



## A Pictorial Key to the Mosquito Genera of the World, including Subgenera of *Aedes* and *Ochlerotatus* (Diptera: Culicidae)

Yiau–Min Huang

Department of Systematic Biology, Entomology Section, MRC 534,  
Smithsonian Institution, Washington, D.C. 20560–0534, U.S.A.  
E–mail: huang.yiau–min@nmnh.si.edu

**Abstract** A pictorial key is presented for the identification of adult mosquitoes of 2 subfamilies of Culicidae, 2 genera of Anophelinae, 38 genera of Culicinae, 22 subgenera of *Aedes* and 20 subgenera of *Ochlerotatus*. Scanning electron micrographs (SEM) demonstrate the taxonomic characters used in the key.

**Key words** Pictorial key, identification, subfamilies, genera, mosquitoes, subgenera of *Aedes* and *Ochlerotatus*

---

### INTRODUCTION

A recent key for the identification of 40 mosquito genera (and subgenera of *Aedes* and *Ochlerotatus*) of the world is not available and previous keys are now out of date or of limited use. In the early 1970s, Mattingly (1971) published a comprehensive, illustrated key to the genera of mosquitoes of the world that included 32 genera. Since then, two keys to the mosquito genera of the world CD–ROM were published by Harbach and Sandlant (1997), and by Rueda et al. (1998). Each key included 38 genera.

To assist field workers in identifying mosquitoes, a pictorial key to adults (males and females) has been prepared. This key includes: (1) Family Culicidae (Key to subfamilies of Culicidae), (2) Subfamily Anophelinae (Key to genera of Anophelinae), and (3) Subfamily Culicinae (Key to genera of Culicinae including subgenera of genus *Aedes* Meigen and the genus *Ochlerotatus* Lynch Arribalzaga). An attempt was made to make the key precise yet as simple as possible. A few additional characters, indicated by a double asterisk (\*\*), were added wherever necessary to facilitate identification.

Figs 1–9 illustrate structures of the adult head, thorax, abdomen, leg and wing that are used in the key. The terminology follows Harbach and Knight (1980, 1982), with the exception of “tarsal claws,” which is retained for “ungues.” The venational terms follow those of Belkin (1962).

Knight and Stone (1977), in their world catalog of mosquitoes, classified the family Culicidae into 3 subfamilies: Anophelinae, Culicinae and Toxorhynchitinae. However, based on a phylogenetic analysis of the Culicidae, Harbach and Kitching (1998) reduced the subfamily status of Toxorhynchites and treated it as a tribe of Culicinae. Thus, the family Culicidae now consists of 2 subfamilies: Anophelinae and Culicinae. Other changes at the generic level since Harbach and Kitching (1998) are as follows: (1) Based on a cladistic analysis of Sabethini (Judd 1996, 1998), *Phoniomyia* Theobald was reduced to a subgenus in

**Table 1.** Current classification of the family Culicidae

Subfamily	Genus	Subfamily	Genus
1. Anophelinae	1. <i>Anopheles</i> Meigen		21. <i>Mansonia</i> Blanchard
	2. <i>Chagasia</i> Cruz		22. <i>Maorigoeldia</i> Edwards
2. Culicinae	3. <i>Aedeomyia</i> Theobald		23. <i>Mimomyia</i> Theobald
	4. <i>Aedes</i> Meigen		24. <i>Ochlerotatus</i> Lynch Arribalzaga
	5. <i>Armigeres</i> Theobald		25. <i>Onirion</i> Peyton and Harbach
	6. <i>Ayurakitia</i> Thurman		26. <i>Opifex</i> Hutton
	7. <i>Coquillettidia</i> Dyar		27. <i>Orthopodomyia</i> Theobald
	8. <i>Culex</i> Linnaeus		28. <i>Psorophora</i> Robineau-Desvoidy
	9. <i>Culiseta</i> Felt		29. <i>Runchomyia</i> Theobald
	10. <i>Deinocerites</i> Theobald		30. <i>Sabethes</i> Robineau-Desvoidy
	11. <i>Eretmapodites</i> Theobald		31. <i>Shannoniana</i> Lane and Cerqueira
	12. <i>Ficalbia</i> Theobald		32. <i>Topomyia</i> Leicester
	13. <i>Galindomyia</i> Stone and Barreto		33. <i>Toxorhynchites</i> Theobald
	14. <i>Haemagogus</i> Williston		34. <i>Trichoprosopon</i> Theobald
	15. <i>Heizmannia</i> Ludlow		35. <i>Tripteroides</i> Giles
	16. <i>Hodgesia</i> Theobald		36. <i>Udaya</i> Thurman
	17. <i>Isostomyia</i> Coquillett		37. <i>Uranotaenia</i> Lynch Arribalzaga
	18. <i>Johnbelkinia</i> Zavortink		38. <i>Verrallina</i> Theobald
	19. <i>Limatus</i> Theobald		39. <i>Wyeomyia</i> Theobald
	20. <i>Malaya</i> Leicester		40. <i>Zeugomyia</i> Leicester

*Wyeomyia* Theobald, (2) *Verrallina* Theobald was restored to generic rank from a subgenus of *Aedes* (Reinert 1999), (3) Based on a phylogenetic analysis of Anophelinae (Sallum et al. 2000), *Bironella* Theobald was synonymized with *Anopheles* Meigen, (4) *Onirion* was described as a new genus of Sabethini (Harbach and Peyton 2000), (5) *Ayurakitia* Thurman was restored to generic rank from a subgenus of *Aedes* (Reinert 2000a), (6) Based on a cladistic analysis of the larval mouthparts, *Deinocerites* Theobald was reduced to subgeneric status in *Culex* Linnaeus (Navarro and Liria 2000), but for the present work, I retain the generic status of *Deinocerites*, and (7) *Ochlerotatus* Lynch Arribalzaga was elevated to generic rank from a subgenus of *Aedes* (Reinert 2000b). Thus, 40 genera are currently recognized in the family Culicidae. The 2 subfamilies with their constituent genera are indicated in Table 1.

Reinert (2000b), in his new classification of the composite genus *Aedes*, divided the genus into 2 genera: *Aedes* and *Ochlerotatus*. Reinert (2000b: 177) stated "No apparent consistent differences in adult habitus were noted for the 2 genera." He included 22 subgenera in *Aedes* and 21 subgenera in *Ochlerotatus*, but provided no definition of the 2 genera using adult morphology. As a result, we now have 2 composite genera, *Aedes* and *Ochlerotatus*. The 2 composite genera with their constituent subgenera are indicated in Table 2.

It should be noted that Reinert (2000b: 181) erroneously reported "The gonostylar claw is absent in *Ae. (Stegomyia) desmotes* (Giles) and...." However, Huang (1977a: 28, Fig. 14C) stated "distimere simple, elongate, 0.7 as long as basimere; with numerous short setae and a short spiniform process on subapical inner side and with several long apical setae." There should be no doubt that the gonostylar claw is present in the typical *desmotes* (Giles).

Dyar and Knob (1907: 12) described *Aedes hortator*, a new species from Trinidad. Later Dyar (1922, 1928) placed this species in the subgenus *Ochlerotatus*. Edwards (1932), in his "Genera Insectorum," divided the subgenus *Ochlerotatus* into 8 groups which he designated A through H. Edwards assigned *Aedes hortator* Dyar and Knab to his Group F (*scapularis*

**Table 2.** Current new classification of the two composite genera *Aedes* and *Ochlerotatus*

Genus	Subgenus	Genus	Subgenus
1. <i>Aedes</i>	1. <i>Aedes</i> Meigen	2. <i>Ochlerotatus</i>	1. <i>Abraedes</i> Zavortink
	2. <i>Aedimorphus</i> Theobald		2. <i>Aztecaedes</i> Zavortink
	3. <i>Alanstonea</i> Mattingly		3. <i>Chaetocruimyia</i> Theobald
	4. <i>Albuginosus</i> Reinert		4. <i>Finlaya</i> Theobald
	5. <i>Belkinius</i> Reinert		5. <i>Geoskusea</i> Edwards
	6. <i>Bothaella</i> Reinert		6. <i>Gymnometopa</i> Coquillett
	7. <i>Canraedes</i> Edwards		7. <i>Halaedes</i> Belkin
	8. <i>Christophersomyia</i> Barraud		8. <i>Howardina</i> Theobald
	9. <i>Diceromyia</i> Theobald		9. <i>Kenknightia</i> Reinert
	10. <i>Edwardsaedes</i> Belkin		10. <i>Kompia</i> Aitken
	11. <i>Fredwardsius</i> Reinert		11. <i>Levua</i> Stone and Bohart
	12. <i>Huaedes</i> Huang		12. <i>Macleaya</i> Theobald
	13. <i>Indusius</i> Edwards		13. <i>Molpemyia</i> Theobald
	14. <i>Isoaedes</i> Reinert		14. <i>Mucidus</i> Theobald
	15. <i>Leptosomatomyia</i> Theobald		15. <i>Nothoskusea</i> Dumbleton
	16. <i>Lorrainea</i> Belkin		16. <i>Ochlerotatus</i> Lynch Arribalzaga
	17. <i>Neomelaniconion</i> Newstead		17. <i>Protomacleaya</i> Theobald
	18. <i>Paraedes</i> Edwards		*18. <i>Pseudoskusea</i> Theobald
	19. <i>Pseudarmigeres</i> Stone and Knight		19. <i>Rhinoskusea</i> Edwards
	20. <i>Scutomyia</i> Theobald		20. <i>Rusticoides</i> Shevchenko and Prudkina
	21. <i>Skusea</i> Theobald		21. <i>Zavortinkius</i> Reinert
	22. <i>Stegomyia</i> Theobald		

\*Specimens of this subgenus are not available to me. Thus, the subgenus *Pseudoskusea* is not included in this key

group). Using this key, users will find that *Ae. hortator* is not in *Ochlerotatus*. The taxonomic status of this species will be treated in a separate paper (M.A.M. Sallum, personal communication).

Cornet (1974: 175) described *Aedes cozi*, a new species from Eastern Senegal, and placed it in the subgenus *Stegomyia*. Huang (2001) indicated that *Ae. cozi* Cornet is not in *Stegomyia*. The taxonomic status of this species will be treated in a separate paper.

*Wyeomyia* (*Davisomyia*) *petrocchiae* (Shannon and del Ponte) was transferred from the genus *Wyeomyia* to the genus *Sabethes* Robineau-Desvoidy by Harbach and Peyton (1991). However, *petrocchiae* has anteprenotal lobe without a conspicuous apicomesal angle (see P. 103, 104). Based on this diagnostic character in adults, *petrocchiae* should not have been considered a species of *Sabethes*. I hereby transfer *petrocchiae* back to *Wyeomyia*.

*Sabethes schnusei* (Martini) has anteprenotal lobe with a conspicuous apicomesal angle (see P. 103, 104). Based on this diagnostic character in adults, *schnusei* can be considered a species of the genus *Sabethes*. Harbach (1991) transferred *schnusei* from the genus *Wyeomyia* to the genus *Sabethes*. The generic placement is confirmed.

This study is based on specimens from the mosquito collections of the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM) and upon specimens that were received as gifts from the individual mentioned in the acknowledgments section. Susann G. Braden (SEM Laboratory, National Museum of Natural History, Smithsonian Institution) prepared pinned adults for scanning electron microscopy using standard procedures. Images of diagnostic characters directly taken from specimens using scanning electron microscopy are provided. Line drawings of certain diagnostic characters are given when specimens are not available using scanning electron microscopy for images. The "cut-off" date is September

2001, and changes in taxonomic status since then are not included.

## ACKNOWLEDGMENTS

I wish to express my sincere appreciation and gratitude to: Mr. Scott D. Whittaker and Mrs. Susann G. Braden, SEM Laboratory, National Museum of Natural History, Smithsonian Institution, for access to and assistance with a scanning electron microscope while conducting this study; to Dr. Wayne N. Mathis, Department of Systematic Biology, Entomology Section, Smithsonian Institution, Drs. Richard C. Wilkerson and Leopoldo M. Rueda, Walter Reed Biosystematics Unit (WRBU) and Dr. Maria Anice Mureb Sallum, University of São Paulo, São Paulo, Brazil, for critically reviewing this manuscript and for their valuable comments.

I am most grateful to Dr. Maria Anice Mureb Sallum, University of São Paulo, São Paulo, Brazil, for the generous gifts of several Sabethini specimens used in this study.

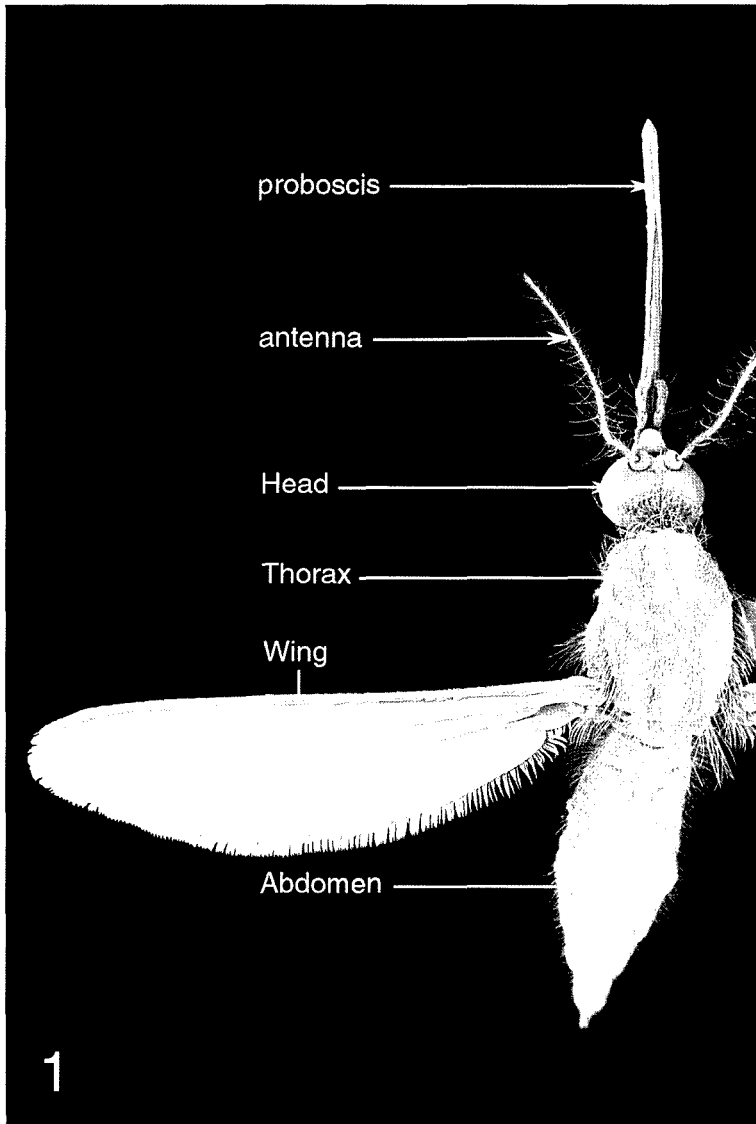
## REFERENCES

- Belkin, J.N. 1962. The mosquitoes of the South Pacific (Diptera, Culicidae). University of California Press, Berkeley and Los Angeles. 2 vols., 608 and 412 pp.
- Cornet, M. 1974. *Aedes (Stegomyia) cozi* n. sp., une nouvelle espece de Culicidae au Senegal. Cahiers de Office de la Recherche Scientifique et Technique Outre-Mer Serie Entomologie Medicale et Parasitologie 11(1973): 175–180.
- Dyar, H.G. and F. Knab. 1907. Descriptions of some American mosquitoes. Journal of the New York Entomological Society. 15: 9–13.
- Dyar, H.G. 1922. The American *Aedes* of the *serratus* group (Diptera, Culicidae). Insector Inscitiae Menstruus. 10: 157–166.
- Dyar, H.G. 1928. The mosquitoes of the Americas. Carnegie Institution of Washington Publication No. 387, 616 pp., 123 pls. + Errata and Addend. Washington, D.C.
- Edwards, F.W. 1932. Diptera. Family Culicidae. In Wytzman, P. Genera Insectorum, Desmet–Verteneuil, Brussels, Fasc. 194, 258 pp., 5pl.
- Harbach, R.E. 1991. Neotype designation, generic realignment and description of *Dendromyia schnusei* Martini (Diptera: Culicidae). Mosquito Systematics 23(3): 175–181.
- Harbach, R.E. and K.L. Knight. 1980. Taxonomists' glossary of mosquito anatomy. Plexus Publishing, Inc., Marlton, New Jersey. 415 pp.
- Harbach, R.E. and K.L. Knight. 1982. Corrections and additions to taxonomists' glossary of mosquito anatomy. Mosquito Systematics (1981) 13: 201–217.
- Harbach, R.E. and I.J. Kitching. 1998. Phylogeny and classification of the Culicidae (Diptera). Systematic Entomology 23: 327–370.
- Harbach, R.E. and E.L. Peyton. 1991. Transfer of the subgenus *Davismyia* from *Wyeomyia* to *Sabethes* and description of the type species, *Miomyia petrocchia* (Diptera: Culicidae). Mosquito Systematics (1990) 22(3): 149–159.
- Harbach, R.E. and E.L. Peyton. 2000. Systematics of *Onirion*, a new genus of sabethini (Diptera: Culicidae) from the Neotropical Region. Bulletin of the Natural History Museum, London (Ent.) 69(2): 115–169.
- Harbach, R.E. and G.R. Sandlant. 1997. CABIKEY mosquito genera of the world. Windows CD-ROM. CAB International, Wallingford, England.
- Huang, Y.M. 1977a. Medical entomology studies. VII. The subgenus *Stegomyia* of *Aedes* in Southeast Asia. II.– The *edwardsi* group of species. III.– The *w-albus* group of species. (Diptera: Culicidae). Contributions of the American Entomological Institute (Ann Arbor). 14(1): 1–111.
- Huang, Y.M. 2001. A pictorial key for the identification of the subfamilies of Culicidae, genera of Culicinae, and subgenera of *Aedes* mosquitoes of the Afrotropical Region (Diptera: Culicidae) Proceedings of the Entomological Society of Washington 103(1): 1–53.
- Judd, D.D. 1996. Review of the systematics and phylogenetic relationships of the Sabethini (Diptera:

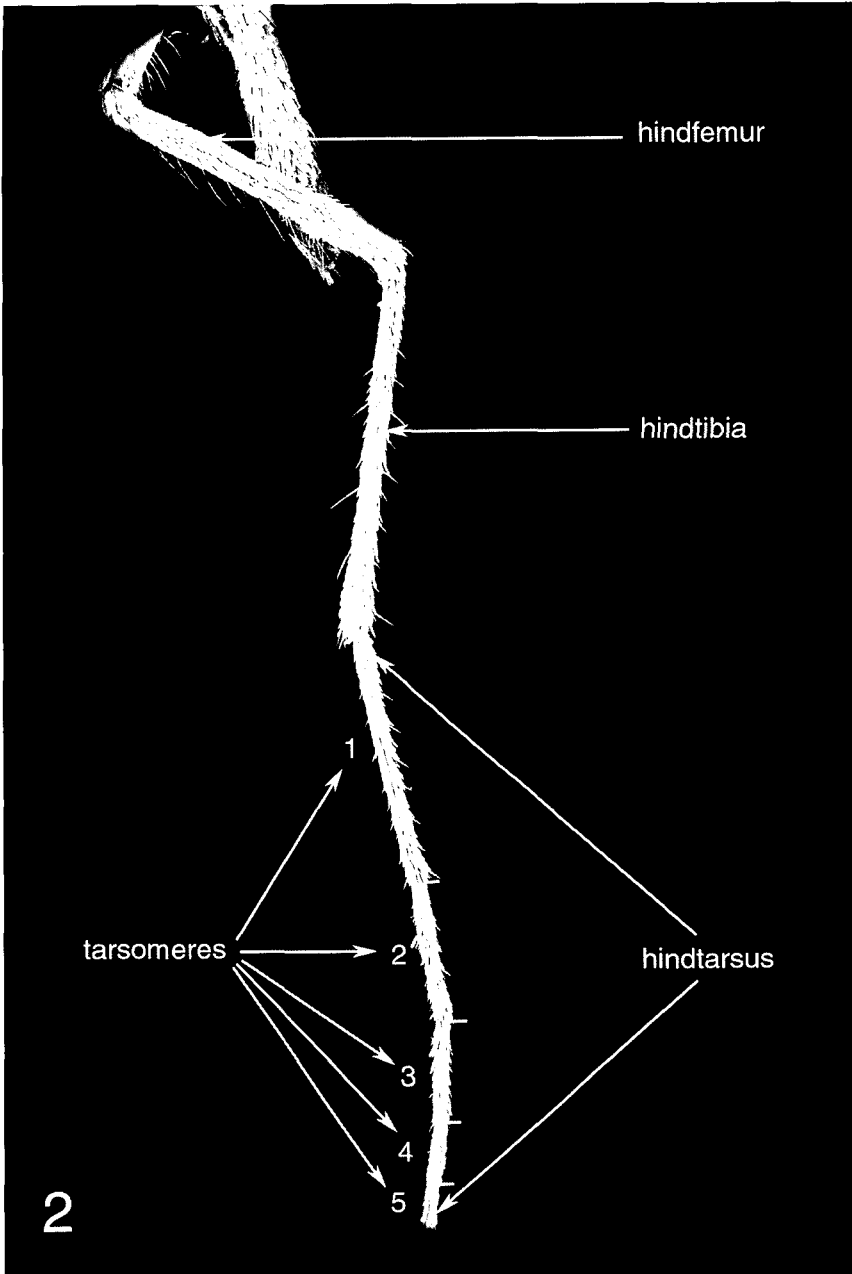
- Culicidae) *Systematic Entomology* 21(2): 129–150.
- Judd, D.D. 1998. Review of a bromeliad-ovipositing lineage in *Wyeomyia* and the resurrection of *Hystatomyia* (Diptera: Culicidae). *Annals of the Entomological Society of America* 91(5): 572–589.
- Knight, K.L. and A. Stone. 1977. A catalog of the mosquitoes of the world (Diptera: Culicidae), Second edition. Thomas Say Foundation, Entomological Society of America. Vol. 6, 611 pp.
- Mattingly, P.F. 1971. Contributions to the mosquito Fauna of Southeast Asia. XII. Illustrated keys to the genera of mosquitoes (Diptera, Culicidae). *Contributions of the American Entomological Institute (Ann Arbor)*. 7(4): 1–84.
- Navarro, J.-C. and J. Liria. 2000. Phylogenetic relationships among eighteen Neotropical Culicini species. *Journal of the American Mosquito Control Association* 16(2): 75–85.
- Reinert, J.F. 1999. Restoration of *Verrallina* to generic rank in tribe Aedini (Diptera: Culicidae) and descriptions of the genus and three included subgenera. *Contributions of the American Entomological Institute (Gainesville)* 31(3): 1–83.
- Reinert, J.F. 2000a. Restoration of *Ayurakitia* to generic rank in tribe Aedini and a revised definition of the genus. *Journal of the American Mosquito Control Association* 16(2): 57–65.
- Reinert, J.F. 2000b. New classification for the composite genus *Aedes* (Diptera: Culicidae: Aedini), elevation of subgenus *Ochlerotatus* to generic rank, reclassification of the other subgenera, and notes on certain subgenera and species. *Journal of the American Mosquito Control Association* 16(3): 175–188.
- Rueda, L.M., S.A. Stockwell, J.E. Pecor and T.V. Gaffigan. 1998. Key to the mosquito genera of the world. In Thompson, F.C. (ed.), *The Diptera Data Dissemination Disk – Volume One*. The North American Dipterists Society, Washington, D.C.
- Sallum, M.A.M., T.R. Schultz and R.C. Wilkerson. 2000. Phylogeny of Anophelinae (Diptera: Culicidae) based on morphological characters. *Annals of the Entomological Society of America* 93(4): 745–775.

(Received: January 15, 2002, Accepted: March 5, 2002)

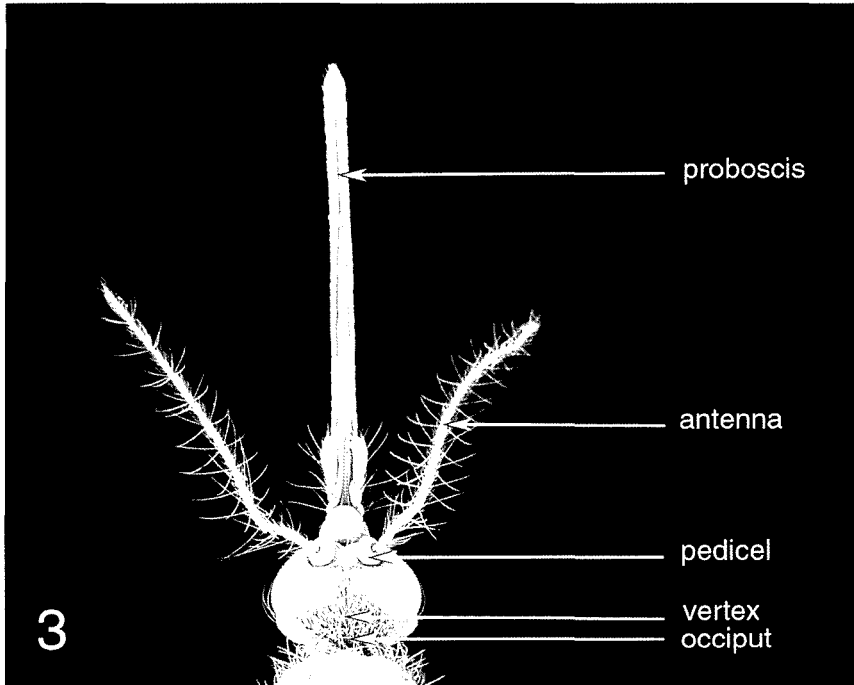
MORPHOLOGICAL FEATURES USED IN IDENTIFICATION



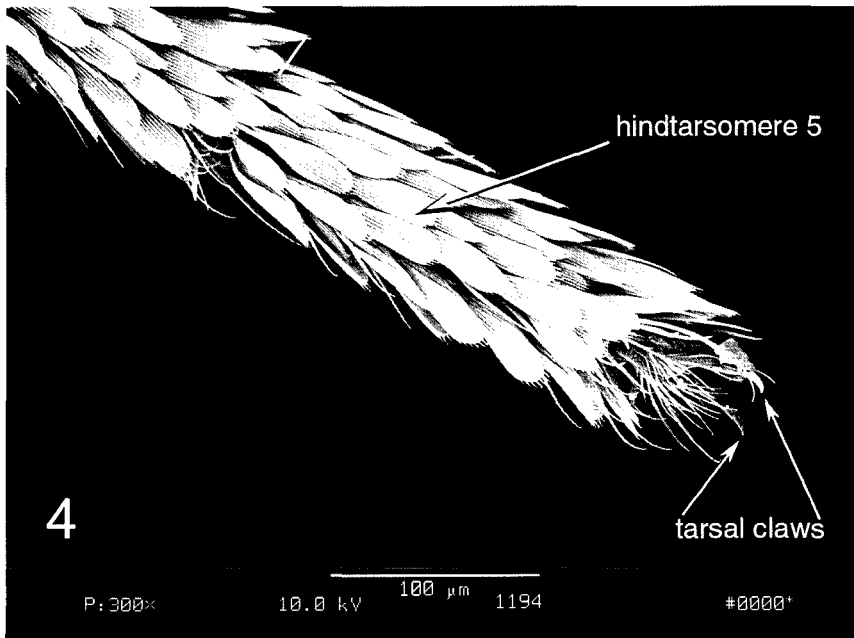
ADULT



HINDLEG

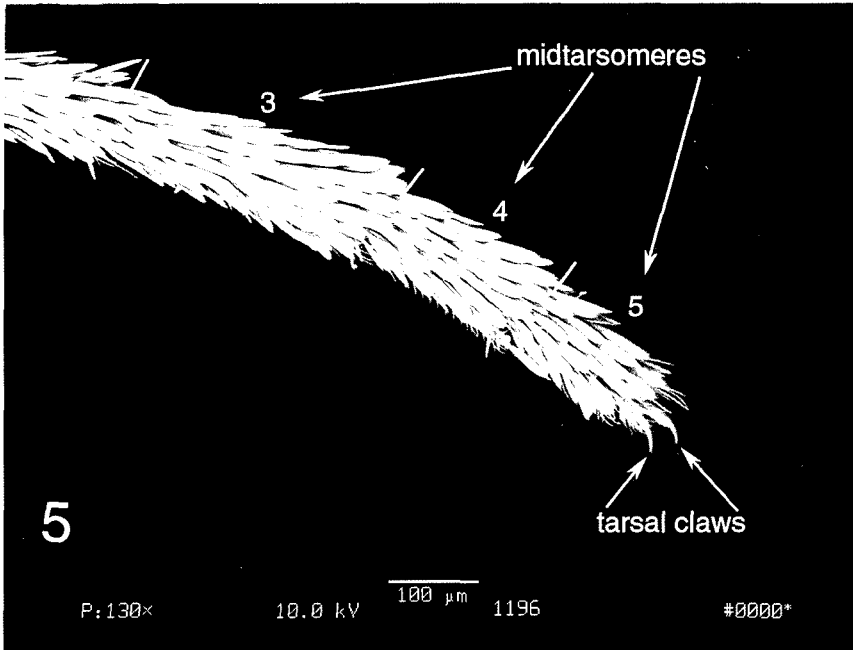


HEAD - DORSAL

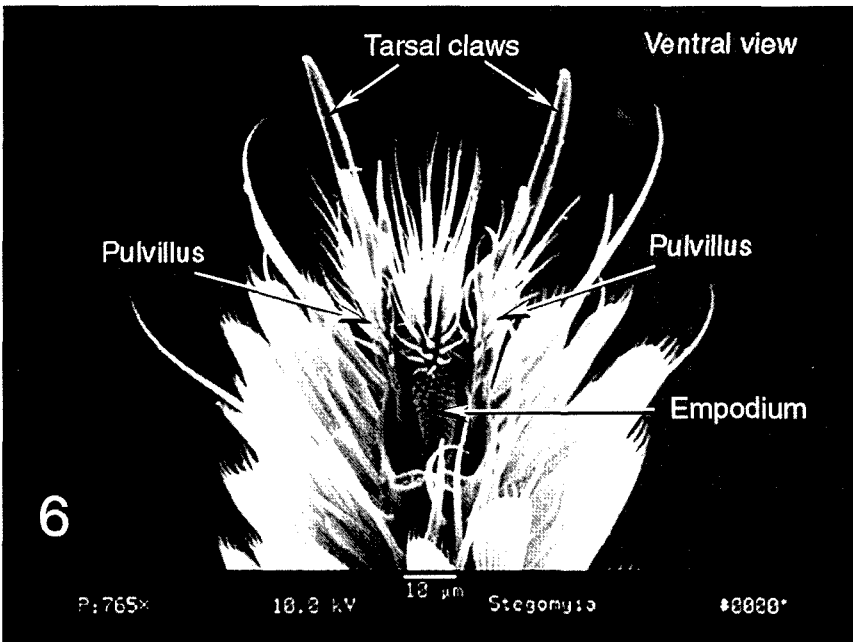


HINDTARSOMERE 5 WITH TARSAL CLAWS

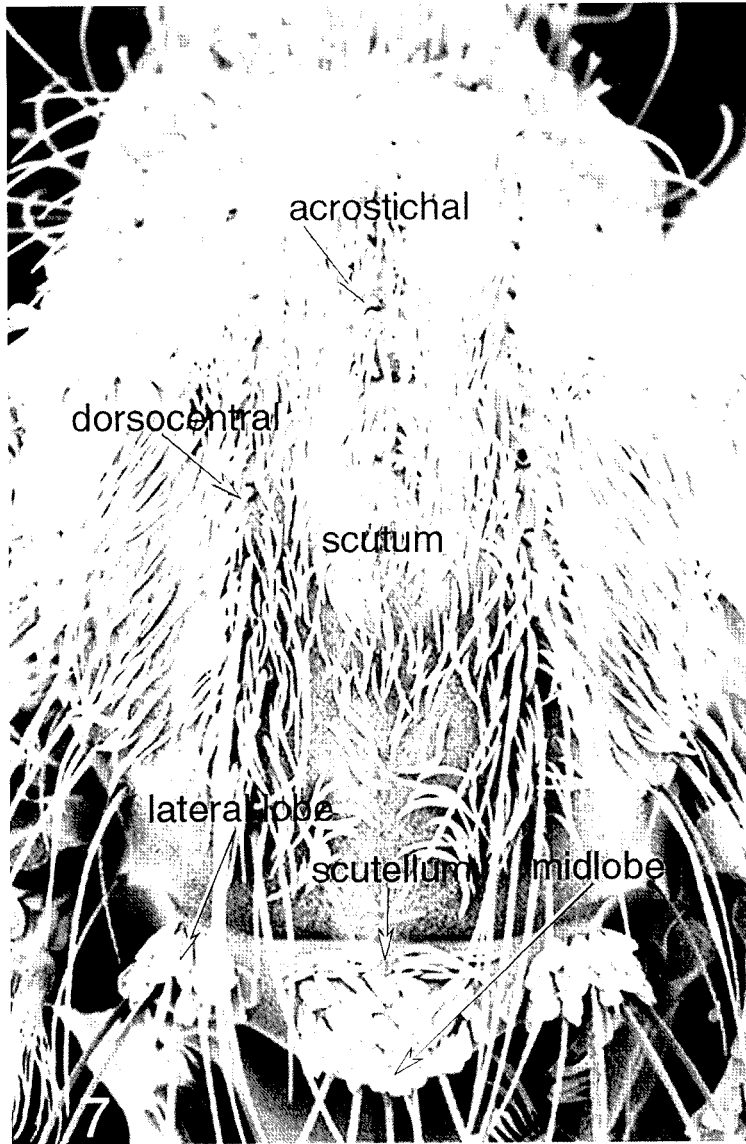




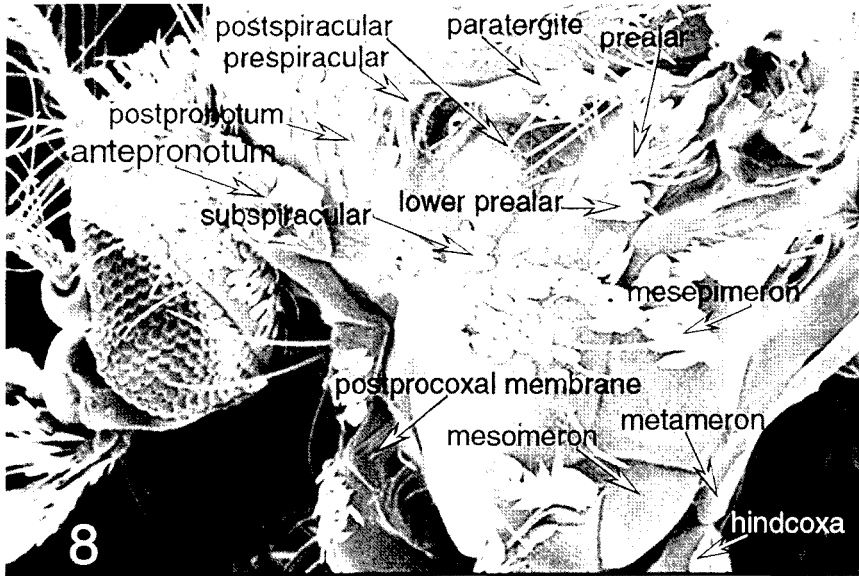
MIDLEG



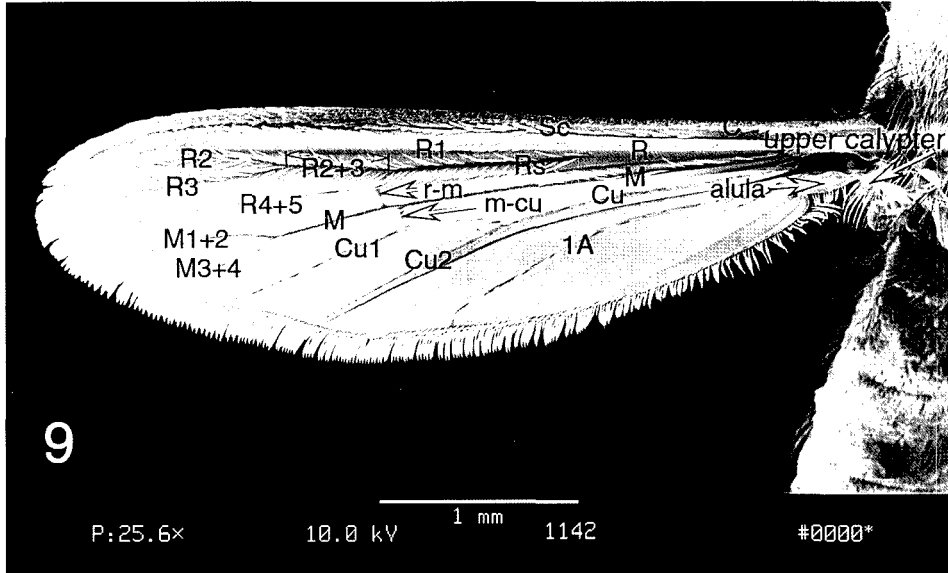
TARSAL CLAWS - VENTRAL



THORAX - DORSAL



THORAX - LATERAL

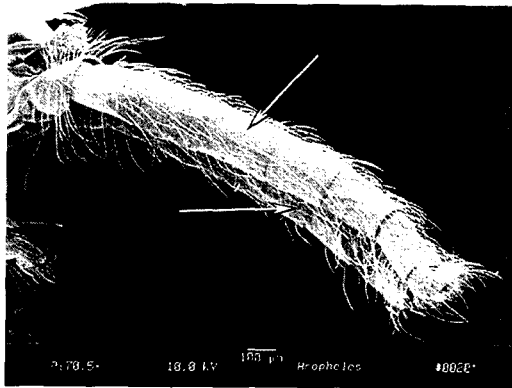


WING - DORSAL

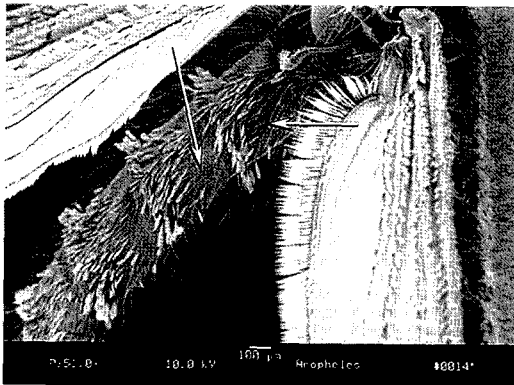
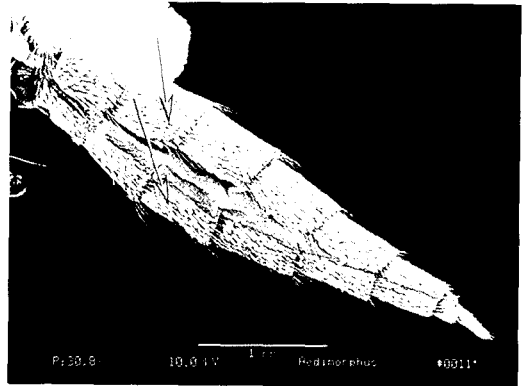
# 1. Key to Subfamilies of Culicidae

