Additions and Corrections to the Aphididae of Puerto Rico[1]

Clyde F. Smith, Silverio Medina Gaud, Luis F. Martorell, and Mario E. Pérez-Escolar[2]

INTRODUCTION

Since the publication of the "Aphididae of Puerto Rico" (Smith, Martorell, and Pérez-Escolar (*12*),[3] additional survey work has been done, especially during 1967 and 1969. Five additional species have been found: *Capitophorus hippophaes javanicus* Hille Ris Lambers, *Macrosiphum rosae* L., *Picturaphis puertoricensis* Smith, *Rhopalosiphum padi* L., and *Tetraneura nigriabdominalis* (Sasaki). *Prociphilus erigeronensis* (Thomas), recorded by Wolcott (*18*), was seen on a slide sent from the U. S. National Museum. The specimen had been intercepted by plant quarantine personnel. *Rhopalosiphum rufiabdominalis* (Sasaki), recorded as *R. subterraneum* Mason by Wolcott (*19*) also was collected. These species are redescribed and illustrated, and new host and locality records are included for the species recorded previously. The "Key to the Aphididae of Puerto Rico" has been revised. A key to the apterous Aphididae of Puerto Rico also has been prepared which, with the aid of a 10× magnifying glass, can be used in the field.

In citing host plant records[4] we have followed Liogier (*8,9*). The new name appears first, followed by an "=" sign and Britton's old name which we used in 1963 (*12*).

The first numbers in parentheses in the collection records indicate the year of collection, and the second numbers indicate the collection number. The specimens are in the collection of North Carolina State University at Raleigh, Puerto Rico Agricultural Experiment Station at Río Piedras, and the collection of Clyde F. Smith. To save space, initials have been used for the following collectors' names: CFS to Clyde F. Smith, CKS for Mrs.

[1] Contributions from the Departments of Entomology, Agricultural Experiment Station, Mayagüez Campus, University of Puerto Rico, Río Piedras, P.R., and North Carolina State University (Journal Paper No. 3158) at Raleigh, N.C.

[2] Professor, Department of Entomology, North Carolina State University at Raleigh and Visiting Scientist, Agricultural Experiment Station, Mayagüez Campus, University of Puerto Rico, Río Piedras, P.R.; Assistant Entomologist, Entomologist, and Head, Department of Entomology, respectively, Agricultural Experiment Station, Mayagüez Campus, University of Puerto Rico.

[3] Italic numbers in parentheses refer to Literature Cited, p. 224–5.

[4] We are indebted to Roy Woodbury, Botanist, Puerto Rico Agricultural Experiment Station, for aid in collecting and for identifying many of the plants.

Clyde F. Smith, LFM for Luis F. Martorell, MEP for Mario E. Pérez, RW for Roy Woodbury, and SMG for Silverio Medina Gaud.

The following abbreviations are used in the keys and descriptions:

a.s.—antennal segments
R IV + V—rostral segments IV + V
p.t.—processus terminalis
t.ch.—tarsomere I chaetotaxy
ca.—approximately

KEY TO THE APHIDIDAE OF PUERTO RICO

1 Siphunculi conspicuous, longer than broad, usually longer than cauda; cauda never knobbed..... 10
Siphunculi not longer than broad, may be mammiform and hairy; cauda may or may not be knobbed..... 2

2 (1) Cauda distinctly knobbed..... 6
Cauda not distinctly knobbed..... 3

3 (2) Tarsomeres I and II separate in aptera..... 4
Tarsomeres I and II fused in aptera; marginal setae long and conspicuous, 4 or more times as long as medial or pleural setae (fig. 51, 52).....*Tetraneura nigriabdominalis* (Sasaki)

4 (3) Primary sensoria with a hairy fringe; siphunculi absent or inconspicuous..... 5
Primary sensoria nude, without a hairy fringe; siphunculi mammiform, hairy (fig. 20)....*Cinara tujafilina* (Del Guercio)

5 (4) R IV + V with 2 accessory setae, setae outside of lateral wax plates, cauda with 3 setae (fig. 24).*Geopemphigus floccosus* (Moreira)
R IV + V with 4 or more accessory setae, setae inside of lateral wax plates, cauda with ca. 12 setae (fig. 43)
Prociphilus erigeronensis (Thomas)

6 (2) Antennal sensoria annular; aptera with hornlike projections on vertex; aptera often scalelike..... 7
Antennal sensoria oval; aptera without hornlike projections on vertex..... 9

7 (6) Body of aptera scalelike, a distinct suture between the meso- and metathorax; head, prothorax, and mesothorax fused together in aptera..... 8
Body of aptera more aphidlike with the most distinct suture between the pro- and mesothorax; head and prothorax fused together in aptera (fig. 38).....*Oregma panicola* Takahashi

8 (7) Front of aptera always with 2 horns; underside of front, near horns, with a number of normal, thin setae on small sockets (fig. 18).....*Cerataphis orchidearum* (Westwood)

Front of aptera with or without horns; underside of front with 1 to 3 pairs of short, dagger or club-shaped setae in addition to the normal setae (fig. 19).....*Cerataphis variabilis* H.R.L.

9 (6) Vertex with long (0.1)[1] spinelike setae; abdomen without dorsal tubercles (fig. 50).....*Sipha flava* (Forbes)

Vertex without long spinelike setae (setae 0.02); abdomen with dorsal tubercles (fig. 34)

Melanocallis kahawaluokalani (Kirkaldy)

10 (1) Antennal tubercles often well-developed; abdominal segments I and VII usually without lateral abdominal tubercles; if tubercles are present on abdominal segments I and VII, they are no longer than the tubercles on segments II and VI..... 11

Antennal tubercles never well-developed; abdominal segments I and VII with lateral abdominal tubercles which are larger than those on segments II and VI..... 42

11(10) Siphunculi with distinct reticulations (4 or more rows)..... 12

Siphunculi without distinct reticulations..... 20

12(11) Siphunculi with cells of reticulations small (each cell about 1/6 or 1/5 the diameter of the reticulated area of the siphunculus).. 13

Siphunculi with cells of reticulations large (each cell about 1/4 or 1/3 the diameter of the reticulated area of the siphunculus).. 15

13(12) Base of siphunculi pale..... 14

Siphunculi unicolorous, base dark (fig. 21)

Dactynotus ambrosiae (Thomas)

14(13) A.s. III subequal to siphunculus. A.s. III of aptera with 5–14 rhinaria, alate 18–27 (fig. 22)....*Dactynotus erigeronensis* (Thomas)

A.s. III distinctly longer than siphunculus. A.s. III of aptera with 8–21 rhinaria, alate 39–46 (fig. 23)

Dactynotus gravicornis (Patch)

15(12) Dorsum of abdomen of aptera (cleared specimens) sclerotic. 16

Dorsum of abdomen of aptera (cleared specimens) not sclerotic..... 17

16(15) Cauda usually bearing 9 setae; vertex setae 0.02; on orchids (fig. 30).....*Macrosiphum* (*Sitobion*) *luteum* (Buckton)

Cauda usually bearing 7 setae; vertex setae 0.04; on *Salvia* and *Hyptis* (figs. 32, 33)

Macrosiphum (*Sitobion*) *salviae* (Bartholomew)

17(15) Siphunculi with 8 or more rows of reticulations..... 18

Siphunculi with 0 to 4 rows of reticulations, Fig. 10

Aulacorthum solani (Kalt.)

[1] All measurements given are in millimeters.

18(17) Siphunculi dark..... 19
Siphunculi pale at base, may be dark on distal part, especially in alate (fig. 29).....*Macrosiphum euphorbiae* (Thomas)

19(18) Sensoria on a.s. III, aptera 1–4, alate ca. 14 (figs. 32, 33) *Macrosiphum* (*Sitobion*) *salviae* (Bartholomew)
Sensoria on a.s. III, aptera 12–23, alate 42–58 (fig. 31) *Macrosiphum rosae* (L.)

20(11) Setae on vertex of head blunt or pointed (may be slightly knobbed)..... 24
Setae on vertex of head distinctly knobbed or fan-shaped, especially in aptera..... 21

21(20) Setae on vertex of head short, and fan-shaped; radial sector fused with media for part of its length (fig. 40) *Pentalonia nigronervosa* Coquerel
Setae on vertex of head conspicuous and distinctly knobbed, especially in aptera..... 22

22(21) T.ch. 3-3-3. On *Cirsium* and *Polygonum*..... 23
T.ch. 5-5-5. On *Fragaria* (fig. 15) *Capitophorus* (*Pentatrichopus*) *minor* (Forbes)

23(22) Abdominal segments VII–VIII of aptera each with 4–6 conspicuous, knobbed setae. On *Cirsium* (fig. 13) *Capitophorus elaeagni* (Del Guercio)
Abdominal segments VII–VIII of aptera each with 2 conspicuous, knobbed setae. On *Polygonum* (fig. 14) *Capitophorus hippophaes* subsp. *javanicus* H.R.L.

24(20) Frontal tubercles usually well developed, distinctly exceeding vertex..... 25
Frontal tubercles not distinctly exceeding vertex..... 26

25(24) Dorsum of abdomen of aptera without a dark U-shaped area. 29
Dorsum of abdomen of aptera with a dark U-shaped area (fig. 9).....*Aulacorthum* (*Neomyzus*) *circumflexum* (Buckton)

26(24) Hindwing with media and cubitus; on Cruciferae..... 27
Hindwing with cubitus lacking; on Cyperaceae..... 28

27(26) Siphunculus subequal to R IV + V; alate without sensoria on a.s. IV (fig. 12).....*Brevicoryne brassicae* (L.)
Siphunculus 2 times length of R IV + V, alate with sensoria on a.s. IV (fig. 28).....*Lipahis pseudobrassicae* (Davis)

28(26) P.t. of aptera 1 to 1.5 times base, of alates, 1.75 to 2.0 times base (fig. 16).....*Carolinaia caricis* Wilson
P.t. of aptera 2 to 2.5 times base, of alates 2.5 to 3.0 times base (fig. 17).....*Carolinaia cyperi* Ainslie

29(25) Inner sides of antennal tubercles diverging, parallel or slightly converging 35
Inner sides of antennal tubercles distinctly converging or with projection 30

30(29) Antennal tubercles of aptera without a projection. Not on *Mentha* 31
Antennal tubercles of aptera with a projection; on *Mentha* (fig. 39) ..... *Ovatus crataegarius* (Walker)

31(30) Antennae about equal to or longer than body 32
Antennae distinctly shorter than length of body, easily seen without measuring (fig. 36) ..... *Myzus ornatus* Laing

32(31) Siphunculi pale; a.s. IV and V of alate without rhinaria; hind tibiae of nymphs without spinules 33
Siphunculi dark; a.s. IV and V of alate bearing rhinaria; hind tibiae of nymphs with spinules (fig. 25)
Hyalomyzus jussiaeae Smith

33(32) A.s. III without rhinaria (fig. 37)
Myzus (*Nectarosiphon*) *persicae* (Sulzer)
A.s. III with 1–14 rhinaria 34

34(33) A.s. III with 1–4 rhinaria (fig. 10) .. *Aulacorthum solani* (Kalt.)
A.s. III with 5–13 rhinaria (fig. 44)
Rhodobium porosum (Sanderson)

35(29) Radial sector of forewing not fused with media, normal; in aptera, distal ½ of siphunculus not distinctly darker than basal ¼ to ½ 37
Radial sector of forewing fused with upper branch of media, forming a closed cell; in aptera, distal ½ of siphunculus dark, basal ¼ to ½ pale 36

36(35) Siphunculi 1.1–1.5 times cauda. Aptera dark brown to blackish (fig. 41) ..... *Picturaphis brasiliensis* (Moreira)
Siphunculi 1.7–2.0 times cauda. Aptera reddish-brown, shiny (fig. 42) ..... *Picturaphis puertoricensis* Smith

37(35) Hindwing with media and cubitus; siphunculus of aptera not surrounded by a large sclerite 38
Hindwing without medius or cubitus; siphunculus of aptera surrounded by a large conspicuous sclerite (fig. 35)
Microparsus olivei Smith and Tuatay

38(37) Siphunculi distinctly swollen on distal half 39
Siphunculi not swollen on distal half 40

39(38) A.s. III of aptera with 6 or more rhinaria; alate with numerous rhinaria on a.s. III, IV, and V (fig. 26)
Hyperomyzus lactucae (L.)

A.s. III of aptera with 0 to 2 rhinaria; a.s. III of alate with 10 to 15 rhinaria, a.s. IV and V without rhinaria (fig. 2)
Amphorophora commelinensis Smith

40(38) Cauda bearing 3 pairs of lateral setae; vertex of head of aptera without a rectangular process..... 41
Cauda bearing 2 pairs of lateral setae; vertex on head of aptera with a rectangular process (fig. 44)
Rhodobium porosum (Sanderson)

41(40) Siphunculi dark, basal 1/5 may be pale; antennal tubercles diverging anteriorly (fig. 1).....*Acyrthosiphon bidenticola* Smith
Siphunculi pale, tip (1/5) may be dusky; inner sides of antennal tubercles parallel or slightly converging (fig. 10)
Aulacorthum solani (Kalt.)

42(10) Abdomen with prominent striae (which are denticulate on the caudal margin) on each side, caudad of siphunculi (fig. 53)
Toxoptera aurantiae (Boyer de Fonscolombe)
Abdomen without such striae..... 43

43(42) Siphunculi imbricated..... 44
Siphunculi not imbricated (fig. 11)
Brachycaudus helichrysi (Kalt.)

44(43) Siphunculi cylindrical or tapering; pentagonal or hexagonal markings (if present) on dorsum of abdomen of aptera, usually outlined by more or less continuous lines..... 50
Siphunculi swollen or clavate; pentagonal or hexagonal markings (if present) on dorsum of abdomen of aptera, outlined by broken lines, spicules or enlarged nodule-like swellings..... 45

45(44) Abdomen of aptera with distinct pentagonal markings, hindwing of alate with 2 cross-veins..... 47
Abdomen of aptera rugose but without distinct pentagonal markings; hindwing of alate with only 1 cross-vein..... 46

46(45) P.t. of aptera 1 to 1.5 times base, of alatae 1.75 to 2.00 times base, (fig. 16).....*Carolinaia caricis* Wilson
P.t. of aptera 2 to 2.25 times base, of alatae 2.5 to 3.0 times base, (fig. 17).....*Carolinaia cyperi* Ainslie

47(45) P.t. approximately 2 times base of a.s. VI (fig. 45)
Rhopalosiphum maidis (Fitch)
P.t. 3 or more times base of a.s. VI..... 48

48(47) Siphunculi strongly swollen on distal half and usually 0.3 or longer, (fig. 46).....*Rhopalosiphum nymphaeae* (L.)
Siphunculi not strongly swollen on distal half, usually less than 0.3..... 49

49(48) Antennae 5-segmented; setae on a.s. III distinctly longer than diameter of segment (fig. 48)
Rhopalosiphum rufiabdominalis (Sasaki)
Antennae 6-segmented; setae on a.s. III shorter than diameter of segment (fig. 47)..... *Rhopalosiphum padi* (L.)

50(44) Cauda with 8 or more setae..... 51
Cauda with not more than 7 setae..... 52

51(50) Abdomen bright green or greenish-yellow; R IV + V, and base of a.s. VI about equal (fig. 8)..... *Aphis spiraecola* Patch
Abdomen bright yellow; R IV + V approximately 1.5 times base of a.s. VI (fig. 7)..... *Aphis nerii* Boyer de Fonscolombe

52(50) A.s. III of aptera pale..... 53
A.s. III of aptera dark (basal ½ may be pale)..... 56

53(52) Cubitus vestigial or absent in hindwing; length of p.t. 1.5 to 2 times length of a.s. III in alate; cauda, alate and aptera, bearing 4 setae (fig. 27)..... *Hysteroneura setariae* (Thomas)
Cubitus present in hindwing; p.t. and a.s. III approximately equal in length in alate; cauda, alate and aptera, usually bearing 5 or more setae..... 54

54(53) Abdomen of living material pale yellowish to dark olive green or brown; dorsum of aptera without sclerites..... 55
Abdomen of living material black; dorsum of abdomen with sclerites, sclerites may be coalesced forming a dark patch on aptera (fig. 4)..... *Aphis craccivora* Koch

55(54) Aptera with postsiphuncular sclerite (fig. 6)
Aphis illinoisensis Shimer
Aptera without postsiphuncular sclerite (fig. 5)
Aphis gossypii Glover

56(52) Vertex of aptera with rectangular process; cauda usually with 4 or 6 setae..... 57
Vertex of aptera without rectangular process; cauda usually with 7 setae (fig. 6)..... *Aphis illinoisensis* Shimer

57(56) Cauda usually with 6 setae; abdomen reticulated (fig. 3)
Aphis coreopsidis (Thomas)
Cauda usually with 4 setae (fig. 49)
Schizaphis graminum (Rondani)

FIELD KEY TO APTEROUS APHIDIDAE OF PUERTO RICO[1]

1 On aerial portion of plants. Not on roots..... 4
On roots of plants..... 2

[1] Characters refer to mature aptera unless indicated otherwise.

2 (1) On roots of *Ipomea;* white to yellowish with tufts of wax on sides of abdomen (fig. 24).....*Geopemphigus floccosus* (Moreira)
Not on roots of *Ipomea*..... 3

3 (2) On roots of grasses (fig. 51, 52)
Tetraneura nigriabdominalis (Sasaki)
Not on roots of grasses, polyphagous, white with tufts of wax on abdomen, (fig. 43).....*Prociphilus erigeronensis* (Thomas)

4 (1) General appearance of an aphid; not flocculent waxy or with tufts of wax on abdomen..... 7
General appearance of a scale; or, body flocculent waxy, or with tufts of wax on abdomen..... 5

5 (4) General appearance of a scale insect; body not flocculent waxy; not on grasses..... 6
Body dark brown, powdery to flocculent waxy; head 2 horn-like projections on vertex; dark grey, powdery, with tufts of wax along lateral margins and 2 medial on abdomen, especially on caudal ⅔; nymphs light brown; on grasses (fig. 38)
Oregma panicola Takahashi

6 (5) On palms; black, round, white fringe around body; numphs tan (fig. 19).....*Cerataphis variabilis* H.R.L.
On orchids; black, round, white fringe around body (fig. 18)
Cerataphis orchidearum (Westwood)

7 (4) Antennal tubercles well developed, distinctly exceeding vertex of head, may be diverging or converging..... 32
Antennal tubercles not well developed, not exceeding vertex of head, may be absent..... 8

8 (7) Not on *Thuja*..... 9
On *Thuja;* aptera brown, siphunculi mammiform, black (fig. 20).....*Cinara tujafilina* (Del Guercio)

9 (8) Not on *Lagerstroemia*..... 10
On *Lagerstroemia;* nymphs yellow; setae on abdomen of nymphs spinelike, wings with dark areas at tip of veins (fig. 34)
Melanocallis kahawakuokalani (Kirkaldy)

10 (9) Not on Cyperaceae..... 14
On Cyperaceae..... 11

11(10) Body tan to brownish-black..... 12
Body greenish with reddish tinge around and between siphunculi. On grasses, bamboo, and *Cyperus* (fig. 47)
Rhopalosiphum padi (L.)

12(11) Brownish-black; on *Cyperus rotundus* (fig. 17)
Carolinaia cyperi Ainslie
Tan, or brownish with white cauda; not on *Cyperus rotundus*. 13

13(12) Tan, cauda not conspicuous; siphunculi constricted toward tip (fig. 16)..... *Carolinaia caricis* Wilson

Brownish to reddish-brown; cauda white, conspicuous; siphunculi dark, not constricted toward tip (fig. 27) *Hysteroneura setariae* (Thomas)

14(10) Aptera black or brown..... 15

Aptera not black or brown, may be varying shades of white, yellow, green or grey; may be powdery..... 20

15(14) Aptera black..... 16

Aptera brown or olive brown..... 17

16(15) Nymphs tan (fig. 53) *Toxoptera aurantiae* (Boyer de Fonscolombe)

Nymphs greyish, pulverulent (fig. 4)....*Aphis craccivora* Koch

17(15) Body uniform color; not reddish-brown around and between siphunculi..... 18

Body not uniform color; reddish-brown around and between siphunculi; on grasses and bamboo (fig. 47). *Rhopalosiphum padi* (L.)

