



Fig. 45. Egg, first, second, and third instars of [*Dacus bivittatus*] showing differences in sizes.



Fig. 46. Cephaloskeleton of *Ceratitis fasciventris*, third instar. Subapical tooth on mouthhook is much smaller than apical tooth. Dental sclerite present (arrow). Bar = length of cephaloskeleton.

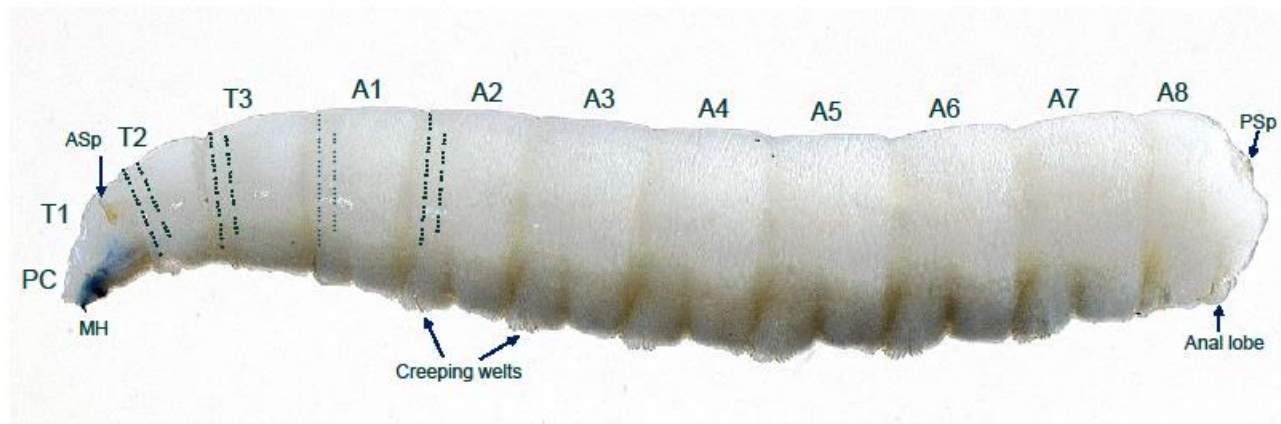


Fig. 47. Cephaloskeleton of *Ceratitis fasciventris*, second instar. Subapical tooth on mouthhook is subequal in size to apical tooth.



Fig. 48. Slide-mounted, cleared cuticle with cephaloskeleton removed.

## Third Instar Larva



- Cylindrical, tapered anteriorly, body usually white or yellow
- Pseudocephalon much reduced; cephaloskeleton internal except for exposed mouthhooks
- Thorax – 3 segments
- Abdomen – 8 segments
- Abdomen and thorax with ventral "creeping welts" which comprise bands of spinules (sometimes continuing dorsally)

- PC – pseudoecephalon (head, cephalic segment)
- T1-T3 – thoracic segments
- A1-A8 – abdominal segments
- ASp – anterior spiracle
- PSp – posterior spiracle
- MH – mouthhook

Fig. 49. Habitus of fruit fly larva showing location of major anatomical features.



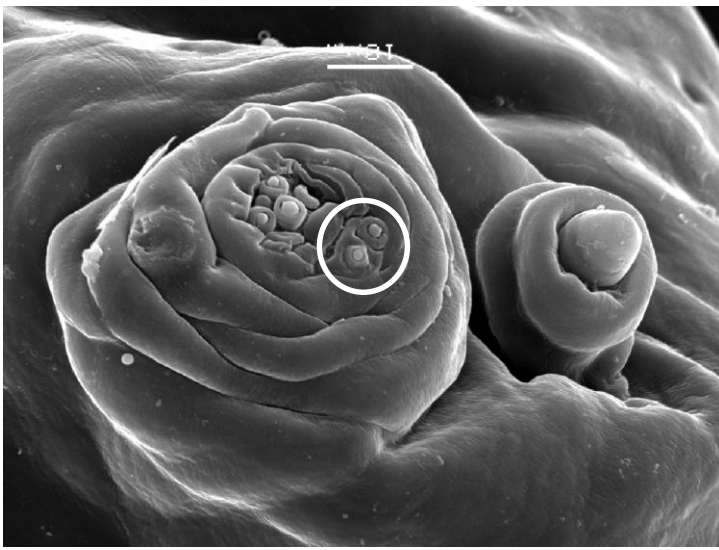


Fig. 50. Maxillary palpus, dorsolateral pair of sensilla (circle), and antenna of *Ceratitidis capitata*, SEM.