## ADULTS

Abdomen. Completely or largely without scales



Abdomen. Completely or largely with dense, uniform covering of scales



### Subfamily Culicinae

to Page 17

### Subfamily Anophelinae

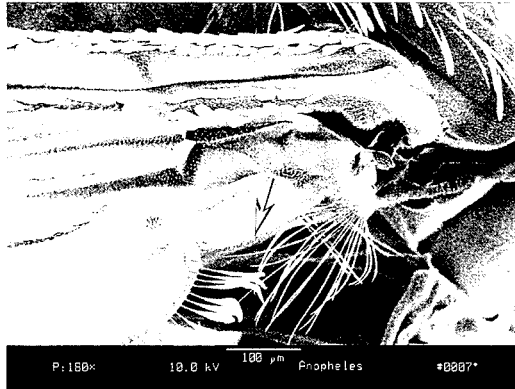
to Page 14

## 2. Key to Genera of Anophelinae

Page 14

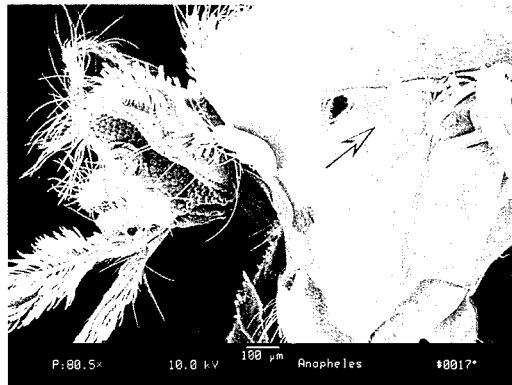
\*\*

Wing. Alula without scales



\*\*

Thorax. Postspiracular setae  
absent

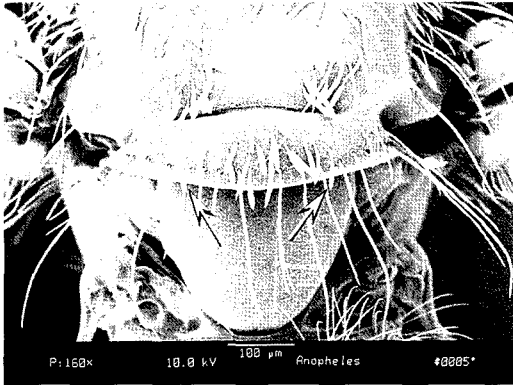


to Page 15

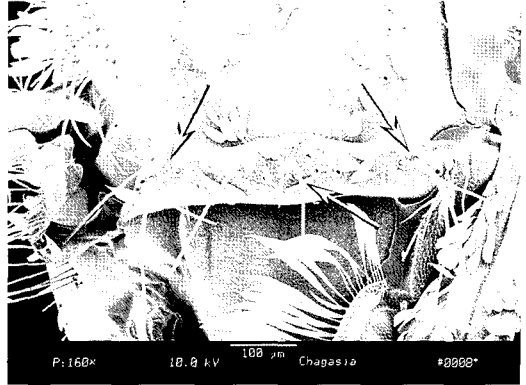
2. (continued)

Page 15

Thorax. Posterior margin of scutellum evenly rounded or slightly trilobed, with setae more or less evenly distributed

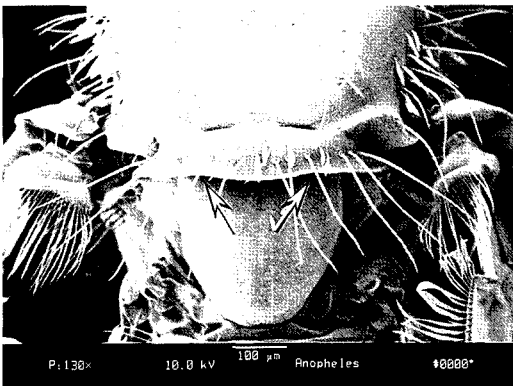


Thorax. Posterior margin of scutellum trilobed, with setae in 3 groups on all lobes



\*\*

Thorax. Paratergite with scales



**Chagasia**

to Page 16

2. (continued)

Page 16

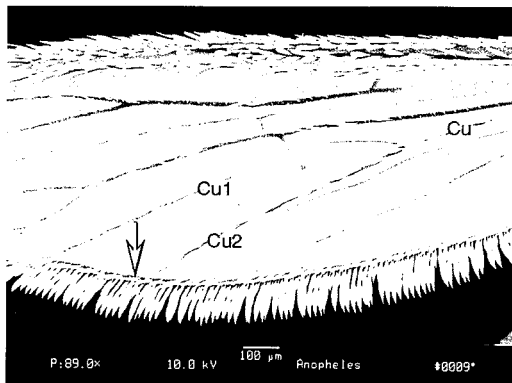
\*\*

Thorax. Paratergite without scales



\*\*

Wing. Posterior margin of wing not emarginated near tip of vein Cu2

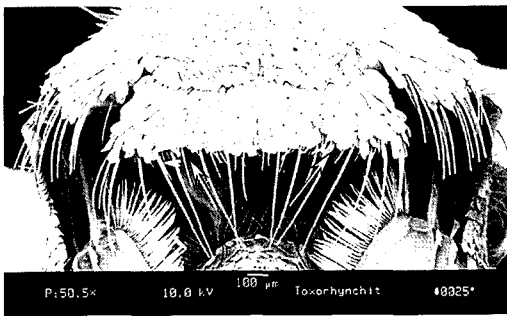


*Anopheles*

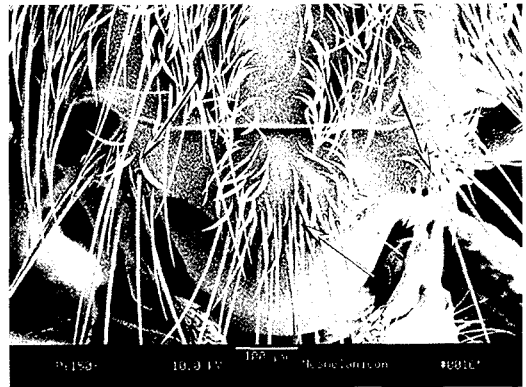
### 3. Key to Genera of Culicinae including Subgenera of *Aedes* and *Ochlerotatus*

Page 17

Thorax. Posterior margin of scutellum evenly rounded, with setae evenly distributed

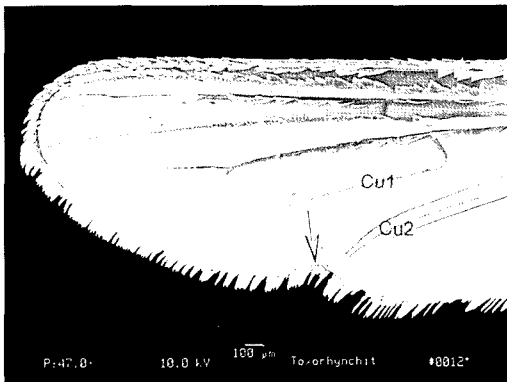


Thorax. Posterior margin of scutellum trilobed, with setae in 3 groups on all lobes



\*\*

Wing. Posterior margin of wing emarginated near tip of vein Cu2



to Page 19

to Page 18

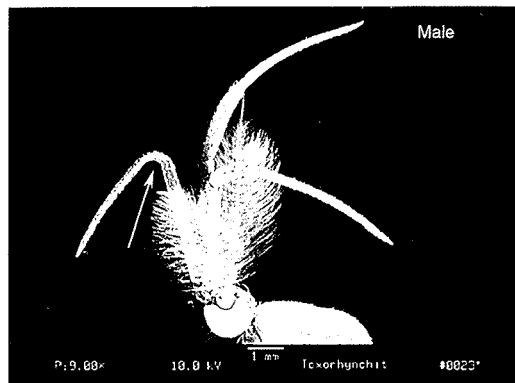
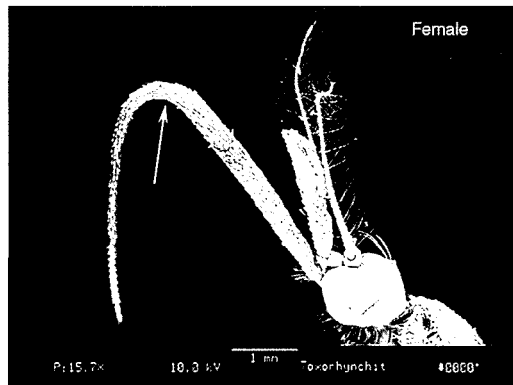


## 3. (continued)

Page 18

\*\*

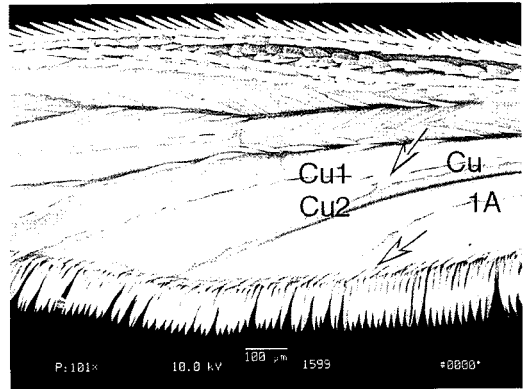
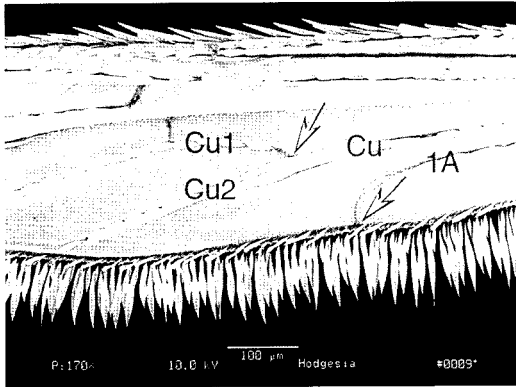
Head. Proboscis with apical half strongly recurved and more slender than basal half

*Toxorhynchites*

3. (continued)

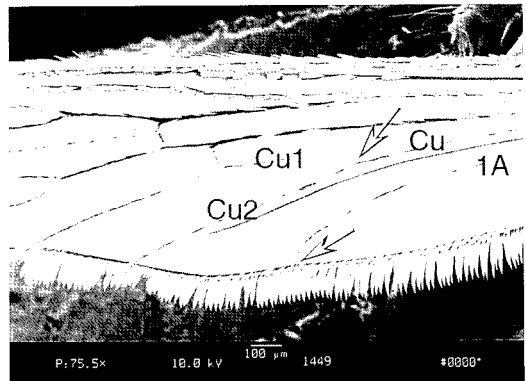
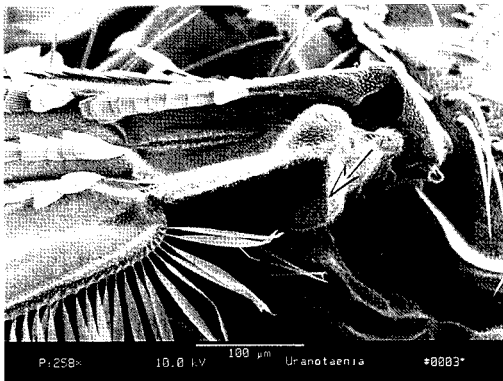
Wing. Vein 1A ending before, or near base of fork of vein Cu

Wing. Vein 1A ending slightly, or well beyond base of fork of vein Cu



\*\*

Wing. Upper calypter not fringed



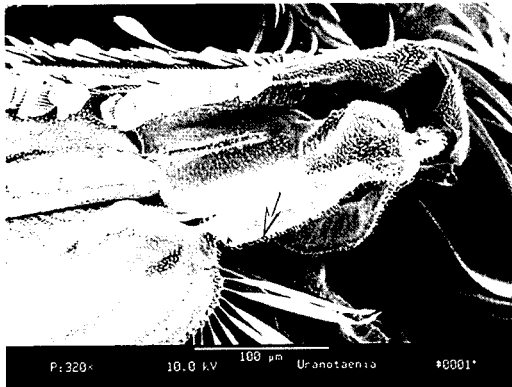
to Page 20

to Page 23

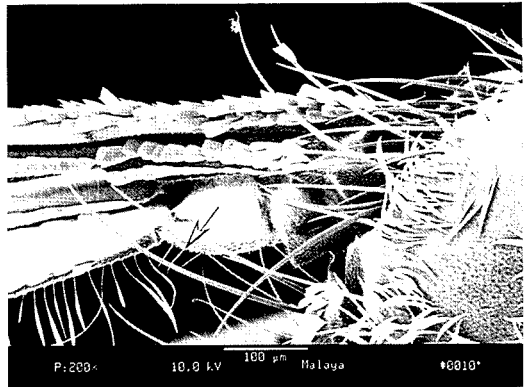
3. (continued)

Page 20

Wing. Alula without scales, or with broad decumbent scales

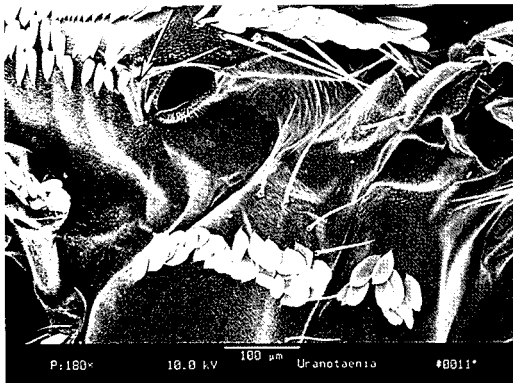


Wing. Alula with narrow fringe scales



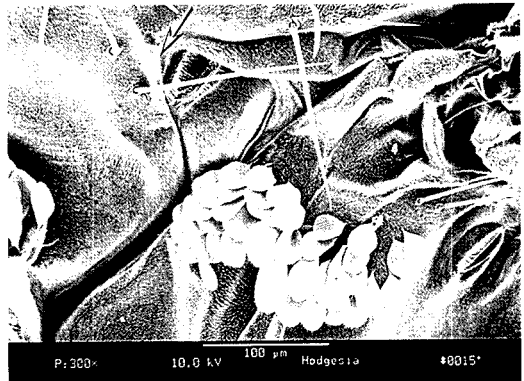
to Page 21c

Thorax. Prespiracular setae present



to Page 21a

Thorax. Prespiracular setae absent



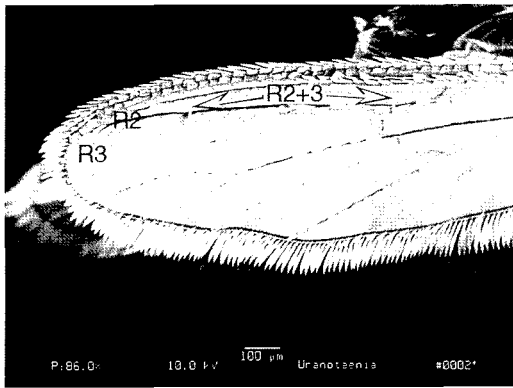
to Page 21b

3. (continued)

Page 21a

\*\*

Wing. Vein R2+3 much longer than veins R2, R3

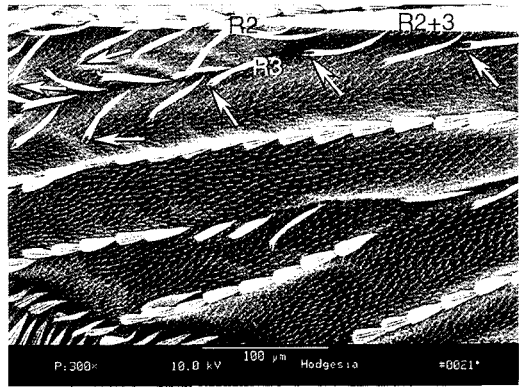


*Uranotaenia*

Page 21b

\*\*

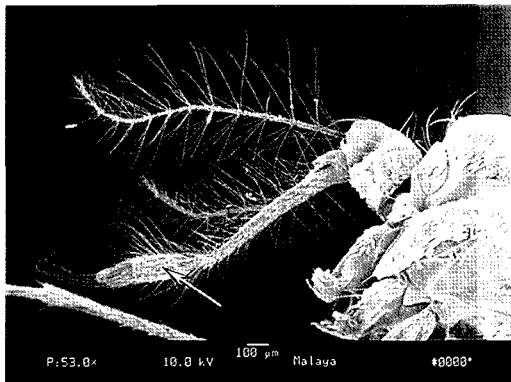
Wing. Veins R2+3, R2, R3 with outstanding scales emarginated at tip



*Hodgesia*

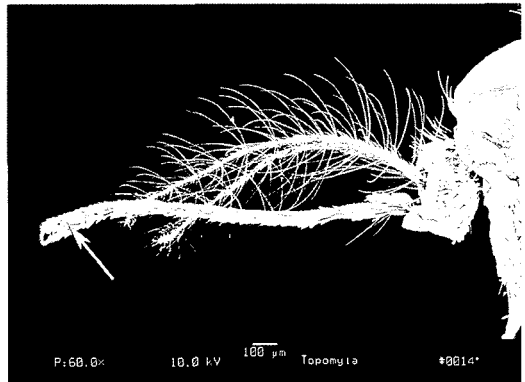
Page 21c

Head. Proboscis with apical part distinctly swollen, upturned and hairy



*Malaya*

Head. Proboscis sometimes with tip swollen, but not upturned and hairy



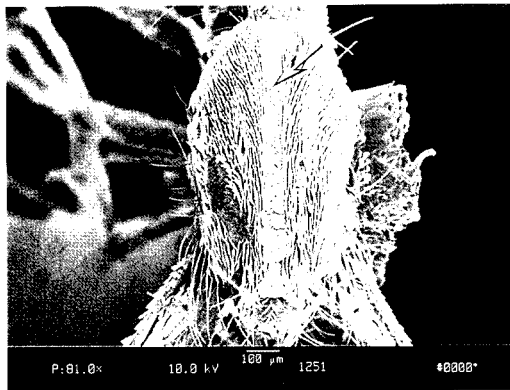
to Page 22

### 3. (continued)

Page 22

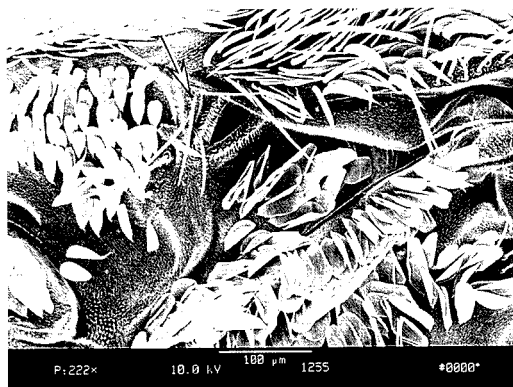
\*\*

Thorax. Scutum with a conspicuous median longitudinal stripe of broad, flat scales



\*\*

Thorax. Prespiracular setae present

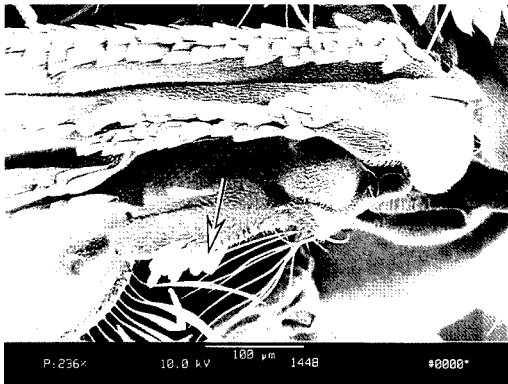


*Topomyia*

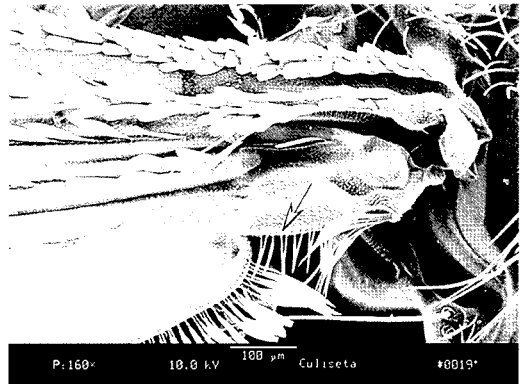
3. (continued)

Page 23

Wing. Alula without scales, or with broad decumbent scales

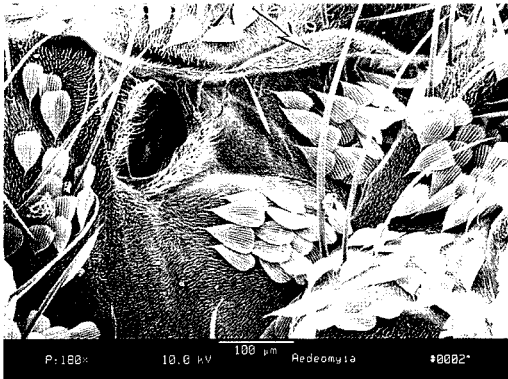


Wing. Alula with narrow fringe scales



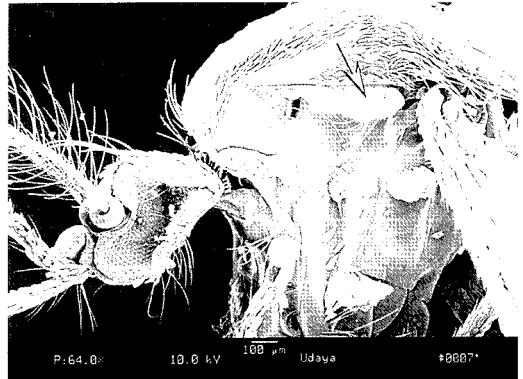
to Page 36

Thorax. Paratergite without scales



to Page 24

Thorax. Paratergite with scales

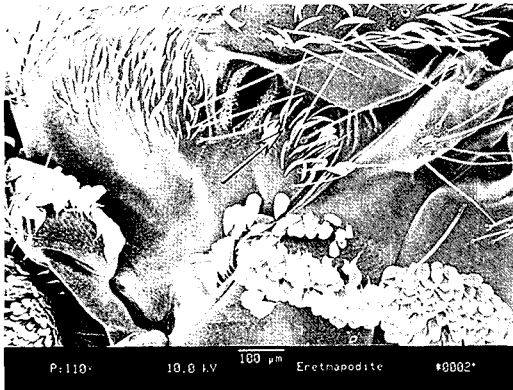


to Page 30

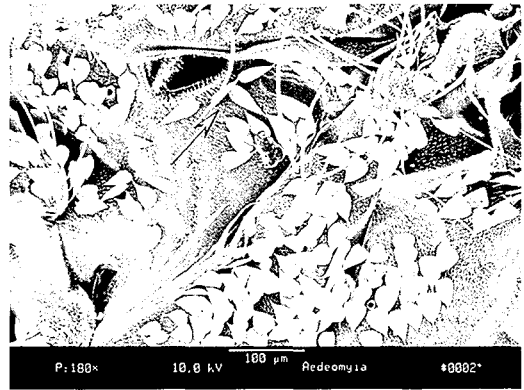
### 3. (continued)

Page 24

Thorax. Postspiracular setae present

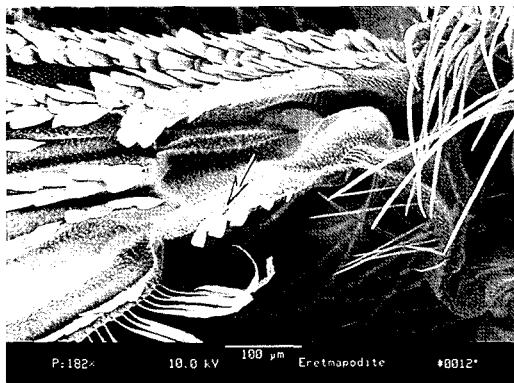


Thorax. Postspiracular setae absent



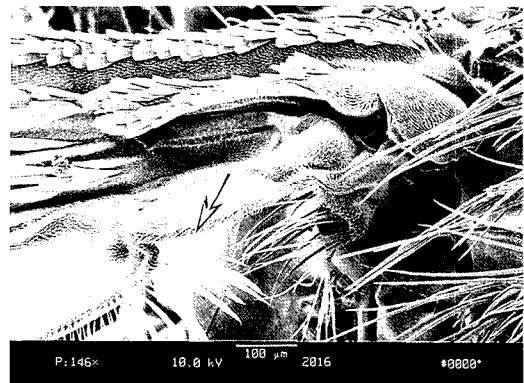
to Page 27b

Wing. Alula with broad decumbent scales



to Page 25

Wing. Alula without scales

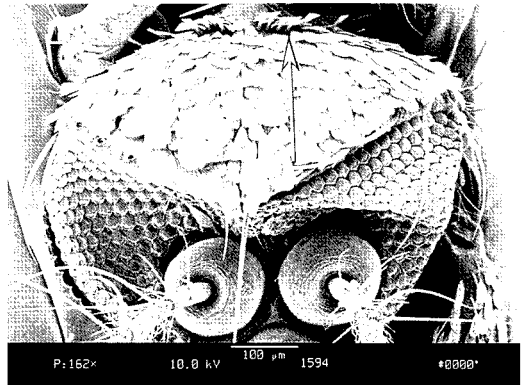
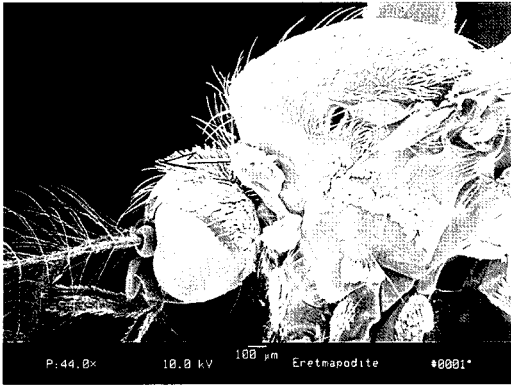


to Page 26b

3. (continued)

Head. Vertex with erect forked scales numerous, not restricted to occiput

Head. Vertex with erect forked scales not numerous, restricted to occiput

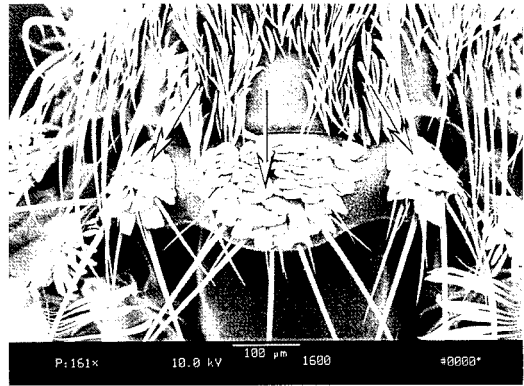
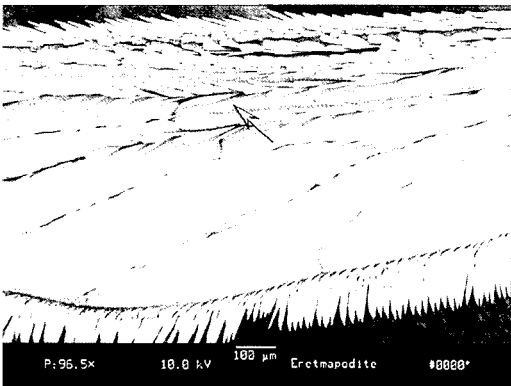


\*\*

Wing. Plume scales all narrow

\*\*

Thorax. Scutellum with all broad scales



*Eretmapodites*

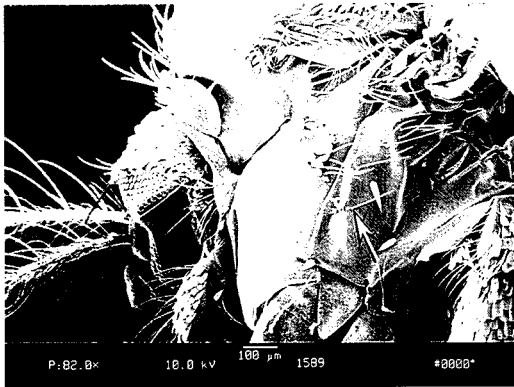
to Page 26a



3. (continued)

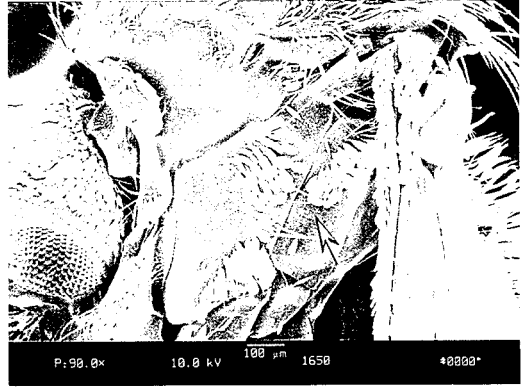
Page 26a

Thorax. Lower mesepimeral setae present



*Aedes* (in part)  
(*Canraedes*)

Thorax. Lower mesepimeral setae absent

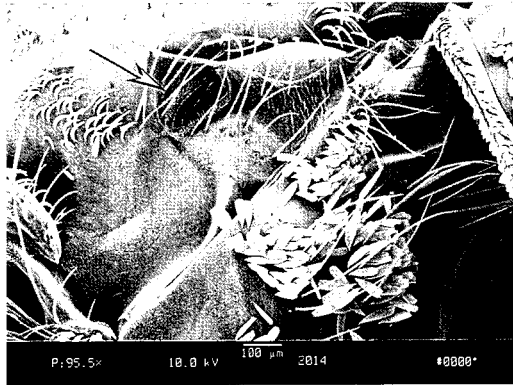


*Aedes* (in part)  
(*Paraedes*) in part

Page 26b

\*\*

Thorax. Prespiracular setae present



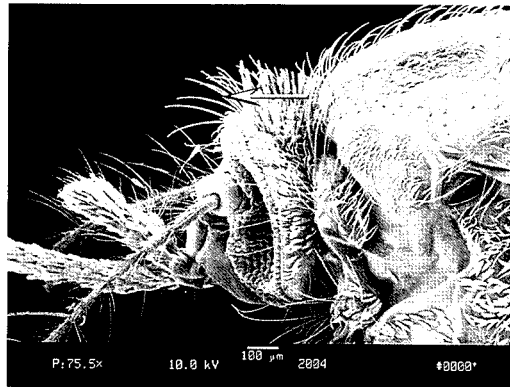
to Page 27a

3. (continued)

Page 27a

\*\*

Head. Vertex with erect forked scales numerous, not restricted to occiput

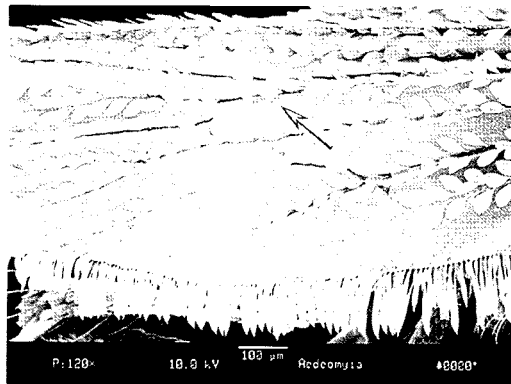


*Psorophora* (in part)

Page 27b

\*\*

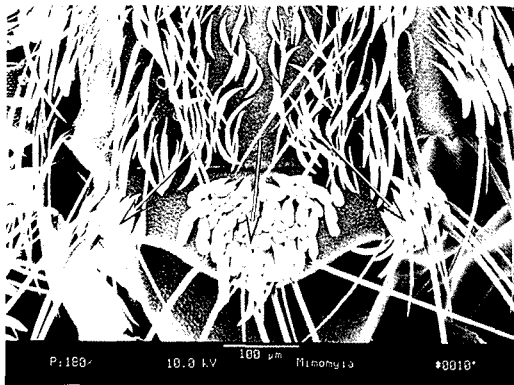
Wing. Plume scales all broad



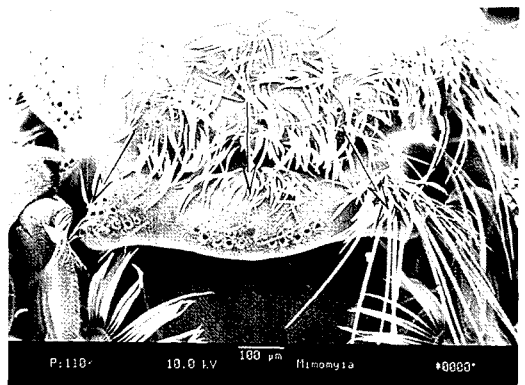
to Page 28

### 3. (continued)

Thorax. Scutellum with all broad scales

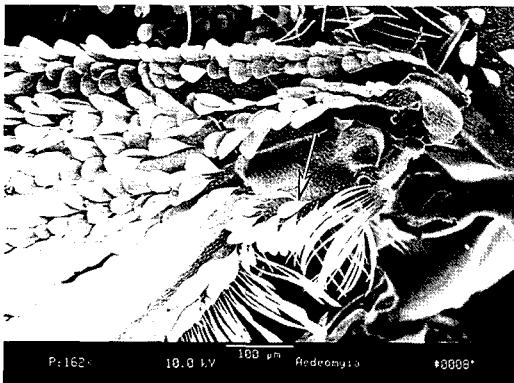


Thorax. Scutellum with all narrow scales



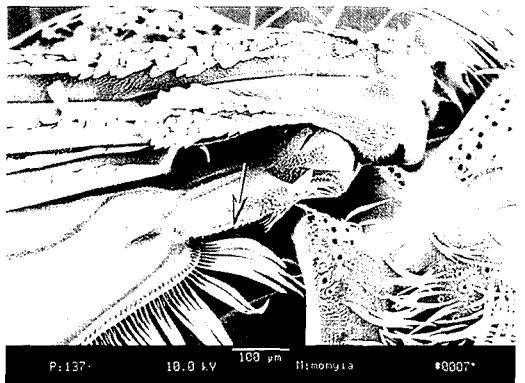
\*\*

Wing. Alula with broad decumbent scales



\*\*

Wing. Alula without scales

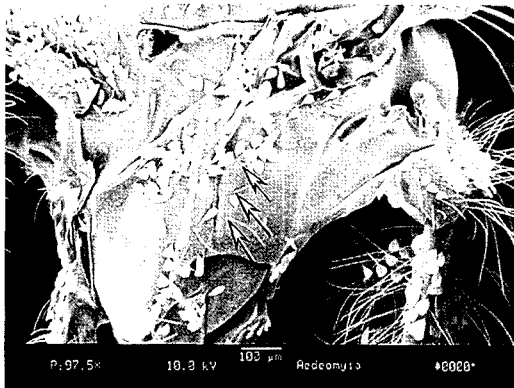


to Page 29

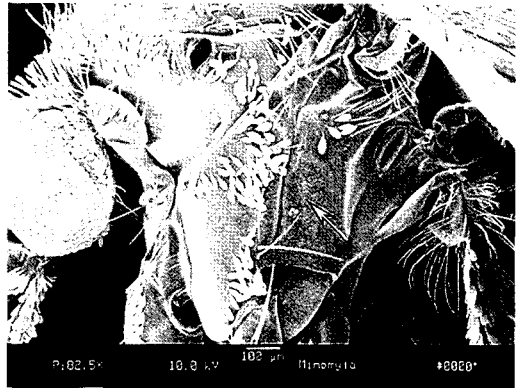
*Mimomyia* ( in part )

3. (continued)

Thorax. Lower mesepimeral setae present



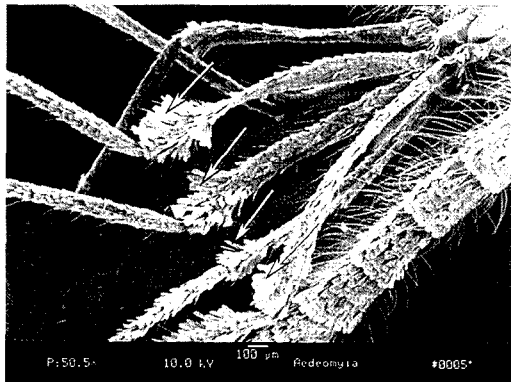
Thorax. Lower mesepimeral setae absent



*Mimomyia* ( in part )

\*\*

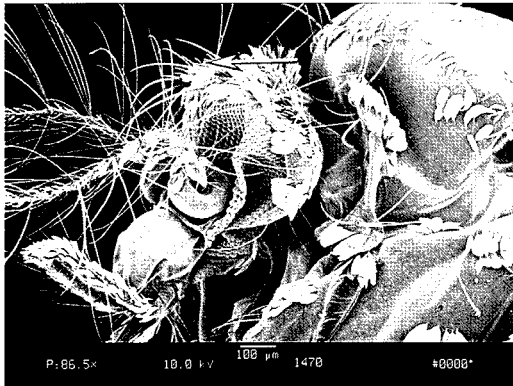
Legs. Mid- and hindfemora with large tufts of suberect scales at apex



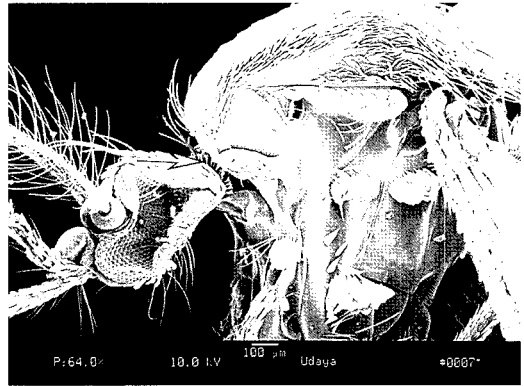
*Aedeomyia*

3. (continued)

Head. Vertex with erect forked scales numerous, not restricted to occiput



Head. Vertex with erect forked scales not numerous, restricted to occiput



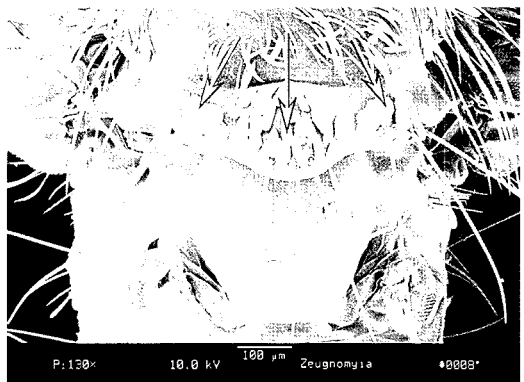
\*\*

Thorax. Postspiracular setae present



\*\*

Thorax. Scutellum with all broad scales



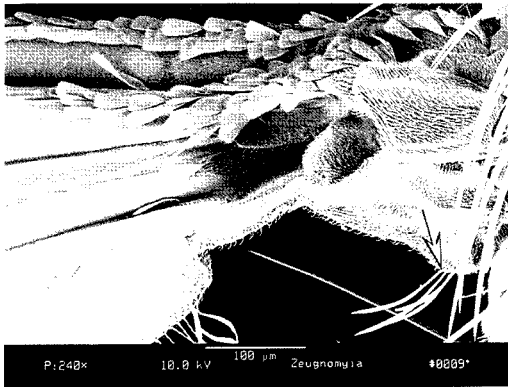
*Ochlerotatus* (in part)  
(*Gymnometopa*) *mediovittatus*

to Page 31

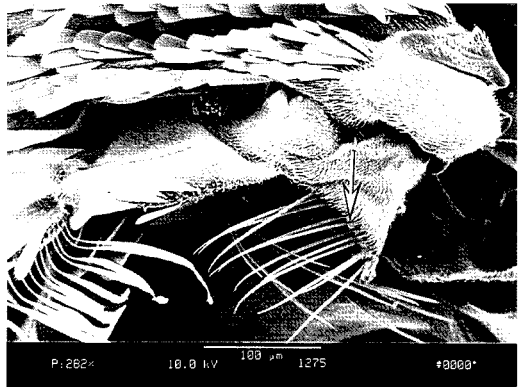
3. (continued)