18(17) Reddish-brown; nymphs tan..... 19

Olive or greenish-brown; siphunculi swollen, may be lighter at base (fig. 46).....*Rhopalosiphum nymphaeae* (L.)

19(18) Brownish; cauda white; siphunculi dark; on grasses (fig. 27) *Hysteroneura setariae* (Thomas)

Reddish-brown to black; on *Cissus* and *Vitis*; antennae dark only at joints and beyond basal portion of a.s. VI; cauda dark; siphunculi dark; not on grasses (fig. 6)...*Aphis illinoisensis* Shimer

20(14) Body without spine-like setae..... 21

Body with spine-like setae; bright lemon-yellow, dorsum of abdomen with rows of dark spots (fig. 50).....*Sipha flava* (Forbes)

21(20) Not on crucifers..... 23

On crucifers..... 22

22(21) Pale green, very powdery on body; siphunculi small, swollen (fig. 12).....*Brevicoryne brassicae* (L.)

Yellowish-green, very little powder on body; siphunculi longer and not as distinctly swollen as on *B. brassicae* (fig. 28) *Lipaphis pseudobrassicae* (Davis)

23(21) Aptera green to bright green or yellow, uniform color..... 28

Aptera bluish-green, white, pale yellowish-white or yellow-green; if bluish-green, green or yellow-green, not uniform color... 24

24(23) Aptera white, pale yellow or yellowish-green, not darker green to black or reddish around siphunculi..... 27

Not as above..... 25

25(24) Head, thorax, and part of abdomen greenish; caudal ½ of abdomen reddish-brown (fig. 48)
Rhopalosiphum rufiabdominalis (Sasaki)
Not as above 26

26(25) Body bluish-grey-green, darker green to black around siphunculi; body distinctly elongate (fig. 45)
Rhopalosiphum maidis (Fitch)
Body dull green, reddish tinge between siphunculi (fig. 47)
Rhopalosiphum padi (L.)

27(24) Bright yellow or bright green, or dark mottled green due to embryos showing through integument; antennae dark beyond basal ½ or a.s. III; head with rectangular process; cauda black (fig. 3) ..... *Aphis coreopsidis* (Thomas)
Pale white, pale yellow, yellowish-green or dark mottled green; a.s. III–V pale; head without rectangular process; cauda pale; alatoid nymphs greyish with white flecks on either side of abdomen ..... *Aphis gossypii* Glover

28(23) Mottled greenish-yellow (bright yellow on *Clibadium*; green on *Bidens*; head may be yellowish to orange); antennae dark beyond basal 0.5 of a.s. III; head with rectangular process on vertex; cauda and siphunculi black, without postsiphuncular sclerite (fig. 3) ..... *Aphis coreopsidis* (Thomas)
Uniformly green or yellow; head without rectangular process on vertex 29

29(28) Not on *Gynura*; greenish or bright yellow; cauda conspicuous; siphunculi imbricated 30
On *Gynura*; yellowish; cauda inconspicuous; siphunculi smooth, not imbricated (fig. 11) .... *Brachycaudus helichrysi* (Kalt.)

30(29) Aptera and nymphs bright yellow; on *Asclepias*, *Calotropis*, and *Nerium* (fig. 7) ..... *Aphis nerii* Boyer de Fonscolombe
Aptera and nymphs greenish 31

31(30) Aptera bright green; siphunculi and cauda black; polyphagous (fig. 8) ..... *Aphis spiraecola* Patch
Aptera pale green; siphunculi dark on distal 0.3 only (fig. 49)
Schizaphis graminum (Rondani)

32 (7) Body of uniform color, may be slightly darker around siphunculi 33
Abdomen with a U-shaped area, a dark spot, or a dark stripe down the middle of the abdomen, or, head and tip of abdomen (cauda) yellowish-orange to reddish-brown and contrasting with rest of body 54

33(32) Abdomen some shade of reddish-brown to black..... 34
Abdomen some shade of white, yellow, tan or green..... 37

34(33) On Compositae; body reddish-brown; wing veins not bordered with fuscous (fig. 21)..... *Dactynotus ambrosiae* (Thomas)
On Leguminosae or Musaceae; body reddish-brown to brownish-black: some wing veins fuscous..... 35

35(34) On Musaceae (fig. 40)..... *Pentalonia nigronervosa* Coquerel
On Leguminosae..... 36

36(35) Aptera shiny, reddish-brown; nymphs reddish-brown (fig. 42) *Picturaphis puertoricensis* Smith
Aptera brownish-black to black; nymphs dark, dull brownish-black to black (fig. 41)..... *Picturaphis brasiliensis* (Moreira)

37(33) Setae on head pointed to blunt..... 40
Setea on head knobbed to fan shape..... 38

38(37) On *Fragaria*; small, body less than 1.5, pale yellowish-white (fig. 15)..... *Capitophorus* (*Pentatrichopus*) *minor* (Forbes)
Not on *Fragaria*; body 1.9 to 2.5, white or pale greenish or pale yellowish..... 39

39(38) On *Cirsium*; light green to powdery white; siphunculi reaching distinctly beyond tip of cauda (fig. 13) *Capitophorus elaeagni* (Del Guercio)
On *Polygonum*, whitish to pale yellow; siphunculi not reaching distinctly beyond tip of cauda (fig. 14) *Capitophosus hippophae* subsp. *javanicus* H.R.L.

40(37) Not on *Mentha*..... 41
On *Mentha*; very small, whitish to light green; antennal tubercles strongly convergent (fig. 39)..*Ovatus crataegarius* (Walker)

41(40) Yellowish-green or dark green around base of siphunculi, contrasting with whitish to yellowish, or greenish abdomen..... 42
Not as above..... 43

42(41) Whitish to pale yellow, yellowish-green around siphunculi; tip of siphunculi black (fig. 10)..... *Aulacorthum solani* (Kalt.)
Bright green, darker green around base of siphunculi (fig. 1) *Acyrthosiphon bidenticola* Smith

43(41) Not on *Rosa*..... 45
On *Rosa*..... 44

44(43) Abdomen light green, head and thorax same color as abdomen; siphunculi pale (fig. 44)..... *Rhodobium porosum* (Sanderson)
Abdomen dark green, head brownish-black; siphunculi black (fig. 31)

45(43) Antennal tubercles convergent..... 46
Antennal tubercles not convergent..... 49

46(45) Yellowish to tan 47
Whitish to yellowish-green 48

47(46) Antennae longer than body; abdomen greenish-brown to tan with reddish area around siphunculi; on *Ludwigia octovalis* = *Jussiaea angustifolia* (fig. 25) ..... *Hyalomyzus jussiaeae* Smith
Antennae shorter than body; abdomen dirty yellowish-tan with dark dashes on sides of abdomen (fig. 36) . *Myzus ornatus* Laing

48(46) Yellowish-green; siphunculi not swollen; antennal tubercles strongly convergent; polyphagous (fig. 37)
Myzus persicae (Sulzer)
Light whitish-green; siphunculi swollen; antennal tubercles only slightly convergent; aptera with rectangular process on vertex of head (fig. 26) ..... *Hyperomyzus lactucae* (L.)

49(45) Distal ½ to ⅔ of siphunculi dark, on *Leptilon* 50
Only tip of siphunculi dark 51

50(49) Cauda dusky to dark (alates); siphunculi subequal to a.s. III (fig. 22) ..... *Dactynotus erigeronensis* (Thomas)
Cauda pale (alates); siphunculi distinctly shorter than a.s. III (fig. 23) ..... *Dactynotus gravicornis* (Patch)

51(49) Whitish-yellow; siphunculi swollen, pale, tips dark (fig. 2)
Amphorophora commelinensis Smith
Greenish or pinkish; siphunculi not swollen 52

52(51) Bright green, darker green at base of siphunculi; siphunculi dusky; on *Bidens* (fig. 1) ..... *Acyrthosiphon bidenticola* Smith
Pale green or pink or whitish; tip of siphunculi dark 53

53(52) Pale green or pink; antennae dark, base of a.s. III may be pale (fig. 29) ..... *Macrosiphum euphorbiae* (Thomas)
Pale whitish-green, appearing somewhat powdery; antennae light, dark at joints (fig. 26) ..... *Hyperomyzus lactucae* (L.)

54(32) Abdomen yellowish-green to bright yellow, and bearing a dark U-shaped area or a black spot 55
Abdomen greenish to brownish; head and cauda orange to reddish-orange 56

55(54) Bright yellow with black spot on abdomen; siphunculi black (fig. 30) ..... *Macrosiphum* (*Sitobion*) *luteum* (Buckton)
Whitish to yellowish-green with a U-shaped dark area on abdomen; antennal tubercles slightly convergent; tip of siphunculi dark (fig. 9) .. *Aulacorthum* (*Neomyzus*) *circumflexum* (Buckton)

56(54) Abdomen with darker medial stripe; specimens in the same colony may vary from a basic greenish to brownish color with yellowish to brownish head or cauda; not on *Desmodium* (fig. 32)
Macrosiphum (*Sitobion*) *salviae* Bartholomew

Abdomen without darker medial stripe; basic color greenish with yellowish to brownish head and cauda and large dark area around siphunculi; On *Desmodium* (fig. 35)

Microparsus olivei Smith and Tuatay

ADDITIONS AND CORRECTIONS

Acyrthosiphon bidenticola Smith

Fig. 1

On *Bidens pilosa*, (67-129), Barranquitas-Naranjito Rd., Km. 9.9, Apr. 7, 1967, (CFS, CKS, MEP); (67–97), Maricao-Sabana Grande Rd., Apr. 4, 1967, (CFS, CKS, LFM, RW).

Amphorophora commelinensis Smith

Fig. 2

On *Callisia repens*, (67-173), Barranquitas-Villalba Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM).

On *Commelina coelestris*, (60-74), Mt. Britton Rd., El Yunque, alt. 2,100 ft., Apr. 20, 1960, (CSF, LFM, RW); (67-218), Mt. Britton Loop Rd., El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Commelina diffusa* = *Commelina longicaulis*, (67-172), Barranquitas-Villalba Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM); (67-36), Cayey-Salinas Rd., Peñón del Collao, alt. 2,000 ft., Apr. 2, 1967, (CFS, CKS, LFM); (67-21), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP); (67-138), Río Grande, Apr. 9, 1967, (CFS, CKS, MEP).

Aphis coreopsidis (Thomas)

Fig. 3

On *Bidens pilosa*, (67-55), Arecibo-Lares Rd., Km. 3.4, Apr. 3, 1967, (CFS, CKS, MEP, RW); (55-162 & 55-170), El Yunque, Km. 10.5, Mar. 9, 1955, (CFS).

On *Bidens reptans*, (67-52), Arecibo-Lares Rd., Km. 3.4, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Clibadium erosum*, (67-183), Cerro Punta-Jayuya, alt. 4,300 ft., Apr. 11, 1967, (CFS, CKS, LFM); (67-23), El Yunque, Km. 7.6, Apr. 1, 1967, (CFS, CKS, MEP); (67-205), El Yunque Peak, Apr. 13, 1967, (CFS, CKS, LFM, RW); (69-68), El Yunque, one Km. from top, Mar. 13, 1968, (CFS, LFM, RW); (67-143), La Santa, Guavate Mts., Cayey, Apr. 10, 1967, (CFS, CKS, SMG).

On *Cosmos caudatus*, (69-50), Adjuntas-Castañer Rd., Km. 68.5, alt. 2,020 ft., Mar. 11, 1969, (CFS, CKS, LFM, SMG).

On *Ilex macfadyenii*, (69-20), El Yunque, East Peak Rd., alt. 2,300 ft., Mar. 7, 1969, (CFS, CKS, LFM, RW).

On *Mikania pachyphylla*, (69-15), El Yunque, East Peak Rd., alt. 3,000 ft., Mar. 7, 1969, (CFS, CKS, LFM, RW).

On *Carica papaya*, (PR No. 2) Rd. 112, Km. 1.2, Oct. 19, 1967, (G. A. Schaefers).

Aphis craccivora Koch

Fig. 4

On *Borreria ocimoides*, (60-29), Río Piedras, Apr. 18, 1960, (CFS, LFM).

On *Lablab niger* = *Dolichos lablab*, (67-116), Guayabal Lake, Villalba, Rd. No. 149, Km. 62, Apr. 6, 1967, (CFS, CKS, LFM, RW).

On *Macroptilium lathyroides* = *Phaseolus lathyroides*, (67-69), Adjuntas Agricultural Substation, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Phaseolus schotti* = *Phaseolus trichocarpus*, (69-31), Florida, east of Arecibo, Mar. 10, 1969, (CFS, CKS, MEP).

On *Portulaca oleracea*, (69-26), Capetillo St. No. 4, Río Piedras, Mar. 8, 1969, (CFS, CKS, LFM); (67-125), Naranjito-Barranquitas Rd., Apr. 6, 1967, (CFS, CKS, LFM, RW).

On *Tephrosia senna* = *Cracca cathartica*, (67-114), El Tuque Beach, Ponce, Apr. 6, 1967, (CFS, LFM, RW, SMG).

On *Tephrosia cinerea* = *Cracca cinerea*, (67-113), Desecheo Island, Apr. 5, 1967, (CFS, LFM, RW); (67-115), El Tuque Beach, Ponce, Apr. 6, 1967, (SMG CFS, LFM, RW).

On *Vicia faba*, (69-30), Florida, east of Arecibo, Mar. 10, 1969, (CFS, CKS, MEP).

Aphis gossypii Glover

Fig. 5

On *Adenostrema verbesina*, (67-91), Mayagüez-Maricao Rd., Km. 21.6, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Anoda acerifolia*, (67-65), Lares-Yauco Rd., Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Anthocephalus cadamba*, (59-8), Catalina Nursery, El Yunque Rd., Km. 4.2, Mar. 6, 1969, (CFS, CKS, LFM, RW).

On *Cajanus cajan* = *Cajanus indicus*, (67-152), Cayey-Guayama Rd., Km. 17.3, Apr. 10, 1967, (CFS, CKS, SMG).

On *Cassia occidentalis* = *Ditremexa occidentalis*, (69-75), Río Piedras, Mar. 14, 1969, (CFS, MEP, Miss J. Sánchez).

On *Cassia tora* = *Emelista tora*, (69-57), south shore of Lake Tortuguero, Vega Baja, Mar. 12, 1969, (CFS, RW).

On *Cestrum macrophyllum*, (67-215), El Yunque, (The Rock), Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Clerodendron fragans*, (69-38), Utuado-Adjuntas Rd., Mar. 11, 1969, (CFS, LFM, SMG).

On *Clibadium erosum*, (67-145), La Santa, Guavate Forest, Cayey, Apr. 10, 1967, (CFS, CKS, SMG).

On *Coccoloba uvifera*, (67-8), Freeport, Bahamas, Mar. 29, 1967, (CFS).

On *Coffea robusta*, (69-41), Adjuntas-Castañer Rd., Km. 77.7, alt. 1,720 ft., Mar. 11, 1969, (CFS, CKS, LFM, SMG).

On *Commelina* sp., (69-76), Río Piedras, Mar. 14, 1969, (CFS, MEP).

On *Crossandra infundibuliformis*, (67-157), Naranjito-Barranquitas Rd., Km. 13.1, Apr. 11, 1967, (CFS, CKS, LFM).

On *Cucumis sativus*, Cupey Alto, Río Piedras, May 13, 1968, (J. Bird, Miss J. Sánchez).

On *Cyathea arborea*, (67-137), Río Grande-El Verde Rd., Km. 13.9, Apr. 9, 1967, (CFS, CKS, MEP).

On *Epidendrum secundum* = *Amphiglottis secunda*, (67-194), Doña Juana, Jayuya Rd., Km. 8.9, Apr. 2, 1967, (CFS, CKS, MEP).

On *Guettarda scabra*, (69-62), south side of Lake Tortuguero, Vega Baja, Mar. 12, 1969, (CFS, RW).

On *Hibiscus eetveldeanus*, (69-24), Cerro La Marquesa, Aguas Buenas (radio and TV towers), Mar. 8, 1969, (CFS, CKS, LFM).

On *Hibiscus furcellatus*, (69-58), south shore, Lake Tortuguero, Mar. 12, 1969, (CFS, RW).

On *Hyptis pectinata*, (67-168), Barranquitas-Villabla Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM).

On *Melothria guadalupensis*, (67-199) Doña Juana-Jayuya Rd., Km. 8.9, Apr. 12, 1967, (CFS, CKS, MEP).

On *Mikania cordifolia*, (67-84), Mayagüez-Maricao Rd., Km. 11.6, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Musa paradisiaca*, Corazal, Feb. 19, 1968, (Miss J. Sánchez); (69-74), Río Piedras, Mar. 14, 1969, (CFS, MEP, Miss Sánchez).

On *Phaseolus lunatus*, (69-34), Florida-Jayuya Rd., Km. 40.3, Mar. 10, 1969, (CFS, CKS, MEP).

On *Piper peltatum* = *Pothomorphe peltata*, (67-62), Lares-Yauco Rd., Apr. 3, 1967, (CFS, CKS, MEP, RW); (67-17), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP).

On *Plantago major*, (67-216), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Saggitaria lancifolia*, (69-6), Toa Baja, Mar. 5, 1969, (CFS, MEP, RW).

On *Salvia occidentalis*, (67-160), Barranquitas-Villalba Rd., Km. 3.5,

Apr. 11, 1967, (CFS, CKS, LFM); (67-63), Lares-Yauco Rd., Km. 6.7, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Sanchezia nobilis*, (67-79), Mayaguez-Maricao Rd., Km. 11.6, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Sida acuta* = *Sida carpinifolia*, (67-64), Lares-Yauco Rd., Apr. 5, 1967, (CFS, CKS, MEP, RW).

On *Sida rhombifolia*, (67-219), Mt. Britton Loop Rd., El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Tournefortia bicolor*, (69-64), south side of Lake Tortuguero, Vega Baja, Mar. 12, 1969, (CFS, RW).

On *Triplaris cumingiana*, (69-77), Río Piedras, Mar. 14, 1969, (CFS, MEP).

On *Turnera ulmifolia*, (69-56), south shore of Lake Tortuguero, Vega Baja, Mar. 12, 1969, (CFS, RW).

On *Xanthosoma nigrum* = *Xanthosoma violaceum*, (67-46), Arecibo, Apr. 3, 1967, (CFS, CKS, MEP, RW).

Aphis illinoisensis Shimer

Fig. 6

On *Cissus sicyoides*, (67-85), Mayaguez-Maricao Rd., Km. 21.4, Apr. 4, 1967, (CFS, CKS, LFM, RW).

Aphis nerii Boyer de Fonscolombe

Fig. 7

On *Asclepias curassavica*, (67-40), Peñón del Collao, Cayey-Aibonito Rd., alt. 2,000 ft., Apr. 2, 1967, (CFS, CKS, LFM); (69-16), East Peak Rd., El Yunque, alt. 2,300 ft., Mar. 7, 1969, (CFS, CKS, LFM, RW).

On *Asclepias nivea*, (67-60), Arecibo-Lares Rd., Km. 34, Apr. 3, 1967, (CFS, CKS, MEP, RW); (69-47), Guilarte Forest, Adjuntas Rd., Km. 7.2, Mar. 11, 1969, (CFS, CKS, LFM, SMG).

On *Carica papaya*, (PR No. 3), Rd. No. 181, Oct. 25, 1967, (Schaefers).

On *Nerium oleander*, (67-11), Freeport, Bahamas, Mar. 21, 1967, (CFS).

Aphis spiraecola Patch

Fig. 8

On *Anthocephalus cadamba*, (69-8), Catalina Nursery, El Yunque Rd., Km. 4.2, Mar. 6, 1969, (CFS, CKS, LFM, RW).

On *Carica papaya*, (PR No. 4), Fortuna Substation, Ponce, Jan. 3, 1968, (G. A. Schaefers); (PR No. 1), Isabela Substation, Oct. 19, 1967, (G. A. Schaefers); (PR No. 7), Isabela, Feb. 15, 1968, (G. A. Schaefers); (PR

No. 6), Mayaguez, Feb. 15, 1968, (G. A. Schaefers); (PR No. 5), Río Piedras, Agricultural Experiment Station, Jan. 10, 1968, (G. A. Schaefers).