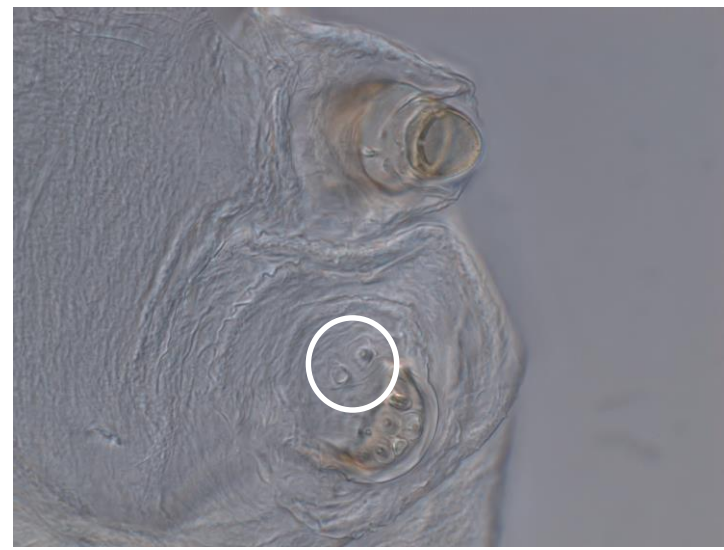


Fig. 51. Maxillary palpus, dorsolateral pair of sensilla (circle), and antenna of [*Dacus bivittatus*], light photomicrograph.

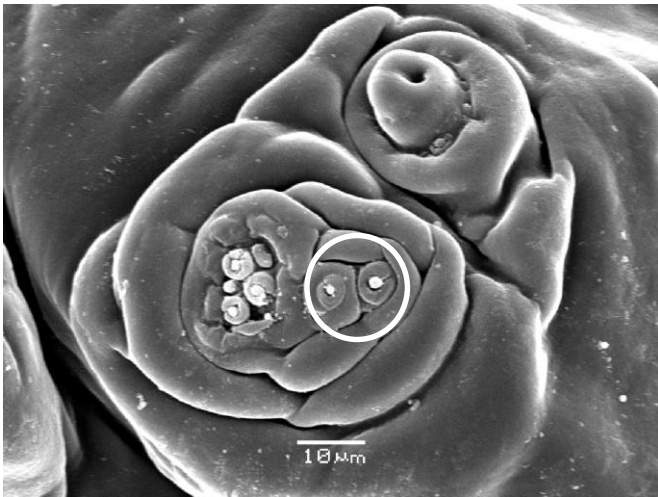


Fig. 52. Maxillary palpus, dorsolateral pair of sensilla (circle), and antenna of *Anastrepha ludens*, SEM