Page 31

Wing. Upper calypter not fringed, or with only a few (4-6) setae

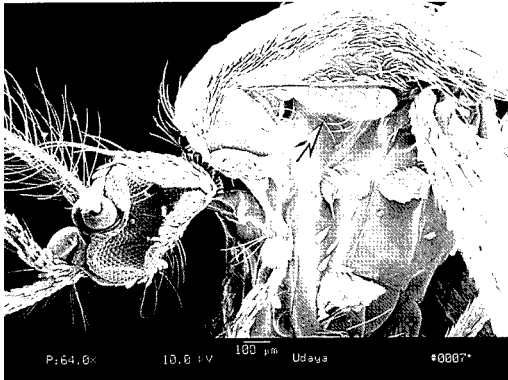


Wing. Upper calypter fringed with many hair-like setae



\*\*

Thorax. Postspiracular setae present



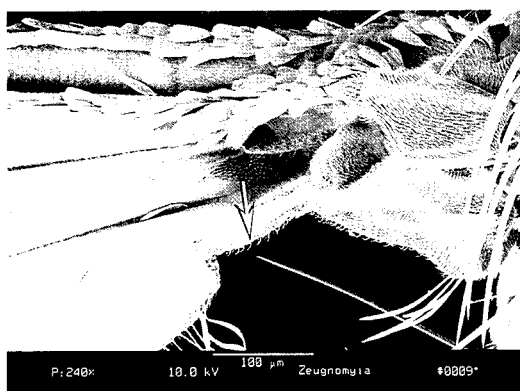
to Page 33

to Page 32

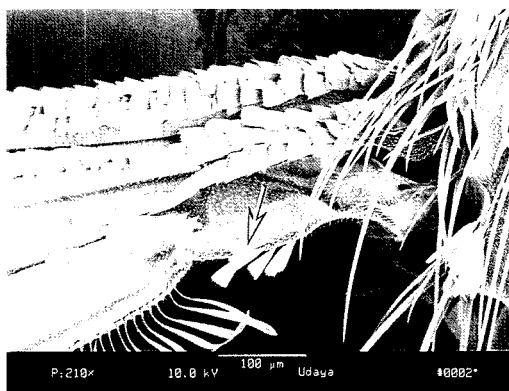
### 3. (continued)

Page 32

Wing. Alula without scales

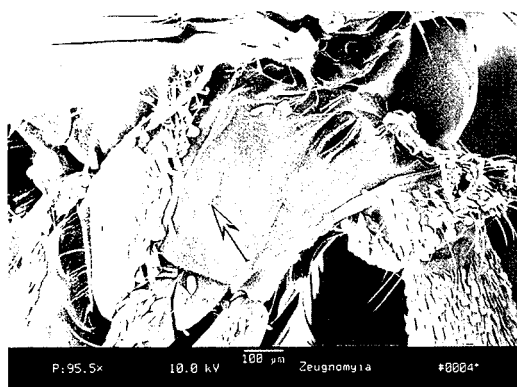


Wing. Alula with broad decumbent scales



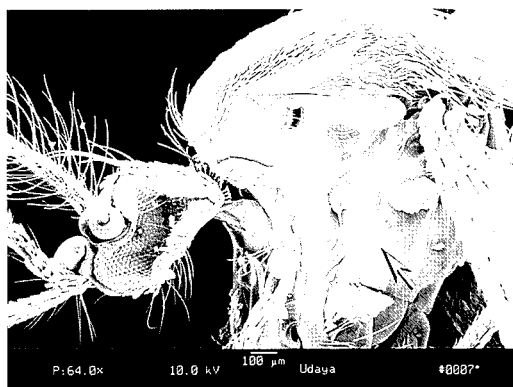
\*\*

Thorax. Lower mesepimeral setae present



\*\*

Thorax. Lower mesepimeral setae absent



*Zeugnomyia*

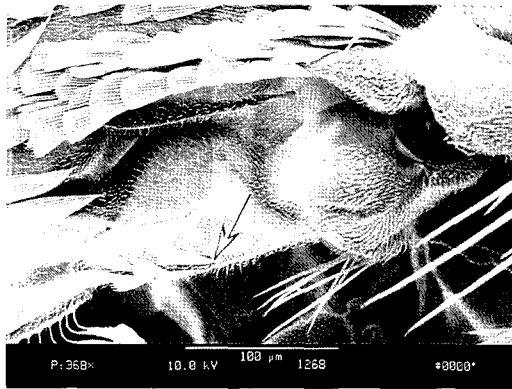
*Udaya*

3. (continued)

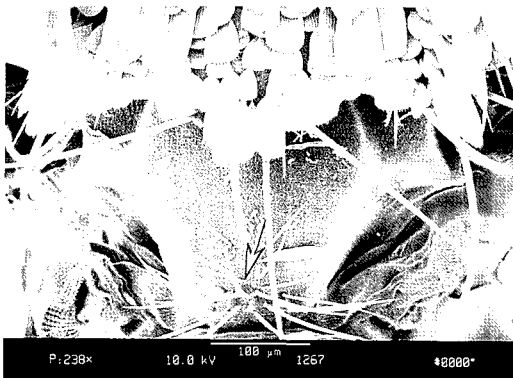
Page 33

\*\*

Wing. Alula with broad decumbent scales

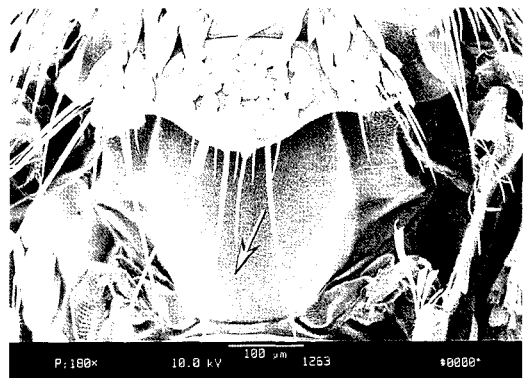


Thorax. Mesopostnotal setae present



to Page 34a

Thorax. Mesopostnotal setae absent



to Page 34b

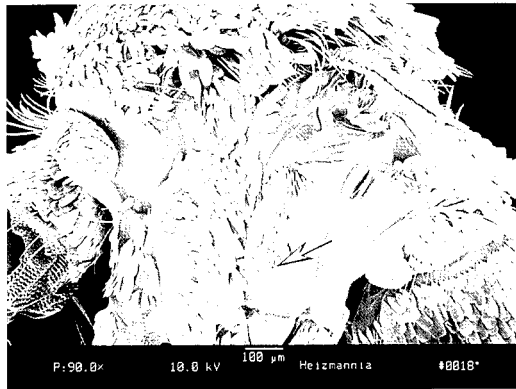


### 3. (continued)

Page 34a

\*\*

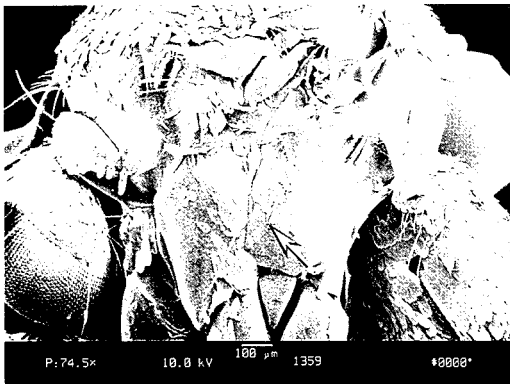
Thorax. Lower mesepimeral setae present



*Heizmannia* (in part)

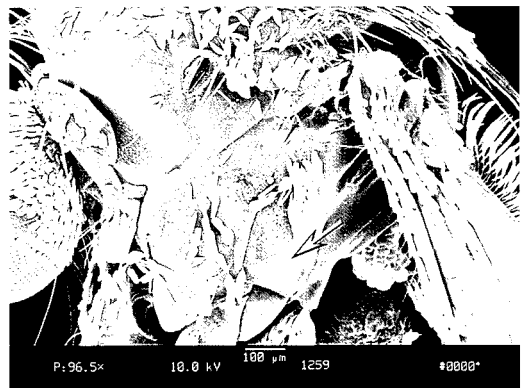
Page 34b

Thorax. Lower mesepimeral setae present



*Heizmannia* (in part)

Thorax. Lower mesepimeral setae absent



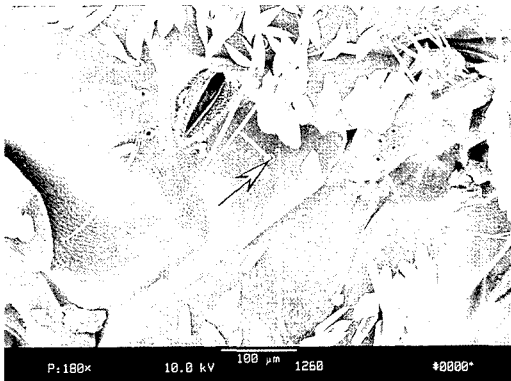
to Page 35

### 3. (continued)

Page 35

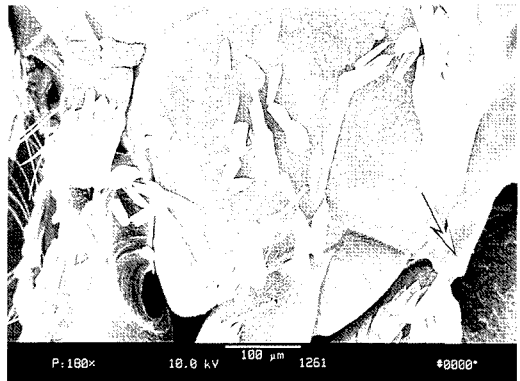
\*\* 1

Thorax. Postspiracular setae present



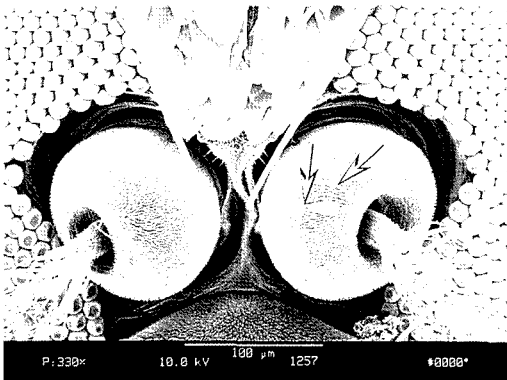
\*\* 2

Thorax. Metameron without scales



\*\* 3

Head. Pedicel with short fine setae and a few small scales on mesal surface

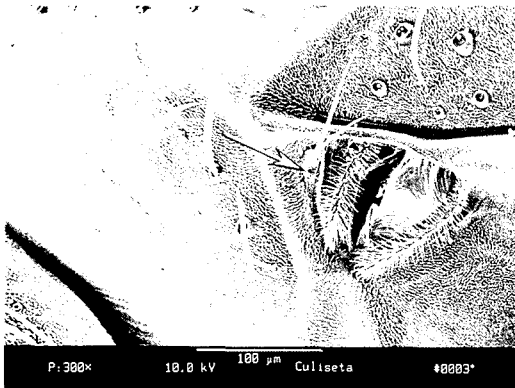


*Heizmannia* (in part)

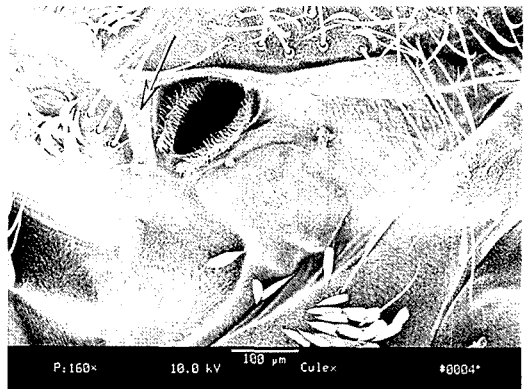
3. (continued)

Page 36

Thorax. Prespiracular setae present

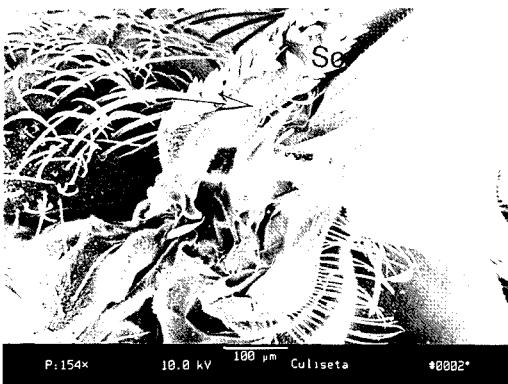


Thorax. Prespiracular setae absent



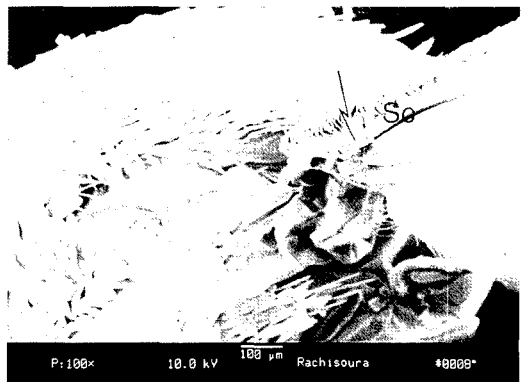
to Page 38

Wing. Base of vein Sc with a patch of setae on ventral side



*Culiseta* (in part)

Wing. Base of vein Sc without a patch of setae on ventral side



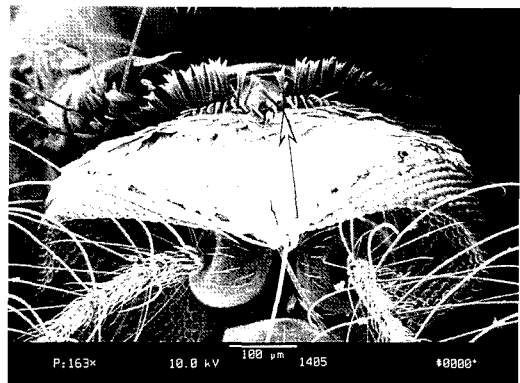
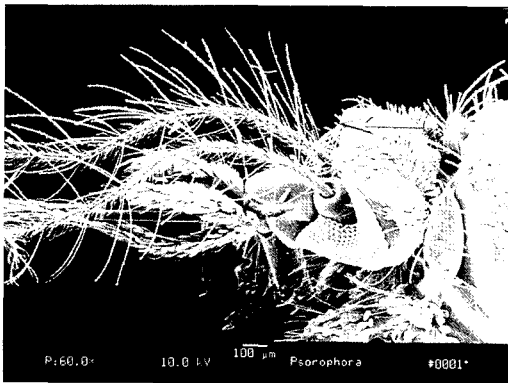
to Page 37

3. (continued)

Page 37

Head. Vertex with erect forked scales numerous, not restricted to occiput

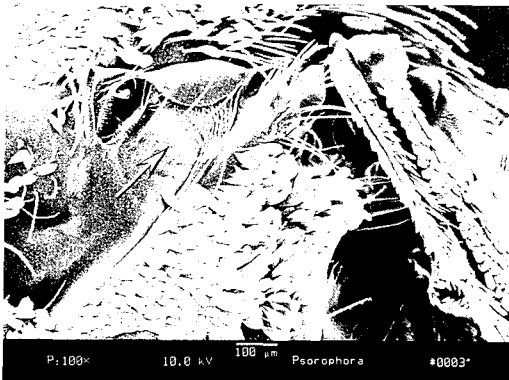
Head. Vertex with erect forked scales not numerous, restricted to occiput, or without erect forked scales



to Page 92

Thorax. Postspiracular setae present

Thorax. Postspiracular setae absent



*Psorophora* (in part)

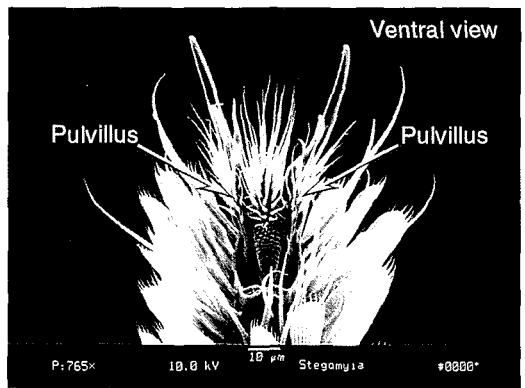
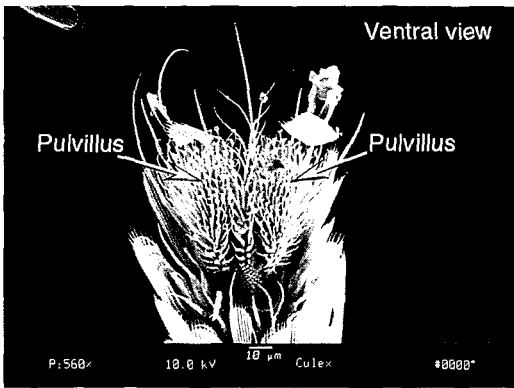
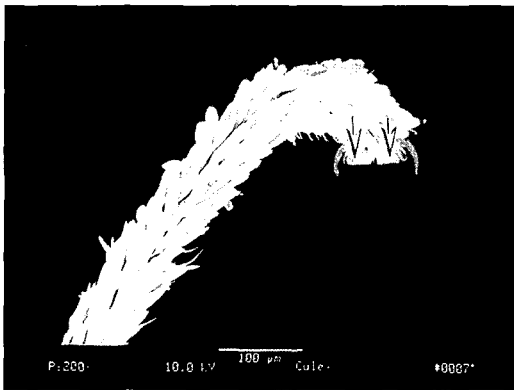
*Culiseta* (in part)

3. (continued)

Page 38

Legs. Pulvillus present, well developed (pad - like)

Legs. Pulvillus absent, or not well developed (hair - like)



to Page 39

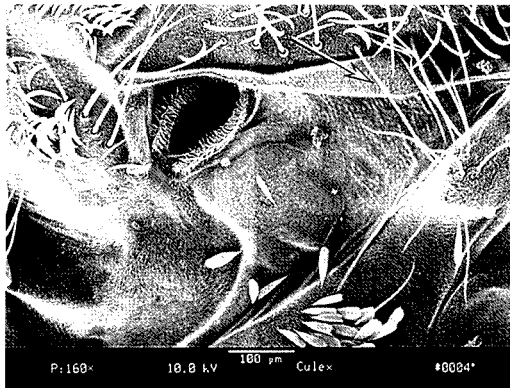
to Page 41

3. (continued)

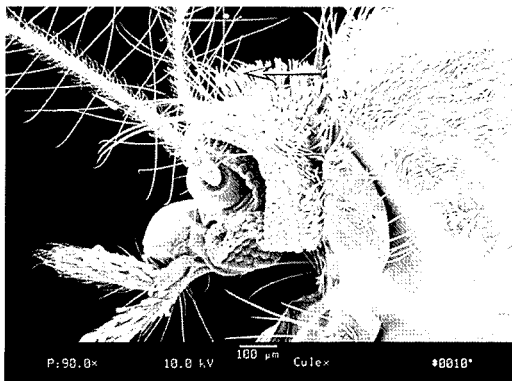
Page 39

\*\*

Thorax. Paratergite without scales

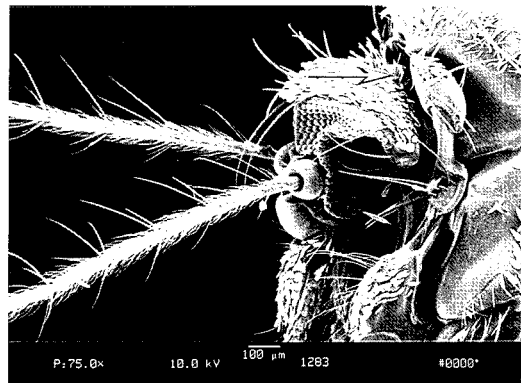


Head. Vertex with erect forked scales numerous, not restricted to occiput



to Page 40a

Head. Vertex with erect forked scales not numerous, restricted to occiput

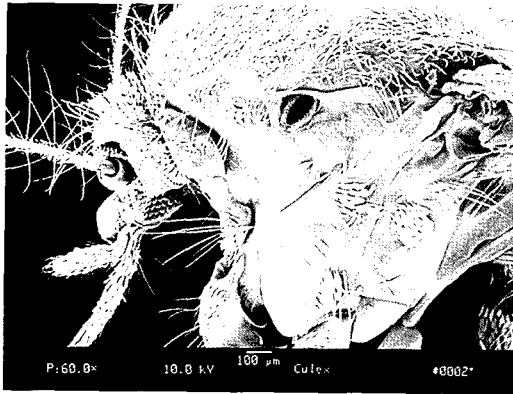


to Page 40b

3. (continued)

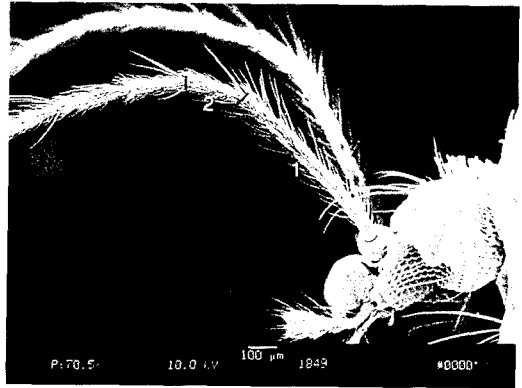
Page 40a

Head. Antenna with flagellomere 1 about as long as flagellomere 2



*Culex*

Head. Antenna with flagellomere 1 much longer than flagellomere 2

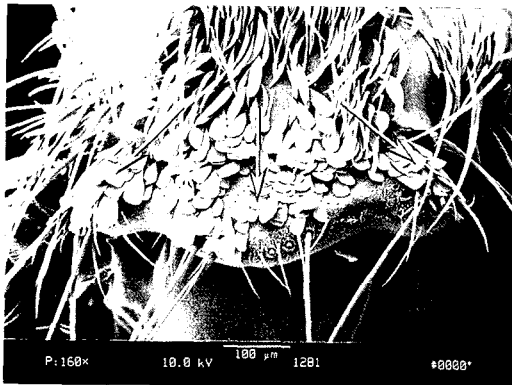


*Deinocerites*

Page 40b

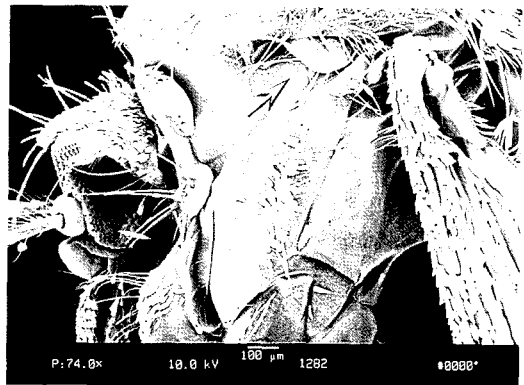
\*\* 1

Thorax. Scutellum with all broad scales



\*\* 2

Thorax. Postspiracular setae absent



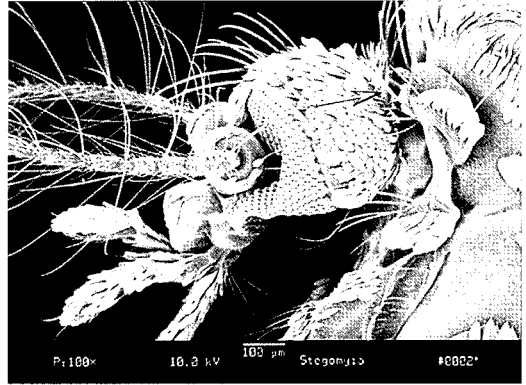
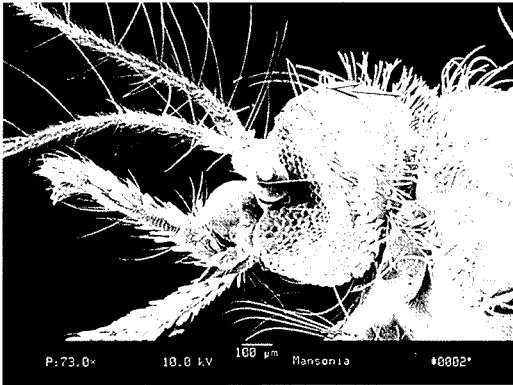
*Galindomyia*  
*Galindomyia leei*

3. (continued)

Page 41

Head. Vertex with erect forked scales numerous, not restricted to occiput

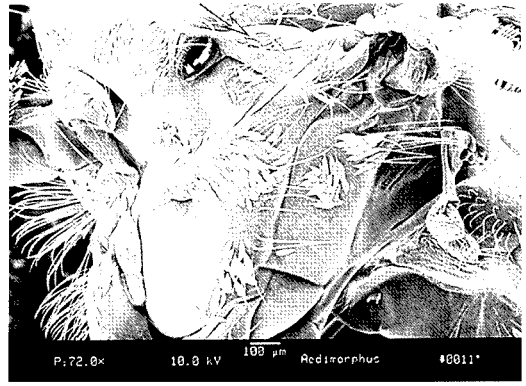
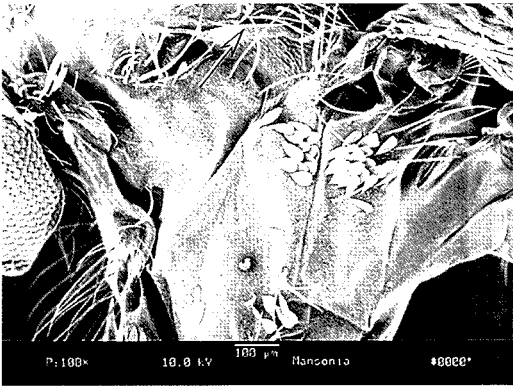
Head. Vertex with erect forked scales not numerous, restricted or not restricted to occiput, or without erect forked scales



to Page 56

Thorax. Paratergite without scales

Thorax. Paratergite with scales



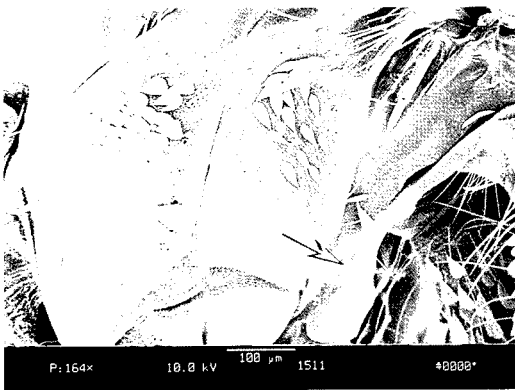
to Page 42

to Page 55c

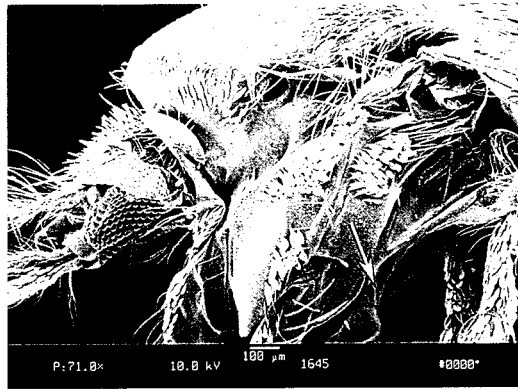


3. (continued)

Thorax. Metameron with short setae

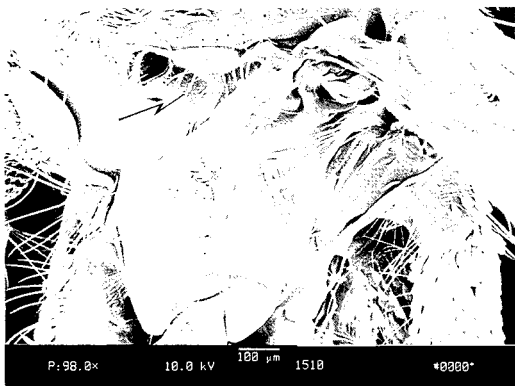


Thorax. Metameron without short setae



★★

Thorax. Postspiracular setae present



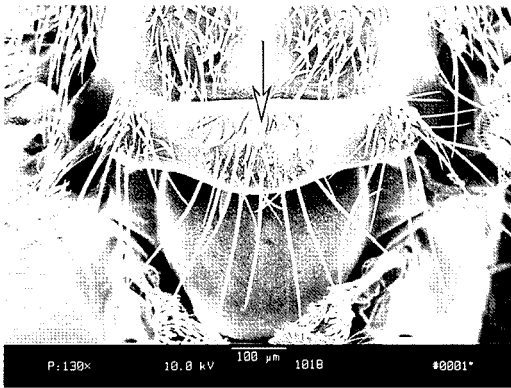
to Page 43

***Ochlerotatus*** (in part)  
(*Geoskusea*)

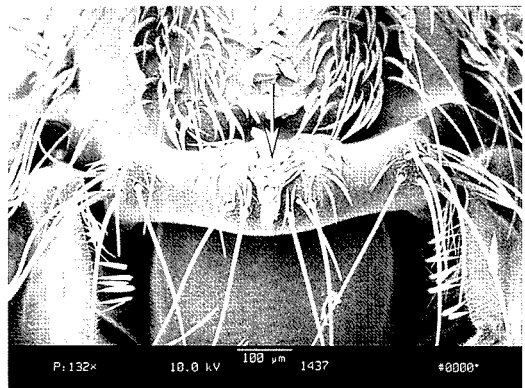
3. (continued)

Page 43

Thorax. Scutellum with all narrow scales on midlobe

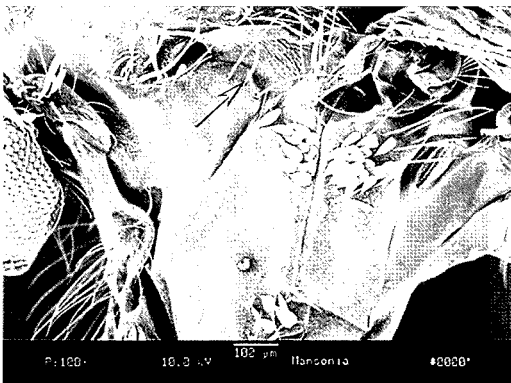


Thorax. Scutellum with all, or at least a few broad scales on midlobe



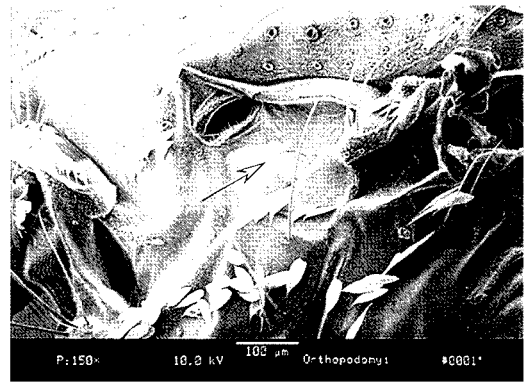
to Page 50b

Thorax. Postspiracular setae present



to Page 44

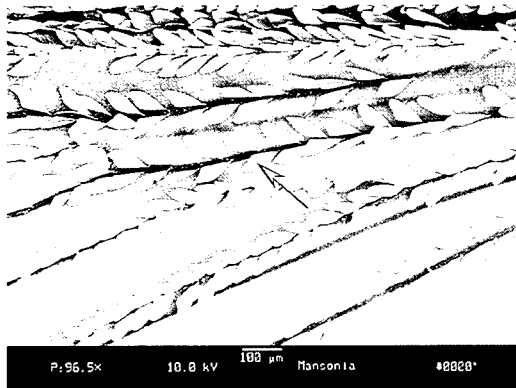
Thorax. Postspiracular setae absent



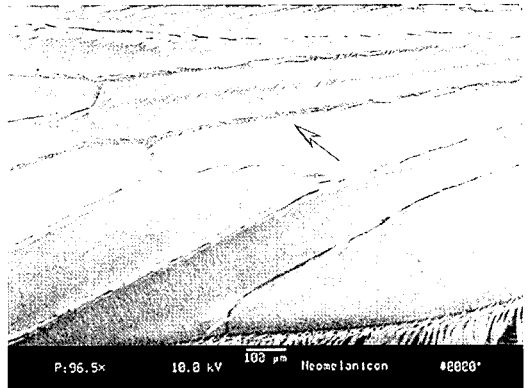
to Page 49

### 3. (continued)

Wing. Most plume scales very broad and asymmetrical



Wing. Plume scales narrow, and not asymmetrical



\*\*

Thorax. Subspiracular area without scales



to Page 45b

to Page 45a

3. (continued)

Page 45a

\*\*

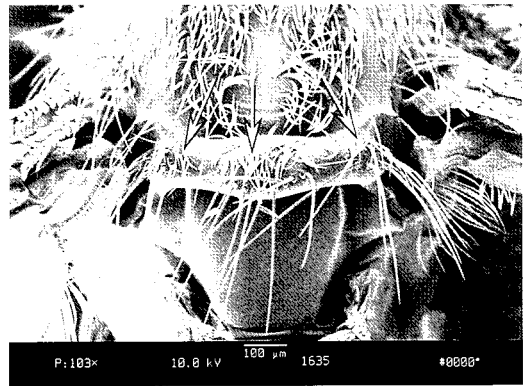
Thorax. Lower mesepimeral setae present



Page 45b

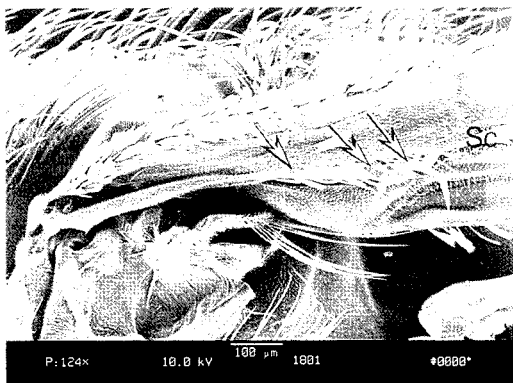
\*\*

Thorax. Scutellum with all narrow scales

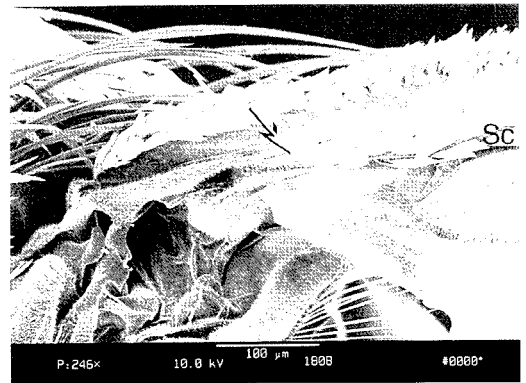


**Mansonia**

Wing. Base of vein Sc with a patch of setae on ventral side



Wing. Base of vein Sc without a patch of setae on ventral side



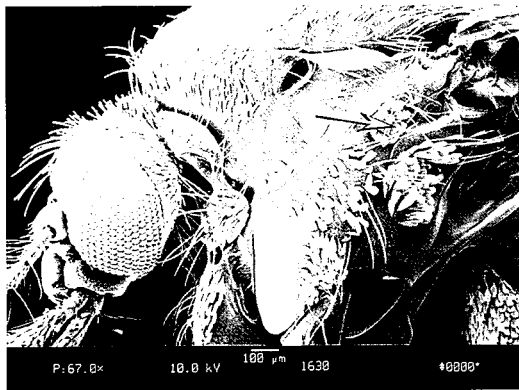
**Ochlerotatus** (in part)  
(*Nothoskusea*) *chathamicus*

to Page 46

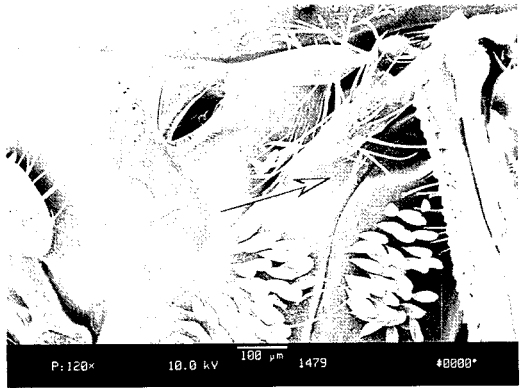
### 3. (continued)

Page 46

Thorax. Lower prealar scale patch present



Thorax. Lower prealar scale patch absent

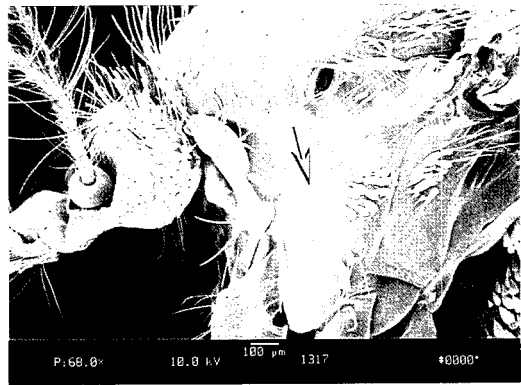


*Ochlerotatus* (in part)  
(*Ochlerotatus*)

Thorax. Subspiracular area with scales



Thorax. Subspiracular area without scales



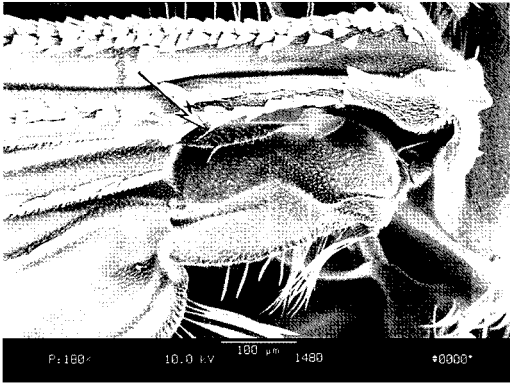
to Page 47a

to Page 47b

3. (continued)

