

Key to the Commonly Intercepted Whitefly Pests

- 1 Crawler (fig.1) with both elongated antennae and segmented legs extending beyond margin; or legs oriented laterally toward and not extending beyond the margin; claw (fig. 2-Aleurodicinae) or pad (fig.-3 Aleyrodinae) present; with two pairs of thoracic compound present or absent prepupal stages

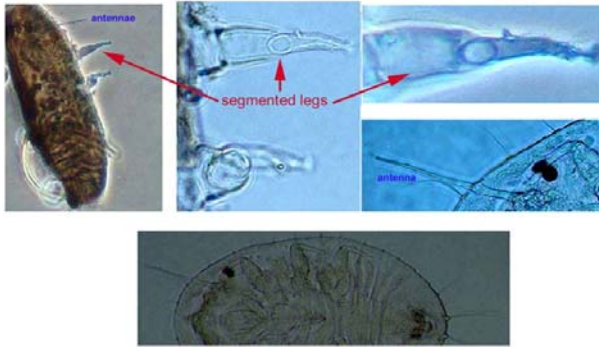


Figure 1-crawler

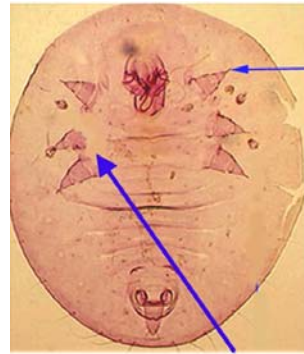


Figure 2 (Aleurodicinae)

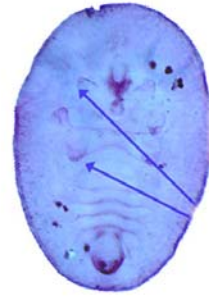


Figure 3 (Aleyrodinae)

- 1' Antennae & legs usually one to two segmented, contained within; legs oriented medially or downward (fig. 4); puparium 2

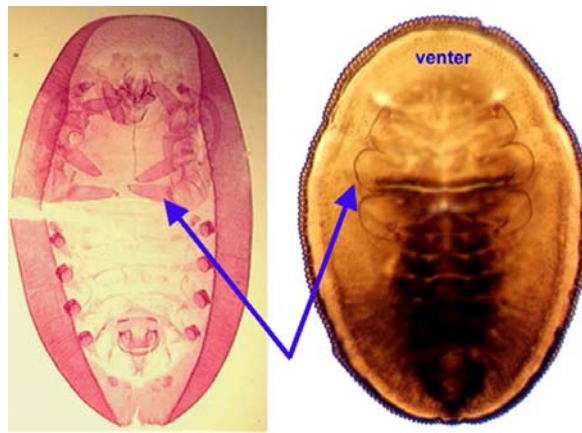


Figure 4

- 2 Claw present (fig.5); lingula- 2 setal pairs (fig. 6); with or without compound pores (fig.7) Aleurodicinae ... 3

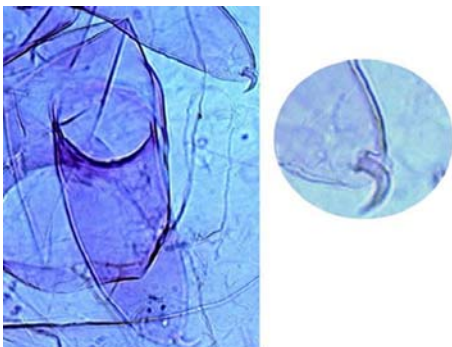


Figure 5

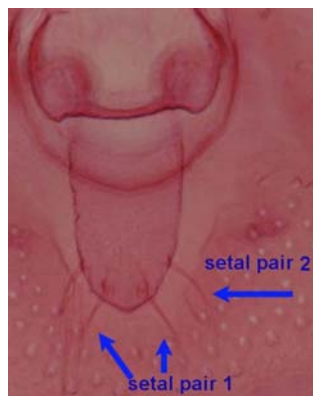


Figure 6

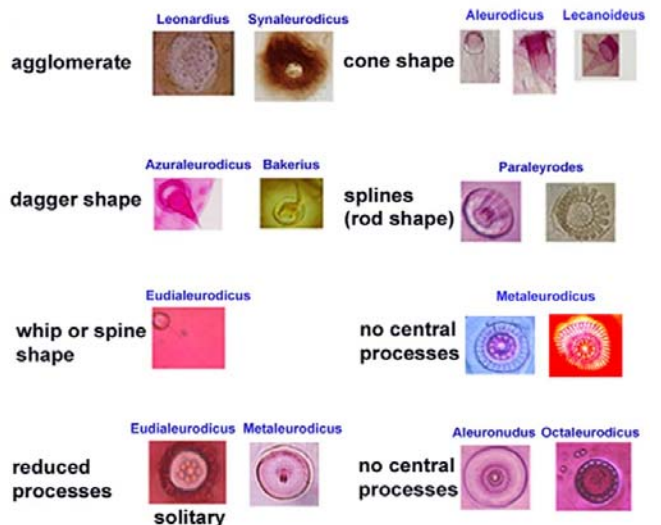


Figure 7

2' Pad present; lingula with 1 pair of setae (fig.8); compound pores absent (Aleyrodinae) 14

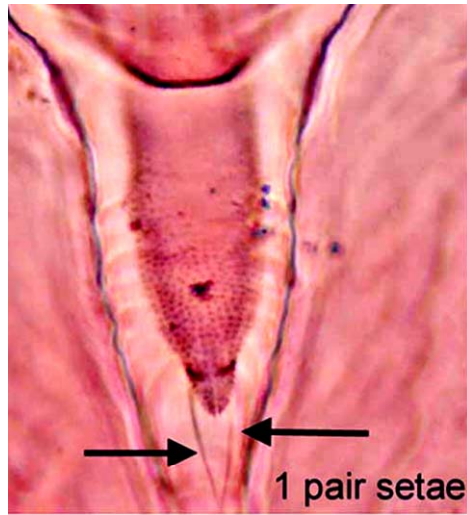


Figure 8

3(2) Compound pores absent; cuticle (derm) uniformly dark brown (if not, other species fig. 9), partially tessellated (reticulated) or not; with paired pores; shape symmetric, if asymmetric (fig.10), other species (see Martin's publication for the Belize Aleyrodidae, Part i) 4

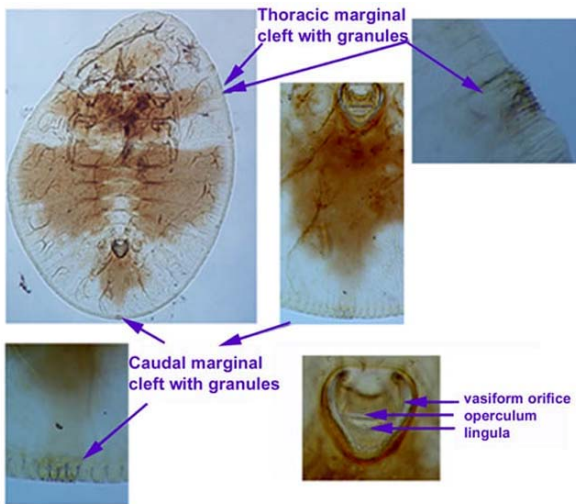


Figure 9 Slide from Systematic Entomology Lab. Image by PPQ (J.Dooley)



figure 10

3' Compound pores present (fig.11) 5

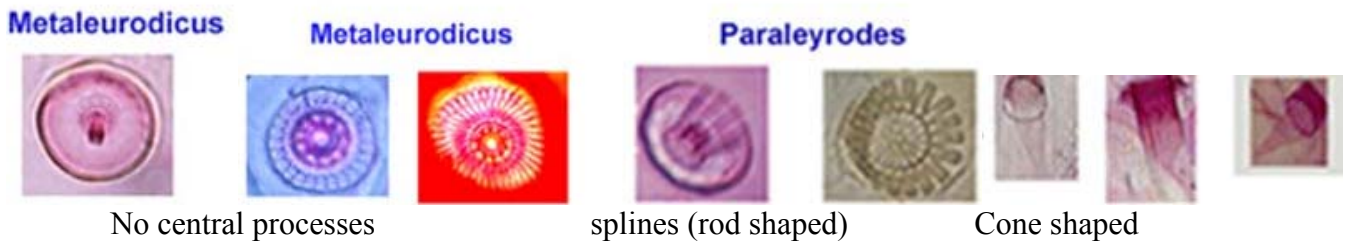


figure 11

- 4(3) Cuticle (derm) tessellated (fig. 12) at least partially from submargin to subdorsal *Dialeurodicus tessellatus* (Quaintance & Baker)



figure 12

- 4' Cuticle not tessellated (fig.13) *Dialeurodicus niger* (Bondar)



figure 13

- 5(3) 5 to 6 pairs of abdominal compound pores with splines & annuli (ring of cells or flower-petal shaped, fig. 14); at least one or the two most anterior compound pore reduced *Paraleyrodes* 6



figure 14

5⁷ 4 to 6 pairs (figure 15 & 16) of abdominal compound pores otherwise; two most anterior pairs of compound pore not reduced (fig.14 to 16); caudal two pairs reduced, or not..... 9

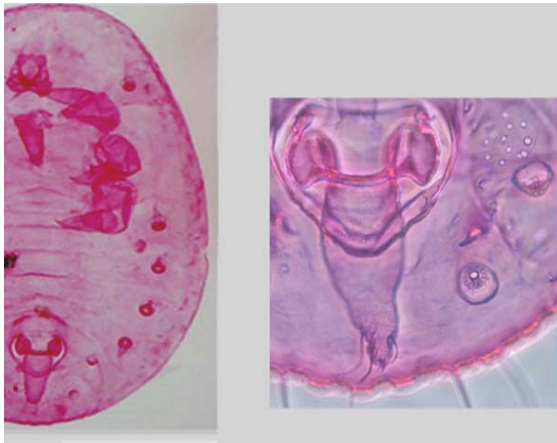


figure 14

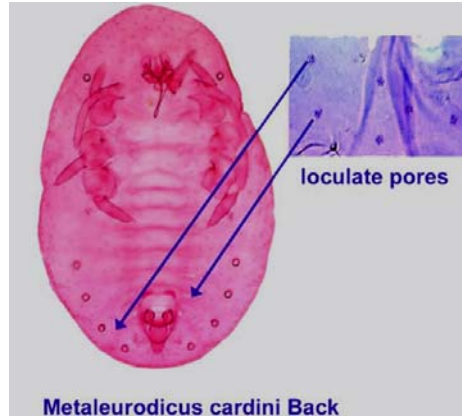


figure 15

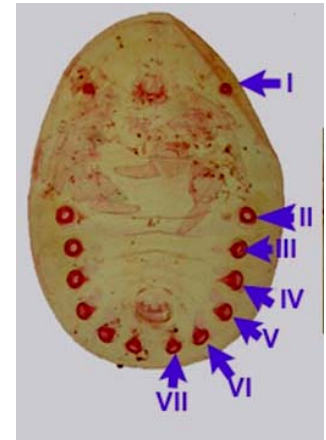


figure 16

6(5) 5 pairs of abdominal compound pores present (fig. 17) with the first anterior pore reduced in size*Paraleyrodes perseae* (Dozier)

Courtesy of Dr. Greg Hodges
DPI, Florida

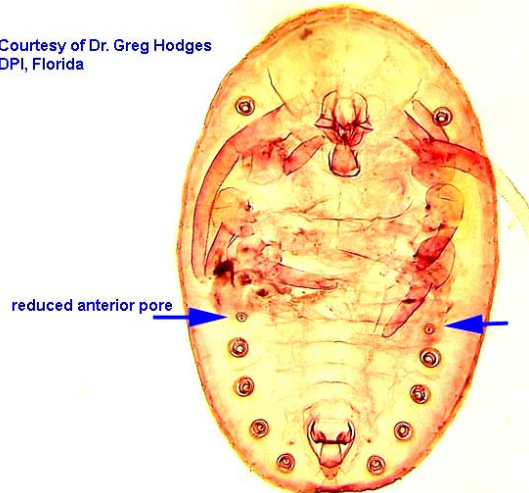


figure 17

6⁷ 6 pairs of abdominal compound pores present with the first two anterior pores reduced in size 7

7(6) Annuli with ring of cells flower-pedal shaped (fig. 18); first two abdominal compound pores reduced with 2-3 disc pores associated with each compound pore (fig 18.); disc pore present (fig. 19) on A8 between last compound pore and vasiform orifice *Paraleyrodes bondari* (Martin)

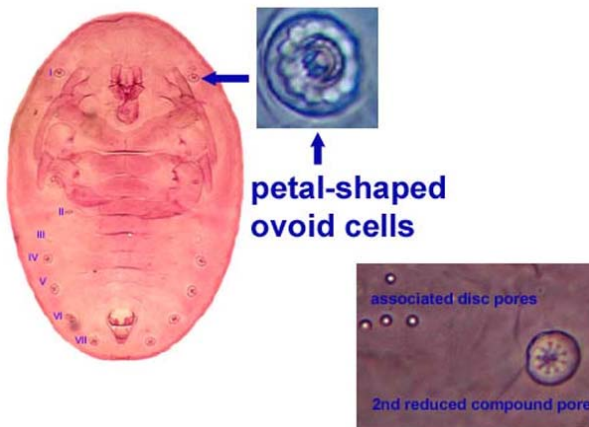


figure 18



figure 19

7⁷ Annuli with ring of cells and obvious splines (fig. 20); abdominal compound and disc pores otherwise; disc pore absent or present on A8 between last compound pore and vasiform orifice8