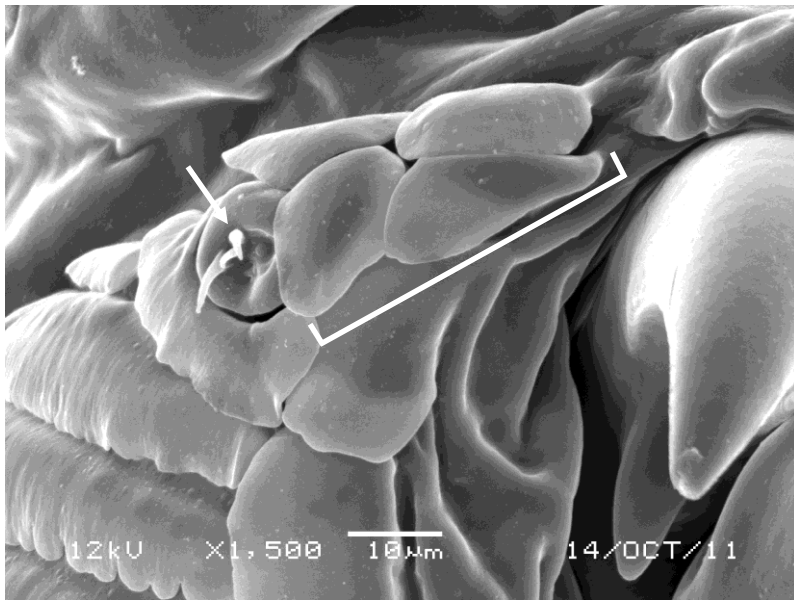


Fig. 53. Preoral organ (arrow) and preoral lobes of *Ceratitidis cosyra* (bar).

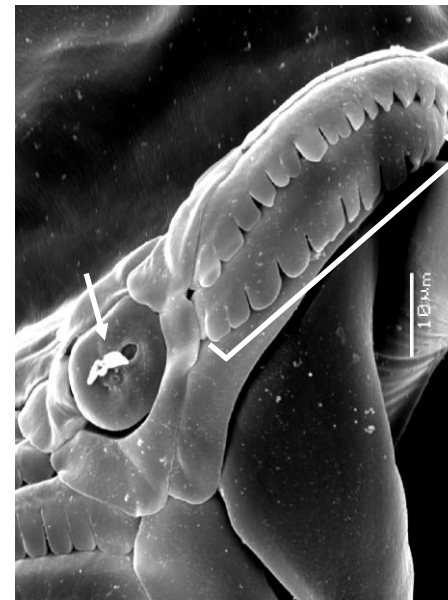


Fig. 54. Preoral organ (arrow) and preoral lobes of *Zeugodacus cucurbitae* (bar).

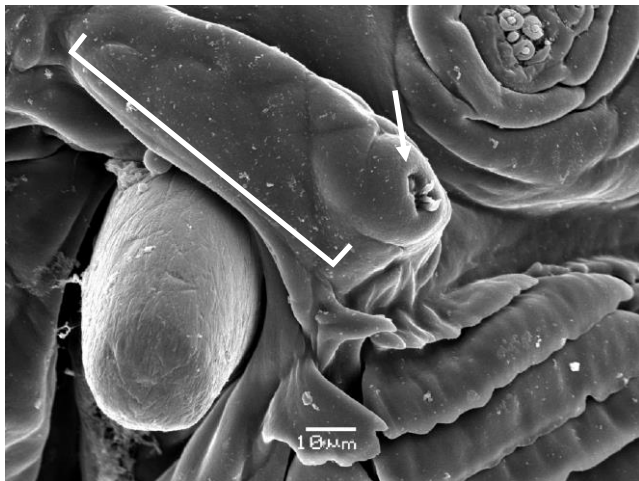


Fig. 55. Preoral organ (arrow) and preoral lobes of *Anastrepha ludens* (bar).

