

## MOSQUITO STUDIES (Diptera, Culicidae)

XXIII. ADDITIONS AND CORRECTIONS TO THE REVISION  
OF THE AEDES TERRENS GROUP<sup>1</sup>

by

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The present additions and corrections to my recent revision of the Terrens Group (Schick, 1970a) are based upon collections obtained in Venezuela by a UCLA team and local collaborators in 1969; in Argentina by Osvaldo Casal, Miguel Garcia and associates in 1967-1969; in Colombia by Marston Bates in 1941 and 1944; and from these and other countries in South America by other workers. Described here are 1 new species, 2 new forms and the hitherto unknown immature stages and female of *braziliensis* Gordon & Evans and the male of *berlini* Schick. Important new records of previously described species are given, some revisions are made in the Terrens and Insolitus Subgroups and corrected keys are provided for the entire group.

The Terrens Group is still poorly known throughout most of South America. This is especially evident in northern Argentina from where there are several small collections of adults which do not agree with any of the known species.

The format and methods of this paper (Schick, 1970b) is similar to that of the earlier one except that (1) complete literature citations are not given for the previously treated species, (2) in the descriptions of the species only the diagnostic features are given, the less useful characters being omitted, (3) the length of the free portion of the midapical comb scales is given to the nearest 0.005 mm rather than to the nearest 0.001 mm, (4) the L/S to the nearest 0.1 rather than 0.01, and (5) an anterior view of femur III is included in the illustrations of the species in which the female is described to indicate the width of the dark bands. The figure numbers follow the sequence started in Schick (1970a). Figures 1-60 appeared in the latter paper and 61-68 are represented in the present one. The known geographic distributions are indicated by circumscribing lines on the maps but only the new records are spotted.

I thank Alan Stone for the loan of material in the U.S. National Museum; T.H.G. Aitken, Marston Bates and Osvaldo Casal for providing me with supplementary collection data; Margaret Kowalczyk for the drawings; and Caryle Abrams for the preparation of the manuscript.

The following are corrections in Schick (1970a):

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- p. 58, line 38. Length of sidepiece should be corrected to 0.27-0.35 mm.  
 p. 59, line 6. Hair 4-C should read 5-C.  
 p. 60, line 28. *Cundinimarca* should read *Cundinamarca*.  
 p. 69, line 13. 12 lp♂ should read 12 lp♀.  
 p. 70, line 21. 352-12 should read 352-13.

### Thorntoni Subgroup

#### 2. *Aedes* (Finlaya) *argyrothorax* Bonne-Wepster & Bonne

Figs. 2,13,14,62

1920. *Aedes argyrothorax* Bonne-Wepster and Bonne, 1920:179.

*Aedes* (Finlaya) *argyrothorax* of Schick (1970a:36-38).

SYSTEMATICS. *Aedes argyrothorax*, previously known from the coastal lowlands of South America, from eastern Venezuela southward into the state of Rio de Janeiro, Brazil, with 1 possible record from Iquitos, Peru (fig. 2), is now recorded from the highlands of Colombia. The Colombian *argyrothorax* may be disjunct from the populations to the east since this species was not taken by the UCLA team in the northcentral state of Aragua, Venezuela, either along the coast or in the Cordillera de la Costa.

NEW RECORDS (fig. 62). Material examined: 6 specimens; 2 M, 1 F, 1 pupa, 2 larvae; 2 individual larval rearings.

COLOMBIA. *Meta*: Villavicencio [elev. ca 460 m], 1944, M. Bates, 2 IM (42-A, 42-7), 1 pF (57-AA) [USNM].

### Terrens Subgroup

The following taxonomic changes are made in this subgroup: (1) *berlini* is removed, (2) *apollo* is synonymized with *terrens*, and (3) *terrens* and *braziliensis* are redefined. The subgroup consequently comprises 3 distinct species, *terrens*, *braziliensis* and *zavortinki*. In addition, a new form, the *Teresopolis form*, is recognized.

With the removal of *berlini*, 1 variable, the presence or absence of subspiracular scales, can be eliminated from the subgroup description (Schick, 1970a:39). All the species have these scales. However, another variable is introduced with the inclusion of the *Teresopolis form*. The primary branches of hair I-I of the pupa of this form are predominantly single or double, whereas in the other species they are predominantly multiple.

The character of the color of the broad decumbent scales of the male vertex can be added to the subgroup description to further distinguish the Terrens and Insolitus Subgroups. In the former the scales are dark and in the latter they are silver. This character is of value in determining the species when the mesonotum is rubbed. These 2 subgroups can be generally separated in the larva by the number of hairs of the ventral brush. In the Insolitus Subgroup it is 11-13 and in the Terrens Subgroup, 13-17.

The undescribed form without a basal dark band on femur III mentioned in

Schick (1970a:43) is *casali*, actually a member of the Insolitus Subgroup.

#### 4. *Aedes* (Finlaya) *terrens* (Walker)

Figs. 3,7,8,15,16,61

1856. *Culex terrens* Walker, 1856:429.

1970. *Aedes* (Finlaya) *apollo* Schick, 1970a:46-48. NEW SYNONYMY.

*Aedes* (Finlaya) *terrens* in part of Schick (1970a:41-43).

*Aedes* (Finlaya) *apollo* in part of Schick (1970a:46-48).

FEMALE (figs. 7,15). Vertex with all decumbent scales narrow curved; erect occipital setae generally pale or dark; complete acrostichal line absent; fossal macula variously developed, at fullest extent not interrupted laterally by dark scales and fairly broad, at least extent reduced to narrow submarginal, longitudinal band divided into anterior and posterior portions; *pra* hairs pale or dark; vein C with silver scales at base.

MALE (figs. 8,15). Vertex with all decumbent scales narrow curved; complete acrostichal line absent; mesonotal disc not transversely silvered or transversely silvered anteriorly for at most 0.25 length of fossa; fossal macula reaching mesal margin of fossa or not; *pra* hairs pale or dark.

MALE GENITALIA (fig. 15). Sidepiece length 0.31-0.38 mm; median sternomesal sclerite of sidepiece weakly developed; prosopallus width 0.11-0.15 mm.

PUPA (fig. 15). Cephalothorax without highly contrasting dark markings on wing and leg cases; hair 1-I with primary branches predominantly multiple; paddle rounded or slightly tapered apically.

LARVA (fig. 16). Head hair 5-C single to triple; 6-C single or double; 11-C much shorter than 7-C; L/S 2.0-2.4.

SYSTEMATICS. *Aedes terrens* is redefined here to include those forms of the Terrens Subgroup in which (1) all the decumbent scales of the vertex are narrow curved, (2) the mesonotum of the male is not transversely silvered or only very narrowly so, and (3) a complete acrostichal line is absent. These characters separate adult *terrens* from the other species of the subgroup except for the female of *zavortinki*. Female *terrens* can often be distinguished from *zavortinki* by the presence of a characteristic lateral dark area on the fossa but this dark area may or may not be developed in some populations of *terrens* including those of the Villavicencio area of Colombia where the 2 species are sympatric. I have identified female *terrens* from this region by the generally dark erect scales of the occiput, assuming that *zavortinki* here would show pale erect scales. The closest known population of *terrens* shows generally dark scales (Venezuela) and the closest one of *zavortinki*, generally pale scales (Panama). Further support for the *terrens* determination is the occurrence of a male and female *terrens* in the same lot (57xy). It should be noted that a female of the *zavortinki* type with pale erect scales is unknown from Colombia, but the total number of specimens of the subgroup from the country is small and male *zavortinki* is represented by only 2 specimens. The immature stages of *terrens* can be separated from those of *braziliensis* and the *Teresopolis form* (see) but apparently not from *zavortinki*.

A third species of the subgroup, *braziliensis*, also occurs in the Villavicencio area. Here both *terrens* and *braziliensis* share an unusual character for the Terrens

Group, the presence in both sexes of dark rather than pale hairs on the upper *mep*. This led me to incorrectly associate the female of *terrens* and the male of *braziliensis* of this region in my previous paper and to describe them as a distinct species, *apollo*. I did note, however, that 2 species were possibly involved (Schick, 1970a:47). Whether the occurrence of these dark hairs in both species is due to parallelism or hybridization is unknown. The former possibility is suggested by development of this character in the single female of *berlini* (Insolitus Subgroup) known from the Villavicencio area but not in the females from the other parts of its range.

*Aedes terreus* in my previous revision was recorded from Brazil south of the Amazon basin southward into northern Argentina. Owing to the generally broadened definition of this species, a northern strip in the Caribbean countries of South America is now added to this geographic range, but *terrens* is still unknown from the intervening Amazon basin.

The widely distributed *terrens* comprises several distinctive geographic populations. The majority can be grouped into 2 general types in which there is a concordance of most or all of the following characters.

**Type A. Female:** Occiput with erect scales generally dark; fossal macula relatively broad, usually not interrupted laterally by dark scales but when so interrupted dark scales forming at most small patch or narrow line; *pra* hairs dark. **Male:** Mesonotum transversely silvered anteriorly; fossal macula coextensive with fossa; *pra* hairs dark. **Larva:** Head capsule with conspicuous fine spicules; hair 5-I often shorter than 4-I; saddle often extending about 0.5 or less around anal segment; ventral brush usually with 15, 16 hairs (14-17); hair 4a-X with 9-13 branches.

**Type B. Female:** Occiput with erect scales generally dark; fossal macula interrupted by relatively broad lateral area of dark scales, the macula consequently forming narrow submarginal longitudinal band; *pra* hairs usually pale, rarely dark. **Male:** Mesonotum not transversely silvered; fossal macula not reaching mesal margin of fossa; *pra* hairs pale. **Larva:** Head capsule without conspicuous fine spicules; hair 5-I subequal in length to or longer than 4-I; saddle extending more than 0.5 around anal segment; ventral brush usually with 13, 14 hairs (13-15; in 1 specimen, 17); hair 4a-X with 7-10 branches.

Type A *terrens* occurs in northern South America from Colombia eastward into French Guiana and disjunctly in the Salvador area of Brazil and in the General Enrique Mosconi (Vespucio) area of Argentina and type B in Brazil south of the Amazon basin southward into northern Argentina (Iguazu) and disjunctly in French Guiana. Type A would appear to represent the more primitive state since the fossal macula is not reduced and the distribution is more of a relict type. The populations of type B vary in the branching of hairs 5, 6-C in the larva; in some they are usually single (1 or 2), in others usually double or triple (1-3). Only the former condition is developed in type A larvae.

**NEW RECORDS** (fig. 61). Material examined: 137 specimens; 20 M, 42 F, 48 pupae, 27 larvae (mounted); 45 individual rearings (25 larval, 20 pupal).