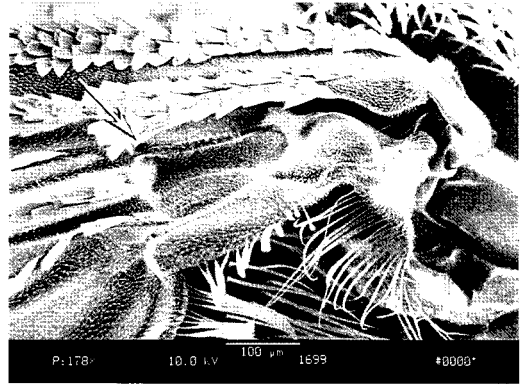
Page 47a

Wing. Remigial setae present



*Aedes* (in part)  
(*Edwardsaedes*)

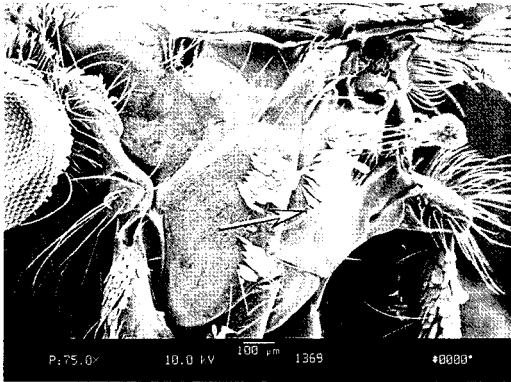
Wing. Remigial setae absent



*Aedes* (in part)  
(*Neomelaniconion*)

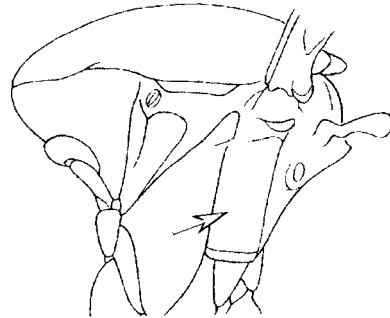
Page 47b

Thorax. Lower mesepimeral setae present



to Page 48a

Thorax. Lower mesepimeral setae absent



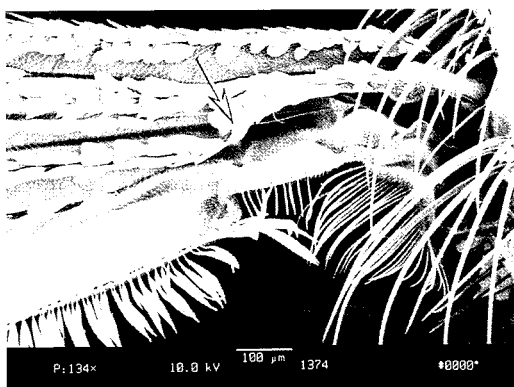
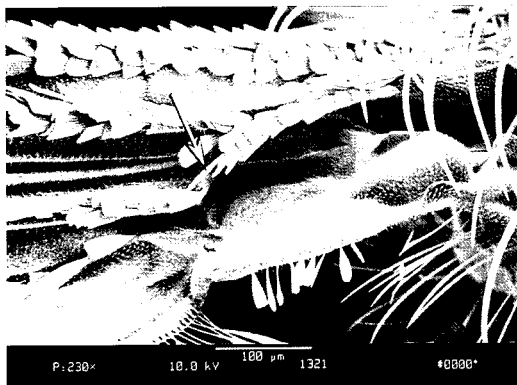
to Page 48b

3. (continued)

Page 48a

Wing. Remigial setae present

Wing. Remigial setae absent



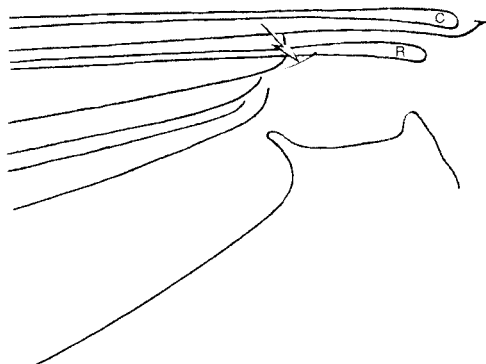
**Aedes** (in part)  
*(Isoaedes) cavaticus*

**Coquillettidia** (in part)

Page 48b

\*\*

Wing. Remigial setae present



**Ochlerotatus** (in part)  
*(Levua)*

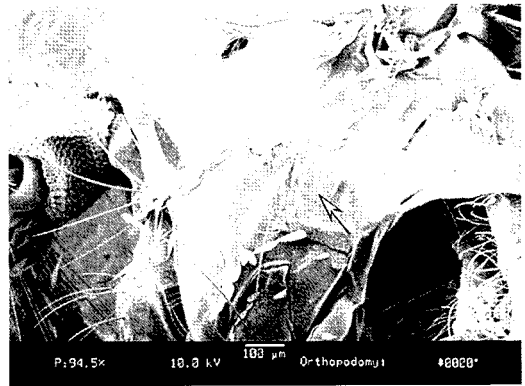
3. (continued)

Page 49

Thorax. Lower mesepimeral setae present

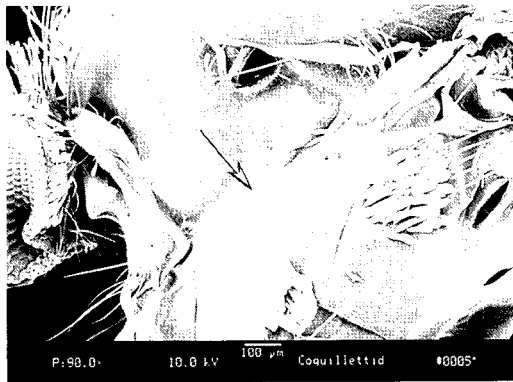


Thorax. Lower mesepimeral setae absent



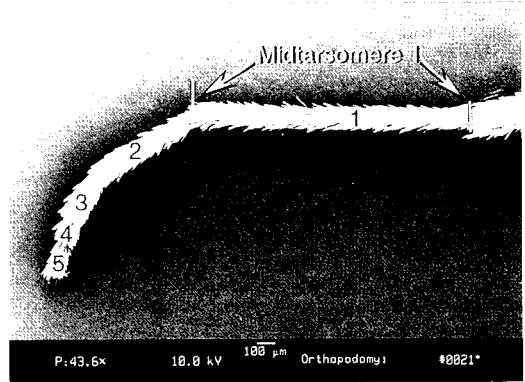
\*\*

Thorax. Subspiracular area without scales



\*\*

Leg. Midtarsomere 1 distinctly longer than tarsomeres 2-5 combined



*Coquillettia* (in part)

to Page 50a

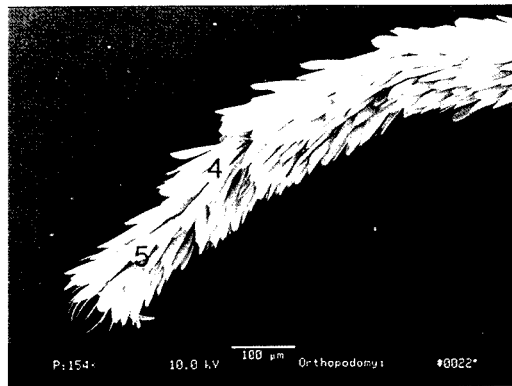


3. (continued)

Page 50a

\*\*

Leg. Midtarsomere 4 shorter than  
midtarsomere 5



*Orthopodomyia*

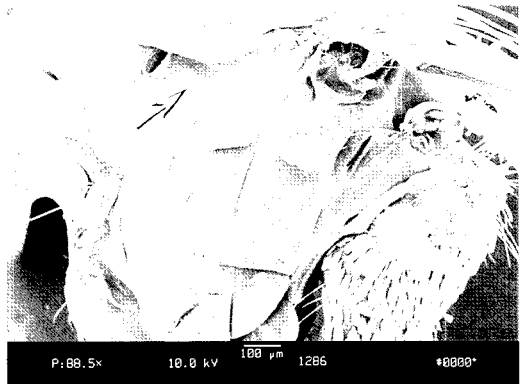
Page 50b

Thorax. Postspiracular setae  
present



to Page 51

Thorax. Postspiracular setae  
absent

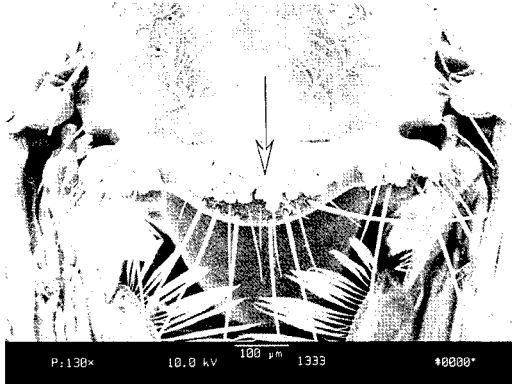


to Page 53b

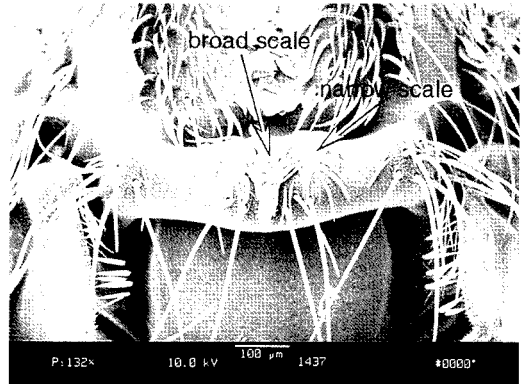
3. (continued)

Page 51

Thorax. Scutellum with all broad scales on midlobe

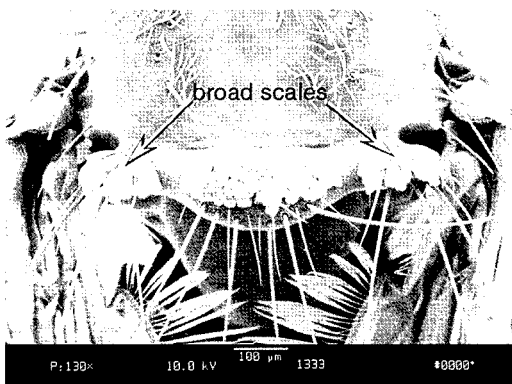


Thorax. Scutellum with narrow and broad scales on midlobe



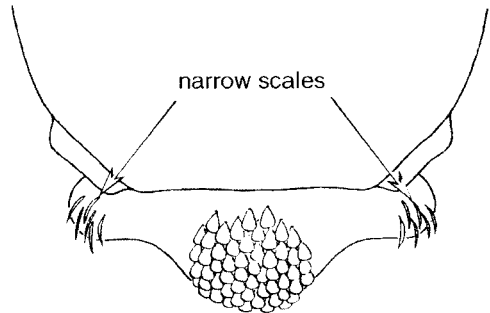
to Page 52

Thorax. Scutellum with all broad scales on lateral lobes



**Aedes** (in part)  
(*Aedimorphus*) in part

Thorax. Scutellum with narrow scales on lateral lobes



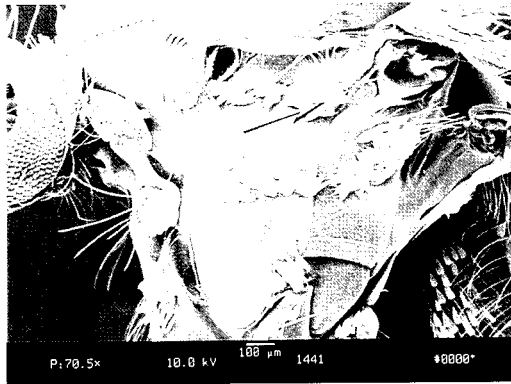
**Ochlerotatus** (in part)  
(*Chaetocruimyia*) in part

3. (continued)

Page 52

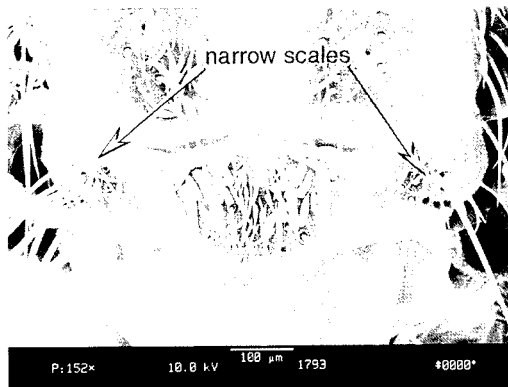
\*\*

Thorax. Lower prealar scale patch present



\*\*

Thorax. Scutellum with all narrow scales on lateral lobes

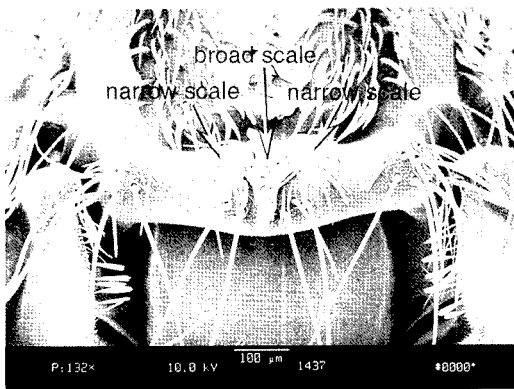


to Page 53a

3. (continued)

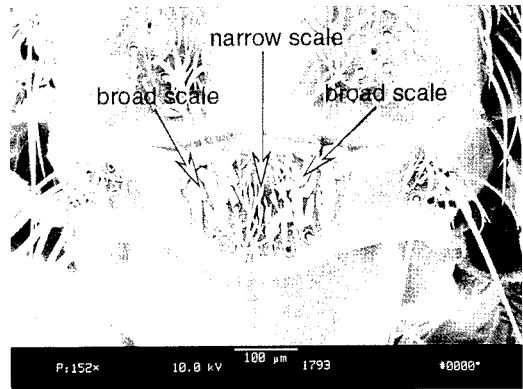
Page 53a

Thorax. Scutellum with broad scales in middle, and with narrow scales laterally on midlobe



***Ochlerotatus*** (in part)  
(*Aztecaedes*) *ramirezi*

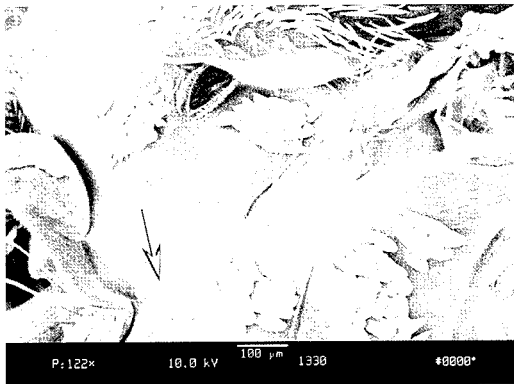
Thorax. Scutellum with narrow scales in middle, and with broad scales laterally on midlobe



***Ochlerotatus*** (in part)  
(*Finlaya*) in part

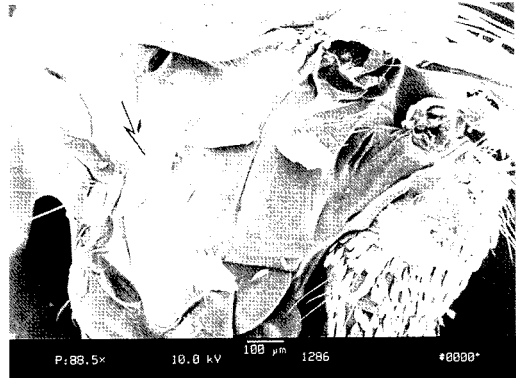
Page 53b

Thorax. Subspiracular area with scales



to Page 54a

Thorax. Subspiracular area without scales



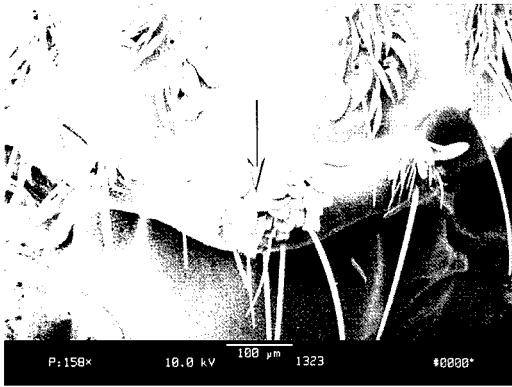
to Page 54b

3. (continued)

Page 54a

\*\*

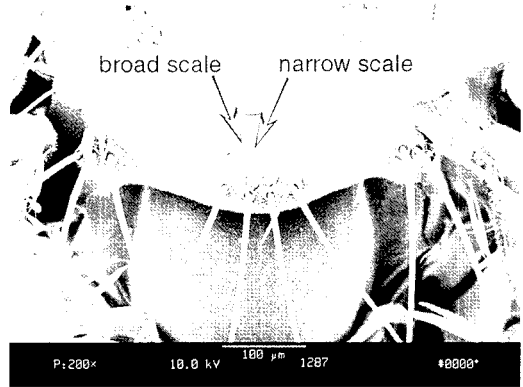
Thorax. Scutellum with all broad scales on midlobe



Page 54b

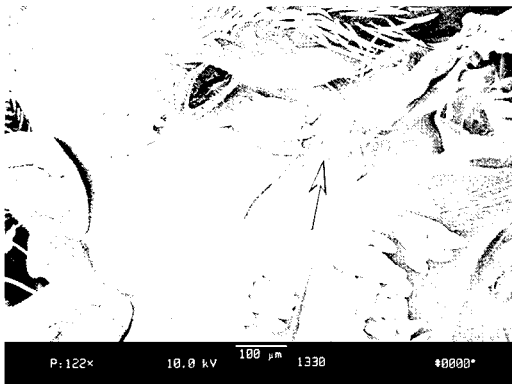
\*\*

Thorax. Scutellum with narrow and broad scales on midlobe



\*\*

Thorax. Lower prealar scale patch present



\*\*

Thorax. Lower mesepimeral setae present



to Page 55a

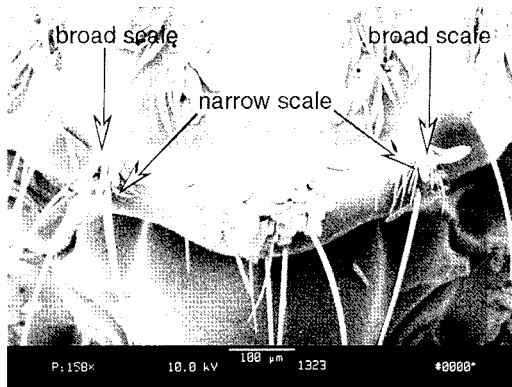
to Page 55b

3. (continued)

Page 55a

\*\*

Thorax. Scutellum with broad and narrow scales on lateral lobes

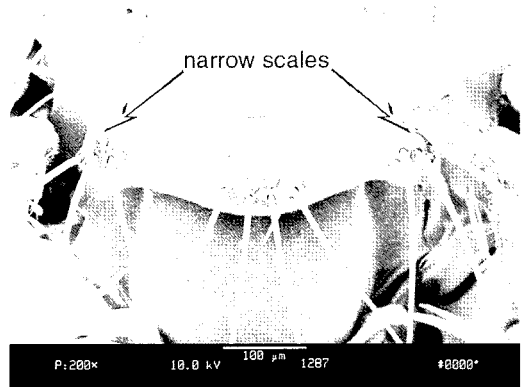


*Ochlerotatus* (in part)  
*(Kompia) purpureipes*

Page 55b

\*\*

Thorax. Scutellum with all narrow scales on lateral lobes

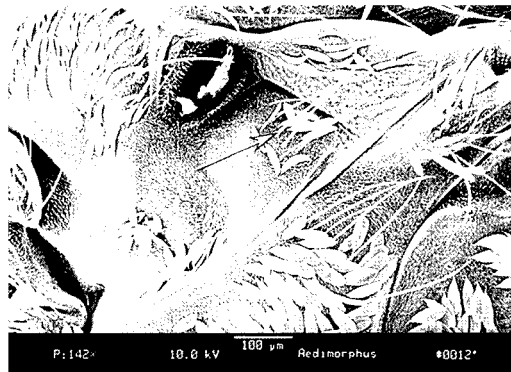


*Ayurakitia*

Page 55c

\*\*

Thorax. Postspiracular setae present

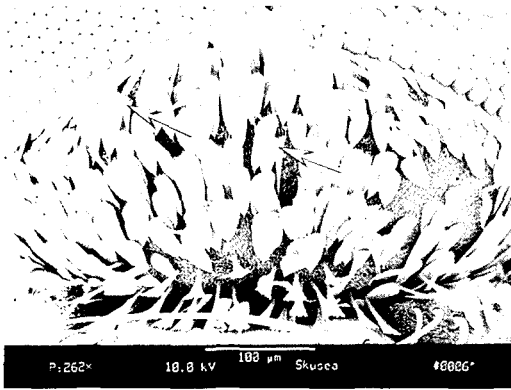


to Page 105

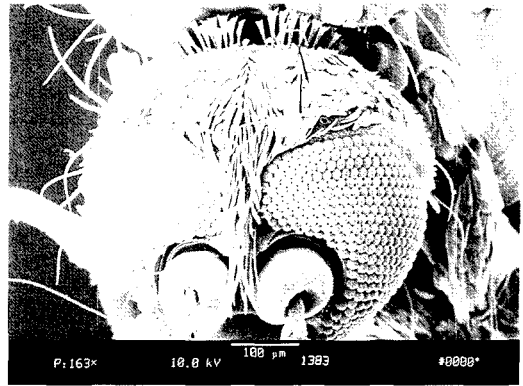
3. (continued)

Page 56

Head. Vertex with erect forked scales not numerous, not restricted to occiput



Head. Vertex with erect forked scales not numerous, restricted to occiput, or without erect forked scales



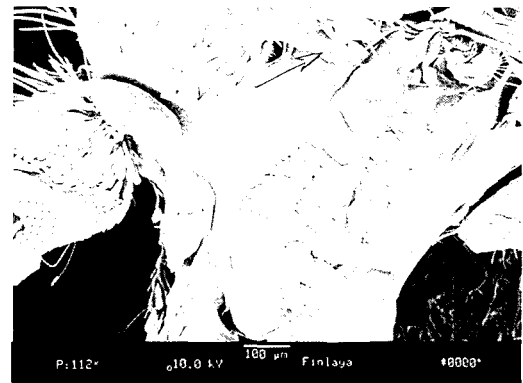
to Page 69b

Thorax. Paratergite without scales



to Page 57

Thorax. Paratergite with scales

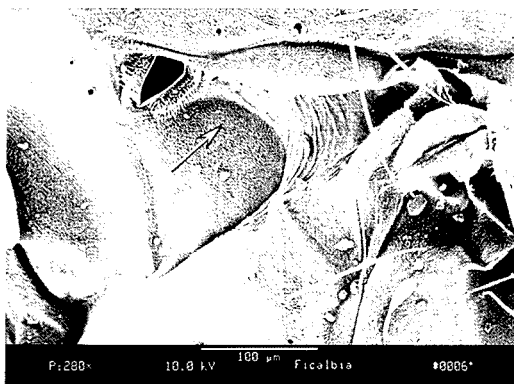


to Page 63b

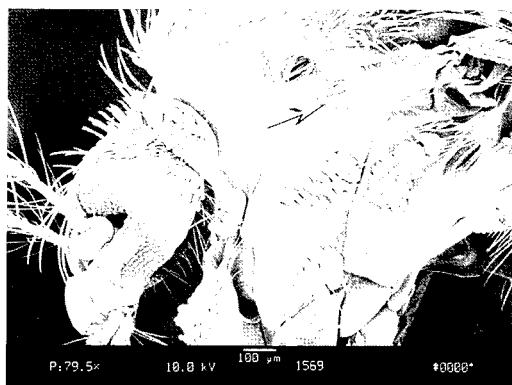
3. (continued)

Page 57

Thorax. Postspiracular setae  
absent

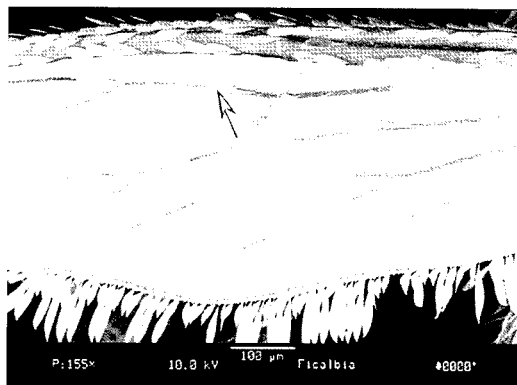


Thorax. Postspiracular setae  
present



\*\*

Wing. Plume scales all broad



to Page 58a

to Page 58b

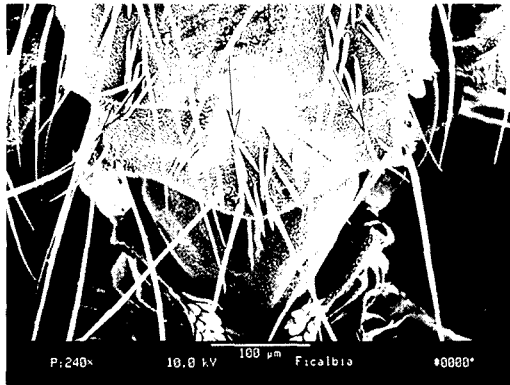


3. (continued)

Page 58a

\*\*

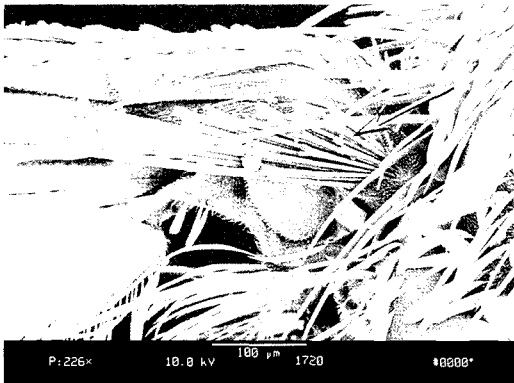
Thorax. Scutellum with all narrow scales



*Ficalbia*

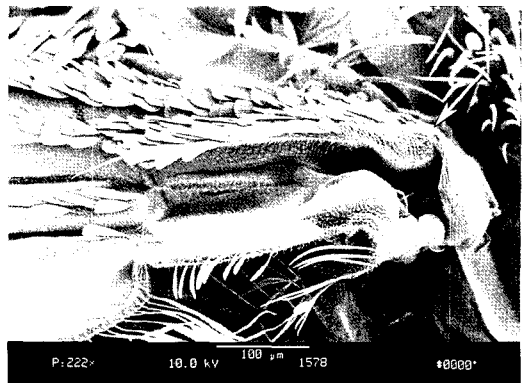
Page 58b

Wing. Base of vein R with a fan-like tuft of long forked scales on dorsal side



*Ochlerotatus* (in part)  
*(Chaetocruimyia)* (in part)

Wing. Base of vein R without a fan-like tuft of long forked scales on dorsal side

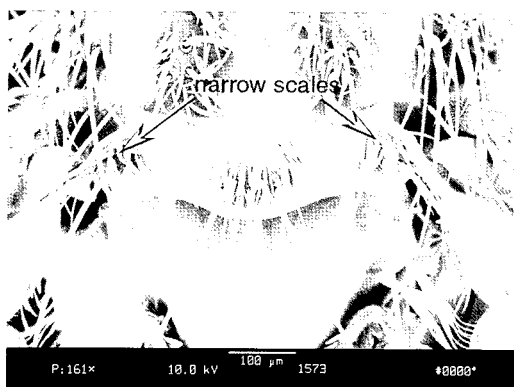


to Page 59

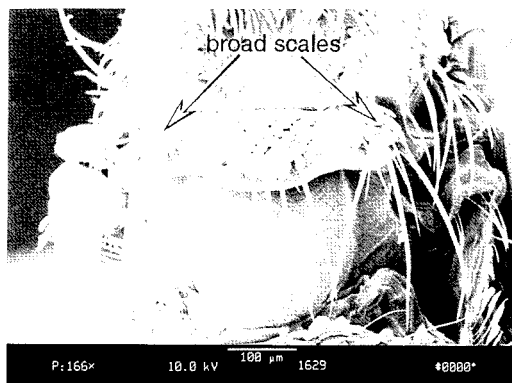
3. (continued)

Page 59

Thorax. Scutellum with all narrow scales on lateral lobes

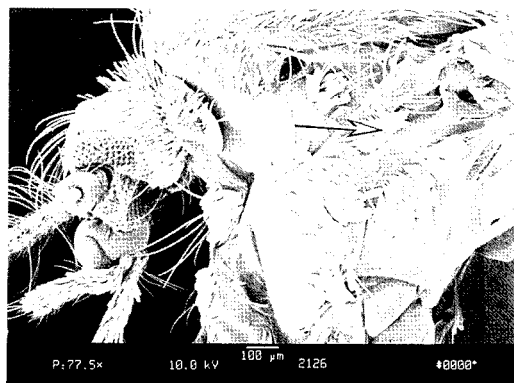


Thorax. Scutellum with all broad scales on lateral lobes



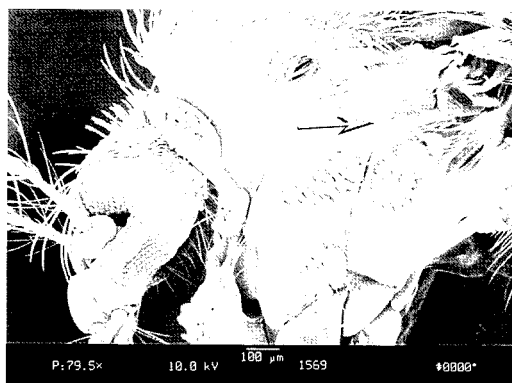
to Page 61

Thorax. Lower prealar scale patch present



to Page 60a

Thorax. Lower prealar scale patch absent



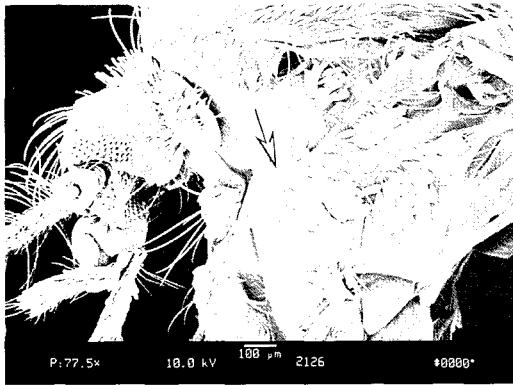
to Page 60b

3. (continued)

Page 60a

\*\*

Thorax. Subspiracular area with scales

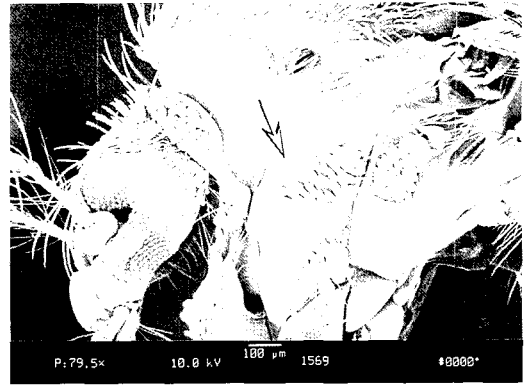


*Ochlerotatus* (in part)  
Atropalpus Group

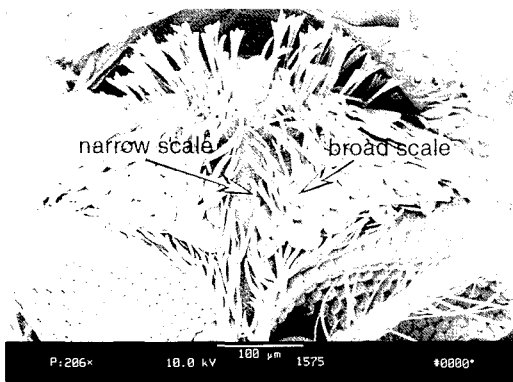
Page 60b

\*\*

Thorax. Subspiracular area without scales

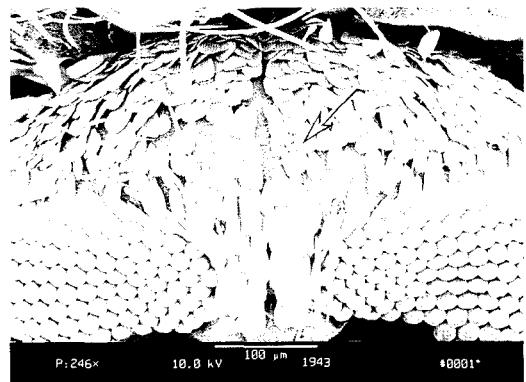


Head. Vertex with narrow and broad decumbent scales



*Aedes* (in part)  
(*Paraedes*) in part

Head. Vertex with broad, flat decumbent scales



*Verrallina* (in part)

3. (continued)

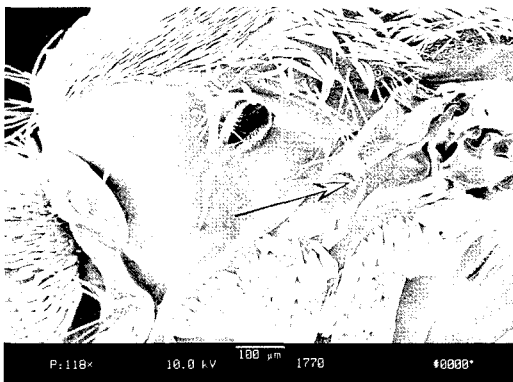
Page 61

\*\*

Thorax. Scutellum with all broad scales on midlobe

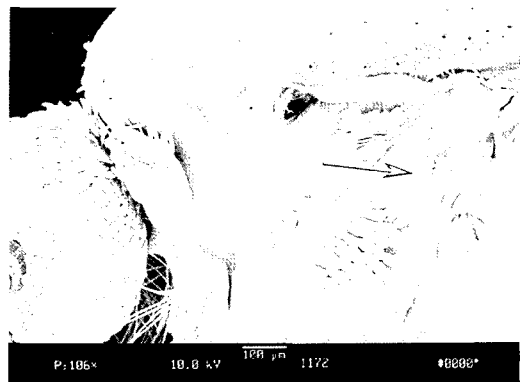


Thorax. Lower prealar scale patch present



*Ochlerotatus* (in part)  
(*Finlaya*) in part

Thorax. Lower prealar scale patch absent

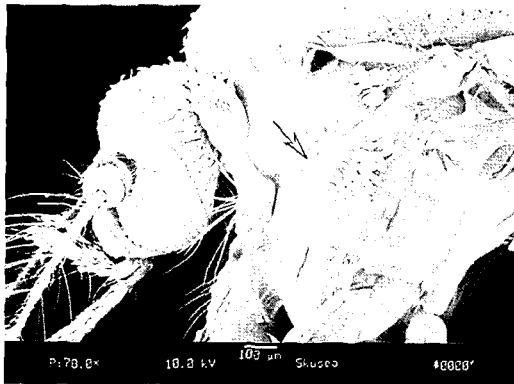


to Page 62

3. (continued)

Page 62

Thorax. Subspiracular area with scales

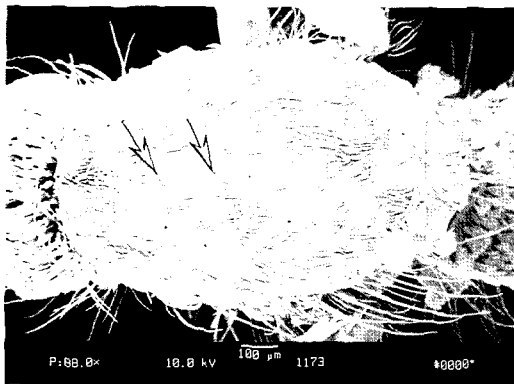


Thorax. Subspiracular area without scales



\*\*

Thorax. Acrostichal setae present



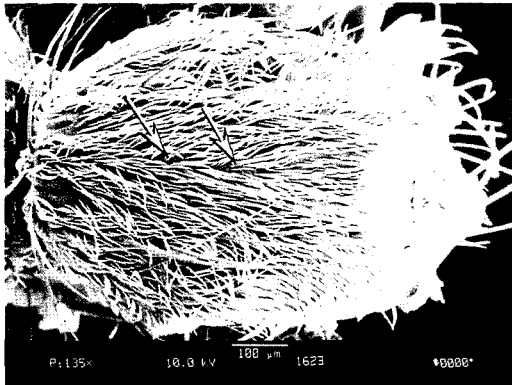
to Page 63a

*Aedes* (in part)  
(Skusea)

3. (continued)

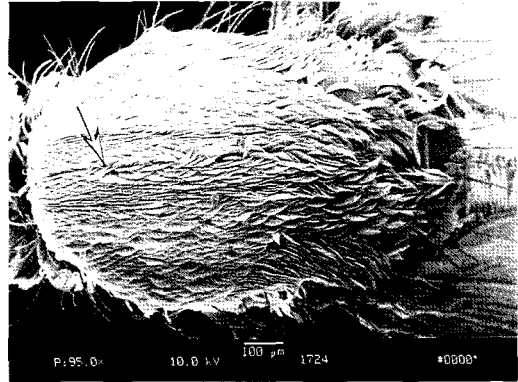
Page 63a

Thorax. Acrostichal setae present



*Aedes* (in part)  
(*Lorrainea*) in part

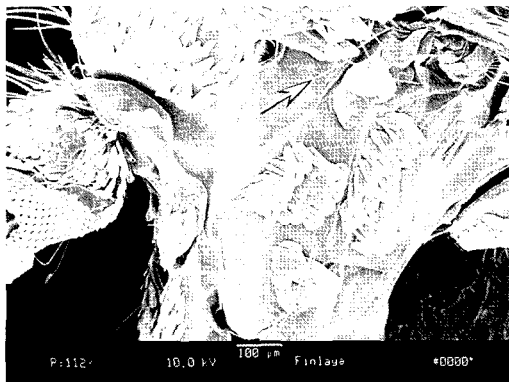
Thorax. Acrostichal setae absent



*Ochlerotatus* (in part)  
(*Finlaya*) in part

Page 63b

\*\*  
Thorax. Postspiracular setae  
present

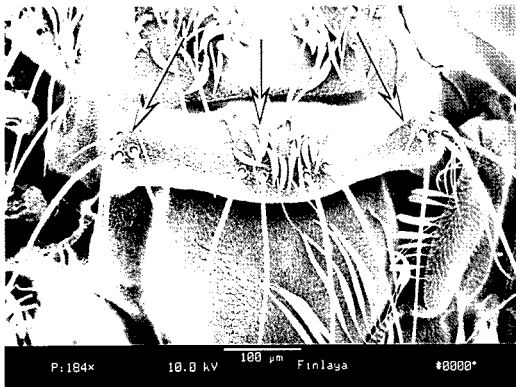


to Page 64

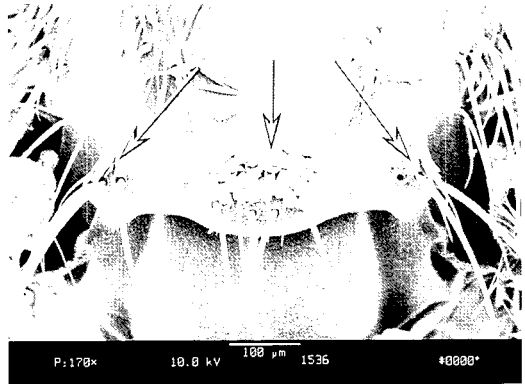
3. (continued)

