shallow, very fine punctures; with a few scales behind antennal insertion. Antennae of male inserted at basal fourth of beak at distance from eye slightly greater than width of frons, of female inserted at basal fifth of beak at distance from eye equal to width of frons; first segment of male equals next two, of female somewhat longer than next two; second segment somewhat

longer than third; club 0.17 by 0.05 mm. Eyes prominent; frons of male narrow, equals dorsal tip of beak; of female wide, much wider than dorsal tip of beak, with a moderately wide, flat, median area with at most a very slight sulcus. Prothorax at base one-third wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface slightly arcuate; punctation 0.03 mm. in diameter, moderately deep, interspaces equal to or slightly less than diameter of punctures; basal fovea shallow, broad, short. Elytra at humeri one-third wider than prothorax at base, 2.75 times as long as prothorax, length to width as 11:8; intervals twice as wide as striae, nearly flat to slightly convex, with one row of fine punctures bearing fine scales; striae moderately fine, deep. Scutellum 0.08 by 0.05 mm., elongate-triangular, with slight median depression. Front femora three times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with small, short, thin, curved mucro; tibia 2 armed with larger curved mucro; tibia 1 with anterior inner surface bearing a smooth, extremely finely and closely striate area on about one-half of its length; tarsus 1 with inner posterior margin of the first segment produced into a large, triangular, flat projection.

MATERIAL EXAMINED: Two males and one female determined by Hans Wagner.

KNOWN DISTRIBUTION:

NICARAGUA: Managua (Solari Collection).
BRAZIL: Rio de Janeiro (BMNH).

Apion punctulirostre Group

Three species comprise this distinct group. Two species, *A. brunnicornis* Fall and *A. eccentricum* Fall, occur together in Arizona. *A. punctulirostre* Sharp occurs farther south in the mountains of Mexico and Guatemala.

A. brunnicornis Fall is distinct because of the pale antennae which in the case of the male are inserted slightly behind the middle of the beak. The antennae of the other two species are black and are inserted at about the basal third of the beak. *A. punctulirostre* Sharp is very close to *A. eccentricum* Fall. The principal difference is that the beak of the former, in lateral view, is nearly parallel beyond the antennal insertion to the apex; in the latter species the beak attenuates, in lateral view from the antennal insertion to the apex.

Apion (Trichapion) brunnicornis Fall

FIGURE 10,*a–d*

Apion brunnicornis Fall, Journ. New York Ent. Soc., vol. 26, p. 221, 1918.

DESCRIPTION: Length, 1.6 to 1.9 mm.

Moderately robust. Black; antennae brownish testaceous; pubescence fine, white, sparse, male with pubescence slightly more conspicuous on sides of mesothorax, under side of head and on anterior surface of front coxae, female with pubescence more uniform. Male beak very thick, one-third shorter than head and prothorax combined, strongly deflexed at middle; in lateral view dorsal margin strongly curved downward, apical third thickened ventromedially; in dorsal view not expanded laterally at antennal insertion, strongly compressed in apical third; sparsely, shallowly punctate to tip, pubescent to near tip, tip slightly shining. Female beak slender, equal to head and prothorax in length, very strongly, evenly curved, cylindrical, sparsely, shallowly punctate to near apex, basal two-thirds with sparse pubescence. Antennae inserted at distance from eye equal to twice width of frons, of male inserted slightly behind middle of beak, of female at basal one-third; first segment of male a little longer than next two, of female equal to next three segments; second segment about one-half longer than third, shorter than next two; club 0.20 by 0.08 mm. Eyes prominent; frons moderately wide, with deep, elongate median sulcus, with a row of large, deep punctures next to sulcus and a row of finer, shallower punctures next to eye. Pro-

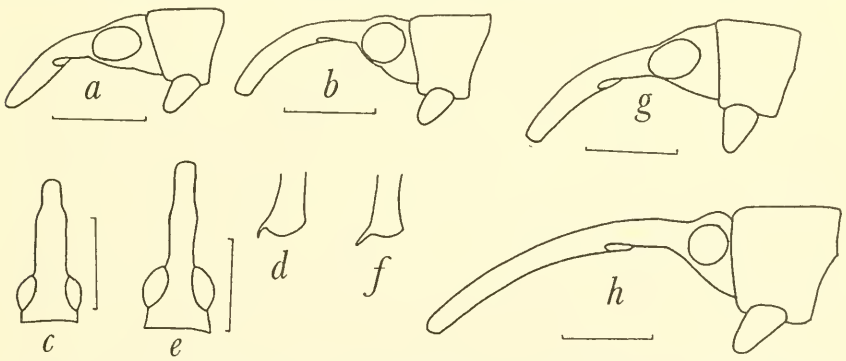

FIGURE 10.—*a–d*, *Apion brunnicornis* Fall: *a*, lateral view of head and prothorax of male; *b*, lateral view of head and prothorax of female; *c*, dorsal view of head of male; *d*, mucro of tibia 2 of male. *e–h*, *A. punctulirostre* Sharp: *e*, dorsal view of head of male; *f*, mucro of tibia 2 of male; *g*, lateral view of head and prothorax of male; *h*, lateral view of head and prothorax of female. Line equals 0.50 mm.

thorax at base slightly to one-fourth wider than long, middle slightly narrower than base, nearly parallel to middle then rounded to constricted apex; in profile dorsal surface nearly flat; punctation 0.03 mm. in diameter, deep, interspaces less than diameter of punctures; basal fovea deep, elongate, extending to middle of prothorax. Elytra at humeri one-third wider than prothorax at base, 2.75 times as long as prothorax, length to width as 10:7.5; intervals flat, twice as wide as striae, not shining, with a single row of fine punctures bearing fine scales; striae deep with a single row of fine scales. Scutellum triangular, 0.07 by 0.05 mm., with a shallow median furrow. Front femora of female 3.5 times as long as wide, of male 2.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 with a fine mucro; femora stouter than those of female, femora 1 and 3 are 2.5 times as long as wide, femur 2 is 2.25 times as long as wide.

MATERIAL EXAMINED: Type, male (MCZ 25078), Chiricahua Mts., Ariz., in Fall Collection, and 25 specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Arizona:* Chiricahua Mts. (MCZ, USNM); Santa Rita Mts., Madera Canyon, June 21, 1953, A. and H. Dietrich (CU).

Apion (*Trichapion*) *eccentricum* Fall

Apion eccentricum Fall, Journ. New York Ent. Soc., vol. 26, p. 220, 1918.

DESCRIPTION: Length, 2.0 to 2.2 mm.

Moderately robust. Black; elytra with faint bluish luster; pubescence white, fine, very sparse, uniform on dorsal surface, denser and coarser on sides of mesothorax, denser on sides of prothorax and metathorax. Male beak slightly shorter than head and prothorax combined, slightly more than one-half longer than prothorax, moderately, evenly curved; in lateral view expanded ventrally at antennal insertion, attenuate to tip; in dorsal view slightly expanded laterally at antennal insertion, attenuating toward apex, apex slightly expanded, sides compressed at apical third; strongly punctate in rows to near apex, punctures bear scales to near apex, apex smooth, bare. Female beak two-fifths longer than head and prothorax combined, twice as long as prothorax, moderately, evenly curved; in lateral view stout in basal third, attenuating to apical third and nearly parallel to tip; in dorsal view stouter at base and nearly parallel-sided, attenuating to beyond middle, slightly compressed before tip; punctures strong, in rows, pubescent in basal two-thirds, apex smoother, bare. Antennae of male inserted at basal third of beak at distance from eye twice as great as width of frons, of female inserted slightly distad of the basal third at distance from eye 2.5 times as great as width of frons; first segment of male equals next three, of female slightly shorter than

next four; second segment slightly longer than third; club 0.24 by 0.09 mm. Eyes moderately prominent; frons slightly wider than dorsal tip of beak, with shallow, broad, median sulcus and one lateral row of coalesced punctures. Prothorax at base one-third wider than long, middle narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion slightly converging to middle, rounded to constricted apex; in profile dorsal surface flat; punctures deep, 0.04 mm. in diameter, interspaces alutaceous, irregular, less than diameter of punctures; basal fovea shallow, extending one-third length of prothorax. Elytra at humeri one-fourth wider than prothorax at base, three times as long as prothorax, length to width as 12 : 8.5; intervals convex, twice as wide as striae, with one or two rows of fine punctures; striae deep. Front femora of male three times as long as wide, of female 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with mucro, all femora swollen.

Material Examined: Type, male (MCZ 25090), Santa Rita Mts., Ariz., in Fall Collection, and three specimens in Fall Collection.

Known Distribution:

United States: *Arizona:* Santa Rita Mts.; Huachuca Mts., Ramsay Canyon (MCZ).

Apion (Trichapion) punctulirostre Sharp

Figure 10,*e–h*

Apion punctulirostre Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 57, 1890.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957.

Apion spectator Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 61, 1890.—Kissinger, Proc. Ent. Soc. Washington, vol. 59, p. 40, 1957.

Description: Length, 2.0 to 2.5 mm.

Moderately robust; black. Pubescence fine, white, sparse, denser on sides of mesothorax. Male beak as long as head and prothorax combined, slightly, evenly curved, middle (in dorsal view) slightly thicker than base, apical third compressed; with slight, dorsal, median carina, and a lateral line of punctures in a slight groove extending to apical third; pubescence conspicuous, apex smoother, glabrous. Female beak nearly twice as long as head and prothorax combined, slightly, evenly curved, nearly cylindrical throughout, apex slightly expanded; finely, deeply punctured, apex not as shining as base, basal third with scant pubescence. Antennae inserted in basal third of beak, of male at distance from eye 2.25 times as great as width of frons, of female at distance from eye three times as great as width of frons; first segment longer than next three, shorter than next four;

second segment shorter than next two; club 0.21 by 0.09 (male) to 0.28 by 0.10 mm. (female). Eyes moderately prominent; frons narrow, equal to width of dorsal tip of beak, with slight median impression and a lateral row of confluent punctures. Prothorax at base one-fourth to one-third wider than long, middle narrower than base; sides strongly expanded laterally at base, nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat, slightly sinuate before base and apex; punctation 0.04 to 0.05 mm. in diameter, deep, interspaces less than diameter of punctures, slightly convex; basal fovea deep, linear, extending one-third length of prothorax. Elytra at humeri one-third wider than prothorax at base, 2.75 times as long as prothorax, length to width as 4:3; intervals twice as wide as striae, moderately convex, with one irregular row of fine punctures bearing fine scales; striae deep. Scutellum triangular, 0.12 by 0.08 mm., with median furrow. Front femora of male 3.4 times as long as wide, of female 4.2 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 with moderately long, simple mucro; all femora much stouter than those of female.

Material examined: Male and female compared with type of *punctulirostre* by G. A. K. Marshall, two males and two females determined as *A. spectator* by Sharp, and six other specimens.

Known distribution:

Mexico: *Morelos:* Cuernavaca (BMNH). *México:* Temescaltepec, Real de Arriba, July 1932, H. Hinton (CAS). *Puebla:* Near Huauchinango, June 1954, D. G. Kissinger (DGK).

Guatemala: Aceituno; San Gerónimo (BMNH).

Remarks: Specimens from Huauchinango, Puebla, were taken while beating in a scrubby oak and pine forest at about 5,000 feet elevation.

A. punctulirostre was described from two females. The original description is rather brief and is more or less a comparison with *A. gracilirostre* Sharp. *A. spectator* was described in more detail with the statement that only the middle tibiae of the male are mucronate. A comparison of specimens reveals no significant differences.

Apion submetallicum Group

The four species comprising this group apparently overlap in geographical range. *Apion auriferum* Wagner and *A. perpilosum* Wagner occur in Guatemala; the latter, *A. submetallicum* Boheman, and *A. hadromerum* Wagner occur in Guerrero, Mexico.

A. submetallicum is about 1 mm. longer than the other species and the antennae are inserted more distad on the beak. The beak of the male of *A. hadromerum* is clothed with long, bristly pubescence. The

beak of the males of the other species is clothed with shorter pubescence. The mucrones of the males of *A. perpilosum* project at an angle with the tibiae and the elytral intervals are flat. The mucrones of the male of *A. auriferum* project in line with the tibiae at the base and curve out at an angle in the apical half and the intervals are convex.

Apion (Trichapion) auriferum Wagner

FIGURE 11,*a,b,k*

Apion (Trichapion) auriferum Wagner, Arch. Naturg. Berlin, vol. 78, p. 100, 1912.

DESCRIPTION: Length, 1.4 to 1.6 mm.

Moderately robust. Black; pubescence conspicuous, fine, white, sparse, coarser and denser at base of elytral interval 3 and sides of prothorax, mesothorax, and metathorax. Male beak one-seventh longer than prothorax, slightly curved, slightly expanded laterally over antennal insertion, evenly attenuate toward apex; in basal three-

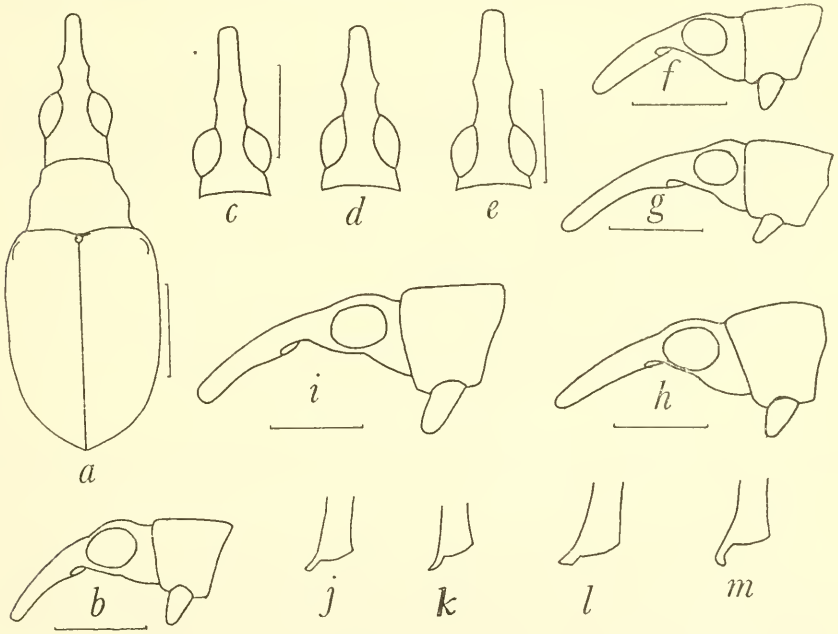

FIGURE 11.—*a, b, k, Apion auriferum* Wagner: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of male; *k*, mucro of tibia 3 of male. *c, f, g, j, A. perpilosum* Wagner: *c*, dorsal view of head of male; *f*, lateral view of head and prothorax of male; *g*, lateral view of head and prothorax of female; *j*, mucro of tibia 3 of male. *d, h, l, A. hadromerum* Wagner: *d*, dorsal view of head of male; *h*, lateral view of head and prothorax of male; *l*, mucro of tibia 3 of male. *e, i, m, A. submetallicum* Boheman: *e*, dorsal view of head of male; *i*, lateral view of head and prothorax of male; *m*, mucro of tibia 3 of male. Line equals 0.50 mm.

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fourths sparsely punctate and pubescent, apical fourth smoother and shining. Antennae inserted at distance from eye equal to width of frons, at basal fifth of beak; first segment one-half longer than second, shorter than next two; second segment slightly longer than third; club 0.17 by 0.09 mm. Eyes moderately prominent; frons moderately wide, with two rows of punctures on either side of wide, slightly concave median area. Prothorax at base one-third wider than long, middle slightly narrower than base, apex two-thirds as wide as base; sides expanded laterally at base, nearly parallel to middle, rounded to constricted apex; in profile dorsal surface slightly, evenly convex; punctation 0.03 mm. in diameter, shallow, interspaces less than diameter of punctures; basal fovea round, moderately deep. Elytra at humeri one-fourth wider than prothorax at base, about 2.5 times as long as prothorax, length to width as 9 : 7; intervals more than twice as wide as striae, moderately convex, smooth, with two rows of punctures bearing fine scales; striae deep, fine. Scutellum triangular, as wide as long, about 0.06 by 0.06 mm., with slight median furrow. Front femora about three times as long as wide. Claws with large, acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long mucrones which at base are in line with the long axis of the tibiae and curve out laterally in apical half, mucrones angulate ventrally.

MATERIAL EXAMINED: One male determined by Hans Wagner.

KNOWN DISTRIBUTION:

MEXICO: *Tabasco:* Teapa.
GUATEMALA: San Gerónimo (BMNH).
NICARAGUA: Managua (Solari Collection).
PANAMA: "San Felice" (BMNH).

Apion (*Trichapion*) *hadromerum* Wagner

FIGURE 11,*d,h,l*

Apion (*Trichapion*) *hadromerum* Wagner, Arch. Naturg. Berlin, vol. 78, p. 105, 1912.

DESCRIPTION: Length, 1.8 to 2.0 mm.

Moderately robust. Black; pubescence conspicuous, fine, on dorsal surface in part yellowish, sparse; coarser, white laterally, on head and base of beak, and at small spot at base of elytral interval 3. Male beak four-fifths as long as head and prothorax, nearly straight; moderately expanded ventrally at antennal insertion, attenuating to apex; punctured and pubescent in basal three-fourths, apex, smooth, shining; with dorsomedian narrow carina in basal three-fourths. Antennae inserted at distance from eye one-fourth greater than width of frons, slightly distad of basal third; first segment shorter than next two, second segment equal to third, club 0.18 by 0.08 mm. Eyes promi-

nent; frons moderately wide, with median sulcus and two or three irregular rows of moderate punctures. Prothorax at base one-fourth wider than long, middle slightly narrower than base, apex seven-tenths as wide as base; sides expanded laterally at base, nearly parallel to middle, slightly rounded to constricted apex; in profile dorsal surface nearly flat; punctation 0.03 mm. in diameter, moderately deep, interspaces about equal to diameter of punctures, flat, alutaceous; basal fovea shallow, moderately broad, short. Elytra at humeri two-fifths wider than prothorax at base, three times as long as prothorax, length to width as 3 : 2; intervals less than twice as wide as striae, third interval twice as wide as striae, moderately convex, smooth with two irregular rows of fine punctures bearing fine scales. Scutellum triangular, about as long as wide, 0.06 by 0.06 mm., smooth, alutaceous. Front femora 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, curved, simple mucrones.

Material examined: One male determined by Hans Wagner and seven other specimens.

Known distribution:

Guatemala: Capetillo; Dueñas (BMNH).

Mexico: *Distrito Federal:* Mexico City, July 29, 1944, N. L. H. Kraus (USNM); Contreras, May 30, 1946, J. and D. Pallister (AMNH). *Guerrero:* Omilteme; Chilpancingo (BMNH). *Michoacán:* South side of Lago de Cuitzeo, 1,950 meters, July 8, 1947, No. 82, T. H. Hubbell (UM). *Morelos:* Coajomulco, June 7, 1946, J. and D. Pallister (AMNH); near Cuernavaca, Aug. 14, 1953, about 7,000 feet, R. B. and J. M. Selander (DGK). *Puebla:* Near Huauchinango, June 1954, D. G. Kissinger.

Remarks: The first two Mexican localities were erroneously attributed to Guatemala by Wagner in his description.

Apion (Trichapion) perpilosum Wagner

Figure 11,*c,f,g,j*

Apion (Trichapion) perpilosum Wagner, Arch. Naturg. Berlin, vol. 78, p. 107, fig. b, 1912.—McKelvey, et al., Mex. Sec. Agr. Ganad. Fol. Tec., vol. 8, pp. 8–42, 1951.

Description: Length, 1.45 to 1.60 mm.

Moderately robust. Black; aeneous; pubescence conspicuous, whitish and in part yellowish on dorsal surface, fine sparse, denser and coarser at base of third elytral interval and sides of prothorax, mesothorax, and metathorax. Male beak three-fourths as long as head and prothorax combined, slightly, uniformly curved; moderately expanded laterally and ventrally at antennal insertion, attenuate to apex; moderately densely punctured and pubescent to near apex, pubescence long and bristling, apex smooth and shining. Female beak slightly longer than head and prothorax combined, moderately,

uniformly curved; slightly expanded laterally and ventrally at antennal insertion, apical two-thirds nearly cylindrical; basal fourth moderately punctured and pubescent, remainder smooth, glabrous, and shining. Antennae inserted at distance from eye equal to width of frons, of male slightly distad of basal fourth of beak, of female at basal fifth; first segment shorter than next two; second segment shorter than next two; club 0.18 by 0.08 to 0.21 by 0.09 mm. Eyes moderately prominent; frons moderately wide, with slight, narrow median sulcus and two lateral rows of punctures. Prothorax at base one-eighth wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides with slight lateral expansion at base, slightly expanded to middle, rounded to constricted apex; in profile dorsal surface slightly arcuate, flattened basally and apically; punctation 0.02 to 0.03 mm. in diameter, deep, interspaces variable, usually less than diameter of punctures; basal fovea moderately deep, about one-fourth length of prothorax. Elytra at humeri two-fifths wider than prothorax at base, 2.5 times as long as prothorax, length to width as 10:7.5; intervals twice as wide as striae, nearly flat, with one or two rows of punctures; striae deep, fine. Scutellum roundly triangular, about 0.08 by 0.06 mm., with moderate, median furrow. Front femora 3.75 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, subangulate mucrones.

Material examined: Male and female determined by Hans Wagner.

Known distribution:

Mexico: Guanajuato. *Guerrero:* Amula; Chilpancingo (BMNH).
Guatemala: Guatemala City (BMNH).

Apion (Trichapion) submetallicum Boheman

Figure 11,*e,i,m*

Apion submetallicum Boheman, *in* Schoenherr, Genera et species curculionidum vol. 5, p. 376, 1839.—Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 48, 1890.

Apion hystriculum Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 56, 1890.—Wagner, Arch. Naturg. Berlin, vol. 78, p. 108, fig. a, 1912. New synonymy.

