

Fig. 96. Diagrammatic section through part of a wing including a transverse section of a vein.

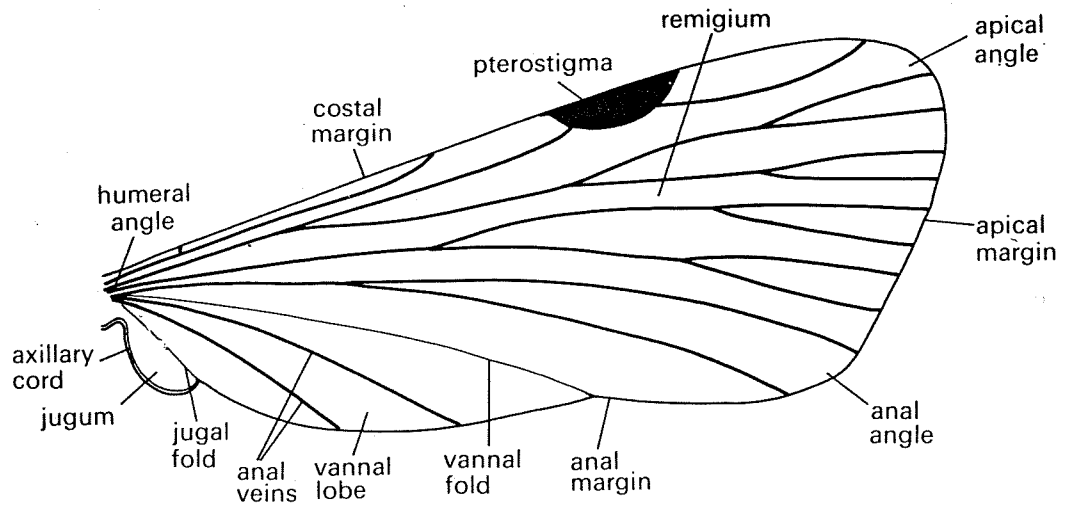


Fig. 101. Diagram illustrating some of the features of the wing.

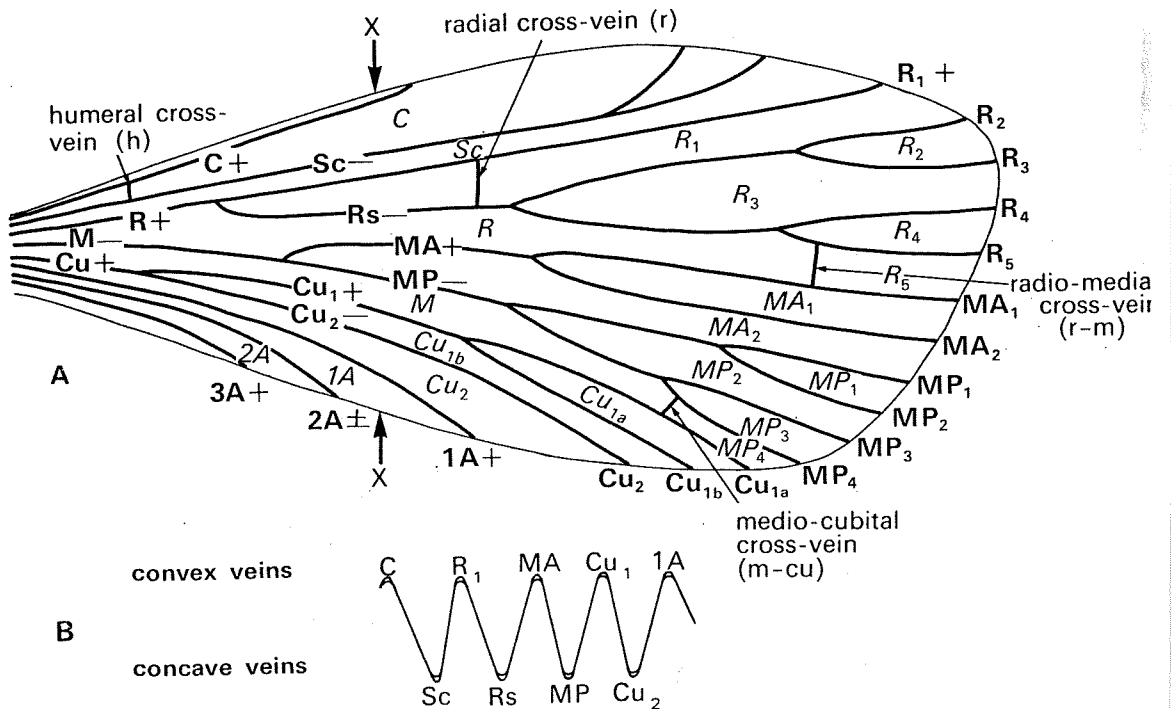


Fig. 97. A. Diagram of the hypothetical basic wing venation showing also the main cross-veins and the names of the cells (italicized). B. Section at X-X in (A) showing the concave and convex veins with the depth of pleating greatly exaggerated.

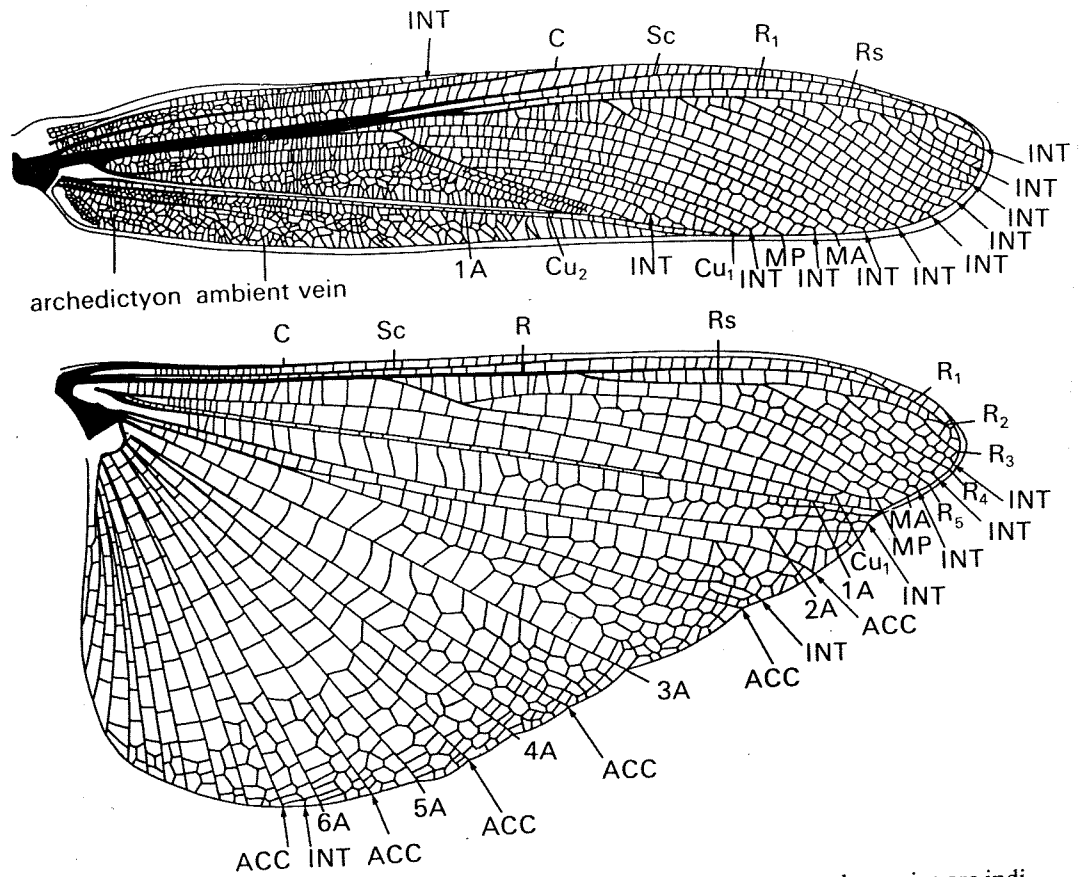


Fig. 100. The wings of *Locusta* showing the venation. Some of the secondary veins are indicated by arrows. INT=intercalary vein, ACC=accessory vein (after Ragge, 1955).

