

PICTORIAL MORPHOLOGY GUIDE OF NEPTICULIDAE BASED ON THE FOREWING PATTERN AND MALE GENITALIA

(by Jonas R. Stonis & Andrius Remeikis)

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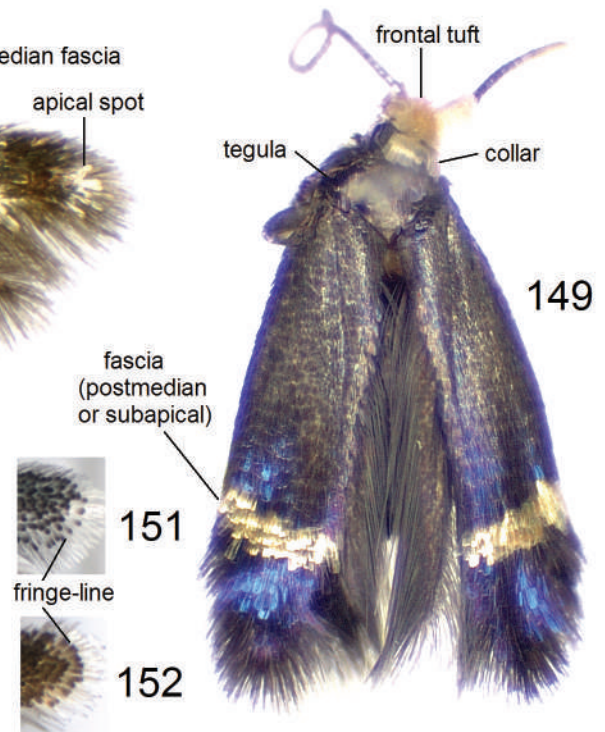
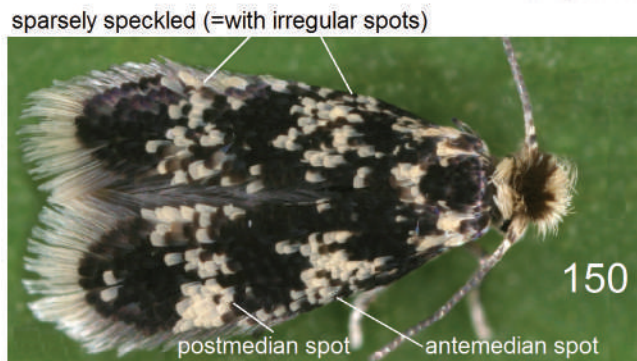
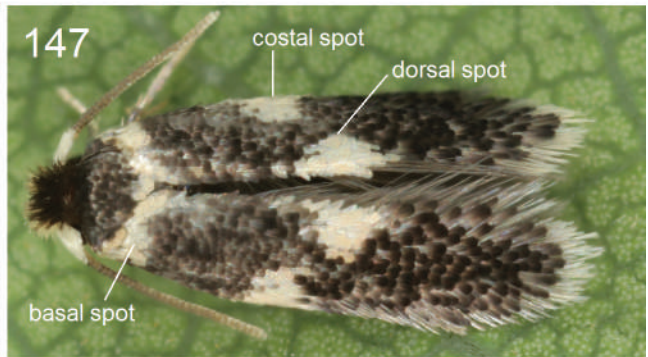
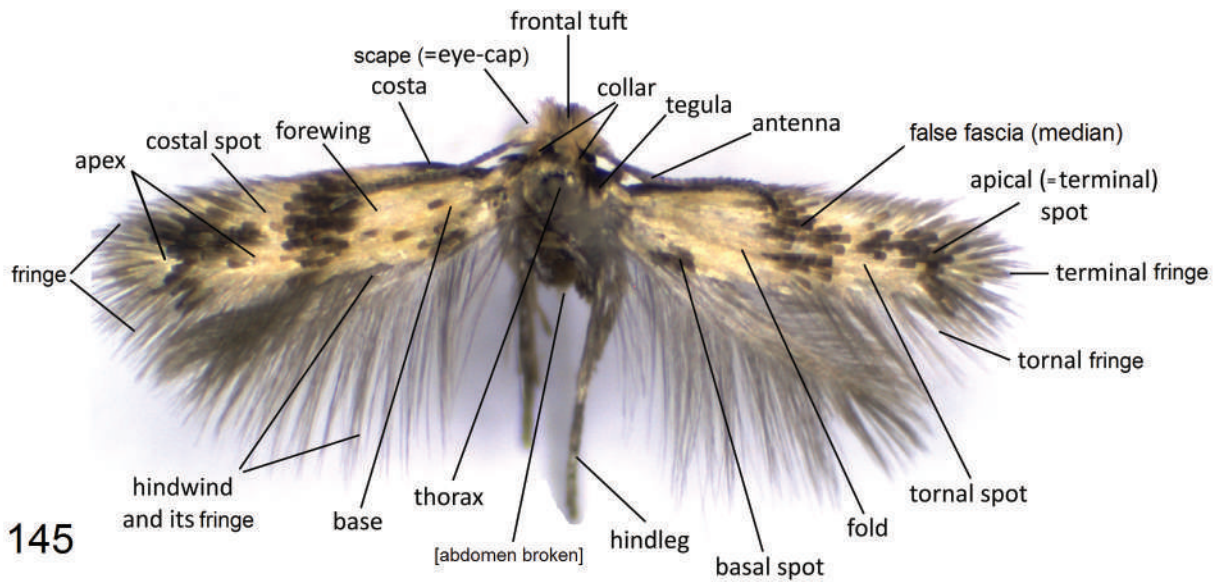
The morphology of the family Nepticulidae was more or less exhaustively characterised several times. For such detailed morphological (as well as biological) characterizations, we recommend monographic reviews by Scoble (1983), van Nieukerken (1986), Johansson *et al.* (1990), Puplesis (1994), Puplesis & Robinson (2000), and Puplesis & Diškus (2003). Some characterization of this morphologically peculiar lepidopteran family can be also found in some other reviews, notably by Wilkinson & Scoble (1979), Stonis *et al.* (2016, 2017), van Nieukerken *et al.* (2016), etc. Moreover, some new, interesting and important morphological data, especially as regards the Neotropical fauna, were revealed and published recently in various papers (see the chapter “Recommended Literature”).