**ARGENTINA. Salta:** General Enrique Mosconi (Vespucio) [elev. ca 500 m], 18 Feb 1967, treehole, H. Fernandez, M. Garcia and O. Casal (ARG 601,603), 2 lpM (603-15,17), 3 lpF (601-10,11; 603-16), 1 pM (603-101), 3 pF (601-102,103; 603-100), 14 L (601-2), 40 L (603-1) [UCLA]. Tablillas, 7 km from (nearest town General Enrique Mosconi, elev. ca 500 m), 25 Feb 1967, O. Casal and M. Garcia (ARG 618), 1 lpM (618-14), 4 lpF (618-10,12,16,18), 3 pM (618-104,108,115A), 1 F, 2 p, more than 100 L (618-1); 6 June 1969 (ARG 773), 7 pF (773-102,103,105,106,110,114,115), 3 L (773-2) [UCLA]. **Tucuman:** Churqui, 4 Dec 1922, 1 F (IMR 29) [UCLA].

COLOMBIA. *Meta*: Finca Vanguardia (Schick, 1970a:48). Villavicencio [elev. ca 460 m], 2 June 1941, very low treehole, M. Bates, 1 F (277); June 1942, W. Komp, 1 F (207B-45); M. Bates, 1 IF (C-57AA), 2 F, 2 p (57-AA); same data, 1 M, 1 F, 2 l (57xy) [USNM]. Villavicencio, river rd to Bosque Ocoa, 1 June 1942, treehole, 1 M (207B-10) [USNM].

FRENCH GUIANA. *Guyane*: Montabo (nearest town Cayenne), elev. 80 m, 30 Jan 1965, small treehole, height 1 m, T. Aitken, R. Martinez and A. Guerra (FG 1), 1 lpM (1-10), 1 lp (1-11) [UCLA]. *Locality not specified*: 1944, H. Floch, 2 M, 2 F (207E-1) [USNM].

VENEZUELA. *Aragua*: El Limon (nearest town Maracay), elev. 600 m, 15 July 1969, small treehole, height 2 m, J. Pulido and J. Valencia (VZ 211), 2 pM (211-100,101), 2 F (211-1) [UCLA]. El Ricon Bonita (nearest town Guigue), elev. 500 m, 24 July 1969, small treehole, height 1 m, J. Pulido and J. Valencia (VZ 266), 1 lpM (266-20), 1 lpF (266-20), 2 lp (266-21,23) [UCLA]. Guamitas (8 km S Rancho Grande on rd to Maracay), elev. 700 m, 18 Aug 1969, small treehole, height 2 m, J. Pulido and J. Clavijo, 1 lpM (VZ 373-10) [UCLA]. Ocumare de la Costa, 2 km N on hwy 8, elev. 100 m, 12 July 1969, small treehole, height 2 m, J. Pulido and J. Valencia (VZ 178), 1 lpM (178-10), 2 lpF (178-11,12); 28 July 1969, small treehole, height 1 m, J. Pulido and J. Valencia (VZ 272), 1 pM (272-100), 3 pF (272-100,102,120), 1 M, 4 F (272-2) [UCLA]; 15 Aug 1969, large treehole, height 1 m, J. Valencia, 2 lpF (VZ 307-10,50); same data, but small treehole, 2 lpF (307-10,11) [UCLA].

### 5. *Aedes* (Finlaya) *braziliensis* Gordon & Evans

Figs. 3,21,61,63,64

1922. *Aedes* (Finlaya) *oswaldi* var. *braziliensis* Gordon and Evans, 1922:329.

*Aedes* (Finlaya) *braziliensis* of Schick (1970a:43-44).

*Aedes* (Finlaya) *apollo* in part of Schick (1970a:46-48).

FEMALE (fig. 63). Vertex with an area of broad decumbent scales adjacent to narrow curved scales of median longitudinal line; occiput with erect scales generally pale; complete acrostichal line absent; fossal macula well developed, not interrupted by dark scales; *pra* hairs dark; vein C with silver scales at base.

MALE (fig. 21). Vertex with decumbent scales as in female; complete acrostichal line present; mesonotal disc transversely silvered anteriorly for at least 0.5 length of fossa; fossal macula reaching mesal margin of fossa; *pra* hairs dark.

MALE GENITALIA (fig. 21). Sidepiece length 0.30-0.34 mm; median sternomesal sclerite of sidepiece weakly developed; prosopallus width 0.11-0.13 mm.

PUPA (fig. 63). Wing pad with broad and dark subbasal band; leg cases with or without dark pigmentation; hair 1-I with primary branches predominantly multiple; paddle slightly tapered apically.

LARVA (fig. 64). Hair 5-C single or double; 6-C single; 11-C much shorter than 7-C; L/S 2.5-2.8.

SYSTEMATICS. *Aedes braziliensis*, as more broadly interpreted here, comprises those populations of the Terrens Subgroup in which there is a lateral area of broad scales on the vertex. The mesonotum of the male is broadly silvered anteriorly as in *zavortinki*. The ornately marked cephalothorax of the pupa may separate *braziliensis* from the other members of the subgroup but the reliability of this character cannot be determined without additional material. The larva generally differs from *terrens* and *zavortinki* in the greater L/S. In the Villavicencio area of Colombia *braziliensis* and *terrens* may be further distinguished by the length of hair 5-I; in *braziliensis* it is much shorter than 4-I and in *terrens* it is subequal.

*Aedes zavortinki* also occurs in the Villavicencio area but the larva is unknown from this region.

*Aedes braziliensis* was previously known only from Brazil and French Guiana at low elevations (fig. 3). The range is now extended into Colombia at moderately high elevations. This species, however, was not taken by the UCLA team in an intervening area, namely the state of Aragua, Venezuela.

NEW RECORDS (fig. 61). Material examined: 31 specimens; 6 M, 5 F, 6 pupae, 13 larvae; 1 individual larval rearing.

COLOMBIA. *Meta*: Villavicencio [elev. ca 460 m], 1944, M. Bates, 4 l (24-4), 2 l (24-78), 1 M, 3 p, 3 l (C-24), 1 M, 4 F (24); same data, 1 l (4288), 2 P (4296, 4298) (C-42-6); Komp, 1 M, 1 F (H-9-10) [USNM]. Villavicencio, Bosque Ocoa, 11 June 1944, 1 M [USNM].

FRENCH GUIANA. *Guyane*: Cabassou, elev. ca 30 m, 31 Jan 1945, small treehole, height 0.5 m, T. Aitken, R. Martinez and A. Guerra (FG 12,14), 1 lpF (12-14), 1 L (12-1), 1 L (14-1) [UCLA].

## 6. *Aedes* (Finlaya) *zavortinki* Schick

Figs. 3,8,9,61

1970. *Aedes* (Finlaya) *zavortinki* Schick, 1970a:45-46.

FEMALE (fig. 8). Vertex with all decumbent scales narrow curved; occiput with all or most erect scales pale; complete acrostichal line absent; fossal macula well developed, not interrupted laterally by dark scales; *pra* hairs dark; vein C with silver scales at base.

MALE (fig. 8). Vertex with decumbent scales as in female; mesonotal disc transversely silvered anteriorly for at least 0.5 length of fossa; fossal macula reaching mesal margin of fossa; *pra* hairs dark.

MALE GENITALIA (fig. 8). Sidepiece length 0.32-0.35 mm (0.27-0.42 mm); prosophaallus width 0.14-0.15 mm (0.13-0.15 mm).

PUPA. Cephalothorax without highly contrasting dark markings on wing and leg cases; hair 1-I with primary branches predominantly multiple; paddle rounded apically.

LARVA (fig. 9). Head hair 5-C usually double (1-3); hair 6-C single; 11-C much shorter than 7-C; L/S 2.1-2.4.

SYSTEMATICS. The above description is essentially condensed from Schick (1970a) and the definition of the species remains unchanged.

*Aedes zavortinki* is very similar morphologically to some forms of *terrens* and generally can be separated from that species only by the mesonotal markings of the male (see *terrens*). The separation of *zavortinki* from *braziliensis* and the *Ter-esopolis* form is discussed under those species.

*Aedes zavortinki*, previously known only from the Canal Zone and eastern Panama at low elevations, 90 m or less (fig. 3), is now recorded from Colombia at an elevation of about 460 m.

NEW RECORDS (fig. 61). Material examined: 2 M.

COLOMBIA. *Meta*: Villavicencio [elev. ca 460 m], 17 May 1939, 1 M; 2 June 1941, very low treehole, M. Bates, 1 M (277) [USNM].

7. *Aedes* (Finlaya) sp., Teresopolis form

Figs. 61,65,66

*Aedes* (Finlaya) *terrens* in part of Schick (1970a:41-43).

FEMALE (fig. 65). Vertex with all decumbent scales narrow curved; occiput with erect scales pale; complete acrostichal line present; fossal macula with a narrow sublateral longitudinal band transversely divided into anterior and posterior portions; *pra* hairs pale; vein C without silver scales at base.

MALE (fig. 65). Vertex with all decumbent scales narrow curved; complete acrostichal line present; mesonotal disc not transversely silvered; fossal macula not reaching mesal margin of fossa; pleural hairs missing.

MALE GENITALIA (fig. 65). Sidepiece length 0.35 mm; median sternomesal sclerite of sidepiece broad and well developed; prosophallus width 0.14-0.16 mm.

PUPA (fig. 65). Cephalothorax without highly contrasting markings on wing and leg cases; hair 1-I with primary branches predominantly single or double; paddle broadly rounded apically.

LARVA (fig. 66). Hair 5-C triple or 4-branched; 6-C with 4-6 branches; 11-C subequal in length to 7-C; L/S 1.7-2.1.

SYSTEMATICS. The *Teresopolis form*, apparently most closely related to *terrens*, differs from that species in the following characters: (1) complete acrostichal line present in both sexes, (2) vein C of female without silver scales at base, (3) the median sternomesal sclerite of the sidepiece more strongly developed, (4) hair 1-I of the pupa with fewer secondary branches, (5) hair 6-C of the larva more highly branched, (6) hair 11-C of the larva much longer (longer than in any of the other species of the group), and (7) L/S tending to be lower (1.7-2.1 vs 2.0-2.4).

The male from Teresopolis is unusual in that the cercal setae are absent. These are present on the P 48-1 male (see distribution).

The *Teresopolis form* is not provided with a formal name at this time because of insufficient adult material and lack of collections from adjacent localities.

DISTRIBUTION (fig. 61). Brazil. Material examined: 9 specimens; 3 M, 1 F, 2 pupae, 3 larvae; 2 individual rearings (1 larval, 1 pupal).

BRAZIL. *Rio de Janeiro*: Fazenda Boa Fe, Teresopolis [elev. 500-1000 m], 13 Nov 1942, treehole, L. Gomes, 2 L (28773-3,4); same data, but habitat not specified, 1 lpF (28774-12); 12 Dec 1942, 1 pM (29078-1) [UCLA]. *Locality not specified*: 1 M (P 48-1); 1 M (P 100(1); lam. P 82/P 81 [genitalia slide missing] [UCLA].