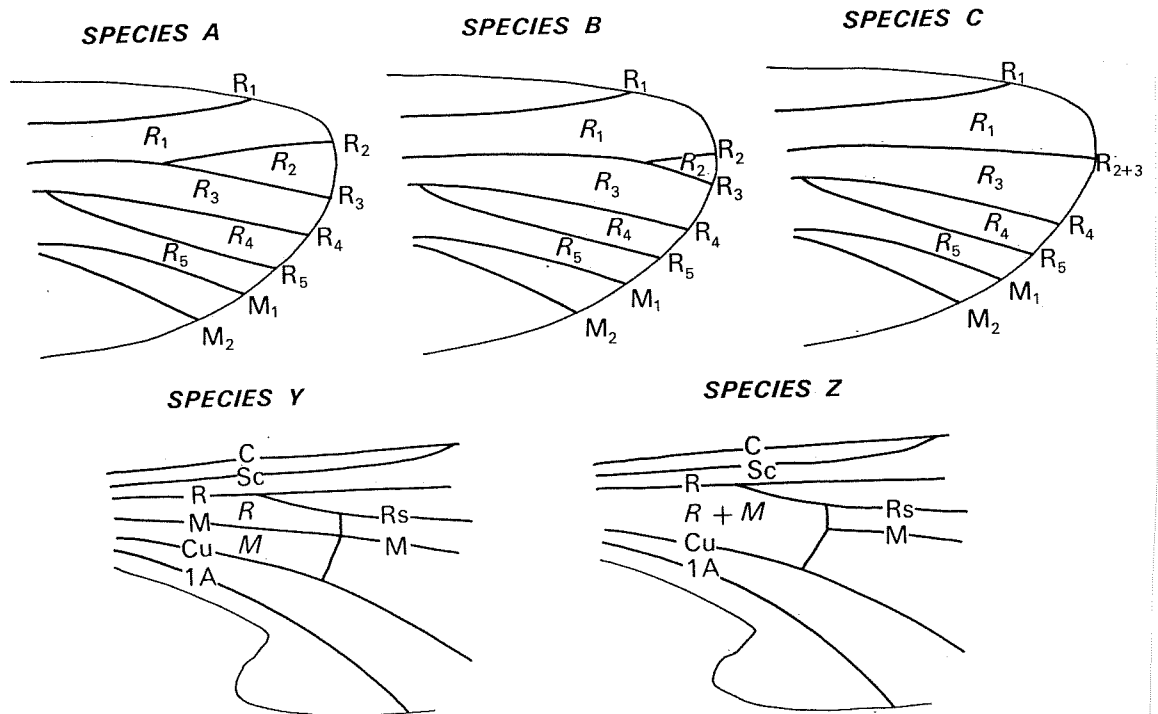


Fig. 98. Diagrams illustrating different methods by which veins are lost. In species A, B and C the veins  $R_2$  and  $R_3$  show progressive degrees of coalescence so that ultimately, in C, cell  $R_2$  is lost. In species Y the base of vein M is present and cells R and M (italicized) are separate, but in Z the stem of M has atrophied so that cells R and M combine to form one large cell R+M.

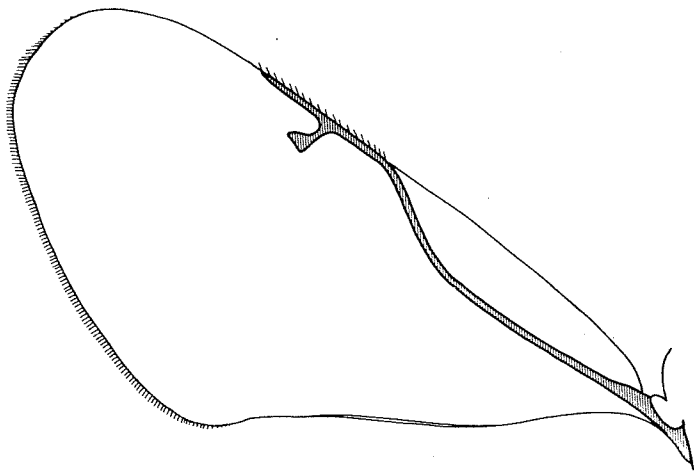


Fig. 99. Forewing of *Perilampus* (Hymenoptera) showing extreme reduction of venation (after Clausen, 1940).

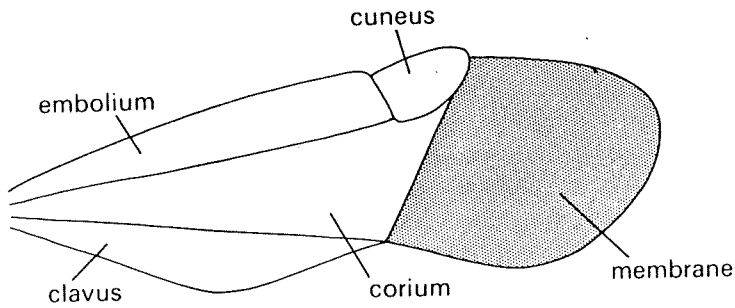


Fig. 107. Forewing of an anthocorid (Heteroptera) (after Comstock, 1918).

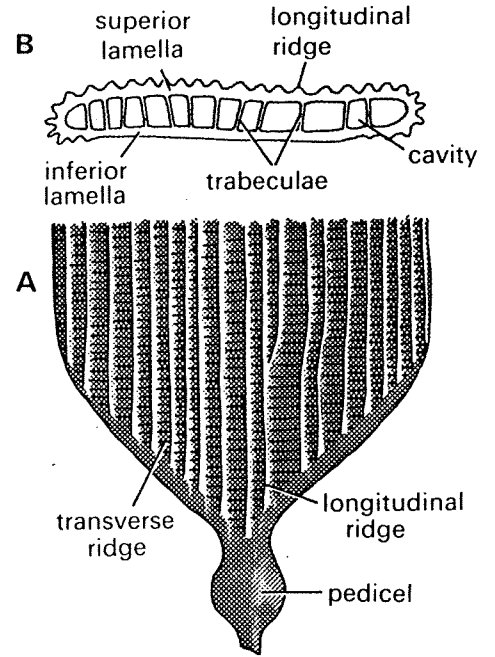
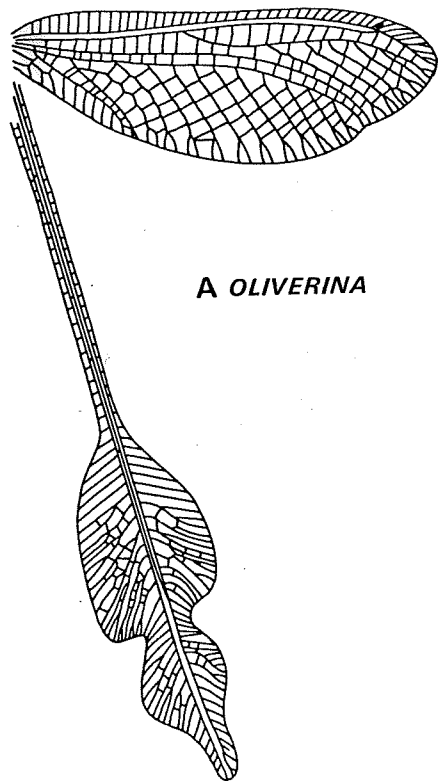
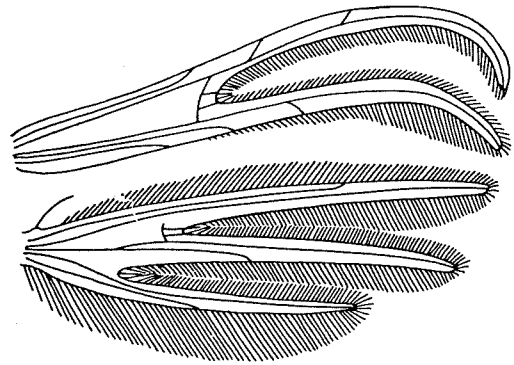


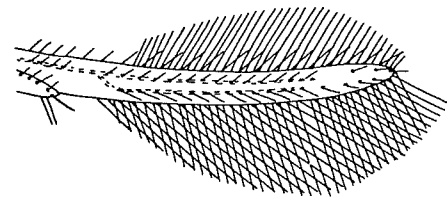
Fig. 103. A. Basal half of a typical lepidopteran scale. B. Transverse section of a scale (after Bourgeois, 1951).



A OLIVERINA



B ALUCITA



C EUTHRIPS

Fig. 104. A. Wings of *Oliverina* (Neuroptera) (after Comstock, 1918). B. Wings of *Alucita* (Lepidoptera) (from Bourgeois, 1951). C. Forewing of *Euthrips* (Thysanoptera) (from Pesson, 1951b).