We launched the first-ever electronic Nepticulidae species identification tool (<https://www.nepticulidaespecies.info>), and nine of ten sections of this tool are dedicated to morphology: one section is about adult forewing pattern and eight other about various structures of the male genitalia. Therefore, for better orientation and navigation, it is recommended to study the current pictorial morphology guide (Figs 145–186). This guide omits such characters like the adult’s head scaling, wing venation, morphology of the female genitalia, as well various other morphological characters, because they were purposely unincorporated into the launched identification tool (see the Chapter above).

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Figures 145–152. Adult morphology (after Stonis *et al.*, 2016; 2018; 2022 and courtesy of Peter Buchner, Austria: Figs 146, 147, 150).

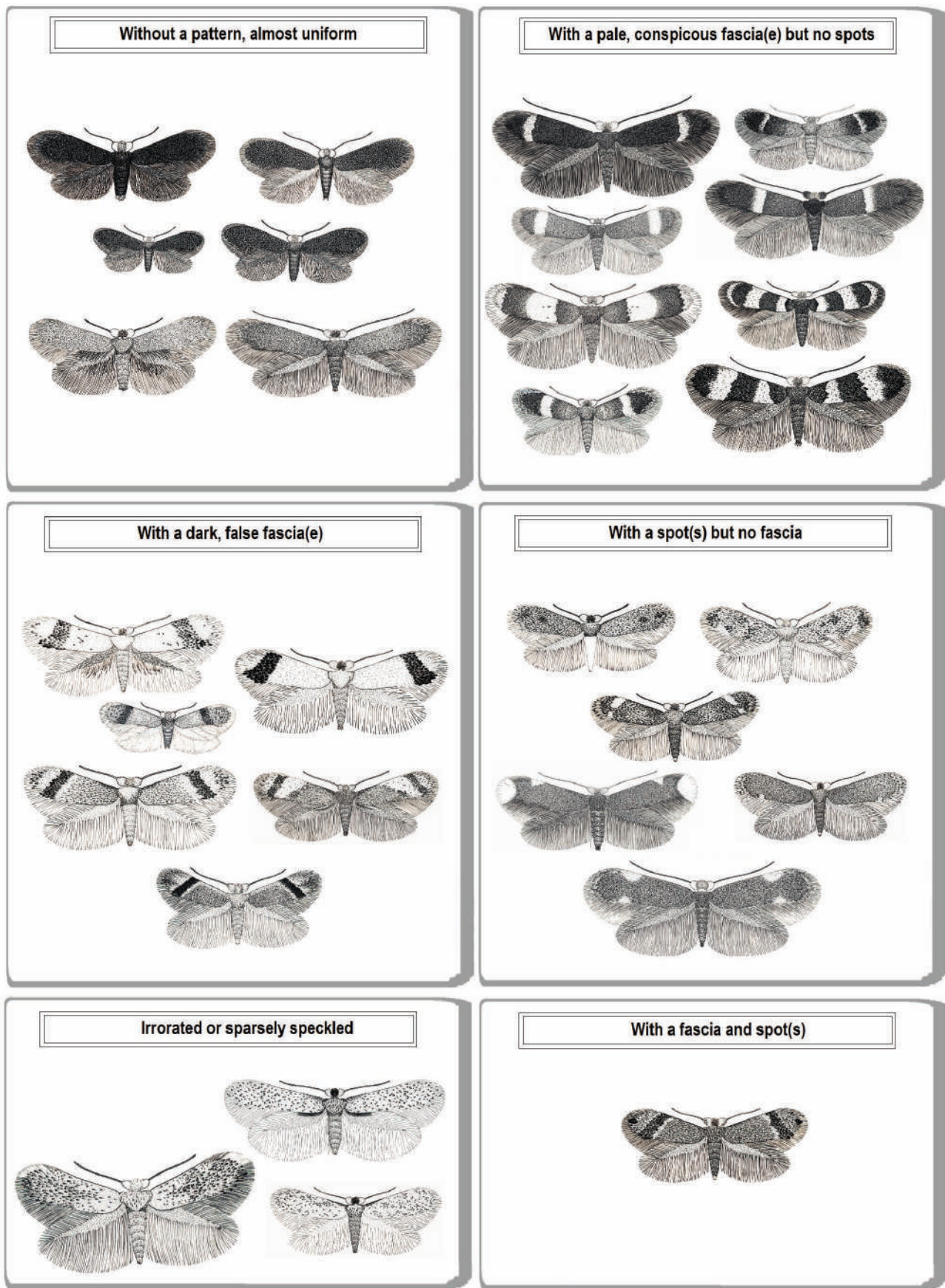
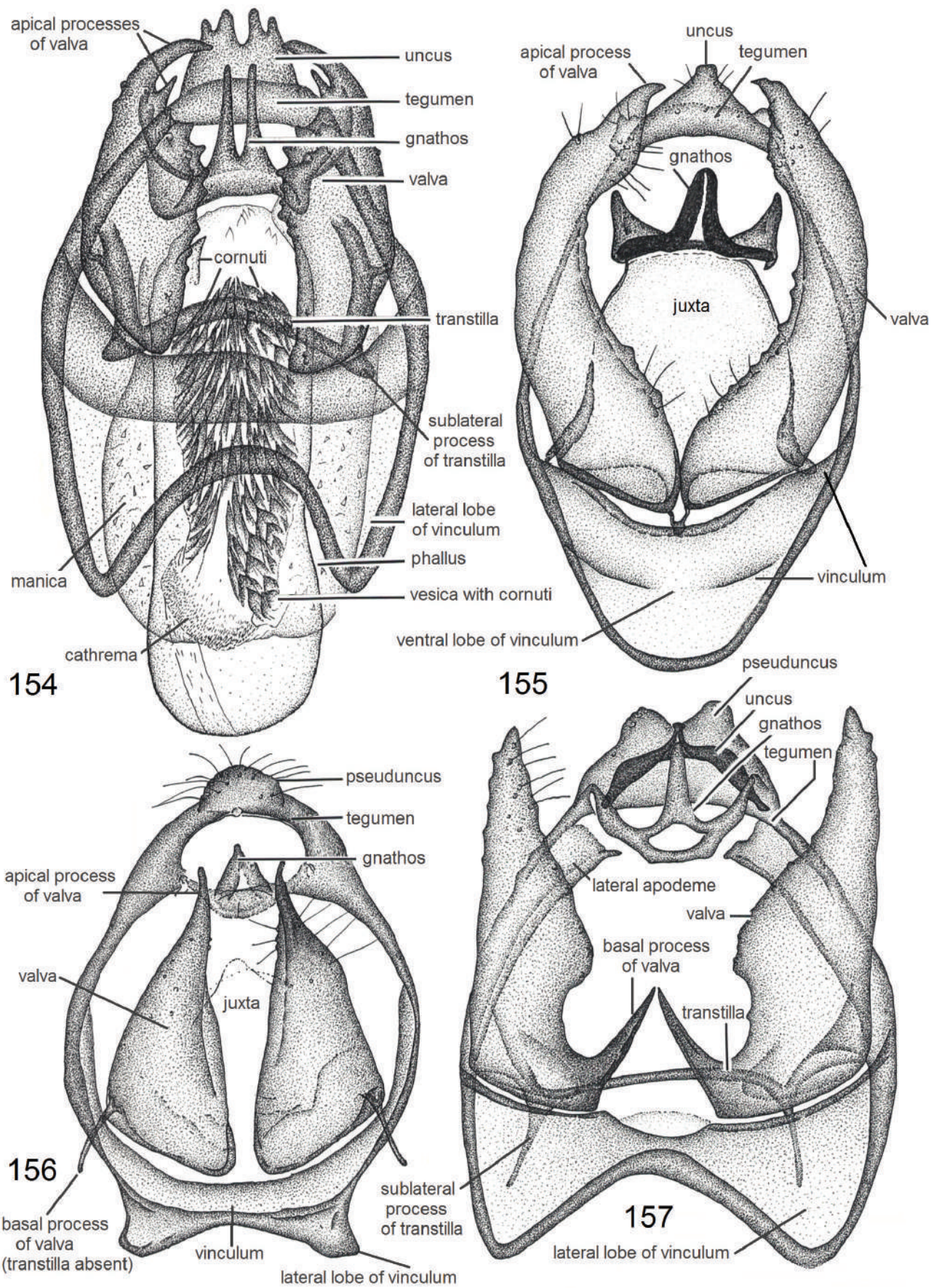
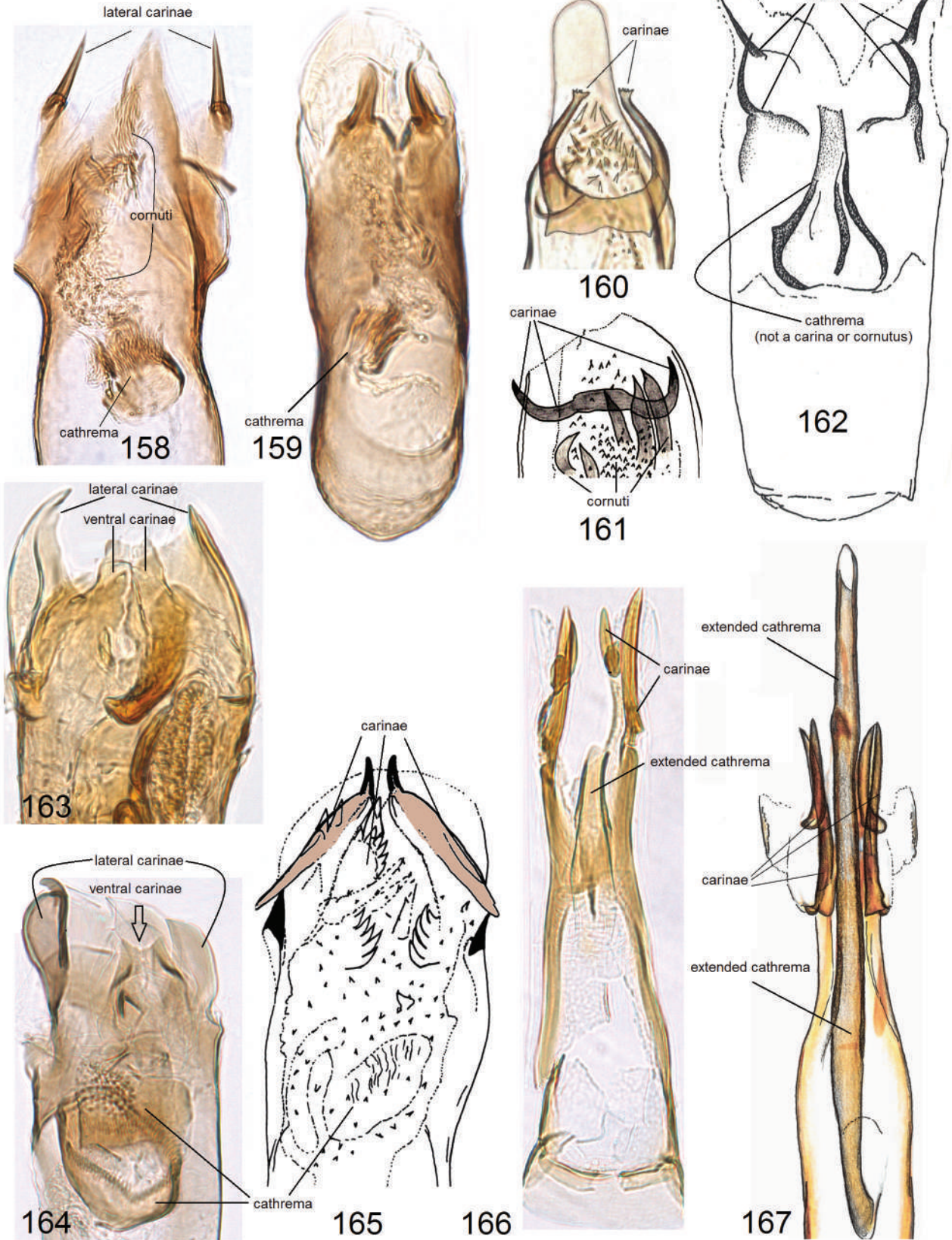