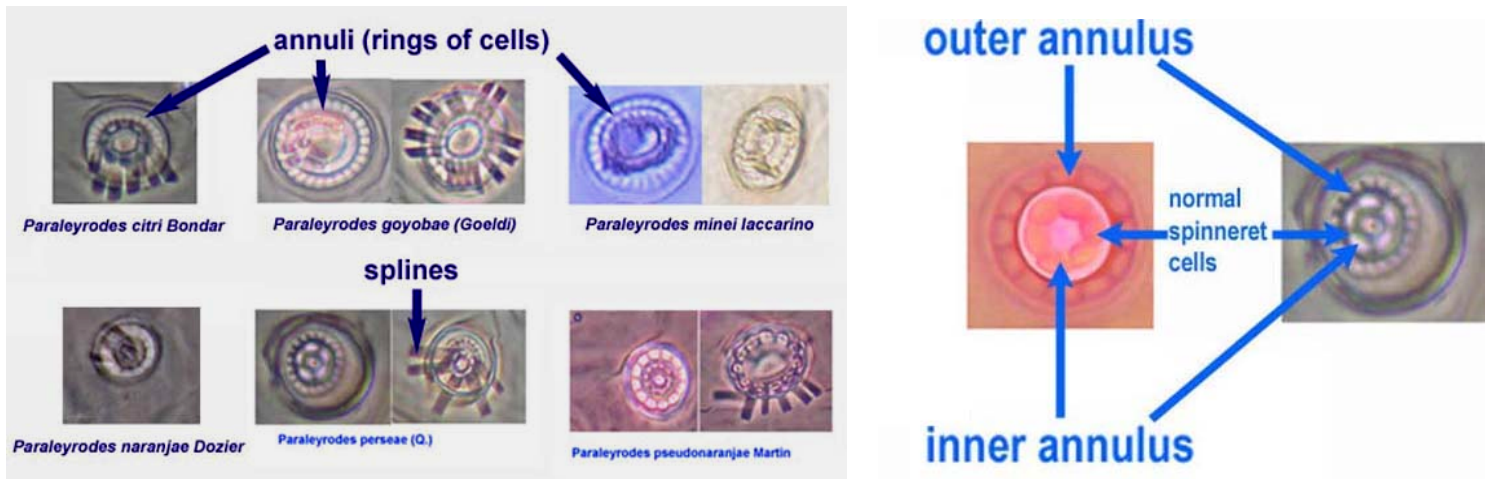


Figure 20

8(7) Disc pore present (figure 21) between vasiform orifice and last abdominal compound pore; larger abdominal compound pores 30-40 µm in diameter (figure 22) *Paraleyrodes minei* Iaccarino

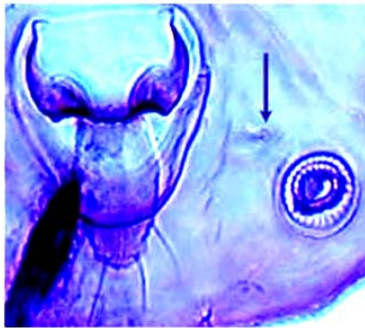


figure 21



figure 22



8⁸ Disc pore absent between vasiform orifice and last abdominal compound pore; larger abdominal compound pores 19-27 µm in diameter (figure 23) *Paraleyrodes pseudonaranjæ* Martin

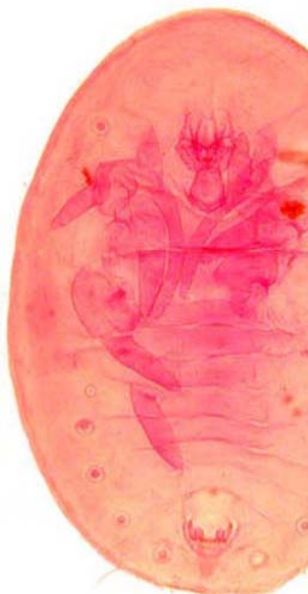
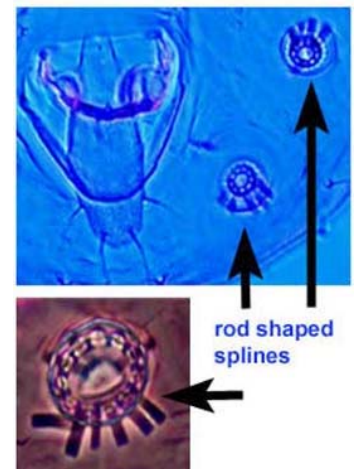
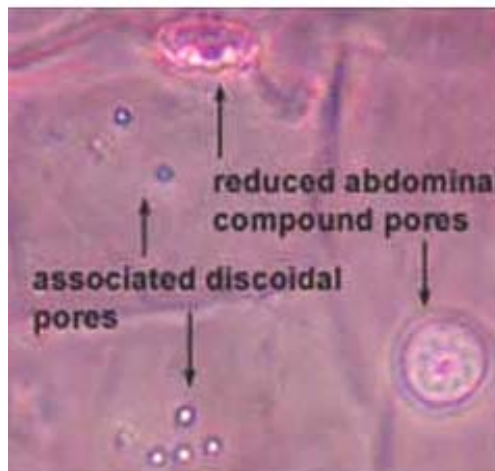


figure 23



9(5) With 4 pairs of abdominal compound pores without central processes; dorsal loculate pores present (fig.24) *Metaleurodicus cardini* (Back)

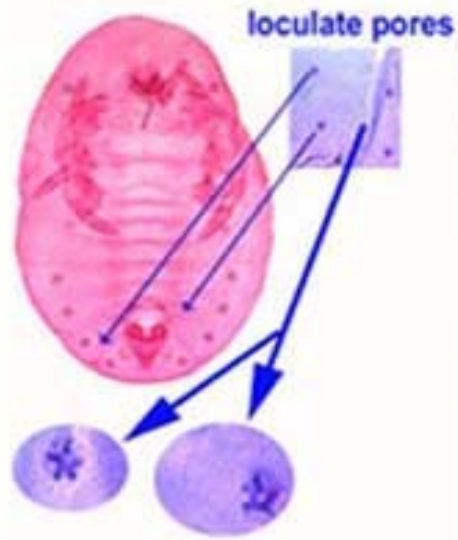


figure 24

9' With 4 to 6 pairs of abdominal compound pores; abdominal compound pores 5 and 6 reduced in sized or not; central processes shaped like a cone (fig.25) 10

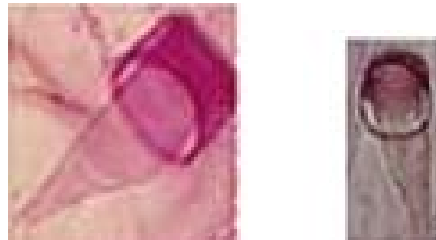


figure 25

10(9) With 4 pairs of abdominal compound pores (fig. 26) 11



figure 26



Figure 27

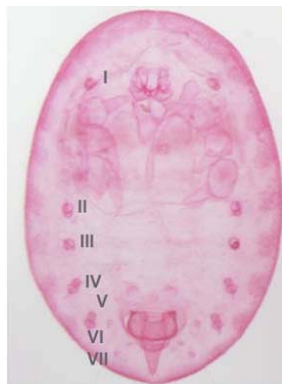
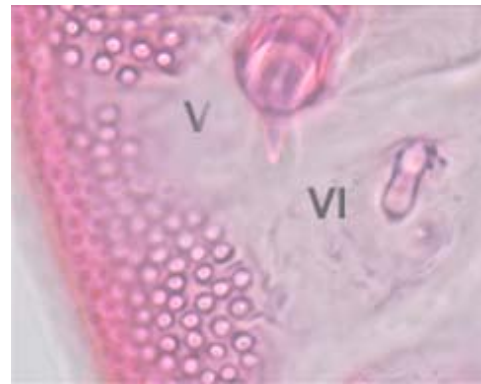


figure 28 (caudal two compound pores reduced)



11(10) Lingula elongate and somewhat with parallel sided (fig.29); submarginal band of pores, interrupted (fig.29), not extending directly below vasiform orifice (or lingula) *Aleurodicus coccolobae* (Q. & B.)



figure 29 (pore band absent below lingula)

11' Lingula oval/spatulate-shaped with medially convex margin (fig.30) ; submarginal band of pores extends directly below vasiform orifice (or lingula) and is not interrupted (fig.30) ... *Aleurodicus dispersus* (Russell)



figure 30 (narrow pore band below lingula)


12(10) All abdominal compound pores subequal in size and about the same size as the diameter of the vasiform orifice (fig. 31) *Aleurodicus destructor* (Mackie) 



figure 31 (caudal compound pores not reduced)

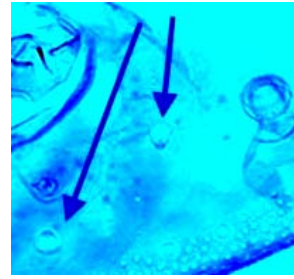


figure 32 (caudal 2 compound pores not reduced)

12' Posterior two abdominal compound pores reduced in size (fig.32) 13

13(12) Cuticle (derm) reticulated (fig.32) & operculum corrugated (fig.33); lingula acute (fig. 34); posterior two compound pores reduced and cylindrical (fig. 3) *Aleurodicus rugioperculatus* (Martin)



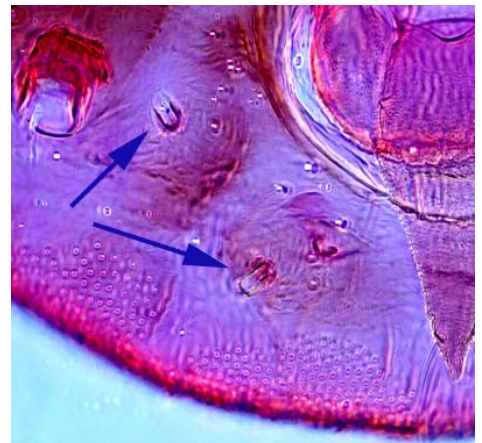
reticulated (roughened) derm (figure 32)



corrugated operculum (figure 33)



acute lingula (figure 34)



reduced pores (figure 35)

- 13' Cuticle (derm) not reticulated; lingula spatulate and apically rounded; posterior two reduced compound pores bell-shaped (fig. 36)..... *Aleurodicus dugesii*
(Cockerell)

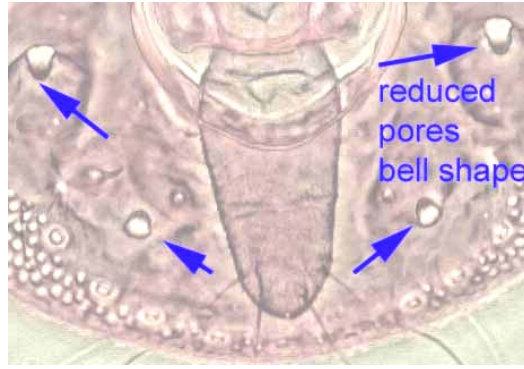


figure 36

- 14(2) Spines or siphon like tubes present on dorsum (fig. 37a, b, c) 15

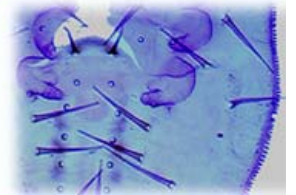
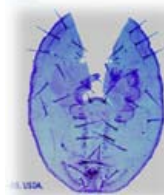
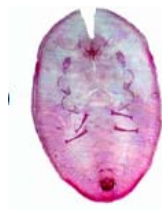


figure 37a (*Siphoninus*)

figure 37b (*A. antidesmae* Takahashi)

figure 37c (*Aleurocanthus*)

- 14' Spines and siphons absent 23

- 15(14) Spines absent; siphon like glands present with apices may be flared or inflated and subequal in length16

- 15' Siphon tubes absent; spines present with apices acute, fringed and varying length (short to long) 17

- 16(15) With two submedian pairs of siphon like glands (fig.38a); dentate margin appearing as two rows of teeth (fig.38b); no caudal tracheal comb (fig.38c) *Aleurothrixus antidesmae* Takahashi

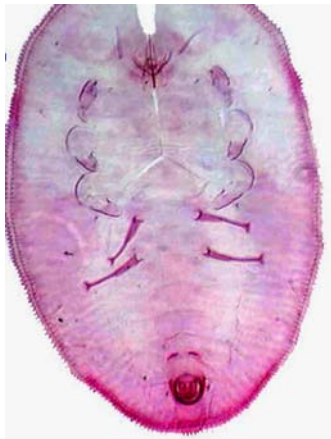


figure 38a



figure 38b



figure 38c

- 16' With numerous long siphon like glands dorsally distributed and subequal in length (fig.39a); margin appears crenulate with a caudal tracheal comb (fig.39b) *Siphoninus phillyreae* Holiday

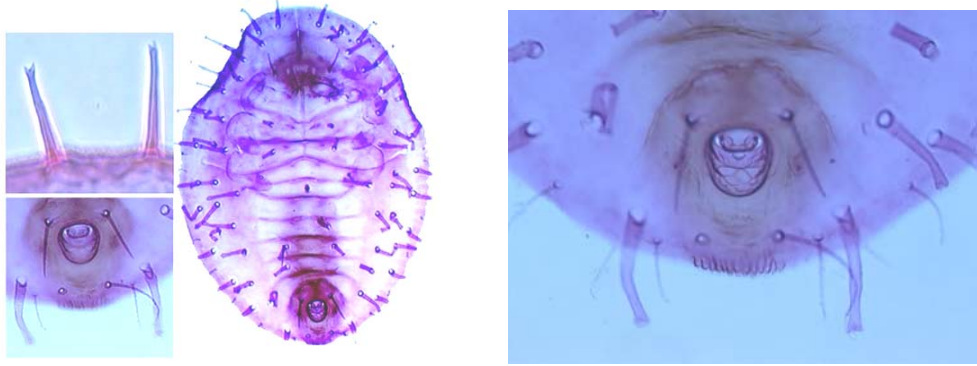


figure 39a

figure 39b

- 17(15) Margin dentate (7-8 teeth per 100 μm, fig. 40a) 18
- 17' Margin dentate (12 or more teeth per 100 μm fig. 40b) 20