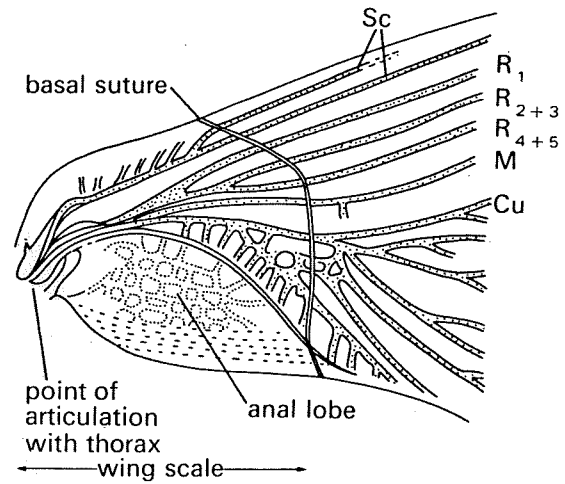
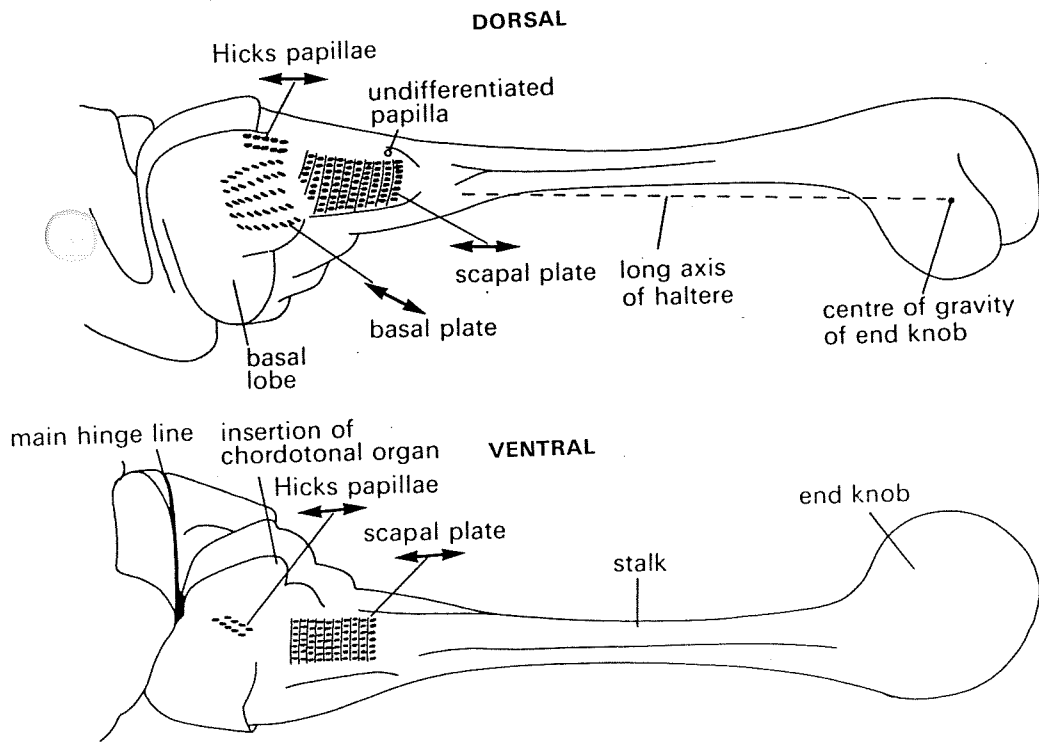
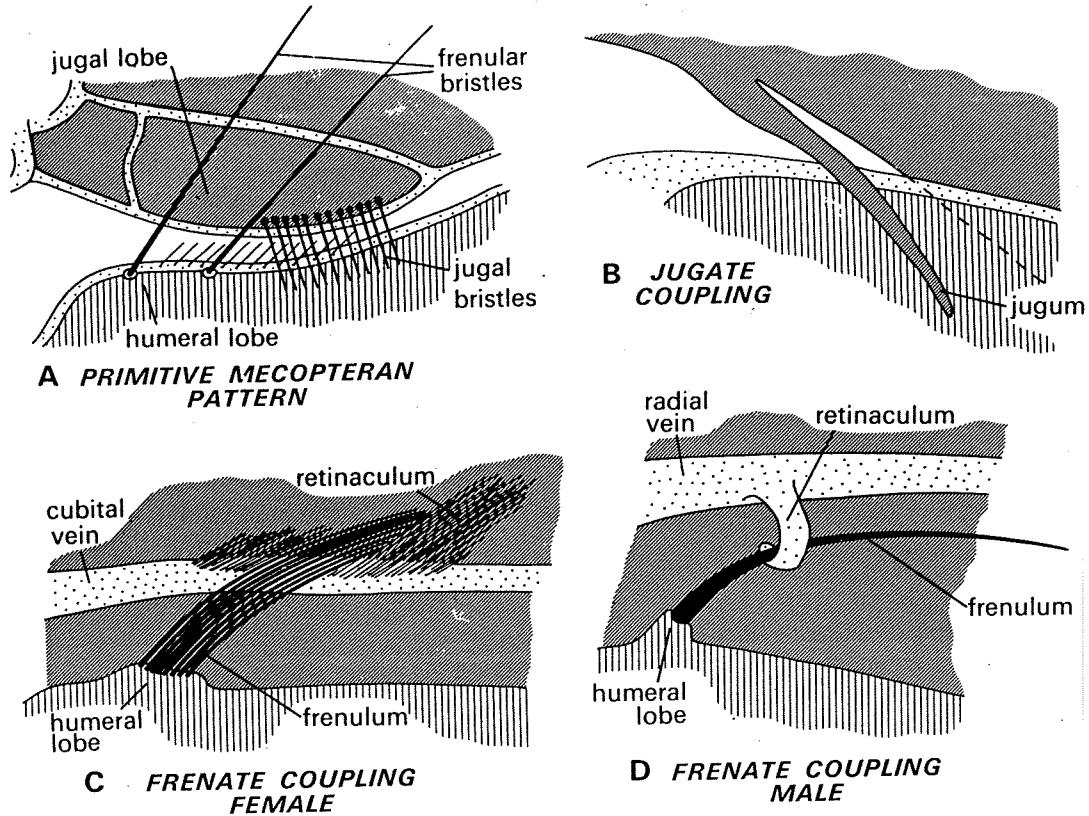


Fig. 105. Wing base of a termite showing the basal suture at which the distal part of the wing breaks off (from Grassé, 1949).

Fig. 113. Dorsal and ventral views of the halteres of *Lucilia* showing the basal groups of sensilla. The orientation of the campaniform sensilla is indicated by the arrows (after Pringle, 1948).



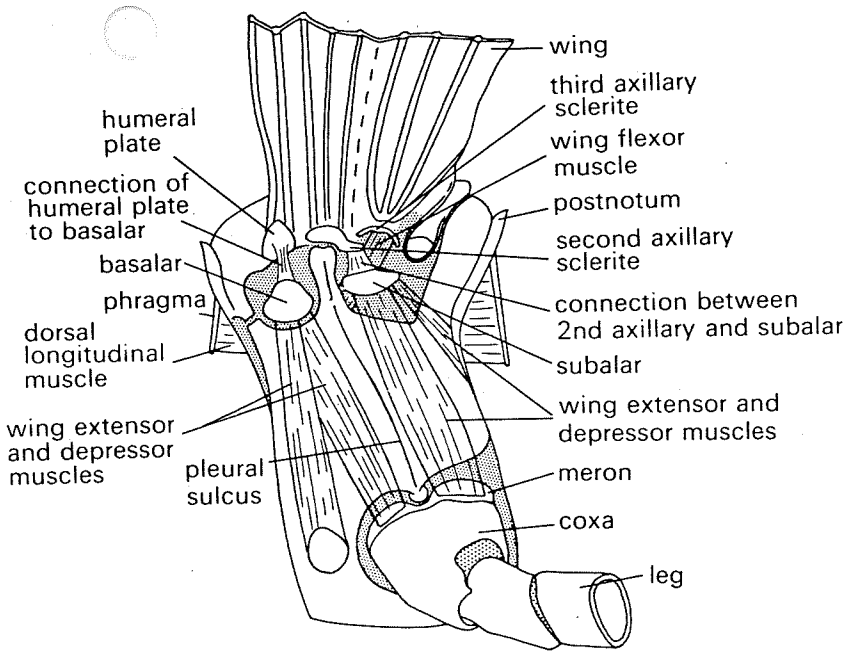


Fig. 114. Lateral view of the thorax showing the direct wing muscles. The pleural region is assumed to be transparent (after Snodgrass, 1935).