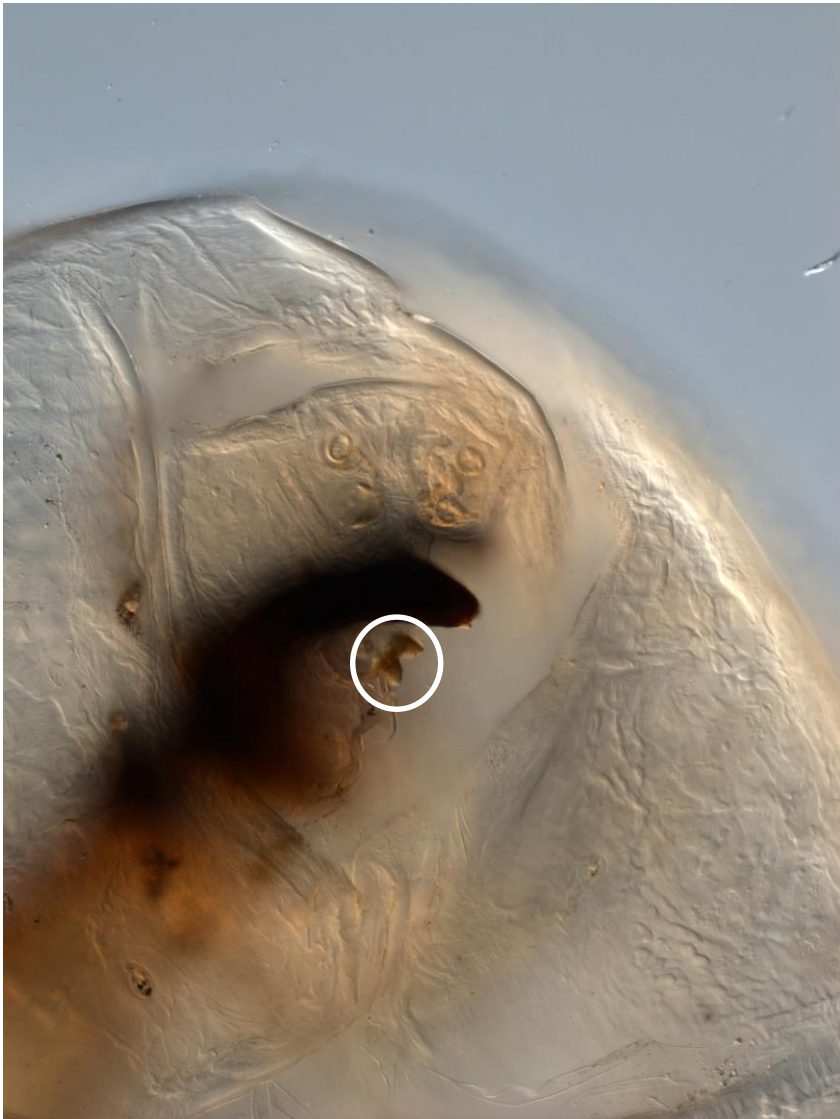


Fig. 56. Preoral teeth (circle) of *Rhagoletis pomonella*.