Description: Length, 2.5 to 3.0 mm.

Moderately robust. Black; pubescence conspicuous, fine, white, sparse, denser and coarser at base of elytra interval 3, laterally and ventrally. Male beak three-fourths as long as head and prothorax, slightly curved, moderately dilated laterally and ventrally at antennal insertion, attenuate to apical third which is nearly cylindrical; moderately punctured and pubescent in basal two-thirds, apex smooth,

shining. Antennae inserted at distance from eye four-fifths greater than width of frons at basal one-third of beak; first segment longer than second, shorter than next two; second segment shorter than next two; club 0.24 by 0.08 mm. Eyes moderately prominent; frons moderately wide, with median sulcus and two or three lateral rows of moderate punctures. Prothorax slightly wider at base then long, middle slightly narrower than base, apex four-fifths as wide as base; sides slightly expanded laterally at base, nearly parallel to middle, slightly rounded to broadly constricted apex; in profile dorsal surface flat; punctures deep, 0.03 mm. in diameter, interspaces narrow, about one-half as wide as diameter of punctures, convex, shining, alutaceous; basal fovea deep, linear, extending one-fifth length of prothorax. Elytra at humeri three-fifths wider than prothorax at base, 2.6 times as long as prothorax, length to width as 13:9; intervals less than twice as wide as striae, flat, with two rows of moderately fine punctures; striae deep. Scutellum elongate, triangular, 0.09 by 0.06 mm., with a median furrow. Front femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long blunt mucrones.

Material examined: 10 males, including Boheman's type and a male compared with the type of *A. hystriculum* by G. A. K. Marshall.

Known distribution:

Mexico: *Puebla:* Near Huauchinango, June 1954, D. G. Kissinger (DGK). *Distrito Federal:* Mexico City, A. W. Barret (USNM). *Mexico:* Amecameca, June 8, 1897, Koebel Collection (CAS). *Guerrero:* Xucumanatlan, Omilteme, H. H. Smith.

Remarks: Material from Huauchinango was taken while beating in a scrubby oak and pine forest at about 5,000 feet elevation.

Apion submetallicum has not been recognized since its description in 1839. Sharp (1890) simply listed the name, stating that he could not recognize the species in any material before him. An examination of Boheman's type, through the kindness of Dr. René Malaise, has revealed the above synonymy.

Apion patruele Group

The 10 species comprising this group are characterized by their robust body; generally deep, elongate prothoracic basal fovea (lacking in *rufipenne* and *evustum*); and the strongly expanded beak over the antennal insertion. Also the second and third pairs of tibiae of the male are mucronate, tibia 1 of the male is simple, prothorax is widest at base, and the beak is subcylindrical in the apical half. The range of three species, *A. patruele* Smith, *A. perforicolle* Fall, and *A. porcatum* Boheman overlaps in the eastern United States. Three species, *A.*

abdominale Smith, *A. centrale* Fall, and *A. perforicolle,* are very similar but occur in widely separated localities.

A. rufipenne Gyllenhal and *A. evustum,* new species, are distinct with their red elytra. The other species are black. *A. gulare* Fall is distinct in that the ventral surface of the head is deeply excavated and polished and the antennae are inserted far front on the beak. *Apion porcatum* is a large species with narrow, strongly convex elytral intervals, and the antennal club is rather small, being shorter than segments 5 through 8 of the antennal funicle. The elytral intervals of the other species are nearly twice as wide as the striae (except in *abdominale*) and are flatter and the antennal club is about as long as segments 3 through 8 of the antennal funicle. The mucrones of *A. perforicolle* are rather short and subangulate, the elytral intervals are twice as wide as the striae, the beak is strongly dilated laterally over the antennal insertion and in comparison with *A. centrale* the prothorax is nearly parallel in the basal half and not constricted apically, and the interspaces on the dorsal surface of the prothorax are about equal to the diameter of the punctures and are slightly shining and strongly alutaceous. The mucrones of *A. patruele, A. abdominale,* and *A. centrale* are dentate and the sides of the prothorax of the latter are sinuate before the base (the basal lateral expansion is more pronounced) and constricted apically; the dorsal surface of the prothorax is closely punctured; and the interspaces are about one-half the diameter of the punctures, polished and very finely alutaceous. The beak of *A. patruele* is not expanded laterally at the antenna insertion; the abdomen and metasternum are rather finely, sparsely punctured; and the elytral intervals are somewhat convex. The beak of *A. centrale* and *A. abdominale* is strongly expanded laterally at the antennal insertion; the abdomen and metasternum are coarsely, closely, and deeply punctured; and the elytral intervals are flatter. The intervals of *A. centrale* are nearly twice as wide as the striae and slightly wider at the middle than at the base and the mucrones of the male are short and strongly angulate. The intervals of *A. abdominale* are narrower and are slightly wider than the striae and are especially narrow basally and the mucrones are moderately long and slender. *A. fusconitidum* Wagner is distinct with its large, robust form; narrow, convex intervals; and irregularly punctured dorsal surface of the prothorax.

The name *Apion patruele* Smith has been selected arbitrarily as the one to be used to designate the section of *Trichapion* Wagner that is coordinate with the *Apion simile* section. As yet no member of the *A. patruele* section is known to be holarctic in distribution.

The differentiation of the groups of the *A. patruele* section with respect to the *A. patruele* group is as follows. The *A. reconditum*

group is very closely allied, most of its members exhibit characters common to both groups, i. e., parallel-sided beak in dorsal view in apical half, male tibiae 2 and 3 mucronate, and generally little sexual dimorphism in length of beak. The members of the *A. reconditum* group are more slender, the elytra are longer in proportion to the prothorax, the basal lateral expansion of the prothorax is more pronounced, and the beak tends to be depressed apically.

The *A. oblitum* group is similar to the *A. patruele* group with its robust body and cylindrical beak in apical half, but the base and middle of the prothorax are nearly equal, the beak is abruptly narrowed beyond the antennal insertion and cylindrical and polished to the tip, and the male has all three tibiae mucronate.

The *A. nigrum* group is similarly stout and has the beak cylindrical in its apical half, but the prothorax is modified so that it is much wider at the middle than at the base, also the front legs of the male are modified either with mucronate tibiae (*cordatum*), or fore tibia dilated, curved, and set with long ciliae within (*heterogeneum*), or with dilated or densely pubescent first tarsal segment (*nigrum* and *dolosum*).

The prothorax of the *A. rostrum* group is generally about as wide at the base as at the middle. The beak is distinctly attenuate to near the apex, also there is sometimes marked sexual dimorphism in the length of the beak. Some members of this group exhibit further affinity with the *A. simile* section because they have multiserially pubescent elytral intervals.

Apion (*Trichapion*) *abdominale* Smith

FIGURE 12,*a*,*e*–*g*

Apion abdominale Smith, Trans. Amer. Ent. Soc., vol. 11, p. 53, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 143, pl. 4, fig. 13, 1898.

DESCRIPTION: Length, 2.25 to 2.40 mm.; width, 1.12 to 1.18 mm.

Robust. Black; pubescence scant, white, fine, not much more conspicuous on ventral surface. Male beak slightly shorter than head and prothorax combined, one-third longer than prothorax; slightly curved; in lateral view apical half is nearly parallel-sided; in dorsal view strongly expanded laterally at antennal insertion, from middle to apex nearly parallel-sided; coarsely punctured laterally, more finely dorsally, with short, deep sulcus above antennal insertion. Female beak as long as head and prothorax combined, one-half longer than prothorax; moderately, evenly curved, in lateral view sides nearly parallel in apical half; dull, smoother and finely, sparsely punctured, tip slightly shining. Antennae inserted at basal fifth of beak at distance from eye equal to width of frons; first segment equals next two, second segment slightly shorter than next two, club 0.24 by

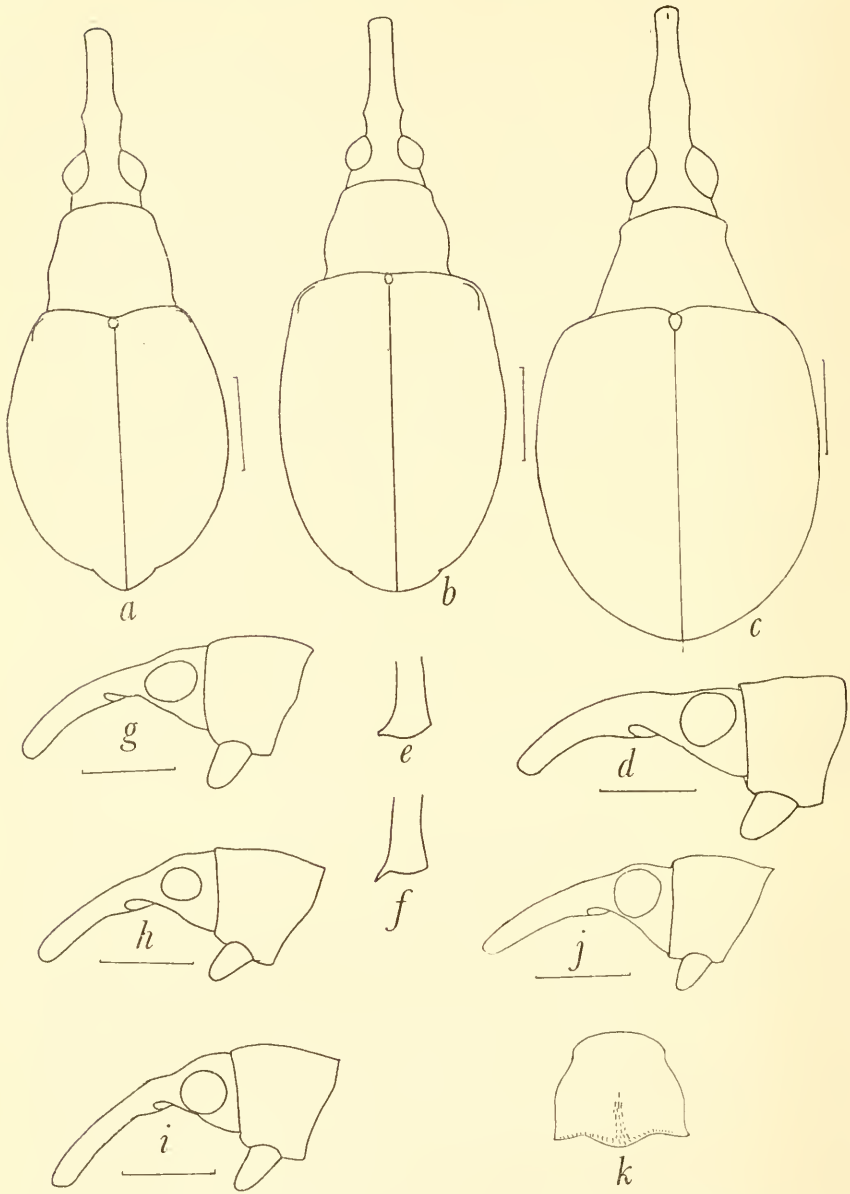

FIGURE 12.—*a*, *e–g*, *Apion abdominale* Smith: *a*, entire dorsal view of male; *e*, mucro of tibia 2 of male; *f*, mucro of tibia 3 of male; *g*, lateral view of head and prothorax of male. *b*, *h*, *i*, *A. centrale* Fall: *b*, entire dorsal view of male; *h*, lateral view of head and prothorax of male; *i*, lateral view of head and prothorax of female. *c*, *d*, *A. fusconitidum* Wagner: *c*, entire dorsal view of female; *d*, lateral view of head and prothorax of female. *j*, *k*, *A. evustum*, new species: *j*, lateral view of head and prothorax of male; *k*, dorsal view of prothorax. Line equals 0.50 mm.

0.09 mm. Eyes moderately prominent; frons slightly wider than dorsal tip of beak. Prothorax at base slightly wider than long, middle and base about equal, apex four-fifths as wide as base; sides beyond slight basal lateral expansion expanding slightly to middle, rounded to slight apical constriction; in profile dorsal surface slightly arcuate; punctation deep, rounded, 0.04 mm. in diameter, interspaces less than diameter of punctures, generally one-half as wide; basal fovea deep, narrow, extending beyond middle. Elytra at humeri one-third wider than prothorax at base, about three times as long as prothorax, length to width as 4 : 3; intervals narrower at base, not more than two-third wider than striae, flat, with one row of fine punctures; striae deep, coarse. Scutellum triangular, 0.06 by 0.06 mm. Front femora 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, dentate mucrones.

LECTOTYPE: I hereby designate as lectotype of this species the male specimen (USNM 1263) labeled California, J. B. Smith Collection.

MATERIAL EXAMINED: Lectotype and five specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *California:* No exact locality (USNM). *Arizona:* No exact locality (CU); Santa Rita Mountains, July 18, 1938, R. I. Sailer (UK).

Apion (Trichapion) centrale Fall

FIGURE 12,*b,h,i*

Apion centrale Fall, Trans. Amer. Ent. Soc., vol. 25, p. 151, 1898.—Bleasdell, Journ. Sci. Iowa State Coll., vol. 11, p. 411, 1937.

DESCRIPTION: Length, 2.1 to 2.4 mm.

Robust. Black; pubescence white, fine, sparse, a little coarser laterally and ventrally. Male beak as long as head and prothorax combined, slightly, evenly curved, expanded laterally and ventrally at antennal insertion, rather abruptly attenuate beyond that point, from middle to apex nearly cylindrical, apex about two-thirds as wide as base of beak; punctation coarse, sparse to apical third, pubescence inconspicuous. Female beak a little longer than head and prothorax; slightly, evenly curved, antennal insertion as in male; punctation beyond antennal insertion sparse, fine. Antennae inserted at distance from eye equal to width of frons, at basal fifth of beak; first segment of male equal to next two, of female longer than next two; second segment equals next two; club ranges from 0.24 by 0.10 to 0.27 by 0.12 mm. Eyes prominent; frons wide with a slight central depression, laterally with two rows of punctures. Prothorax at base slightly wider than long, at middle a little wider than base, apex three-fourths as wide as base; sides in basal half slightly diverging to middle,

rounded to slightly constricted apex; in profile dorsal surface slightly, evenly convex; punctation coarse, 0.04 mm. in diameter, deep, interspaces narrower than diameter of punctures, usually one-half as wide; basal fovea deep, elongate, extending about one-third length of prothorax. Elytra at humeri two-fifths wider than prothorax at base, 2.75 times as long as prothorax, length to width as 13 : 10; intervals twice as wide as striae, nearly flat to slightly convex, with an irregular row of fine punctures, ground sculpture fine, transverse; striae deep. Scutellum triangular, about as long as wide, 0.06 by 0.06 mm., smooth. Front femora 3.5 times as long as wide. Claws with moderate basal tooth.

Special male characters: Tibiae 2 and 3 armed with short, subanguate mucrones.

TYPES: I hereby designate as lectotype of this species the male specimen in the Fall Collection labeled Garland, Colo. (MCZ 25080). Cotypes are in the J. L. LeConte Collection labeled Hudson Bay Territory and Colorado (MCZ 237) and in the U. S. National Museum labeled Hudson Bay Territory (USNM 4224).

Material examined: Lectotype and 50 specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Colorado:* Garland, Hubbard and Schwarz (USNM); Gunnison, Baker (AMNH); Pagosa Springs, July 22, C. F. Baker (USNM); Beta Pass, May 27, Hubbard and Schwarz (USNM). *Idaho:* Bonner Co., Sagle, July 16, 1950, N. M. Downie (DGK). *Iowa:* Emmitsburg, July 6, 1916, D. Stoner (USNM); Iowa City, May 30, 1916, L. L. Buchanan (USNM); Lake Okoboji, July 2, 1917, L. L. Buchanan (USNM); Dickinson Co.; Johnson Co.; Palo Alto Co.; and Story Co. *Montana:* Bear Paw Mountain, Sept. 17, Hubbard and Schwarz (USNM); Kalispell, June 13–20, H. F. Wickham (USNM). *North Dakota:* Wahpeton, July 7 (USNM).

CANADA: *Alberta:* Cypress Hills, July 21, 1930, J. H. Pepper (CNC); Edmonton, June 8, 18, 28, July 8–27, F. S. Carr (AMNH, DGK, UC, USNM); Medicine Hat, July 23, 1930, J. H. Pepper (CNC); Morrin, June 17, 1929, G. F. Manson (CNC); Lethbridge, June 2, 1930, J. H. Pepper (CNC); Little Smokey River, June 23, 1954, C. P. Alexander (CAF). *British Columbia:* Clinton, June 14, 1938, J. K. Jacobs (CNC); Salmon Arm, May 29, 1932, sweeping bushes, H. B. Leech (CNC, USNM); Vernon, July 2, 1929, H. B. Leech (CNC); Oliver, Aug. 6, 1930, J. Nottingham (UK); Robson, May 22, 1948, H. R. Foxlie (CNC); Terrace, Mrs. M. E. Hippisley (CAF). *Hudson Bay Territory* (MCZ, USNM). *Manitoba:* Aweme, July 3, 1909, E. Criddle (CNC); Winnipeg (USNM). *Ontario:* Leamington, June 10, 1929, G. S. Walley (CNC); Moosonee, July 17, 1934, G. S. Walley (CNC); Ogoki, July 6, 1932, J. B. Wallis (CNC); Smoky Falls, Mattagami River, June 11, 1939, G. S. Wallace (CNC). *Saskatchewan:* Fort a la Corne, July 17, 1925, K. M. King (CNC); Waskensin Lake, June 2, 1939, A. R. Brooks (CNC).

Apion (Trichapion) evustum, new species

FIGURE 12,*j*,*k*

DESCRIPTION: Length, 2.12 to 2.25 mm.; width, 1.12 mm.

Robust. Beak, antennae, head, and prothorax black; elytra, abdomen, mesothorax and metathorax pale reddish; coxae and legs darker red. Pubescence white, fine, prothorax with a number of scales on basal median region and a few along median line; elytra glabrous except at apex; denser on sides of mesothorax and metepisternum. Beak of male shorter than head and prothorax combined, one-half longer than prothorax, slightly curved; in lateral view rather stout and parallel-sided in basal third, thence rather suddenly narrowed, apical half subparallel-sided; in dorsal view subparallel in apical half, with moderate expansion over antennal insertion; moderately punctured in basal half, with sparse pubescence in basal third, apical half finely, sparsely punctured; dorsal surface sparsely, finely punctured. Beak of female as long as head and prothorax combined, three-fourths longer than prothorax, slightly curved; apical half subcylindrical, with very sparse, fine punctures; with minute pubescence slightly distad of antennal insertion. Antennae inserted at distance from eye equal to width of frons, of male at basal sixth, of female at basal seventh; first segment equals next two, second segment shorter than next two, club 0.26 by 0.10 mm. Eyes moderately prominent; frons equals dorsal tip of beak, flat medially. Prothorax at base one-third wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond moderate basal lateral expansion subparallel in basal half, thence rounded to distinctly constricted apex; in profile dorsal surface slightly arcuate; punctation shallow, coarse, sparse but irregularly placed; basal fovea lacking. Elytra at humeri two-fifths wider than prothorax at base; 2.75 times as long as prothorax, length to width as 11 : 9; intervals flat, about three times as wide as striae, glabrous, nearly impunctate; stria 1 complete, uniformly impressed throughout, 2 and 9 nearly complete, other striae more or less distinct at base and appear as a row of separated punctures in middle of elytra. Scutellum triangular, 0.09 by 0.09 mm. Front femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with large, blunt strongly dentate mucrones.

TYPES: Holotype male (USNM 63133), Tampico, Tamaulipas, Mexico, December 21, E. A. Schwarz. Allotype female, same data as holotype (USNM). Eight paratypes; five, same data as holotype

(USNM); three, Tamazunchale, San Luis Potosí, Mexico, Jan. 28, 1953, D. G. Kissinger (DGK).

Apion (Trichapion) fusconitidum Wagner

FIGURE 12,*c,d*

Apion fusconitidum Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 23, pl. 2, fig. 4, 1911.

DESCRIPTION: Length, 2.62 mm.; width, 1.50 mm.

Robust. Black, slightly aeneous; tibiae and tarsi castaneous; pubescence white, very fine, on dorsal surface of prothorax and elytra minute, very sparse, slightly more conspicuous on sides of mesothorax and metathorax. Female beak about as long as head and prothorax combined; three-fourths longer than prothorax, moderately curved; basal third stoutly cylindrical, then attenuate, apical three-sevenths subcylindrical; from above not expanded laterally at antennal insertion; with fine sparse punctures evident to tip, with minute scales somewhat distad of antennal insertion. Antennae inserted at basal fourth, at distance from eye slightly greater than width of frons; first segment slightly shorter than next three, second segment shorter than next two, club 0.30 by 0.10 mm. Eyes prominent; frons slightly wider than dorsal tip of beak, flat medially. Prothorax at base one-third wider than long, middle narrower than base, apex seven-tenths as wide as base; sides beyond slight basal lateral expansion converging to apical two-fifths, thence strongly rounded to strongly constricted apex, extreme apex flared out laterally; in profile dorsal surface nearly flat; punctation about 0.03 mm. in diameter, shallow, very irregularly placed; with an impunctate region in lateral basal half; basal fovea deep, punctiform, with a short, shallow anterior furrow. Elytra at humeri one-half wider than prothorax at base, nearly three times as long as prothorax, length to width as 5:4; intervals convex, about twice as wide as striae, with several rows of minute punctures bearing extremely small scales; striae deep, fine. Scutellum triangular, 0.09 by 0.09 mm., with slight median impression. Front femora about four times as long as wide. Claws with acute basal tooth.

Material examined: One female determined by Hans Wagner.

KNOWN DISTRIBUTION:

BRAZIL: Rio de Janeiro and Petrópolis (BMNH).

Apion (Trichapion) gulare Fall

FIGURE 13,*a–c*

Apion gulare Fall, Trans. Amer. Ent. Soc., vol. 25, p. 140, 1898.—Blatchley and Leng, Rhynchophora or weevils of northeastern America, p. 78, 1916.