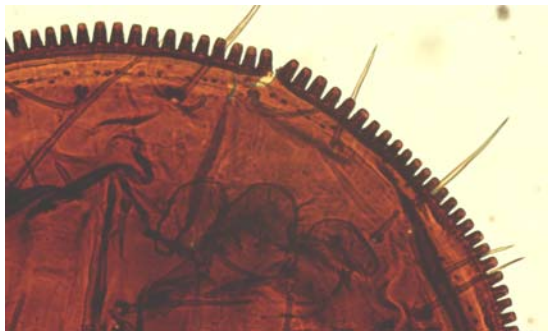


figure 40a (10X power)

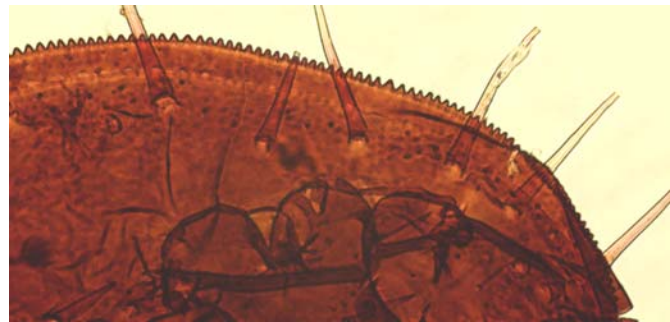


figure 40b (10X power)

- 18(17) Submargin with a ring of 8 to 9 pairs of spines (fig. 41a); puparia cuticle pale
 *Aleurocanthus spinosus* (Kuwana)

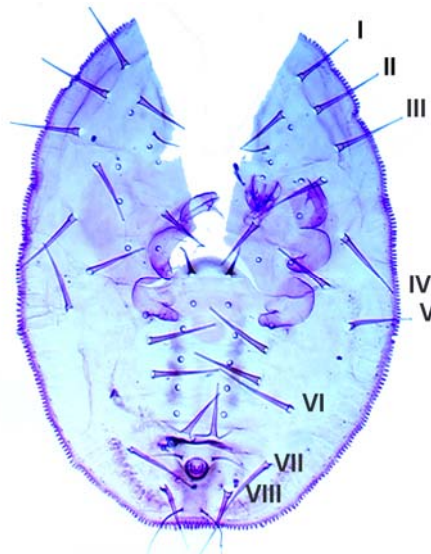


figure 41a

- 18' Submarginal row of 10 or 11 pairs of spines (fig. 41b); puparia cuticle black 19

- 19(18) Submarginal row of 10 pairs of spines (fig.42a); 5 submedian pairs of spines with 1st & 2nd on the cephalothorax along with the 4th & 7th abdominal subdorsal pair of spines extend well beyond margin; usually intercepted on Murraya from India *Aleurocanthus husaini* (Corbett)
- 19' Submarginal row of 11 pairs of spines (fig.42b); submedian and subdorsal spines not the same length pattern as couplet 19 *Aleurocanthus woglumi* (Ashby)

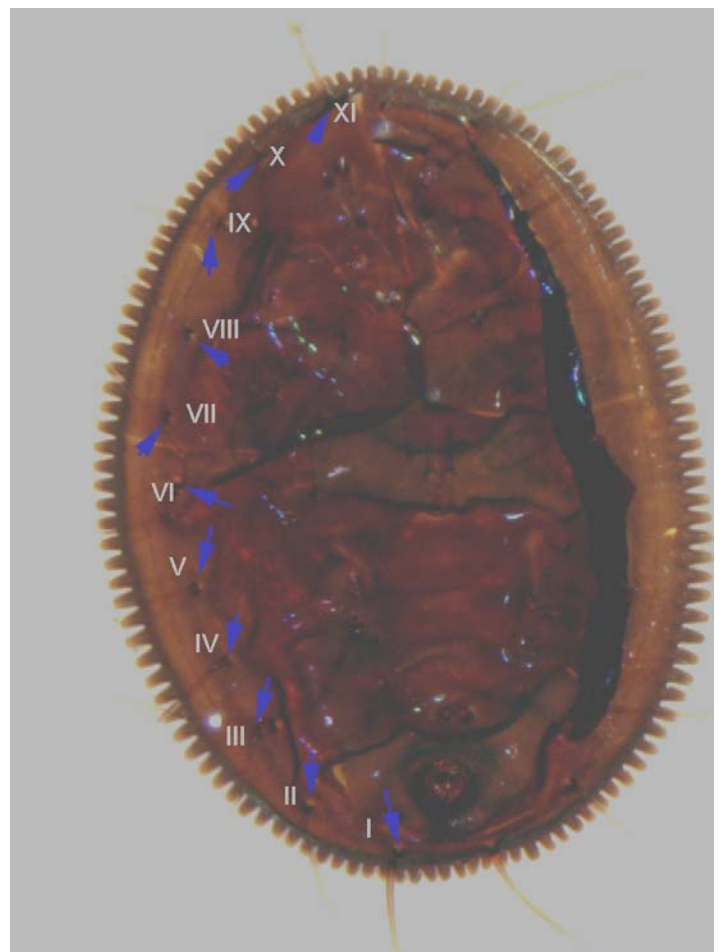
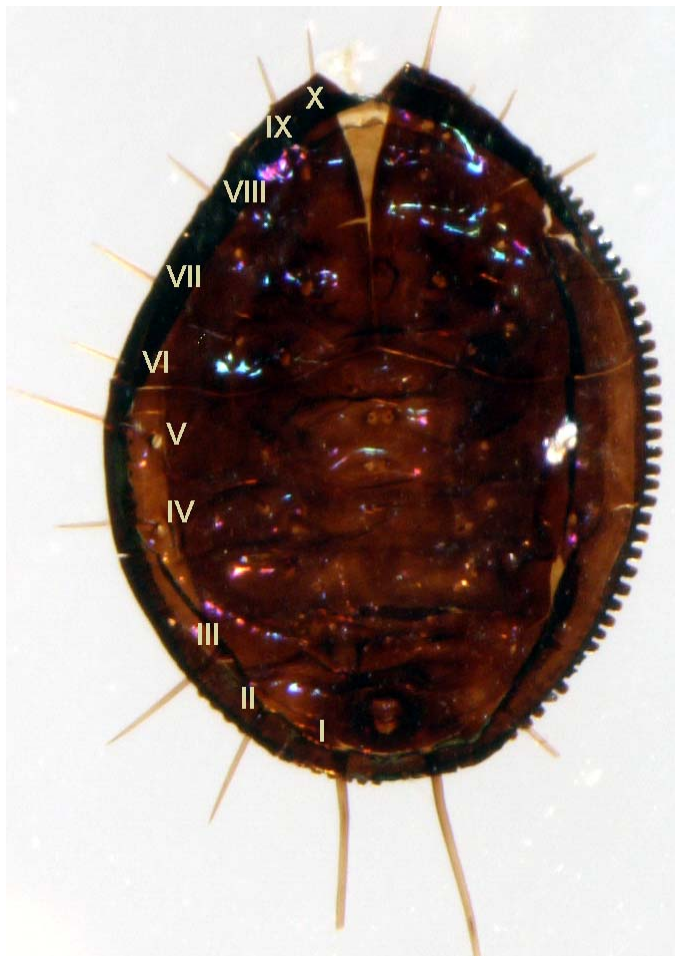


figure 42a figure 42b

- 20(17) Spines short, blunt on dorsum; transverse moulting suture reaches the margin (fig.43a); abdominal rachis present with pronounces lateral arms(fig.43b); vasiform orifice not elevated; submedian cephalothoracic setae absent; Austral..... *Aleurocanthus t-signatus* (Martin)

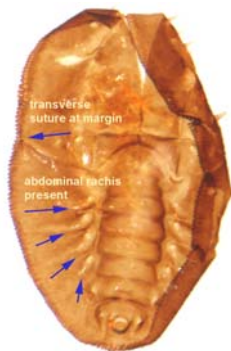


figure 43a

figure 43b

20' Dorsal spines longer and with some projecting beyond margin; transverse moulting suture terminates well before the margin (fig 44); abdominal rhachis absent or present, if present without pronounced arms 21

21(20) Submarginal row of 16 pairs of spines (fig. 44a) *Aleurocanthus citriperdus* (Quaintance & Baker)

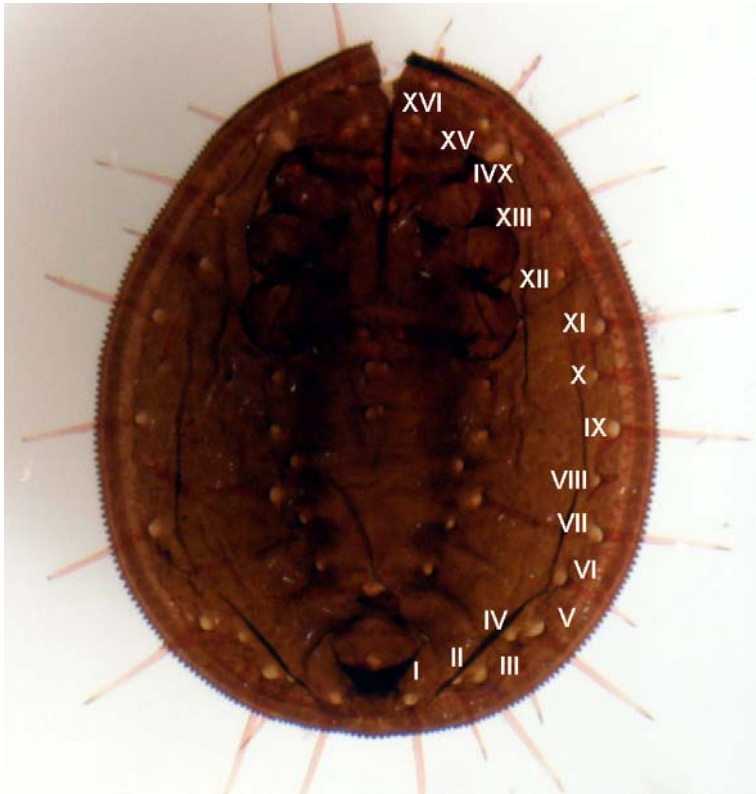


figure 44a

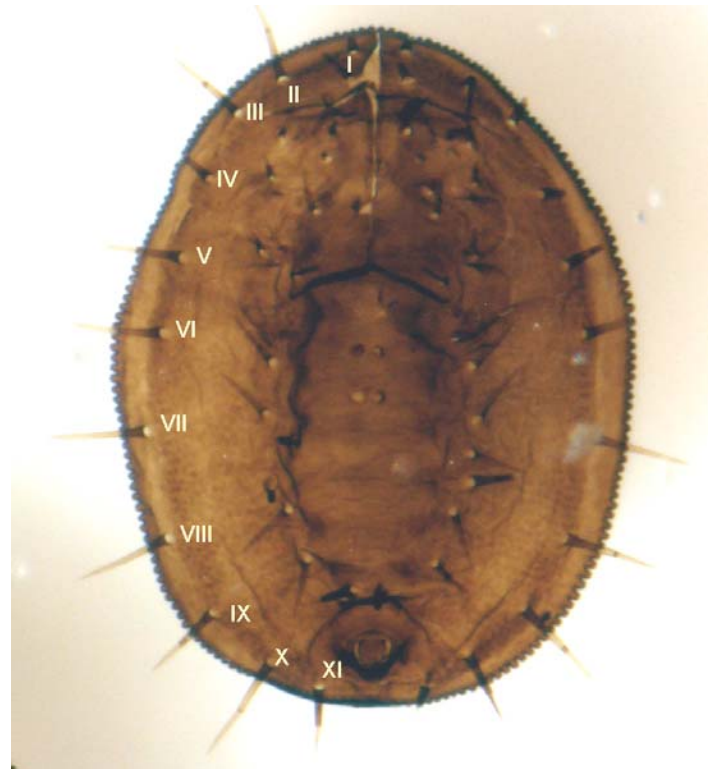


figure 44b

21' Submarginal row of 11 pairs of spines (fig. 44b) *Aleurocanthus spiniferus* (Quaintance)

22(14) Submedian with two pairs of large sack-like glands (fig. 45a); thoracic and caudal tracheal clefts dentate with several teeth (fig. 45b); puparia pale *Aleuroglandulus subtilis* Bondar

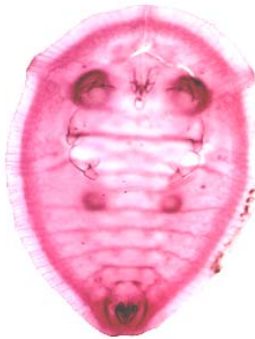


figure 45a



figure 45b

22' Combination of above characters absent; puparia pale to black 23

23(22) Five pairs of large disc pores present & equidistant from each other subdorsally thoracic tracheal cleft with plate (fig. 46) *Dialeuropora decempunctata* (Quaintance & Baker)