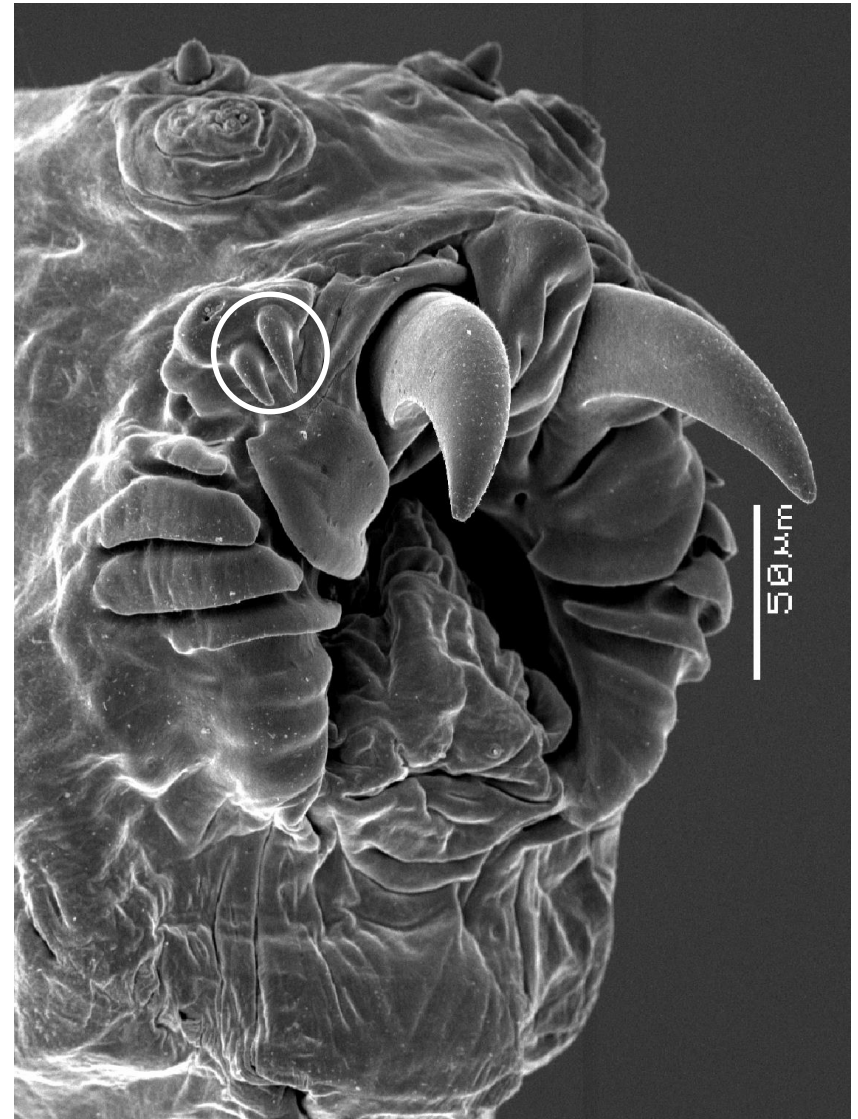


Fig. 57. Preoral teeth (circle) of *Rhagoletis pomonella*, SEM

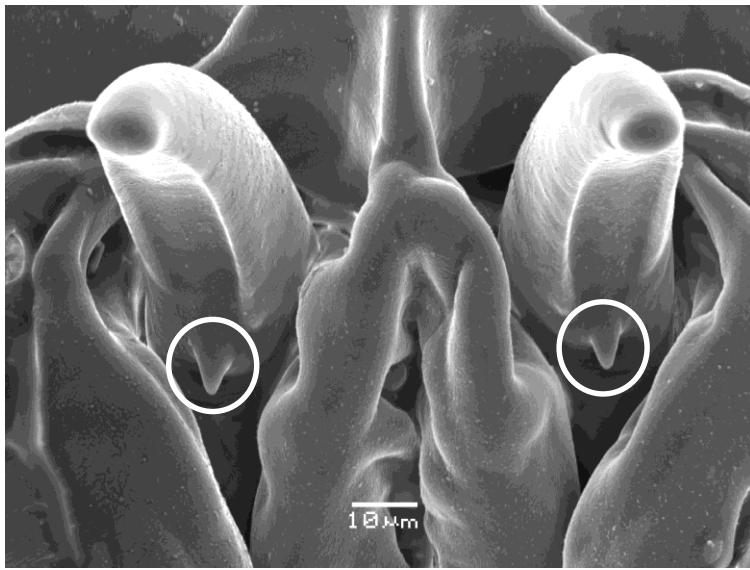


Fig 58. Mouthhooks of *Ceratitis rosa*, with grooved ventral surface and small subapical teeth (circles).

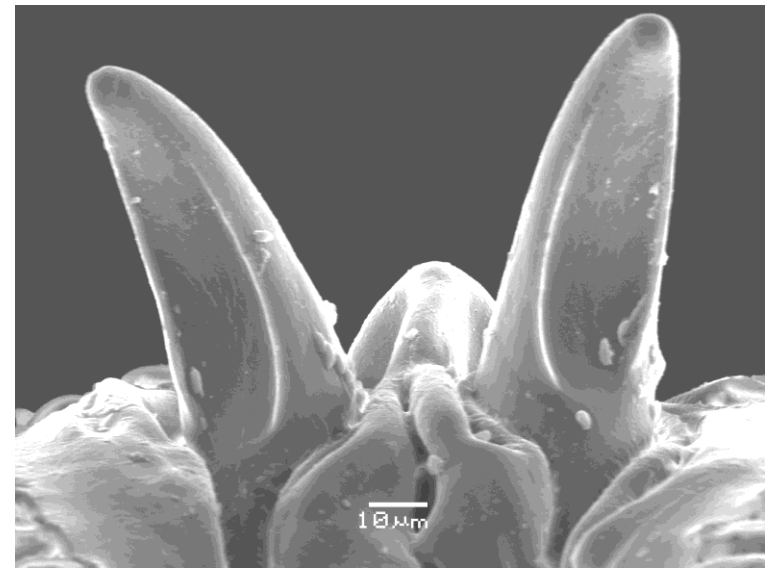


Fig. 59. Mouthhooks of *Ceratitis capitata*, with grooved ventral surface, no teeth.