On *Celosia* sp., (67-74), Yauco-Lares Rd., at Castañer, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Cecropia peltata*, (67-140), Río Grande-El Verde Rd., Km. 13.9, Apr. 9, 1967, (CFS, CKS, MEP).

On *Cestrum laurifolium*, (69-54), south shore of Lake Tortuguero, Vega Baja, Mar. 12, 1969, (CFS, RW).

On *Cestrum macrophyllum*, (67-214), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Chrysanthemum* sp., Río Piedras, Mar. 27, 1968, (J. Bird, Miss Josefina Sánchez).

On *Cissampelos pareira*, (69-9), El Yunque Rd., Km. 8.8, Mar. 6, 1969, (CFS, CKS, LFM, RW).

On *Citrus sinensis*, (67-15), El Yunque Rd., Km. 2.4, Apr. 1, 1967, (CFS, CKS, MEP).

On *Citrus* sp., Maricao, Apr. 27, 1968.

On *Clibadium erosum*, (69-67), El Yunque, one kilometer from El Yunque Peak, Mar. 13, 1969, (CFS, RW, LFM).

On *Dieffenbachia sequine*, (67-81), Mayagüez-Maricao Rd., Km. 11.6, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Dilomilis montana* = *Octadesmia montana*, (69-71), El Yunque, one mile from El Yunque Peak, Mar. 13, 1969, (CFS, LFM, RW).

On *Epidendrum prismatocarpum*, (67-224), Pennock Nursery, Río Piedras, Apr. 15, 1967, (CFS, LFM).

On *Epidendrum secundum* = *Amphiglottis secunda*, (67-223), Pennock Nursery, Río Piedras, Apr. 15, 1967, (CFS, LFM).

On *Eupatorium dolicholepis*, (67-56), Arecibo-Lares Rd., Km. 34, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Ipomoea batatas*, (67-16), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP).

On *Ixora coccinea*, Río Piedras, Mar. 27, 1968, (Bird, Sánchez).

On *Nothopanax quilfoylei* = *Polyscias quilfoylei* (67-222), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On orange orchid, (67-226), Pennock Nursery, Río Piedras, Apr. 15, 1967, (CFS, LFM).

On *Osmanthus* (?), (67-10), Freeport, Bahamas, Mar. 30, 1967, (CFS).

On *Piper aduncum*, (67-18), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP).

On *Piper peltatum* = *Pothomorphe peltata*, (67-17), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP).

On *Plumiera obtusa* = *Plumiera krugii*, (67-104), Maricao-Sabana Grande Rd., Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Rosa*, sp., (67-68), Adjuntas Agricultural Substation, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Salix chilensis*, (67-130), Barranquitas-Naranjito Rd., Km. 11.3, Apr. 7, 1967, (CFS, CKS, MEP).

On *Sonchus oleraceus*, (67-41), Barrio Sonadora, Aguas Buenas, 1,300 ft. alt., Apr. 2, 1967, (CFS, CKS, LFM).

On *Trema micrantha*, (67-182), Cerro de Punta, Jayuya, (Toro Negro Forest), 4,000 ft. alt., Apr. 6, 1967, (CFS, SMG, LFM, RW).

On *Urena lobata*, (67-122), Cerro de Punta area, Jayuya (Toro Negro Forest), 4,000 ft. alt., Apr. 6, 1967, (CFS, SMG, LFM, RW).

On walking iris, (67-96), Fish Hatchery, Maricao, Apr. 4, 1967, (CFS, CKS, LFM, RW).

Aulacorthum (Neomyzus) circumflexum (Buckton)

Fig. 9

On *Commelina coelestris*, (60-74), Mt. Britton Rd., El Yunque area, 2,100 ft. alt., Apr. 20, 1960, (CFS, LFM, RW).

On *Dilomilis montana* = *Octadesmia montana*, (69-12), East Peak Rd., El Yunque area, 2,600 ft. alt., Mar. 7, 1969, (CFS, CKS, LFM, RW).

On *Epidendrum secundum* = *Amphiglottis secunda*, (67-185), Ciales-Villalba Rd., Km. 44.3, Apr. 11, 1967, (CFS, CKS, LFM).

On *Lablab niger* = *Dolichos lablab*, (69-42), Adjuntas-Castañer Rd., Km. 77.7, alt. 1,700 ft., Mar 11, 1969, (CFS, CKS, LFM, SMG)

On *Lactuca intybacea* = *Brachyramphus intybaceus*, (51-59), Ciales-Villalba Rd., Mar. 22, 1959, (LFM, SMG).

On *Malvaviscus grandiflorus*, (60-123; 60-124), Cayey-Guayama Rd., Km. 10.4, 1,920 ft. alt., Apr. 25, 1960, (CFS, MEP).

On *Rubus rosaefolius*, (67-207), El Yunque Peak, Apr. 23, 1967, (CFS, CKS, LFM, RW).

On *Solanum ciliatum*. (67-92), road to fish hatchery, Maricao, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Vernonia cinerea*, (67-87), Mayagüez-Maricao Rd., Km. 21.4, Apr. 4, 1967, (CFS, CKS, LFM, RW).

Aulacorthum solani (Kaltenbach)

Fig. 10

On *Bidens pilosa*, (67-71), Rd. No. 135, 2 miles west, Castañer, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Clibadium erosum*, (67-144), La Santa, Guavate Forest, Cayey, Apr. 10, 1967, (CFS, CKS, SMG).

On *Elephantopus scaber* = *Elephantopus mollis*, (67-174), Barranquitas-Villalba Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM).

On *Lantana camara*, (67-196), Doña Juana-Jayuya Rd., Km. 8.9, Apr. 11, 1967, (CFS, CKS, LFM).

On *Rubus rosaefolius*, (67-127), Barranquitas-Naranjito Rd., Km. 9.9, Apr. 7, 1967, (CFS, CKS, MEP); (67-208), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On scrophulariaceous plant, (67-206), El Yunque Peak, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Zantedeschia aethiopica*, (67-176), Barranquitas, Apr. 11, 1967, (CKS, CFS, LFM).

Capitophorus elaeagni (Del Guercio)

Fig. 13

Principal Diagnostic Characters: Tip of siphunculi dark; abdominal segments VI-VIII with 4 to 8 knobbed setae which are distinctly longer than setae on abdominal segments I-V.

On *Cirsium mexicanum*, (67-153), Guayama-Cayey Rd. No. 15, Km. 17.3, Apr. 10, 1967, (CFS, CKS, SMG); (69-2), La Torre, Barrio Boquerón, Barranquitas, Mar. 5, 1969, (CFS, CKS, MEP, RW).

Capitophorus hippophaes subsp. *javanicus* Hille Ris Lambers

Fig. 14

Capitophorus hippophaes subsp. *javanicus* H. R. L. 1953:156 (*5*)

Apterous vivipara: Color of living specimens whitish. Cleared specimens pale on body and appendages. Measurements of one specimen. Body 1.35. Width of head 0.31. A.s. III, 0.31; IV, 0.20; V, 0.18; VI, 0.09 + 0.25. R IV + V, 0.07. Hind tibia 0.71. Hind tarsomere II, 0.08. Siphunculus 0.40. Cauda 0.20. Antennae without secondary sensoria. Vertex of head with conspicuous knobbed setae 0.03, abdominal segments VII and VIII each bear 2 setae similar to those on the vertex. Other setae on the dorsum of the abdomen and on antennal segments short, inconspicuous, blunt to slightly knobbed 0.004. R IV + V with 2 accessory setae. Cauda with 7 setae.

Principal Diagnostic Characters: Abdominal segments VII and VIII each with 2 knobbed setae similar to those on the vertex.

Types: Collection of D. Hille Ris Lambers, Bennekom.

Collections: On *Persicaria densiflorum* = *Polygonum portoricensis*, (67-192), Doña Juana-Jayuya Rd., Km. 6.6, Apr. 11, 1967, (CFS, CKS, MEP).

On *Persicaria* sp. = *Polygonum* sp., (69-51), Jayuya, (cross of roads No. 144 and 528), Mar. 11, 1969, (CFS, CKS, LFM, SMG).

New record for Puerto Rico.

Carolinaia cyperi Ainslie

Fig. 17

On *Cyperus* sp., (69-7), Río Piedras, Mar. 6, 1969, (CFS, CKS).

On *Cyperus polystachyos* = *Cyperus odoratus*, (69-61), south side of Lake Tortuguero, Vega Baja, Mar. 12, 1969, (CFS, RW).

On *Rhynchospora nervosa* = *Dichromena ciliata*, (69-35), Florida-Jayuya Rd., Km. 40.3, Mar. 10, 1969, (CFS, CKS, MEP).

Cerataphis orchidearum (Westwood)

Fig. 18

On *Epidendrum secundum* = *Amphiglottis secunda*, Villalba-Ciales Rd., Km. 44.6, Apr. 6, 1967, (CFS, CKS, LFM, RW); (67-197), Doña Juana-Jayuya Rd., Km. 8.9, Apr. 12, 1967, (CFS, CKS, MEP); (67-186), Villalba-Ciales Rd., Km. 44.3, Apr. 11, 1967, (CFS, CKS, LFM).

Cerataphis variabilis Hille Ris Lambers

Fig. 19

On *Ptychosperma macarthurii*, (67-141), Interior patio of agronomy building, Agricultural Experiment Station, Río Piedras, Apr. 10, 1967, (CFS, LFM); (69-27), Río Piedras, Mar. 9, 1969, (CFS, MEP).

Dactynotus ambrosiae (Thomas)

Fig. 21

On *Chrysanthemum anethifolium*, (67-184), Cerro Punta, Jayuya, alt. 4,400 ft., Apr. 11, 1967, (CFS, CKS, LFM).

On *Clibadium erosum*, (69-80), Maricao Forest, Mar. 14, 1969, (CFS, CKS, MEP).

On *Elephantopus scaber* = *Elephantopus mollis*, (67-86), Mayagüez-Maricao Rd., Km. 21.4, Apr. 4, 1967, (CFS, CKS, LFM, RW); (67-167), Villalba-Barranquitas Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM).

On *Eupatorium odoratum* = *Osmia odorata*, (67-43), Barrio Sonadora, Aguas Buenas Rd. No. 792, 1,300 ft. alt., Apr. 2, 1967, (CFS, CKS, LFM).

On *Galinsoga ciliata*, (67-88), Mayagüez, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Gnaphalium portoricense*, (67-169), Barranquitas, Apr. 11, 1967, (CFS, CKS, LFM).

On *Pluchea carolinensis* = *Pluchea odorata*, (67-53), Arecibo-Lares Rd., Km. 34, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Solanum torvum*, (67-99), Maricao-Sabana Grande Rd., Km. 18.4, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Sonchus oleraceus*, (67-42), Barrio Sonadora, Aguas Buenas Rd. No. 792, 1,300 ft. alt., Apr. 2, 1967, (CFS, CKS, LFM).

On *Trema lamarckiana*, (67-100), Maricao-Sabana Grande Rd., Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Trema micrantha*, (67-102), Maricao-Sabana Grande Rd., Km. 18.4, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Waltheria indica* = *Waltheria americana*, (67-103), Mariaco, Apr. 4, 1967, (CFS, CKS, LFM, RW).

Dactynotus erigeronensis (Thomas)

Fig. 22

On *Conyza canadensis* = *Leptilon pusillum*, (67-178), Cerro Punta, Jayuya, 4,000 ft. alt., Apr, 11, 1967, (CFS, CKS, LFM); (67-179), Jayuya, Apr. 11, 1967, (CFS, CKS, LFM).

Dactynotus gravicornis (Patch)

Fig. 23

On *Conyza canadensis* = *Leptilon pusillum*, (67-179), Cerro Punta, Jayuya, 4,000 ft. alt., Apr. 11, 1967, (CFS, CKS, LFM); (69-78), Maricao Forest, Mar. 14, 1969, (CFS, CKS, MEP).

Geopemphigus floccosus (Moreira)

Fig. 24

On *Ipomea batatas*, on roots, (67-14), Km. 2.4, El Yunque, Apr. 1, 1967, (CFS, CKS, MEP).

Hyalomyzus jussiaea Smith

Fig. 25

On *Ludwigia octovalvis* = *Jussiaea angustifolia*, (67-26), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP); (69-17), El Yunque, East Peak Rd., 2,300 ft. alt., Mar. 7, 1969, (CFS, CKS, LFM, RW); (67-135), Orocovis, Apr. 7, 1967, (CFS, CKS, MEP); (69-40), Utuado-Adjuntas Rd., Mar. 11, 1969, (CFS, CKS, LFM, SMG).

Hyperomyzus lactucae (Linnaeus)

Fig. 26

On *Cirsium mexicanum*, (69-79), Maricao Forest, Mar. 14, 1969, (CFS, CKS, MEP).

On *Sonchus oleraceus*, (69-4), La Torre, Barrio Boquerón, Barranquitas, Mar. 5, 1969, (CFS, MEP, RW); (67-112), Maricao-Sabana Grande Rd., Km. 13.9, Apr. 4, 1967, (CFS, CKS, LFM, RW).

Hysteroneura setariae (Thomas)

Fig. 27

On *Andropogon bicornis*, (67-105), Maricao-Sabana Grande Rd., Km. 18.4, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Arundo donax*, (60-83), Ponce-Santa Isabel Rd., Apr. 21, 1960, (CFS, LFM, MEP).

On *Bambusa bambos* = *Bambusa vulgaris*, (67-200), Ciales-Villalba Rd., Km. 33.1, Apr. 12, 1967, (CFS, CKS, MEP).

On *Boerhaavia diffusa* = *Boerhaavea coccinea*, (67-181), Cerro Punta, Jayuya, 4,000 ft. alt., Apr. 11, 1967, (CFS, CKS, LFM).

On *Panicum laxum*, (69-59), south shore of Lake Tortuguero, Vega Baja, Mar. 12, 1960, (CFS, RW).

On *Panicum trichoides*, Villalba-Barranquitas Rd., Km. 3.4, Apr. 11, 1967, (CFS, CKS, LFM).

On *Paspalum secans*, (67-136), Orocovis, Apr. 7, 1967, (CFS, CKS, MEP).

On *Sporobolus poiretii* = *Sporobolus berteroanus*, (67-45), Barrio Sonadora, Aguas Buenas Rd. No. 792, 1,300 ft. alt., Apr. 2, 1967, (CFS, CKS, LFM).

Macrosiphum euphorbiae (Thomas)

Fig. 29

On *Emilia coccinea*, (67-106), Maricao-Sabana Grande Rd., Km. 17.9, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Rosa* sp., (67067), Adjuntas Agricultural Substation, Apr. 3, 1967, (CFS, CKS, MEP, RW).

Macrosiphum (Sitobion) luteum (Buckton)

Fig. 30

On *Dilomilis montana* = *Octadesmia montana*, (67-213), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW); (69-13), El Yunque East Peak Rd. area, 2,600 ft. alt., Mar. 7, 1969, (CFS, LFM, RW); (69-70), 1 mile from El Yunque Peak, Mar. 13, 1969, (CFS, LFM, RW).

Macrosipum rosae (Linnaeus)

Fig. 31

Apterous vivipara: Body green. Head brownish-black. Siphunculi black. Cauda pale. Nymphs pale green and slightly pulverulent. Cleared specimens dark on head, antennae, tips of femora, joint of femora and tibia, tips of tibia, all of tarsomeres, siphunculi and pre- and post-siphuncular sclerites. Remaining portions of the body pale. Measurements of one specimen. Body 2.8. Head width 0.57. A.s. III, 0.98; IV, 0.75; V, 0.61; VI 0.14 + 0.90. R IV + V, 0.15. Hind tibia 1.73. Hind tarsomere II, 0.11. Siphunculi 0.70. Cauda 0.55. A.s. III with ca. 16 sensoria. R. IV + V with 8 accessory setae. T. ch. 3-3-3.

Principal Diagnostic Characters: Black head, antennae, and siphunculi; numerous (ca. 16–20) sensoria on a.s. III of aptera.

Collections: On *Rosa*, (67-67), Adjuntas Agricultural Substation, Apr. 3, 1967, (CFS, CKS, MEP, RW); (69-44), Adjuntas Agricultural Substation, Mar. 11, 1969, (CFS, CKS, LFM, SMG).

New record for Puerto Rico.

Macrosiphum (*Sitobion*) *salviae* Bartholomew

Fig. 32, 33

Macrosiphum salviae Bartholomew 1932: 720(*2*)

Macrosiphum mesosphaeri Tissot 1934: 17 (new synonymy) (*17*)

Smith, Martorell, and Pérez (*12*) separated *Sitobion* and *Macrosiphum* on the basis of the presence or absence of a sclerotic area on the dorsum of the abdomen. This is, however, a very variable character. A long series of specimens was collected in 1967 in which the sclerotic area varied from total absence to very distinct (figs. 32, 33). We cannot find any morphological differences and thus believe *Macrosiphum mesosphaeri* Tissot to be a synonym of *M. salviae* Bartholomew.

On *Clibadium erosum*, (67-147), La Santa, Guavate Forest, Cayey, Apr. 10, 1967, (CFS, CKS, SMG).

On *Hyptis capitata*, (69-39), Utuado-Adjuntas Rd., Mar. 11, 1969, (CFS, CKS, LFM, SMG).

On *Hyptis pectinata*, (67-37), Peñón del Collao, Cayey-Aibonito Rd., 2,000 ft. alt., Apr. 2, 1967, (CFS, CKS, LFM); (67-90), Mayagüez, Apr. 4, 1967, (CFS, CKS, LFM, RW); (67-164 & 67-165), Naranjito-Barranquitas Rd., Km. 13.1, Apr. 11, 1967, (CFS, CKS, LFM).

On *Hyptis spicigera* = *Hyptis americana*, (67-51), Arecibo-Lares Rd.,

Km. 3.4, Apr. 3, 1967, (CFS, CKS, MEP, RW); (67-73), Rd. No. 135, 2 miles west Castañer, Apr. 3, 1967, (CFS, CKS, MEP, RW); (67-66), Lares-Yauco Rd., Km. 57.2, Apr. 3, 1967, (CFS, CKS, MEP, RW); (67-89), Maricao-Mayagüez Rd. No. 105, Km. 21.4, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Inga vera* = *Inga inga*, (67-196), Jayuya, Apr. 12, 1967, (CFS, CKS, MEP).

On *Lantana camara*, (67-196), Jayuya, Apr. 12, 1967, (CFS, CKS, MEP).

On *Lomoplis ceratonia* = *Mimosa ceratonia*, (67-38), El Collao, Cayey-Aibonito Rd., Apr. 2, 1967, (CFS, CKS, LFM); (67-98), Maricao-Sabana Grande Rd., Km. 18.4, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Salvia coccinea*, (67-193), Doña Juana-Jayuya, Rd. No. 144, Apr. 12, 1967, (CFS, CKS, MEP); (67-195), Doña Juana-Jayuya Rd., Km. 8.9, Apr. 12, 1967, (CFS, CKS, LFM); (67-159), Barranquitas, Apr. 11, 1967, (CFS, CKS, LFM).

On *Salvia occidentalis*, (67-75), Rd. No. 135, 2 miles west of Castañer, Apr. 3, 1967, (CFS, CKS, MEP, RW); (67-61), Lares-Yauco, Rd. No. 128, Km. 6.7, Apr. 3, 1967, (CFS, CKS, MEP, RW); (67-161 & 67-166), Barranquitas-Villalba Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM); (67-126), Villalba-Ciales Rd., Km. 44.6, Apr. 6, 1967, (CFS, CKS, LFM, RW).

On *Salvia splendens*, (67-154), Naranjito-Barranquitas Rd., Km. 13.1, Apr. 11, 1967, (CFS, CKS, LFM).

On *Trema lamarckiana*, (67-101), Maricao-Sabana Grande Rd., Km. 18.4, Apr. 4, 1967, (CFS, CKS, LFM, RW).

Melanocallis kahawaluokalani (Kirdaldy)

Fig. 34

On *Lagerstroemia indica*, (69-25), Cerro La Marquesa, Aguas Buenas, 1,500 ft. alt. (WKAQ radio and TV towers), Mar. 8, 1969, (CFS, CKS, LFM); (69-72), Río Piedras, Mar. 13, 1969, (CKS).

Myzus ornatus Laing

Fig. 36

Borner (*3*) indicated *M. portulacae* Macch. 1883 may be an earlier name for this aphid. We have not been able to verify this.