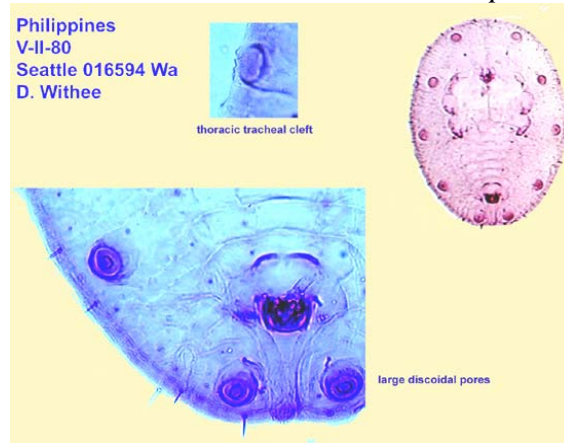


figure 46

23' Five pairs of large disc pores absent; thoracic tracheal cleft with plate or otherwise..... 24

24(23) Bifid horn like process (fig. 47) may be broken off) covers vasiform orifice; cuticle black *Aleurocerus* . 25



figure 47

24' Bifid horn absent; cuticle black or pale 26

25(23) Margin dark brown to black and similar to the remaining puparia; submarginal glands nearly square or rectangular usually on Musaceae(fig.48a) *Aleurocerus musae* Russell



Margin concolorous: figure 48a

Margin pale figure 48b

25' Margin yellowish to pale contrasting sharply with remaining puparium (fig.48b); submarginal glands nearly conical or thimble-shaped; usually on Arecaceae (Palmae) *Aleurocerus palmae* Russell

26 (24) Dorsal or ventral margins reflexed; subdorsal sutures absent; true dentate margin inside, not marginal; submarginal row of glands or papillae absent; oval to boat shape (fig. 49a-d) 27



figure 49a



figure 49b



figure 49c

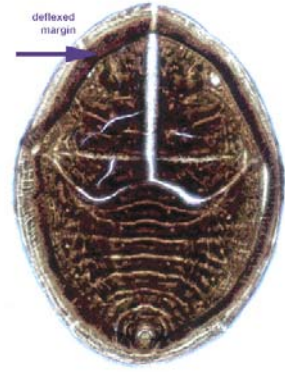


figure 49d

26' Margin not folded away from margin; subdorsal sutures present or absent; subdorsal sutures present or absent; submarginal row of glands or papillae absent or present; shape varies but not boat shape 30

27(26) **Cuticle of puparia pale** in color; oval in shape and ventral margin folded toward median (fig.49a) with true reflexed marginal teeth usually pointing toward margin (fig. 50a) *Aleurovitreus* Martin

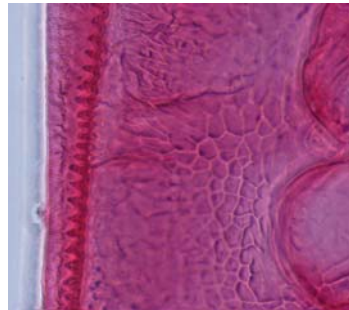


figure 50a

27' **Cuticle of puparia black**; oval to boat shape; dorsal margin folded medially (fig.49b-d) with true reflexed marginal teeth pointing toward median (fig. 50b & 50c) or the margin (fig.50d) *Aleuropleurocelus* Sampson 28



figure 50b

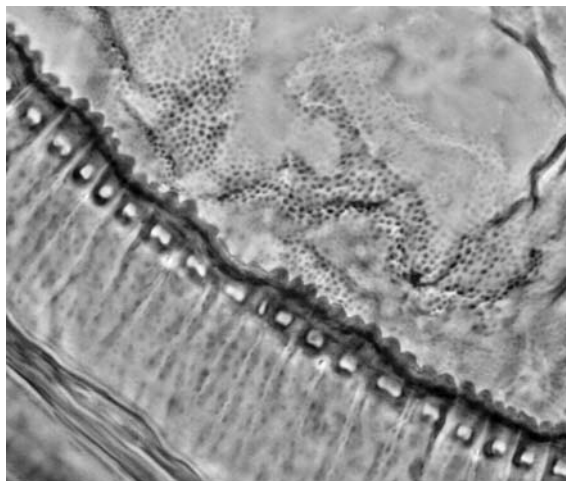


figure 50c

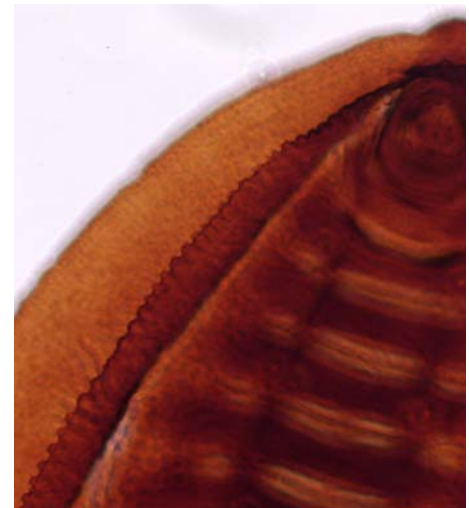


figure 50d

28 Puparia broadly oval; caudal protuberance indistinct (fig. 51a) *Aleuropleurocelus abnormis* Quaintance



figure 51a



Posterior area pointed
with apical setae---

figure 51b

28' Puparia boat-shaped with an obvious caudal protuberance or bump (fig. 51b) 29

29(28) Median abdominal not prominently sclerotized; terminal end of the transverse suture reaching the 3rd thoracic suture (fig. 52a) *Aleuropleurocelus ceanothi* (Sampson)

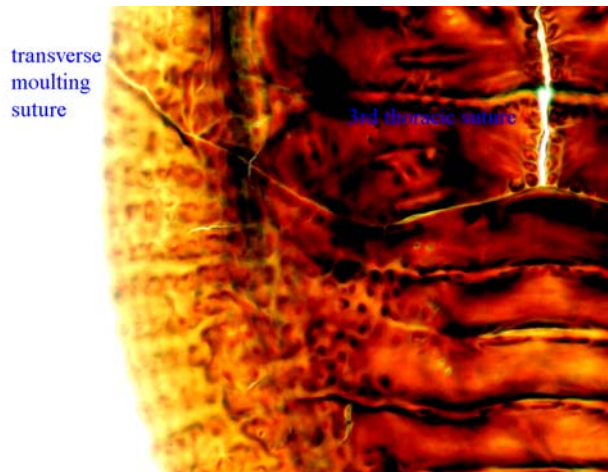


figure 52a: suture complete & no sclerotized depressions

29' Median abdominal prominently sclerotized; terminal end of the transverse suture not reaching the 3rd thoracic suture (fig. 52b) *Aleuropleurocelus nigrans* (Bemis)

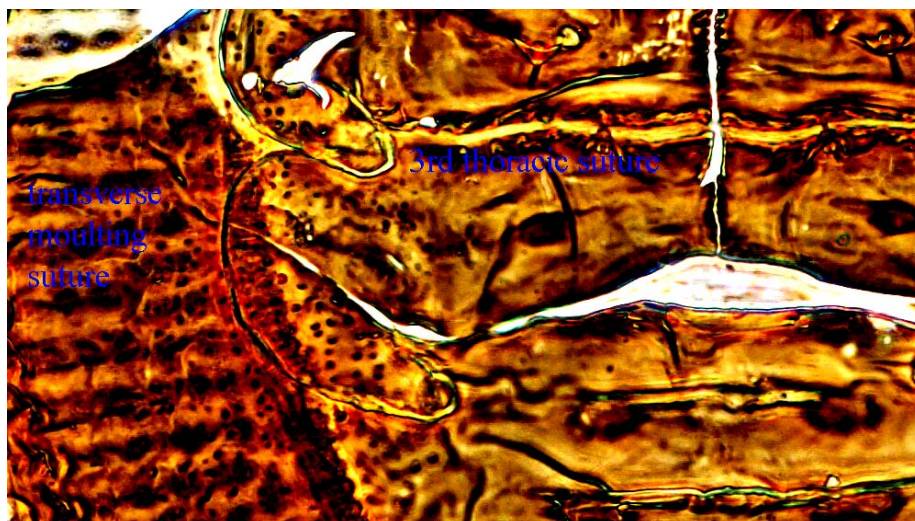


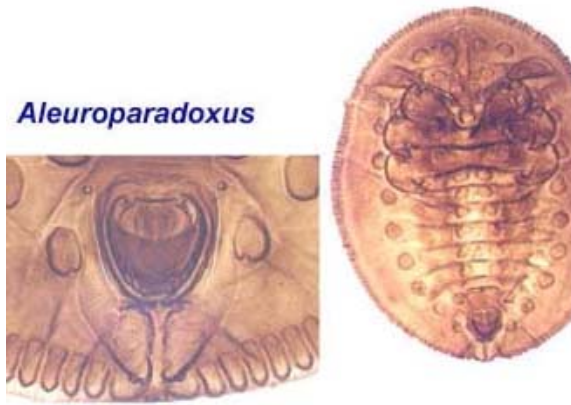
figure 52b suture terminated & sclerotized abd depressions

30(26) With a submarginal row of the glands, papillae, or tubercles (fig.53a-d) 31



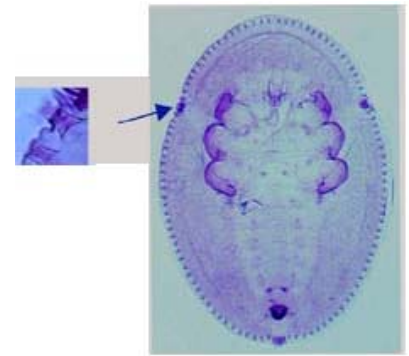
Aleuroclava iasmini Takahashi

figure 53a



Aleuoparadoxus

figure 53b



Orchamoplatus mammaeferus Q.

figure 53c



Trialeurodes floridensis Q.



Trialeurodes vaporariorum



Trialeurodes variabilis

figure 53d

30' Submarginal row of the glands, papillae, or tubercles absent; dorsal subdorsal sutures absent or present ... 41

31(30) Submarginal row of barrel shaped dentate glands present; thoracic & caudal tracheal clefts differentiated as a comb; cephalic setae absent (fig.54) *Orchamoplatus mammaeferus* (Quaintance & Baker)

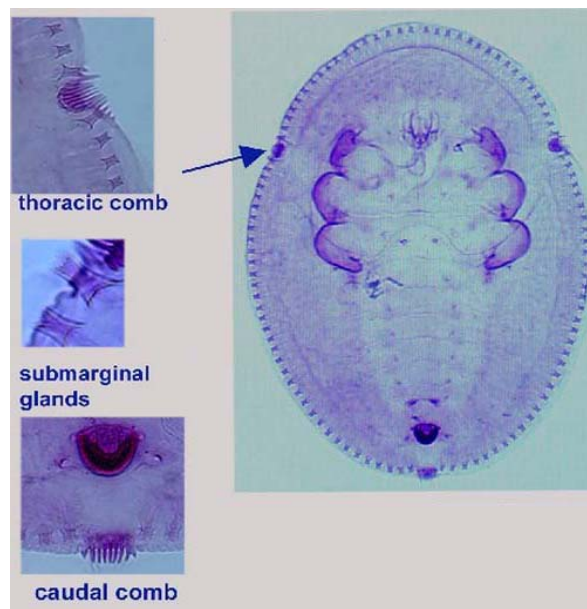


figure 54

31' Thoracic tracheal cleft and submarginal row of glands, papillae or tubercles otherwise 32

32(31) Subdorsal row of bullet shaped tubercles present & barely contiguous (fig.55a); tracheal marginal cleft platelike (fig.55b); subdorsal & median tubercles present (fig 55c); lingula not lobed
*Aleuroclava jasmini* Takahashi



figure 55a



figure 55b

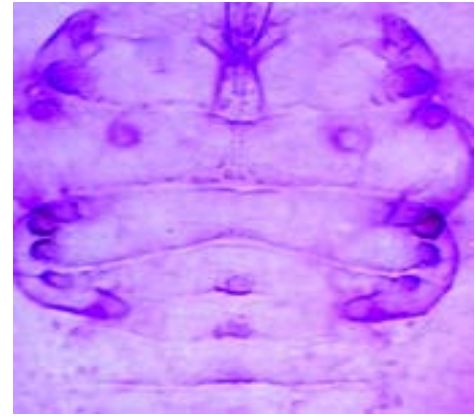


figure 55c

32' Tubercles otherwise (cone to rod shaped) with or without flat renal-shaped papillae on dorsum; tracheal marginal cleft absent or pore like (not plate like); lingula lobed (*Trialeurodes*, fig.56a) or varies 33

33(32) Submarginal row of bullet to rod-shaped papillae (fig.56a) usually present (row may be interrupted or papillae rarely wanting); tracheal cleft not platelike; lingula lobed*Trialeurodes* 35



figure 56a

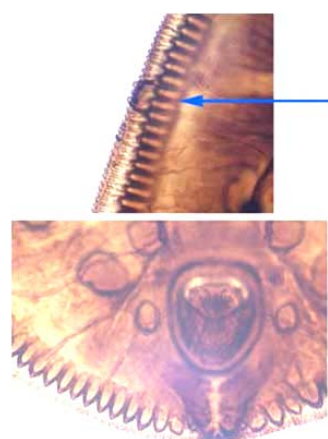


figure 56b



33' Submarginal row of flat to rod-shaped papillae present (fig.56b); tracheal cleft with pore and tooth; with flat renal-shaped papillae on dorsum (fig.56b)..... *Aleuroparadoxus* 34

34(33) Thoracic tracheal pore shape design present, each with a porous area; submarginal papillae almost contiguous; cephalon usually with 5 pairs of modified papillae; leg 1 without spines *A. iridescens* (Bemis)

34' Thoracic tracheal pore shape design absent lacking a porous area; submarginal papillae not contiguous; cephalon usually with 4 pairs of modified papillae; leg 1 with one to three spines (no specimen)
 *A. arctostaphylli* Russell