Figure 153. The main types of the forewing pattern of Nepticulidae.

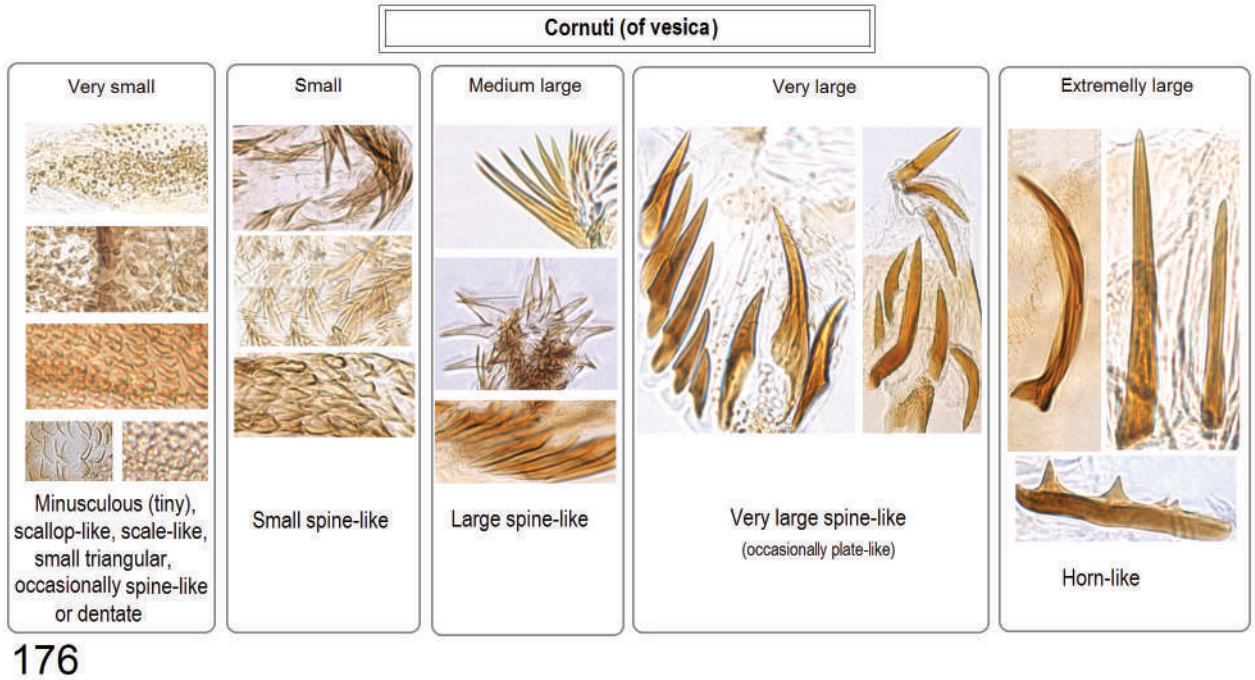
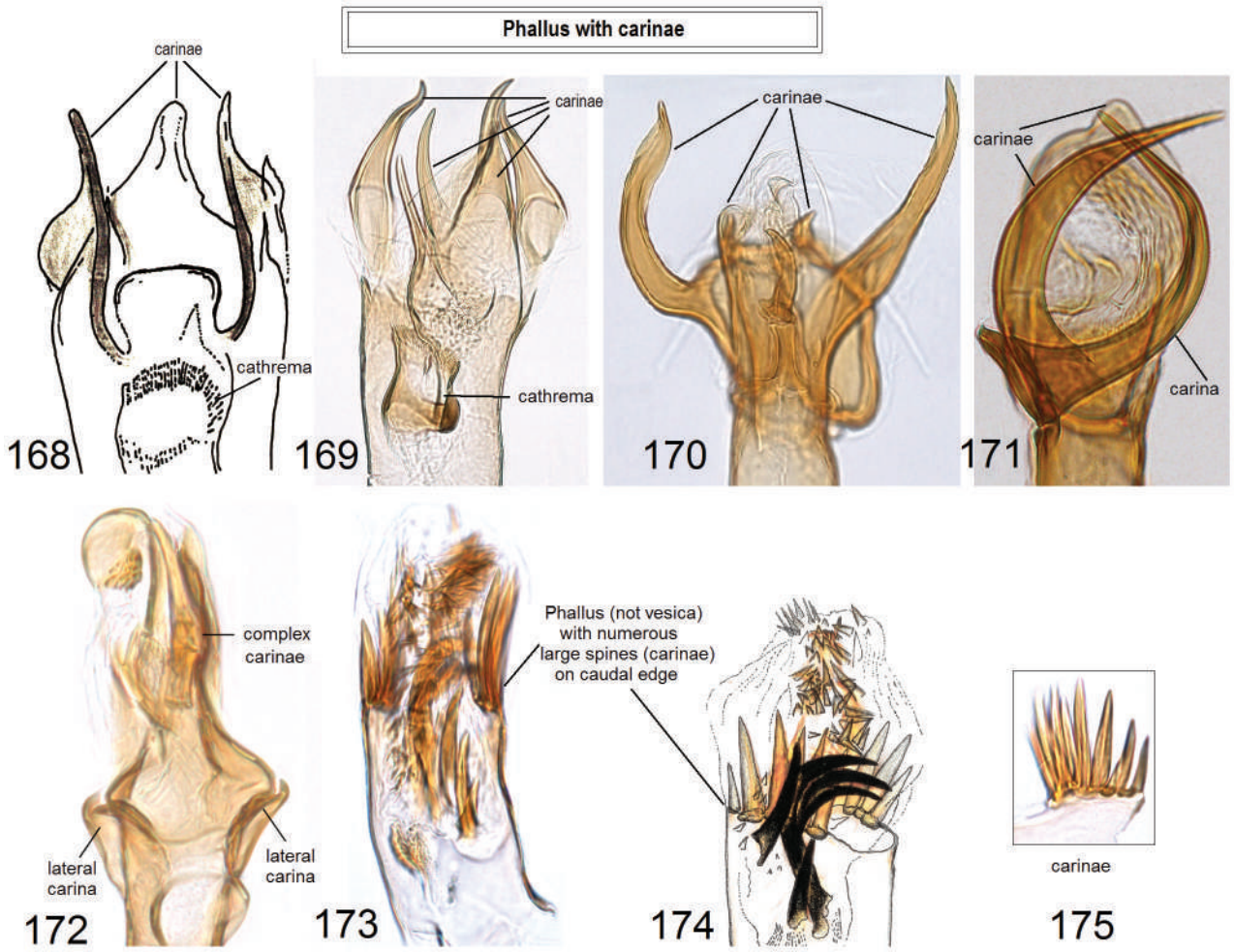


Figures 154–157. Morphology of the male genitalia of Nepticulidae (after Puplesis & Diškus, 2003, modified).

Phallus with carinae



Figures 158–167. Examples of the phallus with carinae.



Figures 168–176. Phallus of Nepticulidae: 168–175 – phallus with strongly developed carinae; 176 – variety of cornuti on vesica.