DESCRIPTION: Robust. Black, with reddish aeneous luster; pubescence moderate, fine, white, sparse, slightly denser on sides of meso-

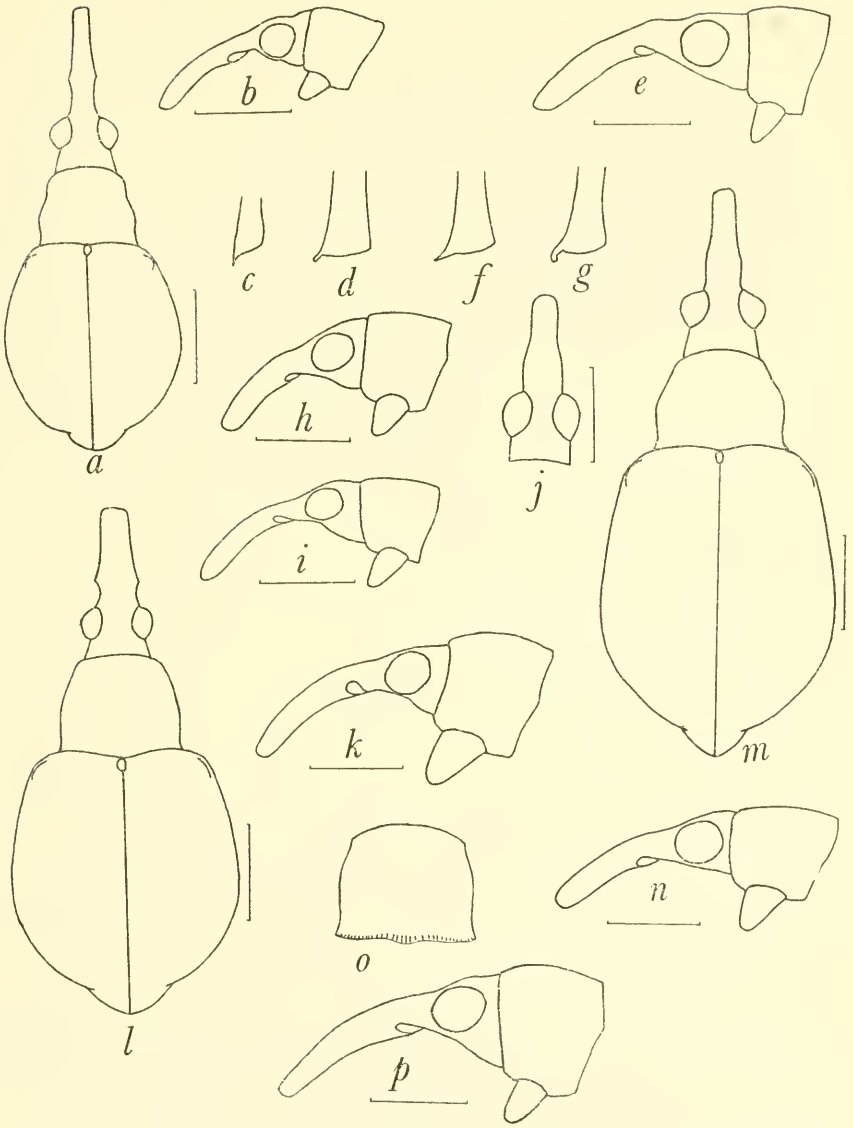

FIGURE 13.—*a–c*, *Apion gulare* Fall: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of male *c*, mucro of tibia 3 of male. *d*, *e*, *A. nitidum* Kirsch: *d*, mucro of tibiae 3 of male; *e*, lateral view of head and prothorax of male. *f*, *m*, *n*, *A. porcatum* Boheman: *f*, mucro of tibiae 3 of male; *m*, entire dorsal view of male; *n*, lateral view of head and prothorax of male. *g–j*, *A. patruele* Smith: *g*, mucro of tibia 3 of male; *h*, lateral view of head and prothorax of male; *i*, lateral view of head and prothorax of female; *j*, dorsal view of head of male. *k*, *l*, *A. perforicolle* Fall: *k*, lateral view of head and prothorax of male; *l*, entire dorsal view of male. *o*, *p*, *A. rufipenne* Gyllenhal: *o*, dorsal view of prothorax; *p*, lateral view of head and prothorax of male. Line equals 0.50 mm.

thorax. Male beak as long as head and prothorax combined, slightly curved, moderately dilated laterally and ventrally at antennal insertion, nearly cylindrical beyond middle, tip slightly expanded; punctures sparse, very fine, with a lateral row of coarse punctures above antennal insertion, apical half shining, pubescence inconspicuous. Female beak slightly longer than head and prothorax, slightly curved, nearly cylindrical throughout, expanded slightly ventrally in basal fourth, apex expanded; in basal half with a lateral row of coarse punctures above antennal insertion, apical half dull, alutaceous, pubescence inconspicuous. Antennae inserted at distance from eye one-half greater than width of frons, of male inserted slightly distad of basal third, of female slightly distad of basal fourth; first segment equal to next two segments, second segment equal to next two, club 0.18 by 0.08 mm. Eyes moderately prominent; frons narrow, wider than dorsal tip of beak, with a wide shallow median impression and a row of four or five coarse punctures lateral to this; underside of head deeply excavated and strongly polished. Prothorax one-third wider at base than long, middle slightly narrower than base, apex three-fourths as wide as base; sides moderately expanded laterally at base, nearly parallel to middle, slightly rounded to slightly constricted apex; in profile dorsal surface nearly flat; punctation shallow, 0.03 mm. in diameter, interspaces narrower than diameter of punctures; basal fovea rounded, shallow. Elytra at humeri one-third wider than prothorax at base, three times as long as prothorax, length to width as 9 :7 ; intervals twice as wide as striae, nearly flat, alutaceous, with one row of fine, distant punctures bearing very fine scales; striae not deep, with a row of scales slightly more conspicuous than those on intervals. Scutellum triangular, about 0.06 by 0.04 mm., smooth. Front femora 2.75 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with minute, simple mucrones.

Types: I hereby designate as lectotype of this species the male specimen in the Fall Collection labeled Key West, Fla. (MCZ 25100). Cotypes with the same data are in the J. L. LeConte Collection (MCZ 364) and in the U. S. National Museum (USNM 4235).

Material examined: Lectotype and 20 specimens.

Known distribution:

United States: *Florida:* Biscayne; Key West (MCZ, USNM).
Mexico: *Tamaulipas:* Tampico, December 8, E. A. Schwarz (USNM).

Remarks: Material in the U. S. National Museum was reared by E. A. Schwarz from *Piscidea erythrina.*

The specimen from Mexico undoubtedly belongs to this species. It differs in that the beak is somewhat more distinctly punctured toward the apex.

Apion (Trichapion) nitidum Kirsch

FIGURE 13,*d,e*

Apion nitidum Kirsch, Berliner Ent. Zeitschr., vol. 18, p. 416, 1874

DESCRIPTION: Length, 2.12 mm.; width, 1.06 mm.

Robust. Black; pubescence white, fine inconspicuous on dorsal surface of elytra, prothorax dorsally with scattered, sparse scales; on sides of mesothorax and metathorax moderately dense. Beak of male about equal to head and prothorax combined, three-fifths longer than prothorax, slightly curved; basal fifth rather stout, subcylindrical, not expanded laterally at antennal insertion; basal half with sparse punctures and scales; apical half smoother, bare. Antennae inserted at basal sixth of beak at distance from eye equal to width of frons; first segment equals next two, second segment shorter than next two, club 0.24 by 0.10 mm. Eyes moderately prominent; frons slightly wider than dorsal tip of beak, flat medially. Prothorax at base one-fourth wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel-sided to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation 0.03 mm. in diameter, rather shallow, irregularly placed, a large impunctate area laterally at base, interspaces from one-fourth as wide to wider than punctures; basal fovea deep, linear, extending about one-half length of prothorax. Elytra at humeri one-half wider than prothorax at base, 2.5 times as long as prothorax, length to width as 10 : 9; intervals nearly flat, about one-half wider than striae, with a single irregular row of minute punctures bearing minute scales; striae deep, coarse, scales in striae somewhat larger than those on intervals. Scutellum triangular, 0.09 by 0.09 mm. Front femora 3.7 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with angulate mucrones.

MATERIAL EXAMINED: One male (BMNH, labeled "Amazonas") compared with type by Hans Wagner.

KNOWN DISTRIBUTION: Peru (type locality).

Apion (Trichapion) patruele Smith

FIGURE 13,*g–j*

Apion patruele Smith, Trans. Amer. Ent. Soc., vol. 11, p. 64, fig. 11, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 142, pl. 4, figs. 11, 11a, 17, 1898.—Blatchley and Leng, Rhynchophora or weevils of northeastern America, p. 78, fig. 37q, 1916.

DESCRIPTION: Length, 1.68 to 2.12 mm.; width, 0.85 to 1.12 mm.

Robust. Black; pubescence fine, white, sparse, coarser and denser on mesothorax and metathorax. Male beak stout, shorter than head

and prothorax combined, two-fifths longer than prothorax, deflexed at basal third; not expanded laterally at antennal insertion, apical third nearly cylindrical; more coarsely punctate laterally, with a row of confluent punctures above antennal insertion bearing scales, punctures to near tip bear minute scales. Female beak as long as head and prothorax combined, three-fifths longer than prothorax, evenly, strongly curved; nearly cylindrical beyond antennal insertion; finely sparsely punctured to tip, punctures bearing minute scales. Antennae inserted at distance from eye equal to width of frons, of male at basal fourth of beak, of female at basal fifth; first segment equals next two, second segment shorter than next two, club 0.21 by 0.08 mm. Eyes moderately prominent; frons slightly wider than dorsal tip of beak, with deep median sulcus and one lateral row of somewhat confluent punctures. Prothorax at base two-fifths wider than long, middle narrower than base, apex five-sevenths as wide as base; sides beyond moderately basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface slightly arcuate; punctation moderately deep, 0.03 mm. in diameter, interspaces about equal to diameter of punctures, somewhat alutaceous. Elytra at humeri two-fifths wider than prothorax at base, three times as long as prothorax, length to width as 16:13; intervals twice as wide as striae, rather convex, generally with one row of fine scales; striae deep, fine. Scutellum triangular, 0.06 by 0.06 mm., nearly smooth. Front femora about 3.25 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with short, dentate mucrones.

TYPES: I hereby designate the lectotype of this species as the male specimen (USNM 1246) labeled Massachusetts. Cotype in the J. L. LeConte Collection labeled with an orange disc signifying the Southern States (MCZ 368).

MATERIAL EXAMINED: Lectotype and 100 specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Alabama:* Mobile, Apr. 18, 1910, W. D. Pierce (USNM); Tuscaloosa, May 21, 1955, at light, B. D. Valentine; 5 miles north of York, July 1954, D. G. Kissinger (DGK). *Connecticut:* Shelton, June 15, 1934, M. P. Zoppe (USNM); West Haven, Sept. 15, 1944 (USNM). *District of Columbia:* Woodridge, July 3, 1919, L. L. Buchanan (USNM). *Florida:* Dunedin, Feb. 30, 1926, W. S. Blatchley (CU, USNM); Lake Harney, May 4, E. A. Schwarz (USNM). *Georgia:* Griffin (UK); Okefenokee Swamp, May 7, 1953, N. J. and E. L. Sleeper (ELS). *Illinois:* Funkhouser, May 21, 1950 (INHS); Herod, May 29, 1936 (INHS); McClure, June 25, 1931, on locust (INHS); Muncie, Aug. 31, 1907 (USNM); Palisades State Park, July 4, 1946 (INHS); Pittsfield, Pike Co. (UC); Starved Rock State Park, July 4, 1941 (INHS); Valmeyer, Aug. 25, 1949, on red clover (INHS). *Indiana:* (Blatchley and Leng, 1916) common throughout the State. *Maryland:* Beltsville, May 21, 1922, L. L. Buchanan (USNM); Glen Echo, Aug. 3, 1922, L. L. Buchanan (USNM); Sparrow Point, July 4, 1932 (UC);

2 miles east of Silver Spring, Northwest Branch, June 28, 1952, D. G. Kissinger (DGK). *Massachusetts:* Canton, August 1924, D. H. Blake (USNM); Chicopee, July 23, 1903, F. Knab (USNM); Framingham, July 2, 1950, C. A. Frost (CAF); Marion, Wickham (USNM); Sherborn, July 19, 1947, C. A. Frost (CAF). *Michigan:* Clarkston (USNM); Detroit (USNM); Washtenaw Co., Aug. 1, 1922, M. H. Hatch (USNM). *Missouri:* No exact locality, J. B. Smith (USNM). *New Jersey:* Anglesea (USNM); Arlington (USNM); Avon, Aug. 30, 1923 (USNM); Bayhead (USNM); Burlington Co. (USNM); Camden, December 1, G. M. Greene (USNM); Cape May (UC); Clifton (USNM); Montclair (USNM); Newark, E. A. Bischoff (USNM); Orange Mt. (USNM); Point Pleasant, July 3, 1926, A. Nicolay (USNM); Roselle Park, Nov. 9, 1924, A. Nicolay (USNM); Woodside (USNM). *New York:* Ithaca (USNM); Riverhead, Long Island, June 23, 1924 (USNM); Rosedale, Long Island, June 3, 1923 (USNM); Schenectady, June 27, 1935, N. M. Downie; South Jamesport, Aug. 25, 1944, Tuthill, on *Apios tuberosa* leaves (USNM). *North Carolina:* Andrews, July 11, 1954 (DGK); Bell Island, May 10, 1952, D. G. Kissinger (DGK); Nelson, August 31, L. D. Beamer (UK). *Ohio:* Champaign Co., July 4, 1950, E. L. Sleeper (ELS); Hocking Co., May 27, July 18, N. J. and E. L. Sleeper (ELS); Licking Co., Aug. 2, 1950, E. L. Sleeper (ELS); Scioto Co., Aug. 1, 1950, E. L. Sleeper (ELS); Summit Co. (UK). *Pennsylvania:* No exact locality (TLCC); Angora, June 15 (USNM); Philadelphia (USNM); Wind Gap, June 18, 1931 (UC). *Rhode Island:* No exact locality (TLCC). *Tennessee:* Gatlinburg (Univ. Illinois). *Texas:* Dallas, May 22, 1910, H. Pinkus (USNM); San Diego, Chittenden (USNM). *Virginia:* Falls Church, July 4, 1919, L. L. Buchanan (USNM); Fredricksburg, May 27, 1900, W. N. Richardson (USNM); Lake Drummond, June 8, 1905, H. S. Barber (USNM); Pennington Gap, Hubbard and Schwarz (USNM). *West Virginia:* White Sulphur Springs (TLCC). *Wisconsin:* Green Lake, June 12, 1928, Ralf Martin (UK).

Remarks: The host plant is not known definitely; Tuthill took specimens on the foliage of *Apios tuberosa* in New York.

Apion (Trichapion) perforicolle Fall

Figure 13,*k,l*

Apion perforicolle Fall, Trans. Amer. Ent. Soc., vol. 25, p. 144, pl. 5, fig. 1, 1898.—Blatchley and Leng, Rhynchophora or weevils of northeastern America, p. 79, 1916.

Description: Length, 1.80 to 2.40 mm.; width, 0.87 to 1.12 mm.

Moderately robust. Black; elytra sometimes faintly aeneous; pubescence white, rather coarse, sparse, denser on sides of mesothorax and metepisternum. Male beak shorter than head and prothorax combined, one-half longer than prothorax, slightly, evenly curved; expanded laterally at antennal insertion, apical half nearly cylindrical; more coarsely punctured above antennal insertion, more finely punctured dorsally, apical third smoother. Female beak slightly longer than head and prothorax, two-thirds longer than prothorax, slightly curved; otherwise similar to male. Antennae inserted at distance from eye equal to width of frons, of male inserted at basal fourth, of female at basal fifth of beak; first segment equals next two, second

segment shorter than next two, club 0.25 by 0.10 mm. Eyes moderately prominent; frons much wider than dorsal tip of beak. Prothorax at base one-third wider than long, middle about equal to base, apex three-fourths as wide as base; sides beyond minute basal lateral expansion slightly expanded to middle, thence rounded to apex, not constricted at apex; in profile dorsal surface slightly arcuate; punctation deep, 0.04 mm. in diameter, interspaces less than diameter of punctures, alutaceous; basal fovea deep, narrow, extending about one-third length of prothorax. Elytra three-eighths wider at humeri than base of prothorax, 2.8 times as long as prothorax, length to width as 9 : 7; intervals twice as wide as striae, nearly flat, with one row of fine scales; striae moderately deep, fine. Scutellum triangular, 0.06 by 0.06 mm., with deep, median groove. Front femora about 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately short, subdentate mucrones.

I hereby designate the lectotype of this species as the male specimen (MCZ 25113) in the Fall Collection labeled Georgia. Cotypes are in the J. L. LeConte Collection (MCZ 371) and in the U. S. National Museum (USNM 4218).

Material examined: Lectotype and 20 specimens.

Known Distribution:

United States: *Alabama:* Tuscaloosa, May 24, 1953, on *Tephrosia spicata*, B. D. Valentine (BDV). *Florida:* Mount Pleasant, April 1952, O. Peck (CNC). *Georgia:* Augusta, May 4, 1944, P. W. Fattig (USNM). *Indiana:* Pulaski Co., June 19, July 16, determined by Fall. *Louisiana:* Longville, June 17, 1948, H. W. Crowder (UK). *Mississippi:* Fulton, July 14, 1930, R. H. Beamer (UK). *North Carolina:* Southern Pines (TLCC). *New Jersey:* Lakehurst, July 4, E. A. Bischoff (USNM).

Remarks: Blatchley and Leng (1916) record this species as swept from the lead plant, *Amorpha canescens* Pursh. Specimens were taken by B. D. Valentine on *Tephrosia spicata.*

Apion (Trichapion) porcatum Boheman

Figure 13,*f,m,n*

Apion porcatum Boheman, *in* Schoenherr, Genera et species curculionidum, vol. 5, p. 374; 1839.—Smith, Trans. Amer. Ent. Soc., vol. 11, p. 64, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 150, 1898.—Blatchley and Leng, Rhynchophora or weevils of northeastern America, p. 81, 1916.—Bleasdell, Journ. Sci. Iowa State Coll., vol. 11, p. 411, 1937.

Description: Length, 2.2 to 2.6 mm.

Robust. Black; pubescence inconspicuous, very fine, white, uniform. Male beak slightly shorter than head and prothorax combined; deflexed at basal two-fifths; moderately expanded laterally and ventrally at antennal insertion, attenuate to middle, apical half nearly

cylindrical; moderately punctate throughout, with a confluent line of punctures over antennal insertion, pubescence inconspicuous. Female beak as long as head and prothorax combined, slightly, evenly curved, otherwise similar to male with exception that beak is more slender and punctation is sparse. Antennae inserted at distance from eye slightly greater than width of frons, at basal fourth of beak; first segment longer than next two, shorter than next three; second segment equal to next two, club 0.21 by 0.10 mm. Eyes prominent; frons moderately wide, with a wide median area with a faint median depression and one lateral line of coalescent punctures. Prothorax at base one-third wider than long, middle slightly wider than base, apex three-fourths as wide as base; sides moderately expanded laterally at base, slightly expanding to middle, rounded to constricted apex; in profile dorsal surface slightly, evenly arcuate; punctation 0.04 mm. in diameter, deep, interspaces irregular, from one-half as great to equal to diameter of punctures; basal fovea deep, elongate, extending one-half length of prothorax. Elytra at humeri two-fifths wider than prothorax at base, 2.8 times as long as prothorax, length to width as 13 : 10; intervals strongly convex, slightly wider than striae, with one row of moderate punctures bearing inconspicuous scales; striae deep. Scutellum triangular, 0.06 by 0.06 mm., with slight median impression. Front femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, slender denticulate mucrones.

Material examined: Type labeled Massachusetts in the Riksmuseum and 50 specimens.

Known distribution:

United States: *District of Columbia:* Collected by Hubbard and Schwarz (USNM). *Georgia:* Neil Gap, Apr. 27, 1946 (USNM). *Illinois:* East St. Louis, May 9, 1924 (USNM). *Indiana:* Clark, Floyd, Perry, and Posey Counties. *Iowa:* Des Moines and Lee Counties. *Maryland:* Beltsville, June 8, 1919, L. L. Buchanan (USNM); Bladensburg, May 4, 1915, L. L. Buchanan (USNM); Cabin John, Potomac River, May 24, 1952, G. H. Nelson, beating foliage; Glen Echo, May 27, 1923, J. R. Malloch (USNM); Plum Point, May 28, 1922, L. L. Buchanan (USNM); Plummers Island, June 29, 1920, H. S. Barber (USNM); South Mountain near Pine Knob, May 14, 1918, R. E. Van Zwaluwonburg (USNM). *Massachusetts:* Chicopee (USNM). *New Hampshire:* Pike, July 16, 1931, on locust, Mrs. A. W. Jones (USNM). *New Jersey:* Nutley, E. A. Bischoff (USNM); Point Pleasant, Aug. 8, 1926, A. Nicolay (USNM). *New York:* Ithaca, Chittenden (USNM). *Ohio:* Hocking Co., Cantwell Cliffs, June 1, 1941, Clem Wolfe (USNM); Marietta, Hubbard and Schwarz (USNM). *Pennsylvania:* Berks Co., Stony Creek Mills, June 11, July 5, D. G. Kissinger (DGK); Hummelstown, June 11, 1925, J. N. Knull (USNM); Lehigh Gap, July 10, 1897, G. M. Greene (USNM); Pen Mar, Hubbard and Schwarz (USNM). *Tennessee:* Clarksville, June 23, 1919, E. R. Jones (USNM); near Nashville, Oct. 30, 1937, R. H. Adams (USNM). *Vermont:* Brattleboro, spring 1894 (USNM). *Virginia:* Afton, Hub-

bard and Schwarz (USNM); Dead Run to Turkey River, Apr. 30, 1922, W. L. McAtee (USNM); Falls Church, May 22, 1921, E. A. Chapin (USNM); Great Falls, June 12, 1918, L. L. Buchanan (USNM); Petersburg, June (USNM); Rosslyn, Feb. 6, Chittenden (USNM); St. Elmo, Chittenden (USNM). *West Virginia:* Berkley, Hubbard and Schwarz (USNM); Harper's Ferry, May 19, Hubbard and Schwarz (USNM).