## Alboapicus Subgroup

9a. *Aedes* (Finlaya) sp., Chaco form

Figs. 62,63

FEMALE (fig. 63). Vertex with an area of moderately broad, dark decumbent scales adjacent to narrow curved scales of median longitudinal line; erect occipital scales dark; proboscis subequal in length to femur I; acrostichal setae absent; fossal macula reduced to small posterior spot about 0.5 length of fossa; supraalar

macula small, very narrowly joined to fossal macula; *ssp* scales present; *pra* hairs dark; femora I and II with well-developed posterior patch of silver scales; femur I with small knee spot; tarsi 5-I-III silver; femur II with moderately broad knee spot, a few of the silver scales extending basad of subapical setae; tarsus I-II with median dark band 0.75; femur III with broad basal dark band and very broad subapical dark band (about 0.42); veins C and R with silver lines subequal in length, neither reaching level of crossvein *h*.

MALE, PUPA, LARVA. Unknown.

SYSTEMATICS. The *Chaco* form is provisionally placed in the Alboapicus Subgroup because of the silvered 5th tarsal segments and the broad basal band of femur III. A less tenuous placement must await the discovery of the other stages.

The *Chaco* form differs from *alboapicus* in the completely silvered tarsus I-I, the presence of a knee spot on femur I, the greater reduction of the fossal macula, the presence of well-developed posterior silver patches on femora I and II, the very broad subapical dark band of femur III and the long silver line on vein R. The presence of a knee spot on femur I and a silver line on vein R in the female are unusual characters for the Terrens Group. The former character occurs elsewhere only in *amabilis* and the latter only in *argyrothorax*.

DISTRIBUTION (fig. 62). Northern Argentina. Material examined: 1 F.

ARGENTINA. *Chaco*: Saenz Pena (rd to Tres Isletas) [elev. ca 100 m], 6 Apr 1963, in forest, biting in afternoon, M. Castro, 1 F (Ch 61b) [UCLA].

#### Insolitus Subgroup

Three species may now be recognized in this subgroup, *insolitus*, *berlini* (transferred from the Terrens Subgroup) and a new species, *casali*.

The description of the subgroup must be broadened to accommodate the latter 2 species. The additions to the description are indicated in *italics* in the following statements: (1) proboscis of female *usually longer* than femur I, (2) femur II with knee spot usually present, *narrow* to broad, (3) femur III with basal dark band *absent*, *incomplete* or complete, usually broad, and (4) sidepiece with median sternomesal sclerite weakly to *strongly* developed.

Further subgroup characters that are of value in separating this from the Terrens Subgroup are given under the latter.

*Aedes casali* occurs in northern Argentina, the southern limit of the geographic range of the Terrens Group, and is broadly disjunct from the other 2 species of the subgroup. The occurrence of such a relict species at the periphery of the range of the group supports the hypothesis that the Insolitus Subgroup is of relatively great antiquity (Schick, 1970a:20).

#### 12. *Aedes* (Finlaya) *insolitus* (Coquillett)

Figs. 4,29,30,62

1909. *Verrallina insolita* Coquillett, 1906:62.

*Aedes* (Finlaya) *insolitus* of Schick (1970a:57-61).

SYSTEMATICS. *Aedes insolitus* was reported from Central America, Colombia

and Trinidad, primarily at high elevations, in my previous paper (fig. 4). New records show that this species also occurs in northern Venezuela.

NEW RECORDS (fig. 62). Material examined: 82 specimens; 16 M, 21 F, 25 pupae, 20 larvae; 24 individual rearings (14 larval, 9 pupal, 1 incomplete).

COLOMBIA. *Meta*: Villavicencio [elev. 460 m], 19 June 1941, treehole, M. Bates, 1 F (278) [USNM].

VENEZUELA. *Aragua*: Carretera 2, 8.7 km S Choroni, elev. 300 m, 16 July 1969, cut bamboo, T. Zavortink et al, 1 M (VZ 228-2); 15.9 km S Choroni, elev. 650 m, 16 July 1969, cut bamboo, T. Zavortink et al (VZ 230), 1 pF (230-100), 1 M, 4 F (230-1); Cumbre de Choroni, elev. 900 m, 26 July 1969, cut bamboo, J. Pulido and J. Valencia (VZ 269), 1 lpM (269-50), 1 lpM (269-50), 1 lp (269-51), 1 M, 1 F, 21 (269-5); 20 km N Maracay, elev. 800 m, 6 Aug 1969, cut bamboo, J. Valencia (VZ 314,315), 1 lpM (314-70), 1 pM (315-104); 4 km N Maracay, elev. 800 m, 6 Aug 1969, small treehole, height 1 m, J. Valencia (VZ 317), 1 lpM (317-10), 1 M, 1 F, 1 (317-1) [UCLA]. Guamita (8 km S Rancho Grande), elev. 700-800 m, 15 July 1969, cut bamboo, T. and J. Zavortink (VZ 203), 1 lpM (203-54), 2 lpF (203-56,58), 1 lp (203-61); 11 Aug 1969, small treehole, height 1 m, J. Valencia (VZ 328), 1 lpF (328-12), 1 pM (328-105); 18 Aug 1969, cut bamboo, J. Pulido and J. Clavijo (VZ 371), 1 lpF (371-10), 2 pF (371-101,103); 18 Aug 1969, small treeholes, height 1-2 m, J. Pulido and J. Clavijo (VZ 372,373,375), 2 lpM (373-11,12), 3 lpF (373-13-15), 1 pM (372-100), 3 pF (373-100,101; 375-101), 1 IP (373-16), 1 I (375-1) [UCLA]. Turiama [elev. near sea level], 11 Sept 1944, 1 M; date unknown, 2 M [UCLA].

## 12a. *Aedes* (Finlaya) *casali* Schick, n.sp.

Figs. 62,67,68

TYPES: *Holotype male* (ARG 618-108) with associated pupal skin, ca 7 km from Tabiillas (nearest town General Enrique Mosconi (Vespucio), elev. ca 500 m), 25 Feb 1967, fallen tree, O. Casal and M. Garcia [USNM]. *Allotype female* (618-106) with associated pupal skin, same data as holotype [USNM]. *Paratypes*: 1 pM (618-103), 1 M (618-113), same data as holotype [UCLA]. This species is dedicated to Osvaldo Casal of the Instituto Nacional de Microbiologia, Buenos Aires, Argentina.

FEMALE (fig. 67). Vertex with broad decumbent scales usually forming variously developed dark patch surrounded by silver scales; infrequently all scales silver; anterior promontory silvered; acrostichal line absent; acrostichal setae present, most posterior seta at about 0.5 from anterior end; fossal macula moderately well developed (ARG 773-109) or reduced to small anterior patch (IMR 29); *ssp* scales present; *pra* hairs pale; femur II with knee spot narrow, often longitudinally divided anteriorly by streak of dark scales; tarsus I-II with complete median dark band, usually about 0.4-0.6 (0.4-0.7); tarsus 2-II with complete dark apical band; femur III usually without basal dark band, incomplete when present.

MALE (fig. 67). Mesonotal disc transversely silvered anteriorly for about 0.5 length or up to prescutellar space; *ssp* scales present; tarsus I-II with incomplete median dark band or band complete, as broad as 0.6; femur III with basal dark band as in female.

MALE GENITALIA (fig. 67). Sidepiece length 0.32-0.35 mm; median sternomesal sclerite weakly to strongly developed; prosophaallus length 0.09-0.10 mm; filament ratio 0.55-0.80.

PUPA (fig. 67). Cephalothorax without pale inverted V-shaped marking; hair 1-I with primary branches predominantly single-double or double-triple; 2-II lat-

erad of 3-II or mesad for as much as 0.4 the distance from 1-II to 3-II.

LARVA (fig. 68). Hairs 5,6-C single or double; 14-C, *bmh* usually double and branching from base (1-3); hair 11-P longer than 0.5 of 14-P; hair 14-P single; 4-M double; 7-II single to triple; 12-VII single; apical comb scale with free portion 0.035-0.040 mm; 2-VIII single; siphon length 0.67-0.92 mm; L/S 2.1-2.3.

SYSTEMATICS. *Aedes casali* is distinguished from the other species of the subgroup by the absence of a complete band at the base of femur III and by the coloration of the broad scales of the vertex of the female. The pupa is similar to that of the other species. The larva apparently shows no features that separate it from *insolitus* but can be distinguished from *berlini* by fewer branches in many of the hairs and by the smaller L/S.

DISTRIBUTION (fig. 62). Northwest Argentina at elevations of about 500 m. Material examined: 52 specimens; 9 M, 22 F, 11 pupae, 10 larvae; 6 individual pupal rearings.

ARGENTINA. *Salta*: Tablillas, ca 7 km from (nearest town General Enrique Mosconi (Vespucio), elev. ca 500 m), 25 Feb 1967, fallen tree, O. Casal and M. Garcia (ARG 618, type series), 2 pM (618-103,108), 1 pF (618-106), 1 M (618-113), 8 L (618-1) [USNM, UCLA]; 6 June 1969, treehole, O. Casal and M. Garcia, 3 pF (ARG 773-109,113,116) [UCLA]. *Tucuman*: Churqui, 4 Dec 1922 (IMR 29), 1 pF (slide 2217), 8 M, 17 F, 1 M gen (360), 4 p (2216), 2 L (2213) [UCLA].

#### (8) 12b. *Aedes (Finlaya) berlini* Schick

Figs. 3,21,22,62,63

1970. *Aedes (Finlaya) berlini* Schick, 1970a:48-49.

FEMALE (fig. 21). Vertex with decumbent scales usually all dark, some scattered silver scales sometimes present; anterior promontory silvered or dark; acrostichal line absent; acrostichal setae present or absent, most posterior seta at about 0.25 from anterior end or as far caudad as in posterior 0.5; fossal macula relatively well developed; *ssp* scales absent; *pra* hairs dark; femur II with broad knee spot, the silver scales extending well basad of anterior subapical setae; tarsus 1-II with complete median dark band, about 0.4-0.5; tarsus 2-II with complete dark apical band; femur III with complete and broad basal dark band.

MALE (fig. 63). Mesonotal disc transversely silvered anteriorly for about 0.5 length or up to prescutellar space; *ssp* scales absent; tarsus 1-II with incomplete or complete median dark band, as broad as 0.5; femur III with basal dark band as in female.

MALE GENITALIA (fig. 63). Sidepiece length 0.29-0.31 mm; median sternomesal sclerite weakly developed; prosophallus length 0.08 mm; filament ratio 0.90-1.10.

PUPA (fig. 21). Cephalothorax with or without pale inverted V-shaped marking; hair 1-I with primary branches usually predominantly double or triple, often multiple, sometimes single; 2-II mesad of 3-II for 0.2-0.5 the distance from 1-II to 3-II.

LARVA (fig. 22). Hairs 5,6-C single to triple; 14-C, *bmh* single or double, when double not branching from base; 11-P greater or less than 0.5 of 14-P; hair 14-P single or double; 4-M usually triple or 4-branched (2-4); hair 7-II with 4-7 branches; 12-VII single or double; apical comb scale with free portion 0.030-0.035 mm; 2-

VIII single or double; siphon length 0.80-0.92 mm; L/S 2.3-2.6.