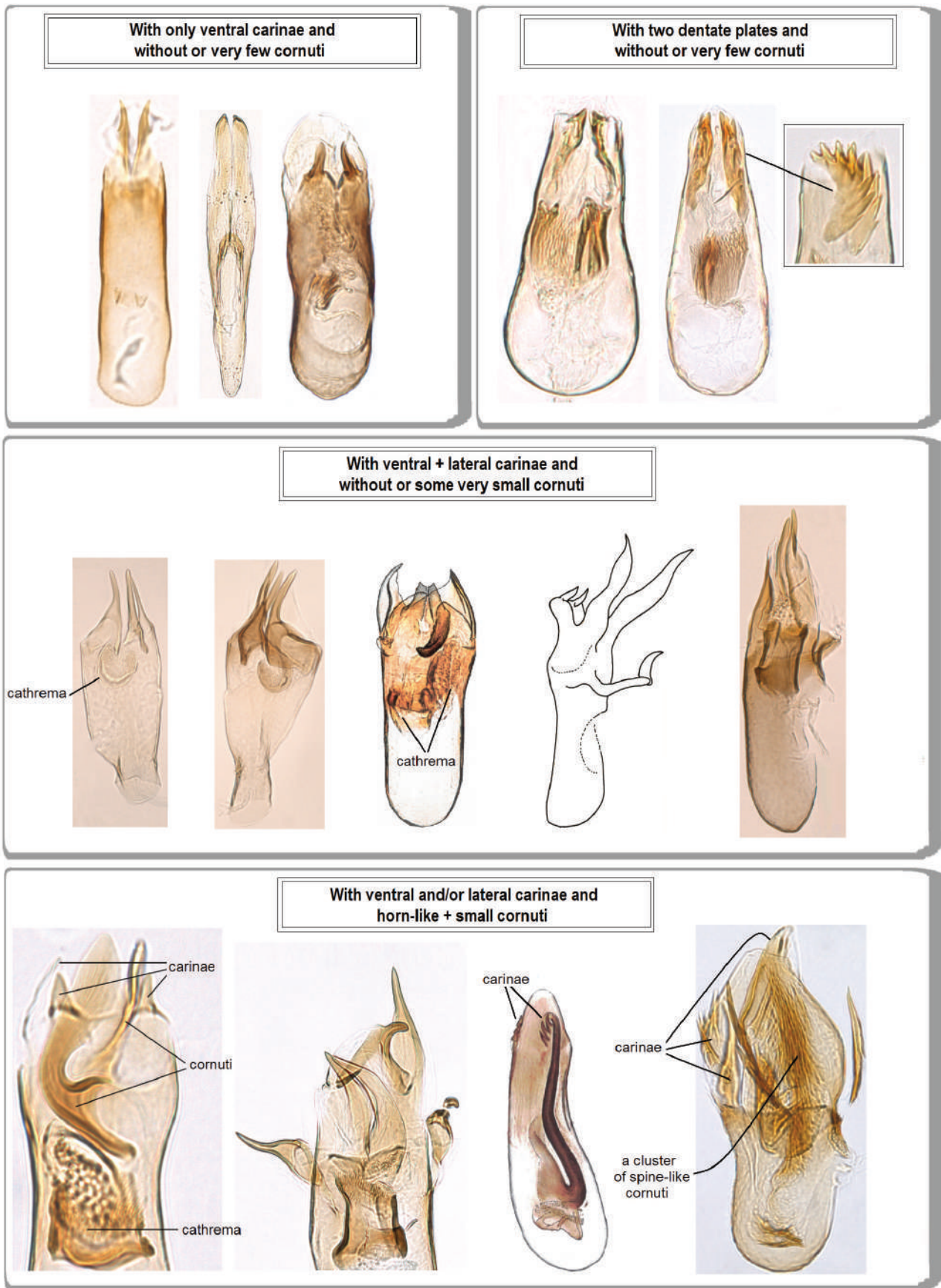


Figure 177. The main morphological varieties of the phallus possessing carinae.