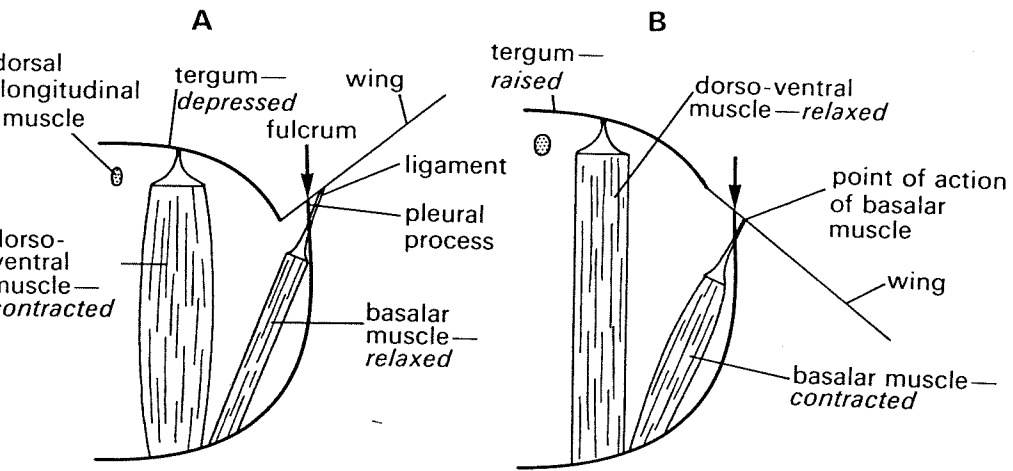


Fig. 115. Diagrammatic cross-section of the thorax illustrating the wing movements in an insect, such as a dragonfly, in which the direct wing muscles cause depression of the wings.

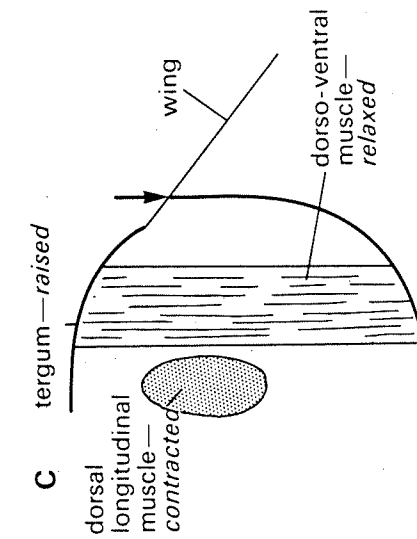
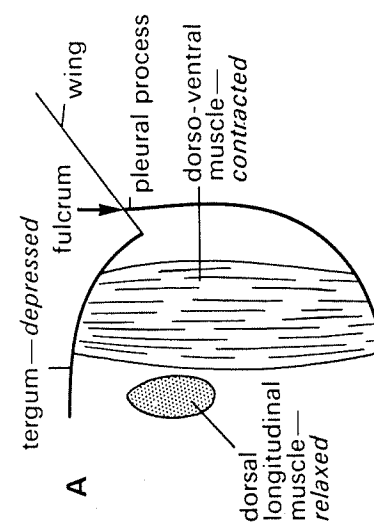
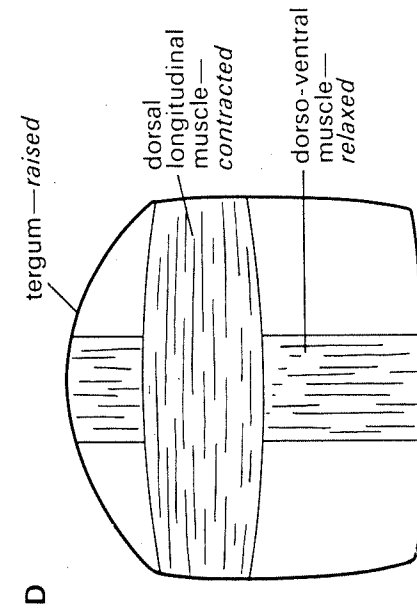
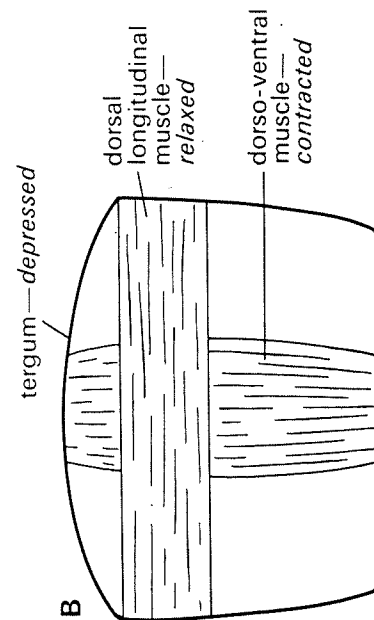


Fig. 116. Diagrams illustrating the movements of the wings in an insect, such as a fly, in which both up and down movements of the wing are produced by indirect muscles. A and C. Cross-sections of the thorax. B and D. Views of the wing-bearing segment from the inside showing, in D, the shortening and bowing of the tergum produced by contraction of the dorsal longitudinal muscles.