Remarks: Blatchley and Leng (1916) record this species as occurring on black locust with *Apion nigrum* Herbst.

Apion (*Trichapion*) *rufipenne* Gyllenhal

Figure 13,*o*,*p*

Apion rufipenne Gyllenhal, *in* Schoenherr, Genera et species curculionidum, vol. 5, p. 397, 1839.—Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 31, 1911.

Apion rufinulum Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 69, pl. 2, fig. 24, 1890—Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 31, 1911.

Apion semicastaneum Faust, Stettiner Ent. Zeitschr., vol. 54, p. 320, 1893.—Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 31, 1911.

Description: Length, 2.38 to 2.62 mm.; width, 1.12 to 1.18 mm.

Robust. Beak, antennae, head and prothorax black; elytra, abdomen, mesothorax and metathorax, coxae, and legs reddish. Pubescence white, fine, dorsal surface nearly glabrous; apex of elytra, head and beak sparsely clothed; denser on anterior surface of front coxae, sides of mesothorax, and metepisternum. Beak of male as long as head and prothorax combined, one-half longer than prothorax, slightly curved; apical four-sevenths subcylindrical, not expanded laterally at antennal insertion; basal five-sevenths with coarse, rather close punctures bearing scales; apical region smoother, bare; dorsal surface with sparse, shallower punctures. Beak of female longer than head and prothorax combined, four-fifths longer than prothorax, slightly, evenly curved; subcylindrical, slightly attenuate distad of antennal insertion; basal fifth with sparse pubescence, moderate punctures; apical region finely, sparsely punctured. Antennae inserted at basal fifth of beak, of male at distance from eye equal to width of frons; first segment slightly shorter than next three; second segment shorter than next two; club 0.30 by 0.11 mm. Eyes moderately prominent; frons wider than dorsal tip of beak, flat medially. Prothorax at base one-third wider than long, middle narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel to slightly distad of middle, thence rounded to apex which is not constricted; in profile dorsal surface moderately convex; punctation shallow, moderately sparse but irregularly placed; basal fovea lacking. Elytra at humeri two-fifths wider than prothorax at base, 2.8 times as long as prothorax, length to width as 13 : 10; intervals flat, three to four times wider than punctures marking striae, nearly impunctate;

striae are not complete, 9 indicated beyond middle, striae are indicated by a row of well separated punctures, somewhat impressed on apex of elytra. Scutellum triangular, 0.09 by 0.09 mm. Front femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Mucro of tibia 2 smaller than that on tibia 3, both strongly dentate.

Material examined: 10 specimens including some determined by Hans Wagner.

Known distribution:

Mexico: *Guerrero:* Chilpancingo. *Tabasco:* Teapa. *Veracruz:* 20 kilometers south of Catemaco.

British Honduras: Belize.

Guatemala: Panajachel; Mirandilla; Zapote; Aceituno; San Gerónimo; San Juan in Vera Paz; Cahabón; Chiacam.

Nicaragua: Chontales.

Panama: David.

Colombia: No exact locality.

Venezuela: San Esteban.

Remarks: I have followed the synonymy of Wagner (1911). Characters separating this species from *A. evustum* Kissinger are summarized in the key.

Apion reconditum Group

The 15 species assigned to this group have characters in common as discussed above. In addition the frons is narrow, being slightly wider than the dorsal tip of the beak, eyes are prominent, elytral humeri are prominent, elytral intervals are generally smooth and uniserially pubescent, and the scales in the striae tend to be more conspicuous than those on the intervals.

Three species assigned to this group, *A. acupunctatum* Sharp, *A. davidis* Sharp, and *A. nitidirostre* Sharp, are known to the author only from females. There is naturally some question as to whether these three species actually belong to *Trichapion*, but this can be settled only when males are available. *A. davidis* and *A. nitidirostre* lack the basal lateral expansion and basal fovea of the prothorax. The beak of the former is very strongly, evenly curved.

In general the antennae are inserted close to the base of the beak at a distance from the eyes equal to the width of the frons, but in *A. minor* Smith, *A. gracilirostre* Sharp, and *A. bicolor* Gerstaecker the antennae are inserted more distad on the beak at a distance from the eyes distinctly greater than the width of the frons. *A. minor* is a small species, 1.5 mm.; the male has an attenuate beak about as long as head and prothorax combined; the dorsal surface of the prothorax is deeply, closely, and coarsely punctured; and the mucrones of the male are long, straight, and slender. *A. gracilirostre* is larger, 2.25 to 2.50 mm.,

the beak of the male is one-fourth longer than head and prothorax, and the antennae are inserted at a distance from the eye four times as great as width of frons, and the prothorax is finely punctured. *A. bicolor* has the prothorax and elytra strongly bronzed, the beak is slightly longer than head and prothorax combined, the antennae are inserted at a distance from the eye one-half greater than width of frons, and the prothorax is finely punctured.

A. nanulum, new species, has the head strongly humped above the eyes. The heads of the other species are nearly flat. *A. subrufum* Sharp and *A. subtinctum* Fall are distinct because of the reddish elytra and yellowish legs. The beak of the male of *A. subrufum* is a little longer than the head and prothorax combined while the beak of the male of *A. subtinctum* is about as long as the head and prothorax.

A. pervicax Fall and *A. importunum* Fall are comparatively shorter and more compact than the other species. The mucrones of the male of the former are very small while those of the latter are long and prominent. The elytral intervals of *A. oscillator* Sharp are convex while those of *A. reconditum* Gyllenhal and *A. managuense* are flat. *A. reconditum* differs from *A. managuense* in that the pubescence of the sides of the prothorax is about as coarse as that on the dorsal surface and the beak is slightly expanded at the antennal insertion. The pubescence on the sides of the prothorax of the latter species is distinctly coarser than that on the dorsal surface and the beak is strongly expanded at the antennal insertion.

A. subsequens, new species, differs from *A. reconditum* by its more acutely prominent eyes, more shallowly punctured prothorax, and scales in striae being not larger than those on elytra intervals.

This group appears to be closely related to the *A. patruele* group but its members differ in the more slender shape, the shallower basal fovea of the prothorax, the narrower frons, and the slight expansion of the beak over the antennal insertion. *A. pervicax* and *A. importunum* make a close approach to the *A. patruele* group. *A. minor*, with its attenuate beak, seems to make an approach to the *A. rostrum* group.

Apion (*Trichapion*) *acupunctatum* Sharp

FIGURE 14,*a*,*b*

Apion acupunctatum Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 51, 1890.

DESCRIPTION: Length, 1.75 mm.

Moderately robust. Black; pubescence inconspicuous, very fine, white, uniform. Female beak one-fifth longer than head and prothorax combined, moderately, evenly curved; basal one-third cylindrical, very gradually attenuate to apex; fine, sparsely punctured throughout. Antennae of female inserted at basal one-fourth of beak, at dis-

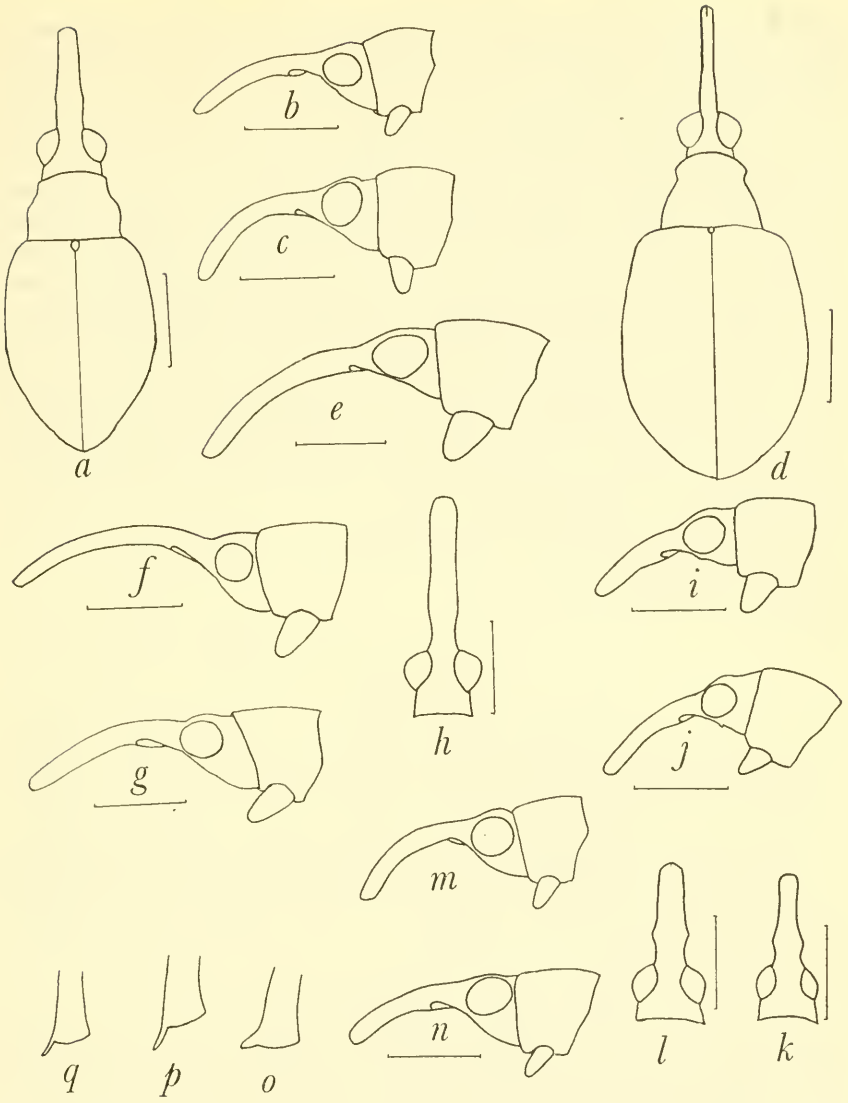

FIGURE 14.—*a*, *b*, *Apion acupunctatum* Sharp: *a*, entire dorsal view of female; *b*, lateral view of head and prothorax of female. *c*, *d*, *A. davidis* Sharp: *c*, lateral view of head and prothorax of female; *d*, entire dorsal view of female. *e*, *h*, *o*, *p*, *A. gracilirostre* Sharp: *e*, lateral view of head and prothorax of male; *h*, dorsal view of head of male; *o*, mucro of tibia 2 of male; *p*, mucro of tibia 3 of male. *f*, *g*, *A. bicolor* Gerstaecker: *f*, lateral view of head and prothorax of female; *g*, lateral view of head and prothorax of male. *i–k*, *q*, *Apion importunum* Fall: *i*, lateral view of head and prothorax of male; *j*, lateral view of head and prothorax of female; *k*, dorsal view of head of male; *q*, mucro of tibia 3 of male. *l–n*, *A. managuense* Wagner: *l*, dorsal view of head of male; *m*, lateral view of head and prothorax of female; *n*, lateral view of head and prothorax of male. Line equals 0.50 mm.

tance from eye one-half greater than width of frons; first segment as long as next three, second segment slightly longer than third, club 0.18 by 0.08 mm. Eyes very prominent; frons wider than dorsal tip of beak, with a smooth, flat median area and one or two irregular lateral rows of punctures. Prothorax at base one-third wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond slight basal lateral expansion parallel to middle, rounded to constricted apex; in profile dorsal surface slightly, evenly arcuate; punctation deep, 0.03 mm. in diameter, interspaces irregular, from one-half as wide to equal to diameter of punctures; basal fovea shallow, short. Elytra at humeri one-third wider than prothorax at base, 2.75 times as long as prothorax, length to width as 9 : 7; intervals somewhat more than twice as wide as striae, flat, with one row of inconspicuous scales; striae fine, shallow. Scutellum triangular, 0.05 by 0.05 mm., not furcate. Front femora about 3.3 times as long as wide. Claws with acute basal tooth.

MATERIAL EXAMINED: Two females determined by Sharp.

KNOWN DISTRIBUTION:

PANAMA: David (type, BMNH).

Apion (*Trichapion*) *bicolor* Gerstaecker

FIGURE 14,*f*,*g*

Apion bicolor Gerstaecker, Stettiner Ent. Zeitschr., vol. 15, p. 244, 1854.—Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 31, 1911.

Apion mandoni Wencker, Ann. Soc. Ent. France, vol. 3, p. 178, 1863.—Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 31, 1911.

Apion guatemalenum Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 50, 1890.—Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 31, 1911.

Apion sagax Faust, Stettiner Ent. Zeitschr., vol. 54, p. 321, 1893.—Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 31, 1911.

DESCRIPTION: Length, 1.88 to 2.06 mm.

Moderately robust. Black; elytra and prothorax with strong bronzy luster, base of antennae piceous; pubescence on dorsal surface of prothorax and elytra inconspicuous, very fine, white, coarser and denser on sides of mesothorax and metathorax. Beak of male slender, a little longer than head and prothorax combined, nine-tenths longer than prothorax, moderately, evenly curved; not expanded at antennal insertion, in lateral view basal fourth stout, parallel-sided, attenuate to apical third which is nearly parallel-sided; in dorsal view expanded slightly at tip; punctures arranged in rows, fine dorsally, coarser laterally, surface nearly polished, shining, sparsely pubescent in basal third. Female beak long and slender, one-third longer than head and prothorax combined, about twice as long as prothorax, strongly, evenly curved; in lateral view slightly dilated beyond basal fourth,

slightly attenuating to apex; in dorsal view nearly parallel-sided, tip slightly expanded; finely, sparsely punctured, polished, with minute pubescence basally. Antennae inserted at distance from eye one-half greater than width of frons, of male at basal fifth, of female slightly distad of basal sixth; first segment equals next three, second segment shorter than next two, club 0.24 by 0.08 mm. Eyes moderately prominent; frons narrow, of male slightly narrower than, of female about as wide as dorsal tip of beak, median sulcus variable, usually obsolete, with one lateral row of punctures. Prothorax at base one-third wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides beyond basal lateral expansion nearly parallel to middle, rounded to constricted apex; in profile dorsal surface slightly convex; punctation moderately deep, 0.02 to 0.03 mm. in diameter, interspaces less than diameter of punctures; basal fovea narrow, elongate, shallow. Elytra at humeri two-fifths wider than prothorax at base, about 2.8 times as long as prothorax, length to width as 9 : 7; intervals flat, twice as wide as striae, smooth, with one row of minute, distant punctures bearing minute scales; striae deep, fine. Scutellum rounded, 0.06 by 0.06 mm., with slight median sulcus. Front femora about 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with mucrones; mucro 2 shorter than mucro 3, both denticulate.

Material examined: One male and three females determined as *A. guatemalenum* by Sharp and five other specimens.

Known distribution:

Honduras: *Morazán:* Cerro Uyuca.
Guatemala: Cerro Zunil; San Gerónimo; El Tumbador; Senahú.
Venezuela: Colonia Tovar.
Bolivia: Sorata.
Colombia: No exact locality.

Apion (*Trichapion*) *davidis* Sharp

Figure 14,*c,d*

Apion davidis Sharp, Biologia Centrali-Americana, Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 53, 1890.

Description: Length, 2.0 mm.; width, 1.0 mm.

Robust. Black; nearly glabrous on dorsal surface; sides of mesothorax and metathorax with noticeable, white pubescence. Beak of female slightly longer than head and prothorax combined, four-fifths longer than prothorax, strongly, evenly curved; cylindrical beyond antennal insertion; with a few punctures arranged in rows in basal third, beyond antennal insertion polished and nearly impunctate. Antennae inserted a little behind basal sixth, at distance from eyes

slightly less than width of frons; first segment equals next three, second segment equals next two, club 0.21 by 0.07 mm. Eyes prominent; frons wider than dorsal tip of beak, flat medially. Prothorax at base one-fourth wider than long, middle narrower than base, apex three-fourths as wide as base; basal lateral expansion lacking, sides evenly converging to middle, then slightly rounded to strongly constricted apex, apical lateral margin flared out; in profile dorsal surface is slightly arcuate; punctation about 0.02 mm. in diameter, rather deep, irregularly placed, interspaces wider basally and laterally; basal fovea lacking. Elytra at humeri one-third wider than prothorax at base, three times as long as prothorax, length to width as 5 : 4; intervals about three times as wide as striae, flat, smooth, nearly impunctate; striae fine, inner margin more pronounced than outer margin. Scutellum triangular, 0.06 by 0.06 mm., with shallow median furrow. Front femora four times as long as wide. Claws with acute basal tooth.

MATERIAL EXAMINED: One female compared with type by G. A. K. Marshall and five other specimens.

KNOWN DISTRIBUTION:

PANAMA: David (type BMNH); Porto Bello, Feb. 28, 1901, E. A. Schwarz (USNM).

***Apion* (*Trichapion*) *gracilirostre* Sharp**

FIGURE 14,*e*,*h*,*o*,*p*

Apion gracilirostre Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 57, pl. 2, fig. 22, 1890.

DESCRIPTION: Length, 2.25 to 2.50 mm.

Moderately robust. Black; pubescence fine, white, sparse, coarser and denser on sides of mesothorax and metathorax. Male beak one-fourth longer than head and prothorax, distinctly curved, slender, basal third cylindrical, apical two-thirds depressed; dorsally polished and with fine, sparse punctures, laterally with irregular rows of coarser, denser punctures. Antennae inserted at basal fourth at distance from eye four times as great as width of frons; first segment slightly shorter than next five segments, second segment shorter than next two, club 0.23 by 0.07 mm. Eyes prominent; frons narrow, equal to dorsal tip of beak, with a shallow median depression and a lateral row of confluent punctures. Prothorax at base one-fourth wider than long, middle about equal to base, apex seven-tenths as wide as base; with moderate basal lateral expansion, sides expanded slightly from base to middle, rounded to constricted apex; in profile dorsal surface nearly flat, apex slightly depressed; punctation moderate, 0.03 mm. in diameter, deep, interspaces slightly narrower than diameter of punctures, alutaceous, flat; basal fovea deep, punctiform at base, with a

fine impressed line extending one-fourth length of prothorax. Elytra at base two-fifths wider than prothorax at base, three times as long as prothorax, length to width as 3 : 2; intervals one-half wider than striae, nearly flat, dull, alutaceous, with one row of punctures with very fine scales; striae deep, with one row of scales more conspicuous than those on intervals. Scutellum rounded, 0.06 by 0.08 mm., with slight median depression. Front femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with mucrones; second mucro short, subangulate; third mucro long, curved, simple.

Female not available for study.

Material examined: Five males, one compared with type by G. A. K. Marshall.

Known distribution:

Mexico: *Guerrero* (type BMNH). *Puebla:* Huauchinango, June 1954, D. G. Kissinger (DGK). *Michoacán:* 20 miles east of Morelia, Mar. 7, 1953, D. G. Kissinger (DGK).

Honduras: Tegucigalpa, Dec. 8, 1917, F. J. Dyer (USNM). *Morazán:* Cerro Uyuca, 5,500–5,700 feet, July 20, 1948, T. H. Hubbell (UM).

Remarks: Specimens from Huauchinango, Puebla were taken while beating in a scrubby oak and pine forest at about 5,000 feet elevation.

Apion (Trichapion) importunum Fall

Figure 14,*i–k,q*

Apion importunum Fall, Trans. Amer. Ent. Soc., vol. 25, p. 146, 1890.

Description: Length, 1.75 mm.; width, 0.85 mm.

Moderately robust. Black; pubescence sparse, white, rather coarse, coarser and more conspicuous laterally and ventrally. Male beak shorter than head and prothorax combined, one-third longer than prothorax; more strongly deflexed in apical third; in lateral view nearly parallel-sided; in dorsal view expanded laterally at antennal insertion, attenuate to apical third, slightly compressed there, apex nearly parallel; basal half dull, alutaceous, with scant pubescence, a row of confluent punctures above antennal insertion, apical half shining, sparsely, finely punctured. Female beak slightly shorter than head and prothorax, one-half longer than prothorax; slightly, evenly curved; apical two-thirds nearly cylindrical, slightly expanded laterally at antennal insertion; nearly smooth, shining beyond antennal insertion, finely sparsely punctate. Antennae inserted at distance from eye equal to width of frons; of male at basal fourth of beak, of female at basal fifth; first segment as long as next two, second shorter than next two, club 0.17 by 0.07 mm. Eyes moderately prominent; frons wider than dorsal tip of beak. Prothorax at base about one-fifth

wider than long, middle about equal to base, apex three-fourths as wide as base; sides beyond basal lateral expansion slightly expanding to middle, rounded to constricted apex; in profile dorsal surface nearly flat; punctation shallow, 0.03 mm. in diameter, interspaces about equal to diameter of punctures, alutaceous; basal fovea moderately deep, punctiform. Elytra at humeri one-third wider than prothorax at base, 2.6 times as long as prothorax, length to width as 13 : 10; intervals twice as wide as striae, somewhat convex, with one row of rather coarse scales, with irregular, fine, transverse rugae; striae fine, with deep, coarse, well separated punctures; striae rather shallow. Scutellum triangular, 0.06 by 0.06 mm., with slight median furrow. Front femora about 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, subangulate mucrones.

Types: I hereby designate as lectotype of this species the male specimen (MCZ 25106) in the Fall Collection labeled Georgia. Cotypes are in the J. L. LeConte Collection labeled Lake Harney, Fla., May (MCZ 373) and in the U. S. National Museum labeled Lake Harney, Fla., May, Hubbard and Schwarz (USNM 4217).

Material examined: Lectotype and 7 specimens.