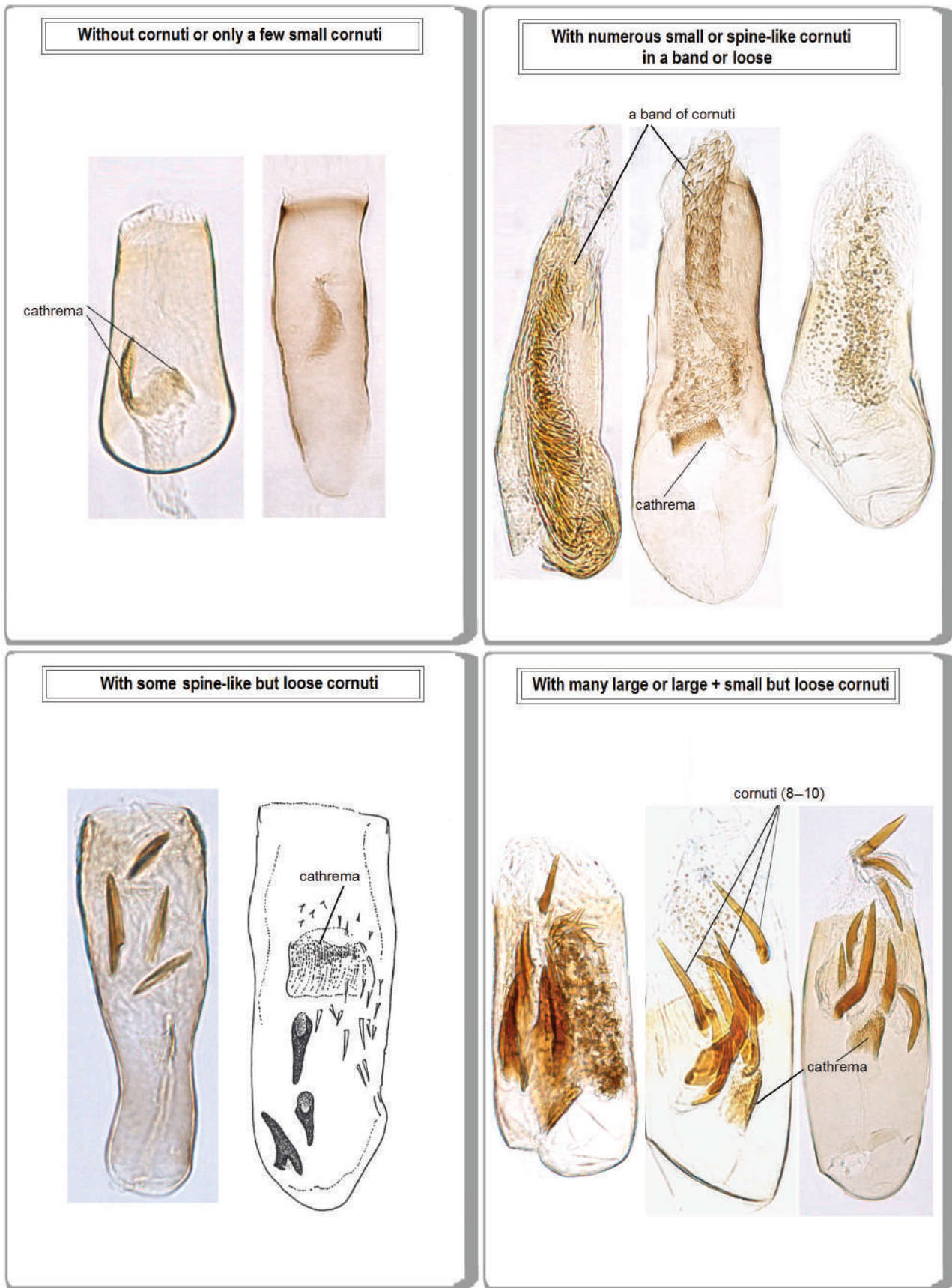


Figure 178. Main morphological types of the phallus without carinae.