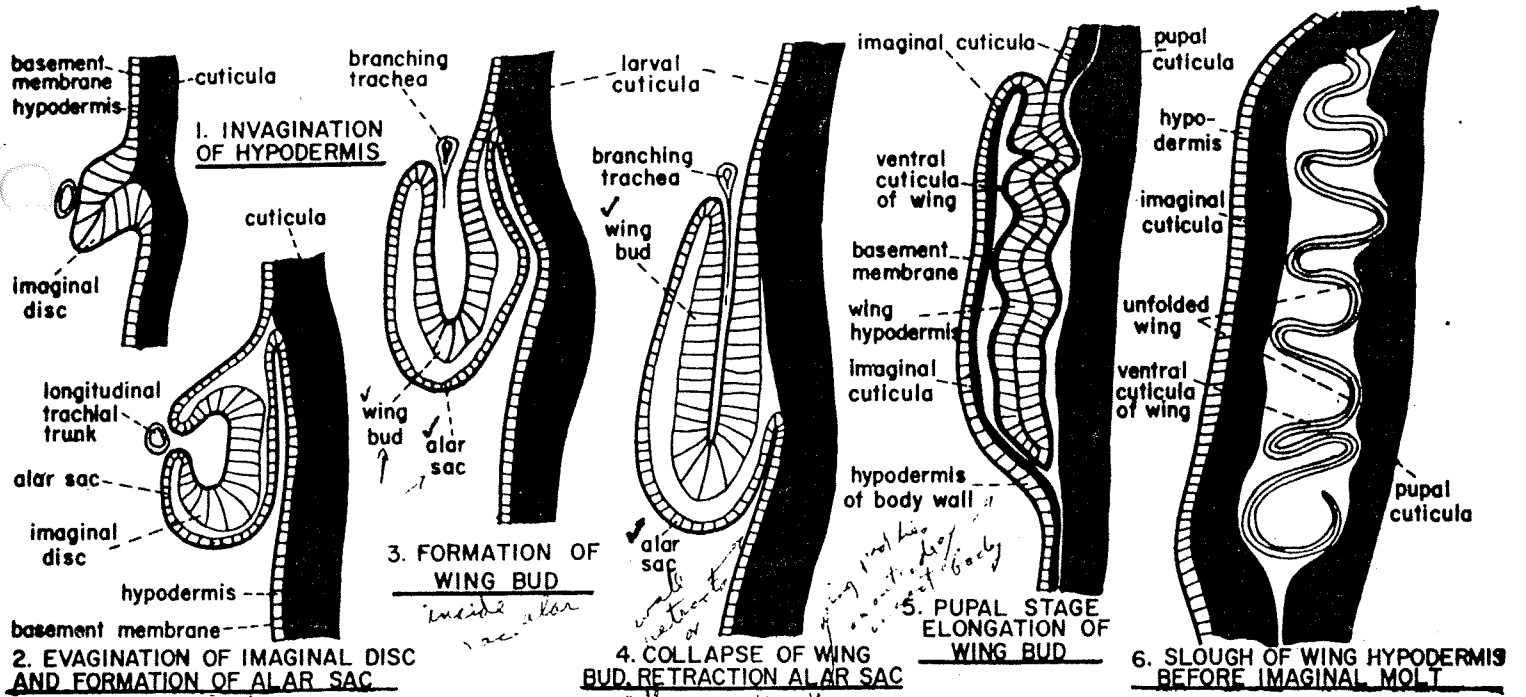


FIG. 17- DEVELOPMENT OF A WING IN THE HOLOMETABOLA

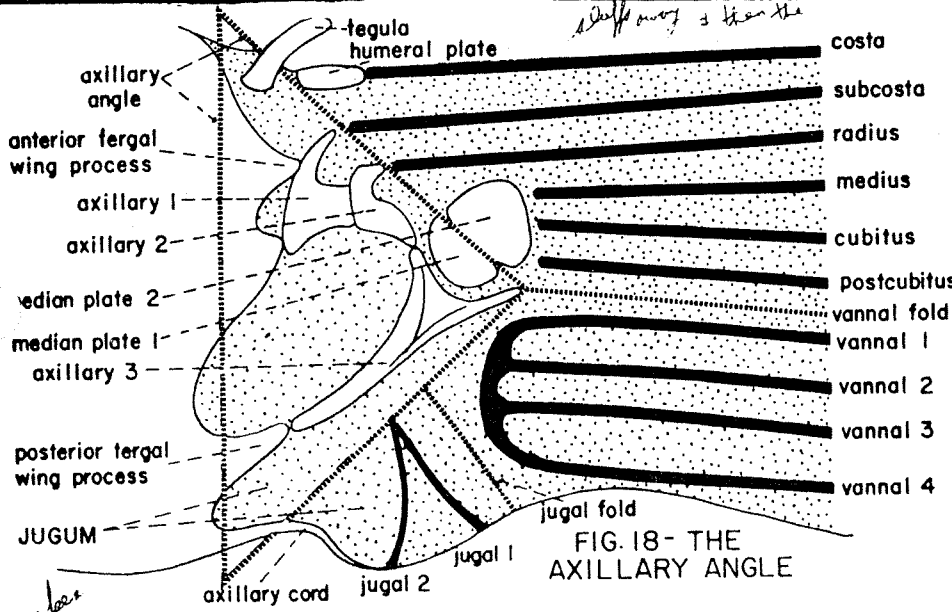


FIG. 18- THE AXILLARY ANGLE

all of these plates & branches & veins are interconnected by ligaments. They are not free floating plates. There is a transitional movement here.

1. A strong flight principle (long. wings are pronounced forward. narrow remigium - long stroke)

2. Important for power

*this part makes up hinge mechanism*

*note vein stems from primitive*

*old under remigium*

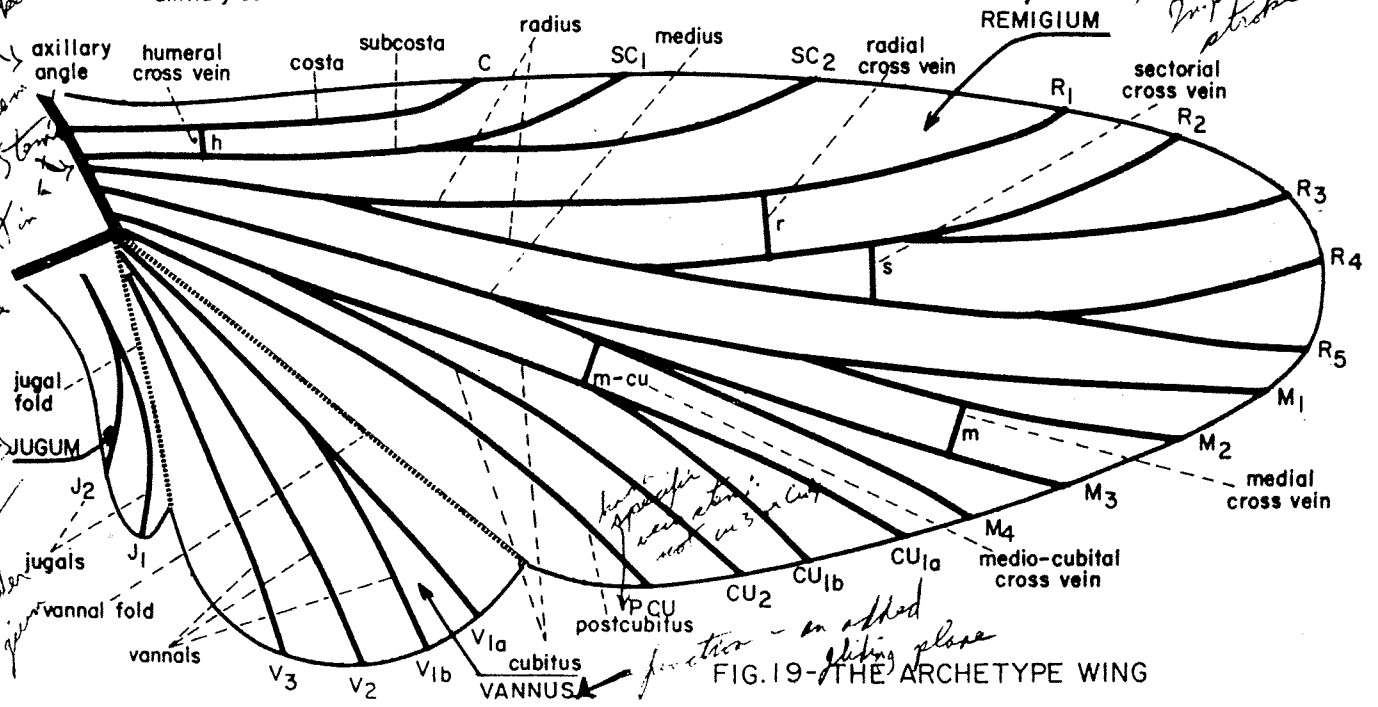
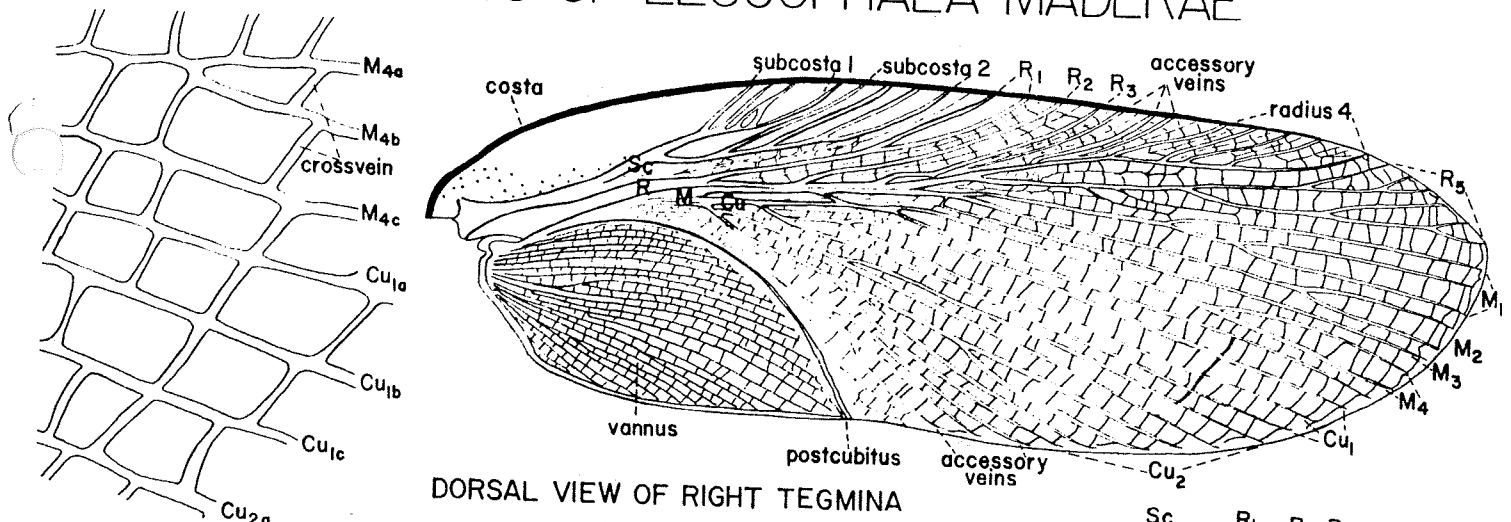
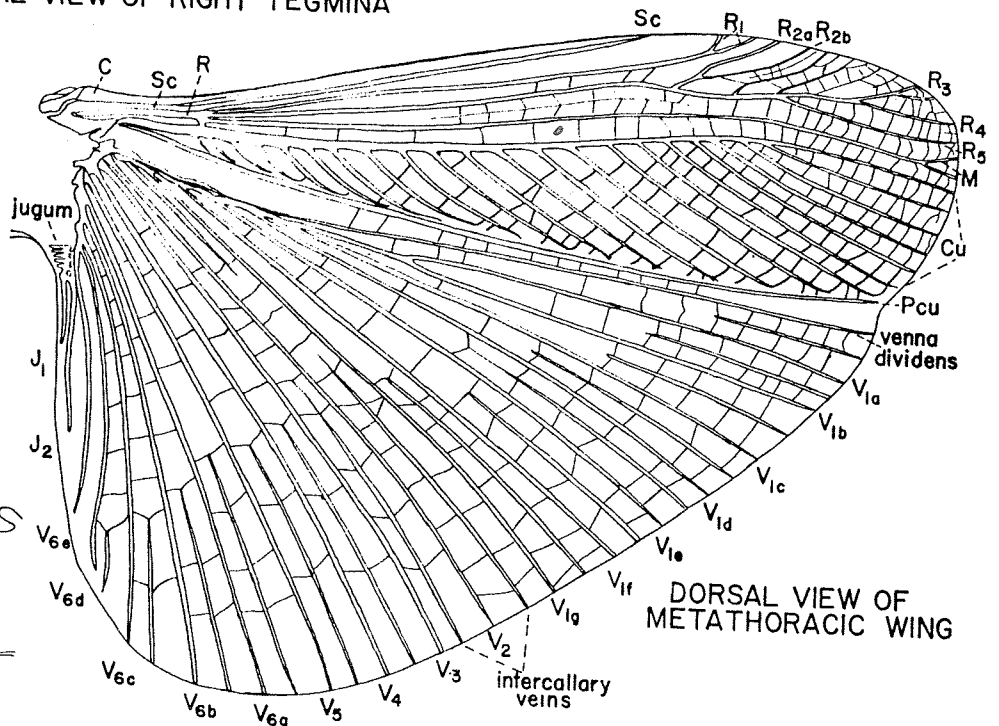
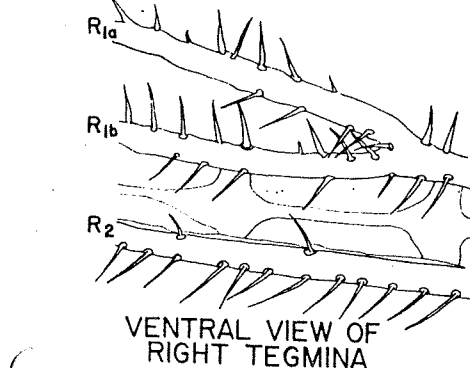