On *Ageratum conyzoides*, (67-203), El Yunque Peak, El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Bidens pilosa*, (67-123), Cerro Punta area, Jayuya, Toro Negro Forest, 4,000 ft. alt., Apr. 6, 1967, (CFS, CKS, LFM, RW).

On *Celosia nitida*, (67-180), Cerro Punta, Jayuya, 4,000 ft. alt., Apr. 11, 1967, (CFS, CKS, LFM).

On *Clibadium erosum*, (67-183), Cerro Punta, Jayuya, 4,300 ft. alt., Apr. 11, 1967, (CFS, CKS, LFM); (67-146), La Santa, Guavate Forest, Cayey, Apr. 10, 1967, (CFS, CKS, SMG).

On *Coleus blumei*, (67-177), Barranquitas-Villalba Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM).

On *Galinsoga ciliata*, (67-204), El Yunque Peak, 3,500 ft. alt., Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Ludwigia octovalvis* = *Jussiaea angustifolia*, (67-135), Orocovis, Apr. 7, 1967, (CFS, CKS, MEP).

On *Mentha nemorosa*, (67-202), El Yunque Peak, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Ocimum basilicum*, (67-133), Barranquitas-Naranjito Rd., Km. 9.9, Apr. 7, 1967, (CFS, CKS, MEP).

On *Salix chilensis*, (67-131), Barranquitas-Naranjito Rd., Km. 9.9, Apr. 7, 1967, (CFS, CKS, MEP).

On *Salvia splendens*, (67-191), Florida, Jayuya, Rd. No. 140, Apr. 12, 1967, (CFS, CKS, MEP).

On *Spathodea campanulata*, (67-72), Rd. No. 135, 2 miles west, Castañer, Apr. 3, 1967, (CFS, CKS, MEP, RW).

Myzus (Nectarosiphon) persicae (Sulzer)

Fig. 37

On *Bidens pilosa*, (67-71), Rd. No. 135, 2 miles west, Castañer, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Celosia nitida* (?), (67-162), Barranquitas-Villalba Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM).

On *Emilia coccinea*, (67-106), Maricao-Sabana Grande Rd., Km. 17.9, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Lepidium virginicum*, (69-46), Adjuntas Substation, Mar. 11, 1969, (CFS, CKS, LFM, SMG).

On *Osmanthus* (?), (67-10), Freeport, Bahamas, Mar. 30, 1967, (CFS).

On *Solanum seaforthianum*, (67-156), Naranjito-Barranquitas Rd., Apr. 11, 1967, (CFS, CKS, LFM).

On *Sonchus oleraceus*, (67-41), Barrio Sonadora, Aguas Buenas, Rd. No. 792, 1,300 ft. alt., Apr. 2, 1967, (CFS, CKS, LFM).

On a solanaceous vine (?), (67-9), Freeport, Bahamas, Mar. 29, 1967, (CFS).

On *Tournefortia bicolor*, (69-63), south side of Lake Tortuguero, Vega Baja, Mar. 12, 1969, (CFS, RW).

Oregma panicola Takahashi

Fig. 38

On *Commelina diffusa* = *Commelina longicaulis*, (67-22), El Yunque, Km. 7.6, Apr. 1, 1967, (CFS, CKS, MEP).

On *Ichnanthus pallens*, (67-32), El Yunque, Km. 11.3, Apr. 1, 1967, (CFS, CKS, MEP); (69-69), one kilometer from El Yunque Peak, Mar. 13, 1969, (CFS, LFM, RW); (67-139), Río Grande, Km. 13.9, Apr. 9, 1967, (CFS, CKS, MEP).

On *Isachne agustifolia*, (69-11), East Peak Rd., El Yunque, alt. 2,600 ft., Mar. 7, 1969, (CFS, CKS, LFM, RW).

Ovatus crataegarius (Walker)

Fig. 39

On *Mentha crispa*, (67-132), Barranquitas-Naranjito Rd., Km. 9.9, Apr. 7, 1967, (CFS, CKS, MEP).

Pentalonia nigronervosa Coquerel

Fig. 40

On *Citrus* sp., (Visitor), Lajas, Apr. 27, 1968.

On *Costus cylindricus*, (67-221), El Yunque, La Catalina area, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Hedychium coronarium*, (67-220), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Musa paradisiaca*, (67-171), Barranquitas-Villalba Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM); (69-33), Florida-Jayuya Rd. 140, Km. 41.3, Mar. 3, 1969, (CFS, CKS, MEP).

On *Musa sapientum*, (67-13), El Yunque, Km. 2.4, Apr. 1, 1967, (CFS, CKS, MEP); (69-73), Río Piedras, Mar. 14, 1969, (CKS).

On *Xanthosoma caracu*, (67-170), Barranquitas-Villalba Rd., Km. 3.5, Apr. 11, 1967, (CFS, CKS, LFM).

Picturaphis brasiliensis (Moreira)

Fig. 41

On *Lablab niger* = *Dolichos lablab*, (69-43), Adjuntas-Castañer, Km. 77.7, 1,700 ft. alt., Mar. 11, 1969, (CFS, CKS, LFM, SMG); (67-189), Barceloneta-Florida Rd., Km. 62.9, Apr. 11, 1967, (CFS, CKS, MEP); (67-149), Guayama-Cayey Rd., Km. 6.5, Apr. 10, 1967, (CFS, CKS, SMG).

On *Phaseolus lunatus*, (67-190), Florida-Jayuya Rd., Km. 49.8, Apr. 11, 1967, (CFS, CKS, MEP); (69-29), Florida, Mar. 10, 1969, (CFS, CKS,

MEP); (69-37), Arecibo-Utuado Rd., Km. 77.8, Mar. 11, 1969, (CFS, CKS, LFM, SMG).

On Phaseolus schottii = Phaseolus trichocarpus, (69-31 & 69-32), Florida, west of Arecibo, Mar. 10, 1969, (CFS, CKS, MEP).

Picturaphis puertoricensis Smith

Fig. 42

Picturaphis puertoricensis Smith 1970: (*13*)

On *Phaseolus adenanthus*, El Yunque, (69-65), Mar. 13, 1969, (CFS, LFM, RW); (69-21), same location as (69-65), Mar. 7, 1969, (CFS, CKS, LFM, RW).

New record for Puerto Rico.

Prociphilus erigeronensis (Thomas)

Fig. 43

Tychea erigeronensis Thomas 1879: 168 (*16*)
Prociphilus erigeronensis Hottes and Frison 1931: 371 (*6*)
Prociphilus erigeronensis: Wolcott 1936: 118 (*18*)

Apterous Vivipara[1]: Color of living specimens whitish with waxlike filaments, especially on the abdomen, which tend to make curls toward the head. Cleared specimens pale; antennae, legs, cauda, and anal plate dusky. Antennae 5 segmented. Length of body 1.7–2.4, A.s. III, 0.10–0.18, IV, 0.06–0.09; V, 0.09–0.11 + 0.03–0.04. R IV + V, 0.11–0.15 and bearing 4–8 accessory setae. Hind tibia, 0.36–0.47; hind tarsus, 0.13–0.16; t.ch. 2-2-2 or 3-2-2. Cauda rounded and bearing 12–22 setae.

Principal Diagnostic Characters: Waxy filaments which curl forward on living specimens, conspicuous wax plates on sides of abdomen, especially segment VII.

Type: Probable cotypes (slide no. 2769) in the collection of the Illinois Natural History Surveys, Hottes and Frison. (*6*)

Collections: Aptera on the roots of several species of plants. Only one specimen has been seen from Puerto Rico. This was intercepted by USDA Plant Quarantine personnel on "lima bean leaves, October 11, 1935, Cidra, P. R., San Juan No. 6214, McGibbin and Mills". This is an apterous specimen, therefore, it must have gotten on the leaf during transit from Cidra to the Plant Quarantine Station at San Juan. Wolcott (*18*) recorded *Prociphilus erigeronensis* (Det. W. P. Mason) resting on dahlia leaf at Guaynabo (No. 3355). We have not been able to locate this slide; there is no way of knowing whether it is apterous or alate.

New record for Puerto Rico.

[1] Measurements and description from specimens collected in North Carolina.

Rhodobium porosum (Sanderson)

Fig. 44

On *Rosa*, (67-67), Adjuntas Agricultural Substation, Apr. 3, 1967, (CFS, CKS, MEP, RW); (69-45), Adjuntas Agricultural Substation, Mar. 11, 1969, (CFS, CKS, LFM, SMG); (69-5), Barranquitas, Mar. 5, 1969, (CFS, MEP, RW); (67-151), Guayama-Cayey Rd., Km. 17.3, Apr. 10, 1967, (CFS, CKS, SMG), (67-155), Naranjito-Barranquitas Rd., Km. 13.1, Apr. 11, 1967, (CFS, CKS, LFM); Saint Just, Trujillo Alto, Mar. 15, 1968, (G. Rivera Mercado).

Rhopalosiphum maidis (Fitch)

Fig. 45

On *Coix lachryma-jobi*, (67-134), Orocovis, Apr. 7, 1967, (CFS, CKS, MEP).

On *Cyperus odoratus* = *Cyperus ferax*, (67-28), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP).

On *Eriochloa punctata*, (67-29), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP).

Rhopalosiphum nymphaeae (Linnaeus)

Fig. 46

On *Dieffenbachia sequine*, (67-80), Mayagüez-Maricao, Rd. No. 105, Km. 11.6, Apr. 4, 1967, (CFS, CKS, LFM, RW).

Rhopalosiphum padi (Linnaeus)

Fig. 47

Aphis padi Linnaeus 1758: 451 (♀)

Apterous Vivipara: Color of living specimens brownish. Nymphs reddish between siphunculi. Cleared specimens dusky on head, antennae, legs, siphunculi, cauda, and anal plate. Measurements of one specimen. Body 1.38. Width of head 0.37. A.s. III, 0.20; IV, 0.11; V, 0.13; VI, 0.08 + 0.33. R IV +V, 0.10. Hind tibia 0.63. Hind tarsomere II, 0.09. Siphunculi 0.20. Cauda 0.13. Antennae without secondary sensoria. R IV + V with 2 accessory setae. Cauda with 4 setae. T. ch. variable, usually 3-2-2.

Collections: On *Bambusa bambos* = *Bambusa vulgaris*, (55-511) El Yunque, 3,500 ft. alt., (MEP, LFM); (67-201), Villalba-Ciales Rd., Km. 8.9, Apr. 12, 1967, (CFS, CKS, MEP).

On *Cyperus rotundus*, (67-24), El Yunque, Km. 7.6, Apr. 1, 1967, (CKS, CFS, MEP).

On *Eriochloa punctata*, (67-29 & 67-30) El Yunque, Km. 7.7, Apr. 1, 1967, (CFS, CKS, MEP); (67-210), El Yunque Peak, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Hypoxis decumbens*, (67-94), road to fish hatchery, Maricao, Apr. 4, 1967, (CKS).

On *Iresine diffusa* = *Iresine celosia*, (67-181), Cerro Punta, Jayuya, 4,000 ft. alt., Apr. 11, 1967, (CFS, CKS, LFM).

On *Paspalum conjugatum*, (67-209), El Yunque Peak, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Passiflora rubra*, (55-106), El Yunque, 3,500 ft. alt., Mar. 4, 1955 (CFS).

On *Pennisetum purpureum*, (69-10) East Peak Rd., El Yunque Area, 2,600 ft. alt., Mar. 7, 1969, (CFS, CKS, LFM, RW).

On *Rhynchospora* sp. (55-103), El Yunque, 3,500 ft. alt., Mar. 4, 1955, (CFS).

New record for Puerto Rico.

***Rhopalosiphum rufiabdominalis* (Sasaki)**

Fig. 48

Toxoptera rufiabdominalis Sasaki 1899: 202 (*11*)
Siphocoryne splendens Theobald 1915: 116 (*15*)
Cerosipha subterranea Mason 1937: 166 (*10*)
Rhopalosiphum subterraneum: Wolcott 1941: 152 (*19*)
Rhopalosiphum rufiabdominalis: Eastop 1966: 496 (Synonomy) (*4*)

Apterous Vivipara: Color of living specimens greenish on head, reddish-brown on caudal ½ of abdomen. Cleared specimens dusky on head, antennae, legs, siphunculi, cauda, and anal plate. Measurements of one specimen. Body 1.45. Width of head 0.38. A.s. III, 0.20; IV, 0.08; V, 0.05 + 0.35. R IV +V, 0.13. Hind tibia 0.60. Hind tarsomere II, 0.09. Siphunculus 0.20. Antennae 5 or 6 segmented, without secondary sensoria. Setae on a.s. III and body 0.07. R IV + V with 2 accessory setae. Cauda with 4 setae.

Principal Diagnostic Characters: Reddish color on caudal ½ of abdomen of living aptera; long setae on antennae and long processus terminalis.

Collections: On *Axonopus compressus*, (69-66), one km. from El Yunque Peak, El Yunque, Mar. 13, 1969, (CFS, LFM, RW).

New record for Puerto Rico.

***Sipha flava* (Forbes)**

Fig. 50

On *Eriochloa punctat*, (67-27 & 67-31), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP); (67-210), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Panicum fasciculatum*, (67-217), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Paspalum conjugatum*, (67-209), El Yunque, Apr. 13, 1967, (CFS, CKS, LFM, RW).

On *Pennisetum purpureum*, (69-10), East Peak Rd., El Yunque area, 2,600 ft. alt., Mar. 7, 1969, (CFS, CKS, LFM, RW).

Tetraneura nigriabdominalis (Sasaki)

Fig. 51, 52

Schizoneura nigriabdominalis Sasaki 1899: 435 (*11*)
Dryopeia hirsuta Baker 1921: 159 (*1*)
Tetraneura nigriabdominalis: Tanaka 1961: 73, 9 (*14*)
Tetraneura nigriabdominalis: Eastop 1966: 541 (*4*)

Tanaka (*14*) lists *Dryopeia hirsuta* Baker (*1*), which has been known as *Tetraneura hirsuta* (Baker), as a synonym of *nigriabdominalis*.

Apterous Vivipara: Antennae, legs, siphunculi, abdominal segments VII, VIII, and cauda dusky, rest of body pale. Antennae 5 segmented, a.s. IV and V apparently coalesced. Setae on a.s. I, 3; II, 2; setae on a.s. II, 0.05. Rostrum attaining 2nd coxae and bearing 4 accessory setae. Abdomen with a conspicuous row of lateral setae 0.16. Tarsomeres I and II fused. Wax plates inconspicuous, bearing 1 to 6 cells. Abdominal segment VIII with 2 conspicuous setae 0.15. Cauda with 3 setae, the middle seta conspicuously shorter than the other two. Measurements of one specimen. Body 1.94. Width of head 0.46. A.s. III, 0.09; IV, 0.14; V, 0.04 + 0.02. R IV +V, 0.10. Hind tibia 0.29. Hind tarsus 0.08. Siphunculi short, truncate, 0.10. Cauda 0.06.

Alate Vivipara: Color of living specimens dark with a greenish tinge on abdomen. Cleared specimens dark on head, antennae, thorax, legs, siphunculi, cauda, and anal plate. Head with 2 small oval wax plates which are widely separated. Tarsomere I and II not fused. Tarsomere II strongly denticulate. Media of fore wings simple, not branched. Siphunculi short, truncate. Cauda bearing 3 setae, the center one being noticeably shorter than the other two. Measurements of a single specimen. Body 2.0. Width of head 0.37. A.s. III, 0.21; IV, 0.07; V, 0.21; VI, 0.04 + 0.02. R IV + V, 0.10. Hind tibia 0.76. Hind tarsus 0.15. T. ch. 2-2-2. Siphunculi 0.02. Cauda 0.08.

Collections: On *Digitaria decumbens* Stent, (roots) Isabela, Apr. 1970 (M. Colón, M. Restrepo, A. Lugo).

On *Emilia coccinea*, (alates) (69-23), Cerro La Marquesa, Aguas Buenas, 1,500 ft. alt., (radio and TV towers), Mar. 8, 1969, (CFS, CKS, LFM).

In flight, (69-1), La Torre, Barrio Boquerón, Barranquitas, Mar. 5, 1969, (CFS, MEP, RW).

On grass (alate), (69-3), La Torre, Barrio Boquerón, Barranquitas, Mar. 5, 1969 (CFS, MEP, RW).

Unknown (69-22) (alate) El Yunque, East Peak Rd. (at gate), Mar. 7, 1969 (CFS, CKS, LFM, RW).

Resting, (69-28), Florida, Mar. 10, 1969, (CFS, CKS, MEP).

New record for Puerto Rico.

Toxoptera aurantiae (Boyer de Fonscolombe)

Fig. 53

On *Anthocephalus cadamba*, (69-8), Catalina Nursery, El Yunque Rd., Km. 4.2, Mar. 6, 1969, (CFS, CKS, LFM, RW).

On *Calliandra surinamensis*, (67-142), Agronomy Building, Agricultural Experiment Station, Río Piedras, Apr. 10, 1967, (CFS, LFM).

On *Calophyllum brasiliense* = *Calophyllum antillanum*, (67-109), Maricao-Sabana Grande Rd., Km. 17.9, Apr. 4, 1967, (CFS, CKS, LFM, RW); (69-55), south shore of Lake Tortuguero, Mar. 12, 1969, (CFS, RW).

On *Citrus sinensis*, (67-82), Mayagüez-Maricao Rd., Km. 11.6 Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Clusia gundlachii*, (67-107), Maricao-Sabana Grande Rd., Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Coccoloba microstachya* = *Coccolobis obtusifolia*, (69-52), Bayamón, Km. 15.1, Mar. 12, 1969, (CFS, RW).

On *Cordia alliodora* = *Cerdana alliodora*, (69-49), end of Guilarte Forest Rd., 3,450 ft. alt., Mar. 12, 1969, (CES, CKS, LFM, SMG).

On *Dendropanax arboreum*, (67-54), Arecibo-Lares Rd., Km. 34, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Didymopanax gleasonii*, (67-121), Cerro Punta area, Jayuya, Toro Negro Forest, 4,000 ft. alt., Apr. 6, 1967, (CFS, CKS, LFM, RW).

On *Didymopanax morototoni*, (67-83), Mayagüez-Maricao Rd., Km. 11.6, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Epidendrum secundum* = *Amphiglottis secunda*, (67-108), Maricao-Sabana Grande Rd., Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Eugenia malaccensis* = *Jambosa malaccensis*, (67-95), road to fish hatchery, Maricao, Apr. 4, 1967, (CFS, CKS, LFM, RW); (67-77 & 67-78), Mayagüez-Maricao Rd., Km. 11.6, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Gesneria albiflora* = *Pentarhaphia albiflora*, (67-47), Arecibo-Lares Rd., Km. 34, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Gonzalagunia aspicata* = *Duggena hirsuta*, (67-20), El Yunque, Apr. 1, 1967, (CFS, CKS, MEP); (67-34), El Yunque, Km. 11.3, Apr. 1, 1967, (CFS, CKS, MEP).

On *Guarea trichilioides* = *Guarea guara*, (67-70), Rd. No. 135, Castañer, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Hamelia erecta*, (67-58), Arecibo-Lares Rd., Km. 34, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Hibiscus rosa-sinensis*, (67-25), El Yunque Rd., Km. 7.7, Apr. 1, 1967, (CFS, CKS, MEP).

On *Ilex macfadyenii*, (69-18), East Peak Rd., El Yunque area, 2,200 ft. alt., Mar. 7, 1969, (CFS, CKS, LFM, RW).

Iresine diffusa = *Iresine celosia*, (67-50), Arecibo-Lares Rd., Km. 34, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Malpighia coccigera*, (67-187), Villalba-Orocovis Rd., Km. 1.4, Apr. 11, 1967, (CFS, CKS, LFM).

On *Mammea americana*, (67-93), road to fish hatchery, Maricao, Apr. 4, 1967, (CFS, CKS, LFM, RW); (67-44), Barrio Sonadora, Aguas Buenas, on Rd. No. 792, 1,300 ft. alt., Apr. 2, 1967, (CFS, CKS, LFM).

On *Myrcia fallax* = *Myrcia berberis*, (67-177), Cerro Punta, Jayuya, Toro Negro Forest, 4,000 ft. alt., Apr. 6, 1967, (SMG, CFS, LFM, RW).

On *Myrcia splendens*, (67-39), El Peñón del Collao, Cayey-Aibonito Rd., 2,000 ft. alt., Apr. 2, 1967, (CFS, CKS, LFM).