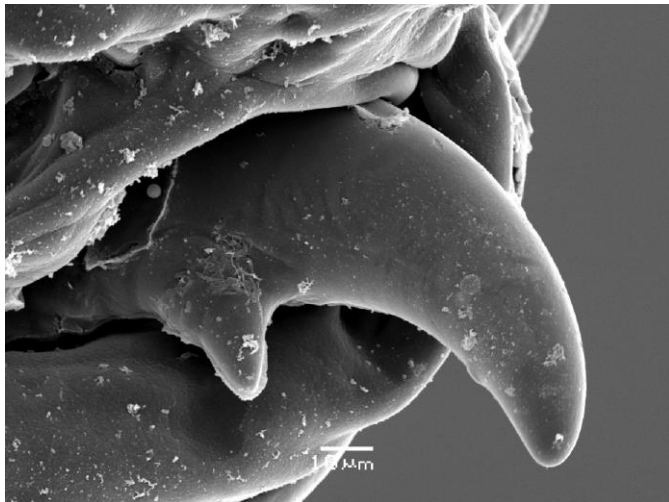


Fig. 60. Mouthhook of *Dacus bivittatus*, tusk-shaped with large subapical tooth.





Fig. 61. Mouthhook of *Ceratitis capitata* with elongate posterior neck (arrow).



Fig. 62. Mouthhook of *Anastrepha ludens* with truncate posterior end.

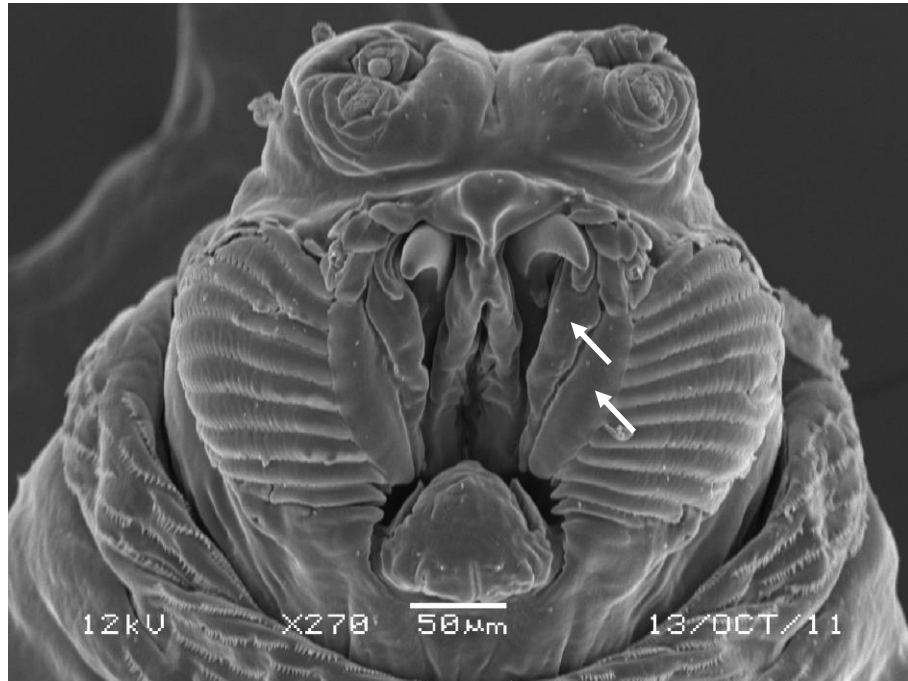


Fig. 63. Facial mask of *Ceratitis anonae*. Lateral lip is divided into narrow inner and outer lips (arrows).