FIG. 19- THE ARCHETYPE WING

# PLATE 35 - WINGS OF LEUCOPHAEA MADERAE



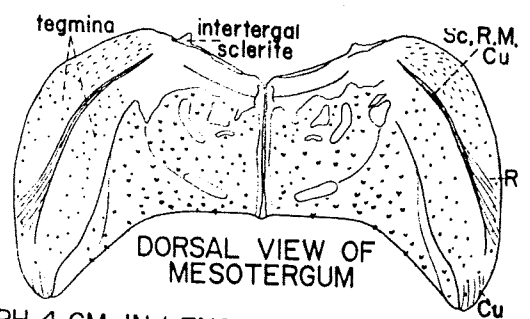
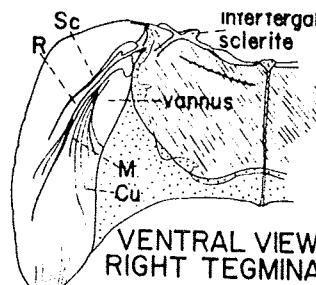
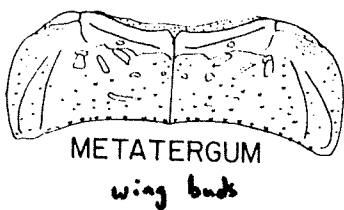
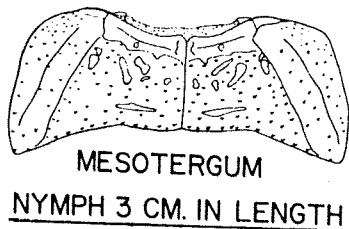
## CROSSVEINS OF TEGMINA



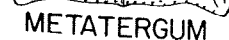
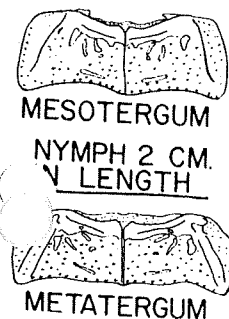
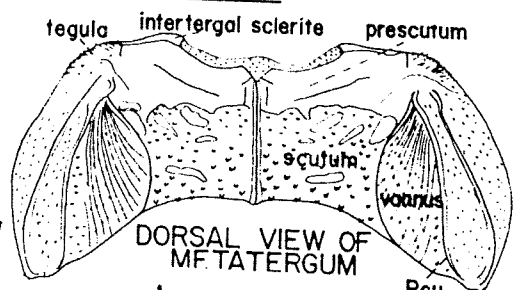
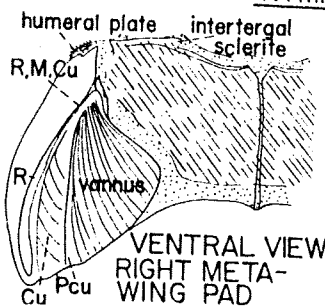
## CROSS SECTIONS OF METAWING



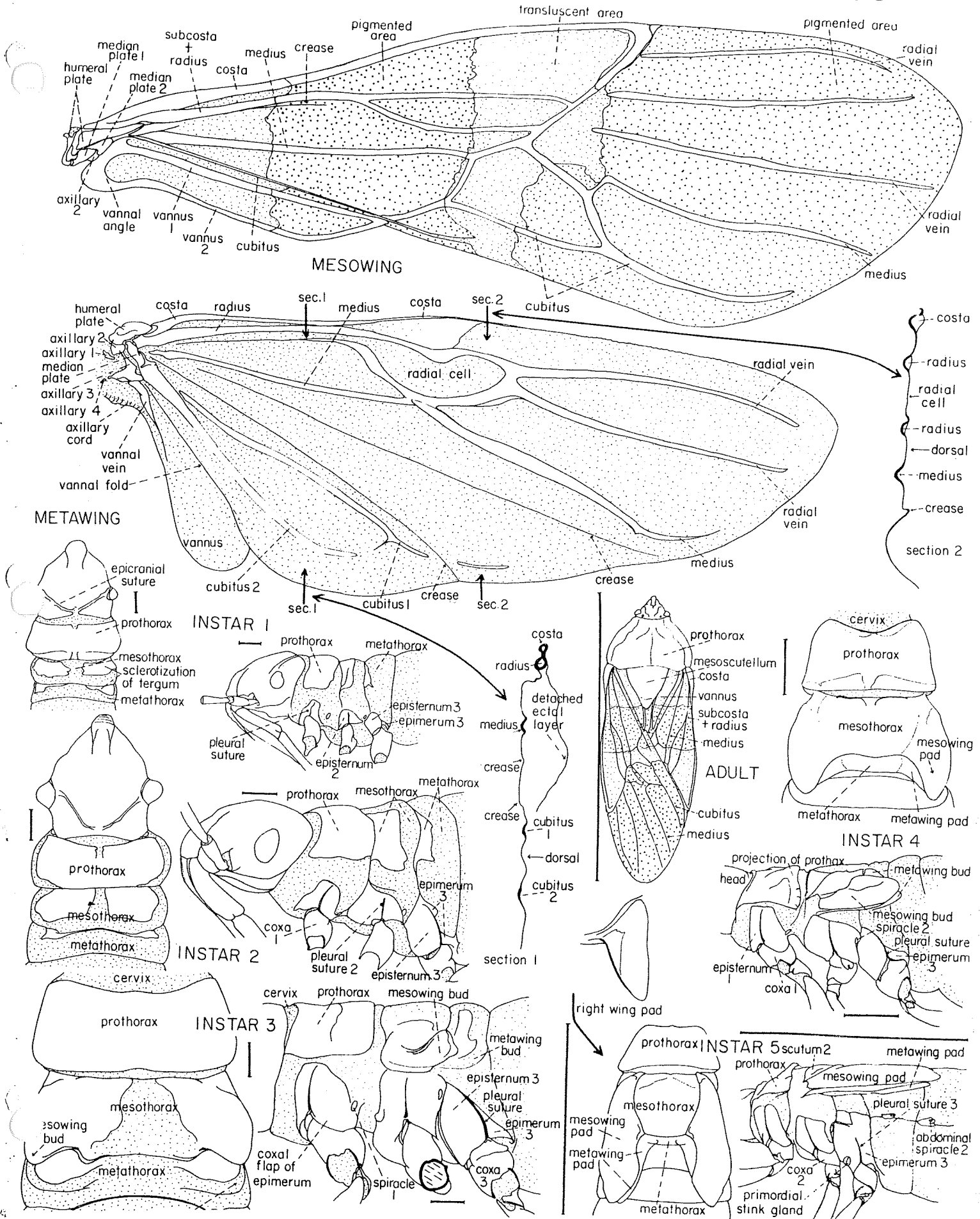
## DEVELOPMENT OF WING PADS IN THE NYMPH