On *Nothopanax guilfoylei* = *Polyscias guilfoylei*, (67-222), El Yunque, Apr. 14, 1967, (CFS, LFM).

On *Piper aduncum*, (67-128), Barranquitas-Naranjito Rd., Km. 9.9, Apr. 7, 1967, (CFS, CKS, MEP); (67-19), El Yunque Rd., Km. 2.4, Apr. 1, 1967, (CFS, CKS, MEP).

On *Piper marginatum*, (67-49), Arecibo-Lares Rd., Km. 34, Apr. 3, 1967, (CFS, CKS, MEP, RW).

On *Rapanea ferruginea*, (67-148), La Santa, Guavate Forest, Cayey, Apr. 10, 1967, (CFS, CKS, SMG); (67-118), Cerro Punta area Jayuya-Toro Negro Forest, 4,000 ft. alt., Apr. 6, 1967, (CFS, SMG, LFM, RW).

On *Rosa* sp., (67-150), Guayama-Cayey Rd., Km. 17.3, Apr. 10, 1967, (CFS, CKS, SMG).

On *Rubus florulentus*, (67-111), Maricao, Apr. 4, 1967, (CFS, CKS, LFM, RW); (67-119), Cerro Punta area, Jayuya, 4,000 ft. alt., Apr. 6, 1967, (CFS, SMG, LFM, RW).

On *Symplocos micrantha*, (67-120), Cerro Punta area, Jayuya, 4,000 ft. alt., Apr. 6, 1967, (SMG, CFS, LFM, RW).

On *Tabebuia haemantha*, (67-110), Maricao, Apr. 4, 1967, (CFS, CKS, LFM, RW).

On *Theobroma cacao*, (67-76), Mayagüez-Maricao Rd., Km. 11.6, Apr. 4, 1967, (CFS, CKS, LFM, RW).

SUMMARY

This is a supplement to the "Aphididae of Puerto Rico." (*12*) The key to the "Aphididae of Puerto Rico" has been revised. A new Field Key to the Apterous Aphididae of Puerto Rico is also included, with a photograph

of each species. Five additional species are recorded: *Capitophorus hippophaes javanicus* H. R. L., *Macrosiphum rosae* L., *Picturaphis puertoricensis* Smith, *Rhopalosiphum padi* L, and *Tetraneura nigriabdominalis* (Sasaki), bringing the total known species of aphids from Puerto Rico to 51. *Macrosiphum mesosphaeri* Tissot is listed as a new synonym of *Macrosiphum (Sitobion) salviae* Bartholomew.

RESUMEN

Este trabajo es un suplemento a la publicación intitulada "Aphididae of Puerto Rico" (*12*). La clave para los áfidos de Puerto Rico se ha revisado. También se incluye en este trabajo una clave de campo para los áfidos de formas aladas de Puerto Rico y se ilustra cada especie con una fotografía. Se informan por primera vez cinco especies adicionales: *Capitophorus hippophaes javanicus* H. R. L., *Macrosiphum rosae* L., *Picturaphis puertoricensis* Smith, *Rhopalosiphum padi* L. y *Tetraneura nigriabdominalis* (Sasaki), elevando a 51 el total de especies de áfidos conocidos de Puerto Rico. *Macrosiphum mesosphaeri* Tissot se incluye como un sinónimo de *Macrosiphum (Sitobion) salviae* Bartholomew.

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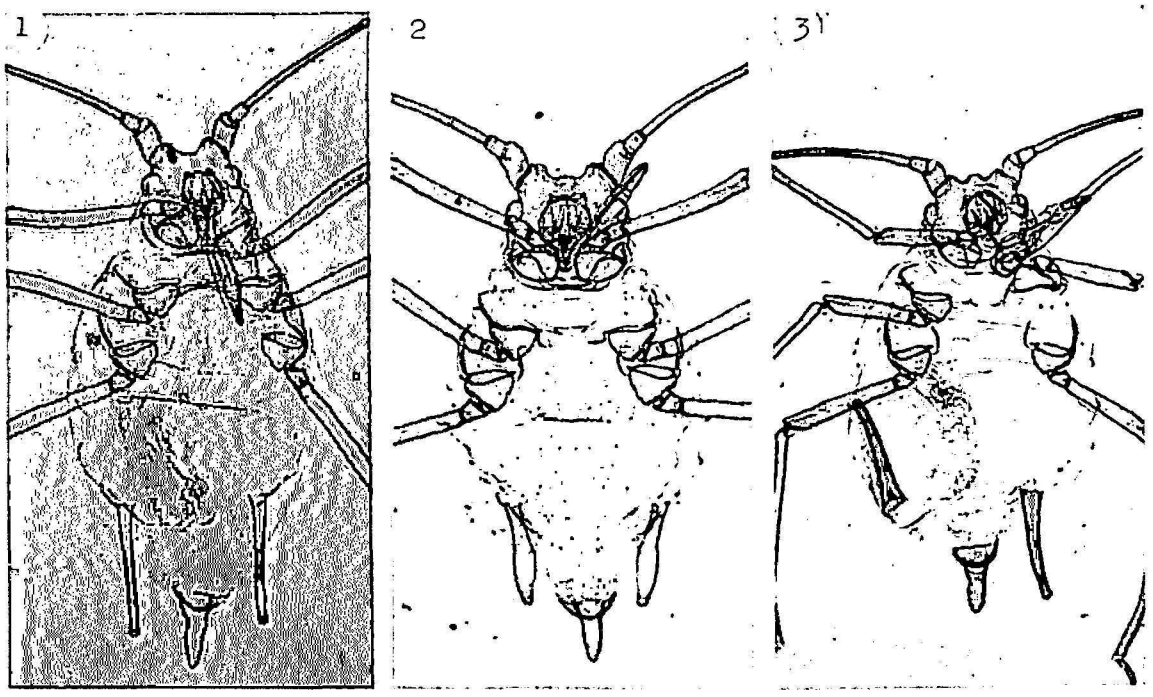

FIG. 1.—*Acyrthosiphon bidenticola* Smith, 22 ×, Coll. 67-97.
FIG. 2.—*Amphorophora commelinensis* Smith, 30 ×, Coll. 67-21.
FIG. 3.—*Aphis coreopsidis* (Thomas), 30 ×, Coll. 67-143.

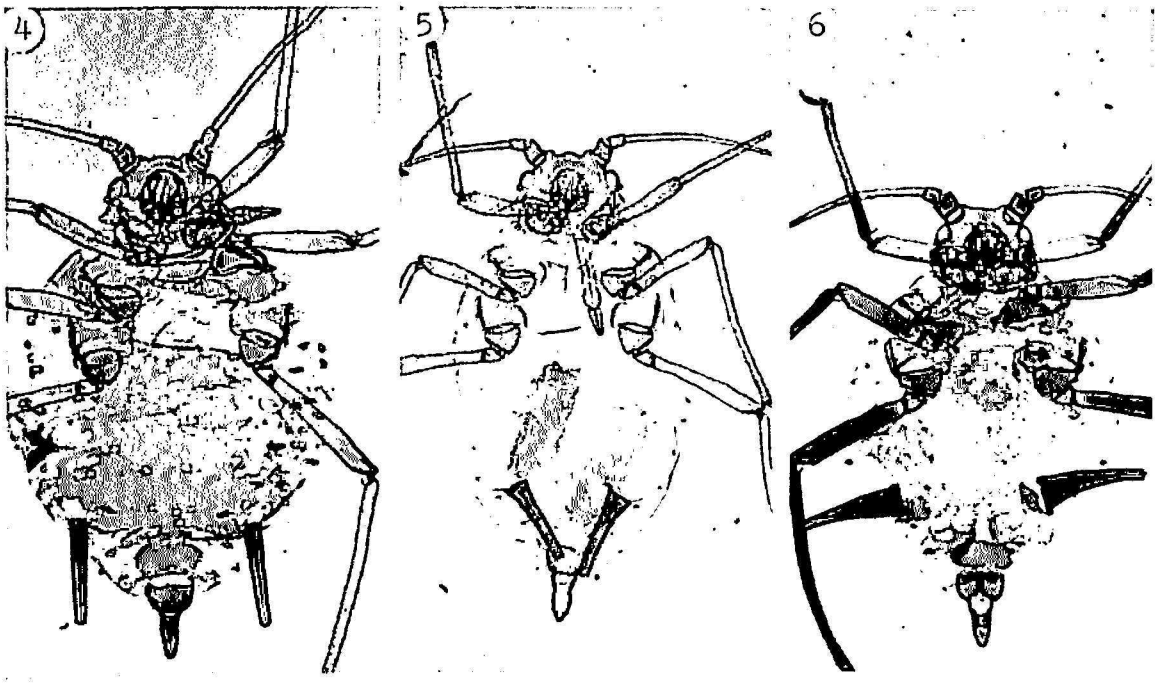

FIG. 4.—*Aphis craccivora* Koch, 30 ×, Coll. 67-116.
FIG. 5.—*Aphis gossypii* Glover, 30 ×, Coll. 67-63.
FIG. 6.—*Aphis illinoisensis* Shimer, 30 ×, Coll. 60-116.

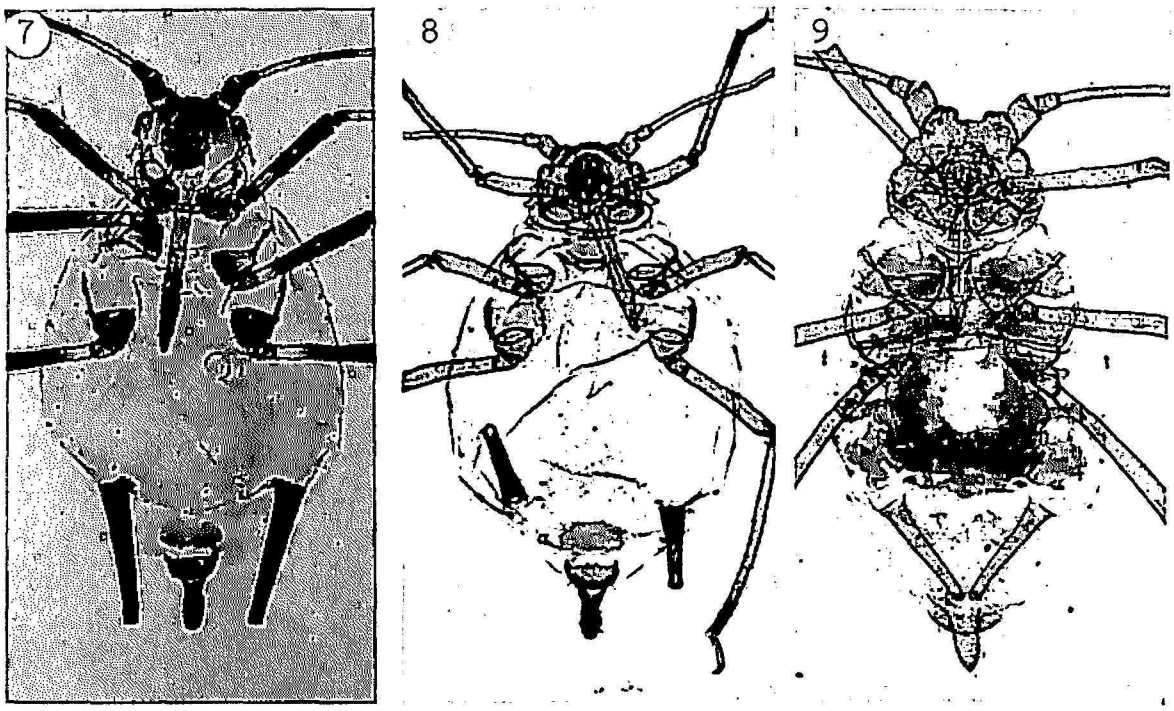

FIG. 7.—*Aphis nerii* Boyer de Fonscolombe, 17 ×, Coll. 67-40.
FIG. 8.—*Aphis spiraecola* Patch, 30 ×, Coll. 67-74.
FIG. 9.—*Aulacorthum* (*Neomyzus*) *circumflexum* (Buckton), 30 ×, Coll. 60-123.

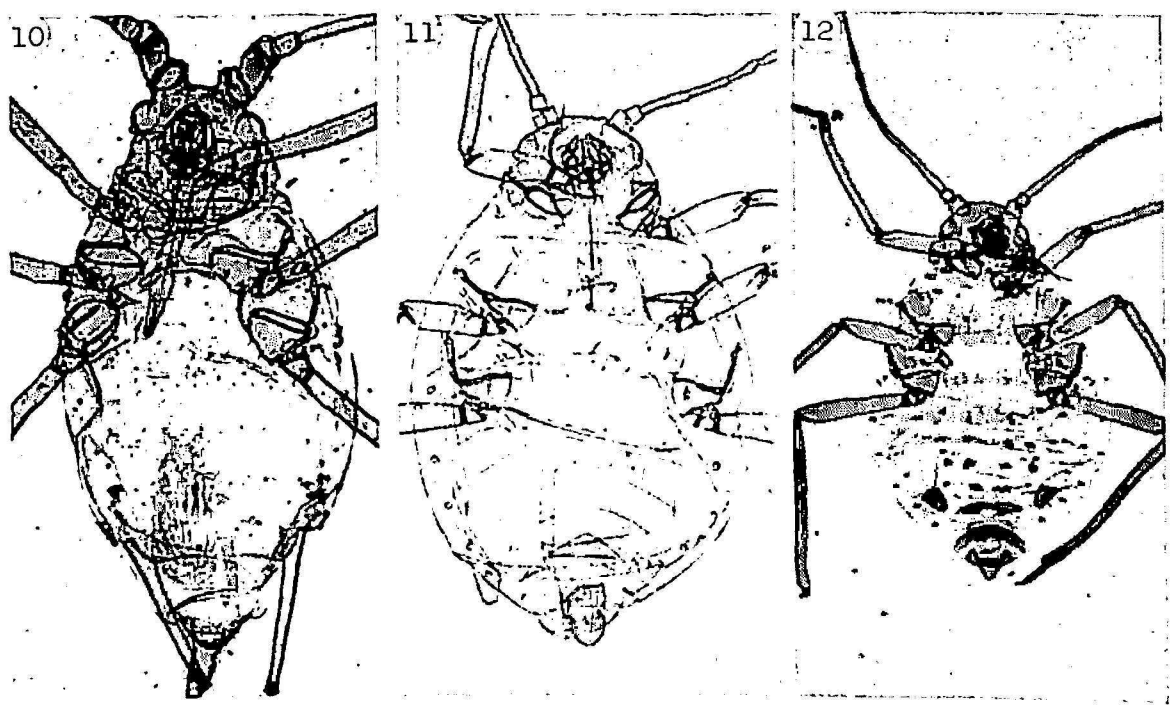

FIG. 10. *Aulacorthum solani* (Kalt.), 30 ×, Coll. 67-71.
FIG. 11. *Brachycaudus helichrysi* (Kalt.), 30 ×, on *Prunus domestica*, Bologna, Italy, May 24, 1938, (M. Martelli).
FIG. 12. *Brevicoryne brassicae* (L.), 17 ×, Coll. 60-36.

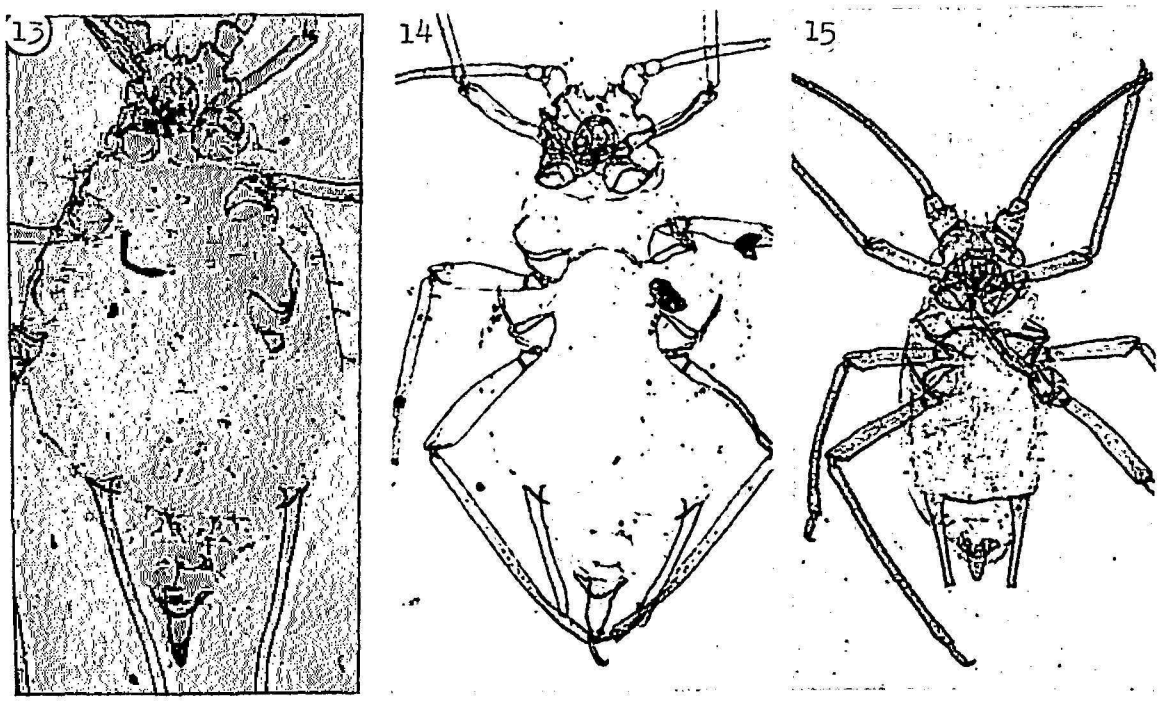

FIG. 13.—*Capitophorus elaeagni* (Del Guercio), 30 ×, Coll. 67-153.
FIG. 14.—*Capitophorus hippophaes* subsp. *javanicus* H. R. L., 30 ×, Coll. 67-192.
FIG. 15.—*Capitophorus* (*Pentatrichopus*) *minor* (Forbes), 30 ×, Coll. 59-1549 on wild strawberry, Blowing Rock, N. C., November 11, 1959, (CFS).

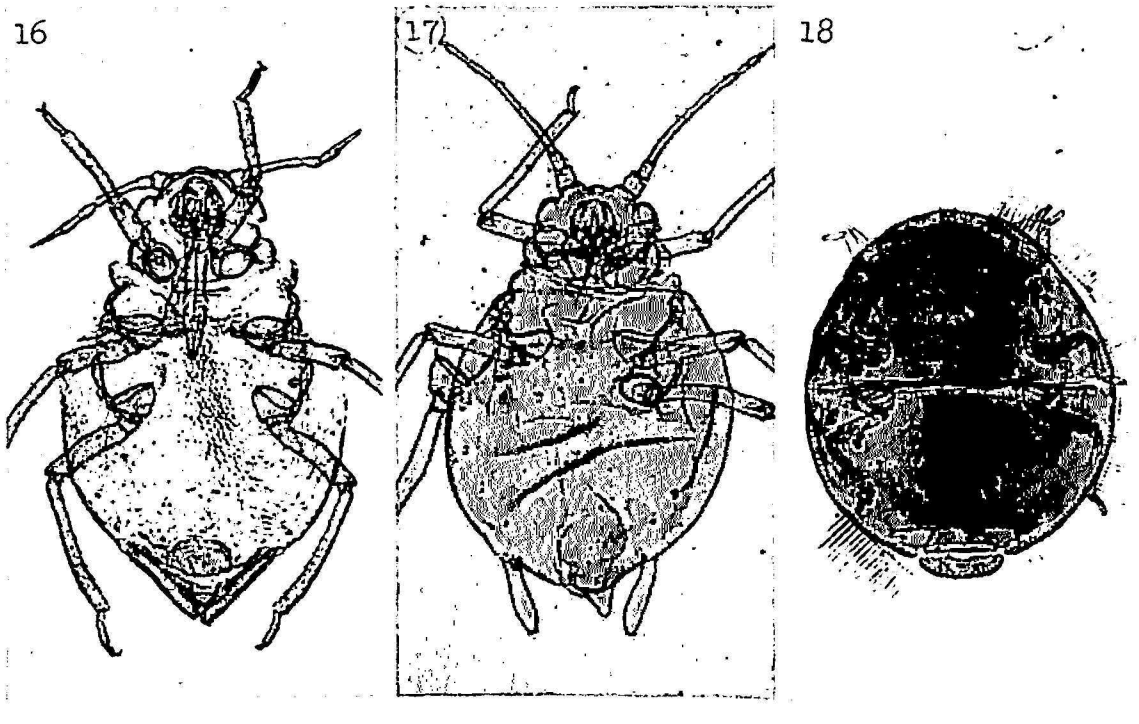

FIG. 16. *Carolinaia caricis* Wilson, 30 ×, Coll. 67-406.
FIG. 17.—*Carolinaia cyperi* Ainslie, 30 ×, Coll. 69-7.
FIG. 18. *Cerataphis orchidearum* (Westwood), 30 ×, Coll. 67-197.