Page 64

Thorax. Scutellum with all narrow scales

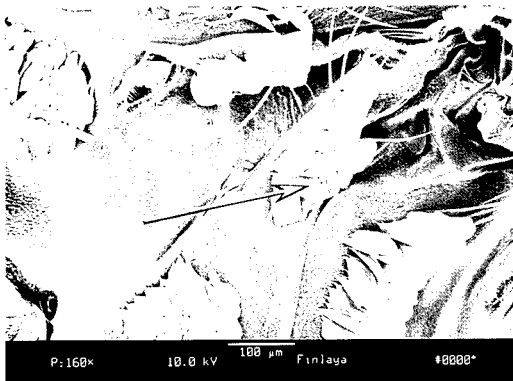


Thorax. Scutellum with all, or at least some broad scales on midlobe

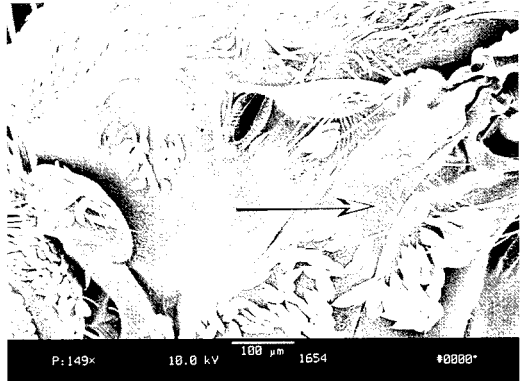


to Page 66b

Thorax. Lower prealar scale patch present



Thorax. Lower prealar scale patch absent



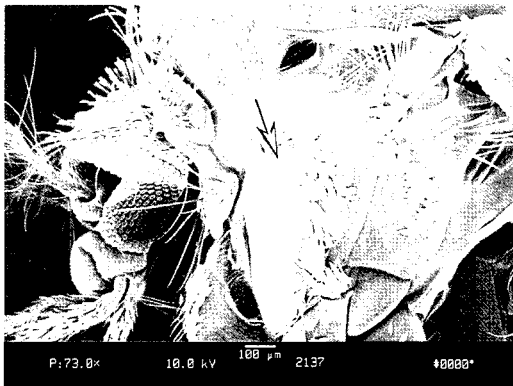
to Page 65

*Aedes* (in part)  
*(Paraedes)* in part

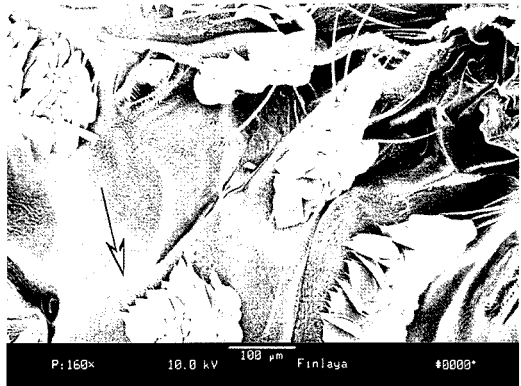
3. (continued)

Page 65

Thorax. Subspiracular area with scales

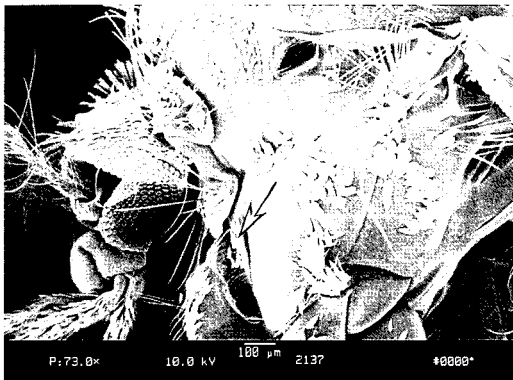


Thorax. Subspiracular area without scales



to Page 66a

Thorax. Postprocoxal membrane with scales



Thorax. Postprocoxal membrane without scales



***Ochlerotatus*** (in part)  
Fluviatilis Group

***Ochlerotatus*** (in part)  
(*Finlaya*) in part

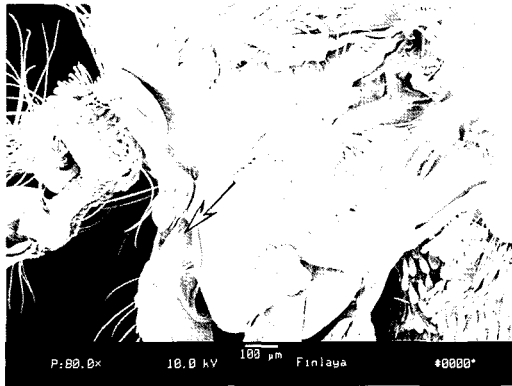


3. (continued)

Page 66a

\*\*

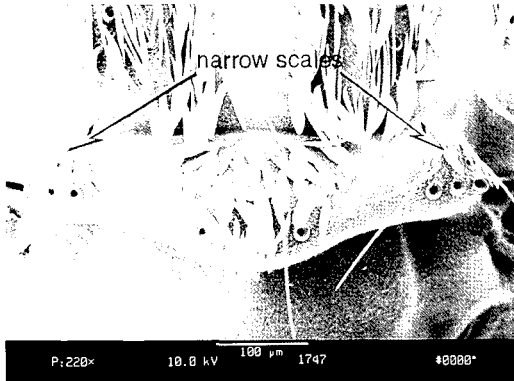
Thorax. Postprocoxal membrane without scales



*Ochlerotatus* (in part)  
*(Finlaya)* in part

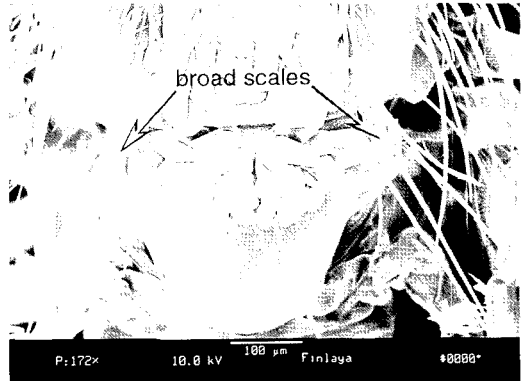
Page 66b

Thorax. Scutellum with narrow scales on lateral lobes



to Page 67

Thorax. Scutellum with all broad scales on lateral lobes



to Page 68

### 3. (continued)

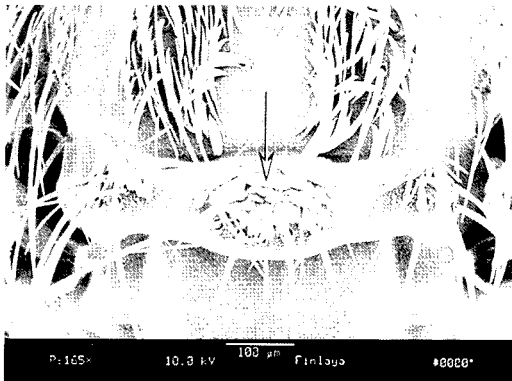
Page 67

\*\*

Thorax. Lower prealar scale patch present

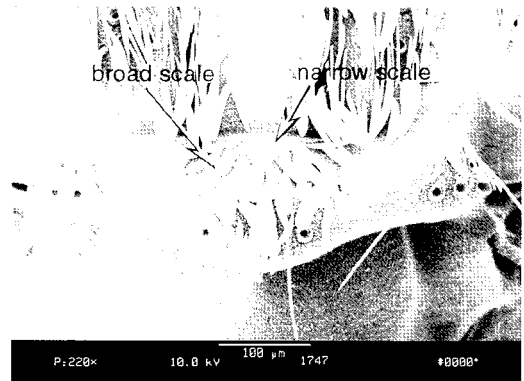


Thorax. Scutellum with all broad scales on midlobe



*Ochlerotatus* (in part)  
(*Finlaya*) in part

Thorax. Scutellum with broad and narrow scales on midlobe



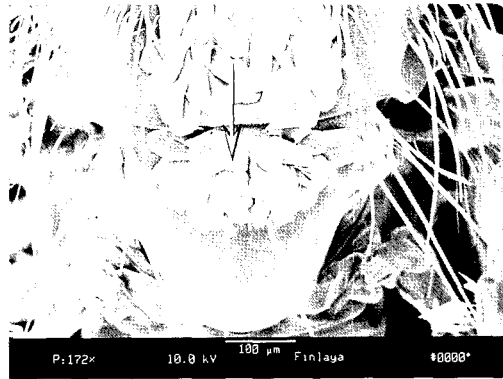
*Ochlerotatus* (in part)  
(*Howardina*) in part

3. (continued)

Page 68

\*\*

Thorax. Scutellum with all broad scales on midlobe

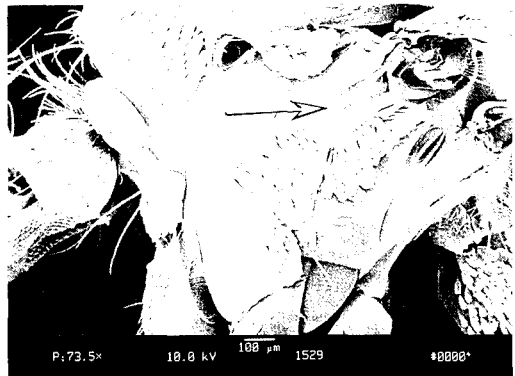


Thorax. Lower prealar scale patch present



*Ochlerotatus* (in part)  
(*Zavortinkius*)

Thorax. Lower prealar scale patch absent

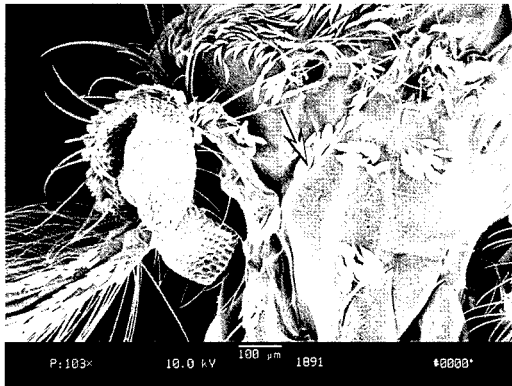


to Page 69a

3. (continued)

Page 69a

Thorax. Subspiracular area with scales



**Aedes** (in part)  
(*Diceromyia*) in part

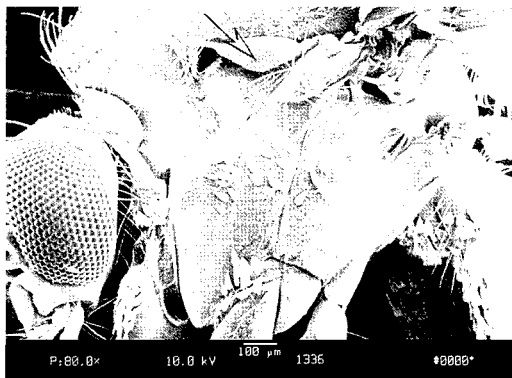
Thorax. Subspiracular area without scales



**Ochlerotatus** (in part)  
(*KenKnightia*)

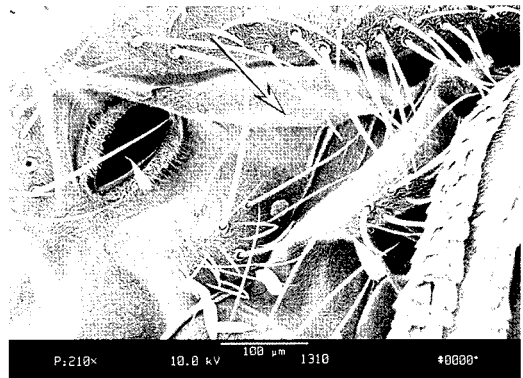
Page 69b

Thorax. Paratergite without scales



to Page 70

Thorax. Paratergite with scales

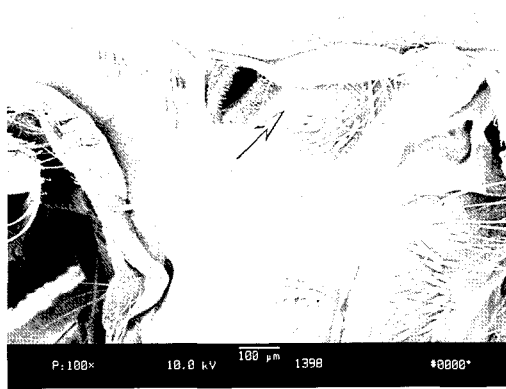


to Page 81b

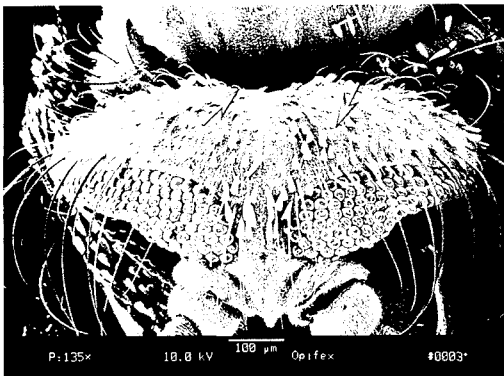
3. (continued)

Page 70

\*\*  
Thorax. Postspiracular setae  
present



Head. Vertex and occiput: with  
numerous short setae



*Opifex*  
*Opifex fuscus*

Head. Vertex and occiput without  
numerous short setae



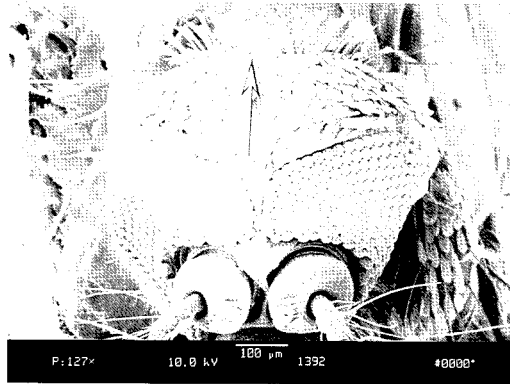
to Page 71

3. (continued)

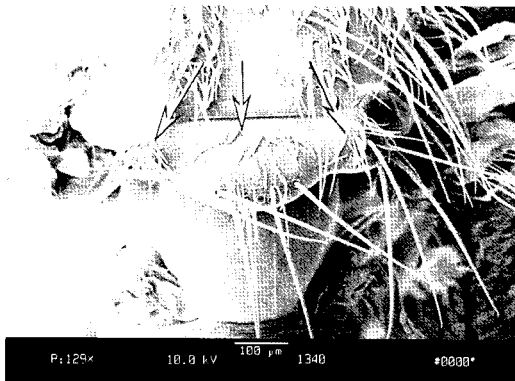
Page 71

\*\*

Head. Vertex with erect forked scales  
not numerous, restricted to occiput

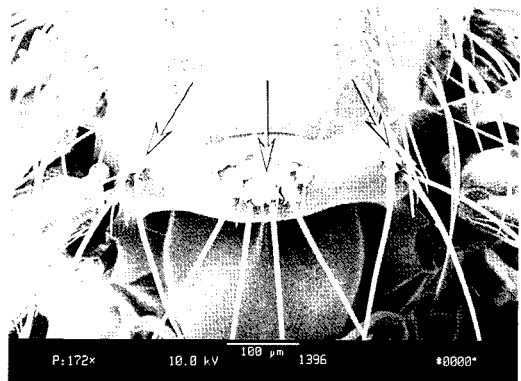


Thorax. Scutellum with all narrow  
scales



to Page 72

Thorax. Scutellum with all, or at least  
some broad scales on midlobe



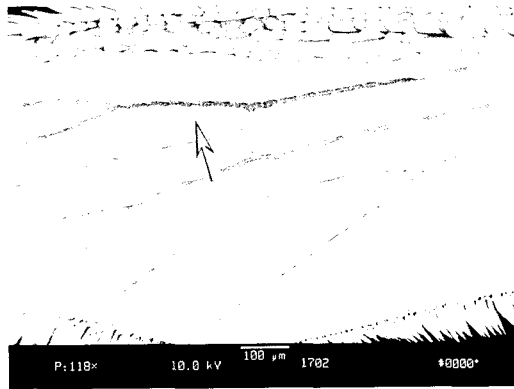
to Page 73b

3. (continued)

Page 72

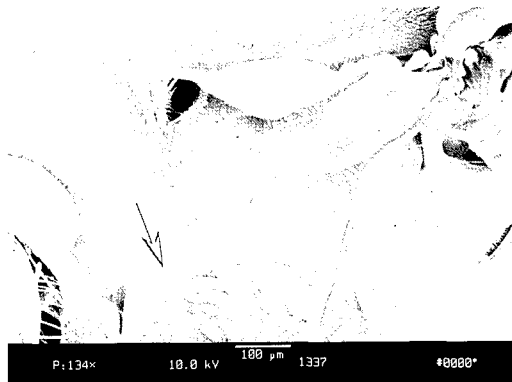
\*\*

Wing. Plume scales all narrow



\*\*

Thorax. Subspiracular area without scales

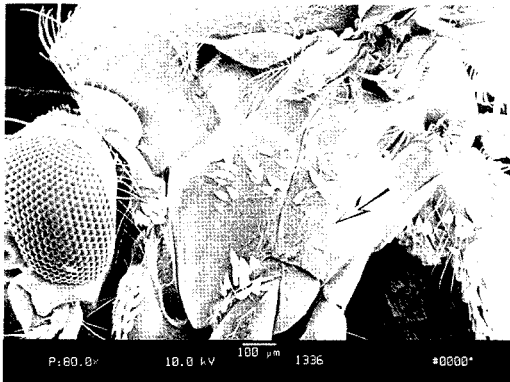


to Page 73a

3. (continued)

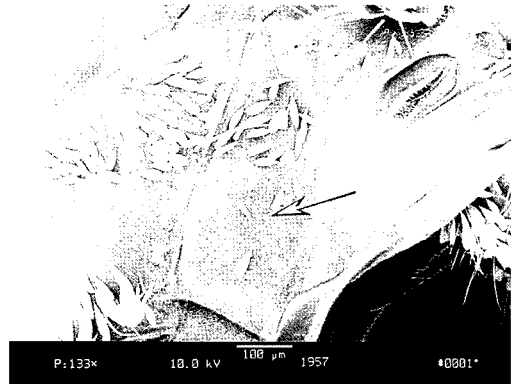
Page 73a

Thorax. Lower mesepimeral area with a patch of fine setae



*Verrallina* (in part)

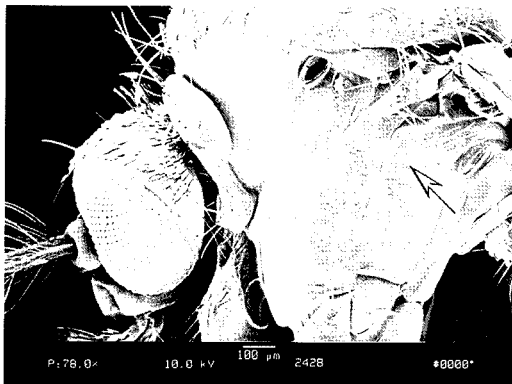
Thorax. Lower mesepimeral area without a patch of fine setae



*Verrallina* (in part)

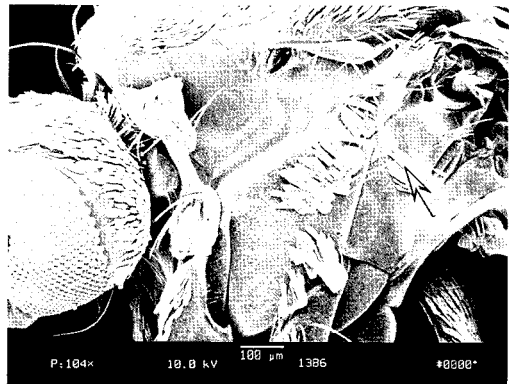
Page 73b

Thorax. Mesepimeron without scale patch



to Page 74

Thorax. Mesepimeron with scale patch



to Page 76

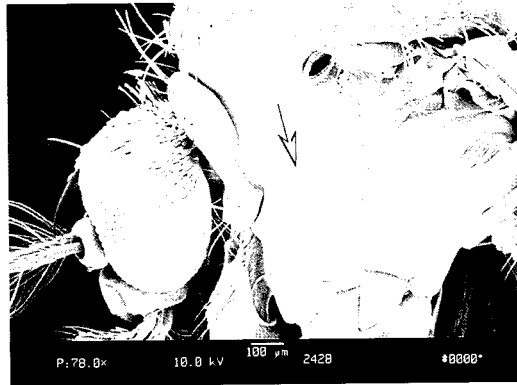


3. (continued)

Page 74

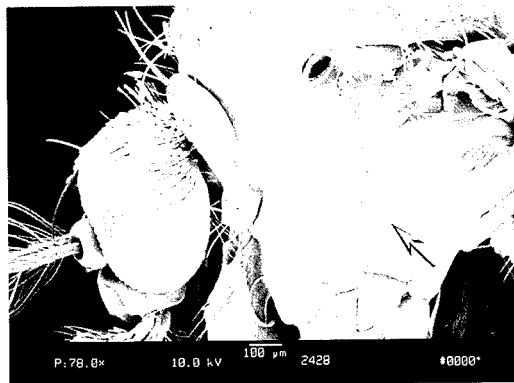
\*\*

Thorax. Subspiracular area  
without scales



\*\*

Thorax. Lower mesepimeral setae  
absent



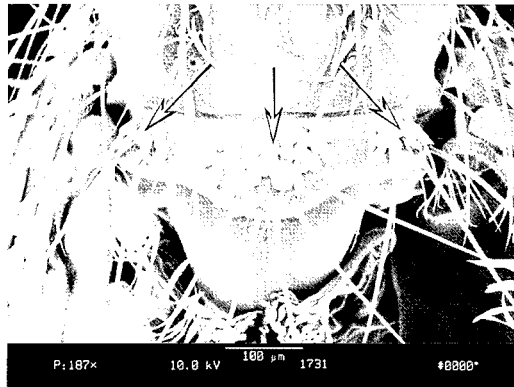
to Page 75

3. (continued)

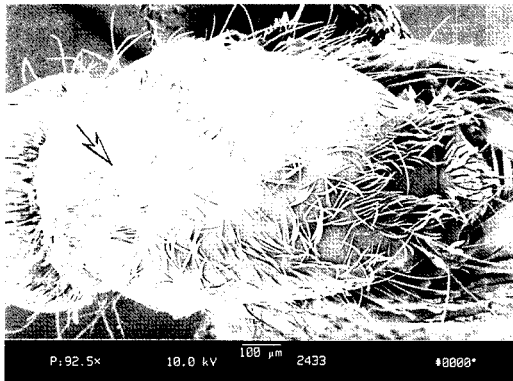
Page 75

\*\*

Thorax. Scutellum with all broad flat scales

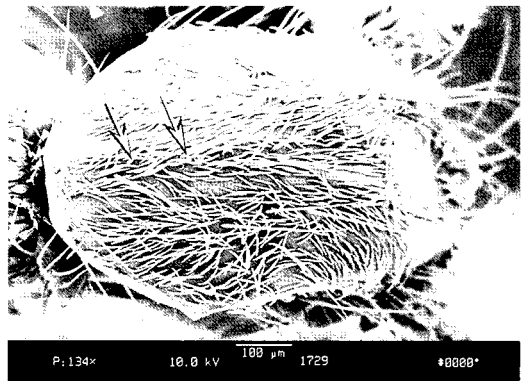


Throax. Acrostichal setae absent



*Aedes hortator*

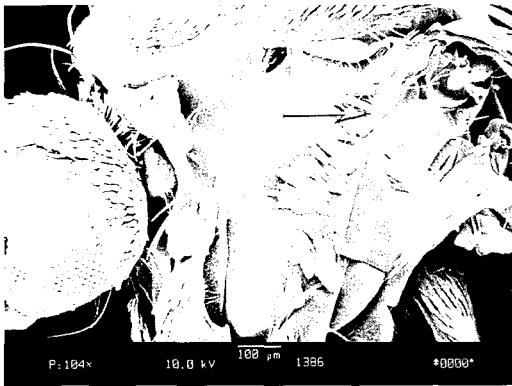
Thorax. Acrostichal setae present



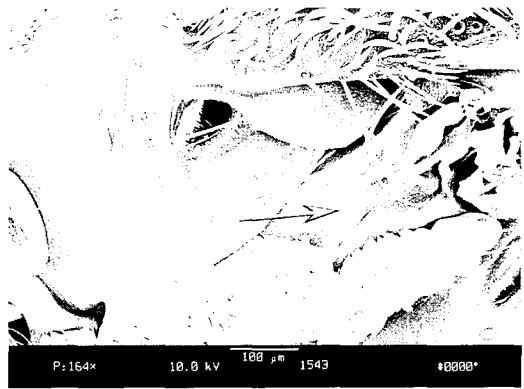
*Ochlerotatus* (in part)  
(*Rhinoskusea*)

3. (continued)

Thorax. Lower prealar scale patch present

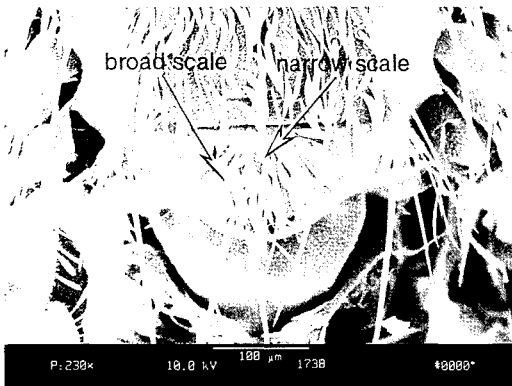


Thorax. Lower prealar scale patch absent



\*\*

Thorax. Scutellum with narrow scales in middle, and with broad flat scales laterally on midlobe



to Page 77

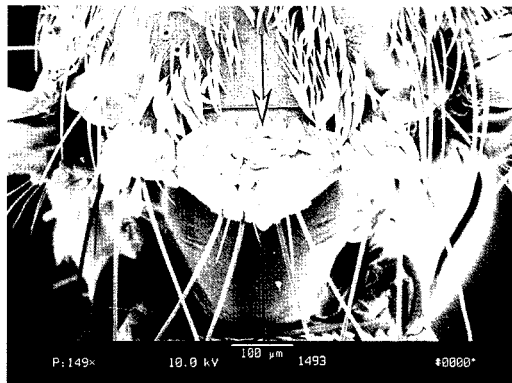
*Ochlerotatus* (in part)  
(*Howardina*) in part

3. (continued)

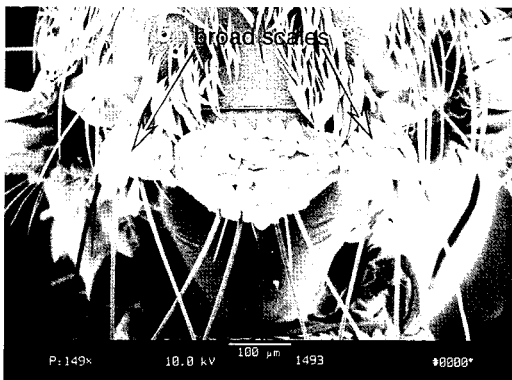
Page 77

\*\*

Thorax. Scutellum with all broad scales on midlobe

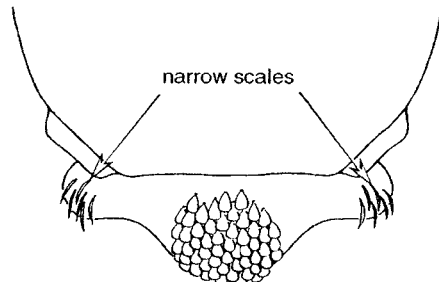


Thorax. Scutellum with all broad scales on lateral lobes



to Page 78

Thorax. Scutellum with all narrow curved scales on lateral lobes

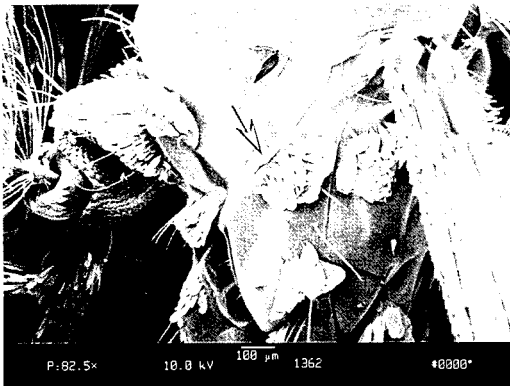


to Page 81a

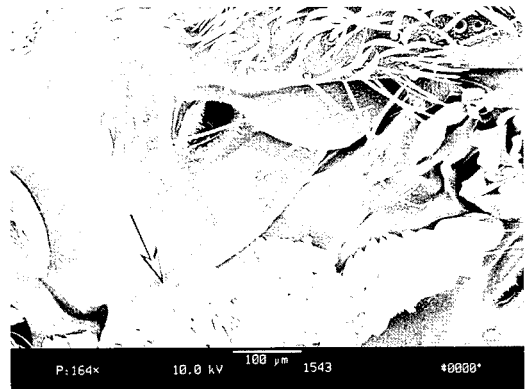
## 3. (continued)

Page 78

Thorax. Subspiracular area with  
scales

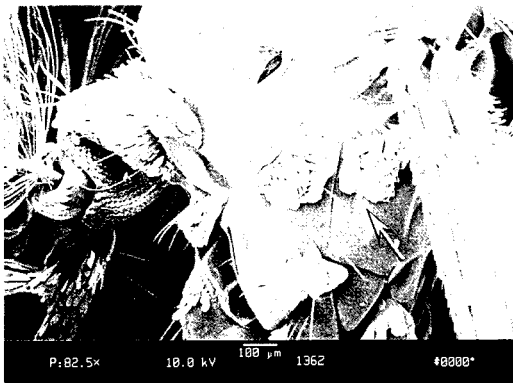


Thorax. Subspiracular area without  
scales



to Page 79

\*\*  
Thorax. Lower mesepimeral setae  
absent

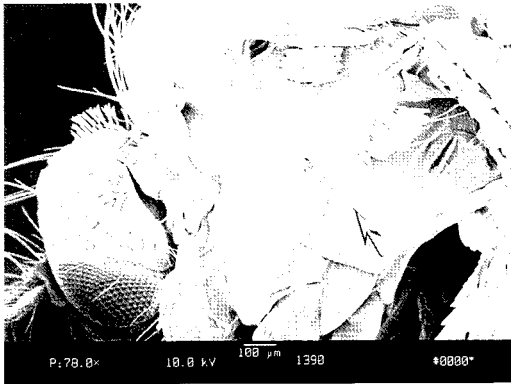


*Aedes* (in part)  
(*Stegomyia*) in part

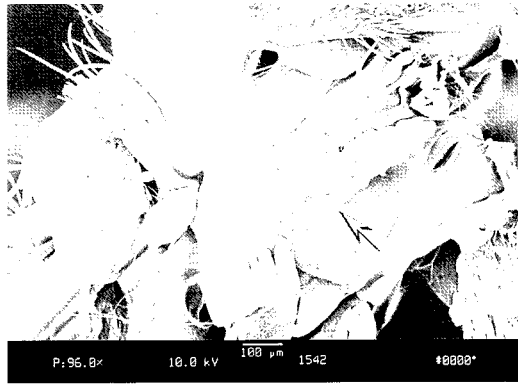
3. (continued)

Page 79

Thorax. Lower mesepimeral setae present

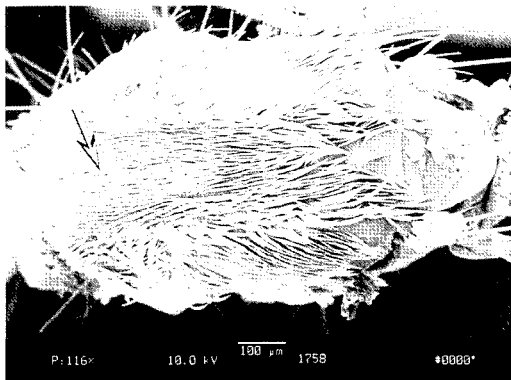


Thorax. Lower mesepimeral setae absent



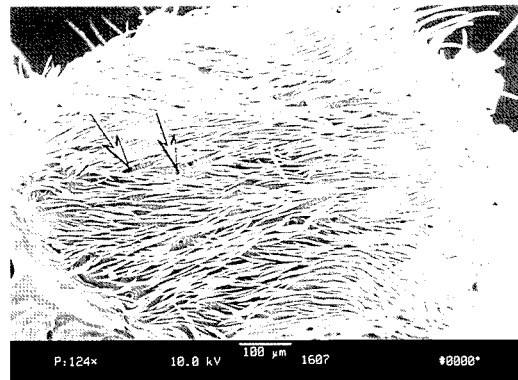
*Aedes* (in part)  
(*Bothaella*)

Thorax. Acrostichal setae absent



to Page 80a

Thorax. Acrostichal setae present



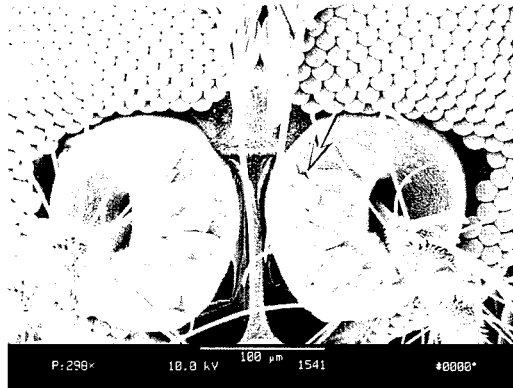
to Page 80b

## 3. (continued)

Page 80a

\*\*

Head. Pedicel with a patch of white broad overlapping scales on mesal surface

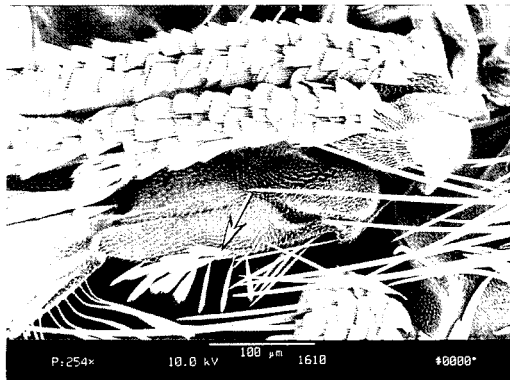


*Aedes* (in part)  
(*Scutomyia*)

Page 80b

\*\*

Wing. Alula with a few broad decumbent scales in addition to the fringe scales



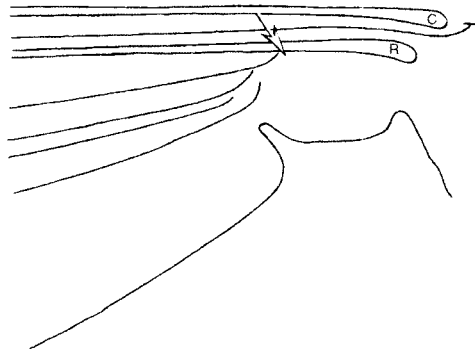
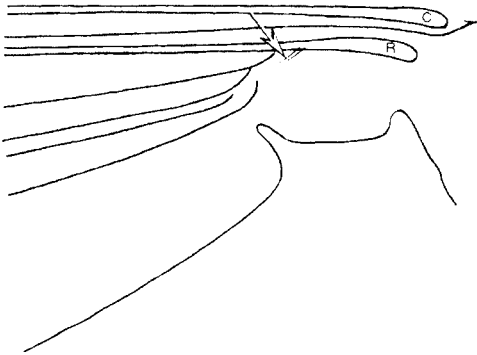
*Aedes* (in part)  
(*Lorrainea*) in part

3. (continued)

Page 81a

Wing. Remigial setae present

Wing. Remigial setae absent



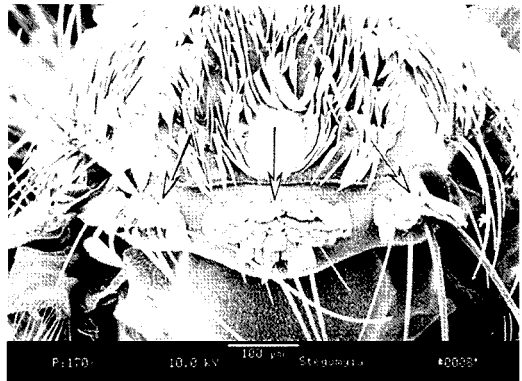
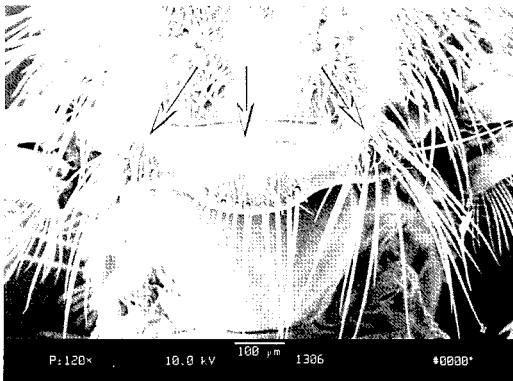
**Aedes** (in part)  
(*Diceromyia*) in part

**Aedes** (in part)  
(*Indusius*) *pulverulentus*

Page 81b

Thorax. Scutellum with all narrow scales

Thorax. Scutellum with all, or at least some broad scales on midlobe



to Page 82

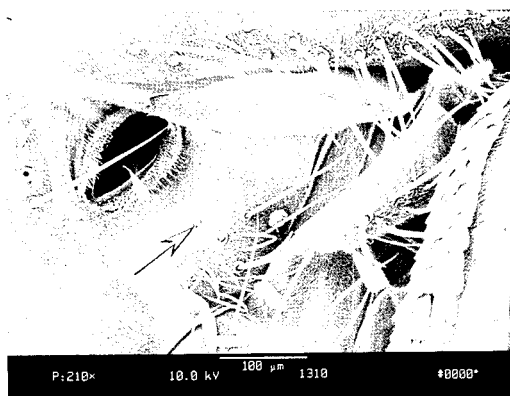
to Page 83



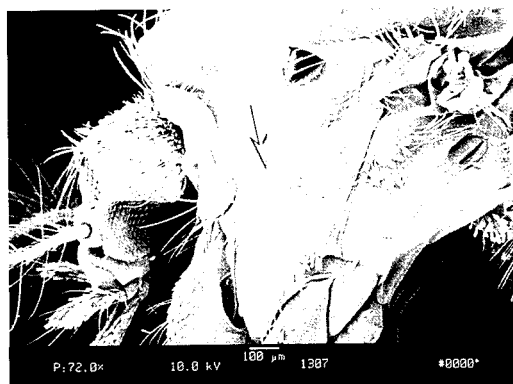
### 3. (continued)