SYSTEMATICS. *Aedes berlini*, previously known from only the type locality, the island of Tobago (fig. 3), is now recorded from Trinidad, Venezuela and Colombia. The populations fall into 2 types, Island (Trinidad, Tobago) and Mainland (Venezuela, Colombia). The former populations occur at elevations of up to 120 m and the latter from 700 to 900 m. They differ in the following 3 morphological characters (Island character state cited first): (1) acrostichal setae absent or when present not extending caudad of anterior 0.25 vs acrostichal setae always present, most posterior seta at 0.5 or in caudal 0.5, (2) hair 11-P of the larva less than 0.5 of 14-P vs subequal in length to 0.5, and (3) mesonotum of male transversely silvered up to prescutellar space vs to about 0.5-0.67 of length.

This broad treatment of *berlini* is consistent with that of *insolitus*. The latter species also occurs at a wide range of elevations and shows the same or a similar type of geographic variation in the above 3 characters.

*Aedes berlini* differs from the other species of the subgroup in the absence of *ssp* scales, the dark *pra* hairs of the female, and the single or nonbasally branched hairs 14-C and *bmh* of the larva. The fossal macula of the female, relatively well developed, is more constant in its degree of development than in the other species.

Emphasis was placed on the taxonomic value of the length of hair 7-VII of the pupa in Schick (1970a:49). Although long in all the new material examined, this character is variable enough to negate its taxonomic value at least as a species criterion in the *Insolitus* Subgroup.

*Aedes berlini* and *insolitus* are sympatric in Venezuela and Colombia and have been taken in the same treehole in the former country.

NEW RECORDS (fig. 62). Material examined: 114 specimens; 21 M, 19 F, 40 pupae, 34 larvae; 38 individual rearings (23 larval, 11 pupal, 4 incomplete).

COLOMBIA. *Cundinamarca*: Santander (Santandercito), 1 F (207D-6/2), 1 F (207D-8/3) [UCLA]. *Meta*: Forzosa Forest (ca 5 mi from Villavicencio, elev. ca 460 m), 12 June 1944, treehole 6, M. Bates, 1 IM [USNM]. Villavicencio, 1944, M. Bates, 1 lpF (78) [USNM].

TRINIDAD. *Saint George*: Grandwood (ca 2 km Chaguaramas), elev. ca 120 m, 11 June 1961, treehole, T.H.G. Aitken, 2 lpM (11-VI-61-8,13), 3 lpF (11-VI-61-11,12,14), 1 pM (11-VI-61-4), 7 lp (11-VI-61-5,7,9,10,15,16,18), 3 p (11-VI-61) [UCLA].

VENEZUELA. *Aragua*: Guamita (8 km S Rancho Grande), elev. 700-800 m, 15 July 1969, small treehole at ground level, T. and J. Zavortink (VZ 198), 1 lpM (198-10), 4 L (198-2) [UCLA]; small treehole, height 1 m (VZ 200,201), 3 lpM (200-10,13; 201-11), 2 lpF (200-11,12), 1 pM (200-100), 1 M, 1 l (200-1) [USNM, UCLA]; cut bamboo, height ca 1-2 m (VZ 203), 1 lpM (203-50), 4 lpF (203-51,52,60,64), 3 pM (203-100,103,110), 1 lp (203-53), 1 M, 2 L (203-6); 11 Aug 1969, small treehole, height 1 m, J. Valencia (VZ 328), 1 lpF (328-10), 1 pM (328-103), 1 pF (328-101); cut bamboo, height ca 1 m, J. Valencia and J. Clavijo (VZ 331), 1 lpF (331-11), 1 M (331-1); 18 Aug 1969, cut bamboo, height ca 1 m, J. Pulido and J. Clavijo, 1 pM (VZ 371-100); small treehole, height 1 m, 2 lpM (VZ 372-10,40); small treehole, height ca 2 m (VZ 374), 1 pF (374-100), 1 F (374-1) [UCLA]. Maracay, 4 km N on rd to Choroni, elev. 800 m, 6 Aug 1969, small treehole, height ca 1 m, J. Valencia, 1 pM (VZ 317-100) [UCLA]. Maracay, 20 km N on rd to Choroni, elev. 800 m, 6 Aug 1969, cut bamboo, height near soil level, J. Valencia, 1 lpF (VZ 314-71) [UCLA].

#### Podographicus Subgroup

#### 25. *Aedes* (Finlaya) *podographicus* Dyar & Knab

Figs. 6,52-57

1906. *Aedes podographicus* Dyar and Knab, 1906:165.

*Aedes (Finlaya) podographicus* of Schick (1970a:82-86).

SYSTEMATICS. The *podographicus* of Schick (1970a) comprised coastal populations in Central America and Mexico which occurred at elevations of less than 300 m. A widely disjunct but apparently conspecific population, cited simply as belonging to the *podographicus* complex, was known from the Maracay area of Venezuela at higher elevations but was not treated as *podographicus* proper since the immature stages were not known. These are now available and show no striking differences from those of typical populations of Central America and Mexico.

Although *podographicus* abounds in the coastal areas to the north, it is apparently absent along the coast of South America. In recent UCLA collections in the state of Aragua, Venezuela, *podographicus* was taken only in the Maracay area, although another member of the Terrens Group (*terrens*) was commonly encountered on the coast.

NEW RECORDS. Material examined: 292 specimens; 81 M, 142 F, 37 pupae, 32 larvae; 33 individual rearings (24 larval, 9 pupal).

VENEZUELA. *Aragua*: Guayabita, elev. 560 m, 14 July 1927, 1 M (35.III.20a) [USNM]; 30 Aug 1966, automobile tire, E. Russian Vasquez, 1 F (VZ 29) [UCLA]. Hacienda Santa Clara (nearest town San Joaquin), elev. 400 m, 19 July 1969, large treehole near soil level, J. Pulido and J. Valencia (VZ 249), 1 lpM (249-21), 1 lpF (249-20) [UCLA]. Macaro (nearest town Turmero), elev. 500 m, 12 Aug 1969, small treehole, height 2 m, J. Valencia and J. Pulido, 1 lpM (VZ 335). Maracay [elev. 600 m], 10 Jan 1926 (1-10-26), M. Nunez Tovar, 7 F; 24 Aug 1926, M. Nunez Tovar, 1 F; 8 Sept 1926, M. Nunez Tovar, 6 F; 11 Sept 1926 (9-11-26), M. Nunez Tovar, 1 F; 13 Sept 1926, M. Nunez Tovar, 4 F; 18 Sept 1926, M. Nunez Tovar, 1 F; 1926, M. Nunez Tovar, 5 M, 1 F; 3 Aug 1927, M. Nunez Tovar, 1 M, 1 F [USNM]; 30 M, 12 F (VZR 252); 23 M, 86 F (VZR 257) [UCLA]. Maracay, Hacienda Militar de San Jacinto, elev. 550-600 m, 17 July 1969, small treehole, height 1 m, J. Pulido and J. Valencia (VZ 233, 234, 239, 240), 4 lpM (233-12; 234-10; 239-20, 21), 3 lpF (233-11; 234-12, 13), 3 pM (233-101; 234-100, 101), 1 pF (233-100), 1 lp (234-16), 1 l (233-1), 6 M, 3 F, 3 p, 3 l (234-1), 2 F (240-3) [UCLA]. Maracay, Universidad Facultad de Agronomia, elev. 600 m, 15 July 1969, small treehole, height 1 m, J. Pulido and J. Valencia (VZ 205, 206), 3 lpM (205-31; 206-10, 11), 7 lpF (205-10, 12-16, 30), 2 pM (205-100, 101), 3 pF (205-102, 103; 206-100), 1 lp (205-17), 1 L, 2 l (205-1), 1 F, 1 p (206-1) [UCLA]. *Carabobo*: Mariara, 2 km E, elev. 400 m, 19 July 1969, small treehole, height 1 m, J. Pulido and J. Valencia, 1 lpM (VZ 245-11) [UCLA]. Punta Palmita (nearest town Mariara), elev. 400 m, 19 July 1969, small treehole, height 1 m, J. Pulido and J. Valencia (VZ 244), 1 lpM (244-12), 1 lp (244-11), 1 l (244-1) [UCLA].

## KEYS TO SPECIES

### FEMALES

#### (15. impostor unknown)

1. Femur III with complete basal dark band *and* supraalar macula broadly reaching scutal suture (figs. 63, *braziliensis*; 65, 67) . . . . . 2
- Without the above combination of characters; femur III sometimes with complete basal dark band and supraalar macula sometimes broadly reaching scutal suture but both conditions not developed simultaneously . . . . . 13

- 2(1). Midtarsi and hindtarsi unmarked except for inconspicuous silver band at base of tarsi 1-II,III . . . . . **10. buenaventura**  
Midtarsi and hindtarsi with prominent silver bands at base and apex of tarsi 1-II,III and at base of tarsi 2-II,III . . . . . 3
- 3(2). Tarsi 5-II,III silvered . . . . . **9. alboapicus**, in part  
Tarsus 5-II usually dark, rarely silvered; 5-III always dark . . . . . 4
- 4(3). Vertex with decumbent scales along longitudinal midline all broad . . . 5  
Vertex with decumbent scales along longitudinal midline all narrow curved . . . . . 6
- 5(4). Mesonotal disc transversely silvered anteriorly (fig. 9); vein R without silver scales . . . . . **1. thorntoni**  
Mesonotal disc not transversely silvered (fig. 13); vein R with small basal patch of silver scales . . . . . **2. argyrothorax**
- 6(4). *Ssp* scales absent . . . . . 7  
*Ssp* scales present . . . . . 8
- 7(6). Vertex with all decumbent scales narrow curved, most or all along longitudinal midline dark. . . . . **11. metoecopus**  
Vertex with an area of broad decumbent scales adjacent to narrow curved scales of median longitudinal line, latter scales silver . . (8) **12b. berlini**
- 8(6). Vertex with all decumbent scales narrow curved . . . . . 9  
Vertex with an area of broad decumbent scales adjacent to narrow curved scales of median longitudinal line . . . . . 10
- 9(8). *Pra* hairs dark; fossal macula not strongly reduced, mesal margin sharply defined, evenly and gently curved or essentially straight (fig. 63) . . . . . **5. braziliensis**  
*Pra* hairs pale; fossal macula usually markedly reduced and mesal margin indistinct and irregular, infrequently well developed as above or completely absent (fig. 29) . . . . . **12. insolitus**
- 10(8). Basal dark band of femur III narrow, at most about 0.05 (Mexico) . . . . . **14. homoeopus**, in part  
Basal dark band of femur III broad, more than 0.10 (Panama, South America) . . . . . 11
- 11(10). Complete acrostichal line present . . . . . **7. Teresopolis form**  
Complete acrostichal line absent . . . . . 12
- 12(11). Fossa without dark scales at lateral margin (fig. 17) (Panama, Colombia) . . . . . **6. zavortinki**  
Fossa usually with at least a few dark scales at lateral margin, these often forming well developed patch or longitudinal band (fig. 15) (Colombia southward into Argentina) . . . . . **4. terreus**