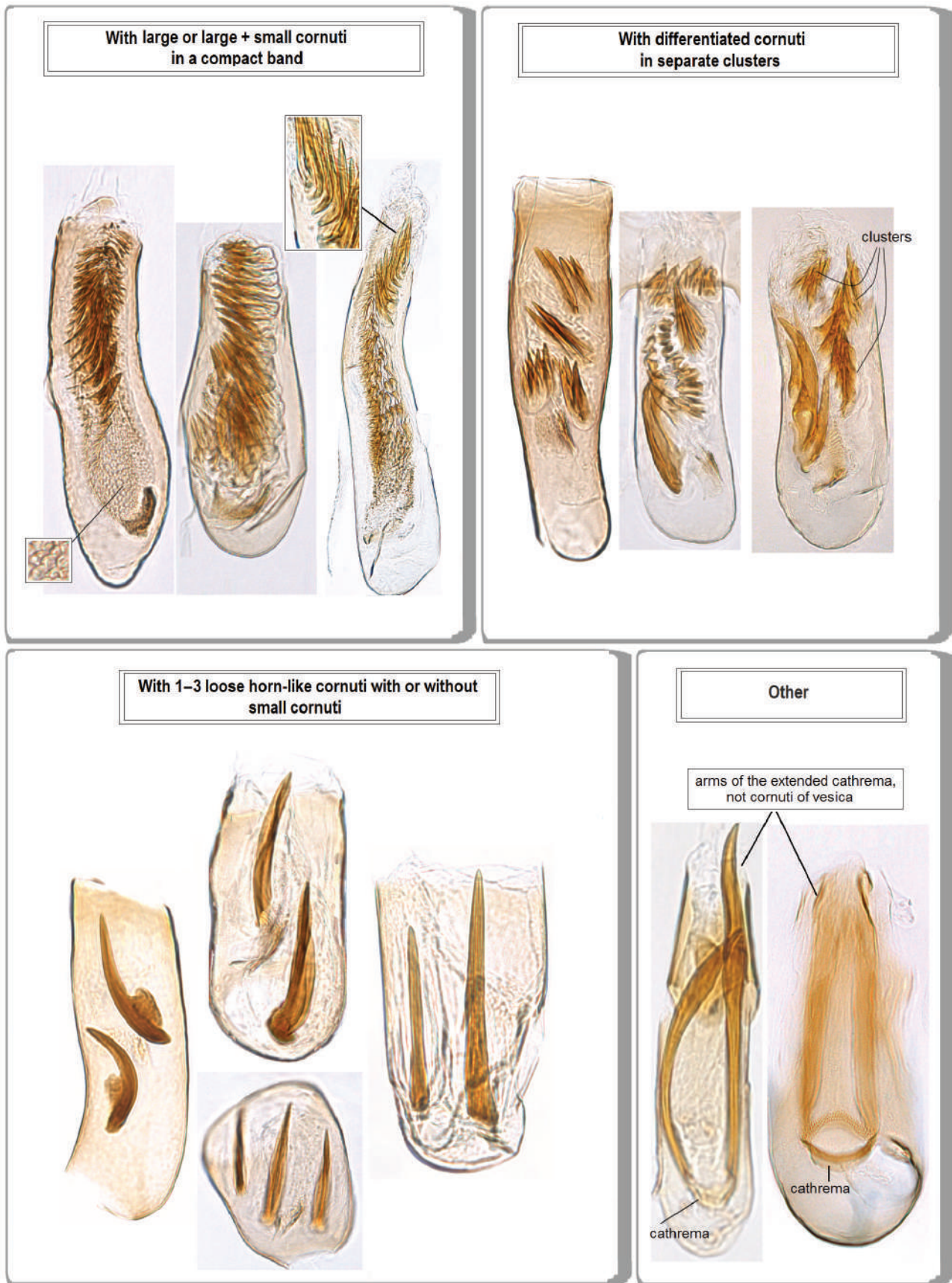


Figure 179. Main morphological types of the phallus