35(33) C1 setae absent; base of legs with a thick spine (fig.57); usually on Laurus from Europe .. *T. lauri* (Signoret)

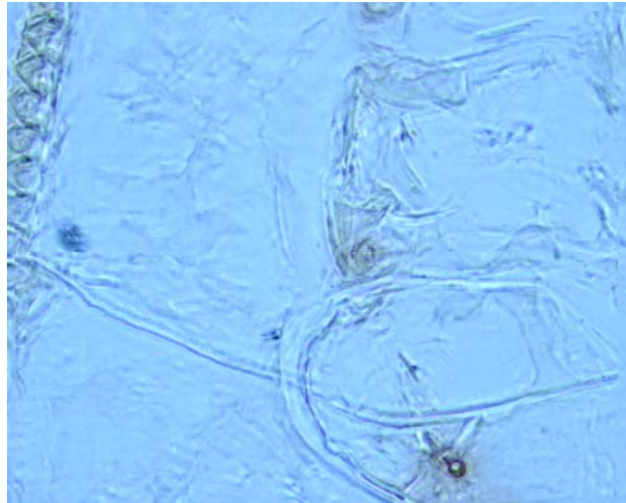
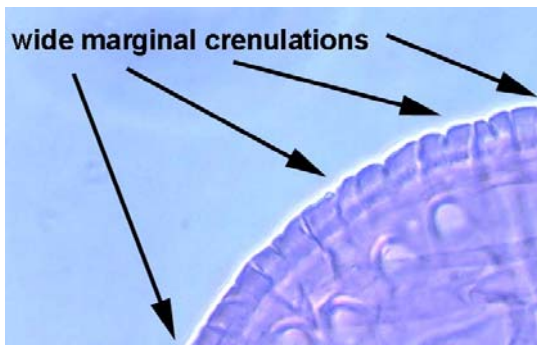


Figure 57

35' C1 setae present; base of legs with or without thick spines, with setae 36

36(35) Marginal crenulations broad less than 18, usually less than 13 per 100 μm (fig. 58a) 37



Trialeurodes vaporariorum margin (40X)

Figure 58a



Trialeurodes abutilonea margin (40X)

Figure 58b

36' Marginal crenulations narrower at least 20 or more, usually at least 22 per 100 μm (fig. 58b); 7 abdominal segments (fig. 59a); 1 pair of submedian disc pores on A1; peglike tooth from posterior margin of vasiform orifice (fig.59b) *T. abutiloneus* (Haldeman)

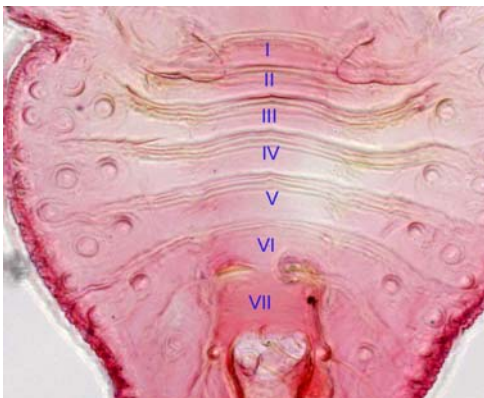


Figure 59a

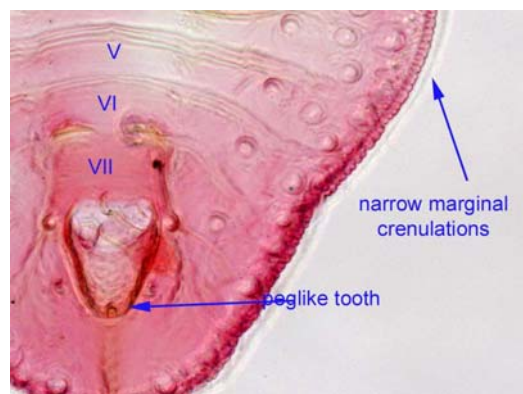
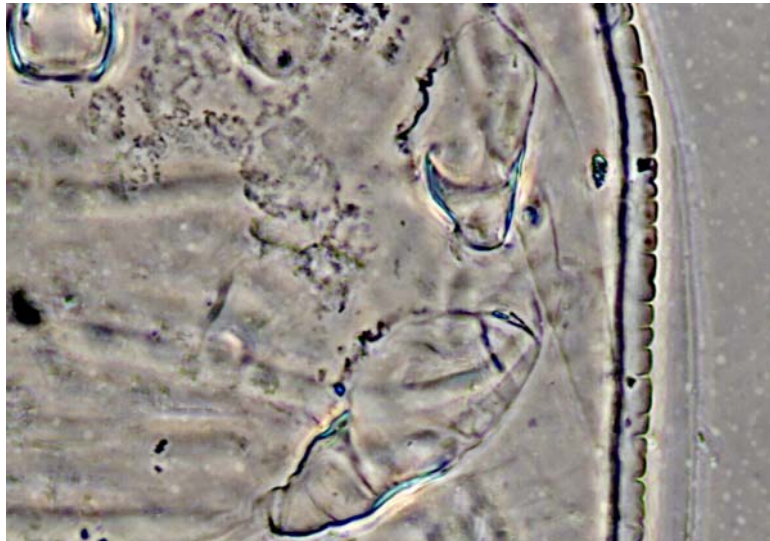


Figure 59b

37(36) Legs with 2+ large spines (fig. 60); submarginal papillae rarely developed *T. variabilis* (Quaintance)



(fig. 60)

37' Legs without spines; submarginal papillae developed.....38

38(37) Abdomen with median tubercles/papillae (fig. 61a or 61b) 39

38' Abdomen without median tubercles/papillae 40

39(38) Median tubercles only present on A1 and A2; marginal crenulations vary in width; submarginal papillae conical (fig.61a) *T. floridensis* (Quaintance)

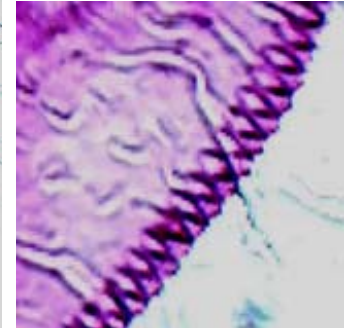
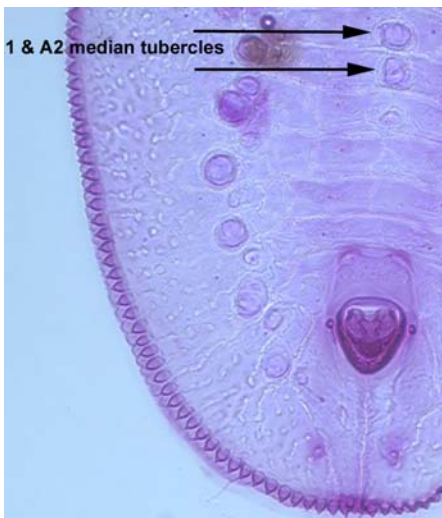


figure 61a (*T. floridensis* with tubercles & papillae)

figure 61b (*T. vitrinellus* with tubercles & papillae)

39' Median tubercles present on A1 to A5-6; marginal crenulations uniform about the same diameter; submarginal papillae parallel sided and distally tapering fig.61b) *T. vitrinellus* (Cockerell)

- 40(39) Submedium with a cluster, band, or row of papillae; submarginal papillae subequal in an irregular single or triple rows (no specimens available) *T. glacialis* (Bemis)
- 40' Submedian cluster or band of papillae absent; single submarginal row of large and often smaller papillae (fig.62); subdorsal papillae absent or present *T. vaporariorum* (Westwood)



Figure 62

- 41(30) Dorsal disk separated from the margin (fig.63a) by a radially concentric suture (that may be limited to the cephalothoracic area or extend as far as or below the vasiform orifice either) or disjuncted submarginal suture; or as lateral pair of submedian or subdorsal folds that may extend from the thorax and into the abdomen; margin dentate; puparia pale to black 42

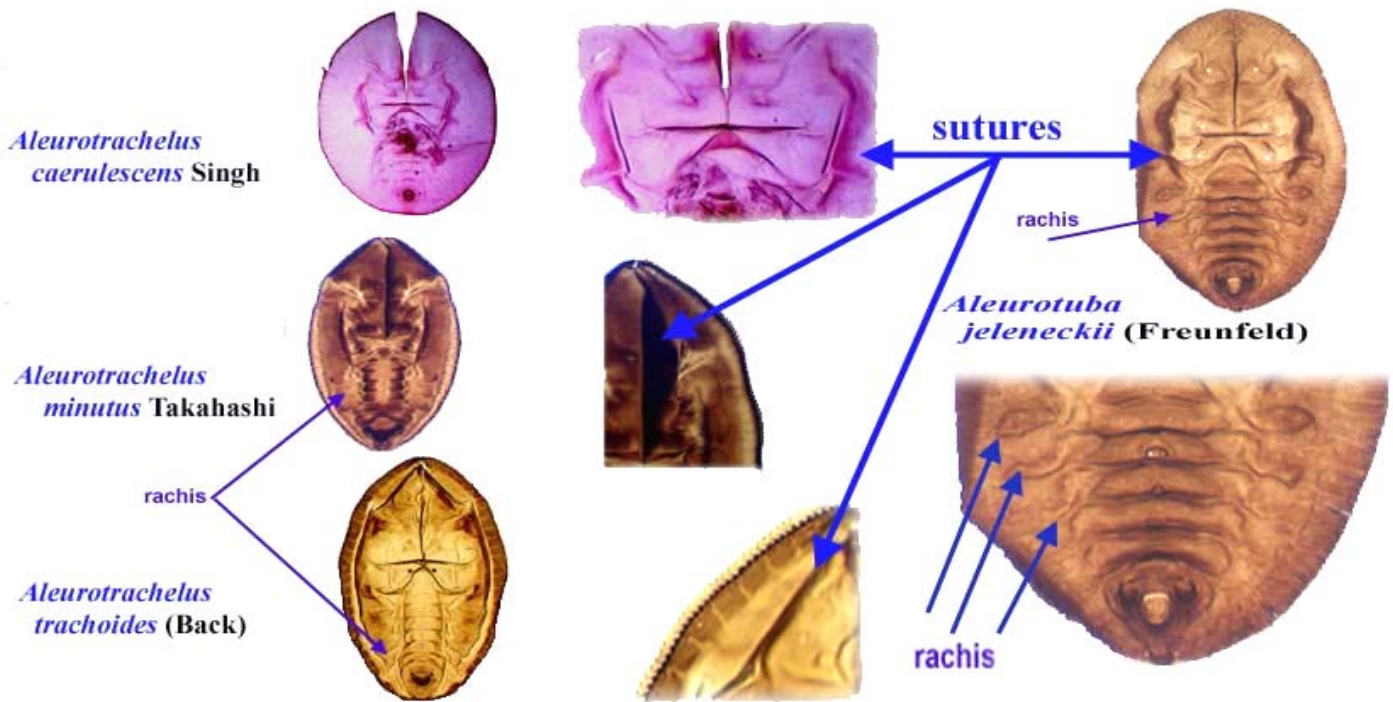
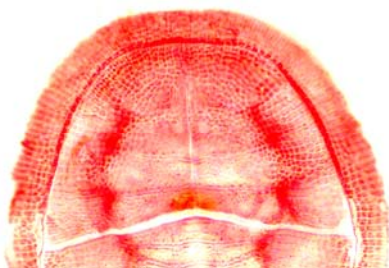


figure 63a



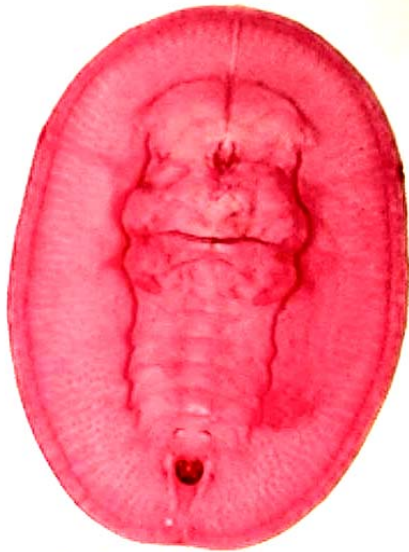
cephalon suture (left) figure 63b



disjuncted (right)

41' Dorsum entire; dorsal suture absent; if with a faint crania suture, lacks thoracic & abdominal sutures 57

42(41) lateral pair of separate submedian or subdorsal folds (somewhat disjointed, fig.64a-c) that may extend from the thorax and into the abdomen; margin dentate; puparium pale to black 43



Slide from CDFA (Ray Gill, ret.)
Image from PPQ San Francisco by J. Dooley

figure 64a



figure 64b



figure 64c

42' Dorsal disk separated from the margin by a radially concentric or disjointed submarginal suture (that may be limited to the cephalothoracic area or extend as far as or below the vasiform orifice either); puparium may be pale but normally black 45

43(42) lateral pair of submedian folds that extend from the thorax and to abdominal segment 6 (fig.65); puparia pale; transverse granular patches *Crenidorsum aroidephagus* Martin et al

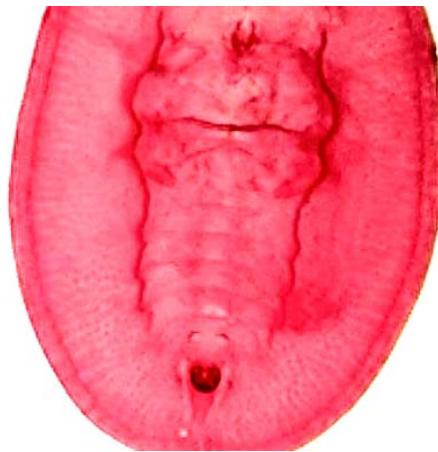


figure 65

43' lateral pair of submedian or subdorsal folds that may extend from the thorax and into the abdomen as far as the vasiform orifice; puparia rarely pale to normally black; the submargin with transverse granular patches *Aleurotrachelus* 44