- 13(1). Mesonotal disc transversely silvered anteriorly . . . . . 14  
 Mesonotal disc not transversely silvered . . . . . 15
- 14(13). Transverse silvered area of mesonotum extending caudad to about 0.5  
 (fig. 11); *ppn* silver scaled. . . . . **3. bertrami**  
 Transverse silvered area of mesonotum much narrower, extending caudad  
 to less than 0.25 (fig. 39); *ppn* dark scaled . . . . . **13. aitkeni**
- 15(13). Tarsus 5-III silvered . . . . . 16  
 Tarsus 5-III dark . . . . . 18
- 16(15). Tarsus 1-I with broad apical silver band, about 0.4; midlegs and hindlegs  
 shaggy . . . . . **28. diazi**  
 Tarsus 1-I with at most very narrow apical silver band, much less than  
 0.4; midlegs and hindlegs not shaggy . . . . . 17
- 17(16). Fossal macula developed up to anterior margin of fossa (fig. 23); femur I  
 without knee spot; tarsus 5-I at most only partly silvered . . . . .  
 . . . . . **9. alboapicus**, in part  
 Fossal macula a small posterior spot (fig. 63); femur I with small knee  
 spot; tarsus 5-I entirely silvered . . . . . **9a. Chaco form**
- 18(15). Supraalar macula broadly reaching scutal suture (fig. 67) and mesal margin  
 of fossal macula poorly defined (Argentina). . . . . **12a. casali**  
 Supraalar macula rarely broadly reaching scutal suture; mesal margin of  
 fossal macula usually sharply defined (Mexico, Central America) . . 19
- 19(18). Acrostichal setae absent; tarsus 1-II with median dark band usually in-  
 complete or complete and narrow, at most about 0.33 . . . . . 20  
 Acrostichal setae present; tarsus 1-II with median dark band usually com-  
 plete and broad, about 0.33 or greater . . . . . 22
- 20(19). Proboscis shorter than or subequal in length to femur I; femur II with  
 knee spot moderately broad, the silver scales at most just reaching an-  
 terior subapical setae . . . . . **25. podographicus**  
 Proboscis longer than femur I; femur II with knee spot broad, the silver  
 scales extending basad of anterior subapical setae . . . . . 21
- 21(20). Vertex with all decumbent scales silver . . . . . **26. tehuantepec**  
 Vertex with silver and dark decumbent scales, latter forming submedian  
 patch . . . . . **27. schroederi**
- 22(19). Femur II with or without knee spot, when present, narrow, a single row  
 of apical scales; *ssp* scales absent . . . . . 23  
 Femur II with broad knee spot, the scales extending basad of anterior sub-  
 apical setae; *ssp* scales present or absent . . . . . 24
- 23(22). Fossal macula reduced only mesally (figs. 48,50); supraalar macula reach-  
 ing scutal suture; femora I,II with well developed posterior patch of sil-  
 ver scales . . . . . **24. daryi**

- Fossal macula reduced anteriorly and mesally (fig. 44); supraalar macula not reaching scutal suture; femora I,II without posterior patch of silver scales . . . . . 22. *galindoi*; 23. *campana*
- 24(22). *Ssp* scale patch absent although 1 or 2 scales sometimes present . . . . . 20. *vargasi*  
*Ssp* scale patch present . . . . . 25
- 25(24). Proboscis shorter than or subequal in length to femur I; midlobe of scutellum with silver scales . . . . . 26  
 Proboscis usually longer than, sometimes subequal in length to femur I, when subequal midlobe of scutellum without silver scales . . . . . 27
- 26(25). Acrostichal line absent or represented by scattered silver scales (fig. 39); midlobe of scutellum usually with a mixture of silver and dark scales, the dark scales usually predominating, infrequently all scales silver . . . . . 19. *sumidero*  
 Acrostichal line present, complete (fig. 35); midlobe of scutellum with all scales silver . . . . . 17. *gabriel*
- 27(25). Femur I with narrow knee spot; complete and strong acrostichal and posterior dorsocentral lines present (fig. 37) . . . . . 16. *amabilis*  
 Femur I without knee spot; complete and strong acrostichal and posterior dorsocentral lines usually absent, sometimes complete but weak . . . . . 28
- 28(27). Vertex with an area of broad decumbent scales adjacent to narrow curved scales of median longitudinal line . . . . . 18. *idanus*  
 Vertex with all decumbent scales narrow curved . . . . . 29
- 29(28). Midlobe of scutellum without silver scales; proboscis subequal in length to or longer than femur I . . . . . 12. *heteropus*  
 Midlobe of scutellum usually with silver scales; proboscis longer than femur I . . . . . 14. *homoeopus*, in part

## MALES

(3. *bertrami*, 9a. Chaco form, 13. *aitkeni*, 16. *amabilis*,  
 27. *schroederi* and 28. *diasi* unknown)

1. Vein C with basal line of silver scales reaching crossvein *h*; mesonotal disc usually transversely silvered . . . . . 2  
 Vein C with small basal patch of silver scales or line reaching at most to about 0.5 to crossvein *h*; mesonotal disc not transversely silvered . . . . . 14
- 2(1). Vein R with basal line of silver scales much longer than that of vein C . . . . . 3  
 Vein R with basal line of silver scales much shorter than that of vein C . . . . . 4
- 3(2). Median sternomesal area of sidepiece with well developed tuft and usually with well developed convexity and sclerite (fig. 31). . . . . 14. *homoeopus*  
 Median sternomesal area with these structures not strongly differentiated (fig. 33) . . . . . 15. *impostor*

- 4(2). *Ssp* scale patch absent . . . . . 5  
*Ssp* scale patch present . . . . . 6
- 5(4). Midtarsi and hindtarsi unmarked except for inconspicuous silver band at base of tarsi 1-II,III . . . . . 10. **buenaventura**  
Midtarsi and hindtarsi with prominent silver bands at base and apex of tarsi 1-II,III and at base of tarsi 2-II,III; tarsi 5-II,III and sometimes 5-I silvered . . . . . 9. **alboapicus**
- 6(4). Vertex with decumbent scales along longitudinal midline all broad . . . 7  
Vertex with decumbent scales along longitudinal midline all narrow curved . . . . . 8
- 7(6). Transverse silvered area of mesonotal disc not emarginate posteriorly (fig. 9); palpus 1 or 2 labellum lengths shorter than proboscis. Claspette filament not expanded distally (figs. 9,11) . . . . . 1. **thorntoni**  
Transverse silvered area of mesonotal disc emarginate posteriorly (fig. 13); palpus 4-7 labellum lengths shorter than proboscis. Claspette filament expanded distally (fig. 13) . . . . . 2. **argyrothorax**
- 8(6). Vertex with an area of broad, silver decumbent scales adjacent to narrow curved scales of median longitudinal line; mesonotal disc usually transversely silvered anteriorly, the silvered area usually reaching caudad of fossa (fig. 29) and not emarginate caudally . . . . . 9  
Vertex with or without this lateral area of broad decumbent scales, these dark when present; mesonotal disc transversely silvered or not, the silvered area not reaching caudad of fossa and emarginate caudally (fig. 17) . . . . . 11
- 9(8). Femur III without basal dark band or with incomplete band . . . 12a. **casali**  
Femur III with complete basal dark band . . . . . 10
- 10(9). *Ssp* scales present . . . . . 12. **insolitus**  
*Ssp* scales absent . . . . . (8) 12b. **berlini**
- 11(8). Mesonotal disc not transversely silvered . . . . . 12  
Mesonotal disc transversely silvered anteriorly . . . . . 13
- 12(11). Complete acrostichal line present (fig. 65) . . . . . 7. **Teresopolis form**  
Complete acrostichal line absent (fig. 15, Rio de Janeiro) . . . . . 4. **terrens**
- 13(11). Vertex with an area of broad decumbent scales adjacent to narrow curved scales of median longitudinal line . . . . . 5. **braziliensis**  
Vertex with all decumbent scales narrow curved . . . . . 6. **zavortinki**
- 14(1). Acrostichal setae absent . . . . . 15  
Acrostichal setae present . . . . . 17
- 15(14). Occiput with erect scales dark . . . . . 11. **meteocopus**  
Occiput with erect scales pale . . . . . 16

- 16(15). Palpal segment 3 without prominent tuft of setae, the setae at ventro-lateral apex shorter than segments 4 and 5 combined. Prosophaallus with lateral portion of mesal lobe usually moderately inclined, between  $15^{\circ}$  and  $30^{\circ}$  from horizontal; stems usually bowed and convergent (figs. 52,54,56). . . . . 25. *podographicus*  
 Palpal segment 3 with prominent tuft of setae as long as segments 4 and 5 combined. Prosophaallus with lateral portion of mesal lobe slightly inclined, about  $15^{\circ}$  or less from horizontal; stems not bowed, divergent or essentially parallel (fig. 58) . . . . . 26. *tehuantepec*
- 17(14). Femur II without or with narrow knee spot, the silver scales a single row at apex of segment; *ssp* scale patch absent . . . . . 18  
 Femur II with broad knee spot, the silver scales extending basad of anterior subapical setae; *ssp* scale patch present . . . . . 20
- 18(17). Femora I,II with well developed posterior patch of silver scales. Sidepiece with median sternomesal tuft poorly differentiated and the setae not wavy (figs. 48,50) . . . . . 24. *daryi*  
 Femora I,II without posterior patch of silver scales. Sidepiece with median sternomesal tuft well differentiated and the setae wavy (figs. 44,46) . . . . . 19
- 19(18). Prosophaallus with median lobe projecting farther cephalad than lateral lobe (fig. 44) . . . . . 22. *galindoi*  
 Prosophaallus with median lobe projecting to about same level as lateral lobe (fig. 46) . . . . . 23. *campana*
- 20(17). Median sternomesal area of sidepiece with sclerite and tuft well developed; hook of filament strongly angulate (figs. 35,37) . . . . . 21  
 Median sternomesal area of sidepiece with sclerite and tuft absent or poorly developed; hook of filament not strongly angulate (figs. 39,40,42) . . . . . 22
- 21(20). Palpus subequal in length to or slightly longer than proboscis. Basal tergomesal area of sidepiece without dense patch of long setae (fig. 35) . . . . . 17. *gabriel*  
 Palpus about 2 labellum lengths shorter than proboscis. Basal tergomesal area of sidepiece with dense patch of long setae (fig. 37) . . . . . 18. *idanus*
- 22(20). *Ssp* scale patch absent; complete acrostichal or posterior dorsocentral lines absent (fig. 40); tarsus 1-II with median dark band incomplete . . . . . 20. *vargasi*  
*Ssp* scale patch present; complete acrostichal or posterior dorsocentral lines present; tarsus 1-II with median dark band complete, about 0.33-0.4 . . . . . 23
- 23(22). Acrostichal line absent; posterior dorsocentral line complete (fig. 39); segment 3 of palpus with apical ventrolateral tuft not as long as segments 4 and 5 combined . . . . . 19. *sumidero*  
 Acrostichal line present, complete, sometimes weakly developed; posterior

dorsocentral line incomplete (fig. 42); segment 3 of palpus with apical ventrolateral tuft as long as segments 4 and 5 combined . 21. *heteropus*