Page 82

\*\*  
Thorax. Postspiracular setae  
present



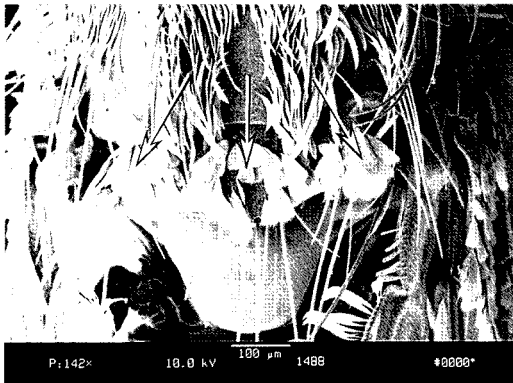
\*\*  
Thorax. Subspiracular area without  
scales



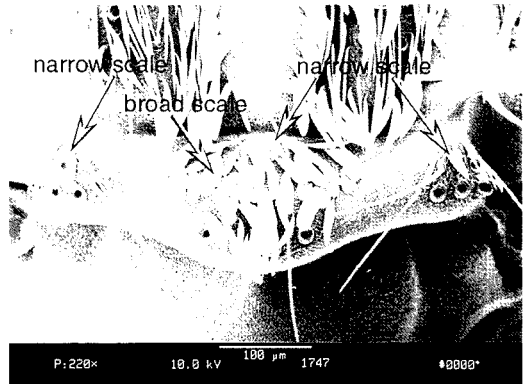
*Verrallina* (in part)

3. (continued)

Thorax. Scutellum with all broad scales

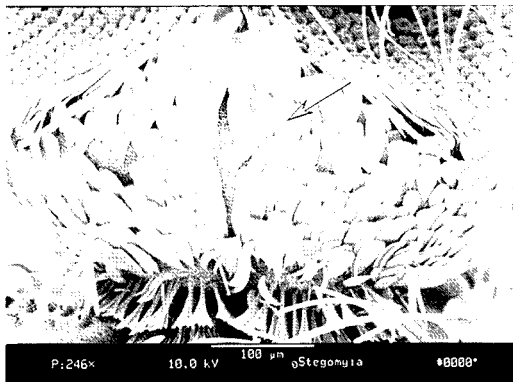


Thorax. Scutellum with broad and narrow scales on midlobe, and with narrow scales on lateral lobes



to Page 86b

\*\*  
Head. Vertex with all broad, flat decumbent scales



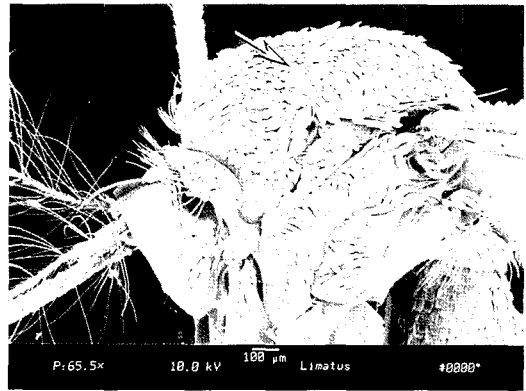
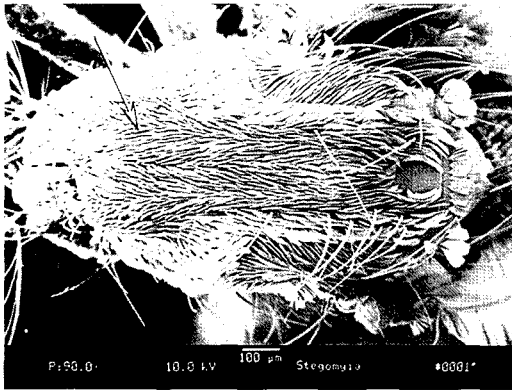
to Page 84

3. (continued)

Page 84

Thorax. Scutum with all, or mainly narrow scales

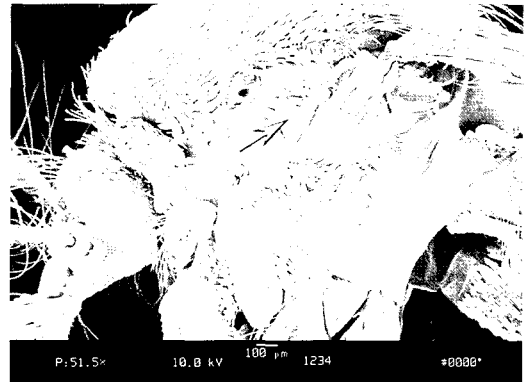
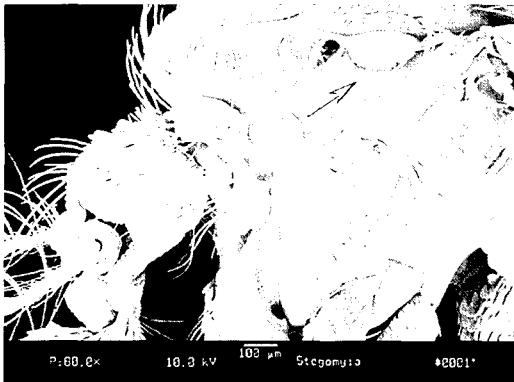
Thorax. Scutum with all broad or moderately broad flat scales



to Page 91

Thorax. Postspiracular setae present

Thorax. Postspiracular setae absent



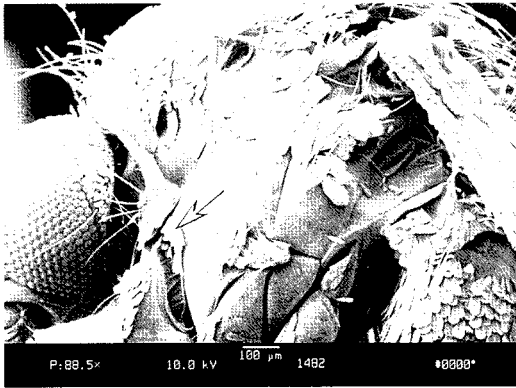
to Page 85

*Armigeres* (in part)

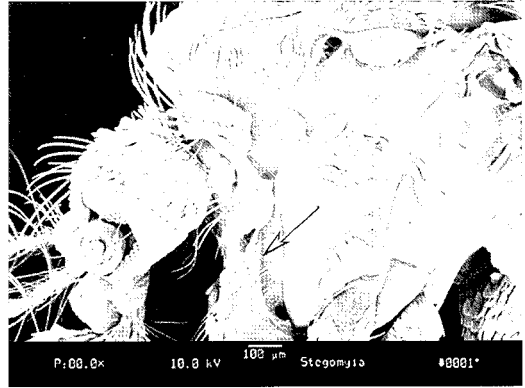
3. (continued)

Page 85

Thorax. Postprocoxal membrane with scales

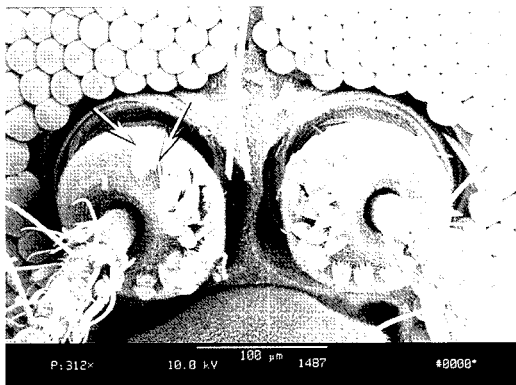


Thorax. Postprocoxal membrane without scales



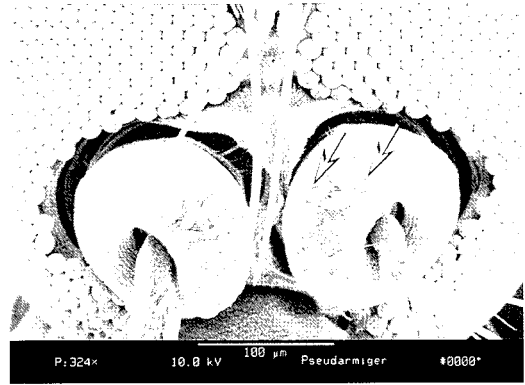
to Page 87

Head. Pedicel with a few setae mixed with broad scales on mesal surface



to Page 86a

Head. Pedicel with setae and scales on mesal surface



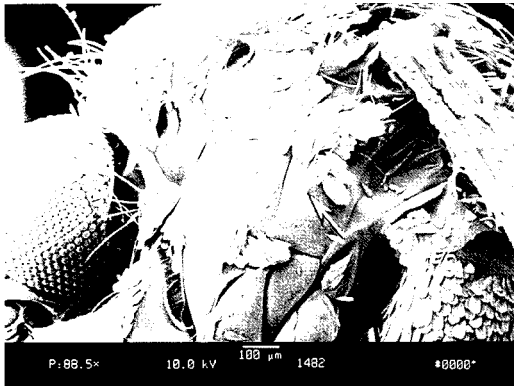
**Aedes** (in part)  
(*Pseudarmigeres*)

3. (continued)

Page 86a

\*\*

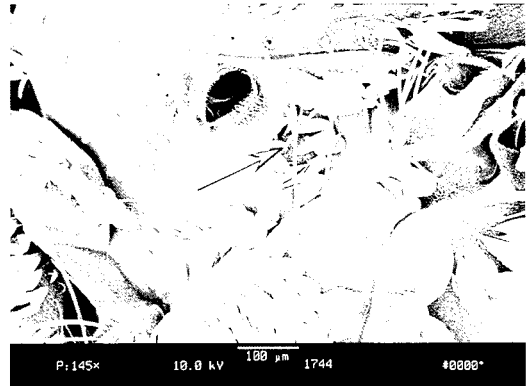
Thorax. Lower mesepimeral setae present



Page 86b

\*\* 1

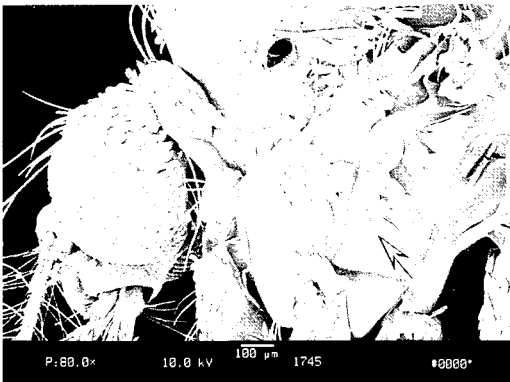
Thorax. Postspiracular setae present



*Aedes* (in part)  
(*Christophersiomyia*)

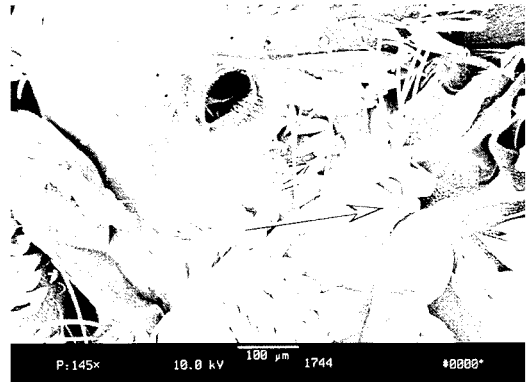
\*\* 2

Thorax. Lower mesepimeral setae absent



\*\* 3

Thorax. Lower prealar scale patch present

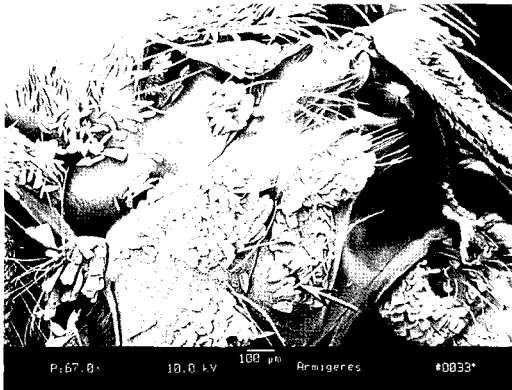


*Ochlerotatus* (in part)  
(*Howardina*) in part

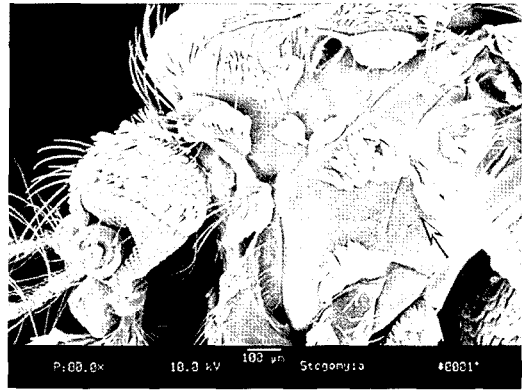
3. (continued)

Page 87

Thorax. Lower mesepimeral setae present

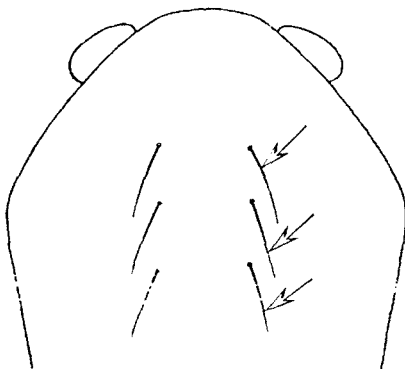


Thorax. Lower mesepimeral setae absent



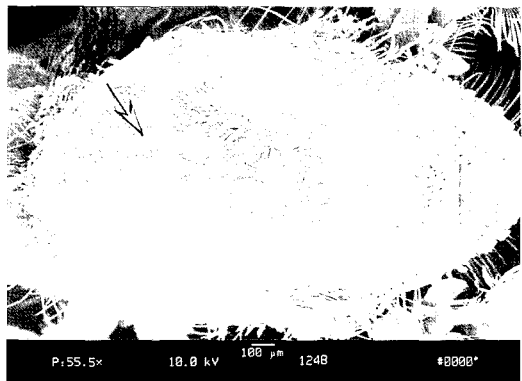
to Page 88c

Thorax. Dorsocentral setae present



to Page 88a

Thorax. Dorsocentral setae absent

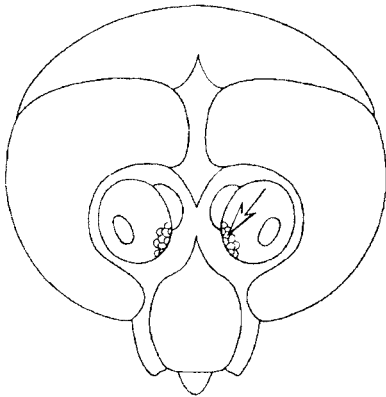


to Page 88b

3. (continued)

Page 88a

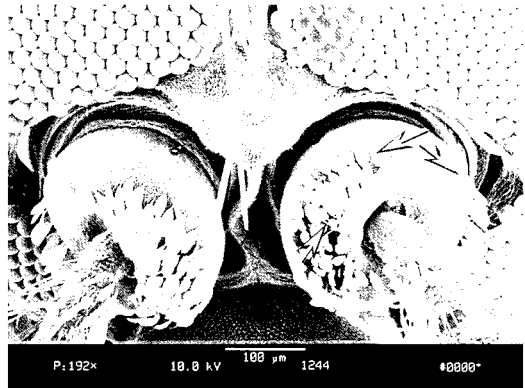
\*\*  
Head. Pedicel with a small patch of white broad overlapping scales on mesal surface



*Aedes* (in part)  
*(Stegomyia)* in part

Page 88b

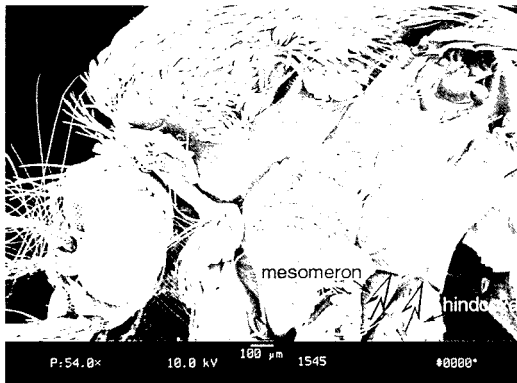
\*\*  
Head. Pedicel with a few setae mixed with white broad scales on mesal and lateral surfaces



*Armigeres* (in part)

Page 88c

Thorax. Base of mesomeron level with, or slightly above base of hindcoxa



to Page 89

Thorax. Base of mesomeron distinctly above base of hindcoxa

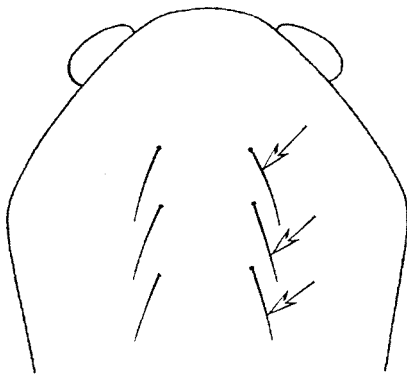


to Page 90b

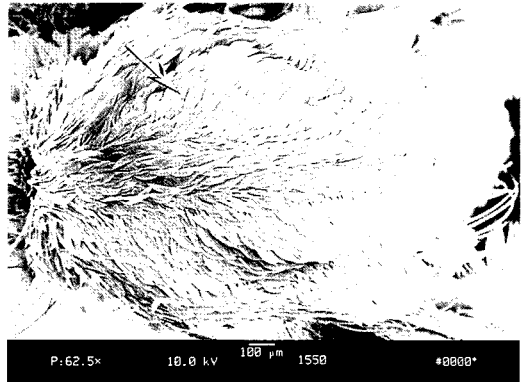
3. (continued)

Page 89

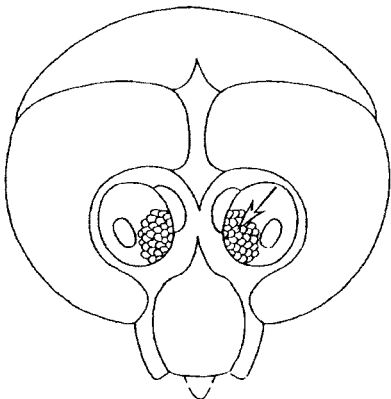
Thorax. Dorsocentral setae present



Thorax. Dorsocentral setae absent



\*\*  
Head. Pedicel with a large patch of broad scales on mesal surface



**Aedes** (in part)  
*(Belkinus) aurotaeniatus*

to Page 90a

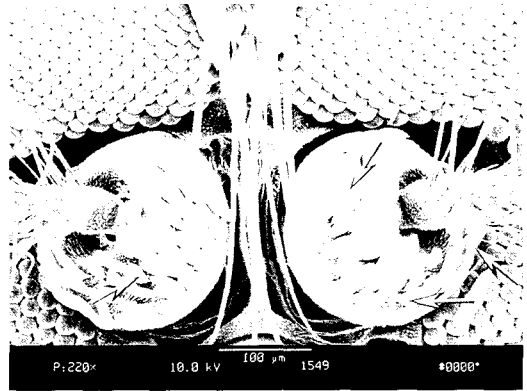
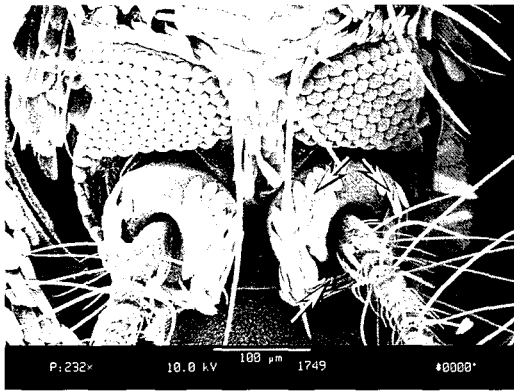


3. (continued)

Page 90a

Head. Pedicel with white broad overlapping scales on mesal, ventral and lateral surfaces

Head. Pedicel with a few setae mixed with white broad scales on mesal, ventral and lateral surfaces



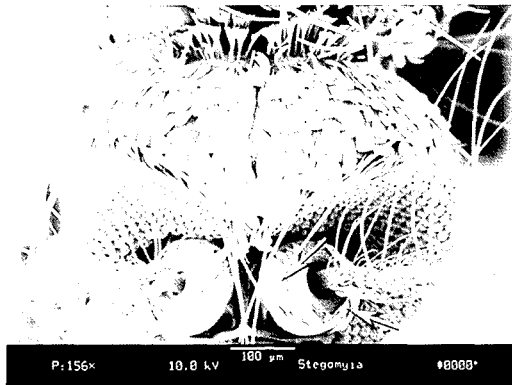
*Aedes* (in part)  
(*Stegomyia*) in part

*Aedes* (in part)  
(*Alanstonea*)

Page 90b

\*\*

Head. Pedicel with white broad overlapping scales on mesal and lateral surfaces

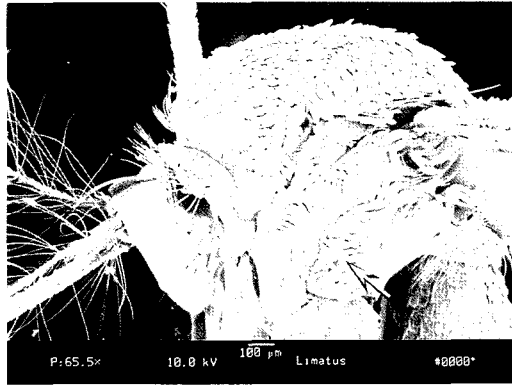


*Aedes* (in part)  
(*Stegomyia*) in part

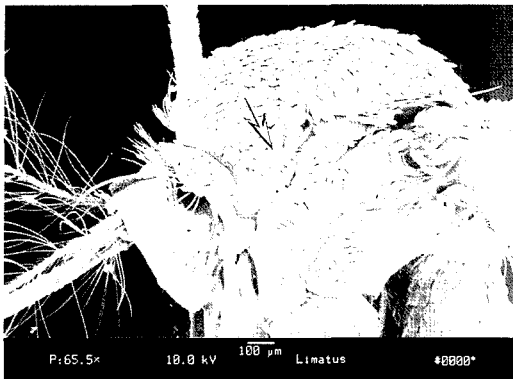
3. (continued)

Page 91

\*\*  
Thorax. Lower mesepimeral setae  
absent

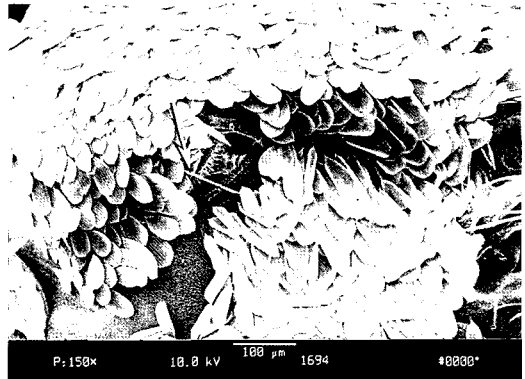


Thorax. Postpronotal setae  
absent



*Limatus*

Thorax. Postpronotal setae  
present

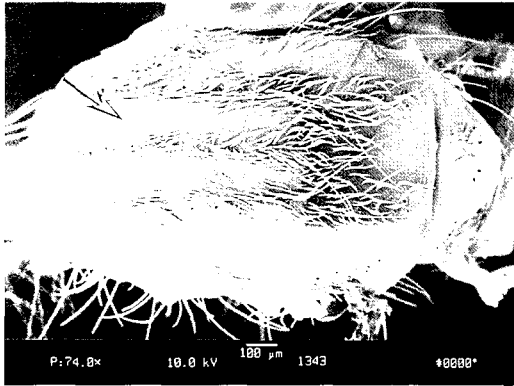


*Haemagogus*

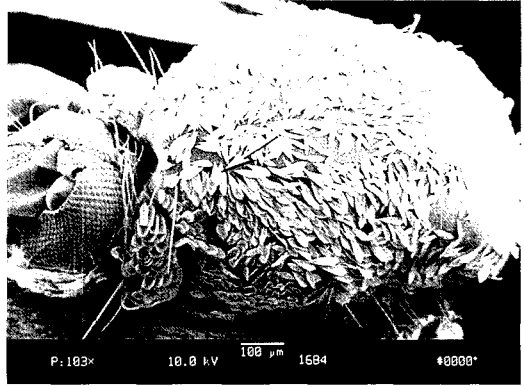
### 3. (continued)

Page 92

Thorax. Scutum with all, or mainly narrow scales

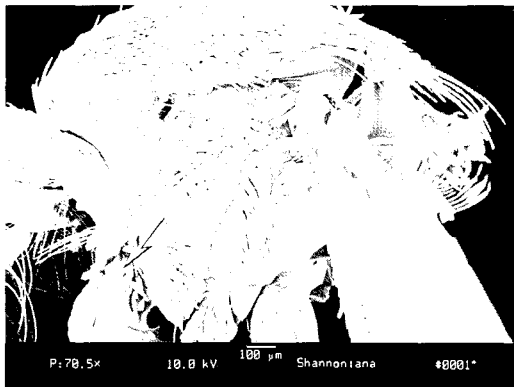


Thorax. Scutum with all broad flat scales



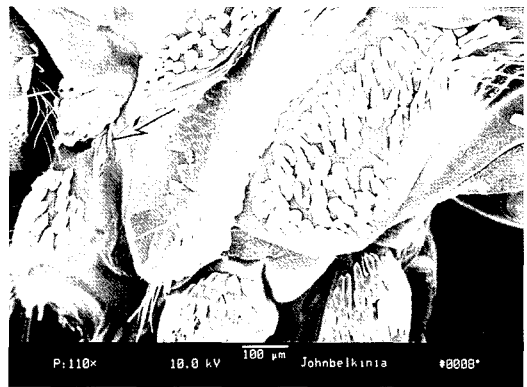
to Page 96

Thorax. Postprocoxal membrane with scales



to Page 93

Thorax. Postprocoxal membrane without scales

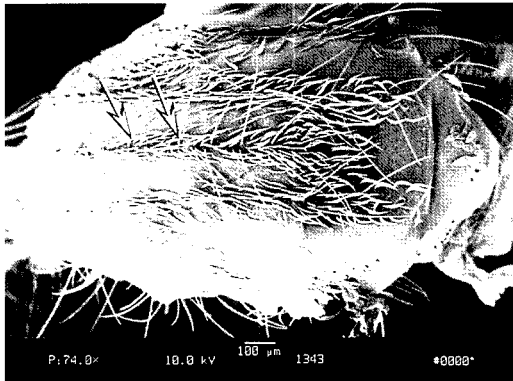


to Page 95

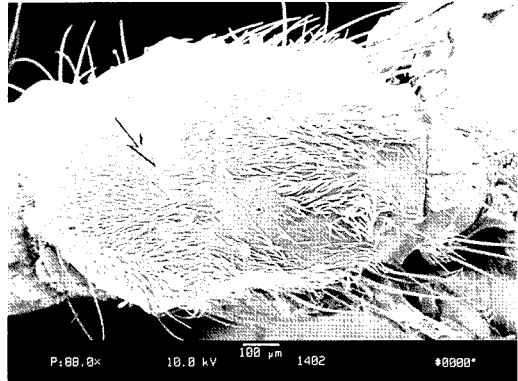
3. (continued)

Page 93

Thorax. Acrostichal setae present

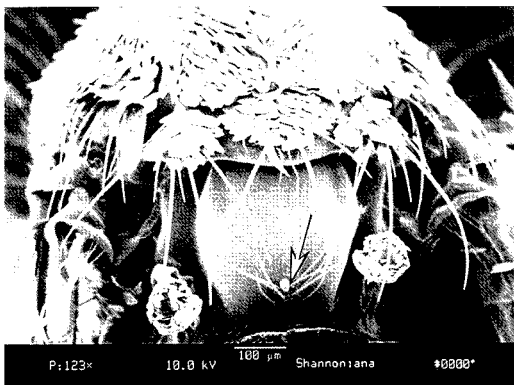


Thorax. Acrostichal setae absent

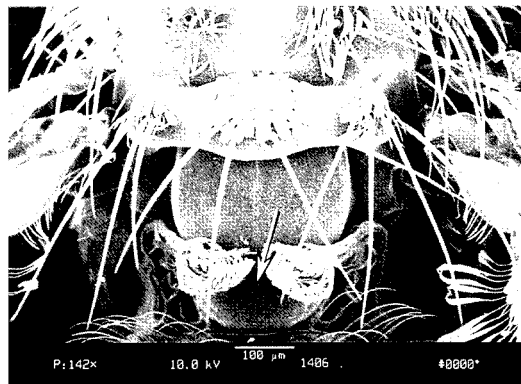


*Maorigoeldia*

Thorax. Mesopostnotal setae present



Thorax. Mesopostnotal setae absent



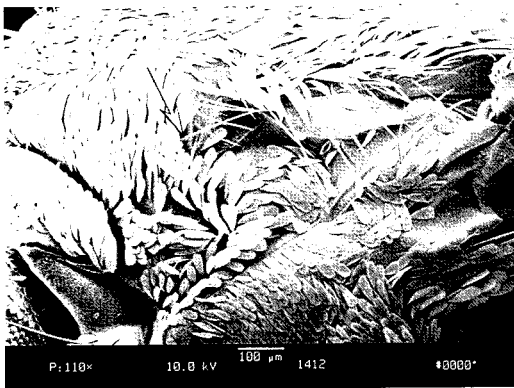
to Page 94a

to Page 94b

### 3. (continued)

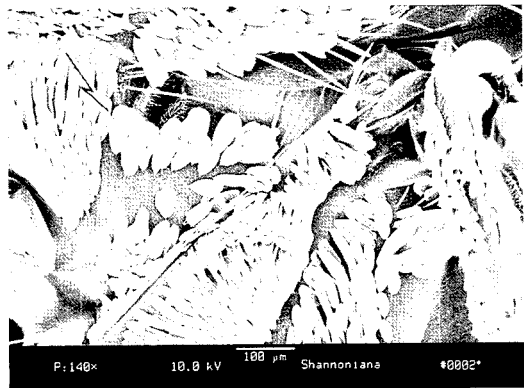
Page 94a

Thorax. Postpronotal setae present



*Tripteroides* (in part)

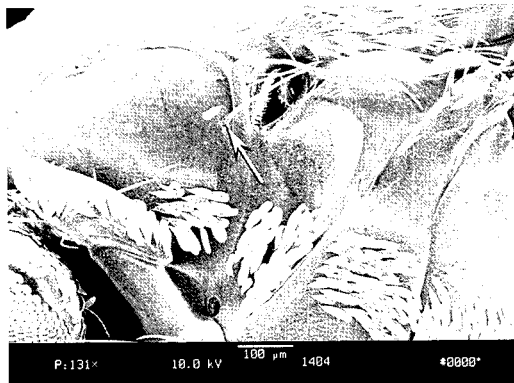
Thorax. Postpronotal setae absent



*Shannoniana*

Page 94b

\*\*  
Thorax. Postpronotal setae present

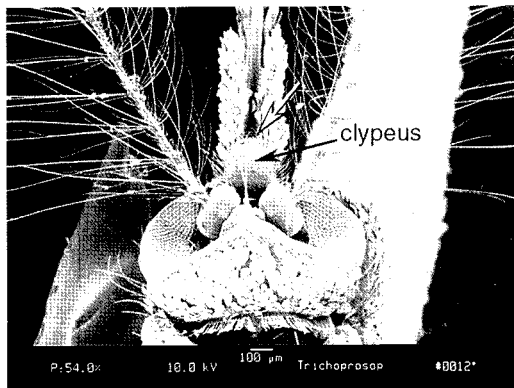


*Tripteroides* (in part)

3. (continued)

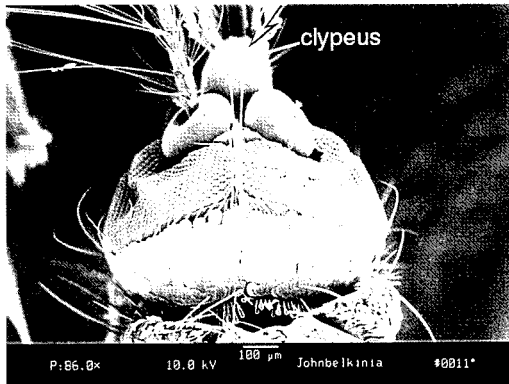
Page 95

Head. Clypeus with conspicuous setulae

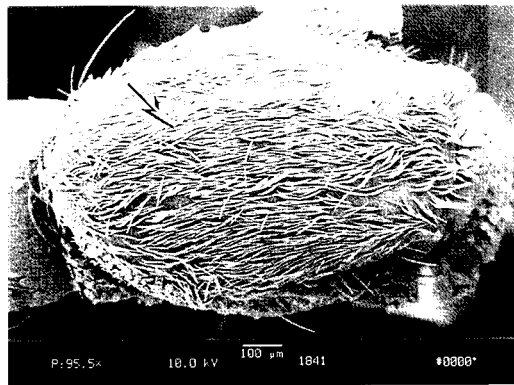


*Trichoprosopon*

Head. Clypeus without conspicuous setulae

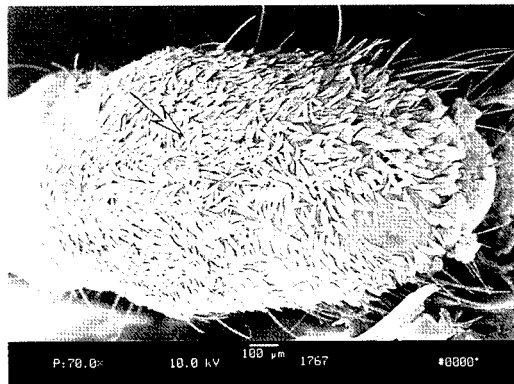


Thorax. Scutum with very narrow scales



*Runchomyia*

Thorax. Scutum with much broader scales

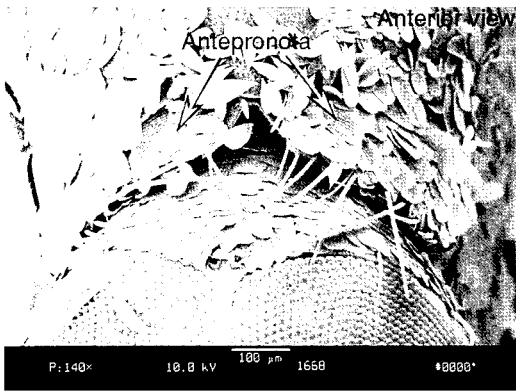


*Johnbelkinia*

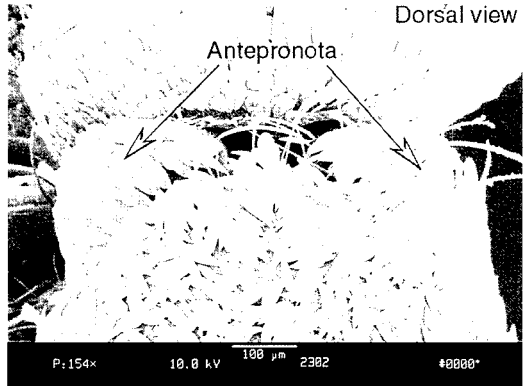
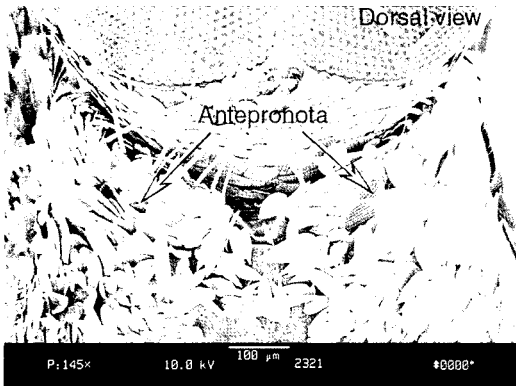
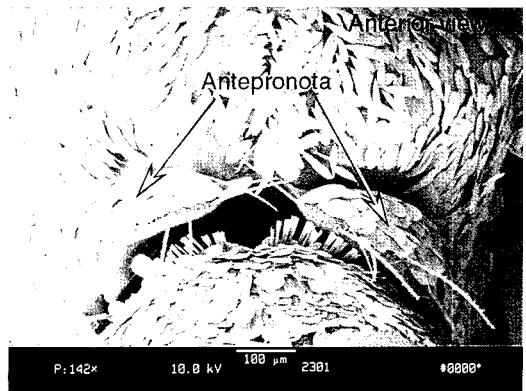
3. (continued)

Page 96

Thorax. Antepronota large, almost touching middorsally



Thorax. Antepronota large or small, widely separated middorsally



to Page 97

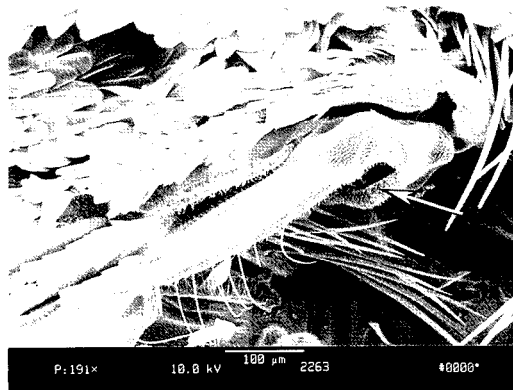
to Page 99

3. (continued)

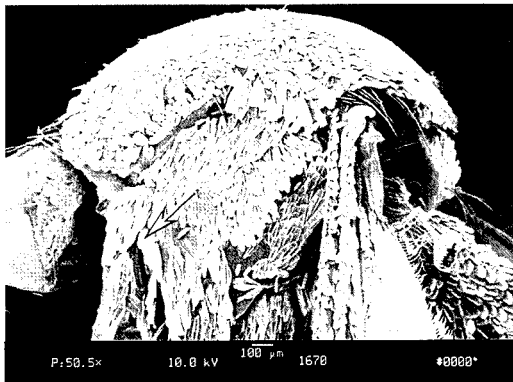
Page 97

\*\*

Wing. Upper calypter not fringed

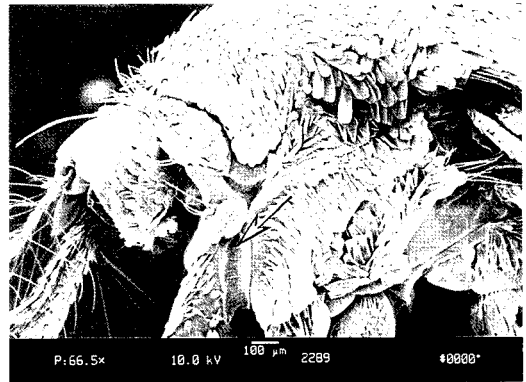


Thorax. Postprocoxal membrane with scales



to Page 98a

Thorax. Postprocoxal membrane without scales



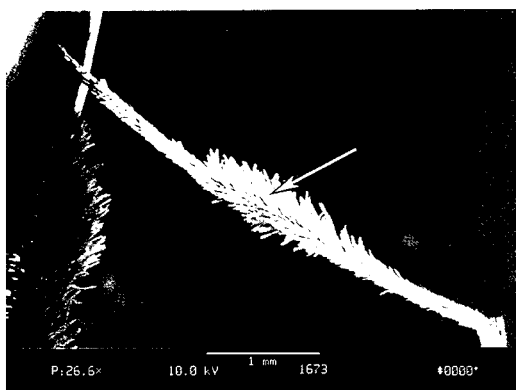
to Page 98b



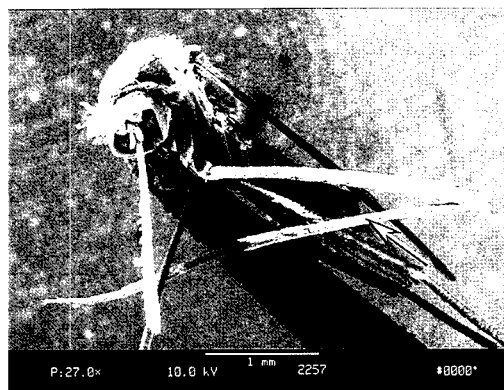
3. (continued)