44(43) Margin yellowish to pale contrasting sharply with remaining puparia (fig.66a); with rectangular granular transverse patches submarginally (fig.66a); submarginal fold extends to level of vasiform orifice (fig.66b); usually found on Capsicum & Piper *A. trachoides* (Back)

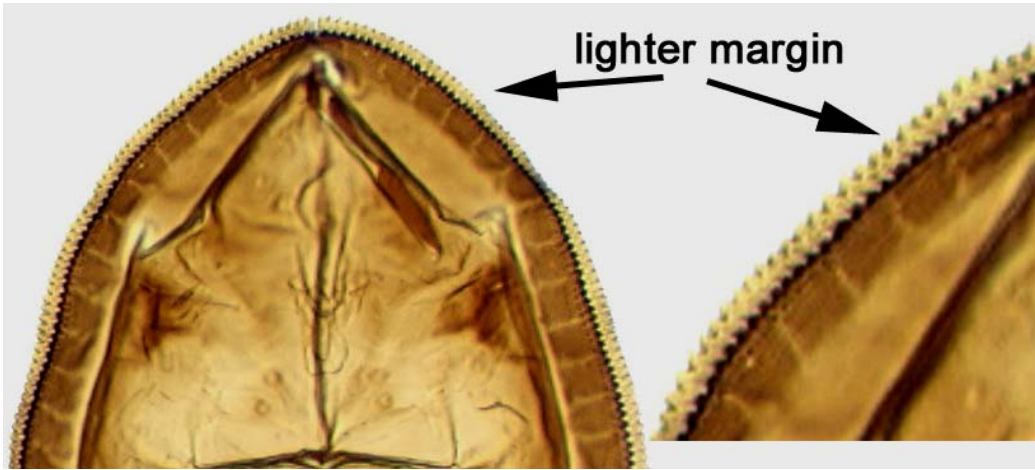


figure 66a



figure 66b

44' Margin dark brown to black and concolorous to the remaining puparia (fig.67a); granular patches otherwise; usually found on Arecaceae (Palmae); submarginal fold extends below vasiform orifice to weak caudal fold (fig.67b) *A. atratus* (Bondar)



figure 67a



figure 67b

Aleurocerus flavomarginatus Bondar

Paraleurolobus sp.



folds



Asialeyrodes maesae (Takahashi)

Tetraeurodes acaciae (Quaintance)



figure 68

45' Dorsal disk separated from the margin by a complete disjunct submarginal suture forming distinct sections (fig. 69); base of dentate margin with elongate shaped glands giving the appearance of two rows of teeth; inner submargin with a row of small setae from the cephalothorax to the anterior abdominal segments; vasiform orifice obscured by a raised, triangular shaped structure and may or may not have branched, comb like structure that arises from the posterior margin of the vasiform orifice.....
 *Aleurothrixus floccosus* (Maskell)

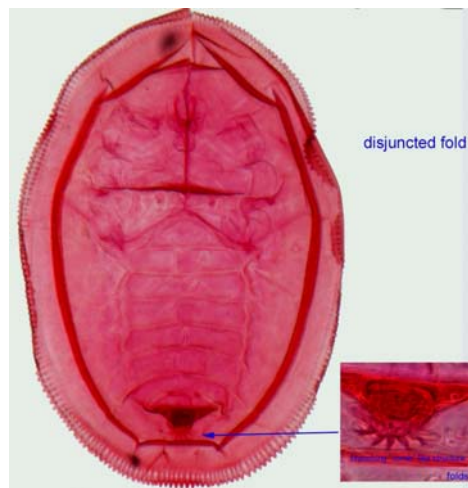


figure 69

46(45) Radially concentric suture present (forming a uniform arc) on the cephalothorax only (fig.70a-b), barely extending into the abdomen *Cockerelliella*

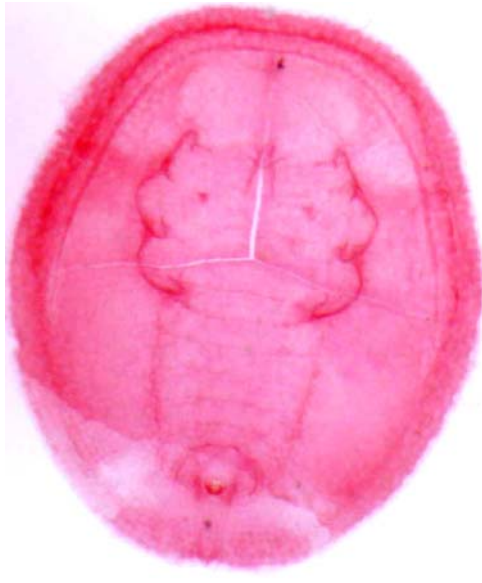


figure 70a

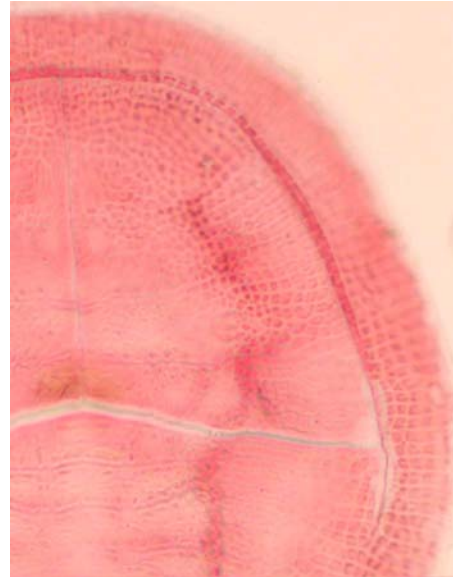


figure 70b

46' Radially concentric suture present (forming a uniform arc) extending past the vasiform orifice (fig 71a) and either joined (fig 71b) or interrupted below the vasiform orifice 47



figure 71a-b

47(46) Tracheal cleft differentiated as a plate or pore (may be small) *Aleuroclava* 48

47' Tracheal cleft not differentiated as a plate or pore; may have differentiated teeth 49

48(47) Puparium brownish, mostly concolorous; without or with a faint a darker T-shaped, submedian patch; without thoracic subdorsal tubercles and with abdominal subdorsal tubercles (fig.71a) *A. aucubae* (Kuwana)

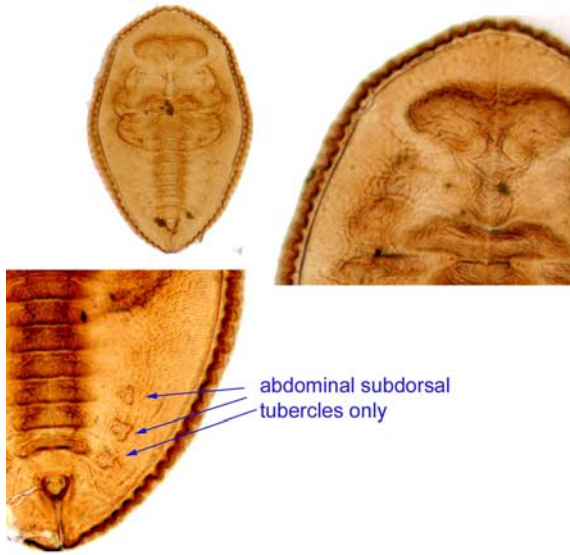


figure 71a

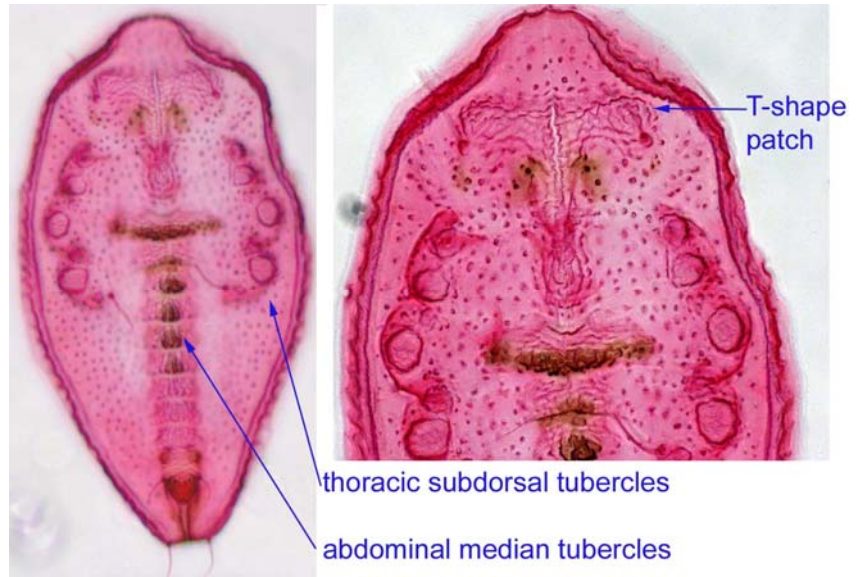


figure 71b

48' Puparium light with a dark submedian patch from cephalothorax to abdomen as a sclerotized T-shape at lower power; with thoracic subdorsal tubercles, without abdominal median tubercles (fig. 71b) *A. psidii* (Singh)

49(46) Tracheal cleft may be differentiated by a comb of different sized teeth (fig. 72b); thoracic tracheal furrow may be reticulated or smooth, if present; vasiform orifice cordate, not elevated.....*Aleurolobus* 50

49' Tracheal cleft not differentiated; thoracic tracheal furrow may be present, or absent; puparium usually black, but may be pale; vasiform orifice subcircular to trapezoidal and slightly elevated posteriorly....
..... *Tetraeurodes* 52

50(49) Puparium very robust to rotund (fig. 72a); submarginal setae very long extending well beyond the margin with bases very robust (fig. 72c); abdominal submedian depressions pronounced *A. subrotundus* Silvestri



Figure 72a

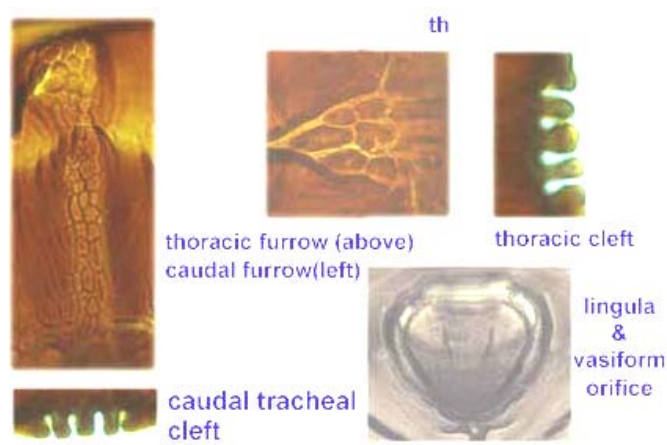


figure 72 b



figure 72c

50' Puparium ovoid to subcircular; submarginal setae short, not robust; no abdominal submedian depression ... 51

51(50) Puparium oval with the thoracic & caudal tracheal margin differentiated by 3 teeth (fig.73a); comma or half-moon shaped eyespots present (fig.73a); common on *Murraya koenigii* from India (lower left)*A. marlatti* (Quaintance)

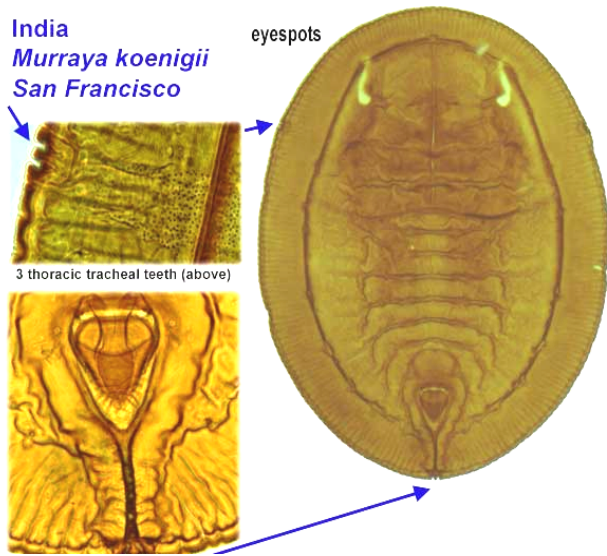


figure 73a



figure 73b

51' Puparium subcircular with the thoracic & caudal tracheal margin differentiated by very minute teeth; eyespots much smaller (fig.73b), reduced and more oval shaped; on Oleaceae *A. olivinus* (Silvestri)

52(49) Puparium pale (fig.74a); meso- and metathoracic setal pairs present; submargin with a row of geminate pores/porettes present but uneven and just inside the row of marginal tooth-based glands (fig.74b& 74c); usually on Lauraceae*Tetraleurodes neemani* Bink-Moenen



figure 74a

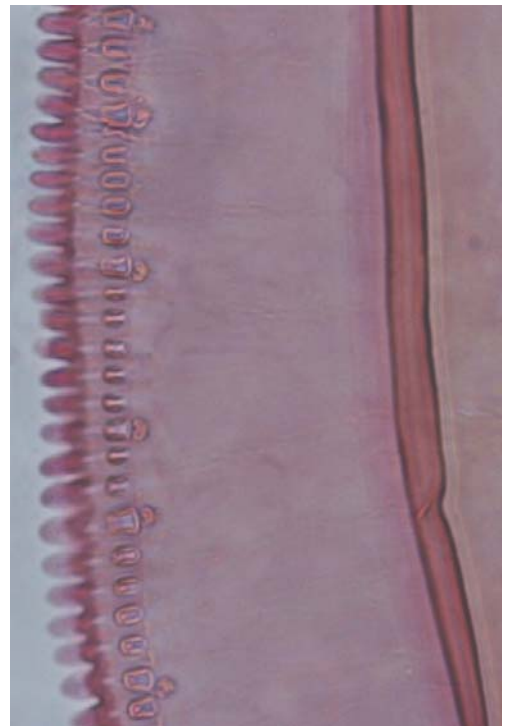


figure 74b (20X) and figure 74c (40X)