## LARVAE

(3. *bertrami*, 9a. Chaco form, 16. *amabilis*  
and 19. *sumidero* unknown)

1. Hair 11-C subequal in length to 7-C . . . . . 7. *Teresopolis* form  
Hair 11-C much shorter than 7-C . . . . . 2
- 2(1). Hair 5-C usually with 4 or more branches (when fewer branches, only on 1  
side) *and/or* 14-P branched . . . . . 3  
Hair 5-C usually single or double, sometimes triple (when more branches,  
only on 1 side) *and* 14-P usually single (when rarely branched, only on  
1 side) . . . . . 9
- 3(2). Hair 5-VII cephalad of 4-VII . . . . . 10. *buenaventura*  
Hair 5-VII caudad of 4-VII . . . . . 4
- 4(3). Hairs 4-VII and 3-VI branched . . . . . 9. *alboapicus*  
Hair 4-VII single and 3-VI usually single (when rarely branched, only on  
1 side) . . . . . 5
- 5(4). Hair 2-II well mesad of 4-II (fig. 42); hair 14-P single . . . . . 6  
Hair 2-II mesad of 4-II for about only 1 alveolus width, often laterad of  
4-II (fig. 44); hair 14-P branched . . . . . 7
- 6(5). Hair 11-P less than half length of 14-P; hair 1-VIII shorter than 2-VIII;  
hair 6-C single or double; *bmh* single . . . . . 18. *idanus*  
Hair 11-P about half length of 14-P; hair 1-VIII usually at least subequal  
in length to 2-VIII; hair 6-C usually with more than 2 branches; *bmh*  
usually branched but often single . . . . . 21. *heteropus*
- 7(5). Hair 14-C usually with 3 or more branches; 1-A usually branched but of-  
ten single; free portion of apical scales ligulate, awl shaped or spatulate  
. . . . . 24. *daryi*  
Hair 14-C usually with fewer than 3 branches; 1-A usually single (when  
branched, only on 1 side); free portion of apical scales spatulate . . . 8
- 8(7). Comb scales 35-47, in 4 rows; free portion of midapical scale longer than  
sessile portion . . . . . 22. *galindoi*  
Comb scales 23-32, in 3 rows; free portion of midapical scale shorter than  
or subequal in length to sessile portion. . . . . 23. *campana*
- 9(2). Hair 7-C short, less than half length of 6-C; hair 11-C short, less than  
length of mentum . . . . . 10  
Hair 7-C more than half length of 6-C; hair 11-C longer than mentum . 11
- 10(9). Hair 8-S single; 2-A about 2.0 distal portion of 6-A; anal saddle extending  
less than halfway around segment (fig. 14) . . . . . 2. *argyrothorax*

- Hair 8-S multiple; 2-A about 3.0 or more length of distal portion of 6-A;  
anal saddle extending more than halfway around segment (figs. 10,12)  
. . . . . 1. *thorntoni*
- 11(9). Hairs 14-C and *bmh* usually basally branched, rarely single; 11-P usually  
at least 0.5 of 14-P . . . . . 12. *insolitus*; 12a. *casali*  
Hairs 14-C and *bmh* usually single, when double usually branching about  
0.25 or more from base; 11-P usually less than 0.5 of 14-P . . . . 12
- 12(11). Hair 4-VII at least double; 4-M and 3-III usually at least triple; hairs 10,  
12-VII often branched . . . . . 13  
Hair 4-VII usually single, rarely double; 4-M and 3-III with less than 3  
branches; 10,12-VII single . . . . . 15
- 13(12). Ventral brush usually with 12 hairs (11-13); hair 4a-X usually 6-8 branch-  
ed (5-9) (northern South America, Trinidad, Tobago) . (8) 12b. *berlini*  
Ventral brush usually with 14-16 hairs (13-17); hair 4a-X usually 10-12  
branched (9-15) where sympatric with *berlini* . . . . . 14
- 14(13). L/S 2.5-2.8 . . . . . 5. *braziliensis*  
L/S 2.0-2.4 . . . . . 4. *terrens*; 6. *zavortinki*
- 15(12). Saddle extending around segment to at most moderate distance beyond  
horizontal midline, submarginal slit absent, ventral margin either with  
broad rounded incision or irregular in outline (fig. 52) . . . . .  
. . . . . 11. *metoecopus*; 14. *homoeopus*  
. . . . . 16. *impostor*; 17. *gabriel*; 20. *vargasi*; 26. *podographicus*  
Saddle extending around segment far beyond horizontal midline, with  
ventral submarginal or marginal slit (figs. 59,60) . . . . . 16
- 16(15). Comb scales 33-54, in 4 rows, narrow (fig. 59) . . . . . 27. *tehuantepec*  
Comb scales 20-29, in 2-3 rows, stout (fig. 60) . . . . . 28. *schroederi*

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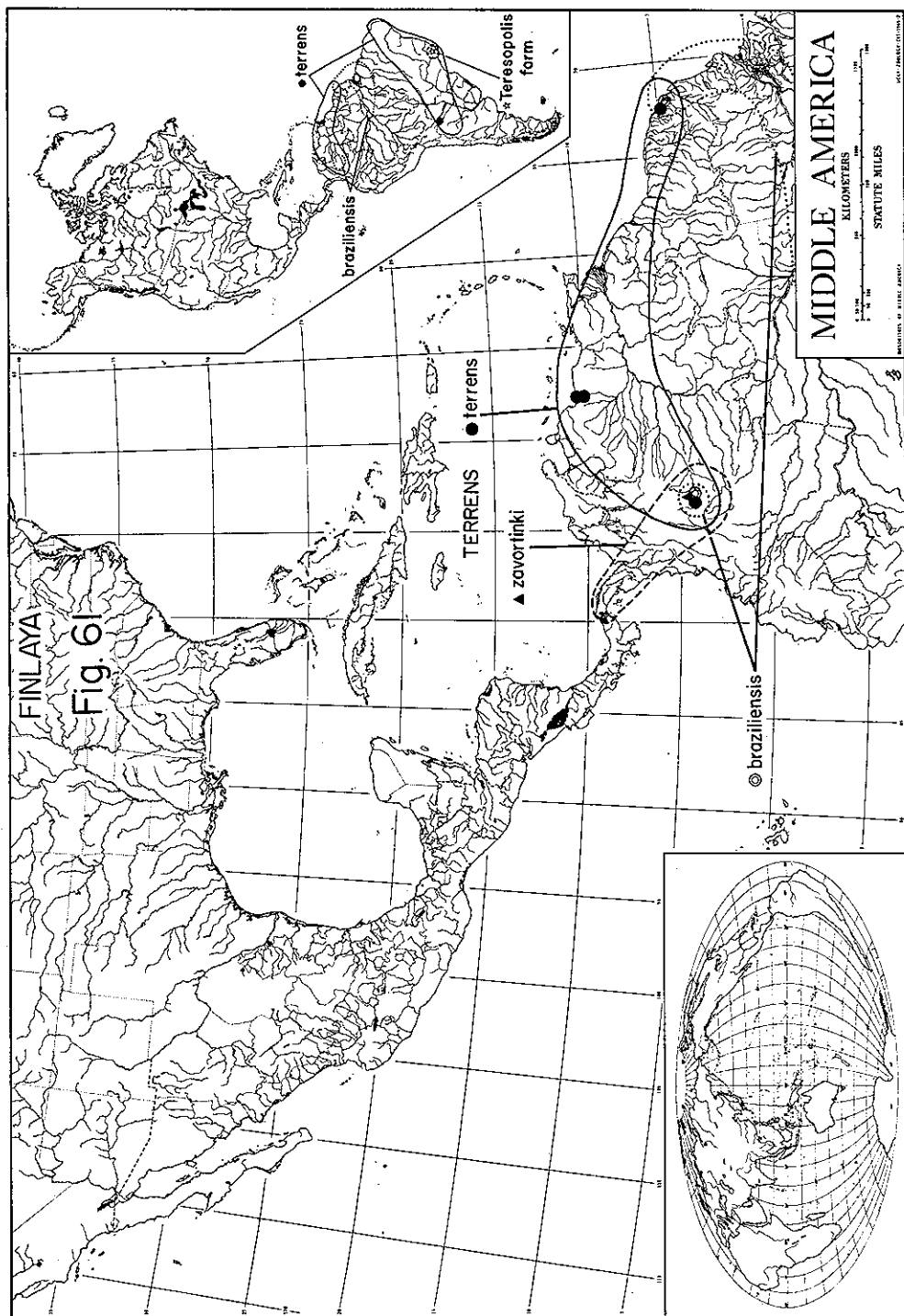
## FIGURES