## NYMPH 4 CM. IN LENGTH

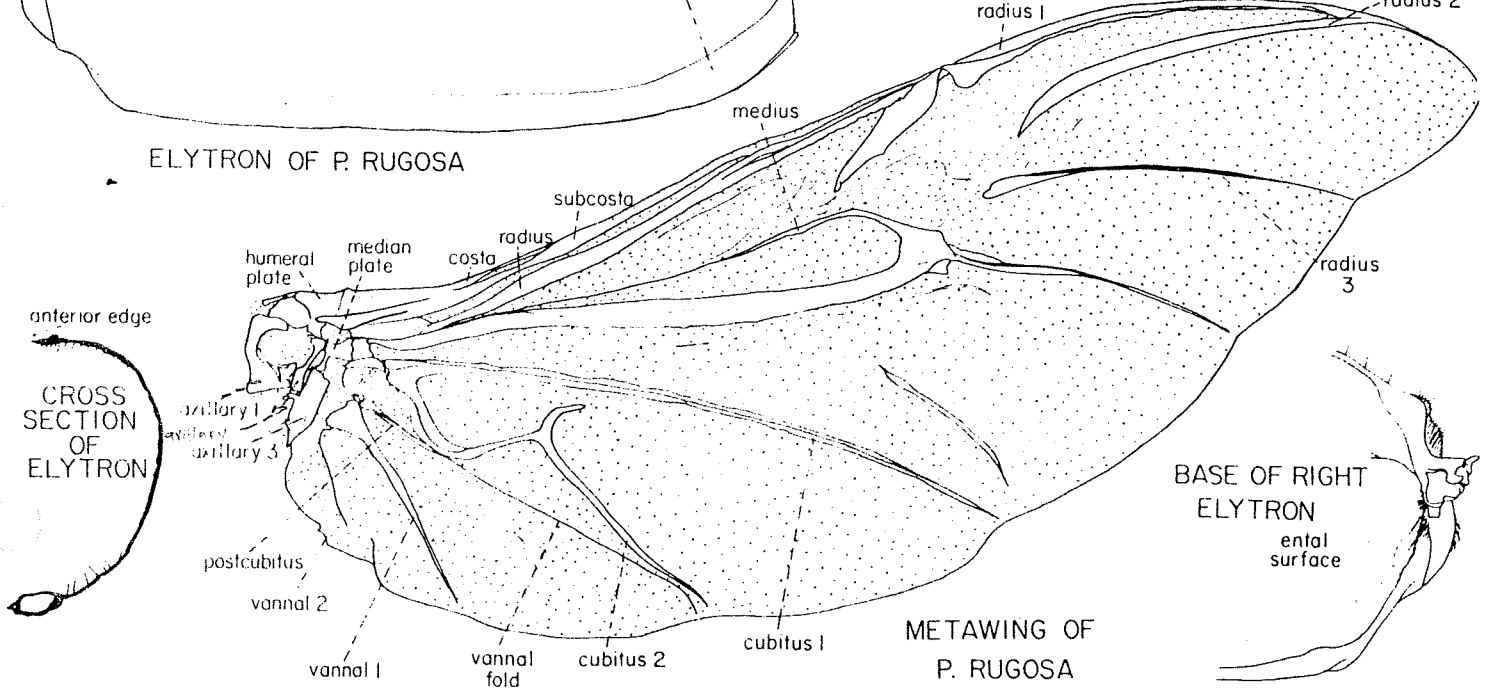
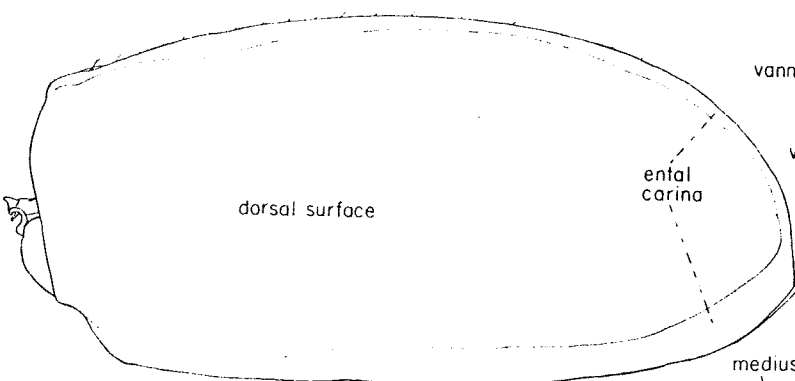
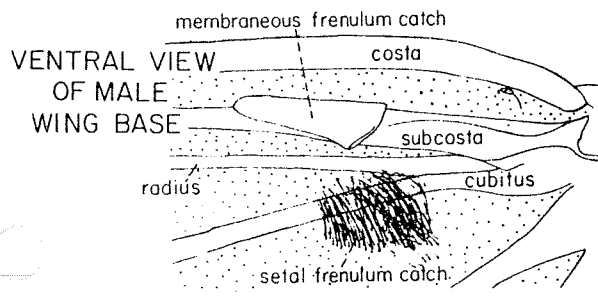
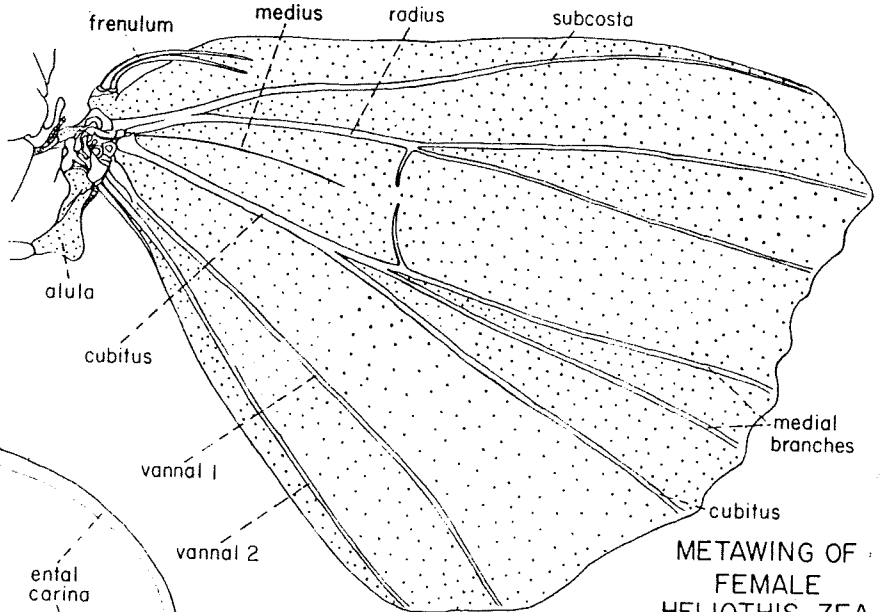
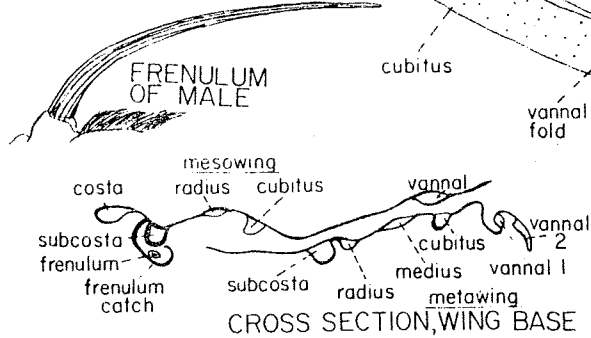
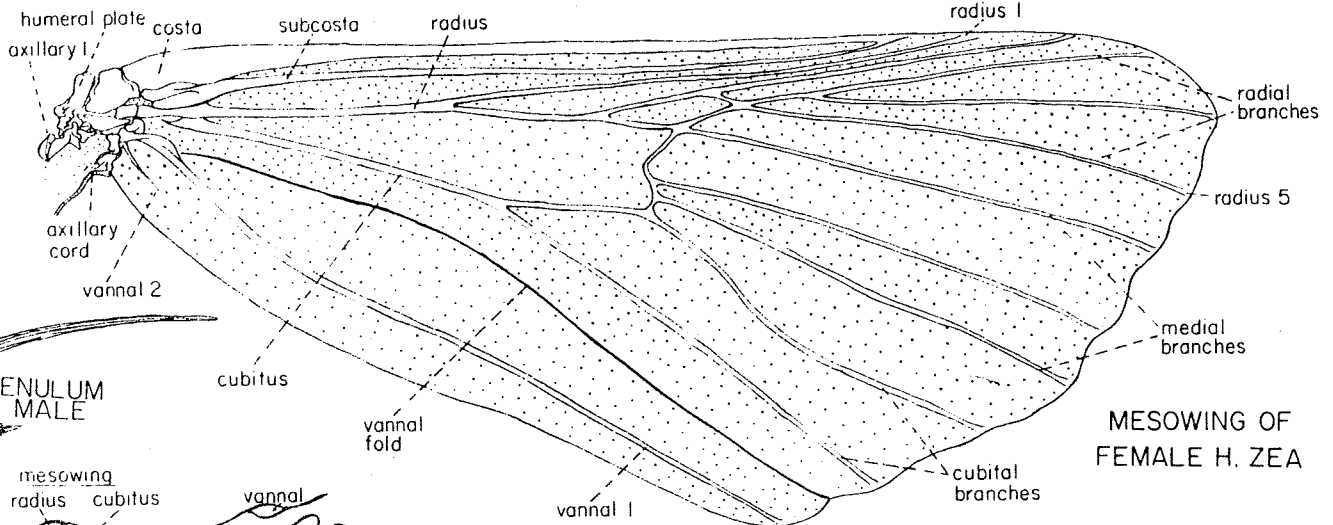
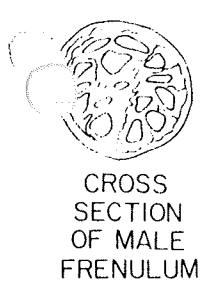