Known distribution:

United States: *Georgia:* No exact locality (MCZ). *Florida:* Hilliard, June 8, 1930, J. O. Nottingham (UK); Jacksonville, Hubbard and Schwarz (USNM); Lake Harney, May 4, Hubbard and Schwarz (MCZ, USNM). *Mississippi:* Fulton, July 14, 1930, R. H. Beamer (UK).

Apion (*Trichapion*) *managuense* Wagner

Figure 14,*l–n*

Apion (*Trichapion*) *managuense* Wagner, Arch. Naturg. Berlin, vol. 78, p. 110, 1912.

Description: Length, 1.6 to 1.9 mm.

Moderately robust. Black; elytra slightly aeneous; pubescence moderate, fine, whitish, sparse, coarser and denser on sides of mesothorax and metathorax. Male beak as long as head and prothorax combined, deflexed in middle, strongly expanded laterally and ventrally at antennal insertion, attenuate to middle, nearly cylindrical to apex; in basal two-thirds moderately punctured and sparsely pubescent, apex smooth, shining. Female beak slightly longer than head and prothorax, moderately strongly curved, basal fifth stout, cylindrical, in dorsal view beak at middle two-thirds as wide as at base, apical four-fifths nearly cylindrical; basal fifth with scant pubescence, moderately punctured, apical four-fifths smooth, glabrous, shining. Antennae of male inserted at distance from eye equal to width of

frons, at basal fifth of beak, of female at distance from eye about two-thirds as great as width of frons, at basal one-seventh; first segment as long as next two; second segment shorter than next two; club 0.22 by 0.10 mm. Eyes moderately prominent; frons narrow, wider than dorsal tip of beak, with a shallow, median depression and an irregular lateral row of moderate punctures. Prothorax at base one-fourth to one-third wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides slightly expanded laterally at base, nearly parallel to middle, rounded to constricted apex; in profile dorsal surface slightly, evenly arcuate; punctation moderate, deep, 0.03 mm. in diameter, interspaces narrower than diameter of punctures, flat, alutaceous; basal fovea deep, short. Elytra at humeri one-half wider than prothorax at base, three times as long as prothorax, length to width as 9 : 7; intervals twice as wide as striae, flat, alutaceous, with one row of punctures bearing minute scales; striae deep, with one row of fine scales coarser than those on intervals. Scutellum roundly triangular, 0.06 by 0.06 mm., with median furrow. Front femora 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, blunt mucrones.

Material examined: Male and female determined by Hans Wagner.

Known distribution:

Nicaragua: Managua (type, Solari Collection).
Mexico: *Tabasco:* Teapa (BMNH).
Guatemala: Capetillo; San Gerónimo (BMNH).
Panama: "San Felice" (BMNH).

Apion (*Trichapion*) *minor* Smith

Figure 15,*a–c*

Apion minor Smith, Trans. Amer. Ent. Soc., vol. 11, p. 56, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 145, pl. 4, fig. 10, 10a, 1898.

Description: Length, 1.50 to 1.67 mm.; width, 0.67 to 0.71 mm.

Moderately slender. Black; pubescence conspicuous, white, moderately fine, not much denser laterally. Male beak shorter than head and prothorax combined, one-fifth longer than prothorax, slightly curved; attenuate from laterally expanded antennal insertion to tip; basal two-thirds dull, alutaceous, sparsely pubescent behind antennal insertion; apical third smoother, shining, glabrous. Female beak slightly longer than head and prothorax combined, three-fourths longer than prothorax, slightly curved; slightly attenuate beyond slight lateral expansion over antennal insertion to apical third, thence nearly cylindrical to apex; basal three-fourths dull, alutaceous, apical

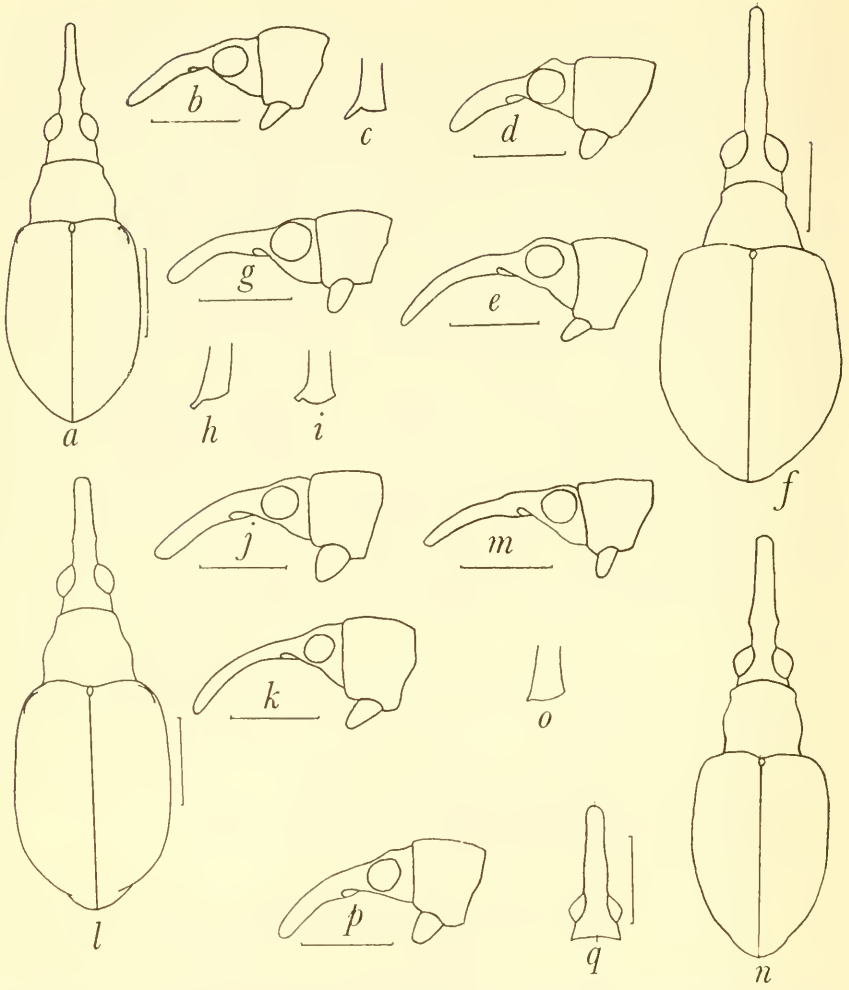

FIGURE 15.—*a-c*, *Apion minor* Smith: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of male; *c*, mucro of tibia 3 of male. *d*, *o*, *A. nanulum*, new species: *d*, lateral view of head and prothorax of male; *o*, mucro of tibia 3 of male. *e*, *f*, *A. nitidirostre* Sharp: *e*, lateral view of head and prothorax of female; *f*, entire dorsal view of female. *g–i*, *A. oscillator* Sharp: *g*, lateral view of head and prothorax of male; *h*, mucro of tibia 2 of male; *i*, mucro of tibia 3 of male. *j–l*, *A. reconditum* Gyllenhal: *j*, lateral view of head and prothorax of male; *k*, lateral view of head and prothorax of female; *l*, entire dorsal view of male. *m*, *n*, *A. subrufum* Sharp: *m*, lateral view of head and prothorax of male; *n*, entire dorsal view of male. *p*, *q*, *A. subsequens*, new species: *p*, lateral view of head and prothorax of male; *q*, dorsal view of head of male. Line equals 0.50 mm.

fourth smooth, shining. Antennae inserted at distance from eye one-half greater than width of frons, of male at basal third, of female at basal fourth of beak; first and second segments each equal to next two, club 0.17 by 0.07 mm. Eyes moderately prominent; frons wider than dorsal tip of beak. Prothorax at base slightly wider than long, middle about equal to base, apex three-fourths as wide as base; sides beyond slight basal lateral expansion slightly expanding to middle then rounded to constricted apex; in profile dorsal surface nearly flat; punctures deep, 0.03 mm. in diameter, interspaces about one-half diameter of punctures, slightly alutaceous; basal fovea deep, punctiform. Elytra at humeri one-third wider than prothorax at base, 2.6 times as long as prothorax, length to width as 13 : 8.5; intervals about twice as wide as striae, rather convex, with one row of punctures; striae fine, moderately deep. Scutellum triangular, 0.06 by 0.06 mm., with moderate median furrow. Front femora slightly more than three times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, simple mucrones.

Material examined: Five specimens including material in the Fall Collection.

Known distribution:

United States: *Iowa:* Dickinson, Johnson, and Story Counties; Iowa City, H. F. Wickham (USNM); Lake Okoboji, July 24, Aug. 26, 1916, L. L. Buchanan (USNM). *Missouri* (USNM). *Nebraska* (USNM). *Kansas:* Topeka (USNM).

Remarks: No types of this species were found in either the J. L. LeConte Collection or the U. S. National Museum, the two collections containing most of Smith's types. It is necessary therefore to follow Fall (1898) in his interpretation of this species.

Fall (1898) did not list distribution records for this species, evidently through an oversight. Leng (1920) gives the locality of this species as Lower California, which is certainly an error.

***Apion (Trichapion) nanulum*, new species**

Figure 15,*d*,*o*

Description: Length, 1.75 to 1.80 mm.; width, 0.80 to 0.87 mm.

Moderately robust. Black, prothorax and elytra aeneous; pubescence inconpsicuous, white, very fine, slightly coarser and more conspicuous on sides of prothorax, mesothorax, and metathorax. Beak of male shorter than head and prothorax combined, one-third longer than prothorax, moderately curved; in side view nearly parallel-

sided throughout; in dorsal view slightly expanded at antennal insertion, attenuate to apical third, there slightly compressed, tip parallel; alutaceous, basal two-thirds very sparsely pubescent, sparsely punctured, tip smooth. Beak of female shorter than head and prothorax combined, slightly longer than beak of male and more slender, moderately curved; nearly cylindrical, in side view very slightly attenuate toward tip; nearly glabrous, smoother and more shining than that of male. Antennae of male inserted at basal fourth of beak at distance from eye one-third greater than width of frons, of female inserted at basal fifth at distance from eye equal to width of frons; first segment equals next two; second segment shorter than next two; club 0.16 by 0.06 mm., eyes prominent; frons equals dorsal tip of beak, with indistinct median furrow. Prothorax slightly wider than long, middle slightly wider than base, apex 0.85 as wide as base; sides beyond slight basal lateral expansion expanding to widest point at middle, rounded to slightly constricted apex; in profile dorsal surface slightly arcuate; punctation 0.02 mm. in diameter, shallow, interspaces much greater than diameter of punctures, minutely alutaceous; basal fovea shallow, punctiform. Elytra at humeri two-fifths wider than prothorax at base, 2.75 times as long as prothorax, length to width as 9 : 6.5; intervals flat, intervals 2 and 4 more than three times as wide as striae, other intervals somewhat narrower, with one row of indistinct punctures, surface smooth; striae shallow, very fine. Scutellum narrowly elongate-triangular, 0.08 by 0.04 mm., convex. Front femora 3.6 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with short mucrones.

Types: Holotype male (USNM 64129), Tampico, Tamaulipas, Mexico, December 12, E. A. Schwarz. Allotype female, same data as holotype (USNM).

Apion (Trichapion) nitidirostre Sharp

Figure 15,*e,f*

Apion nitidirostre Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 49, 1890.

Description: Length, 1.88 mm.

Robust. Black, elytra faintly bluish; dorsal surface of prothorax and elytra nearly glabrous, sides of mesothorax and metathorax with dense, white, fine scales. Beak of female longer than head and prothorax combined, nearly two times as long as prothorax, moderately, evenly curved; stout and nearly parallel-sided in basal one-fifth, then attenuate, apical three-fourths nearly cylindrical; polished and shining throughout, slightly punctured and minutely pubescent in basal fourth; apical three-fourths impunctate, bare. Antennae

inserted at basal sixth, at distance from eye equal to width of frons; first segment slightly shorter than next two, second segment slightly shorter than next two, club 0.22 by 0.08 mm. Eyes prominent; frons narrow, about equal to dorsal tip of beak, with one row of coarse punctures on either side of a rather broad, concave, median area. Prothorax at base one-third wider than long, middle three-fourths as wide as base, apex seven-tenths as wide as base; basal lateral expansion lacking, sides converging from base to middle, then strongly rounded and constricted, lateral apical margin expanded, dorsal apical margin emarginate medially; in profile dorsal surface slightly arcuate; punctation minute (0.02 mm. in diameter), shallow, sparse, interspaces one to three times as wide as punctures; basal fovea lacking. Elytra at humeri two-fifths wider than prothorax at base, three times as long as prothorax, length to width as 5 : 4; intervals flat, four to five times as wide as striae, smooth, with minute ground sculpture, with two rows of minute punctures, apparently glabrous; striae very fine, moderately deep, punctures vague, widely separated, apparently glabrous. Scutellum triangular, 0.06 by 0.06 mm., not furcate. Front femora 3.8 times as long as wide. Claws with acute basal tooth.

MATERIAL EXAMINED: One female determined by Sharp.

KNOWN DISTRIBUTION:

PANAMA: Bugaba (type, BMNH).

Apion (*Trichapion*) *oscillator* Sharp

FIGURE 15,*g–i*

Apion oscillator Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 64, 1890.

DESCRIPTION: Length 1.6 to 2.0 mm.

Moderately robust. Black, slightly aeneous; pubescence scant, fine, slightly denser on sides of mesothorax and metepisternum. Male beak equal to head and prothorax combined, moderately, evenly curved; at basal fourth moderately stout, cylindrical, attenuate to middle, apical half nearly cylindrical; finely, sparsely, deeply punctate, a coarse lateral row of punctures above antennal insertion. Antennae inserted at basal sixth of beak at distance from eye equal to width of frons; first segment slightly shorter than next two, second segment slightly shorter than next two, club 0.18 by 0.08 mm. Eyes prominent; frons narrow, equal to dorsal tip of beak, with a shallow median depression and a lateral row of coarse punctures. Prothorax at base more than two-fifths wider than long, at middle slightly narrower than base, apex seven-tenths as wide as base; sides expanded laterally at base, nearly parallel to middle, rounded to constricted apex; in profile

dorsal surface moderately convex, flattened basally and apically; punctation deep, 0.03 to 0.04 mm. in diameter, interspaces usually about one-half as great as diameter of punctures, with a narrow impunctate median area; basal fovea moderately deep, elongate, oval. Elytra at humeri two-fifths wider than prothorax at base, more than 2.8 times as long as prothorax, length to width as 7.5 : 6; intervals one-half wider than striae, moderately convex, smooth, alutaceous, with one row of very fine, distant punctures, apparently glabrous; striae deep, with one row of conspicuous scales. Scutellum rounded, triangular, 0.06 by 0.08 mm., smooth. Front femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 2 armed with a moderately long, dentate mucro; tibia 3 armed with a moderately long, subangulate mucro.

Material examined: One male determined by Hans Wagner, two broken specimens determined by Sharp, and one other male.

Known distribution:

Mexico: *Tabasco:* Frontera (type, BMNH).

Guatemala: Guatemala City (BMNH). British Honduras: "M-tee" district, May 25, 1906, Bowditch Collection (MCZ).

Apion (*Trichapion*) *pervicax* Fall

Apion pervicax Fall, Trans. Amer. Ent. Soc., vol. 25, p. 139, pl. 4, fig. 2, 14, 1898.

Description: Length 1.4 to 1.6 mm.

Moderately robust. Black, elytra slightly aeneous; pubescence scant, fine, white, nearly uniform. Male beak four-fifths as long as head and prothorax combined, moderately deflexed at middle, moderately expanded laterally and ventrally at antennal insertion, attenuate to apex; basal two-thirds finely punctured, with scant pubescence, finely densely alutaceous, apical third smoother, more shining. Female beak a little longer than head and prothorax combined, moderately, evenly curved; basal fifth moderately stout, attenuate to middle, apical half nearly cylindrical; basal fifth with scant pubescence, densely, finely alutaceous, apical third polished, finely punctured. Antennae inserted at distance from eye equal to width of frons, of male at basal fourth of beak, of female at basal fifth; first segment nearly as long as next two, second segment nearly as long as next two, club 0.15 by 0.08 mm. Eyes slightly prominent; frons moderately wide, with slight median sulcus and two lateral rows of punctures. Prothorax one-fifth wider at base than long, middle about equal to base, apex three-fourths as wide as base; sides expanded laterally at base, slightly expanded to middle, rounded to constricted apex; in profile dorsal surface nearly flat, apical third slightly deflexed; punctation deep, 0.03 mm. in diameter, interspaces

narrower than diameter of punctures; basal fovea deep, elongate, one-third length of prothorax. Elytra at humeri one-third wider than prothorax at base, 2.6 times as long as prothorax, length to width as 4 : 3; intervals nearly flat, twice as wide as striae, finely, transversely rugulose, with one row of fine punctures bearing fine scales; striae deep, with one row of scales. Scutellum triangular, 0.06 by 0.06 mm., smooth. Front femora slightly less than three times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with very small mucrones.

Types: I hereby designate the lectotype of this species as the male specimen (MCZ 25116) in the Fall Collection labeled Tampa, Fla. Cotype with same data in U. S. National Museum (USNM 4234).

Material examined: Lectotype and two other specimens.

Known distribution:

United States: *Florida:* Hillsborough Co. (USNM); Tampa (MCZ, USNM).

Apion (*Trichapion*) *reconditum* Gyllenhal

Figure 15,*j–l*

Apion reconditum Gyllenhal, *in* Schoenherr, Genera et species curculionidum, vol. 5, p. 432, 1839.

Apion turbulentum Smith, Trans. Amer. Ent. Soc., vol. 11, p. 56, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 146, 1898.—Chittenden, Bur. Ent. Bull., vol. 64, p. 31, 1908.—Blatchley and Leng, Rhynchophora or weevils of northeastern America, p. 80, 1916.—Buchanan, Proc. Ent. Soc. Washington, vol. 24, p. 84, 1922.—Bruhn, Great Basin Nat., vol. 8, p. 12, 1947 (new synonymy).

Description: Length, 1.54 to 2.00 mm.; width, 0.81 to 0.93 mm. Moderately robust. Black, slightly aeneous; pubescence scant, fine, white, denser on sides of mesothorax and metepisternum. Male beak slightly shorter than head and prothorax, moderately, evenly curved, slightly dilated laterally and ventrally at antennal insertion, attenuate to middle, apical half nearly cylindrical; laterally with rows of strong punctures, dorsally punctures sparse, fine, tip smoother, more shining; pubescence scant. Female beak a little longer than head and prothorax combined, moderately, evenly curved, lateral antennal dilation very slight, apical two-thirds nearly cylindrical; shining beyond antennal insertion, finely punctured Antennae inserted at distance from eye equal to width of frons at basal fifth of beak; first segment nearly equal to next three; second segment shorter than next two; club 0.21 by 0.09 mm. Eyes moderately prominent; frons narrow, about equal to dorsal tip of beak, with a rather broad median sulcus, deep in middle, rather broadly V-shaped, with a lateral line of deep, confluent punctures. Prothorax at base one-fourth wider than long, middle slightly narrower than base, apex

three-fourths as wide as base; sides moderately expanded laterally at base, nearly parallel to middle, rounded to constricted apex; in profile dorsal surface nearly flat, more convex in some females; punctation deep, irregular, about 0.03 mm. in diameter, interspaces irregular, flat, shining, alutaceous, from one-third to twice as great as diameter of punctures; basal fovea deep, linear, about one-third length of prothorax or shorter. Elytra at humeri two-fifths wider than prothorax at base, more than 2.8 times as long as prothorax, length to width as 10 : 7; intervals at least one-half wider than striae, nearly flat, smooth, alutaceous, with one row of fine punctures bearing inconspicuous scales; striae deep, with one row of conspicuous scales. Scutellum triangular, 0.06 by 0.06 mm., with slight median furrow. Front femora 3.6 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderate, nearly simple mucrones.

Types: I hereby designate the lectotype of *A. turbulentum* Smith as the male specimen (USNM 1260) labeled District of Columbia. A cotype (MCZ 372) in the J. L. LeConte Collection is labeled Pennsylvania.

Material examined: Type of *A. reconditum*, female, labeled Pennsylvania in the Riksmuseum, through the kindness of Dr. René Malaise; lectotype of *A. turbulentum;* and 150 other specimens.

Known distribution:

Canada: *Ontario:* Fisher Glen, June 12, 1931, W. J. Browne (CNC); Ottawa, July 4, August 25, R. De Ruette (CNC). *Quebec:* Montreal, July 2, 1902, C. J. Quellet (USNM).