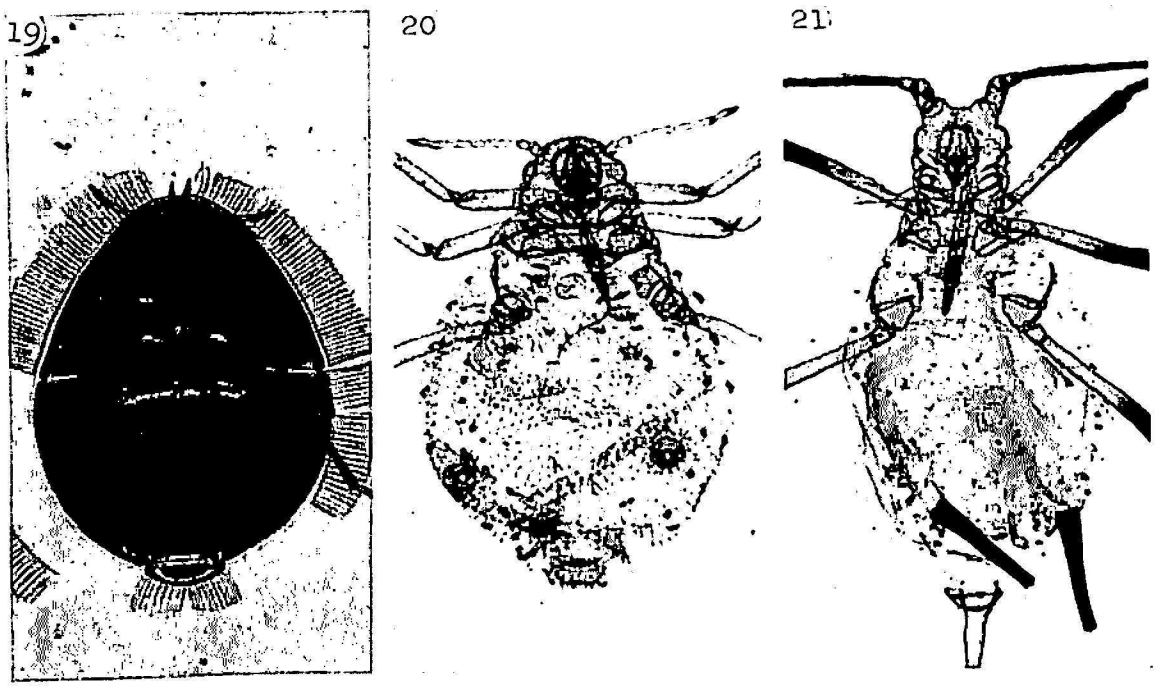

FIG. 19. —*Cerataphis variabilis* H. R. L., 30 ×, Coll. 67-141.
FIG. 20. —*Cinara tujafilina* (Del Guercio), 17 ×, Coll. 66-290 on arborvitae, Provo, Utah, September 18, 1966, (CFS and E. Nelson).
FIG. 21.—*Dactynotus ambrosiae* (Thomas), 17 ×, Coll. 67-42.

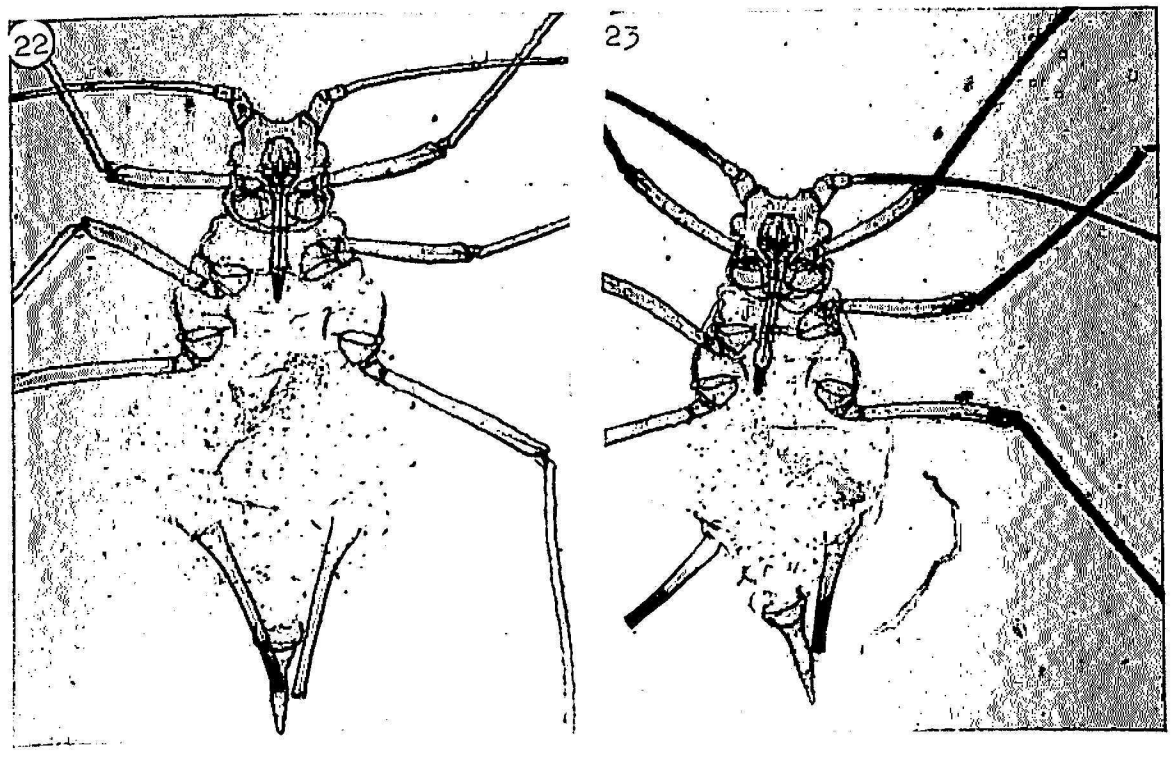

FIG. 22. *Dactynotus erigeronensis* (Thomas), 22 ×, Coll. 67-178.
FIG. 23. —*Dactynotus gravicornis* (Patch), 22 ×, Coll. 69-78.

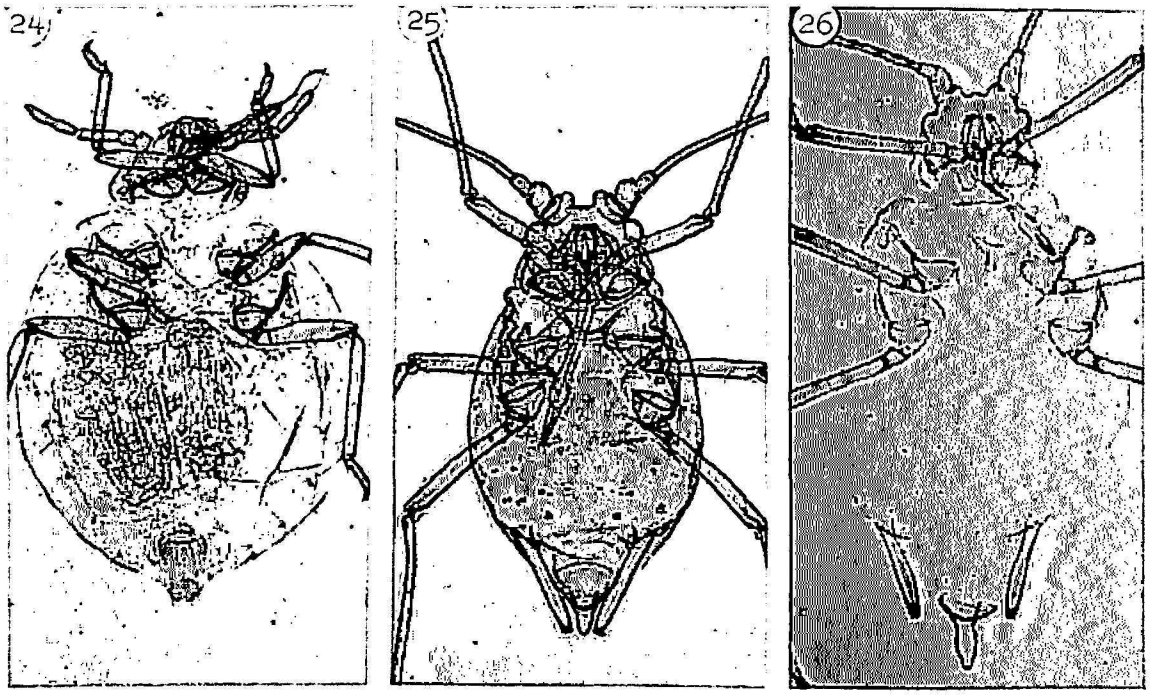

FIG. 24.—*Geopemphigus floccosus* (Moreira), 30 ×, on Moonvine (roots), Belle Glade, Florida, October 17, 1959, (C. E. Seilen).

FIG. 25.—*Hyalomyzus jussiaeae* Smith, 30 ×, Coll. 67-26.

FIG. 26.—*Hyperomyzus lactucae* (L.), 22 ×, Coll. 67-112.

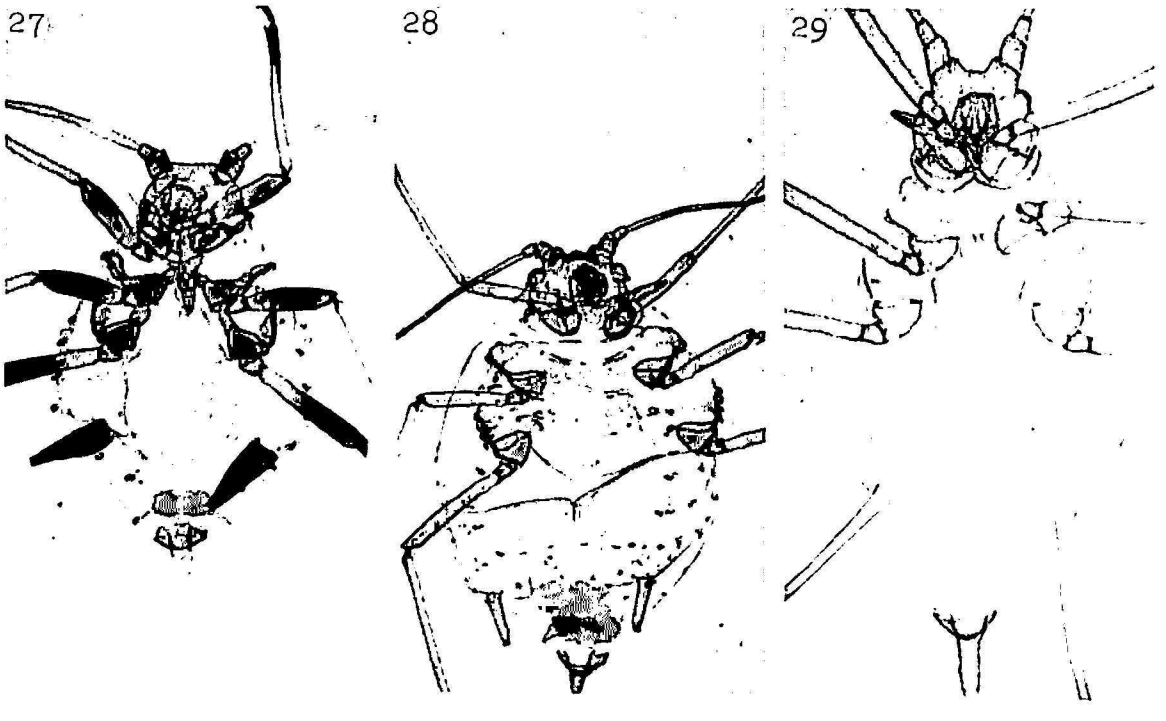

FIG. 27. *Hysteroneura setariae* (Thomas), 22 ×, Coll. 59-25 on wild plum, West End, N. C., April 24, 1959, (CFS).

FIG. 28. *Lipaphis pseudobrassicae* (Davis), 22 ×, on "dock", Knox Co., Tennessee, December 4, 1966, (C. O. Pless).

FIG. 29. *Macrosiphum euphorbiae* (Thomas), 17 ×, Coll. 67-67.

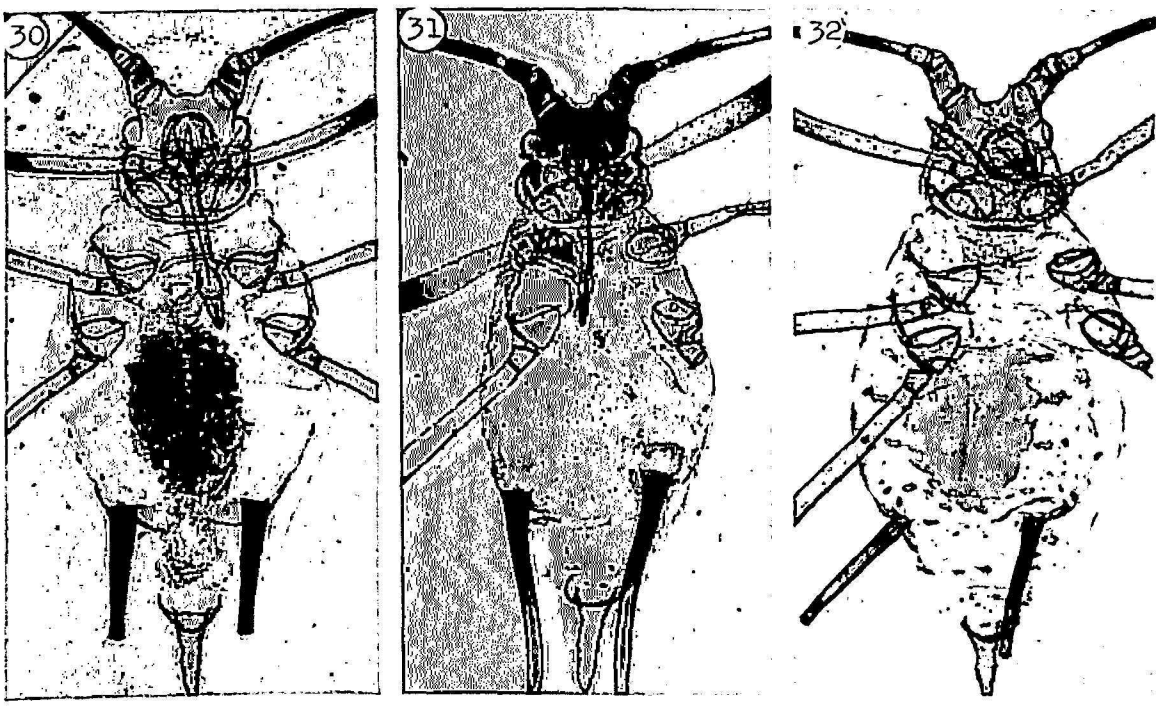

FIG. 30.—*Macrosiphum* (*Sitobion*) *luteum* (Buckton), 22 ×, Coll. 67-213.
FIG. 31.—*Macrosiphum rosae* (L.), 22 ×, Coll. 69-44.
FIG. 32.—*Macrosiphum* (*Sitobion*) *salviae* Bartholomew, 22 ×, Coll. 69-158.

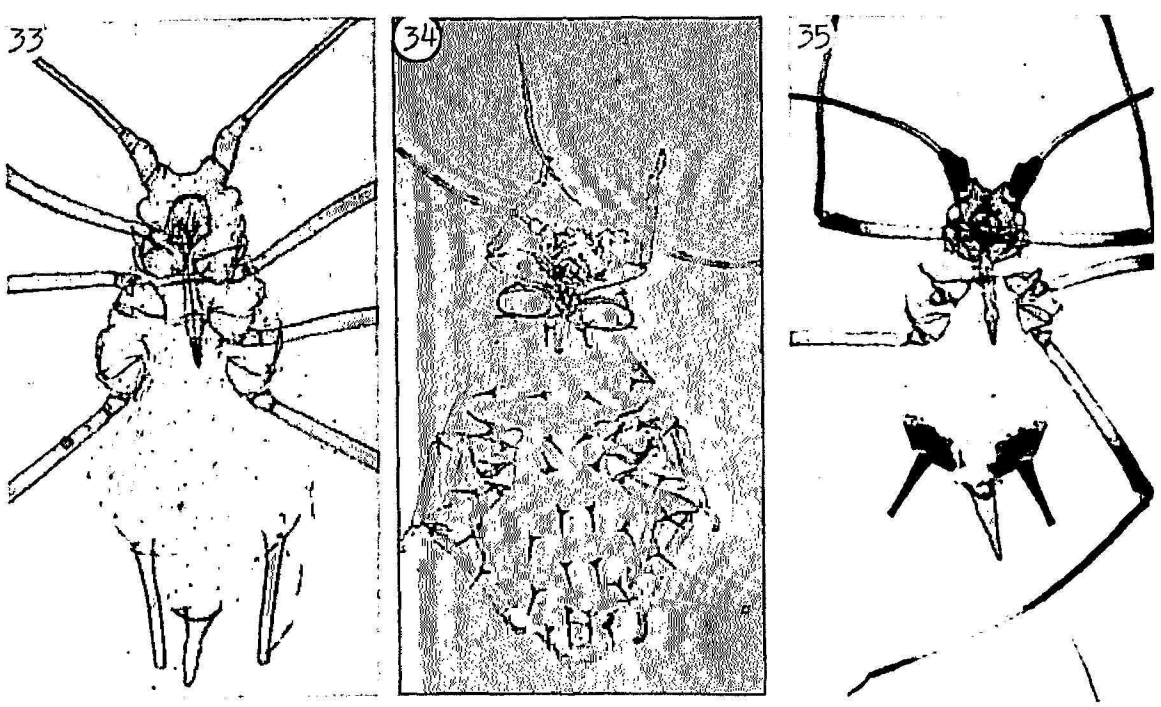

FIG. 33.—*Macrosiphum* (*Sitobion*) *salviae* Bartholomew, 22 ×, Coll. 67-126.
FIG. 34. *Melanocallis kahawaluokalani* (Kirkaldy), 30 ×, nymph on *Lagerstroemia* sp., Raleigh, N. C., September 26, 1969, (CFS).
FIG. 35. *Microparsus olivei* Smith and Tuatay, 17 ×, Coll. 59-335A.