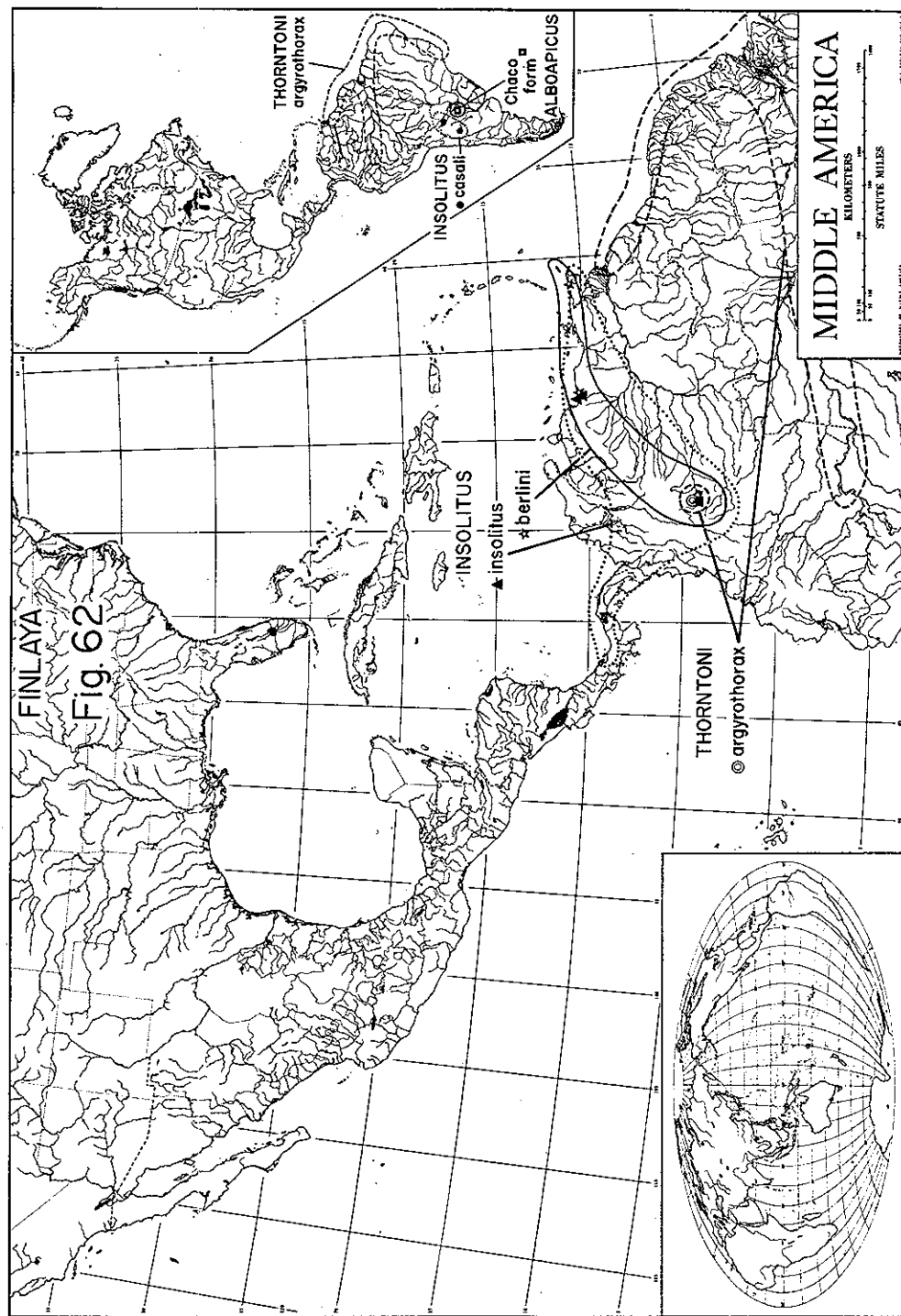
61. Distribution of the species of the Terrens Subgroup
62. Distribution of the species of the Thorntoni, Alboapicus and Insolitus Subgroups
63. *Aedes (F.) braziliensis*; female mesonotum, femur III and pupa. *Aedes (F.) sp., Chaco form*; female mesonotum and femur III. *Aedes (F.) berlini*; male mesonotum and genitalia
64. *Aedes (F.) braziliensis*; larva
65. *Aedes (F.) sp., Teresopolis form*; female and male mesonotum, femur III of female, male genitalia and pupa
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68. *Aedes (F.) casali*; larva

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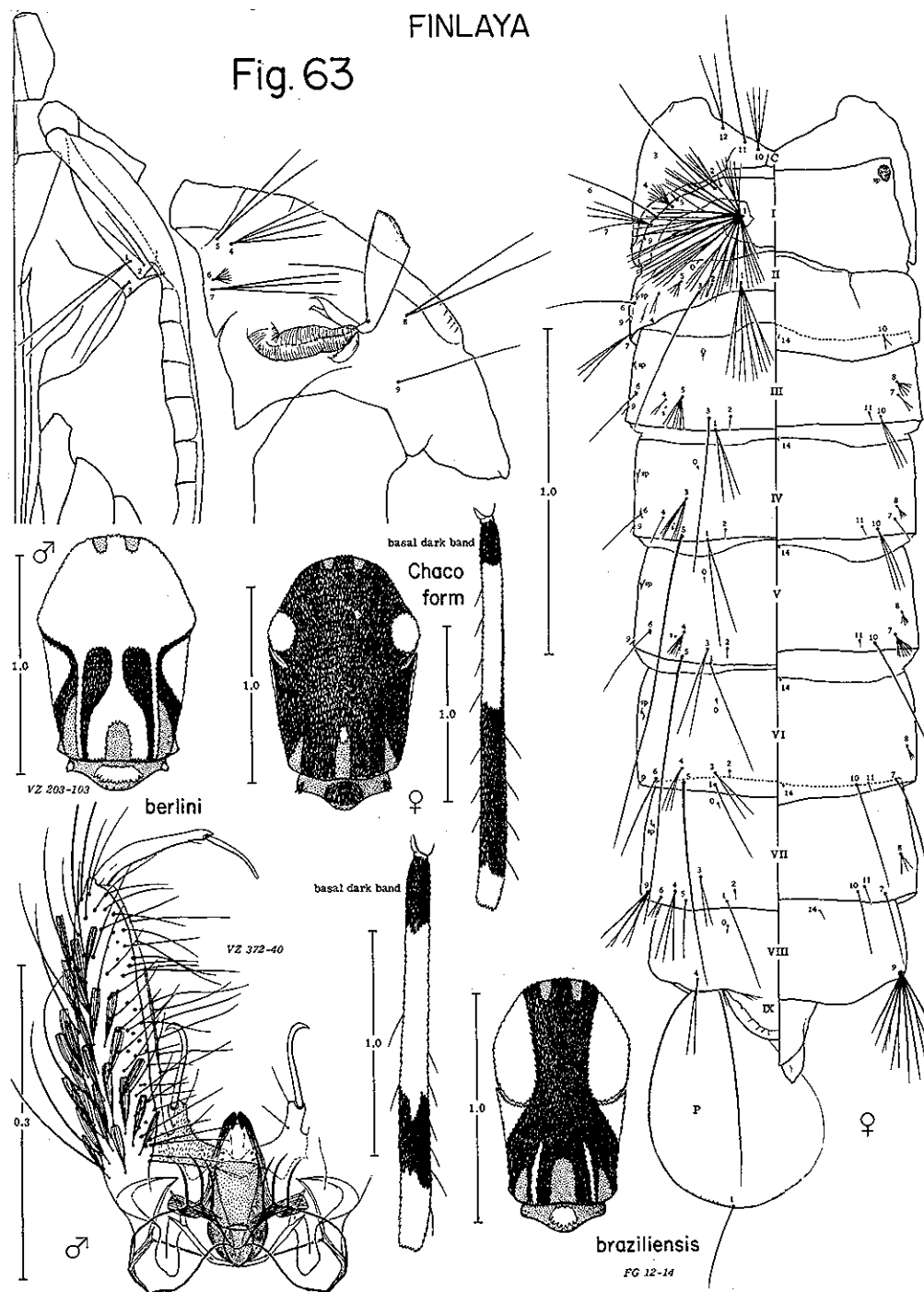
- |  |   |
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| Alboapicus Subgroup, 19, 20; 62f                       | Insolitus Subgroup, 13, 14, 15, 16, 20, 23; 62f |
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| Chaco form, 19-20; 62f, 63f                            | zavortinki, 14, 15, 17, 18, 18; 61f             |





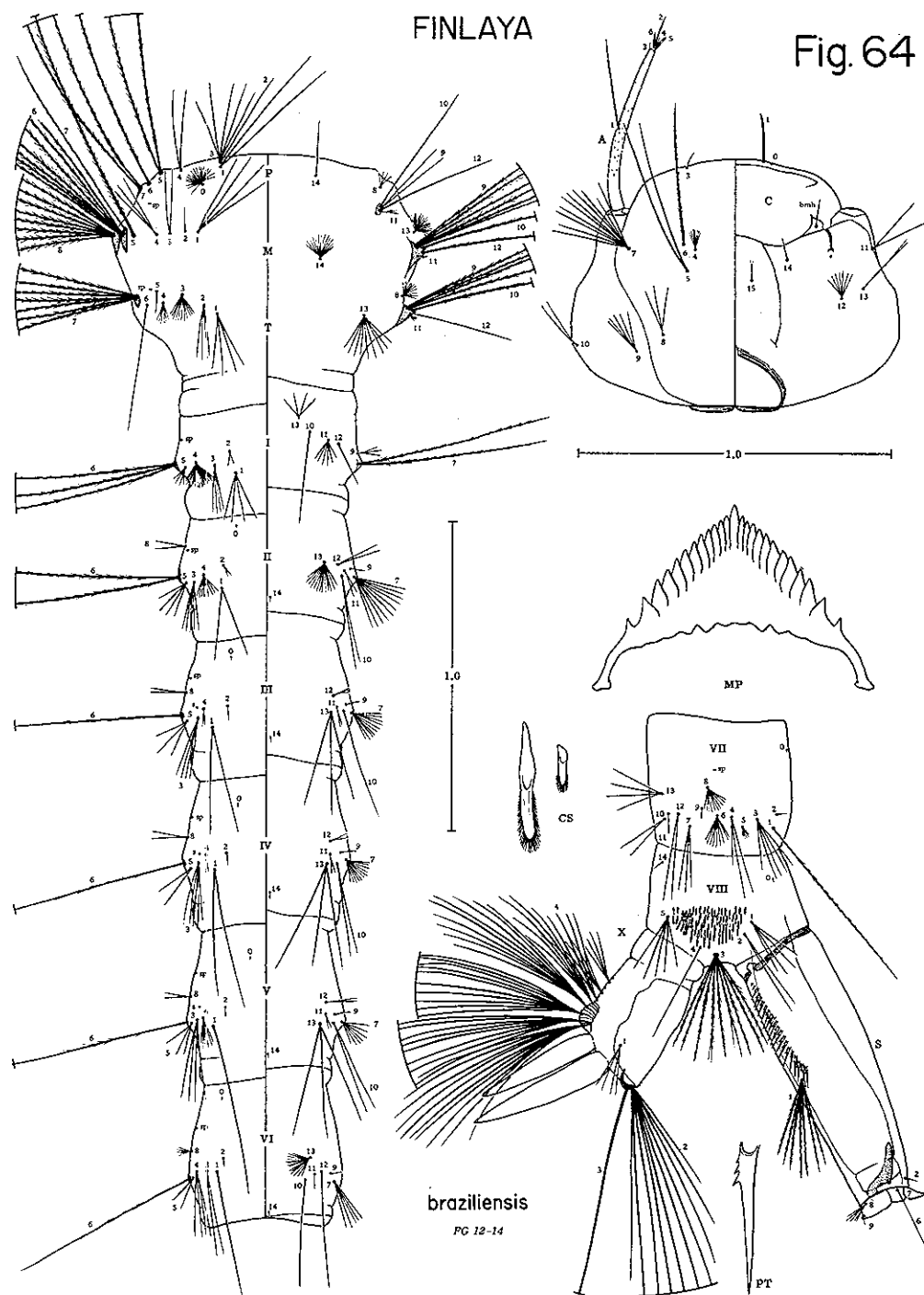
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Fig. 63