Page 98a

Leg. Fore-tibia with paddle of erect scales



Leg. Fore-tibia without paddle of erect scales



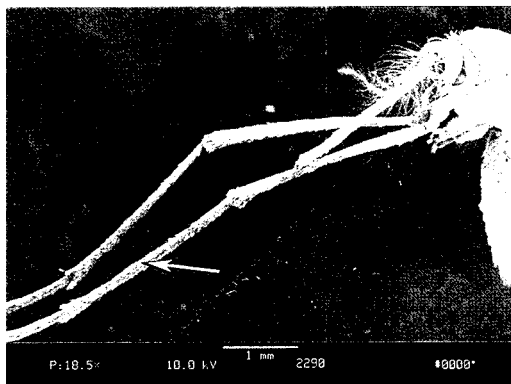
*Sabethes* (in part)

*Sabethes* (in part)

Page 98b

\*\*

Leg. Fore-tibia without paddle of erect scales

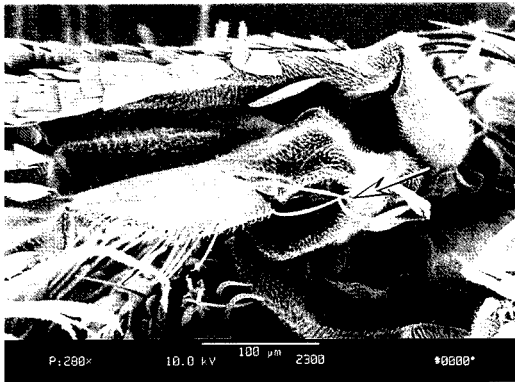


*Sabethes* (in part)

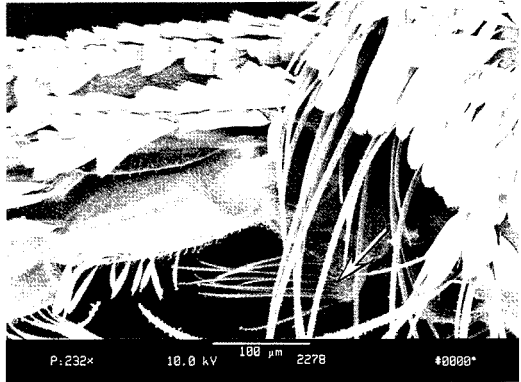
### 3. (continued)

Page 99

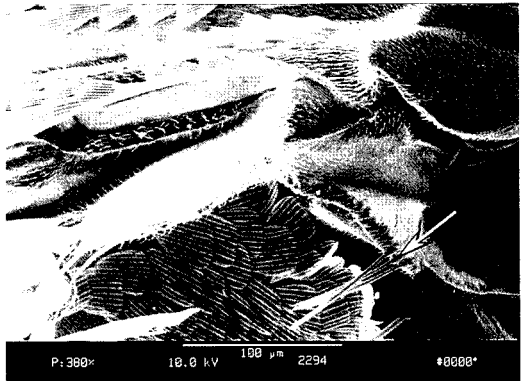
Wing. Upper calypter not fringed, or with only a few (1-3) setae near alula



Wing. Upper calypter fringed with hair-like setae, or with 3-4 setae far from alula



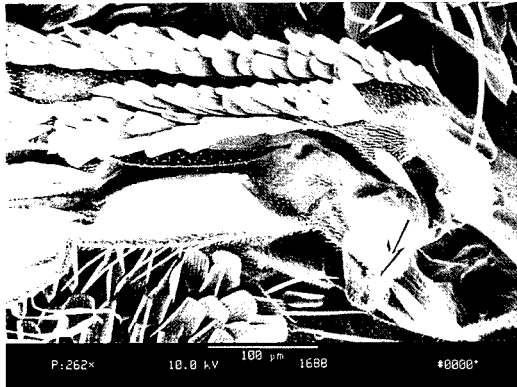
to Page 100



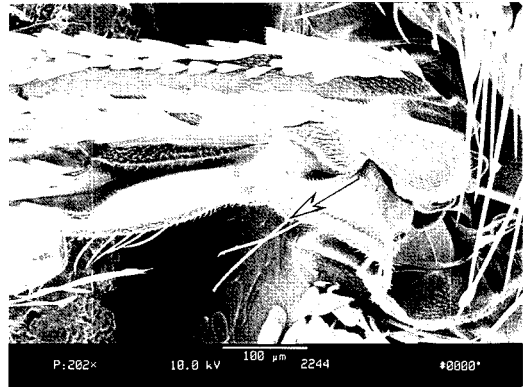
*Isostomyia*

3. (continued)

Wing. Upper calypter not fringed



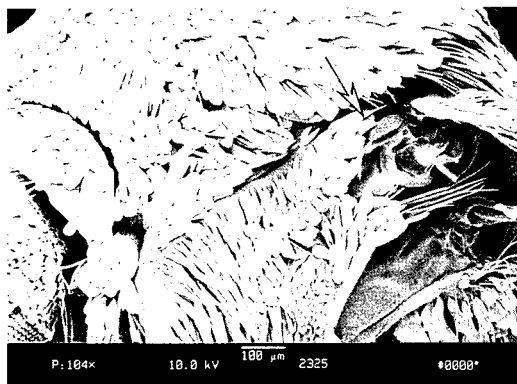
Wing. Upper calypter with few (1-3) setae near alula



*Wyeomyia* (in part)  
*Onirion*

\*\*

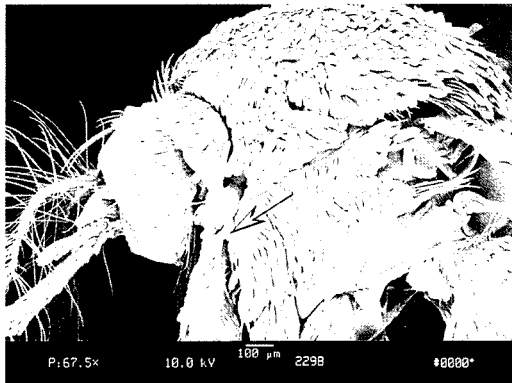
Thorax. Prealar setae present



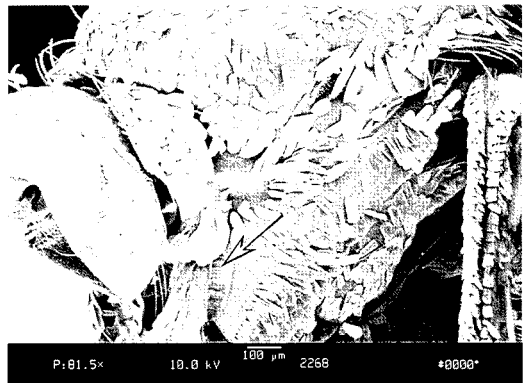
to Page 101

3. (continued)

Thorax. Postprocoxal membrane with scales

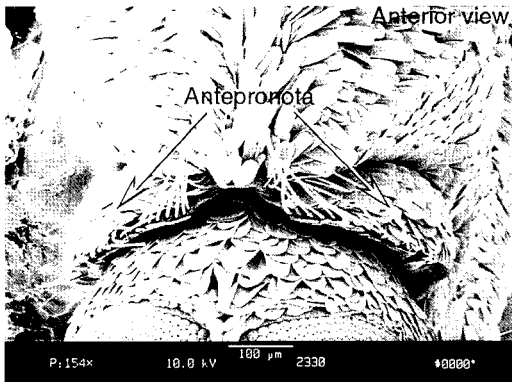


Thorax. Postprocoxal membrane without scales



\*\*

Thorax. Antepronota large, widely separated middorsally



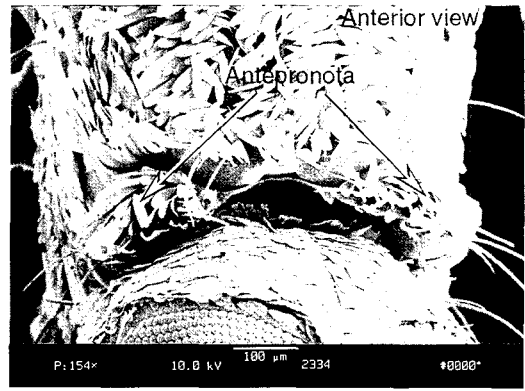
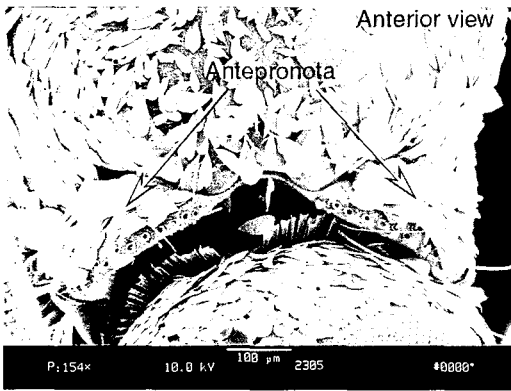
to Page 102

*Wyeomyia* (in part)

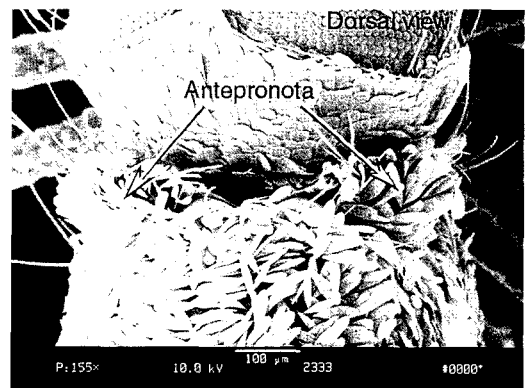
3. (continued)

Thorax. Anteppronota large, widely separated middorsally

Thorax. Anteppronota small, widely separated middorsally



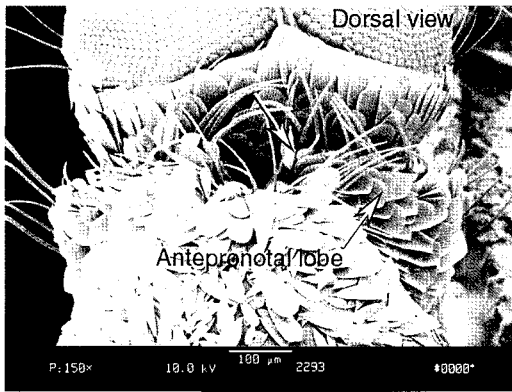
\*\*\*  
***Wyeomyia*** (*Davismyia*)  
*Wyeomyia petrocchia*



***Wyeomyia*** (in part)

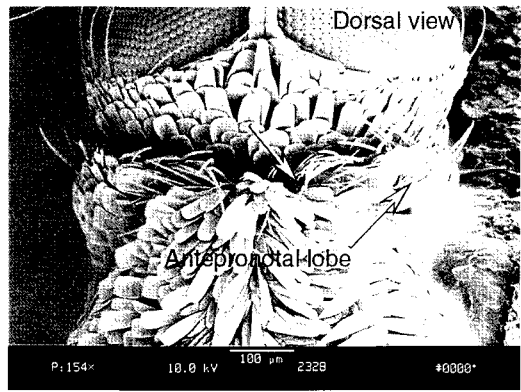
3. (continued)

Thorax. Anteprenotal lobe with a conspicuous apicomeseal angle



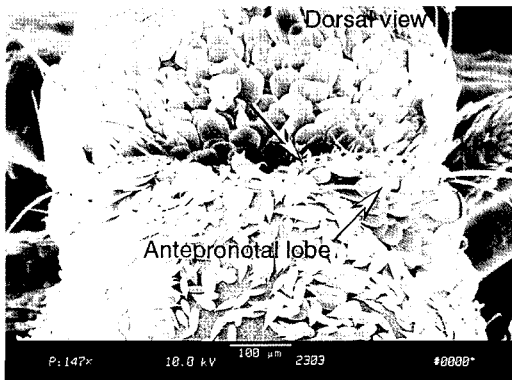
*Sabethes hadrognathus*

Thorax. Anteprenotal lobe without a conspicuous apicomeseal angle



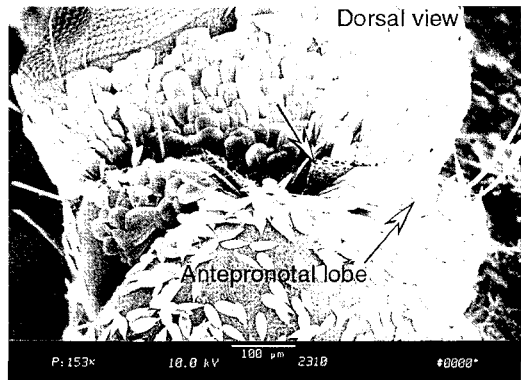
*Wyeomyia arthrostigma*

Thorax. Anteprenotal lobe without a conspicuous apicomeseal angle



*Wyeomyia (Davismyia) petrocchia*

Thorax. Anteprenotal lobe with a conspicuous apicomeseal angle

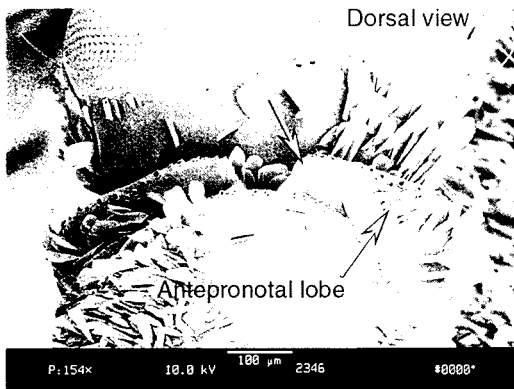


*Sabethes schnusei*

### 3. (continued)

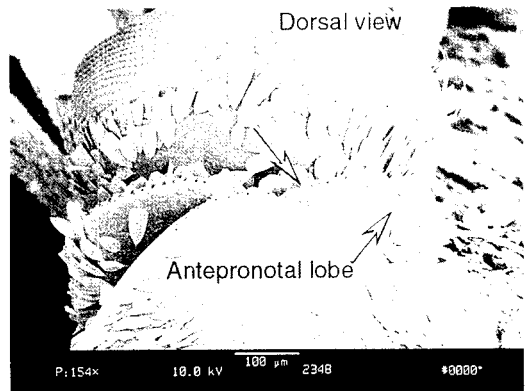
Page 104 (scales off)

Thorax. Anteprenotal lobe with a conspicuous apicomesimal angle



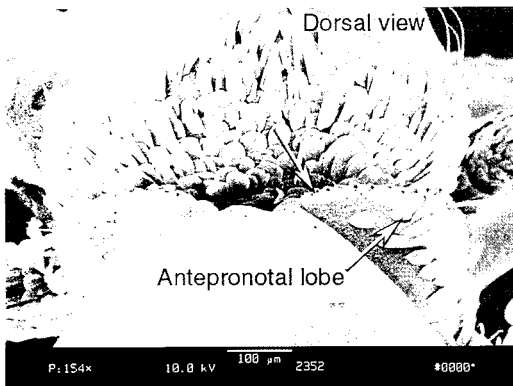
*Sabethes hadrognathus*

Thorax. Anteprenotal lobe without a conspicuous apicomesimal angle



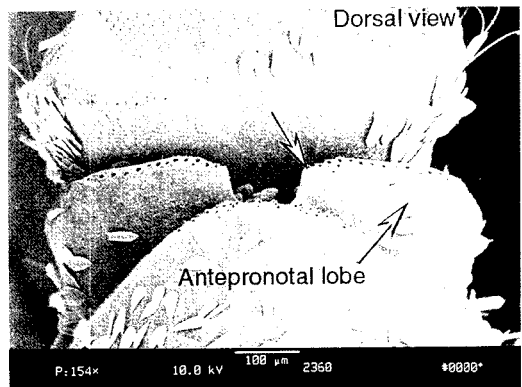
*Wyeomyia arthrostigma*

Thorax. Anteprenotal lobe without a conspicuous apicomesimal angle



*Wyeomyia (Davismyia) petrocchia*

Thorax. Anteprenotal lobe with a conspicuous apicomesimal angle

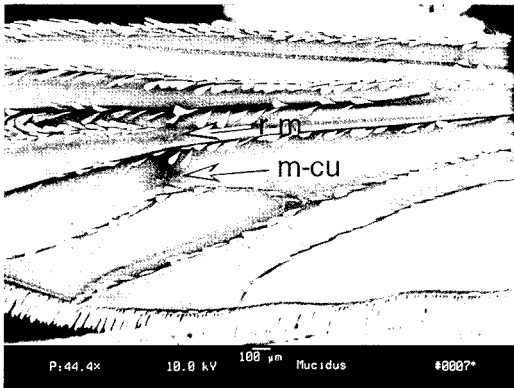


*Sabethes schnusei*

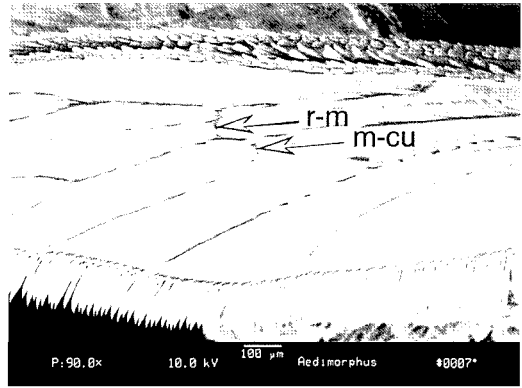
3. (continued)

Page 105

Wing. Wing membrane clouded on crossveins r-m and m-cu



Wing. Wing membrane not clouded on crossveins r-m and m-cu

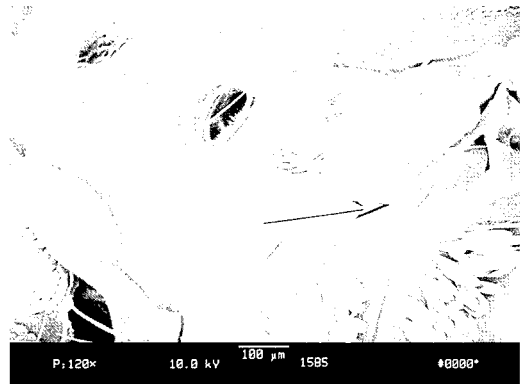


*Ochlerotatus* (in part)  
(*Mucidus*)

Thorax. Lower prealar scale patch present



Thorax. Lower prealar scale patch absent



to Page 106

to Page 122

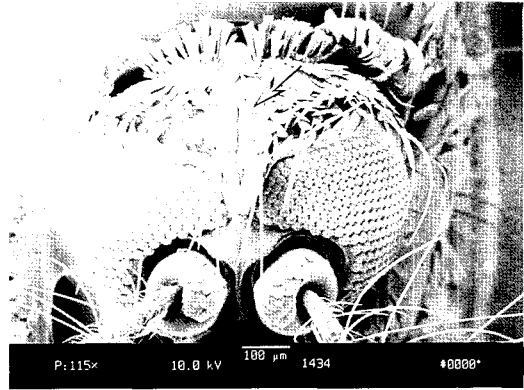
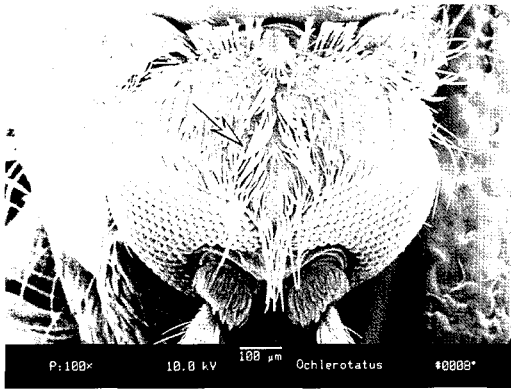


3. (continued)

Page 106

Head. Vertex with decumbent scales largely narrow

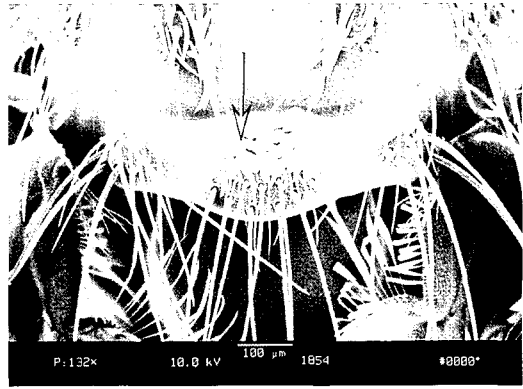
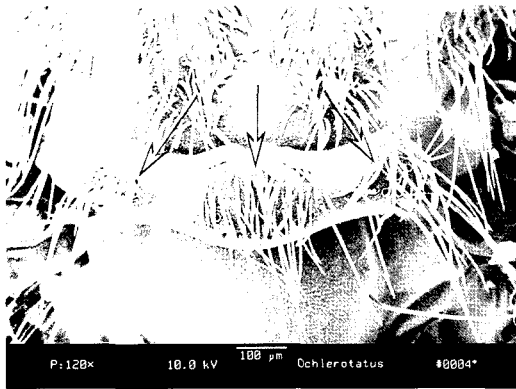
Head. Vertex with decumbent scales largely broad



to Page 117c

Thorax. Scutellum with all narrow scales

Thorax. Scutellum with all, or at least some broad scales on midlobe



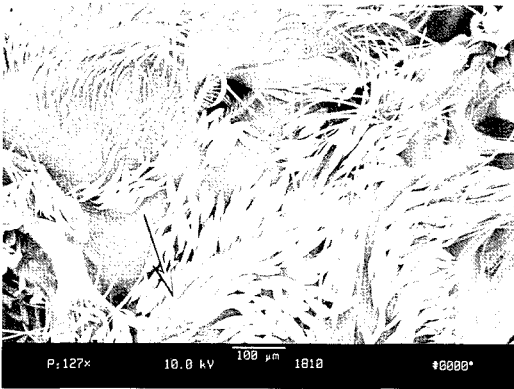
to Page 107

to Page 113b

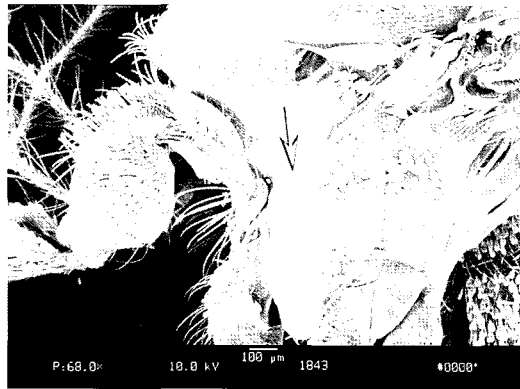
3. (continued)

Page 107

Thorax. Subspiracular area with scales



Thorax. Subspiracular area without scales



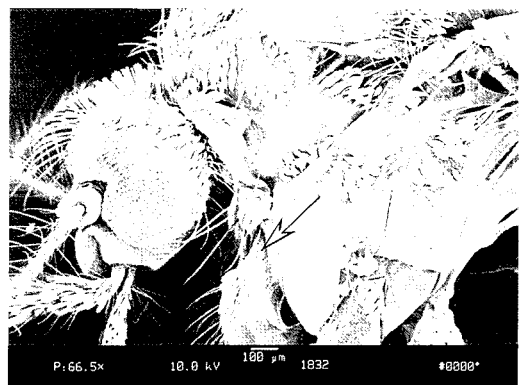
to Page 113a

Thorax. Postprocoxal membrane with scales



to Page 108

Thorax. Postprocoxal membrane without scales

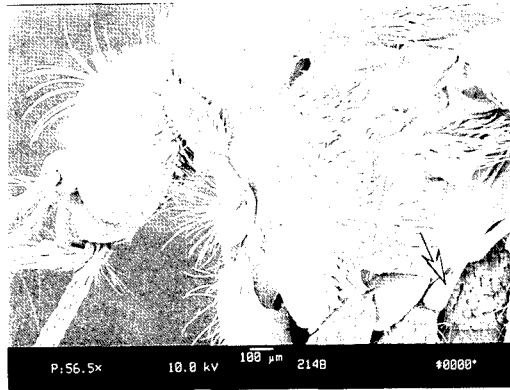


to Page 110

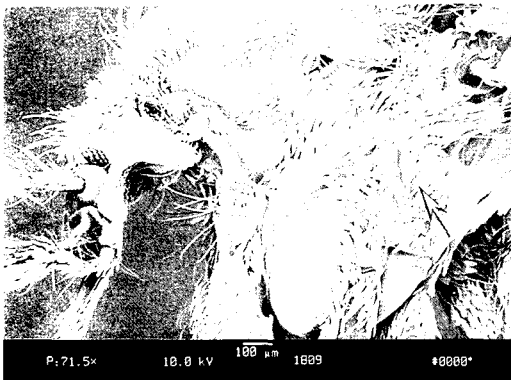
### 3. (continued)

Page 108

\*\*  
Thorax. Metameron with scales

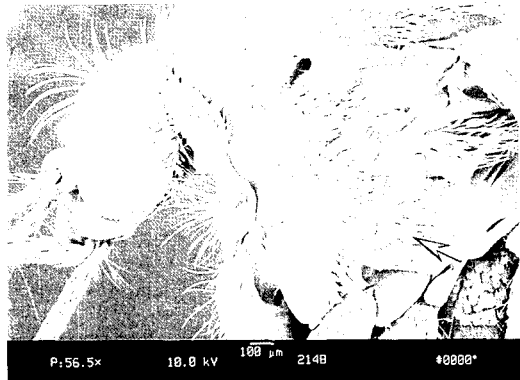


Thorax. Lower mesepimeral setae present



to Page 109a

Thorax. Lower mesepimeral setae absent

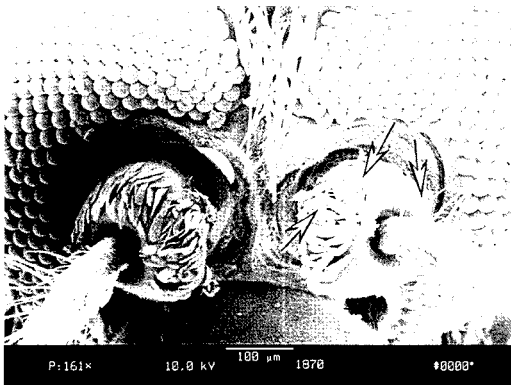


to Page 109b

### 3. (continued)

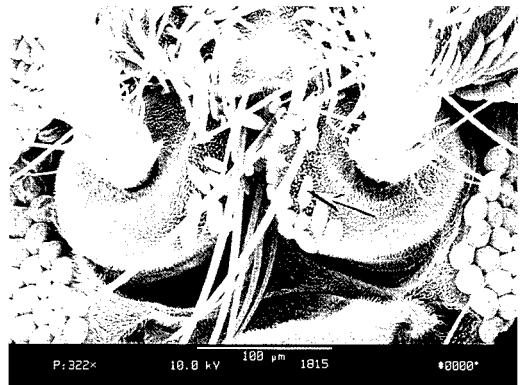
Page 109a

Head. Pedicel with few setae mixed with many scales on mesal and lateral surfaces



*Ochlerotatus* (in part)  
(*Rusticoides*)

Head. Pedicel with white broad scales on mesal surface

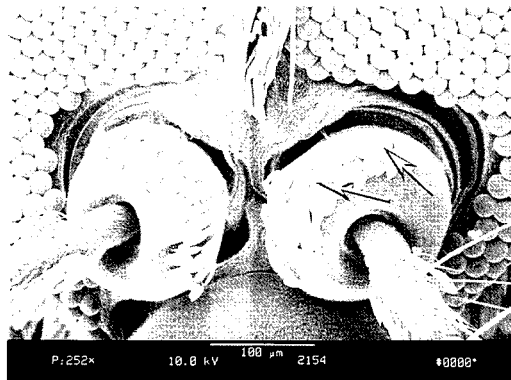


*Ochlerotatus* (in part)  
(*Ochlerotatus*) in part

Page 109b

\*\*

Head. Pedicel with a large patch of broad scales on mesal and dorsal surfaces



*Ochlerotatus* (in part)  
(*Ochlerotatus*) in part

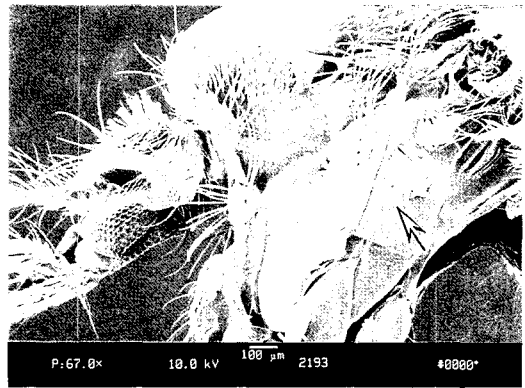
3. (continued)

Page 110

Thorax. Lower mesepimeral setae present



Thorax. Lower mesepimeral setae absent



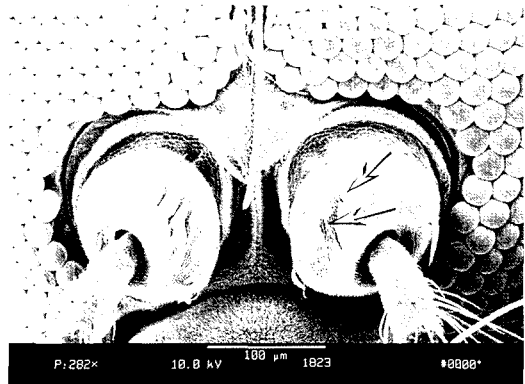
to Page 111

to Page 112

Head. Pedicel with long setae and small broad scales on mesal surface



Head. Pedicel with setae and scales on mesal surface



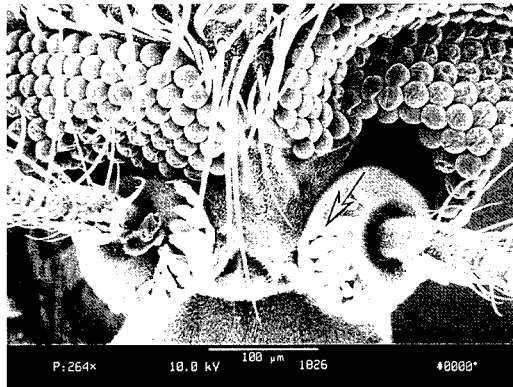
*Ochlerotatus* (in part)  
(*Halaedes*)

*Ochlerotatus* (in part)  
(*Ochlerotatus*) in part

3. (continued)

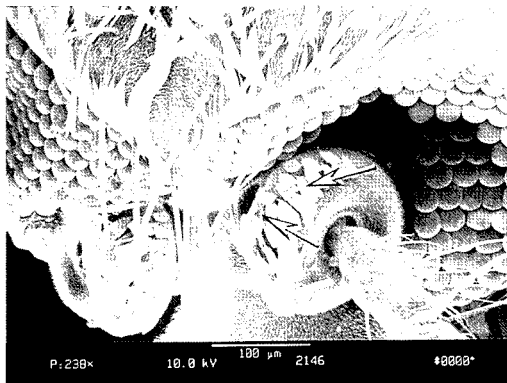
Page 111

Head. Pedicel with a large patch of white broad scales on mesal surface



*Ochlerotatus* (in part)  
(*Finlaya*) in part

Head. Pedicel with few (2-3) setae mixed with a large patch of broad scales on mesal surface

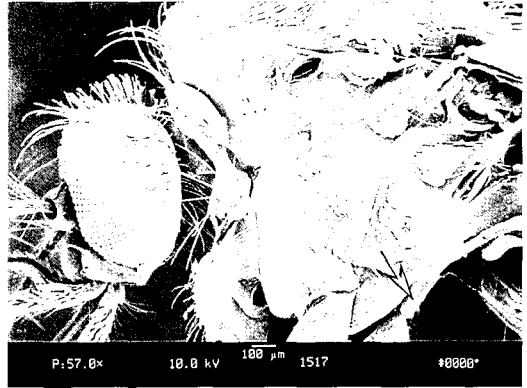
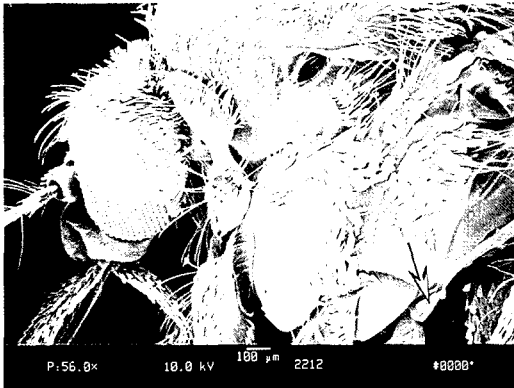


*Ochlerotatus* (in part)  
(*Ochlerotatus*) in part

3. (continued)

Thorax. Metameron with scales

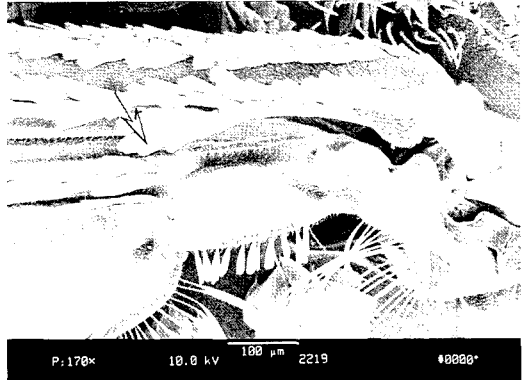
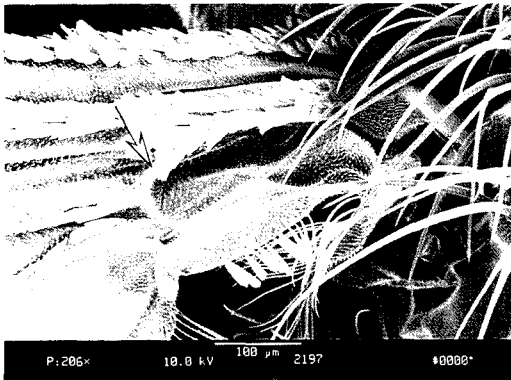
Thorax. Metameron without scales



*Ochlerotatus* (in part)  
(*Ochlerotatus*) in part

Wing. Remigial setae present

Wing. Remigial setae absent



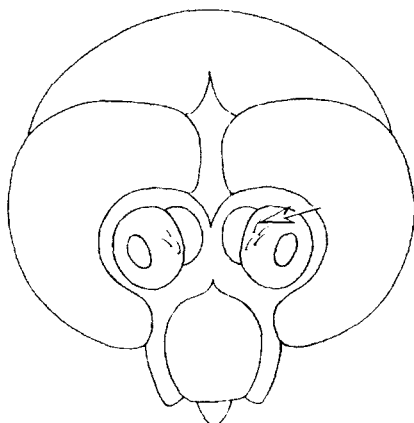
*Ochlerotatus* (in part)  
(*Finlaya*) in part

*Ochlerotatus* (in part)  
(*Protomacleaya*) in part

3. (continued)

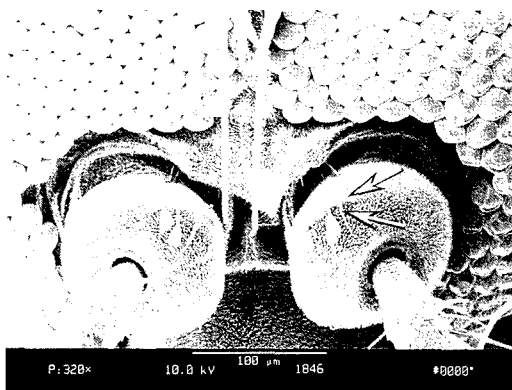
Page 113a

Head. Pedicel with few short fine setae on mesal surface



*Ochlerotatus* (in part)  
(*Molpemyia*) in part

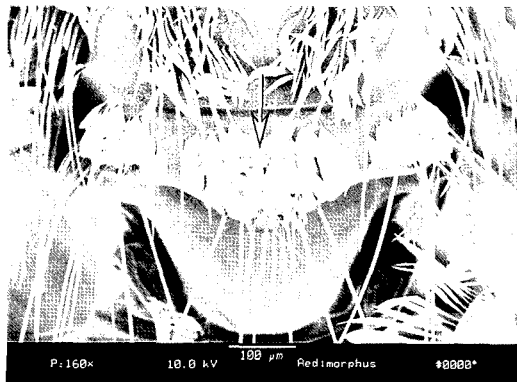
Head. Pedicel with short fine setae and small broad scales on mesal surface



*Ochlerotatus* (in part)  
(*Ochlerotatus*) in part

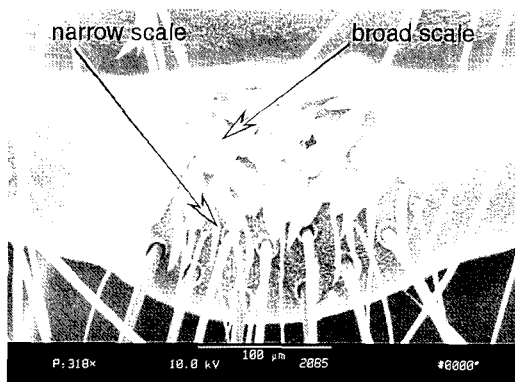
Page 113b

Thorax. Scutellum with all broad scales on midlobe



to Page 114

Thorax. Scutellum with narrow and broad scales on midlobe



to Page 116

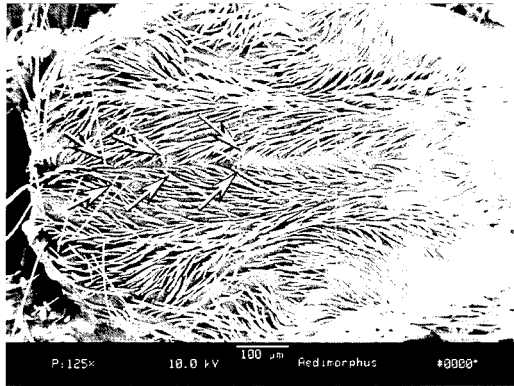


3. (continued)