- 52' Puparium black; cephalothoracic setal pairs absent or present; submargin otherwise 53
- 53(52) All dorsal setal pairs absent including cephalothoracic group (Australia only) *T. stirlingiae* Martin
- 53' Cephalothorax with setae either absent or present on all or some segments (not from Australia) 54
- 54(53) Submarginal gland tubercles present (fig.75); cephalothorax with 3 pairs of setae; vasiform orifice on an U-shaped elevation of A8 segment; usually on legumes *T. acaciae* (Quaintance)

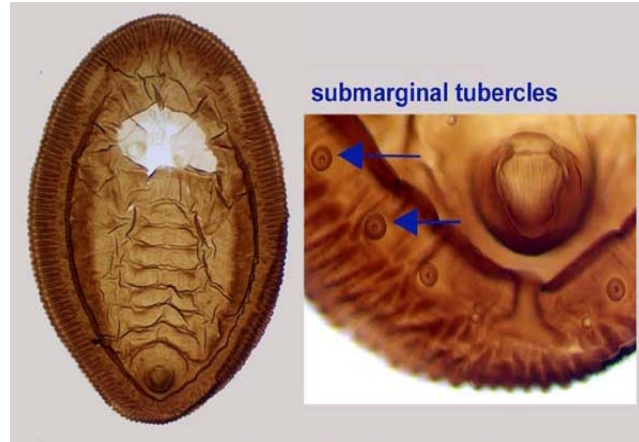


figure 75

- 54' Submarginal gland tubercles absent; cephalothorax with 0 to 3 pairs of submedian setae 55
- 55(54) Cephalothorax submedian setae & A8 setae absent; pair of small tubercles with a pale gland on posterior rim of vasiform orifice and with 3 to 4 cells laterally (fig.76) *T. usorum* (Cockerell)

A8 setae absent



figure 76

- 55' Cephalothorax with 2 to 3 pairs submedian setae; A8 setae present either anterior to or lateral of the vasiform orifice; submarginal glandular areas at base of teeth U to V shape 56

56(55) Operculum with small posterior median notch; A4 cluster of 3-8 subdisc pores absent; oval abdominal submedian depressions present; submarginal disc pores in microtubercular band and as an irregular row between band and submarginal suture; (fig.77)*T. perseae* Nakahara

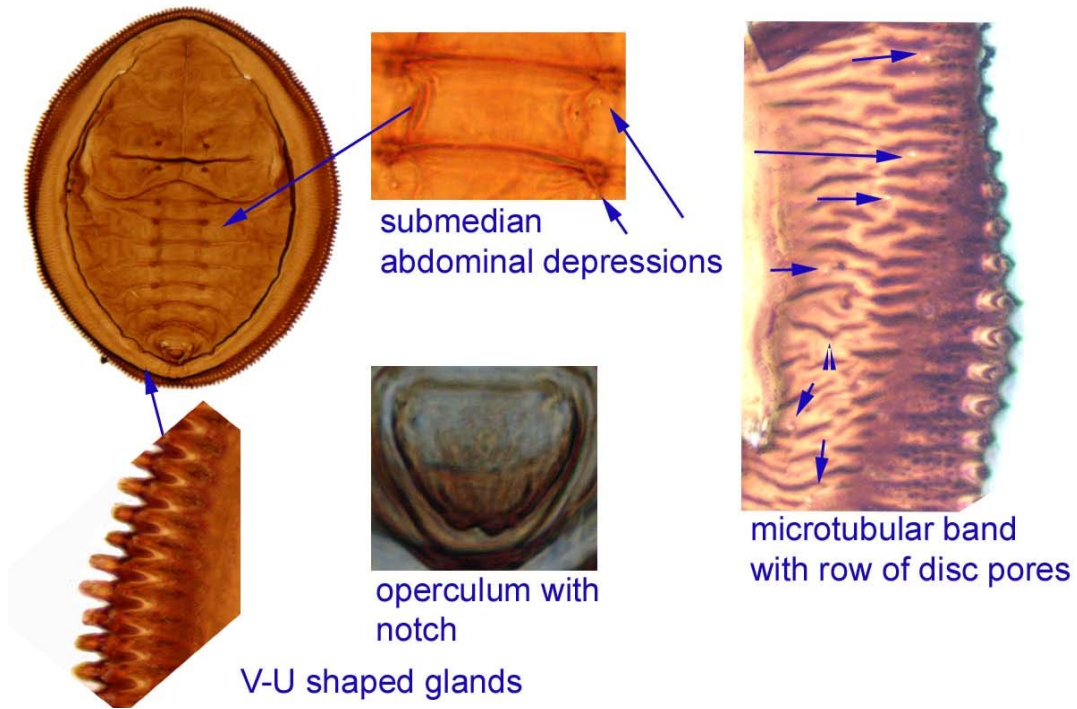


figure 77

56' Operculum without small posterior median notch; A4 with a cluster of 3-8 subdorsal pores present; oval abdominal submedian depressions absent; narrow band of ventral spinules on mesal base of legs present (fig.78) *T. mori* (Quaintance)

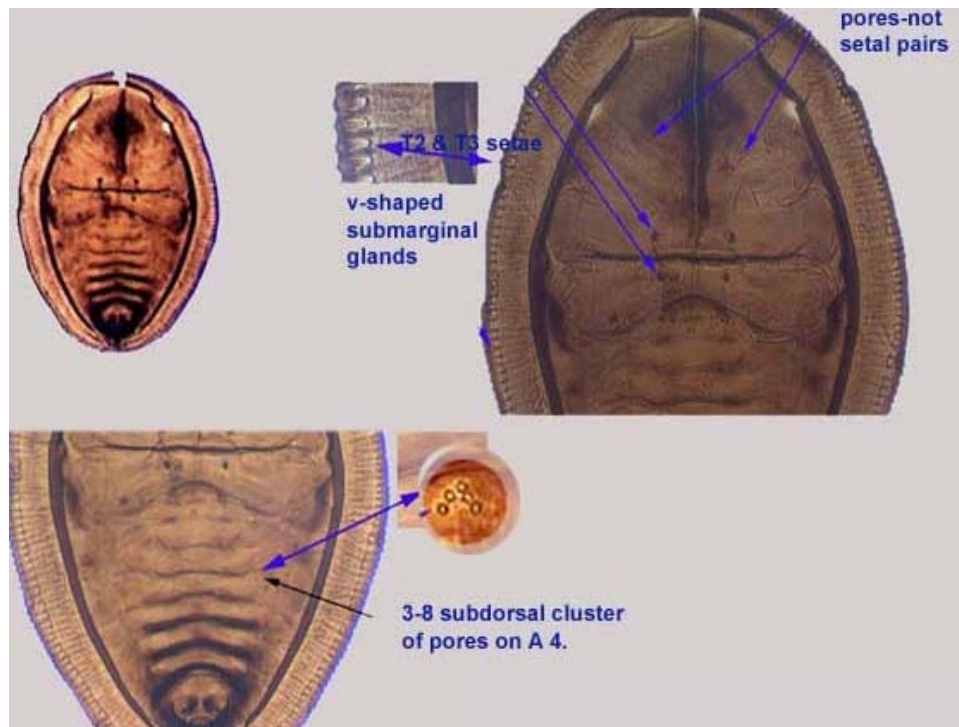


figure 78

56'' Operculum without small posterior median notch; A4 with a cluster of 3-8 subdorsal pores absent; oval abdominal submedian depressions absent; broad band of ventral spinules on mesal base of legs present (fig.79)
*T. fici* (Quaintance and Baker)



figure 79

57(41) Thoracic and caudal tracheal cleft differentiated as a pore with or without teeth, open to or closed from the margin, invaginated or close to the margin; thoracic and caudal tracheal furrow present, ornamented or not 58
 57' Tracheal cleft either not differentiated, or if slightly, not as a pore and not deeply invaginated 61
 58(57) Tracheal cleft deeply invaginated & reticulated (fig.80) *Rusostigma*

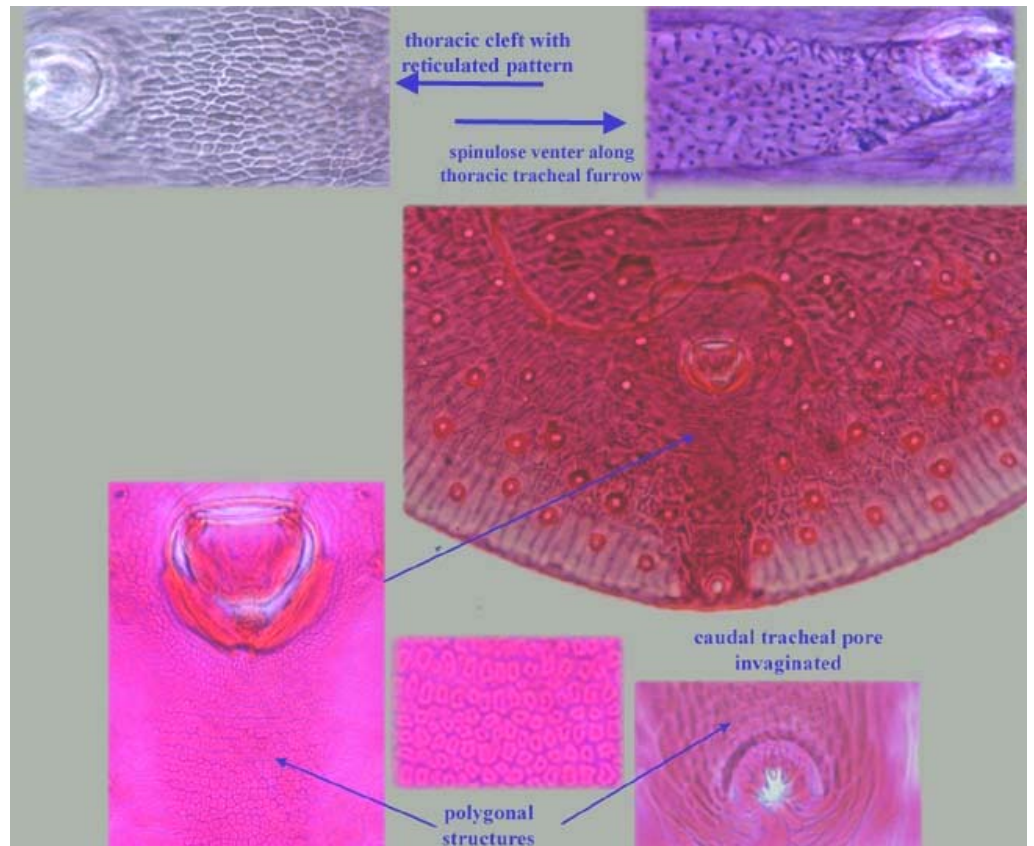
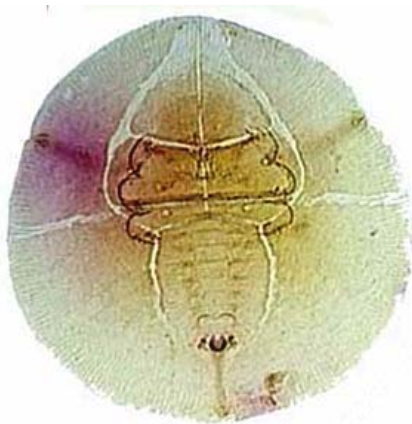


figure 80

58' Tracheal cleft not deeply invaginated, not reticulated, usually with a pore and furrows 59
 29

59(58) Head delineated by a faint suture (fig.81a); ventral tracheal folds spinulose or with nodules (fig.81b); 10-12 pairs of submarginal setae *Dialeurodes* ... 60