Fig. 64. Facial mask of *Ceratitis capitata*. Lateral lip is wide, undivided (arrow).



Fig. 65. Oral ridges of *Ceratitis capitata* with entire margins, no accessory plates.

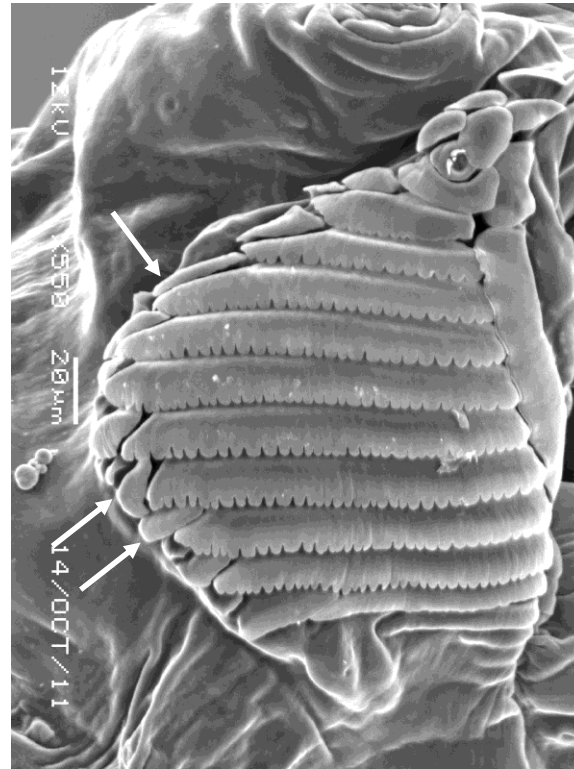


Fig. 66. Oral ridges of *Ceratitis cosyra* with scalloped margins, one series of accessory plates (arrows).

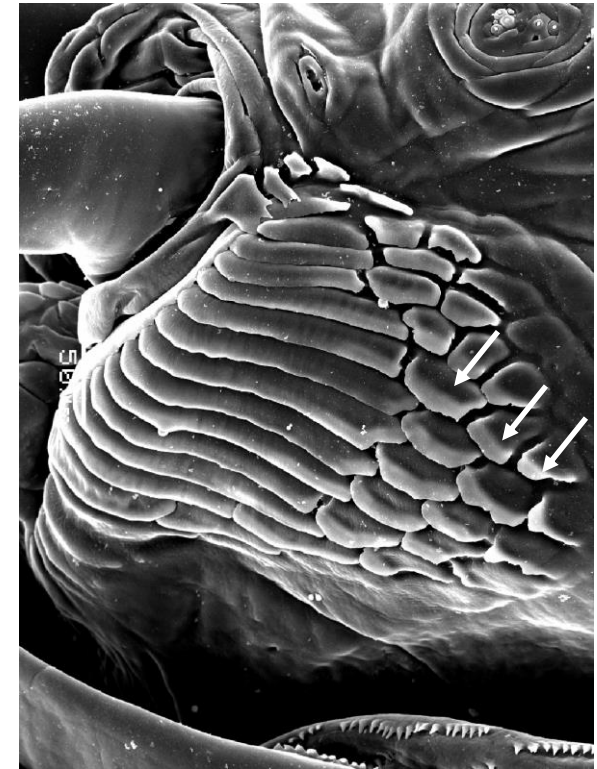


Fig. 67. Oral ridges of *Anastrepha curvicauda* with entire margins, three series of accessory plates (arrows).



Fig. 68. Anterior spiracle of *Ceratitis rosa*, flat topped.  
Bar = apical width.



Fig. 69. Anterior spiracle of *Anastrepha ludens*, bilobed.





Fig. 70. Posterior spiracles of *Ceratitis anonae*. Arrows = length/width measurements.