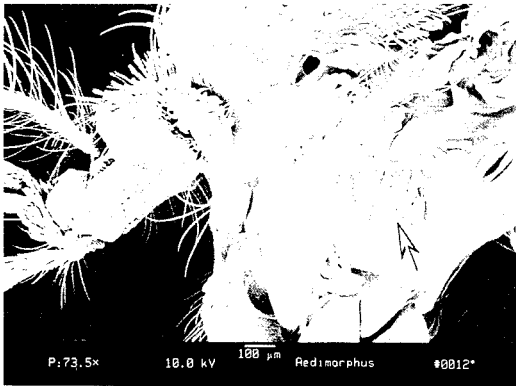
Page 114

\*\*

Thorax. Acrostichal setae present



Thorax. Lower mesepimeral setae present



to Page 115a

Thorax. Lower mesepimeral setae absent

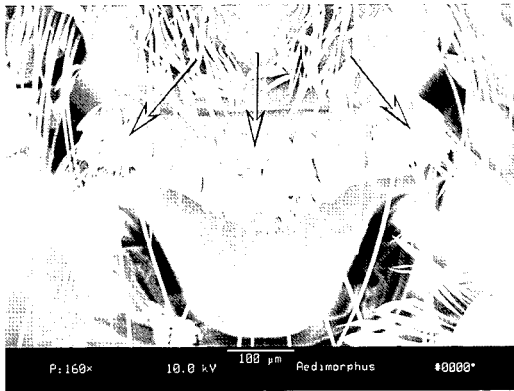


to Page 115b

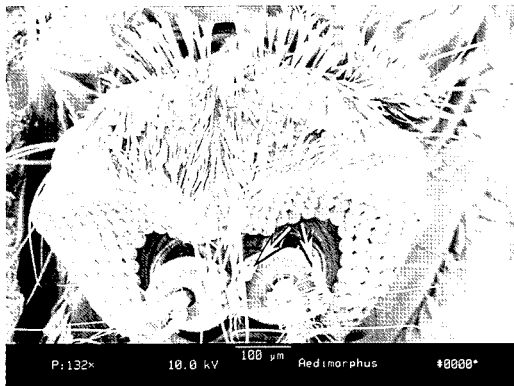
3. (continued)

Page 115a

\*\*  
Thorax. Scutellum with all broad scales



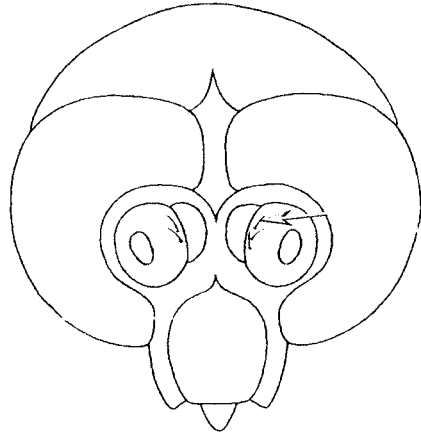
\*\*  
Head. Pedicel with white broad scales on mesal and lateral surfaces



**Aedes** (in part)  
*(Fredwardsius) vittatus*

Page 115b

\*\*  
Head. Pedicel with few short fine setae on mesal surface



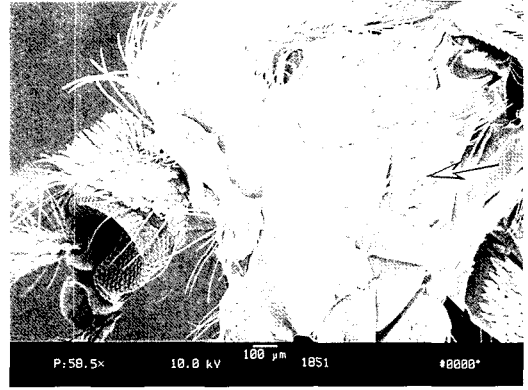
**Ochlerotatus** (in part)  
*(Molpemyia)* in part

3. (continued)

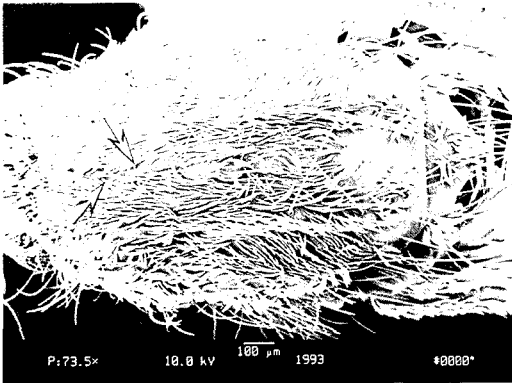
Thorax. Mesepimeron with 2 patches of scales



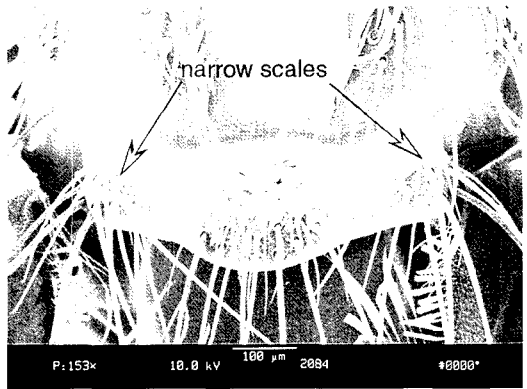
Thorax. Mesepimeron with a single large patch of scales



\*\*  
Thorax. Acrostichal setae present



\*\*  
Thorax. Scutellum with all narrow scales on lateral lobes



to Page 117a

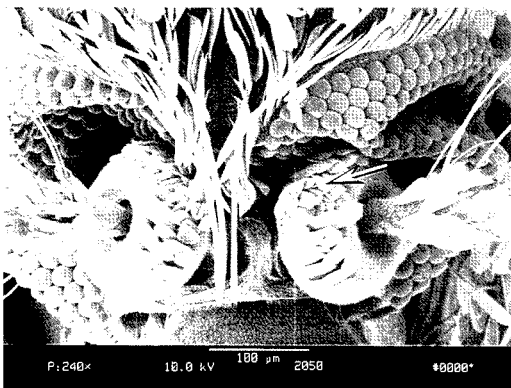
to Page 117b

3. (continued)

Page 117a

\*\*

Head. Pedicel with a large patch of broad scales on mesal surface

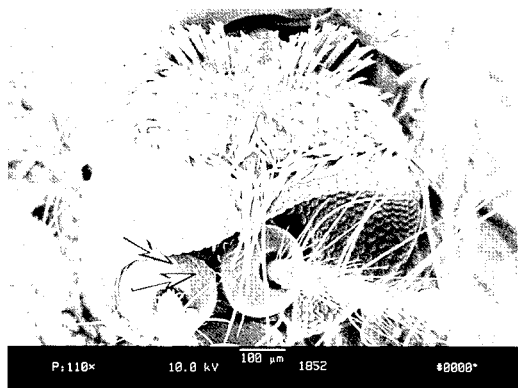


*Ochlerotatus* (in part)  
Varipalpus Group

Page 117b

\*\*

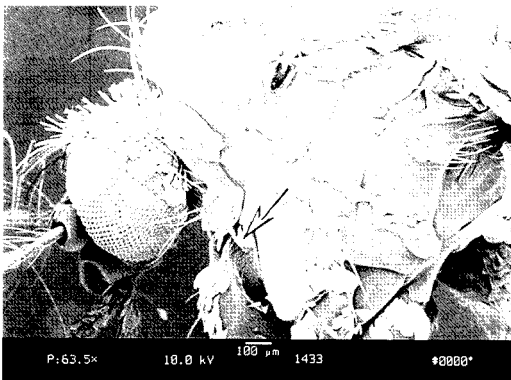
Head. Pedicel with setae and few (1-2) small scales on mesal surface



*Ochlerotatus* (in part)  
(*Protomacleaya*) in part

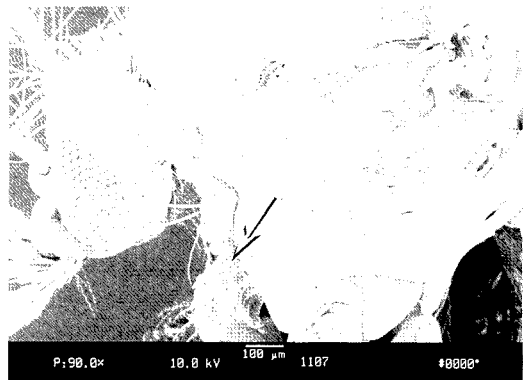
Page 117c

Thorax. Postprocoxal membrane with scales



to Page 118a

Thorax. Postprocoxal membrane without scales



to Page 118b

3. (continued)

Page 118a

\*\*

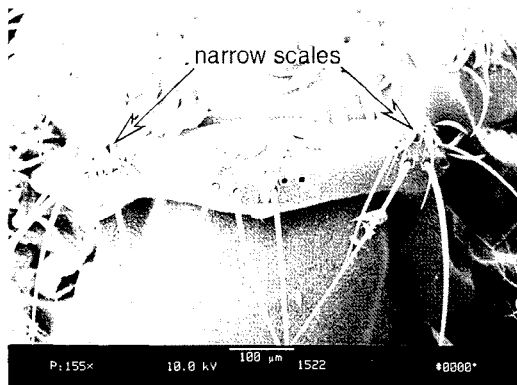
Thorax. Scutellum with all broad scales



*Ochlerotatus* (in part)  
(*Abraedes*) *papago*

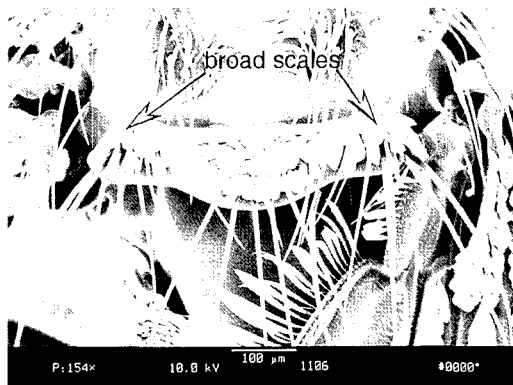
Page 118b

Thorax. Scutellum with all narrow scales on lateral lobes



to Page 119

Thorax. Scutellum with all broad scales on lateral lobes

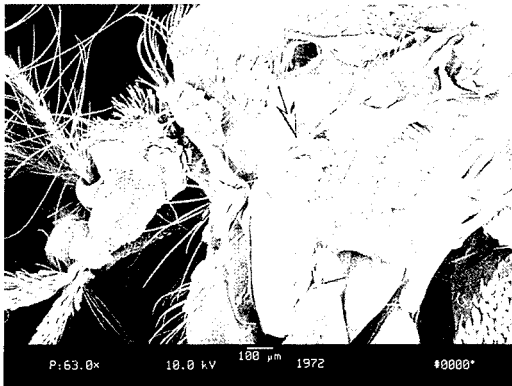


to Page 120b

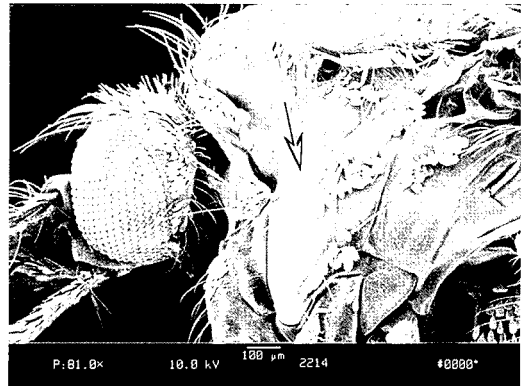
3. (continued)

Page 119

Thorax. Subspiracular area with scales

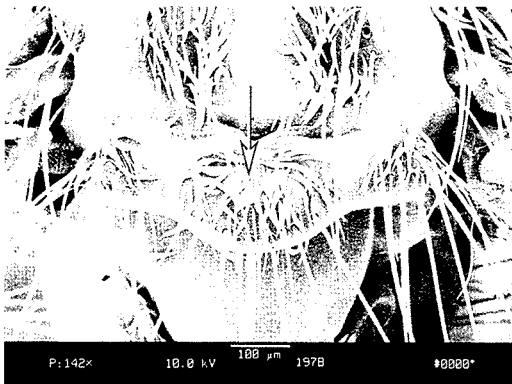


Thorax. Subspiracular area without scales



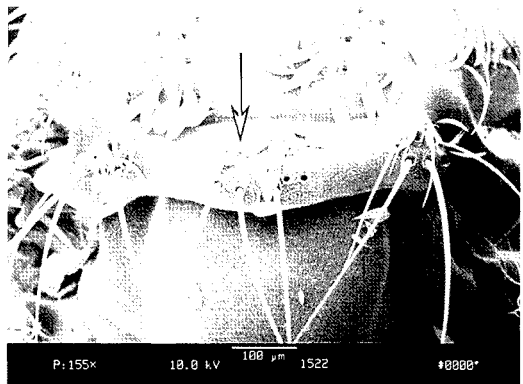
to Page 120a

Thorax. Scutellum with all narrow scales on midlobe



*Ochlerotatus* (in part)  
*(Finlaya)* in part

Thorax. Scutellum with all broad scales on midlobe



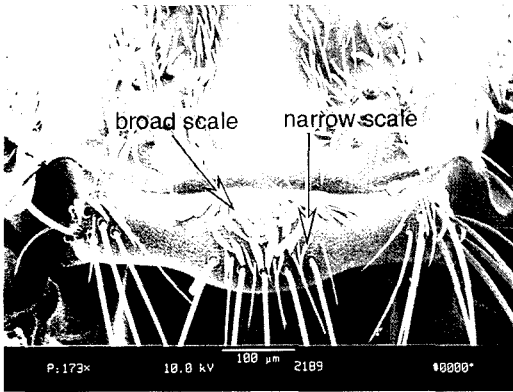
*Ochlerotatus* (in part)  
*(Macleaya)*

### 3. (continued)

Page 120a

\*\*

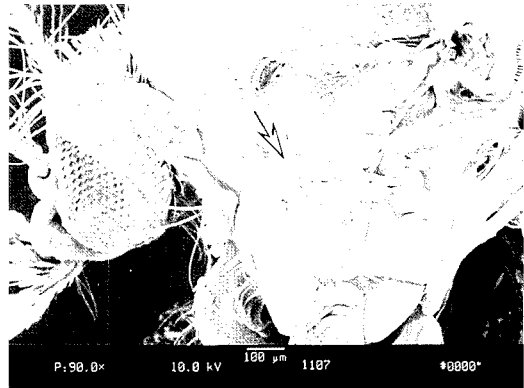
Thorax. Scutellum with narrow and broad scales on midlobe



Page 120b

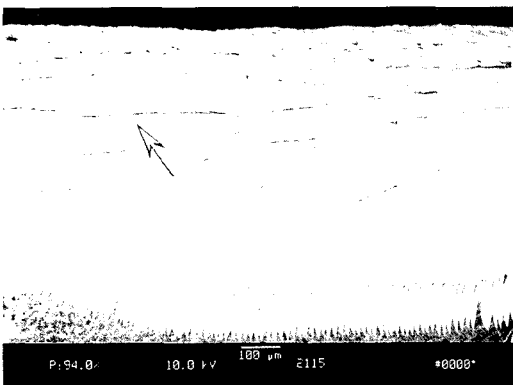
\*\*

Thorax. Subspiracular area with scales

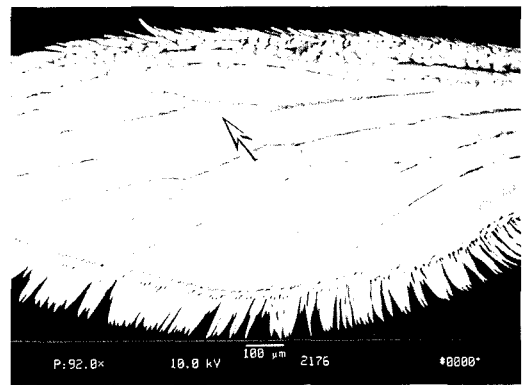


*Ochlerotatus* (in part)  
*(Finlaya)* in part

Wing. Plume scales all broad



Wing. Plume scales all narrow



to Page 121a

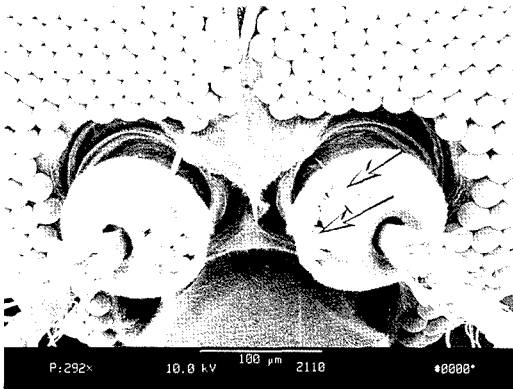
to Page 121b

3. (continued)

Page 121a

\*\*

Head. Pedicel with a few (1-2) setae mixed with a small patch of broad scales on mesal surface



*Ochlerotatus* (in part)  
(*Finlaya*) in part

Page 121b

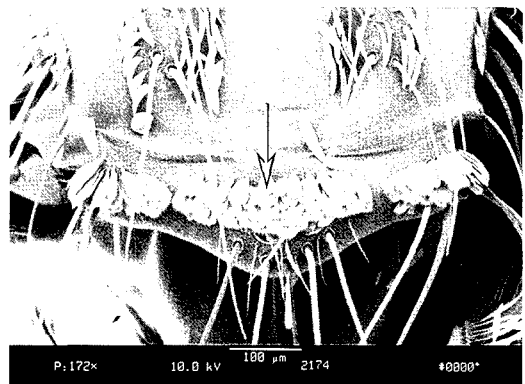
\*\*

Head. Pedicel with a small patch of broad scales and a few (1-2) setae on mesal surface



\*\*

Thorax. Scutellum with all broad scales on midlobe



*Ochlerotatus* (in part)  
(*Finlaya*) in part

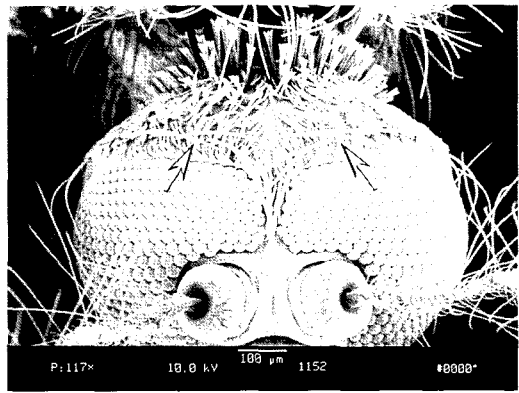
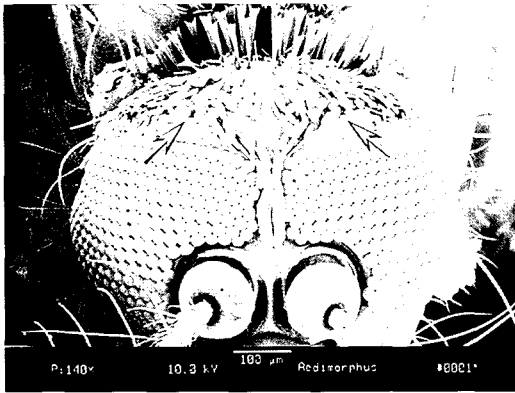


### 3. (continued)

Page 122

Head. Vertex with a pair of wedge-shaped patches of broad, flat scales on eye-margins

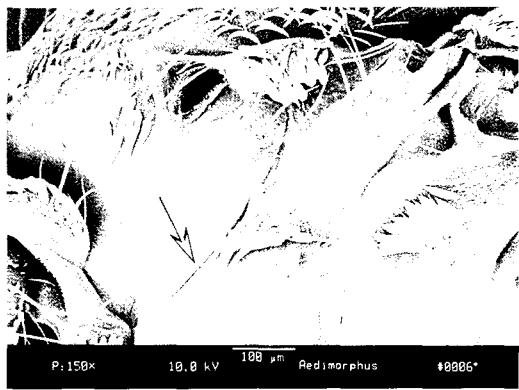
Head. Vertex without a pair of wedge-shaped patches of broad, flat scales on eye-margins



to Page 124

Thorax. Subspiracular area with scales

Thorax. Subspiracular area without scales



to Page 123a

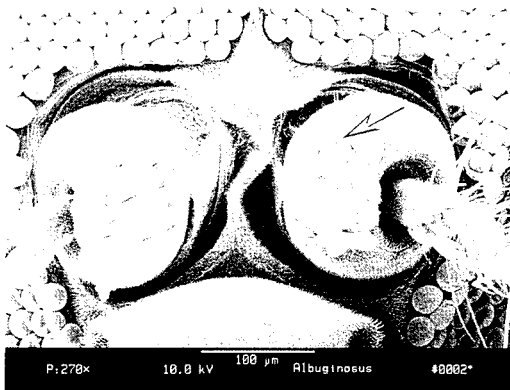
to Page 123b

3. (continued)

Page 123a

\*\*

Head. Pedicel with a patch of white broad overlapping scales on mesal surface

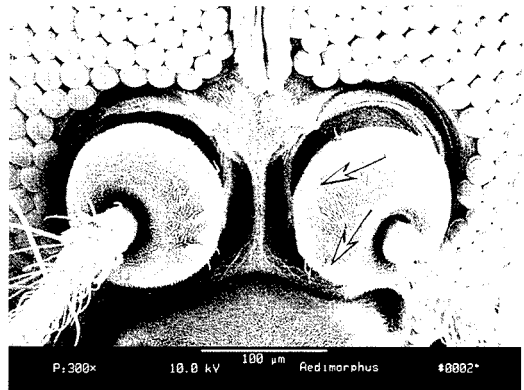


***Aedes*** (in part)  
(*Albuginosus*)

Page 123b

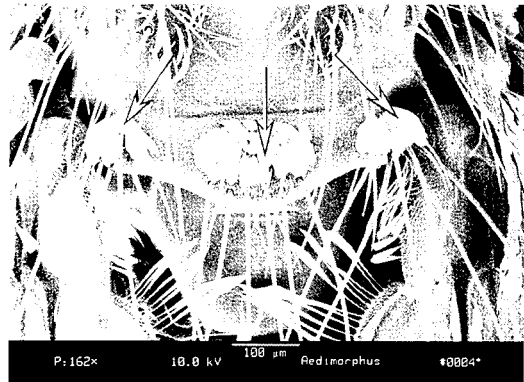
\*\*

Head. Pedicel with a few small scales and short fine setae on mesal surface



\*\*

Thorax. Scutellum with all broad, flat scales

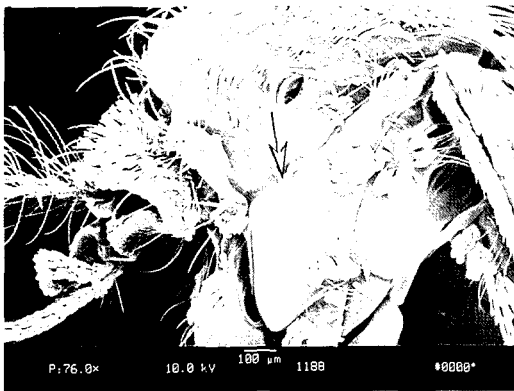


***Aedes*** (in part)  
(*Aedimorphus*) in part

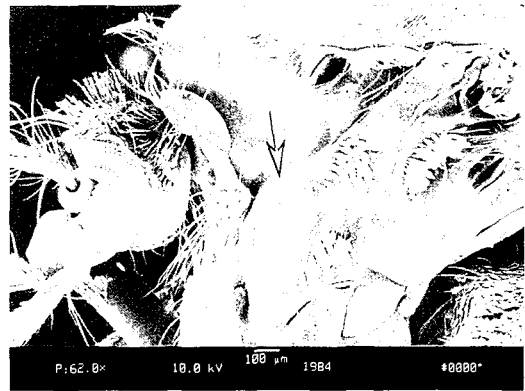
3. (continued)

Page 124

Thorax. Subspiracular area with scales

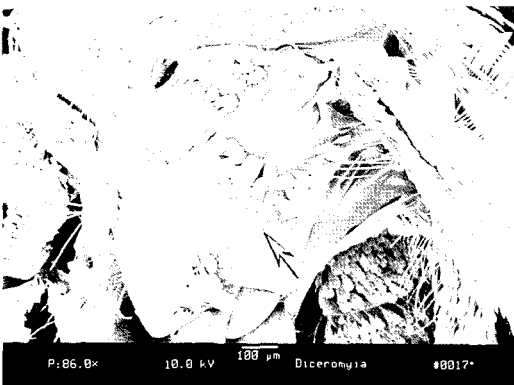


Thorax. Subspiracular area without scales

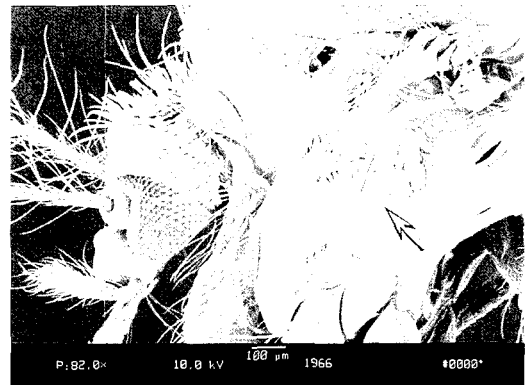


to Page 130

Thorax. Lower mesepimeral setae present



Thorax. Lower mesepimeral setae absent



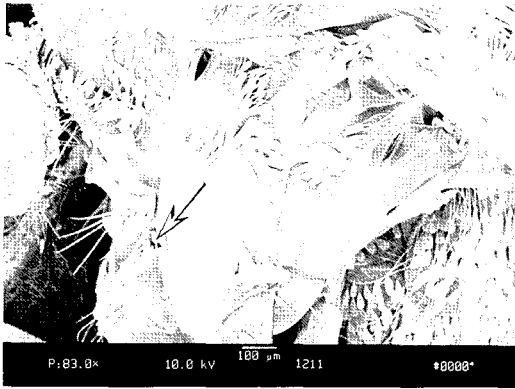
to Page 125

to Page 129b

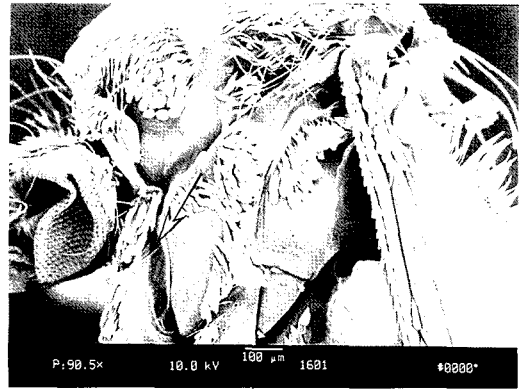
3. (continued)

Page 125

Thorax. Postprocoxal membrane  
with scales

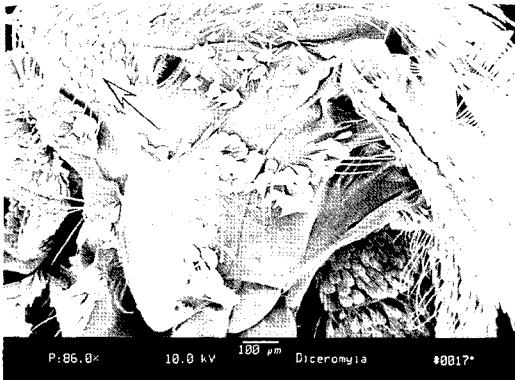


Thorax. Postprocoxal membrane  
without scales

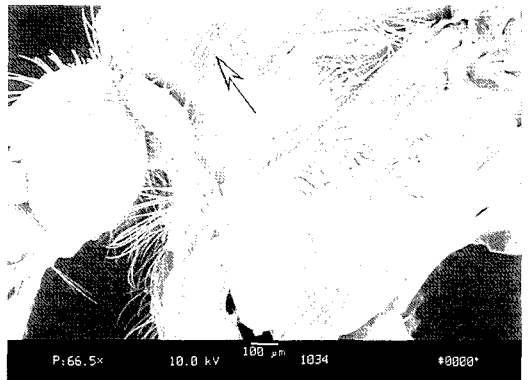


to Page 127

Thorax. Postpronotum with all, or  
largely broad, flat scales



Thorax. Postpronotum with all, or  
largely narrow curved scales



to Page 126

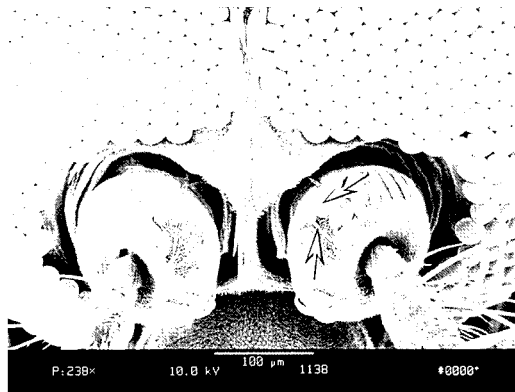
*Aedes* (in part)  
*(Aedimorphus)* in part

## 3. (continued)

Page 126

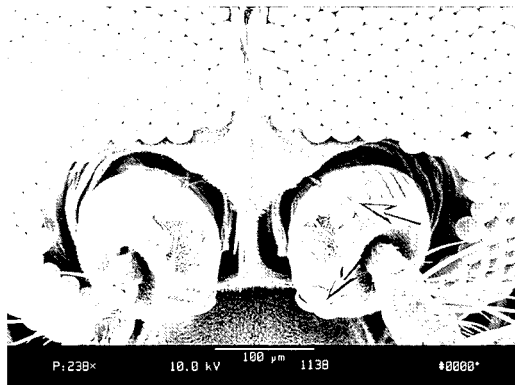
\*\*

Head. Pedicel with setae mixed with many broad, flat scales on mesal surface



\*\*

Head. Pedicel with 2 patches of scales on mesal surface

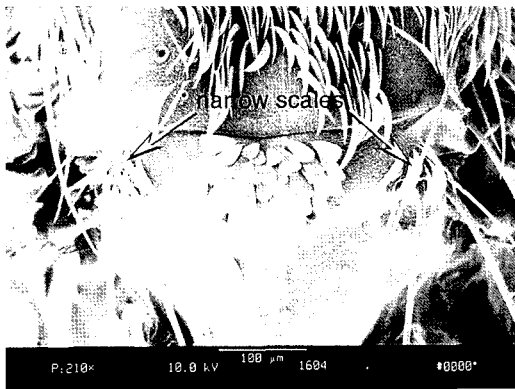


*Aedes* (in part)  
*Diceromyia* (in part)

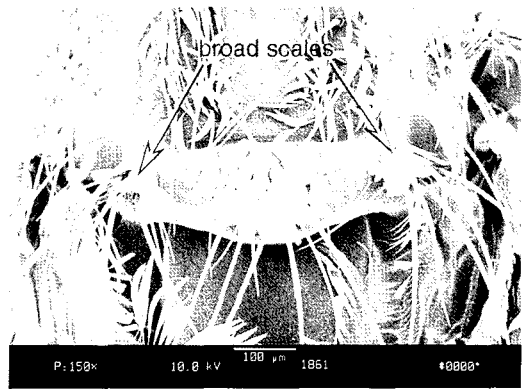
3. (continued)

Page 127

Thorax. Scutellum with all narrow scales on lateral lobes

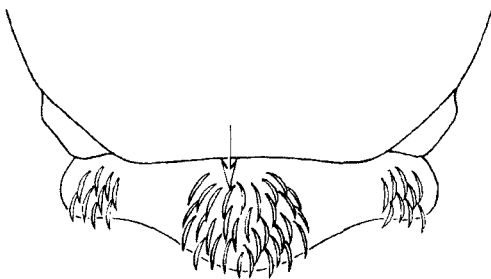


Thorax. Scutellum with all broad scales on lateral lobes



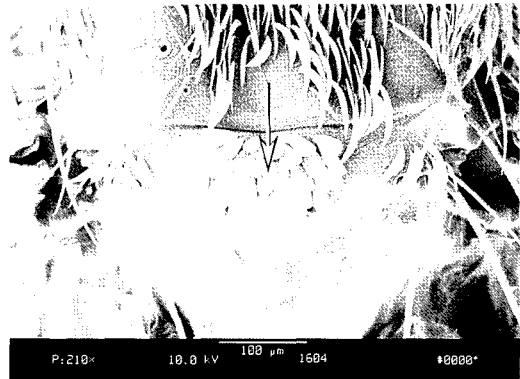
to Page 128

Thorax. Scutellum with all narrow scales on midlobe



*Aedes* (in part)  
(*Huaedes*)

Thorax. Scutellum with all broad, flat scales on midlobe



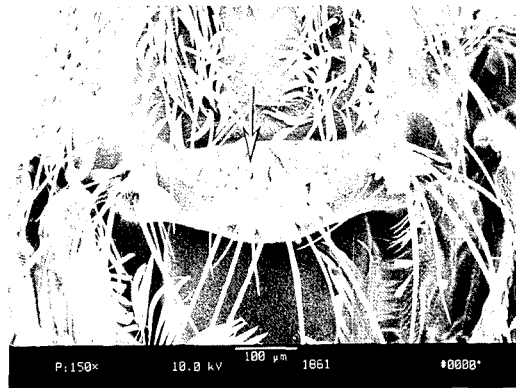
*Aedes* (in part)  
(*Leptosomatomyia*)

### 3. (continued)

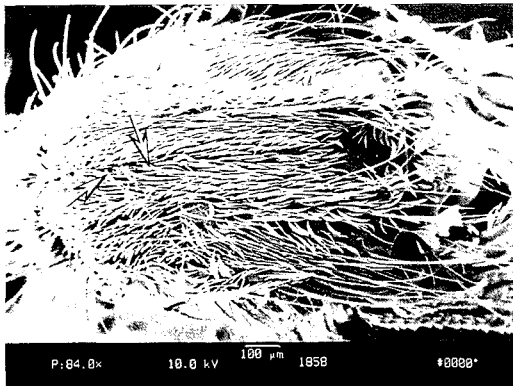
Page 128

\*\*

Thorax. Scutellum with all broad scales on midlobe

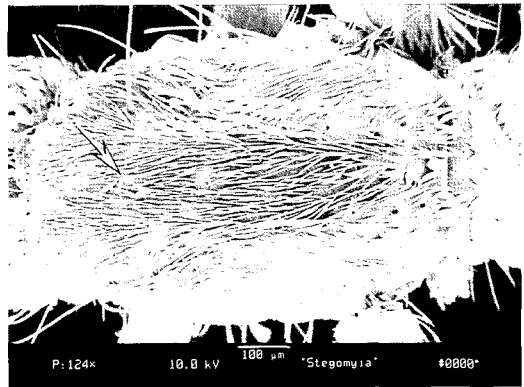


Thorax. Acrostichal setae present



*Aedes* (in part)  
(*Diceromyia*) in part

Thorax. Acrostichal setae absent



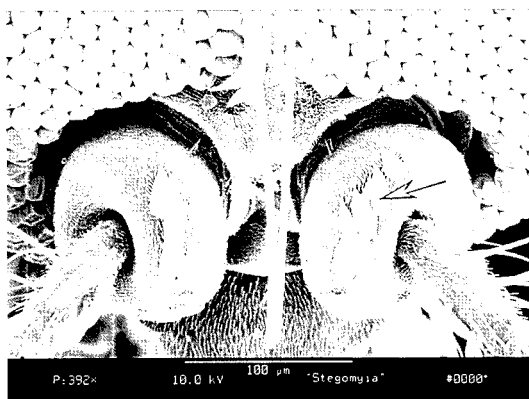
to Page 129a

### 3. (continued)

Page 129a

\*\*

Head. Pedicel with a long patch of white broad, flat scales on mesal surface



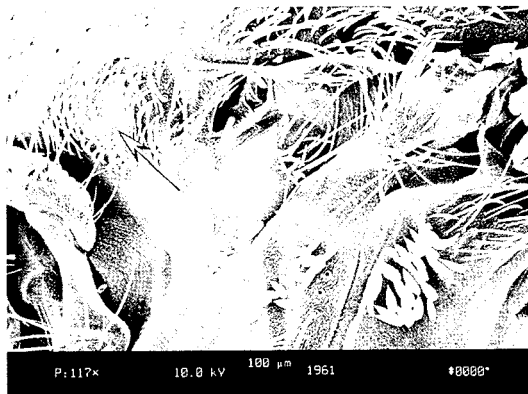
*Aedes* (in part)

*Aedes cozi*

Page 129b

\*\*

Thorax. Postpronotum with all, or largely narrow curved scales



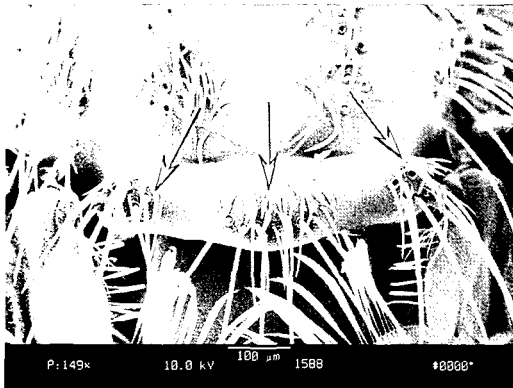
*Aedes* (in part)

(*Aedimorphus*) in part

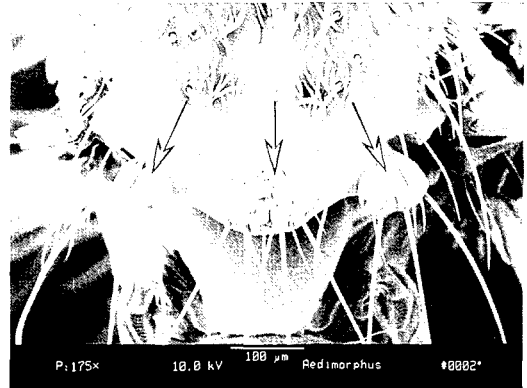


3. (continued)

Thorax. Scutellum with all narrow scales

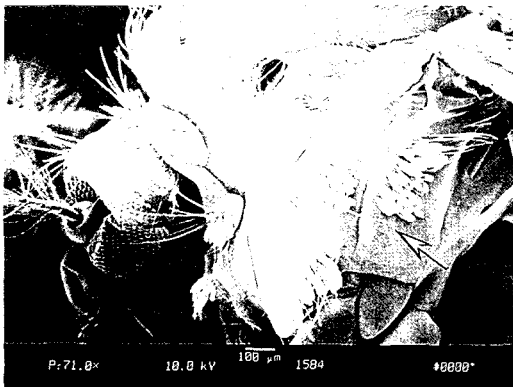


Thorax. Scutellum with all broad scales



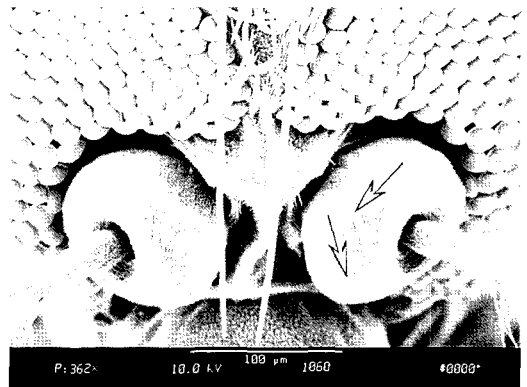
\*\*

Thorax. Lower mesepimeral setae absent



\*\*

Head. Pedicel with few setae and scales on mesal surface



*Aedes* (in part)  
(*Aedes*)

*Aedes* (in part)  
(*Aedimorphus*) in part