United States: *Alabama:* "Coleta," H. H. Smith (USNM); Corona, Walker Co., October 12, 1950, A. F. Archer (BDV); Langsdale, Chambers Co., H. H. Smith (USNM); Mobile, Apr. 18, 1910, W. D. Pierce (USNM); Pyziton, Clay Co., H. H. Smith (USNM); Wadley, H. H. Smith (USNM). *Arkansas:* Little Rock, Wickham (USNM); McNeil, Oct. 1, 1906, in cotton field, J. D. Mitchell (USNM). *Connecticut:* East Haddam, June 19, 1936, M. P. Zoppe (USNM). *District of Columbia:* Apr. 24, May 15 (USNM). *Georgia:* Okefenokee Swamp, Aug. 8, 1902, P. L. Richer (USNM); Rabun Co., July, Leng (USNM). *Illinois:* Muncie, Aug. 31, 1907 (USNM). *Indiana:* Blatchley and Leng (1916) state this species is common throughout the State. *Iowa:* Iowa City, H. F. Wickham (USNM); Lake Okoboji, June 21, 1916, L. L. Buchanan (USNM). *Kansas:* Leavenworth Co., June 30, 1924, R. H. Beamer (UK). *Kentucky:* Brooklyn Bridge, June 29, 1925 (USNM). *Louisiana:* Forbing, Mar. 24, 1908, R. A. Cushman (USNM); Mansura, Apr. 3, 1909, W. D. Pierce (USNM). *Maryland:* Many records throughout the State. *Massachusetts:* Chicopee, Aug. 16, 1902, F. Knab (USNM); Springfield (USNM). *Michigan:* Detroit, May, Hubbard and Schwarz (USNM); Washtenaw Co., Aug. 1, 1922, M. H. Hatch (USNM). *Mississippi:* Utica, August (USNM). *Nebraska:* Nebraska City, June (USNM). *New Jersey:* Greenwood Lake (USNM); Orange Mt. (USNM); Pompton (USNM); Raritan (USNM); Springfield (USNM); Warren Co. (USNM); Woodside (USNM). *New York:* Ithaca, July 10, 1951, B. D. Valentine (BDV). *North Carolina:* Round Knob (USNM). *Ohio:* Adams Co., Aug. 1, 1950 (ELS); Ash-

land Co., Apr. 9, 1953 (ELS); Cincinnati, H. Soltau (USNM); Franklin Co., June 21, 1950 (ELS); Westerville, June 26, 1949 (ELS). *Pennsylvania:* Ashbourne, May 24, 1900 (USNM); Frankford (USNM); Glenolden, June 16 (USNM); Glenside, June 16 (USNM); Hanover, May 15, 1930 (USNM); Lehigh Gap, Aug. 8, 1904 (USNM). *Tennessee:* Gatlinburg, Sept. 20, 1941 (USNM); Memphis, May 20, 1916 (USNM); Nashville, Aug. 4–15, 1897 (USNM). *Texas:* Columbus, Aug. 14, E. A. Schwarz (USNM). *Virginia:* Chain Bridge, May 7, 1922 (USNM); Covington, May 6, 1950 (DGK); Fairfax Co., Dyke, May 28 (USNM); Falls Church, July 2, 1922 (USNM); Fredericksburg, July 15, 1900 (USNM); Nelson Co., Aug. 4, 1910 (USNM); Stone Creek, Lee Co. (USNM).

Remarks: Chittenden (1908) records this species as developing in the seeds of tick-trefoil, *Meibomia marylandica* L. Blatchley and Leng (1916) state that it was beaten from flowers of panicled dogwood, *Cornus candidissma* Marsh., and swept from huckleberry.

Apion reconditum Gyllenhal is a name that has not been recognized since its description in 1839. Both Smith (1884) and Fall (1898) treat the name as an unrecognized species. An examination of the type has revealed the above synonymy.

Apion (*Trichapion*) *subrufum* Sharp

Figure 15,*m*,*n*

Apion subrufum Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 68, 1890.

Description: Length, 1.67 mm.

Moderately robust. Dark reddish; beak, head and prothorax darker than elytra; tibiae and tarsi light reddish yellow; pubescence moderately fine, white, on dorsal surface of prothorax and elytra inconspicuous, denser on median basal spot of prothorax; denser on sides of mesothorax and metathorax. Beak of male slender, slightly longer than head and prothorax combined, three-fifths longer than prothorax, slightly curved; more strongly deflexed in apical third; in lateral view stouter in basal fourth, attenuate, apical one-half nearly parallel-sided; in dorsal view moderately expanded over antennal insertion, apical two-thirds nearly parallel-sided; polished, with irregularly placed, sparse, moderately deep punctures, more strongly punctured toward base and laterally. Antennae of male inserted at basal one-eighth at distance from eye equal to width of frons; first segment equals next two, second segment shorter than next two, club 0.25 by 0.09 mm. Eyes moderately prominent; frons narrow, about equal to dorsal tip of beak, with a moderately wide median area and a shallow, wide sulcus. Prothorax at base one-fifth wider than long, middle about as wide as base, apex seven-tenths as wide as base; sides beyond minute basal lateral expansion slightly expanding to middle, rounding to constricted apex; in profile dorsal surface nearly flat; punctation 0.03 mm. in diameter, shallow, margin

of punctures more distinct basally, interspaces irregular, from one to three times as wide as punctures; basal fovea absent. Elytra at humeri one-third wider than prothorax at base, 2.6 times as long as prothorax, length to width as 6:5; intervals flat, twice as wide as striae, with one row of distant, minute punctures bearing minute scales; striae moderately fine, deep, with one row of scales larger than those on intervals. Scutellum triangular, 0.08 by 0.08 mm., with no median depression. Front femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with short, triangular-acute mucrones.

MATERIAL EXAMINED: One male determined by Sharp.

KNOWN DISTRIBUTION:

GUATEMALA: La Tinta in Vera Paz (type).

***Apion (Trichapion) subsequens*, new species**

FIGURE 15,*p,q*

DESCRIPTION: Length, 1.67 to 1.91 mm.; width, 0.78 to 0.94 mm.

Moderately robust. Black, elytra and prothorax somewhat aeneous, femora and tibiae piceous; pubescence very fine, white, inconspicuous on dorsal surface, somewhat coarser and denser on mesothorax. Beak of male slightly shorter than head and prothorax combined, four-sevenths longer than prothorax, moderately, evenly curved; apical third nearly cylindrical, in dorsal view attenuate from antennal insertion to apical third; basal two-thirds moderately dull, alutaceous, sparsely punctured and pubescent, apical third shining, minutely punctured. Beak of female longer than head and prothorax combined, nearly twice as long as prothorax, moderately, evenly curved; apical half nearly cylindrical, somewhat depressed at tip; in dorsal view attenuate from antennal insertion to middle; basal three-fourths rather strongly punctured, a distinct row of punctures above antennal insertion extends to middle; pubescence sparse at base. Antennae inserted at distance from eye equal to width of frons, of male at basal fourth, of female at basal sixth of beak; first segment equals next two, second segment shorter than next two; club 0.20 by 0.07 mm. Eyes acutely prominent; frons wider than dorsal tip of beak, with a slight, broad median depression and one lateral row of fine punctures. Prothorax at base one-fourth longer than wide, middle about as wide as base, apex three-fourths as wide as base; sides beyond obsolete basal lateral expansion subparallel in basal half, rounded to constricted apex; in profile dorsal surface is nearly flat; punctation very shallow, about 0.03 mm. in diameter, interspaces equal to or wider than punctures; basal fovea shallow, short. Elytra at humeri one-half

wider than prothorax at base, three times as long as prothorax, length to width as 9 : 6.5; intervals more than twice as wide as striae, flat, with one row of minute punctures bearing minute scales; striae fine, deep. Scutellum elongate-triangular, 0.06 by 0.04 mm., convex, no median furrow. Front femora four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, subdentate mucrones, mucro of tibia 3 longer than that of tibia 2.

Types: Holotype male (USNM 64130), Tampico, Tamaulipas, Mexico, Dec. 16, E. A. Schwarz. Allotype female, same locality as holotype, December 7 (USNM). One paratype, male, same locality as holotype, December 6 (DGK).

Apion (Trichapion) subtinctum Fall

Apion subtinctum Fall, Trans. Amer. Ent. Soc., vol. 25, p. 138, 1898.

Description: Length, 1.37 to 1.70 mm.; width, 0.68 to 0.82 mm.

Moderately robust. Black with reddish bronze luster; pubescence scant, fine, white, denser mediobasally on prothorax and on sides of mesothorax and metathorax. Male beak as long as head and prothorax combined, slightly, evenly curved; with a moderate, lateral dilation over antennal insertion, attenuate to middle, apical half nearly cylindrical; polished, laterally with a few strong punctures at antennal insertion; glabrous beyond base. Female beak similar. Antennae inserted at distance from eye equal to width of frons, at basal one-sixth of beak; first segment longer than next two, shorter than next three; second segment shorter than next two; club 0.18 by 0.06 mm. Eyes prominent; frons narrow, about equal to dorsal tip of beak, with slight median sulcus and a lateral row of punctures. Prothorax at base one-sixth wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides moderately expanded laterally at base, nearly parallel to middle, rounded to moderately constricted apex; in profile dorsal surface nearly flat; punctation 0.01 to 0.02 mm. in diameter, shallow, posterior margin of punctures more abrupt, interspaces flat, alutaceous, variable, greater than diameter of punctures, usually twice as wide; basal fovea shallow, linear, reduced. Elytra at humeri two-fifths wider than prothorax at base, 2.8 times as long as prothorax, length to width as 4 : 3; intervals about twice as wide as striae, flat, with one row of fine punctures bearing inconspicuous scales, smooth; striae deep, with one row of rather conspicuous scales. Scutellum triangular, 0.04 by 0.04 mm., with median furrow. Front femora 3.75 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, simple mucrones.

TYPES: I hereby designate the lectotype of this species as the male specimen (MCZ 25126) in the Fall Collection labeled San Antonio, Tex. A cotype (USNM 4221) is labeled Columbus, Tex.

MATERIAL EXAMINED: Lectotype and 20 specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Texas:* Brownsville (USNM); Columbus (USNM); La Paloma, Oct. 14, 1944 (ELS); San Antonio (MCZ); Victoria (USNM);
MEXICO: *Tamaulipas:* Matamoros, Mar. 23, 1942, Libby and Moreno (USNM), May, Fenyes Collection (CAS). Tampico, December 21, E. A. Schwarz (USNM).

REMARKS: Material in the U. S. National Museum was reared from blooms of *Malvaviscus drummondi* from Matamoros, Mexico. Also in the same collection is material collected at Victoria, Tex. on *Bumelia* sp.

Apion oblitum Group

The males of the two species placed in this group have all three tibiae mucronate, in addition the beak of both sexes is abruptly narrowed slightly distad of the antennal insertion and is polished and nearly cylindrical to the tip. The two species do not overlap in range. *A. oblitum* Smith ranges from Nebraska to Texas and Arizona: *A. mediocre* Sharp occurs in Mexico in the States of Guerrero and Puebla.

The two species are rather similar in appearance. The dorsal surface of the prothorax of *A. oblitum* is deeply punctured and mucrones 2 and 3 of the male are rather short. The dorsal surface of the prothorax of A. *mediocre* is shallowly punctured and mucrones 2 and 3 of the male are long.

Apion (*Trichapion*) *mediocre* Sharp

Figure 16,*a–d*

Apion mediocre Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 56, 1890.

DESCRIPTION: Length, 1.95 to 2.50 mm.

Moderately robust. Black; elytra dull with bluish luster, prothorax more shining; pubescence conspicuous, fine, white, sparse, coarser and denser on sides of mesothorax and metathorax. Male beak slightly shorter than head and prothorax, slightly curved, basal third stoutly cylindrical, abruptly attenuate to basal two-fifths, nearly cylindrical to apex; in dorsal view middle about two-thirds as wide as base; sparsely, finely punctate, basal third very sparsely pubescent. Female beak a little longer than head and prothorax, slightly deflexed at apical two-thirds; in dorsal view stoutly cylindrical at basal fifth, abruptly attenuate to basal two-fifths, cylindrical to apex; in lateral view attenuating from base to slightly distad of antennal insertion, at middle two-thirds as wide as base; basal fifth sparsely pubescent, dull, apical

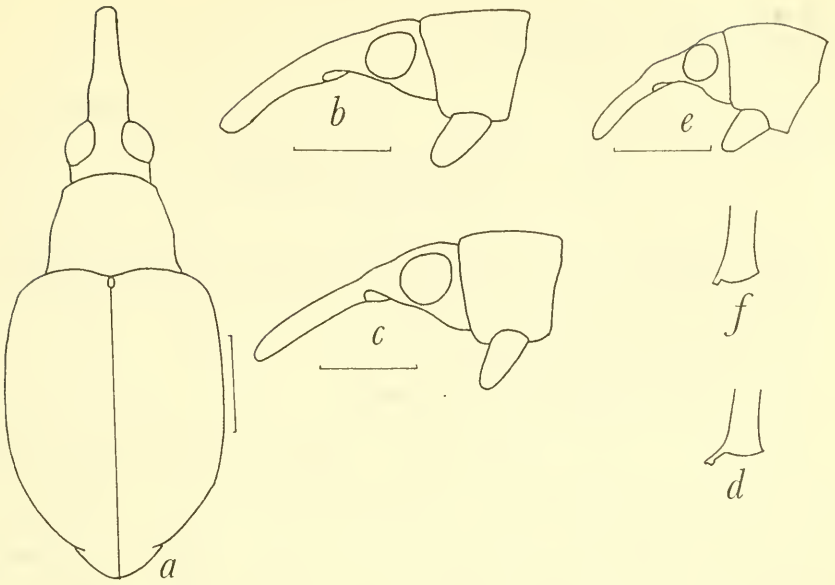

FIGURE 16.—*a–d*, *Apion mediocre* Sharp: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of male; *c*, lateral view of head and prothorax of female; *d*, mucro of tibia 3 of male. *e*, *f*, *A. oblitum* Smith: *e*, lateral view of head and prothorax of male; *f*, mucro of tibia 3 of male. Line equals 0.50 mm.

four-fifths shining, glabrous, very finely, sparsely punctate. Antennae inserted at distance from eye slightly less than width of frons, at basal fifth of beak; first segment slightly shorter than next three; second segment shorter than next two; club 0.27 by 0.09 mm. Eyes moderately prominent; frons narrow, about as wide as dorsal tip of beak, with slight median depression and a lateral row of coalesced punctures. Prothorax at base one-fourth wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides slightly expanded laterally at base, slightly diverging to middle, rounded to constricted apex; in profile dorsal surface slightly, evenly arcuate; punctation moderately deep, 0.03 mm. in diameter, interspaces narrower than diameter of punctures; basal fovea shallow, linear, extending one-third length of prothorax. Elytra at humeri two-fifths wider than prothorax at base, 2.7 times as long as prothorax, length to width as 4 : 3; intervals twice as wide as striae, convex, with one row of fine scales. Scutellum rounded, 0.06 by 0.06 mm., with slight median furrow. Front femora slightly more than four times as long as wide. Claws with acute basal tooth.

Special male characters: Three pairs of tibiae mucronate, tibia 1 with minute mucro, tibiae 2 and 3 with long, dentate mucrones.

MATERIAL EXAMINED: One male compared with type by G. A. K. Marshall and 70 specimens.

KNOWN DISTRIBUTION:

MEXICO: *Guerrero* (type, BMNH). *Puebla:* Huauchinango, June 1954, D. G. Kissinger.

Apion (Trichapion) oblitum Smith

FIGURE 16,*e,f*

Apion oblitum Smith, Trans. Amer. Ent. Soc., vol. 11, p. 54, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 153, 1898.—Schwitzgebel and Wilbur, Journ. Kansas Ent. Soc., vol. 15, p. 44, 1942.

Apion capitatum Smith, Trans. Amer. Ent. Soc., vol. 11, p. 54, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 154, 1898.

DESCRIPTION: Length, 2.0 to 2.4 mm.

Moderately robust. Black; pubescence fine, white, sparse, denser on mesothorax and metepisternum. Male beak shorter than head and prothorax combined, one-fifth longer than prothorax; deflexed at basal third; in lateral view abruptly narrower in front of antennal insertion; in dorsal view expanded laterally over antennal insertion, attenuate beyond dilated portion, apical third nearly cylindrical; basal three-sevenths dull, alutaceous, punctured, sparsely pubescent, apical four-sevenths dull, shining. Female beak similar to male except that in lateral view it is not as abruptly narrowed beyond antennal insertion. Antennae inserted at distance from eye equal to width of frons; nearly at basal fourth of beak; first segment equals next two, second segment shorter than next two, club 0.21 by 0.08 mm. Eyes moderately prominent; frons wider than dorsal tip of beak. Prothorax at base slightly wider than long, middle and base about equal, apex five-sevenths as wide as base; sides beyond basal lateral expansion slightly expanded to middle, rounded to moderately constricted apex; in profile dorsal surface slightly arcuate; punctation deep, 0.04 mm. in diameter, interspaces about one-half as wide as punctures, alutaceous; basal fovea deep, narrow, extending one-third length of prothorax. Elytra at humeri two-fifths as wide as prothorax, 2.8 times as long as prothorax, length to width as 4 : 3; intervals twice as wide as striae, nearly flat, generally with one row of scales; striae moderately deep, fine. Scutellum triangular, 0.04 by 0.04 mm., not furcate. Front femora 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibia 1 with minute mucro, tibiae 2 and 3 with small, subdentate mucrones.

TYPES: I hereby designate as lectotype of *A. oblitum* Smith the male specimen (USNM 1261) labeled Colorado. A cotype (MCZ 379) in the J. L. LeConte Collection is labeled Texas.

I hereby designate the lectotype of *A. capitatum* Smith as the male specimen (MCZ 380) in the J. L. LeConte Collection labeled Nebraska.

MATERIAL EXAMINED: Lectotype and 50 specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Arizona:* No exact locality (USNM). *Colorado:* No exact locality (USNM); Lincoln Co., Aug. 12, 1926 (UC). *Illinois:* New Canton, Aug. 12, 1948, Sanderson and Stannard (INHS). *Kansas:* Douglas Co. (UK); Hodgeman Co., July 17–25, 1917 (UK); Onaga July 7, 1925, R. H. Beamer (UK); Sedgwick Co., 1,291 ft., 1916, R. H. Beamer (UK); Sumner Co., 1,189 ft., 1916, R. H. Beamer (UK); Wallace Co., Aug. 11, 1926, W. Benedict (UK); Wichita, Sept. 6, 1935, R. H. Beamer (UK). *Nebraska:* No exact locality (USNM). *Texas:* Potter Co., July 7, 1927, R. H. Beamer (UK).

REMARKS: Although *A. capitatum* has line priority over *A. oblitum*, Fall (1898), as the first reviser, fixed the latter as the valid name.

Schwitzgebel and Wilbur (1942) collected this species on ironweed, *Veronia interior* Small.

Apion nigrum Group

The five species comprising this group are distinct in that the middle of the prothorax is distinctly wider than the base and the sides are strongly rounded at the middle; males of these species exhibit more or less well developed secondary sexual modifications of the front legs. The five species do not overlap in range. *A. nigrum* Herbst occurs in the eastern half of the United States; *A. dolosum* Fall occurs in the mountains of New Mexico and Arizona; *A. cordatum* Smith occurs on the Pacific Coast from Washington to southern California; *A. heterogeneum* Sharp occurs in the mountains of central Mexico; and *A. lativentre* Béguin-Billecocq occurs in Brazil and Argentina.

Of the five species, *A. dolosum* and *A. nigrum* are the most alike. The former differs in that the sides of the prothorax are not as strongly rounded, the beak of both sexes is comparatively long; the front tarsi of the male are not strongly dilated, and the front femora of the male are incrassate. *A. nigrum* differs from the other four species by the dilated, densely pubescent front tarsi of the male. The front tibiae of the male of *A. heterogeneum* are dilated, curved, and have long, yellowish ciliae on the inner surface. The front tibiae of the male of *A. cordatum* are minutely mucronate. *A. lativentre* is distinct in that the basal lateral region of the prothorax is prominent on either side of the middle.

Apion (*Trichapion*) *cordatum* Smith

FIGURE 17,*a–c*

Apion cordatum Smith, Trans. Amer. Ent. Soc., vol. 11, p. 54, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 153, pl. 4, fig. 3, 1898.

DESCRIPTION: Length, 2.00 to 2.75 mm.

Moderately robust. Black; pubescence conspicuous, white, coarse,

sparse, denser on sides of mesothorax. Male beak four-fifths as long as head and prothorax, slightly expanded laterally and ventrally at antennal insertion, attenuate to middle, nearly cylindrical beyond middle, apex three-fifths as wide as base; punctation over antennal insertion strong, arranged in rows, apical third finely, sparsely punctate; pubescence inconspicuous. Female beak as long as head and prothorax combined, similar to male. Antennae inserted at distance from eye equal to width of frons, at basal fourth of beak; first segment slightly longer than next two; second segment shorter than next two combined; club 0.20 by 0.09 mm. Eyes moderately prominent; frons moderately broad, with slight median impression, two lateral rows of punctures. Prothorax at base one-fifth wider than long, middle wider than base, apex three-fourths as wide as base; sides diverging to widest point at middle, then rounding to constricted apex; in profile dorsal surface slightly convex, flattened basally and apically; punctation deep, 0.03 to 0.04 mm. in diameter, interspaces convex, alutaceous, narrower than diameter of punctures; basal fovea deep, linear, extending two-fifths length of prothorax. Elytra at humeri one-third wider than prothorax at base, three times as long as prothorax, length to width as 3 : 2; intervals twice as wide as striae, somewhat convex, intervals with one or two rows of fine punctures bearing fine scales; striae deep. Scutellum triangular, 0.06 by 0.06 mm., with slight median sulcus. Front femora 3.50 to 3.75 times as long as wide. Claws with moderate basal tooth.

Special male characters: Three pairs of tibiae mucronate, tibia 1 with small, triangular mucro; tibiae 2 and 3 with moderate, subdentate mucrones.

Lectotype: I hereby designate the lectotype of this species as the male specimen (MCZ 378) in the J. L. LeConte Collection labeled California.

Material examined: Lectotype and 60 specimens.

Known distribution:

United States: *Washington:* Rochester, July 22, 1931, H. T. Peters (UK); Seattle, May 11, 1953, on *Psoralea physodes,* E. I. Smith (USNM). *California:* Colfax (UC); Bartlett Spring, Lake Co. (TLCC); Murphys, Calaveras Co., May 15, 1936 (CAF).

Remarks: Material in the U. S. National Museum was associated with *Psoralea physodes;* 50 beetles were found alive on 25 plants.

Apion (Trichapion) dolosum Fall

Figure 17,*h–k*

Apion dolosum Fall, Trans. Amer. Ent. Soc., vol. 25, p. 148, 1898.

Description: Length, 2.50 mm.