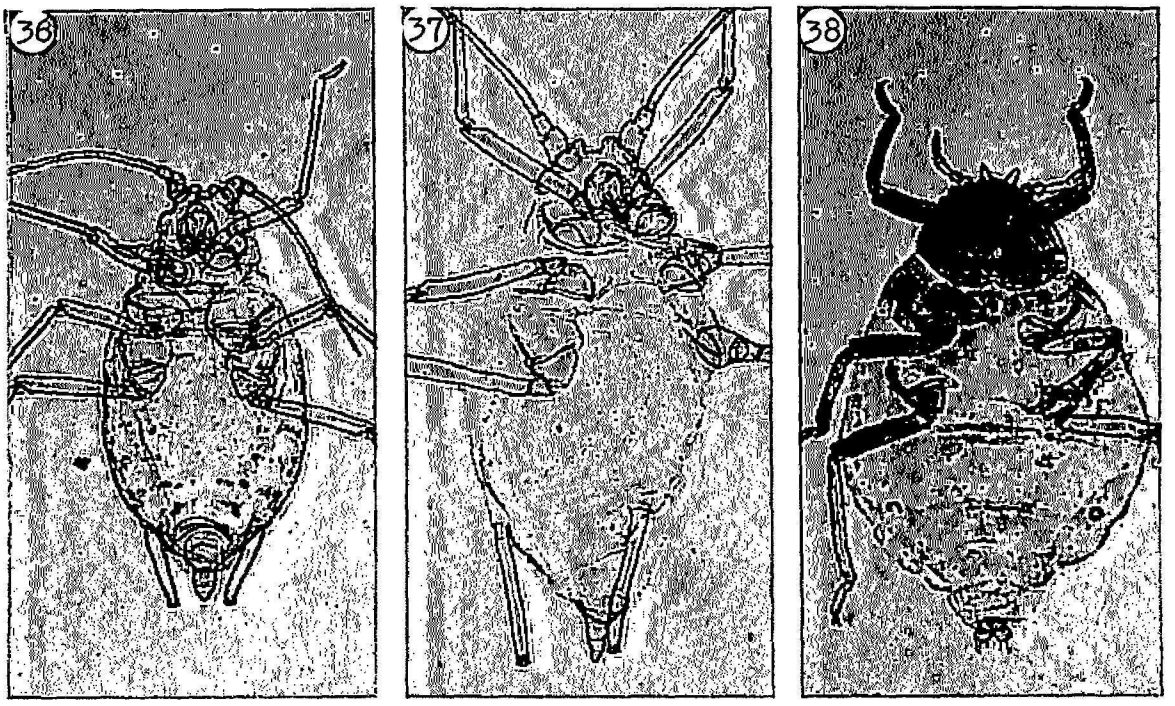

FIG. 36.—*Myzus ornatus* Laing, 30 ×, Coll. 67-177.
FIG. 37.—*Myzus* (*Nectarosiphon*) *persicae* (Sulzer), 30 ×, Coll. 67-106.
FIG. 38.—*Oregma panicola* Takahashi, 30 ×, Coll. 67-32.

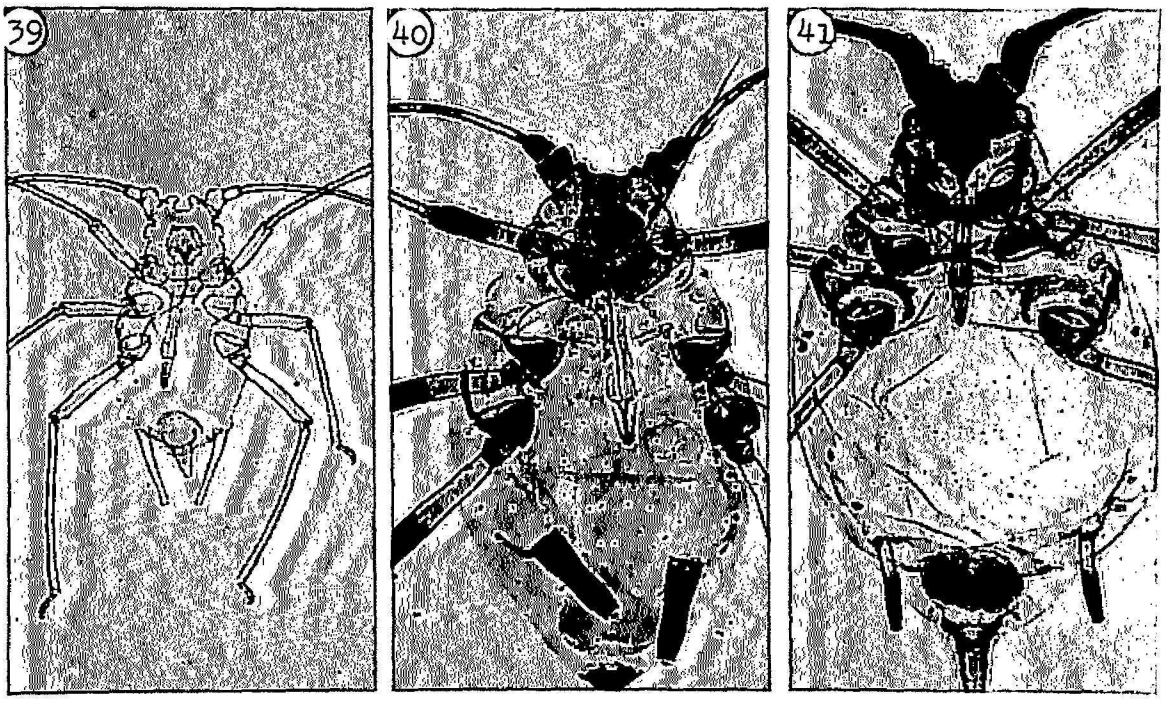

FIG. 39.—*Ovatus crataegarius* (Walker), 30 ×, Coll. 67-132.
FIG. 40.—*Pentalonia nigronervosa* Coquerel, 30 ×, Coll. 60-146.
FIG. 41.—*Picturaphis brasiliensis* (Moreira), 30 ×, Coll. 67-149.

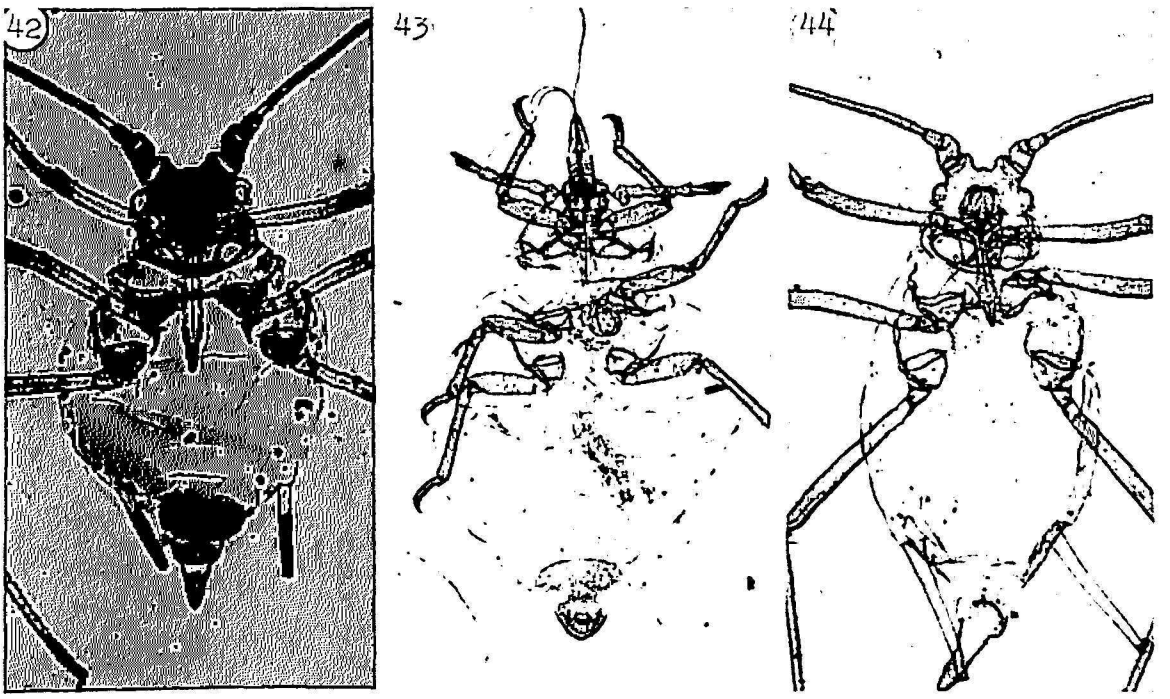

FIG. 42.—*Picturaphis puertoricensis* Smith, 30 ×, Coll. 69-65(12).
FIG. 43.—*Prociphilus erigeronensis* (Thomas), 22 ×, Coll. 60-1136 on *Bidens* sp. (roots) Reedy Creek Park, Raleigh, N. C., October 12, 1960, (CFS).
FIG. 44.– *Rhodobium porosum* (Sanderson), 22 ×, Coll. 67-155.

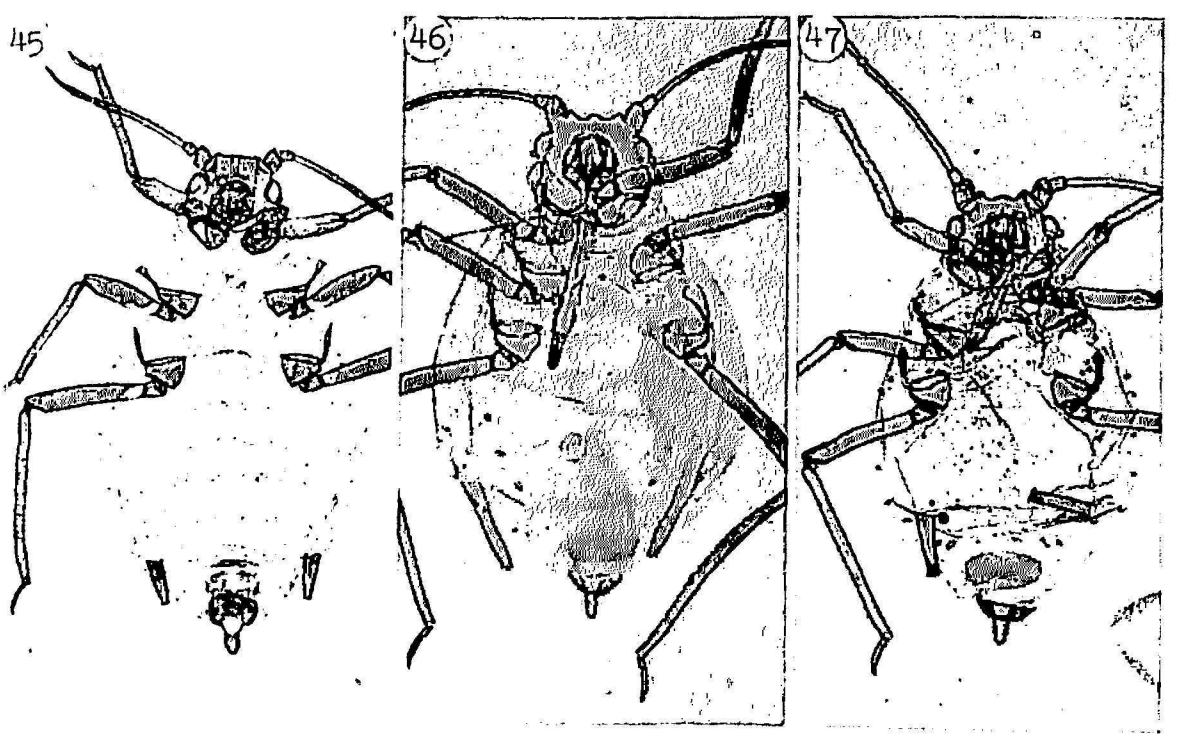

FIG. 45.—*Rhopalosiphum maidis* (Fitch), 22 ×, Coll. 54-1.
FIG. 46. *Rhopalosiphum nymphaeae* (L.), 22 ×, Coll. 67-80.
FIG. 47. *Rhopalosiphum padi* (L.), 30 ×, Coll. 67-210.

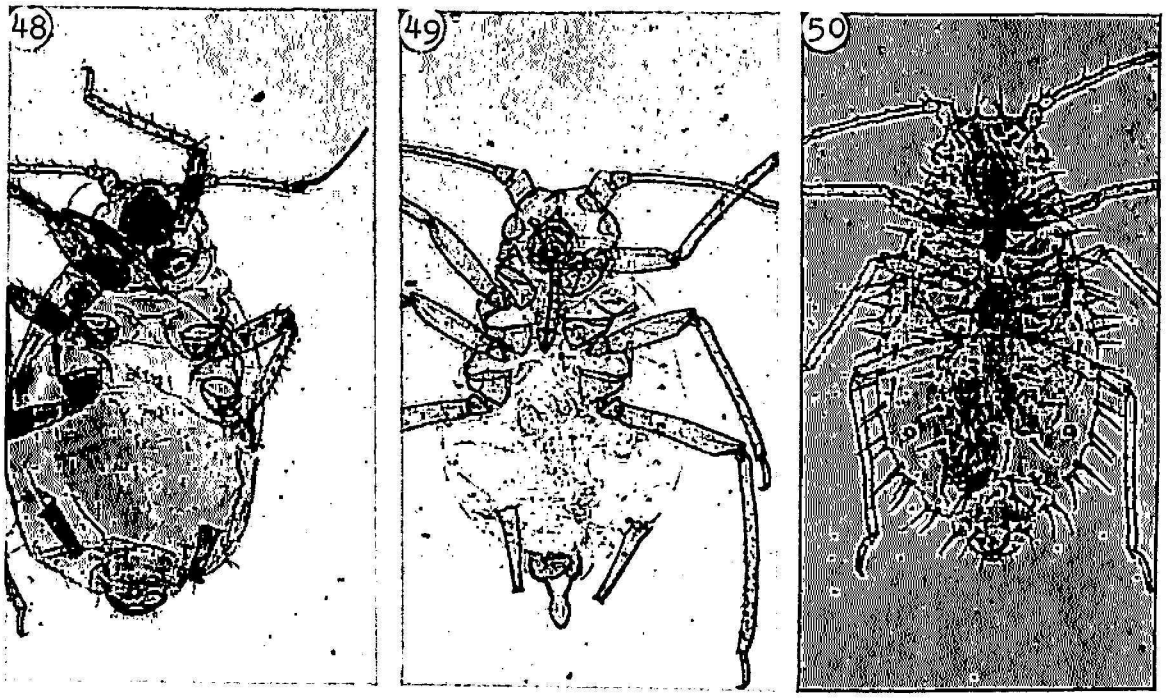

FIG. 48.—*Rhopalosiphum rufiabdominalis* (Sasaki), 30 ×, Coll. 69-66.
FIG. 49.—*Schizaphis graminum* (Rondani), 30 ×, Coll. 60-174.
FIG. 50.—*Sipha flava* (Forbes), 30 ×, Coll. 67-27.

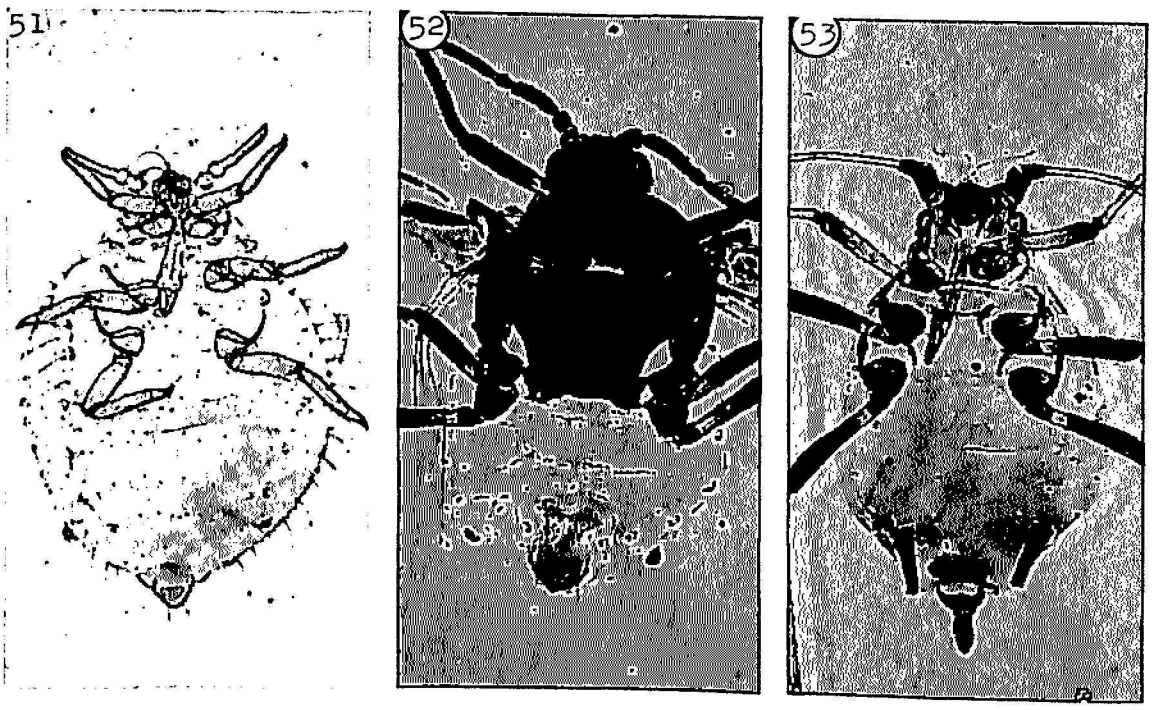

FIG. 51.—*Tetraneura nigriabdominalis* (Sasaki), 30 ×, Coll. HA 318 on *Ixophorus unisetus*, San Juan, Honduras, June 6, 1962, (C. Evers).
FIG. 52.—*Tetraneura nigriabdominalis* (Sasaki), alate 30 ×, Coll. 69-28.
FIG. 53.—*Toxoptera aurantiae*, (Boyer de Fonscolombe), 30 ×, Coll. 67-77.

INDEX TO GENERA AND SPECIES

Generic and subgeneric names printed in boldface type, specific names in roman; names in synonymy are in italics.

INDEX TO GENERA AND SPECIES OF PLANTS[4]

Generic names printed in boldface type, specific and common names in roman type; synonyms are in italics.

HOST PLANT INDEX AND APHID ASSOCIATION

Botanical plant names are in bold face type, common names in roman; botanical plant names in synonymy in italics; insect names also in italics. This is a complete index which includes the host plants and aphids mentioned in Technical Paper 37, published by the Agricultural Experiment Station in September 1963, as well as the host plants and aphids discussed in this publication. Names preceded by an asterisk indicate new host plant records not mentioned in Tech. Paper No. 37 or a new aphid record for the host plant.