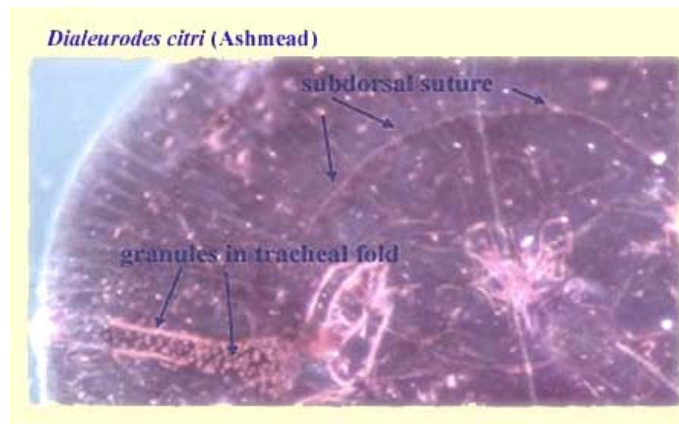


figure 81a

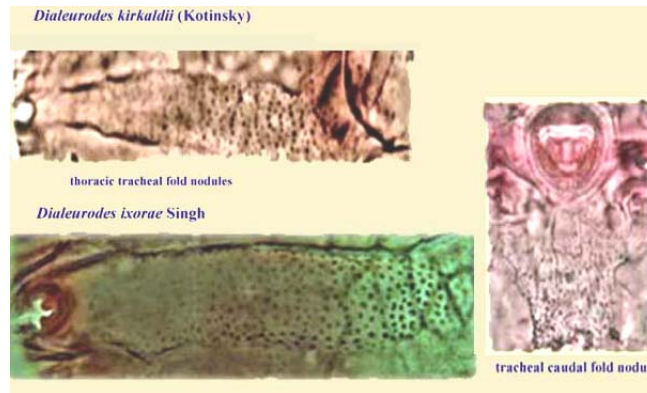


figure 81b

59' Head lacking delineated suture (fig.82a); ventral tracheal folds almost always smooth (fig.82b); 13-15 pairs of submarginal setae *Singhiella citrifolii* (Morgan)



figure 82a

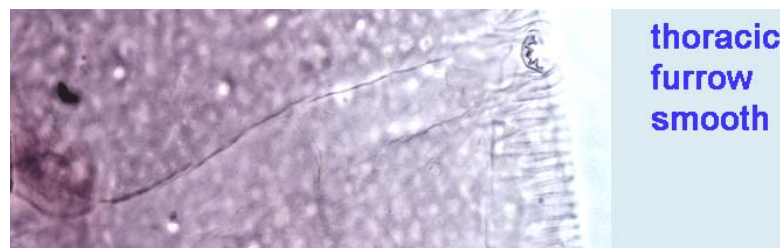


figure 82b

60(59) Longitudinal pigmented stripe present; A1 setae present; (fig.83a) *Dialeurodes Kirkaldi* (Kotinsky)

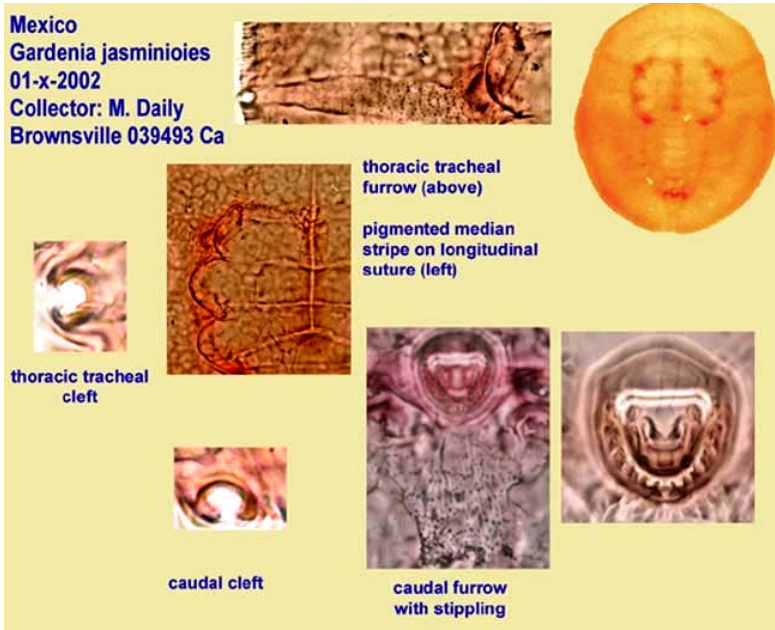


figure 83a

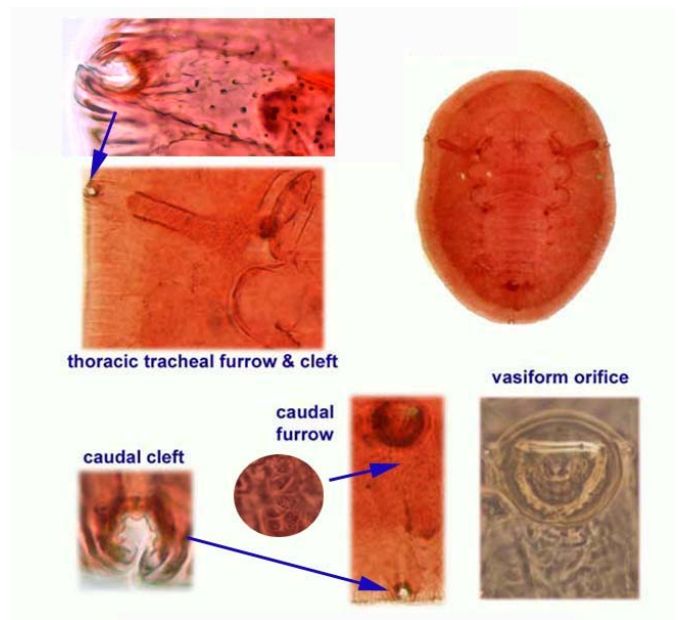


figure 83b

60' Longitudinal pigmented stripe & A1 setae both absent; (fig.83b) *D. citri* (Ashmead)

61(57) Appearing as 7 abdominal segments visible (between the vasiform orifice and the transverse moulting sutures) with A7 significantly reduced medially; Lingula elongated and spear shaped; with a pronounced or slight caudal fold that extends to posterior margin; (fig.84a) *Bemisia* ... 63

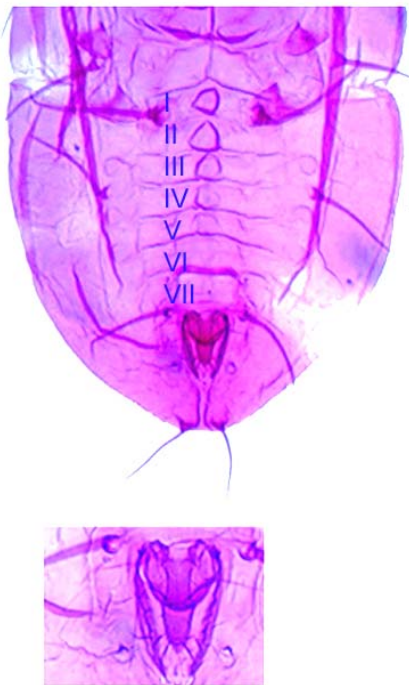


figure 84a

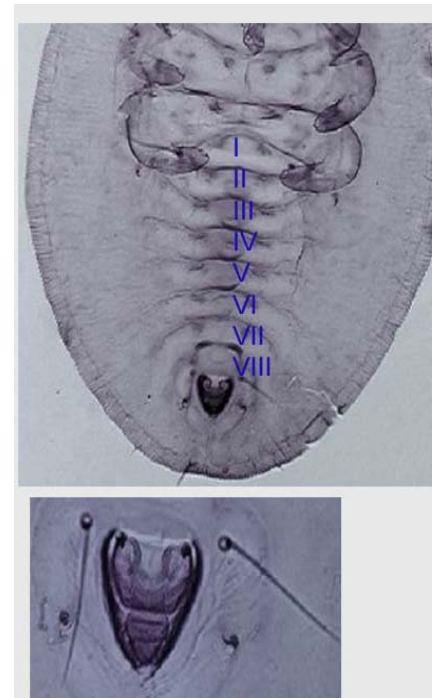


figure 84b

61' 8 subequal abdominal segments visible (between the vasiform orifice and the transverse moulting sutures) with A7 not significantly reduced medially; Not fitting above description *Aleyrodes* (fig.84b) 62

62(61) Caudal setae always reduced hardly extending beyond puparium margin; C1, A1, and A8 setae similar; abdominal segments lack median tubercles; vasiform orifice rounded but truncate posteriorly (fig.85a)
 *Aleyrodes lonicera* (Walker)



Figure 85a

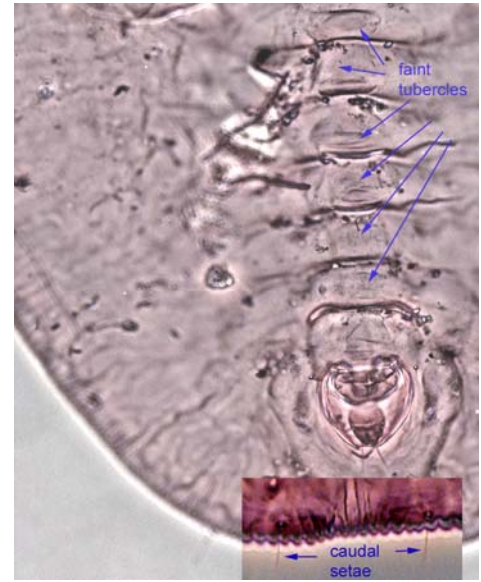


Figure 85b

62' Caudal setae sometimes extends beyond puparium margin; C1, A1, and A8 setae similar; A2 to A5 or A2 to A6 with shallow, smooth median tubercles; vasiform orifice often with a triangular apical lobe (fig.85b)
 *Aleyrodes proletella* (Linnaeus)

63(61) Caudal furrow with pronounced ridge; puparia obviously elongated with two pairs subdorsal longitudinal ridges (fig.86)
 *Bemisia giffardi*

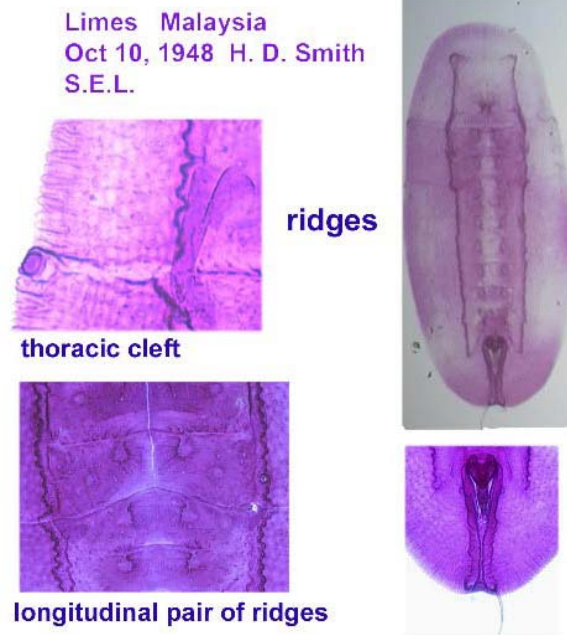


Figure 86

63' Without the two pairs subdorsal parallel, longitudinal ridges 64

64(63) Caudal setae slender (fig.87a) less than half the length of the vasiform orifice (with lateral sides concave); vasiform orifice always less than its length from the posterior margin; usually with two geminate pore/porette pairs between A1 seta and median line; thoracic tracheal margin may be slightly differentiated (fig.87b) *Bemisia afer* (Priesner & Hosny)

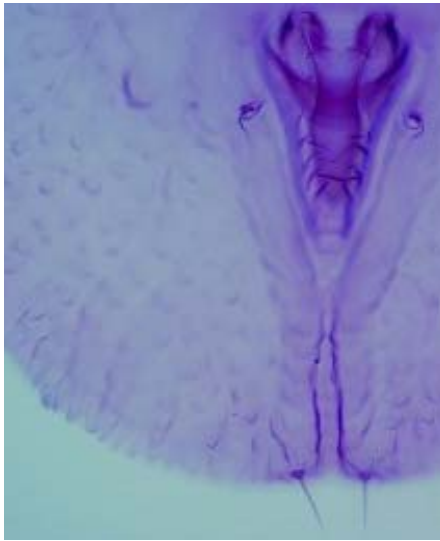


figure 87a

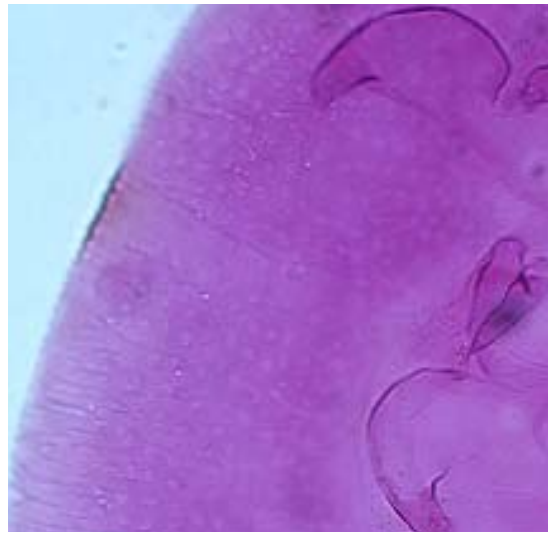


figure 87b

64” Caudal setae (fig.88a & b) stout and as long as the vasiform orifice (with lateral sides almost straight); vasiform orifice always less than its length from the posterior margin (fig.88a); single geminate pore/porette pair between A1 seta and median line ... *Bemisia tabaci* (Gennadius) including *B. argentifolia* and Biotype Q

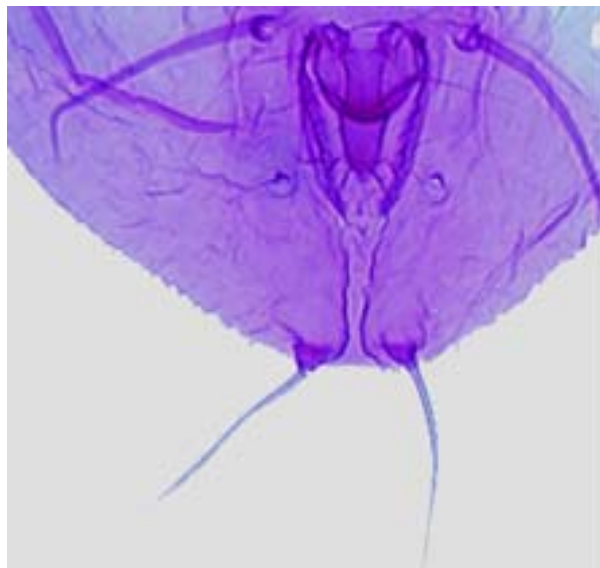


figure 88a



figure 88b

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 October 4, 2006