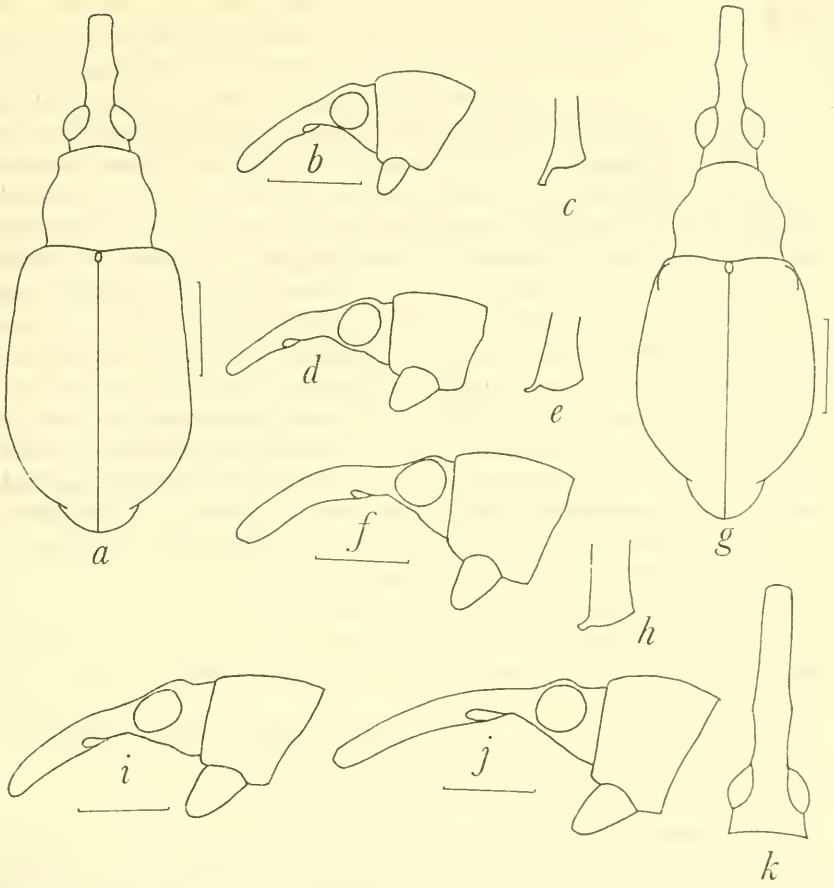

FIGURE 17.—*a–c*, *Apion cordatum* Smith: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of male; *c*, mucro of tibia 3 of male. *d–g*, *A. nigrum* Herbst: *d*, lateral view of head and prothorax of male; *e*, mucro of tibia 3 of male; *f*, lateral view of head and prothorax of female *g*, entire dorsal view of male. *h–k*, *A. dolosum* Fall: *h*, mucro of tibia 3 of male; *i*, lateral view of head and prothorax of male; *j*, lateral view of head and prothorax of female; *k*, dorsal view of head of female. Line equals 0.50 mm.

Moderately robust. Black; pubescence evident, whitish, coarse, sparse, denser on sides of mesothorax. Male beak slightly shorter than head and prothorax, slightly, evenly curved, expanded laterally and ventrally at antennal insertion, attenuate from there to apex; basal three-fourths moderately punctured, with slight median dorsal carina, tip shining; sparsely pubescent in basal three-fourths. Female beak about one-fourth longer than head and prothorax, slightly curved, nearly cylindrical throughout, dull throughout, with uniform, fine, sparse punctation. Antennae of male inserted at distance from eye

two-thirds greater than width of frons, of female at distance from eye twice as great as width of frons, in both sexes at basal one-third of beak; first segment of male shorter than next three, of female equal to next three; second segment shorter than next two; club 0.21 by 0.10 mm. Eyes moderately prominent; frons moderately wide, nearly flat or with vague median depression, with three lateral rows of punctures. Prothorax at base one-fifth wider than long, middle slightly wider than base, apex three-fourths as wide as base; sides moderately expanded laterally at base, slightly diverging to widest point at middle, then rounded to constricted apex; in profile dorsal surface nearly flat; punctures moderate, 0.03 mm. in diameter, deep, interspaces narrower than diameter of punctures, convex, alutaceous; basal fovea linear, deep at middle, shallow on each end, extending two-fifths length of prothorax. Elytra at humeri one-third to two-fifths wider than prothorax at base, 2.75 times as long as prothorax, length to width as 14 : 9; intervals twice as wide as striae, flat to slightly convex, with an irregular row of punctures bearing fine scales; striae deep. Scutellum narrow, triangular, with slight median impression. Front femora of female four times as long as wide, of male three times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with moderately long, subangulate mucrones; front femora noticeably stouter than those of female.

Material examined: Type, female (MCZ 25089), Williams, Ariz., in the Fall Collection, and 25 specimens.

Known distribution:

United States: *New Mexico:* Estancia, 1925, J. R. Douglas (USNM); Terrence, 1926, J. R. Douglas (USNM). *Arizona:* Chiricahua Mts., Hubbard and Schwarz (USNM); Graham Mts., Graham Co., 8,000 feet, Aug. 16, 1952 (AMNH); Pinal Mts., Gila Co. (CU); Prescott, July, G. H. Nelson (DGK); Williams, Hubbard and Schwarz (USNM).

Remarks: This species has been taken on locust at Prescott, Arizona by H. F. Wickham (USNM) and G. H. Nelson (DGK). One specimen in the U. S. National Museum apparently was reared from a maple seed.

Apion (Trichapion) heterogeneum Sharp

Figure 18

Apion heterogeneum Sharp, Biologia Centrali-Americana. Insecta, Coleoptera, Curculionidae: Apioninae, vol. 4, pt. 3, p. 59, pl. 3, fig. 7, 1890.

Description: Length, 1.95 to 3.00 mm.

Robust. Black, elytra dull, prothorax shining; pubescence fine, white, sparse, coarser and denser on sides of prothorax, mesothorax, and metathorax. Male beak slightly shorter than head and prothorax, very stout; slightly, evenly curved; in dorsal view as wide as

frons to slightly distad of middle, strongly attenuate, apical third parallel-sided, less than two-thirds as wide as basal portion; in lateral view stoutly parallel in basal half, greatly attenuate, apical third nearly cylindrical; basal two-thirds with moderately dense, fine punctures bearing fine pubescence, apical third smoother, glabrous, more shining. Female beak one-fourth to one-third longer than head and prothorax, moderately, evenly curved, slender; in dorsal view basal fifth stout, nearly parallel-sided, equal to width of frons, abruptly attenuate to basal third where it is about two-thirds as wide as at base, apical two-thirds cylindrical; basal fifth dull, densely alutaceous, with fine, dense punctures, pubescence scant, with deep, short lateral furrow above antennal insertion; apical four-fifths polished, very sparsely, minutely punctured. Antenna of male inserted at distance from eye two-thirds greater than width of frons, slightly behind middle of beak, of female at distance slightly greater than width of frons, at basal fifth of beak; first segment longer than next two, shorter

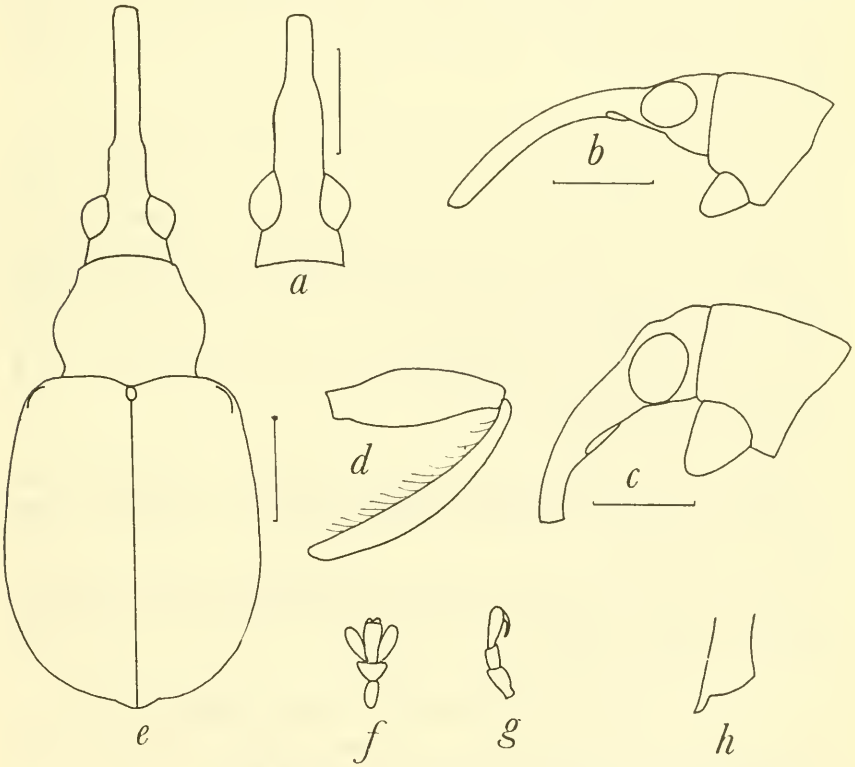

FIGURE 18.—*Apion heterogeneum* Sharp: *a*, dorsal view of head of male; *b*, lateral view of head and prothorax of female; *c*, lateral view of head and prothorax of male; *d*, front leg of male; *e*, entire dorsal view of female; *f*, dorsal view of tarsus 2 of male; *g*, lateral view of tarsus 2 of male; *h*, mucro of tibia 3 of male. Line equals 0.50 mm.

than next three; second segment as long as third; club of male, 0.34 by 0.12 mm.; of female 0.30 by 0.12 mm. Eyes moderately prominent; frons moderately wide, with moderately deep median sulcus and a lateral row of punctures. Prothorax at base slightly wider than long, at middle one-fifth wider than base, at apex two-thirds (male) to four-fifths (female) as wide as base; sides slightly expanded laterally at base, strongly roundly expanded to middle, rounded to strongly constricted apex; in profile dorsal surface of male slightly arcuate, flattened at base and apex, of female nearly flat, apical third depressed; punctation moderately deep, more so toward posterior margin, 0.03 mm. in diameter, interspaces narrower than diameter of punctures, alutaceous, moderately convex; basal fovea deeper at middle, linear, about one-fourth length of prothorax. Elytra at humeri one-half (male) to three-fifths (female) wider than base of prothorax, 2.5 to 2.8 times as long as prothorax, length to width as 19 : 14; intervals twice as wide as striae, moderately convex, very densely, minutely punctate, with two irregular rows of slightly larger punctures bearing fine scales; striae deep. Scutellum triangular, 0.09 by 0.06 mm. Front femora about four times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with short, subangulate mucrones, mucro on tibia 2 more curved laterally than mucro on tibia 3; antennae elongate, robust, with long cilia; front coxae enlarged, about as wide as length of antennal club; front tibiae dilated, curved, set with long cilia on inner surface; third segment of middle tarsus very broad, with diverging lobes receiving very short, broad fourth segment, claws of which are abruptly curved and applied to ventral surface of segment.

Material examined: One male compared with type by G. A. K. Marshall and 20 other specimens.

Known distribution:

Mexico: *Guerrero:* Omilteme, 8,000 ft. (type, BMNH). *Michoacán:* El Pueblito, Aug. 9, 1954, 6,500 feet (DGK). *Distrito Federal:* Desiertos de los Leones, May 26, 1946, J. and D. Pallister (AMNH). *Puebla:* Near Huauchinango, June 1954, D. G. Kissinger.

Remarks: Specimens were taken by the author while beating in a pine and scrubby oak forest at about 5,000 feet elevation near Huauchinango, Puebla, Mexico.

Apion (Trichapion) lativentre Béguin-Billecocq

Apion lativentre Béguin-Billecocq, Ann. Soc. Ent. France, vol. 78, p. 451, 1909.—Wagner, Mém. Soc. Ent. Belgique, vol. 19, p. 32, 1911.

Description: Length, 2.06 to 2.62 mm.; width, 1.00 to 1.28 mm. Moderately robust. Black, elytra blue, antennae piceous; pubes-

cence white, on dorsal surface very fine, sparse, inconspicuous, under eyes, on sides of prothorax, mesothorax, and metathorax longer, coarser, and denser. Beak of male shorter than head and prothorax combined, one-fourth longer than prothorax, slightly curved, more noticeably so toward apex; basal third stout, subcylindrical, not expanded laterally at antennal insertion, apical two-fifths subcylindrical, slightly depressed at tip; basal half with strong punctures bearing scales; apical half and dorsal surface with fine punctures. Beak of female slightly shorter than head and prothorax combined, three-fifths longer than prothorax, slightly, evenly curved; nearly cylindrical beyond antennal insertion; glabrous and polished beyond antennal insertion, with sparse, minute punctures in that region, basal region with sparse pubescence. Antennae inserted at distance from eyes one-half greater than width of frons, of male slightly behind basal third, of female slightly behind basal fourth; first segment of male slightly longer than next two, of female slightly longer than next three; second segment equals next two; club 0.21 by 0.07 to 0.27 by 0.09 mm. Eyes slightly promiment; frons equals width of dorsal tip of beak, flat medially, sometimes with trace of median sulcus. Prothorax with basal lateral region slightly anterior to basal margin prominent on either side of middle; at base one-fourth wider than long, middle as wide or slightly wider than base, apex seven-tenths as wide as base; sides beyond basal lateral expansion diverging slightly to middle, rounded to constricted apex; in profile dorsal surface flat, immediately at base strongly deflexed downward; punctation 0.03 mm. in diameter, shallow, interspaces generally as wide as punctures, strongly alutaceous; basal fovea very deep between basal prominences, extends about one-third length of prothorax. Elytral sides at middle above ninth stria with more or less distinct depression; elytra at humeri two-fifths wider than prothorax at base, three times as long as prothorax, length to width as 7 : 5 to 4 : 3; intervals flat, a little more than twice as wide as striae, in part with two rows of scales; striae deep, rather fine. Scutellum triangular, 0.08 by 0.06 mm., with deep median furrow. Front femora about 3.7 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with short, blunt mucrones.

Material examined: Specimens determined by J. Balfour-Browne and six other specimens.

Known distribution:

Argentina: Province of Buenos Aires (type); Santa Fé, Río San Javier, Estancia La Noria, Dec. 16, 1911, to Jan. 5, 1912, G. E. Bryant (BMNH).
Paraguay: Independencia, June 19, 1951 (DGK).
Brazil: Rio de Janeiro.

Apion (Trichapion) nigrum Herbst

FIGURE 17,*d–g*

Apion nigrum Herbst, Natursystem aller bekanntenin- und ausländischer Insecten, vol. 7, p. 112; pl. 103, fig. 11, 1797.—Germar, Mag. Ent., vol. 2, p. 239, 1817.—Gyllenhal, *in* Schoenherr, Genera et species curculionidum, vol. 1, pt. 1, p. 254, 1833.—Smith, Trans. Amer. Ent. Soc., vol. 11, p. 64, 1884.—Fall. Trans. Amer. Ent. Soc., vol. 25, p. 152, 1898.—Cotton, Ohio Nurs. Orch. Insp. Bull., vol. 7, p. 23, 1906.—Pierce, U. S. Dep. Agr. Bur. Ent. Bull. 100, p. 75, 1912.—Blatchley and Leng, Rhynchophora or weevils of northeastern America. p. 82.

DESCRIPTION: Length, 2.0 to 2.4 mm.

Moderately robust. Black; pubescence scant, fine, white, coarser and more conspicuous laterally. Male beak one-fourth longer than prothorax, slightly curved, moderately expanded laterally at antennal insertion, attenuate to apical third which is nearly cylindrical; basal two-thirds dull, punctured, with scant pubescence, apical third smoother, moderately shining. Female beak about as long as head and prothorax, slightly curved, attenuate beyond basal third to middle, nearly cylindrical to apex; glabrous, dull, moderately punctured to apex. Antennae inserted at distance from eye two-fifths greater than width of frons at basal two-fifths of male, of female at distance from eye one-half greater than width of frons slightly distad of basal third; first segment of male equal to next three, of female equal to next four; second segment shorter than next two; club 0.16 by 0.08 to 0.18 by 0.10 mm. Eyes prominent; frons moderately wide, with median smooth area flanked by two lateral rows of punctures. Prothorax at base about one-fifth wider than long, middle distinctly wider than base, apex two-thirds to three-fourths as wide as base; sides moderately expanded laterally at base, roundly expanded to widest point at middle, rounding to constricted apex; some females with sides more broadly rounded and basal constriction greatly reduced; in profile dorsal surface slightly arcuate, depressed basally and apically; punctures moderately deep, 0.03 to 0.04 mm. in diameter, interspaces nearly flat, less than diameter of punctures, alutaceous; basal fovea deep, linear, extending about one-third length of prothorax. Elytra at humeri one-fourth to one-third (especially of female) wider than prothorax at base, 2.75 times as long as prothorax, length to width as 7 : 5; intervals twice as wide as striae, moderately convex, with one or two rows of punctures bearing fine scales; striae deep. Scutellum triangular, slightly longer than wide, with median furrow. Front femora 3.75 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, subdentate mucrones, front tarsus dilated and densely pubescent on ventral surface.

MATERIAL EXAMINED: 150 specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Arkansas:* Crawford Co., May 14, 1939, M. W. Sanderson (INHS); Franklin Co., May 19, 1940, L. Warren, on black locust (INHS.) *District of Columbia:* beating pine (USNM). *Georgia:* Rabun Co., Leng (USNM). *Illinois:* Charleston, June 7, 1941, Ross and Mohr (INHS); Coulterville, June 7, 1940, L. M. Smith, on black locust (INHS); Toledo, July 7, 1950, Ross and Sanderson (INHS); Topeka, Aug. 17, 1907 (USNM). *Indiana:* Clay Co., July 8, 1935, on locust (USNM); Blatchley and Leng (1916) state species is common throughout the State. *Iowa:* Story Co. *Kansas. Louisiana:* Tallulah, May 9, 1910, G. D. Smith, on *Robinia pseudacacia* (USNM). *Maryland:* Beltsville, Aug. 24, 1922, I. L. Buchanan (USNM); Chespeake Beach, Wrenn and Barber (USNM); Great Falls, July 2, 1919, L. L. Buchanan (USNM); Hagerstown, July 3, 1917, W. E. Pennington (USNM); Lakeland, September 1895, Chittenden (USNM). *Massachusetts:* West Medford, July 21, 1919, R. H. Van Zwaluwenburg (USNM). *Mississippi:* Natchez, June 6, 1895, H. E. Weed (USNM). *New Jersey:* Many records. *New York:* Bellport, Long Island, June 11, 1912, A. Nicolay (USNM); Ithaca, Chittenden (USNM); Peekskill (USNM); Portage, May 30, 1885, E. O. VanDuzee (CIS); Staten Island (USNM); West Point, May 12, 1913, W. Robinson (USNM). *North Carolina:* Tryon, W. D. Pierce (USNM). *Ohio:* Franklin Co., May 16, 1949, E. L. Sleeper (ELS); Ross Co., Hubbard and Schwarz (USNM). *Pennsylvania:* Glenolden, June 16 (USNM); Philadelphia, June 18, 1897 (USNM). *South Carolina:* Rocky Bottom, May 22, 1934, J. A. Berly (USNM); Charleston, Aug. 5, 1938, W. J. Reid (USNM). *Tennessee:* Clarksville, Apr. 23, 1919, E. R. Jones (USNM); Gatlinburg, June 14, 1947, R. H. Wittaker (USNM). *Vermont:* Bergen Co. (USNM). *Virginia:* Many records. *West Virginia:* "Berkley," Hubbard and Schwarz (USNM); Harper's Ferry, May 19, Hubbard and Schwarz (USNM); White Sulphur Springs, Aug. 1, 1914, W. Robinson (USNM). *Wisconsin:* Waupaca, June 14, 1920, L. G. Gentner, feeding on locust (USNM).

REMARKS: Blatchley and Leng (1916) state that this species develops in the seeds of black locust, *Robinia pseudacacia* L., and that the adults riddle the leaves of the tree. Recorded also as feeding on the foliage of peach and wild cherry.

Apion rostrum Group

The six species comprising this group are distinct in that the prothorax is as wide or slightly wider at the middle than at the base, the sides are not strongly rounded; the beak is attenuate to near the apex; and typically the male has tibiae 2 and 3 mucronate, but in three species the front tibiae are also mucronate. The ranges of four species overlap. *A. confertum* Smith and *A. furtivum* Fall occur

together in Florida. The southern range of *A. rostrum* Say extends into Florida. *A. rostrum* and *A. coloradense* Fall overlap in range in Kansas and probably in surrounding States. *A. commodum* Fall is a northern species occurring in Montana and Manitoba. *A. mexicanum* Wagner occurs in the mountains of central Mexico.

The males of three species, *A. rostrum*, *A. coloradense*, and *A. mexicanum*, have tibiae 2 and 3 mucronate. The tarsi of *A. rostrum* are stouter than those of the other species, the second tarsal segment is as long as wide and not longer than the lobes of the third segment, and the species is large, ranging from 2.5 to 3.0 mm. in length. The other two species are generally less than 2.5 mm. long and the second tarsal segment is longer than wide and longer than the lobes of the third segment. *A. coloradense* and *A. mexicanum* are closely allied species. The prothorax of the former is slightly constricted apically and the beak is strongly punctured in rows. The prothorax of the latter is distinctly constricted apically and the beak is finely punctured beyond the middle. The males of three species, *A. commodum*, *A. confertum*, and *A. furtivum*, have all three tibiae mucronate, the front pair generally has a minute mucro. The dorsal margin of the antennal scrobe of the last species is nearly horizontal and the tibial mucrones are rather short. The dorsal margin of the antennal scrobe of the other two species is oblique and somewhat angulate. The tibial mucrones of the male of *A. commodum* are denticulate, elytral interval 2 has two or more rows of fine scales, and the beak is not strongly dilated at the antennal insertion and is somewhat cylindrical apically. The tibial mucrones of the male of *A. confertum* are simple, elytral interval 2 has a single row of scales, and the beak is strongly dilated at the antennal insertion and is strongly attenuate toward the apex.

Apion (Trichapion) coloradense Fall

FIGURE 19,*d*,*e*

Apion coloradense Fall, Trans. Amer. Ent. Soc., vol. 25, p. 152, 1898.

DESCRIPTION: Length, 2.00 to 2.60 mm.; width, 0.94 to 1.18 mm.