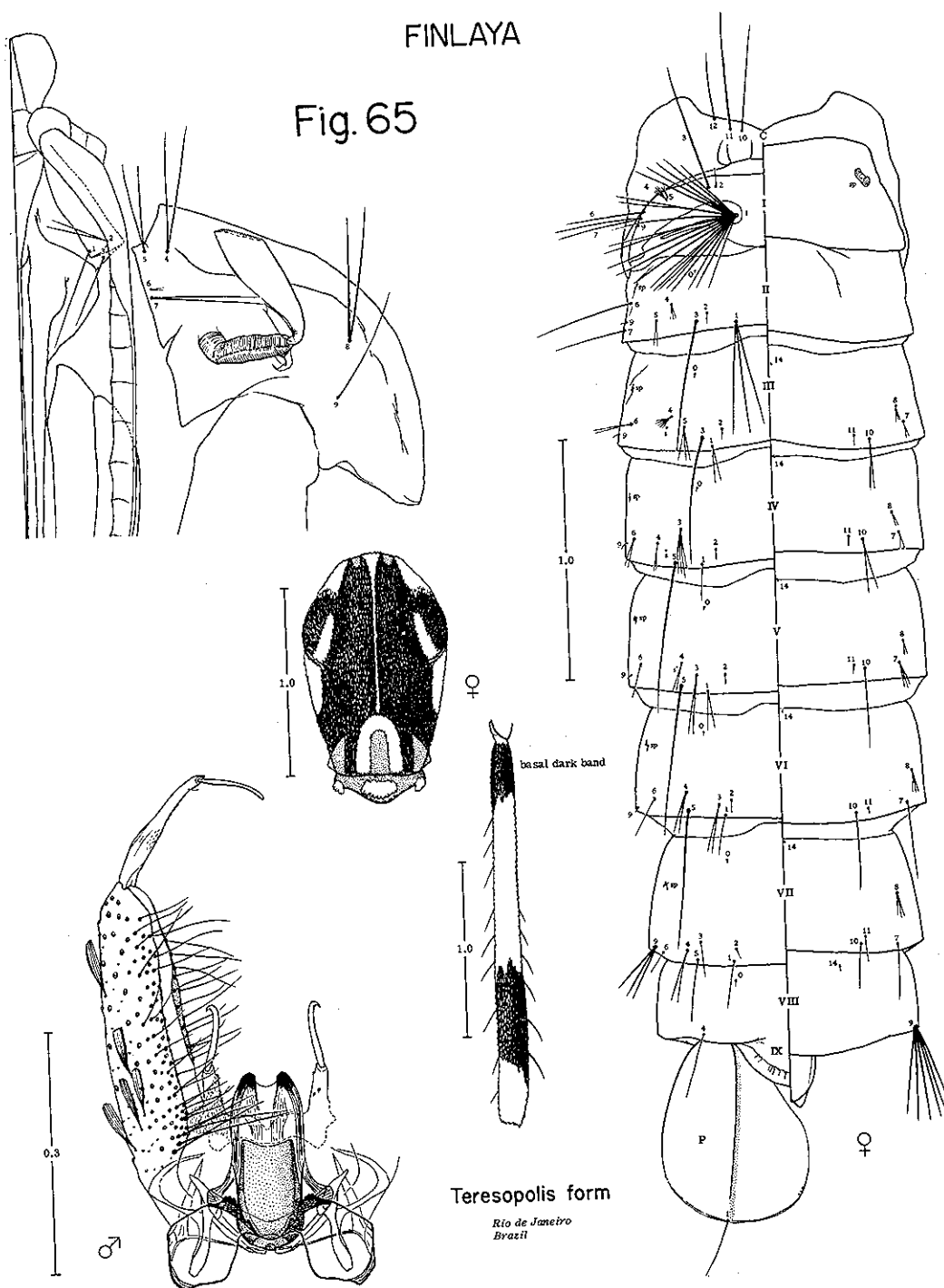
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Fig. 64



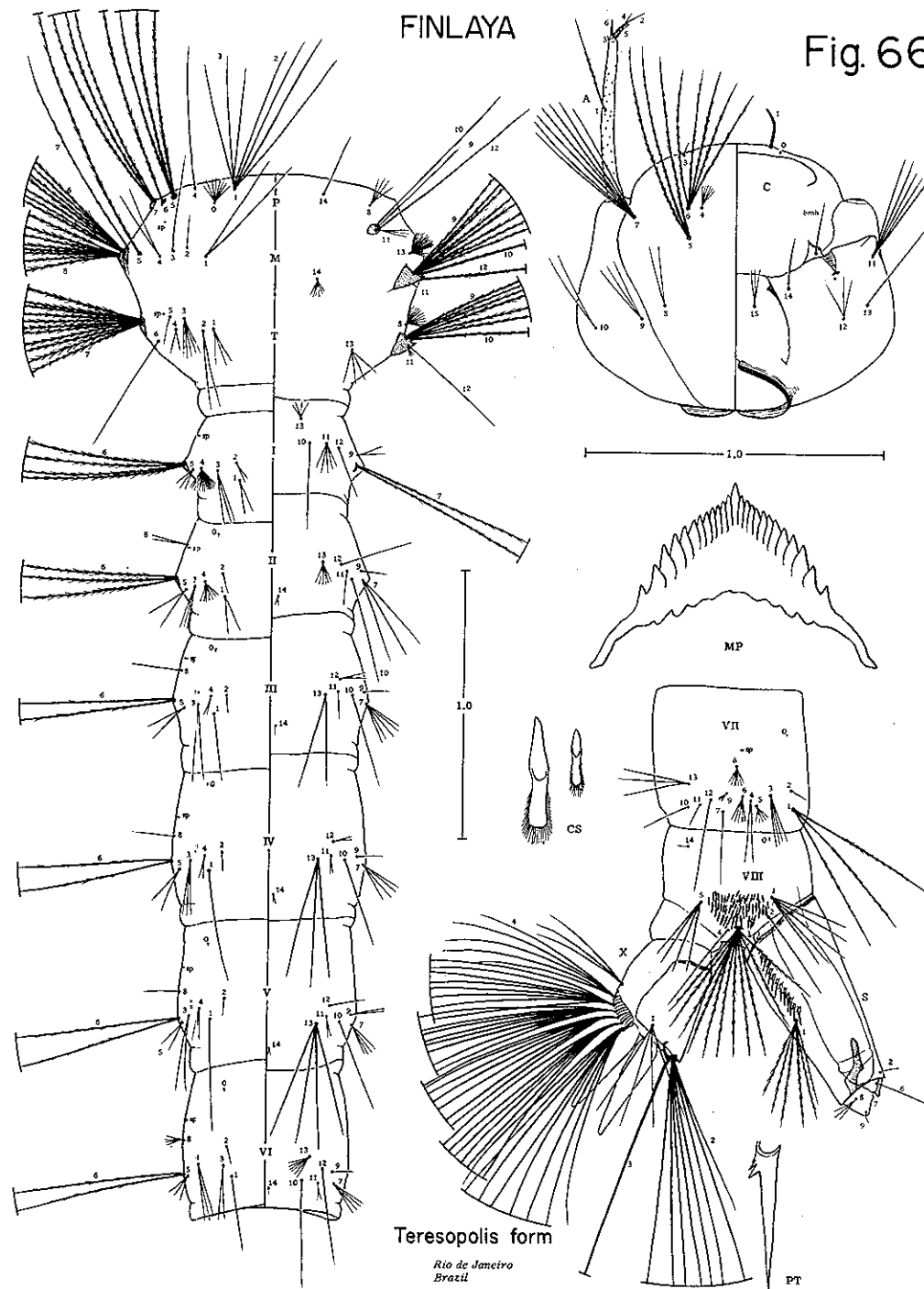
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Fig. 65



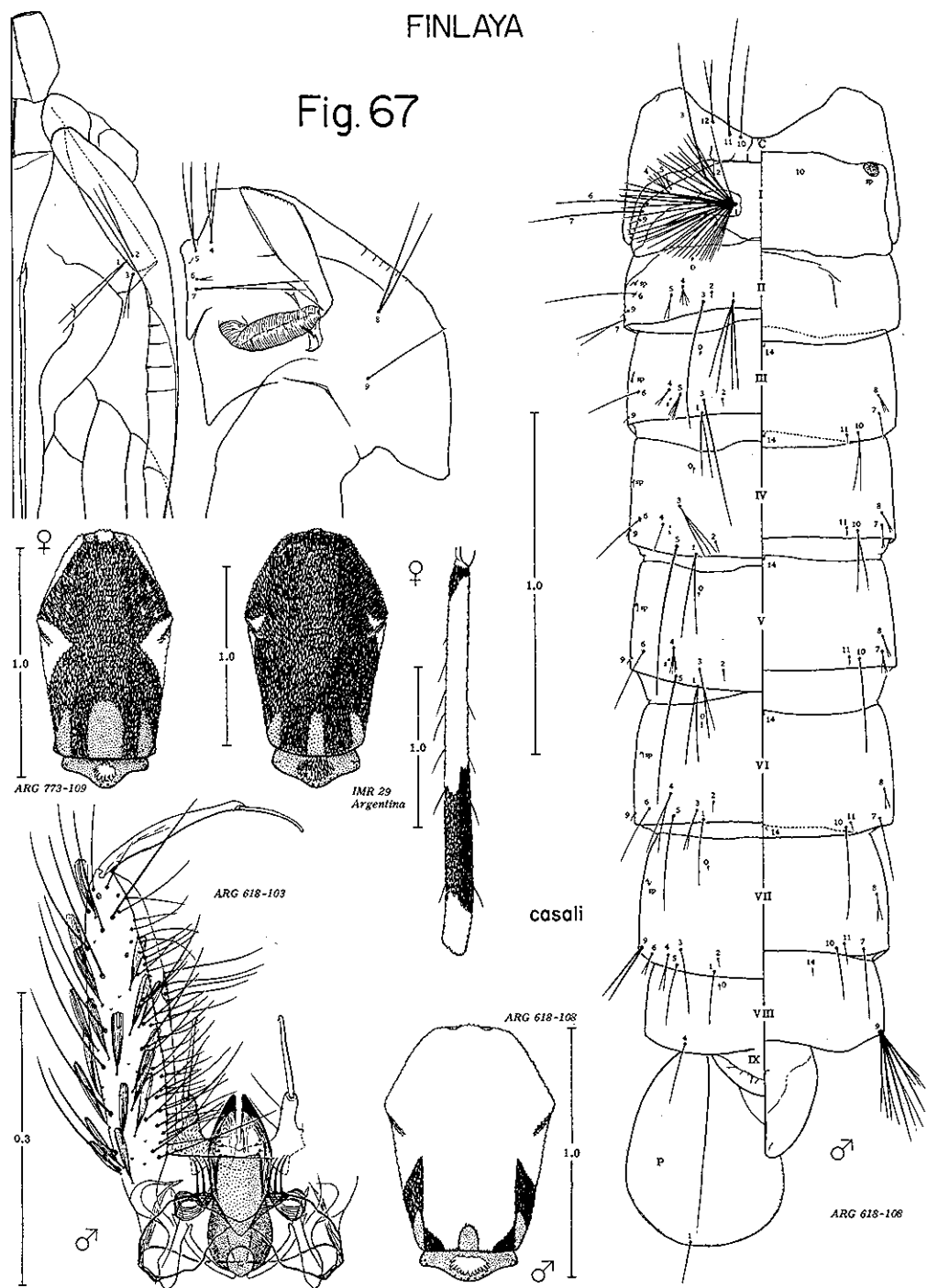
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Fig. 66



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Fig. 67



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Fig. 68