# PLATE 36 - THE WINGS OF ONCOPELTUS FASCIATUS

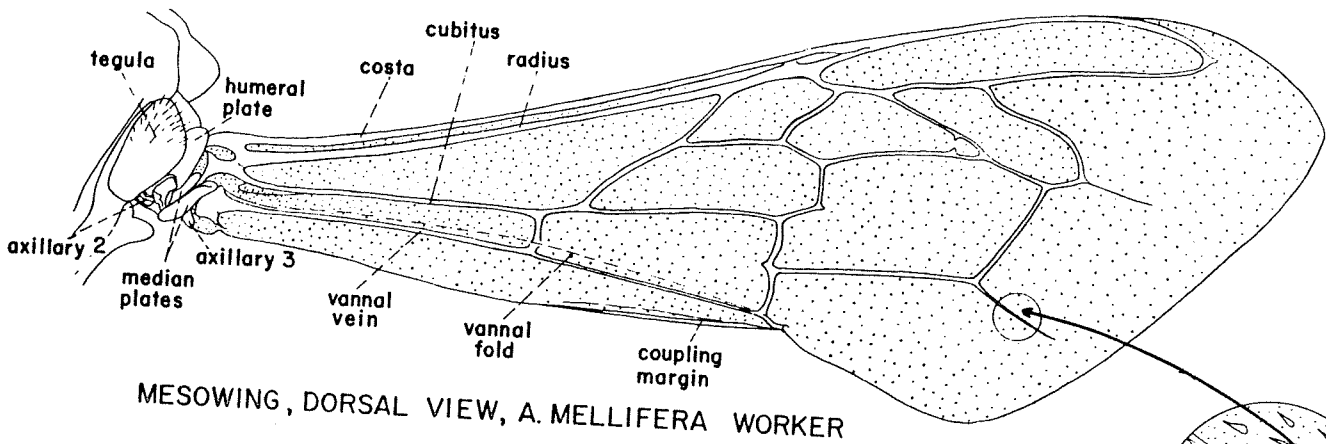




# PLATE 37-WINGS OF H. ZEA AND P. RUGOSA



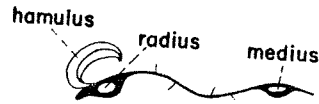
# PLATE 38 - WINGS OF APIS MELLIFERA AND MUSCA DOMESTICA



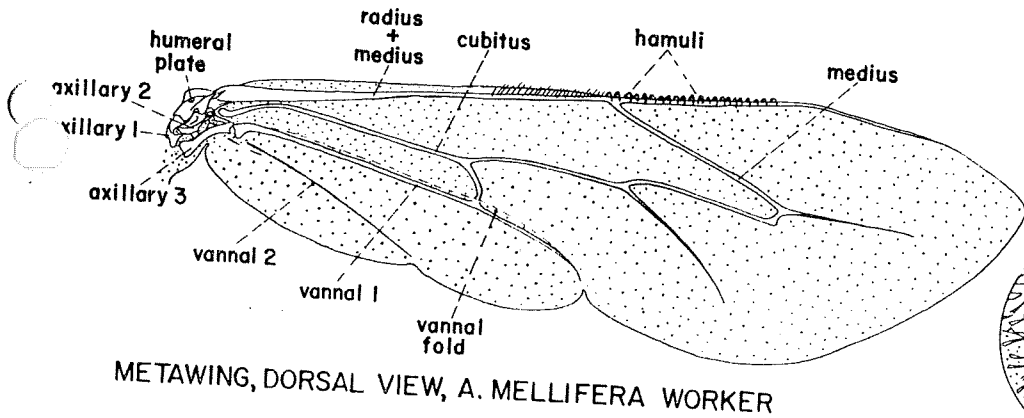
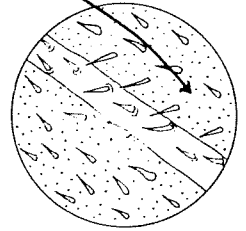
MESOWING, DORSAL VIEW, A. MELLIFERA WORKER



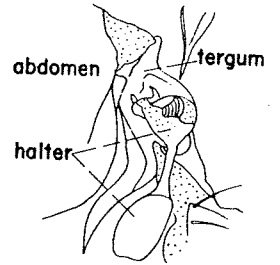
CROSS SECTION OF MESOWING



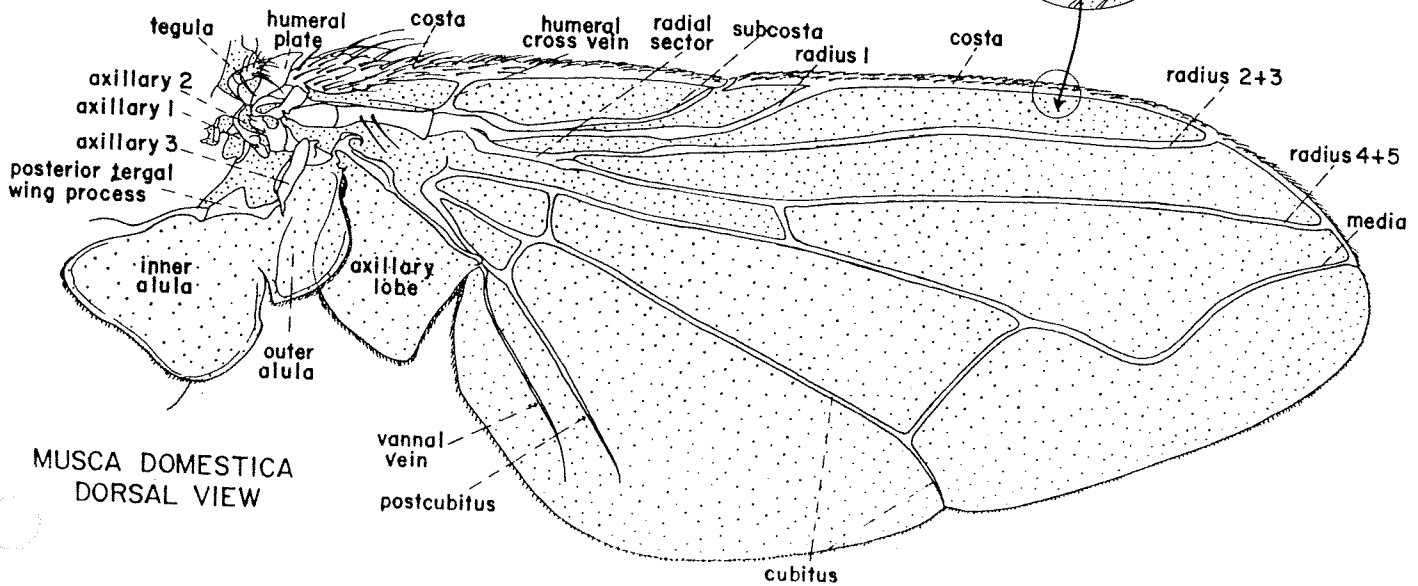
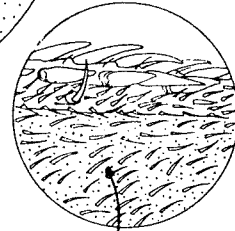
CROSS SECTION, ANTERIOR MARGIN, META-WING, WORKER



META-WING, DORSAL VIEW, A. MELLIFERA WORKER



DORSAL VIEW RIGHT HALTER M. DOMESTICA



MUSCA DOMESTICA DORSAL VIEW