Abelmoschus esculentus
Aphis gossypii
Actinophloeus macarthurii
(see **Ptychosperma macarthurii**)
***Adenostema verbesina**
Aphis gossypii
***Ageratum conyzoides**
Myzus ornatus
Amaranthus gangeticus var. tricolor
Macrosiphum euphorbiae
Amphiglottis secunda
(see **Epidendrum secundum**)
Anachelium cochleatum
(see **Epidendrum cochleatum**)
Andira inermis
Aphis craccivora
Andropogon bicornis
Hysteroneura setariae
Annona muricata
Aphis spiraecola
Toxoptera aurantiae
***Anoda acerifolia**
Aphis gossypii
***Anthocephalus cadamba**
Aphis gossypii
Aphis spiraecola
Toxoptera aurantiae
Apium graveolens
(see **Arracacia xanthorriza**)
Arundo donax
**Hysteroneura setariae*
Rhopalosiphum maidis
Arracacia xanthorriza =
(*Apium graveolens*)
Nectarosiphon persicae
Asclepias curassavica
Aphis gossypii
Aphis nerii
Asclepias nivea
Aphis nerii
Aster sp
Dactynotus ambrosiae
Axonopus compressus
Hysteroneura setariae
**Rhopalosiphum rufoabdominalis*
Bambusa bambos =
(*Bambusa vulgaris*)
Hysteroneura setariae
**Rhopalosiphum padi*
Bambusa vulgaris
(see **Bambusa bambos**)
Barringtonia asiatica
Toxoptera aurantiae
Bean vine
Picturaphis brasiliensis
Bidens cynapiifolia
Aphis coreopsidis
Dactynotus ambrosiae
Bidens pilosa
Acyrthosiphon bidenticola

Capsicum baccatum
Myzus (Nectarosiphon) persicae
Capsicum sp.
Myzus (Nectarosiphon) persicae
***Carica papaya**
Aphis coreopsidis
Aphis nerii
Aphis spiraecola
Casearia arborea
Toxoptera aurantiae
Casearia decandra
Aphis spiraecola
Casearia sylvestris
Toxoptera aurantiae
Cassia obtusifolia =
(*Emelista tora*)
**Aphis gossypii*
Macrosiphum ambrosiae
Cassia occidentalis =
(*Ditremexa occidentalis*)
Aphis gossypii
Cassia tora =
(*Emelista tora*)
Aphis gossypii
Catharanthus roseus
Aphis gossypii
Aphis spiraecola
Cattleya luddemanniana (= *C. speciosissima*)
Toxoptera aurantiae
Cecropia peltata
Aphis gossypii
Aphis spiraecola
***Celosia nitida**
Myzus ornatus
Myzus (Nectarosiphon) persicae
***Celosia** sp.
Aphis spiraecola
Cerdana alliodora
(see **Cordia alliodora**)
Cestrum laurifolium
Aphis spiraecola
Cestrum macrophyllum
**Aphis gossypii*
**Aphis spiraecola*
Aulacorthum solani
Toxoptera aurantiae
Chalcas exotica
(see **Murraya exotica**)
Chenopodium ambrosioides
Myzus (Nectarosiphon) persicae
Chinese fan palms
Cerataphis variabilis
Chloris inflata
Hysteroneura setariae
Chrysanthemum anethifolium
Dactynotus ambrosiae
***Chrysanthemum** sp.
Aphis spiraecola
Cinnamomum burmanni
Toxoptera aurantiae
Cirsium mexicanum
Aphis gossypii
Aphis spiraecola
Capitophorus elaeagni
Dactynotus ambrosiae
**Hyperomyzus lactucae*
***Cissampelos pareira**
Aphis spiraecola
Cissus sycyoides
Aphis illinoisensis
Cithraexylum fruticosum
Aphis spiraecola
Citrus aurantium
Aphis spiraecola
Toxoptera aurantiae
Citrus limonia
Aphis spiraecola
Toxoptera aurantiae
Citrus maximum
Aphis spiraecola
Toxoptera aurantiae

Cracca cinerea
(see **Tephrosia cinerea**)
Critonia portoricensis
Dactynotus ambrosiae
***Crossandra infundibuliformis**
Aphis gossypii
Crotalaria retusa
Aphis gossypii
Crotalaria stipularia
Macrosiphum euphorbiae
Crotalaria striata
Aphis gossypii
Croton humilis
Aphis spiraecola
Cruciferous plant (unidentified)
Myzus (*Nectarosiphon*) *persicae*
Cucumis melo
Aphis gossypii
Cucumis sativus
Aphis gossypii
***Cyathea arborea**
Aphis gossypii
Cymbopogon citratus
Sipha flava
Cyperus odoratus
(see **Cyperus polystachyos**)
Cyperus peruvianus =
(*Kyllinga peruviana*)
Carolinaia caricis
***Cyperus polystachyos** =
(*Cyperus odoratus*)
Carolinaia cyperi
Cyperus rotundus
Carolinaia cyperi
**Rhopalosiphum padi*
Cyperus sp.
Carolinaia cyperi
Cyrtospadix bicolor
Pentalonia nigronervosa
dahlia
Prociphilus erigeronensis
Dahlia pinnata
Aphis gossypii
Dactynotus ambrosiae
**Prociphilus erigeronensis*
Dendrobium moschatum
Sitobium luteum
***Dendropanax arboreum**
Toxoptera aurantiae
Desmodium supinum =
(*Meibomia supina*)
Microparsus olivei
Dichromena ciliata
(see **Rhynchospora nervosa**)
Dichromena radicans
(see **Rhynchospora radicans**)
***Didymopanax gleasonii**
Toxoptera aurantiae
Didymopanax morototoni
Toxoptera aurantiae
Dieffenbachia seguine
**Aphis spiraecola*
Pentalonia nigronervosa
**Rhopalosiphum nymphaeae*
Digitaria adscendens =
(*Digitaria sanguinalis*)
Hysteroneura setariae
Schizaphis graminum
Sipha flava
Digitaria decumbens
Sipha flava
Tetraneura nigriabdominalis
Digitaria sanguinalis
(see **Digitaria adscendens**)
Dilomilis montana =
(*Octadesmia montana*)
**Aphis spiraecola*
Aulacorthum circumflexum
Aulacorthum solani
Sitobium luteum
Ditremexa occidentalis
(see **Cassia occidentalis**)

Dolichos lablab
(see **Lablab niger**)
Duggena hirsuta
(see **Gonzalagunia spicata**)
Echites agglutinata
Aphis spiraecola
Eclipta alba
Dactynotus ambrosiae
Elaphrium simaruba
(see **Bursera simaruba**)
Elephantopus mollis
(see **Elephantopus scaber**)
***Elephantopus scaber** =
(*Elephantopus mollis*)
Aulacorthum solani
Dactynotus ambrosiae
Eleusine indica
Hysteroneura setariae
Emelista tora
(see **Cassia obtusifolia**)
Emilia coccinea
Aphis gossypii
Aphis spiraecola
Aulacorthum circumflexum
Macrosiphum euphorbiae
Myzus (*Nectarosiphon*) *persicae*
**Tetraneura nigriabdominalis*
Emilia sonchifolia
Aulacorthum circumflexum
Hyperomyzus lactucae
Myzus (*Nectarosiphon*) *persicae*
Epidendrum cochleatum =
(*Anachelium cochleatum*)
Cerataphis orchidearum
Sitobium luteum
Epidendrum prismatocarpum
Aphis spiraecola
Epidendrum secundum =
(*Amphiglottis secunda*)
Aphis gossypii
**Aphis spiraecola*
Aulacorthum circumflexum
Cerataphis orchidearum
Myzus (*Nectarosiphon*) *persicae*
**Toxoptera aurantiae*
Epidendrum sp.
Sitobion luteum
Erechtites valerianaefolia
Acyrthosiphon bidenticola
Aphis spiraecola
Aulacothum circumflexum
Dactynotus ambrosiae
Hyperomyzus lactucae
***Eriochloa punctata**
Rhopalosiphum maidis
Rhopalosiphum padi
Sipha flava
Erithalis fruticosa
Aphis spiraecola
Eugenia borinquensis
Aulacorthum solani
Eugenia jambos
Toxoptera aurantiae
***Eugenia malaccensis** =
(*Jambosa malacensis*)
Toxoptera aurantiae
***Eupatorium dolicholepis**
Aphis spiraecola
Eupatorium odoratum =
(*Osmia odorata*)
Aphis gossypii
Aphis spiraecola
Dactynotus ambrosiae
Eupatorium polyodon
Aphis spiraecola
Dactynotus ambrosiae
Exostema caribaeum
Aphis spiraecola
Ficus pumila
Aulacorthum circumflexus
Fleurya aestuans
Macrosiphum euphorbiae
Myzus (*Nectarosiphon*) *persicae*

Fragaria chiloensis
Capitophorus (*Pentatrichopus*) *minor*
Fuirena umbellata
(see **Scirpus fuirena**)
Furcraea tuberosa
Aphis spiraecola
***Galinsoga ciliata**
Dactynotus ambrosiae
Myzus ornatus
Gardenia jasminoides
Aphis spiraecola
***Gesneria albiflora** =
(*Pentarhapia albiflora*)
Toxoptera aurantiae
Gliricidia sepium
Aphis craccivora
***Gnaphalium portoricense**
Dactynotus ambrosiae
Gonzalagunia spicata =
(*Duggena hirsuta*)
Aphis gossypii
Toxoptera aurantiae
Gossypium barbadense var. Sea Island
Aphis gossypii
Gossypium hirsutum var. punctatum
Aphis gossypii
Gossypium sp.
Aphis gossypii
grass
Hysteroneura setariae
green peas
Aphis craccivora
Guarea guara
(see **Guarea trichilioides**)
***Guarea trichilioides** =
(*Guarea guara*)
Toxoptera aurantiae
Guazuma guazuma
(see **Guazuma ulmifolia**)
Guazuma ulmifolia =
(*Guazuma guazuma*)
Toxoptera aurantiae
Guettarda krugii
Aphis spiraecola
***Guettarda scabra**
Aphis gossypii
Gynura aurantiaca
Brachycaudus helichrysi
Habenaria monorrhiza
Aulacorthum circumflexum
Aulacorthum solani
Hamelia erecta
Aphis spiraecola
**Toxoptera aurantiae*
Hamelia sp.
Aphis gossypii
Aphis spiraecola
***Hedychium coronarium**
Pentalonia nigronervosa
Helianthus annuus
Dactynotus ambrosiae
Heliconia latispatha
Pentalonia nigronervosa
Hemidiodia ocimifolia
Aphis gossypii
Hernandia sonora
Aphis gossypii
***Hibiscus eetveldeanus**
Aphis gossypii
***Hibiscus furcellatus**
Aphis gossypii
Hibiscus rosa-sinensis
Aphis coreopsidis
Aphis gossypii
Toxoptera aurantiae
Holcus sorghum
Rhopalosiphum maidis
Hydrocleys nymphoides
Rhopalosiphum nymphaeae
***Hypoxis decumbens**
Rhopalosiphum padi

Lasiacis divaricata
Oregma panicola
Lasiacis maculata =
(*Lasiacis sorghoidea*)
Oregma panicola
Lasciasis sorghoidea
(see **Lasciasis maculata**)
Leonitis nepetaefolia
Aphis gossypii
***Lepidium virginicum**
Myzus (*Nectarosiphon*) *persicae*
Leptilon chinense
(see **Conyza apurensis**)
Leptilon pusillum
(see **Conyza canadensis**)
lima bean
Prociphilus erigeronensis
***Lomoplis ceratonia** =
(*Mimosa ceratonia*)
Macrosiphum (*Sitobion*) *salviae*
Ludwigia octovalvis =
(*Jussiaea angustifolia*)
Aphis spiraecola
Hyalomyzus jussiaea
**Myzus ornatus*
Lycopersicon esculentum
Macrosiphum euphorbiae
***Macroptilium lathyroides** =
(*Phaseolus lathyroides*)
Aphis craccivora
***Malpighia coccigera**
Toxoptera aurantiae
Malpighia fucata
Aphis spiraecola
Toxoptera aurantiae
Malpighia glabra
Aphis craccivora
Malpighia punicifolia
Aphis spiraecola
Toxoptera aurantiae
Malvaviscus grandiflorus
Aulacorthum cicumflexum
Aulacorthum solani
Toxoptera aurantiae
***Mammea americana**
Toxoptera aurantiae
Mangifera indica
Aphis spiraecola
Toxoptera aurantiae
Meibomia supina
(see *Desmodium supinum*)
Melanthera confusa
Aphis spiraecola
Dactynotus ambrosiae
***Melothria guadalupensis**
Aphis gossypii
***Mentha crispa**
Ovatus crataegarius
***Mentha nemorosa**
Myzus ornatus
Mikania cordifolia
**Aphis gossypii*
Aphis spiraecola
***Mikania pachyphylla**
Aphis coreopsidis
Mimosa ceratonia
(see **Lomoplis ceratonia**)
Mint
Ovatus crataegarius
Momordica charantia
Aphis gossypii
Montezuma speciosissima
Aphis gossypii
Moringa oleifera
Aphis spiraecola
Myzus (*Nectarosiphon*) *persicae*
Murraya exotica =
(*Chalcas exotica*)
Aphis spiraecola
Toxoptera aurantiae
Musa paradisiaca
Pentalonia nigronervosa
**Aphis gossypii*

Musa sapientum
Pentalonia nigronervosa
Myrcia berberis
(see **Myrcia fallax**)
***Myrcia fallax** =
(*Myrcia berberis*)
Toxoptera aurantiae
Myrcia splendens
Toxoptera aurantiae
Nectandra antillana
Toxoptera aurantiae
Nerium oleander
Aphis nerii
Nicotiana tabacum
Myzus (Nectarosiphon) persicae
Nothopanax guilfoyle =
(*Polyscias guilfoylei*)
Aphis spiraecola
Myzus (Nectarosiphon) persicae
Toxoptera aurantiae
Nymphaea caerulea
Rhopalosiphum nymphaeae
***Ocimum basilicum**
Myzus ornatus
Octadesmia montana
(see **Dilomilis montana**)
orange orchid
Aphis spiraecola
Orchids
Cerataphis orchidearum
Sitobion luteum
***Osmanthus** sp.
Aphis spiraecola
Myzus (Nectarosiphon) persicae
Osmia odorata
(see **Eupatorium odoratum**)
Palms
Cerataphis variabilis
Pandorea ricasoliana
Aphis gossypii
Panicum conjugatum
Sipha flava
***Panicum fasciculatum**
Sipha flava
***Panicum laxum**
Hysteroneura setariae
Panicum maximum
Sipha flava
Panicum trichoides
Oregma panicola
**Hysteroneura setariae*
Parthenium hysterophorum
Dactynotus ambrosiae
Paspalum boscianum =
(*Paspalum melanospermum*)
Sipha flava
***Paspalum conjugatum**
Rhopalosiphum padi
Paspalum fimbriatum
Hysteroneura setariae
Macrosiphum euphorbiae
Paspalum melanospermum
(see **Paspalum boscianum**)
Paspalum paniculatum
Hysteroneura setariae
Sipha flava
***Paspalum secans**
Hysteroneura setariae
***Passiflora rubra**
Rhopalosiphum padi
Paullinia pinnata
Aphis spiraecola
Pennisetum purpureum
Sipha flava
**Rhopalosiphum padi*
Pentarhaphia albiflora
(see **Gesneria albiflora**)
Pepo moschata
Aphis gossypii
Persea gratissima
Aphis gossypii
***Persicaria densiflorum** =
(*Polygonum portoricensis*)

Capitophorus hippophaes javanicus
Persicaria sp. (= *Polygonum* sp.)
Capitophorus hippohaes javanicus
Petrea volubilis
Aphis gossypii
***Phaseolus adenanthus**
Picturaphis puertoricensis
Phaseolus lathyroides
(see **Macroptilium lathyroides**)
Phaseolus lunatus
Aphis craccivora
**Aphis gossypii*
Picturaphis brasiliensis
***Phaseolus schottii** =
(*Phaseolus trichocarpus*)
Aphis craccivora
Picturaphis brasiliensis
Phaseolus sp.
Picturaphis brasiliensis
Phaseolus trichocarpus
(see **Phaseolus schotti**)
Phaseolus vulgaris
Aphis craccivora
Phoebe elongata
Toxoptera aurantiae
Physalis pubescens
Myzus (*Nectarosiphon*) *persicae*
Pictetia aculeata
Aphis craccivora
Piper aduncum
Aphis gossypii
Aulacorthum circumflexum
Aulacorthum solani
Toxoptera aurantiae
***Piper marginatum**
Toxoptera aurantiae
Piper peltatum =
(*Pothomorphe peltata*)
Aphis gossypii
Aphis spiraecola
Dactynotus ambrosiae
Piper umbellatum
Aphis gossypii
Pithecellobium dulce
Aphis craccivora
Plantago sp.
Aulacorthum solani
Plantago major
Aphis gossypii
Aulacorthum solani
Carolinaia cyperi
Myzus ornatus
Pleurothalis near **ruscifolia**
Sitobion luteum
Pluchea carolinensis =
(*Pluchea odorata*)
Aphis gossypii
Dactynotus ambrosiae
Pluchea odorata
(see **Pluchea carolinensis**)
Pluchea purpurascens
Dactynotus ambrosiae
Plumiera krugii
(see **Plumiera obtusa**)
***Plumiera obtusa** =
(*Plumiera krugii*)
Aphis spiraecola
Poliantes tuberosa
Myzus (*Nectarosiphon*) *persicae*
Polygonum portoricensis
(see **Persicaria densifforum**)
Polyscias guilfoylei
(see **Nothopanax guilfoylei**)
Polystachya extinctoria =
(*Polystachya minuta*)
Cerataphis orchidearum
Polystachya minuta
(see **Polystachya extinctoria**)
***Portulaca oleracea**
Aphis craccivora

scrophulariaceous splant
Aulacorthum solani
Sechium edule
Aphis gossypii
Sencio confusus
Aphis spiraecola
Dactynotus ambrosiae
Myzus (Nectarosiphon) persicae
Senecioides cinerea =
(Vernonia cinerea)
Aphis spiraecola
Serjania polyphylla
Aphis spiraecola
Setaria geniculata
Hysteroneura setariae
***Sida acuta** =
(Sida carpinifolia)
Aphis gossypii
Sida carpinifolia
(see **Sida acuta**)
***Sida rhombifolia**
Aphis gossypii
Sida sp.
Aphis coreopsidis
Aphis gossypii
Aphis spiraecola
Aulacorthum solani
*solanaceous vine
Myzus (Nectarosiphon) persicae
Solanum caribaeum
(see **Solanum nodiflorum**)
***Solanum ciliatum**
Aulacorthum circumflexum
Solanum melongena
Macrosiphum euphorbiae
Solanum nigrum
(see **Solanum nodiflorum**)
Solanum nodiflorum =
(Solanum nigrum)
(Solanum caribaeum)
Aphis gossypii
Myrus (Nectarosiphon) persicae
***Solanum seaforthianum**
Myzus (Nectarosiphon) persicae
Solanum torvum
Aphis gossypii
**Dactynotus ambrosiae*
Solanum wendlandii
Aphis gossypii
Sonchus asper
Dactynotus ambrosiae
Hyperomyzus lactucae
Myzus ornatus
Sonchus oleraceus
Aphis coreopsidis
Aphis spiraecola
Dactynotus ambrosiae
Hyperomyzus lactucae
**Myzus (Nectarosiphon) persicae*
Spathodea campanulata
Aphis gossypii
Aphis spiraecola
Myzus ornatus
Spondias cirouella
Aphis spiraecola
Spondias mombin
Aphis spiraecola
Toxoptera aurantiae
Spondias purpurea
Aphis spiraecola
Myzus (Nectarosiphon) persicae
Sporobolus berteroanus
(see **Sporobolus poiretii**)
***Sporobolus poiretii** =
(Sporobolus berteroanus)
Hysteroneura setariae
Stachytarpheta jamaicensis =
(Valerianoides jamaicensis)
Aphis gossypii
Stigmaphyllon tomentosum
Aphis craccivora

Swinglea glutinosa
Aphis spiraecola
***Symplocos micrantha**
Toxoptera aurantiae
***Tabebuia haemantha**
Toxoptera aurantiae
Tabebuia heterophylla =
(*Tabebuia pallida*)
Aphis craccivora
Aphis gossypii
**Toxoptera aurantiae*
Tabebuia pallida
(See **Tabebuia heterophylla**)
Tamarindus indicus
Aphis craccivora
Tectona grandis
Myzus (*Nectarosiphon*) *persicae*
***Tephrosia cinerea** =
(*Cracca cinerea*)
Aphis craccivora
***Tephrosia senna** =
(*Cracca cathartica*)
Aphis craccivora
***Theobroma cacao**
Toxoptera aurantiae
Thuja orientalis
Cinara tujafilina
Thunbergia alata
Aphis gossypii
Tithonia diversifolia
Aphis gossypii
Aphis spiraecola
Dactynotus ambrosiae
Torrubia fragans
Toxoptera aurantiae
***Tournefortia bicolor**
Aphis gossypii
Myzus (*Nectarosiphon*) *persicae*
Tournefortia hirsutissima
Aphis gosspii
***Trema lamarckiana**
Dactynotus ambrosiae
Macrosiphum (*Sitobion*) *salviae*
***Trema micrantha**
Aphis spiraecola
Dactynotus ambrosiae
Tricholaena repens
(see **Rynchelytrum repens**)
***Triplaris cumingiana**
Aphis gossypii
***Turnera ulmifolia**
Aphis gossypii
Urena lobata
**Aphis spiraecola*
Aulacorthum circumflexum
Aulacorthum solani
Urena trilobata
Aphis gossypii
Valerianoides jamaicensis
(see **Stachytarpheta jamaicensis**)
Vanilla planifolia
Cerataphis orchidearum
Varronia corymbosa
Dactynotus ambrosiae
Verbesina alata
Dactynotus ambrosiae
Vernonia cinerea
(see **Senecioides cinerea**)
***Vicia faba**
Aphis craccivora
Vitis vinifera
Aphis illinoisensis
*Walking iris
Aphis spiraecola
Waltheria americana
(see **Waltheria indica**)
***Waltheria indica** =
(*Waltheria americana*)
Dactynotus ambrosiae

Wedelia trilobata
Aulacorthum circumflexum
***Xanthosoma caracu**
Pentalonia nigronervosa
Xanthosoma nigum =
(*Xanthosoma violaceum*)
Aphis gossypii
Xanthosoma sp.
Aphis gossypii
Pentalonia nigronervosa
Xanthosoma violaceum
(see **Xanthosoma nigrum**)
Xolisma rubiginosa
Dactynotus ambrosiae
Toxoptera aurantiae
***Zantedeschia aethiopica**
Aulacorthum solani
Zanthoxylum flavum
Toxoptera aurantiae
Zanthoxylum monophyllum
Aphis spiraecola
Zea mays
Hysteroneura setariae
Rhopalosiphum maidis