Moderately robust. Black, antennae piceous; pubescence white, fine, very sparse, not denser laterally. Male beak longer than head and prothorax combined, one-half longer than prothorax; more strongly deflexed at basal third; in lateral view expanded ventrally at antennal insertion, apical two-fifths nearly parallel; in dorsal view expanded laterally at antennal insertion, basal two-fifths attenuate, apical two-fifths nearly parallel; with strong, elongate punctures arranged in rows, tip smooth. Female beak one-half longer than head and prothorax, nearly twice as long as prothorax; moderately curved, more strongly so toward apical region; in lateral view nearly parallel-sided; in dorsal view stout and parallel in basal third, attenuate to

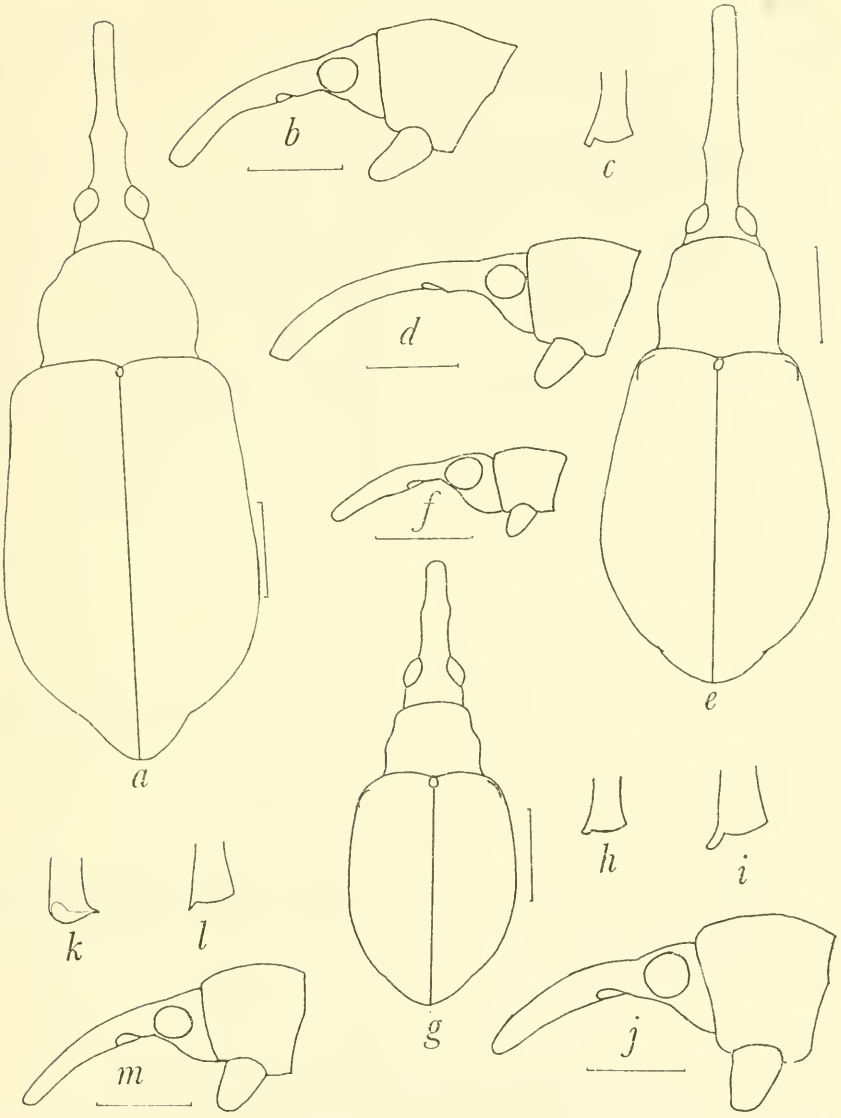

FIGURE 19.—*a–c*, *Apion commodum* Fall: *a*, entire dorsal view of male; *b*, lateral view of head and prothorax of male; *c*, mucro of tibia 3 of male. *d*, *e*, *A. coloradense* Fall: *d*, lateral view of head and prothorax of female; *e*, entire dorsal view of female. *f–h*, *A. mexicanum* Wagner: *f*, lateral view of head and prothorax of male; *g*, entire dorsal view of male; *h*, mucro of tibia 3 of male. *i*, *j*, *A. rostrum* Say: *i*, mucro of tibia 3 of male; *j*, lateral view of head and prothorax of male. *k–m*, *A. confertum* Smith: *k*, mucro of tibia 1 of male; *l*, mucro of tibia 3 of male; *m*, lateral view of head and prothorax of male. Line equals 0.50 mm.

middle, tip slightly expanded; moderately punctured in rows, tip smooth and shining. Antennae of male inserted at distance from eye twice as great as width of frons at basal third of beak, of female at distance from eye one-half greater than width of frons at basal fourth of beak; first segment of male shorter than next two, of female equal to next two; second segment shorter than next two. Eyes not prominent; frons wider than dorsal tip of beak, with slight, shallow median sulcus and one lateral row of confluent punctures. Prothorax at base one-fourth wider than long, middle and base equal in width, apex four-fifths as wide as base; sides minutely expanded laterally at base, nearly parallel to middle, rounded to apex which is very slightly constricted; in profile dorsal surface slightly arcuate; punctation deep, 0.03 to 0.04 mm. in diameter, not round, interspaces about one-half diameter of punctures, nearly smooth; basal fovea deep, narrow, extending one-fourth length of prothorax. Elytra at humeri one-half wider than prothorax at base, slightly more than three times as long as prothorax, length to width as 13 : 9; intervals nearly flat, a little less than twice as wide as striae, with one or sometimes two irregular rows of punctures, nearly smooth; striae deep, coarse. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with short, nearly simple mucrones.

LECTOTYPE: I hereby designate the lectotype of this species as the male specimen (MCZ 25082) labeled "Colorado Springs, Col., June 15–30, 1896, 6,000–7,000 feet, H. F. Wickham."

MATERIAL EXAMINED: Lectotype and 7 specimens.

KNOWN DISTRIBUTION:

UNITED STATES: *Colorado:* Boulder, S. A. Rohmer (MCZ); Colorado Springs, June 15–30, 1896, 6,000–7,000 feet, H. F. Wickham (MCZ). *Kansas:* (MCZ); Douglas Co., 900 feet, F. H. Snow (UK). *Illinois:* Valmeyer, May 24, 1950, M. W. Sanderson (INHS).

Apion (Trichapion) commodum Fall

FIGURE 19,*a–c*

Apion commodum Fall, Trans. Amer. Ent. Soc., vol. 25, p. 154, 1898.

DESCRIPTION: Length, 3.0 to 3.3 mm.

Moderately robust. Black; pubescence conspicuous, white, moderately coarse, sparse, slightly denser on sides of mesothorax. Male beak about as long as head and prothorax, moderately, evenly curved, expanded laterally, but not abruptly, at antennal insertion, attenuate to apical third; coarsely punctate. Female beak a little longer than head and prothorax, slightly curved, slender, nearly cylindrical throughout, slightly expanded laterally at antennal insertion; punctures in basal two-thirds moderately coarse, apical third finely

punctate, apex shining. Antennae of male inserted at distance from eye one-half greater than width of frons at basal two-sevenths, of female at distance from eye one-third greater than width of frons at basal one-fourth; first segment of male shorter than next two, of female equal to next three; second segment of male shorter than next two, of female longer than next two; female club 0.24 by 0.12 mm., male club 0.30 by 0.12 mm.; dorsal margin of antennal scrobe angulate. Prothorax at base slightly wider than long, middle one-sixth wider than base, apex two-thirds as wide as base; sides broadly rounded; in lateral view dorsal surface moderately strongly convex, flattened basally and apically; punctures moderate, 0.04 mm. in diameter, interspaces convex, alutaceous, one-half as great as diameter of punctures; basal fovea deep, linear, extending one-third length of prothorax. Elytra at humeri two-fifths wider than prothorax at base, three times as long as prothorax, length to width as 16.5 : 11; intervals twice as wide as striae, nearly flat to slightly convex, with two or three rows of fine punctures bearing fine scales; striae deep. Scutellum rounded, 0.06 by 0.06 mm., with slight median furrow. Front femora 3.0 to 3.5 times as long as wide. Claws with moderate basal tooth.

Special male characters: Three pairs of tibiae mucronate, tibia 1 with minute, simple mucro; tibiae 2 and 3 with larger, subdentate mucrones.

Material examined: Type, male (USNM), Montana, and 30 specimens.

Known distribution:

United States: *Montana:* Custer Co. (USNM).

Canada: *Manitoba:* Aweme, September 20, N. Criddle, June 9 and July 10, R. M. White (CNC).

Remarks: Material in the U. S. National Museum was taken from an ovary of *Psoralea esculenta* and material in the Canadian National Collection is associated with the same plant.

Apion (Trichapion) confertum Smith

Figure 19,*k–m*

Apion confertum Smith, Trans. Amer. Ent. Soc., vol. 11, p. 63, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 154, 1898.—Blatchley and Leng, Rhynchophora or weevils of northeastern America, p. 82, 1916.

Description: Length, 2.3 to 2.5 mm.

Moderately robust. Black; pubescence white, sparse, moderately fine, slightly coarser and more conspicuous ventrally. Male beak about as long as head and prothorax combined, two-sevenths longer than prothorax; slightly, evenly curved; attenuate from laterally expanded antennal insertion to apical fourth; basal two-thirds dull,

alutaceous, shallowly rather coarsely punctate, apical third shining, sparsely punctured, sparsely pubescent behind antennal insertion. Female beak similar to male but slightly longer, three-sevenths longer than prothorax, and a little more slender. Antennae inserted at distance from eye one-third greater than width of frons at basal fifth of beak; first segment equals next two, second segment shorter than next two, club 0.18 by 0.08 mm. Eyes moderately prominent; frons moderately wide, wider than dorsal tip of beak. Prothorax at base slightly wider than long, middle about as wide as base, apex three-fourths as wide as base; sides beyond basal lateral expansion slightly expanded to middle, rounded to constricted apex; in profile dorsal surface slightly, evenly arcuate; punctation deep, 0.04 mm. in diameter, interspaces not as wide as punctures, alutaceous; basal fovea deep at middle, narrow, extending one-half length of prothorax. Elytra at humeri one-half wider than prothorax at base, about 2.85 times as long as prothorax, length to width as 10.5 : 7; intervals nearly flat, slightly more than twice as wide as striae, with one row of moderately fine scales; striae moderately deep, fine. Scutellum triangular, 0.08 by 0.06 mm., not furcate. Front femora about 3.3 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 1 and 2 with small, simple mucrones, tibia 3 with slightly larger, subangulate mucro.

Material examined: Type, female (USNM 1247), Georgia, and four specimens.

Known distribution:

United States: *Florida:* No exact locality (USNM); Jacksonville. *Georgia:* No exact locality (USNM).

Apion (Trichapion) furtivum Fall

Apion furtivum Fall, Trans. Amer. Ent. Soc., vol. 25, p. 154, 1898.

Description: Length, 2.00 mm.; width, 0.98 mm.

Moderately robust. Black, antennae piceous; pubescence white, fine, very sparse, not more conspicuous laterally. Male beak shorter than head and prothorax combined, one-fourth longer than prothorax, slightly, evenly curved; in lateral view dorsal margin abruptly narrowed beyond antennal insertion, attenuating to apical fourth, thence nearly parallel-sided to tip; in dorsal view expanded laterally at antennal insertion, attenuate to apical third, thence nearly parallel-sided to tip; base moderately pubescent, minutely so beyond antennal insertion, with a row of punctures above antennal insertion, tip smooth, shining. Female beak one-fifth longer than head and prothorax combined, two-thirds longer than prothorax; moderately, strongly curved; nearly cylindrical throughout; finely, sparsely punctured throughout, with a slightly stronger row of punctures

above antennal insertion. Antennae inserted at distance from eye one-half greater than width of frons at basal third of beak of male, of female at distance from eye slightly greater than width of frons and slightly distad of basal fourth; first segment shorter than next three, second segment equals next two, club 0.18 by 0.08 mm. Eyes slightly prominent; frons wider than dorsal tip of beak, with moderately strong, deep, median sulcus and one lateral row of punctures. Prothorax slightly wider at base than long, middle slightly wider than base, apex three-fourths as wide as base; sides, beyond slight basal lateral expansion, roundly expanding to middle, rounding to constricted apex; in profile dorsal surface slightly arcuate; punctation deep, 0.03 to 0.04 mm. in diameter, interspaces less than diameter of punctures, alutaceous; basal fovea deep basally, narrow, extending about one-half length of prothorax. Elytra at humeri one-third wider than prothorax at base, 2.6 times as long as prothorax, length to width as 10.5 : 7.5; intervals flat, at middle twice as wide as striae, with one row of shallow, rather coarse punctures bearing scales; striae deep. Claws with acute basal tooth.

Special male characters: Three pairs of tibiae mucronate, mucro on tibia 1 somewhat smaller.

Types: I hereby designate the lectotype of this species as the male specimen (MCZ 25098) in the Fall Collection labeled with a blue square (representing Southeastern States) and "2442," collected by Zimmerman. Cotypes (MCZ 381) in the J. L. LeConte Collection have the same data.

Known distribution:

United States: *Georgia:* No exact locality. *Arkansas:* "Holes," May 27, 1950, R. H. Beamer (UK).

Apion (Trichapion) mexicanum Wagner

Figure 19,*f–h*

Apion (*Trichapion*) *mexicanum* Wagner, Arch. Naturg. Berlin, vol. 78, p. 114, 1912.

Description: Length, 1.50 to 2.00 mm.; width, 0.87 to 0.94 mm. Moderately robust. Black; pubescence conspicuous, fine, white, sparse, denser on sides of mesothorax. Male beak as long as head and prothorax, two-thirds longer than prothorax, slightly curved, moderately swollen laterally and ventrally at antennal insertion, attenuate to middle, apical half nearly cylindrical; finely, sparsely punctured in basal two-thirds, pubescence scant, apical third smooth, shining. Female beak is longer than head and prothorax combined, four-fifths longer than prothorax, similar to beak of male, apical third nearly cylindrical; dull, alutaceous, minutely pubescent behind antennal insertion, glabrous distad of antennal insertion, tip smoother,

more shining. Antennae inserted at distance from eye one-half greater than width of frons, at basal third of beak; first segment shorter than next two, second segment shorter than next two, club 0.15 by 0.07 mm. Eyes slightly prominent; frons moderately wide, with a slight median depression and a lateral row of four moderate punctures. Prothorax at base one-third wider than long, middle slightly narrower than base, apex three-fourths as wide as base; sides moderately expanded laterally at base, nearly parallel to middle, apex broadly constricted; in profile dorsal surface slightly evenly arcuate; punctation 0.03 mm. in diameter, deep, interspaces variable, generally less than diameter of punctures; basal fovea deep in middle, short. Elytra at humeri one-half wider than prothorax at base, 3.3 times as long as prothorax, length to width as 5 : 3.3; intervals nearly twice as wide as striae, nearly flat, with a single row of fine punctures bearing fine scales; striae narrow, deep. Scutellum triangular, 0.06 by 0.04 mm., with slight median furrow. Front femora 3.5 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with angulate mucrones.

Material examined: One male determined by Hans Wagner and 27 other specimens.

Known distribution:

Mexico: "Mexico" (type, BMNH); *Distrito Federal:* Atcapotzalco; Tacuba; Tlalpam (USNM).

Remarks: Material in the U. S. National Museum is recorded as occurring "on bean."

Apion (Trichapion) rostrum Say

Figure 19,*i,j*

Apion rostrum Say, Journ. Acad. Nat. Sci. Philadelphia, vol. 5, p. 253, 1826.—Say, Descriptions of North American curculionides and an arrangement of some of our known species agreeably to the method of Schoenherr, p. 6—Smith, Trans. Amer. Ent. Soc., vol. 11, p. 63; fig. 16, 1884.—Fall, Trans. Amer. Ent. Soc., vol. 25, p. 151, 1898.—Pierce, U. S. Dep. Agr. Bur. Ent. Bull. 100, p. 75, 1912.—Blatchley and Leng, Rhynchophora or weevils of northeastern America p. 81, 1916.—Bleasdell, Iowa State Coll. Journ. Sci., vol. 11, p. 110, 1937.—Bissell, Journ. Econ. Ent., vol. 33, p. 846, 1940.—Frost, Journ. New York Ent. Soc., vol. 53, p. 221, 1945.—Tuttle, Ann. Ent. Soc. Amer., vol. 47, p. 305, 1954.

Apion scrobicolle Gyllenhal, *in* Schoenherr Genera et species curculionidum, vol. 5, p. 374, 1839.—Wencker, L'Abeille, vol. 1, p. 121, 1864.—Wagner, Münchener Kol. Zeitschr., vol. 3, p. 304, 1906–08; Genera insectorum, Coleoptera, fam. Curculionidae: subfam. Apioninae, fasc. 130, p. 84.

Description: Length, 2.5 to 3.0 mm.

Robust. Black; pubescence scant, fine, white, more conspicuous on sides of mesothorax and metathorax. Male beak as long as head and

prothorax combined, slightly, evenly curved; moderately dilated laterally over antennal insertion, attenuate to apical third, there nearly cylindrical, tip depressed; sculpture shallow, moderately punctured throughout, with a line of punctures over antennal insertion, tip more shining, pubescence scant. Female beak one-seventh longer than head and prothorax, more strongly deflexed distad of apical third; moderately dilated over antennal insertion, attenuating to middle, apical half nearly cylindrical, tip depressed; basal two-thirds with shallow, moderate punctures, with a line of punctures over antennal insertion, apical third smoother, alutaceous. Antennae inserted at distance from eye one-third greater than width of frons, of male at basal third, of female at basal fourth; first segment as long as next three; second segment slightly shorter than next two, club 0.27 by 0.12 mm. Eyes prominent; frons moderately wide, with deep, median sulcus and a lateral line of coalesced punctures. Prothorax at base one-sixth wider than long, middle equal or slightly wider than base, apex seven-tenths as wide as base; sides with slight lateral expansion at base, roundly diverging to middle, rounded to slightly constricted apex; in profile dorsal surface moderately convex; punctation coarse, 0.04 to 0.06 mm. in diameter, deep, interspaces generally half as great as diameter of punctures, strongly alutaceous, convex; basal fovea deep, elongate, extending at least one-third length of prothorax. Elytra at humeri two-fifths to one-half wider than prothorax at base, 2.6 times as long as prothorax, length to width as 14:11; intervals twice as wide as striae, flat, with one row of fine punctures bearing fine scales; striae deep. Scutellum roundly triangular, 0.10 by 0.10 mm., smooth. Front femora 3.75 times as long as wide. Claws with acute basal tooth.

Special male characters: Tibiae 2 and 3 armed with long, blunt, dentellate mucrones.

Material examined: 100 specimens and type of *A. scrobicolle* from "Anglia" in the Riksmuseum, through the kindness of Dr. René Malaise.

Known distribution:

United States: *Connecticut:* Lyme, June 18, 1918, W. S. Fisher (USNM); *District of Columbia:* Sept. 15, 1907 (USNM). *Florida:* Farmingdale, Aug. 19, 1945, C. O. Esselbaugh (INHS); Sansond, June 20, 1940, G. W. Barber (USNM); Shady, July 11, 1904, C. Buhl (USNM). *Georgia:* Clayton, Davis (USNM); Lexsy, Apr. 26, 1940, P. W. Fattig (USNM); Rabun Co., July, Leng (USNM); Valdosta, May 28, 1946, P. W. Fattig (USNM). *Indiana:* Pulaski, Starke, and Wells Counties. *Iowa:* Story and Taylor Counties. *Kansas:* Topeka, Aug. 7, E. A. Popenoe (USNM). *Louisiana:* Natchitoches, Mar. 28, 1907, Cushman and Pierce (USNM). *Maryland:* Beltsville, June 30, 1923, L. L. Buchanan (USNM); Contee, May 7, 1914, A. Wetmore (USNM); Oakland, July 16, Hubbard and Schwarz (USNM); Odenton, June 11, 1922, L. L. Buchanan (USNM); Takoma Park, June 27, 1952, G. H. Nelson, to light (GHN); 2 miles north of

Priest Bridge, June 8, 1928, H. S. Barber (USNM). *Massachusetts:* Agawan, May 25, 1916, E. A. Chapin (USNM); Boston, June 4 (USNM); Nantucket Island (USNM); Natick, Aug. 29, 1937, C. A. Frost (USNM); Waltham (USNM); Woods Hole, Wickham (USNM). *Michigan:* Detroit (USNM). *New Jersey:* Many records. *New York:* Grasmere, Sept. 8, 1944 (USNM); Ithaca (USNM); New York City and vicinity (USNM). *Pennsylvania:* Berks Co., Aug. 18, 1938, ex seed *Baptisia tinctorum*, S. C. Schell (USNM); Foxes Run near Newtown Square, Sept. 30, 1947, J. W. Adams (USNM); Glenolden, June 16 (USNM); Hanover, June 15, 1930 (USNM); Lancaster (USNM); Lehigh Gap, June 29, 1897 (USNM); Mauch Chunk, July 5 (USNM). *Rhode Island:* Watch Hill, July 11, 1909, W. Robinson (USNM). *Texas:* Anahuac, June 20, 1918, H. C. Harrison (USNM). *Vermont:* Bennington Co. (USNM). *Virginia:* Four-Mile Run, June 22, 1919, L. L. Buchanan (USNM); Falls Church, July 3, 1920 (USNM); Fairfax Co., June 20, 1923 (USNM); Vienna, July 14, 1921 (USNM). *West Virginia:* Elkins, F. E. Brooks (USNM); White Sulphur Springs, July 3, 1912, W. Robinson (USNM). *Wisconsin:* Madison (USNM).

Remarks: Larvae of this species develop in the seeds of the false indigo, *Baptisia tinctoria* and *B. leucantha* (Blatchley and Leng, 1916; Bissell, 1940; Frost, 1945; Tuttle, 1954).

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