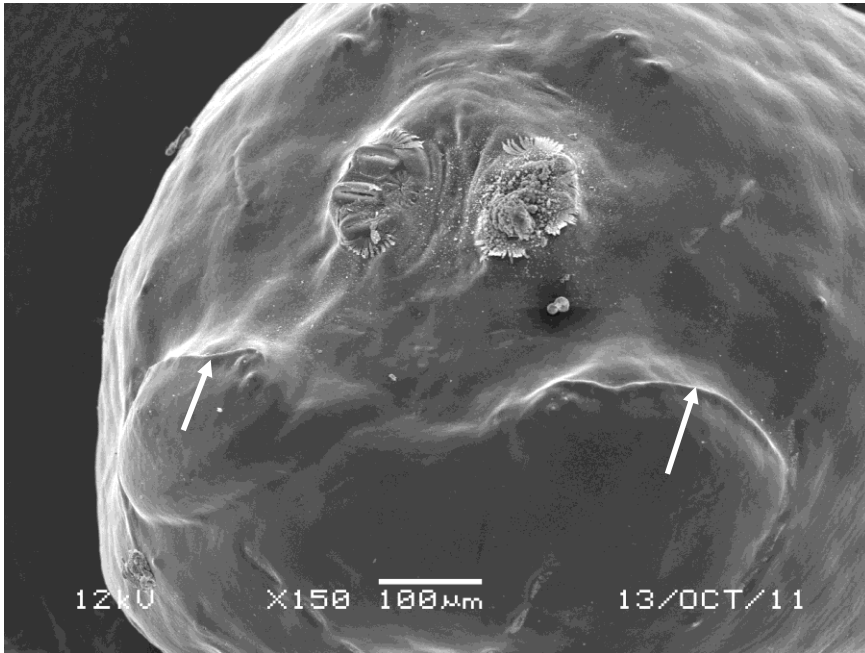


Fig. 71. Caudal segment of *Ceratitis capitata*, caudal ridges present (arrows).

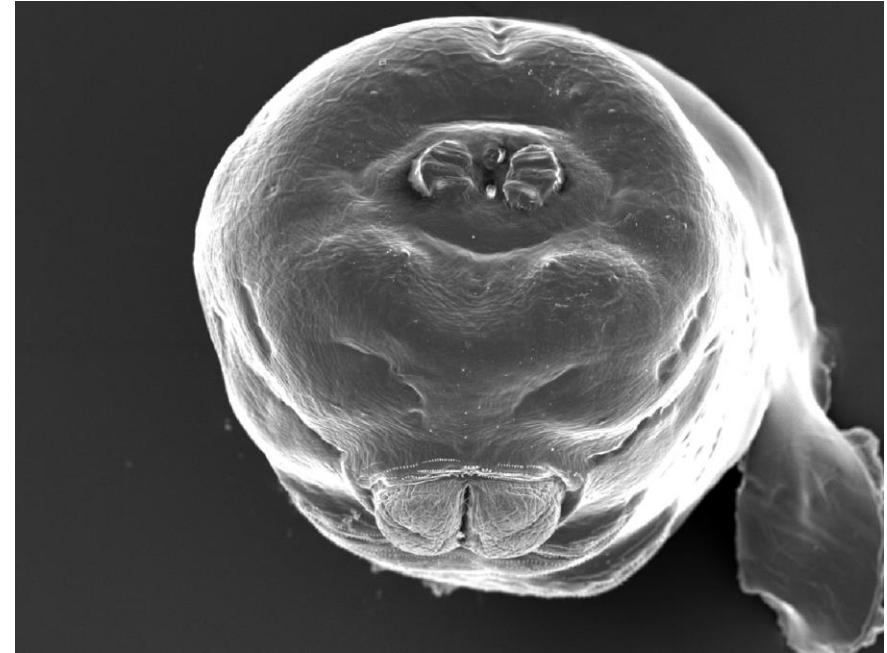


Fig. 72. Caudal segment of *Anastrepha distincta*, caudal ridges absent.



Fig. 73. Caudal segment of *Zeugodacus cucurbitae* with black line (arrow) below caudal ridges.