without carinae.

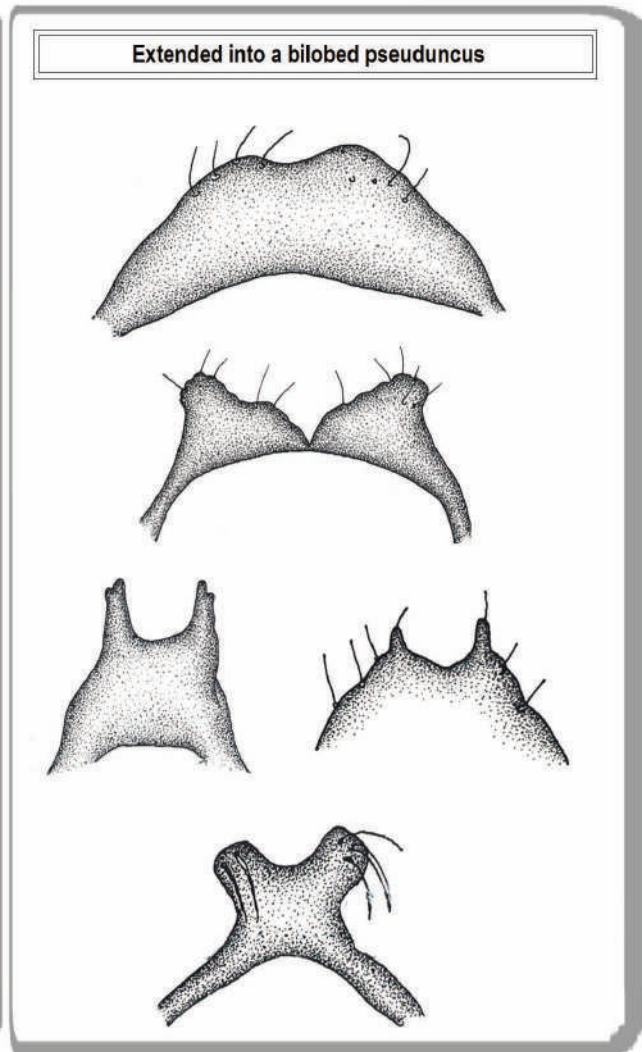
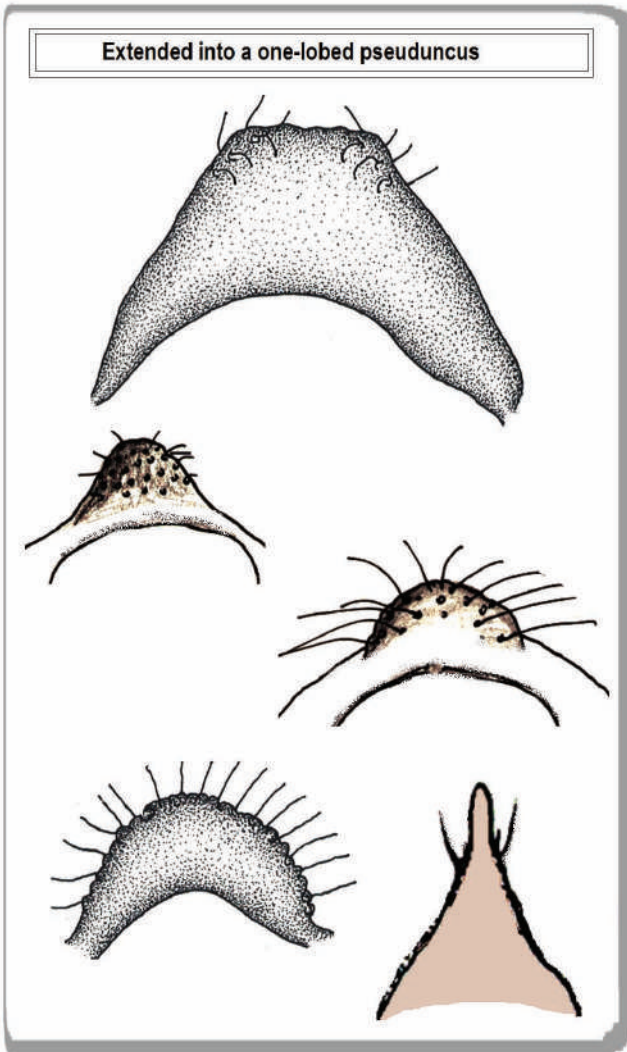
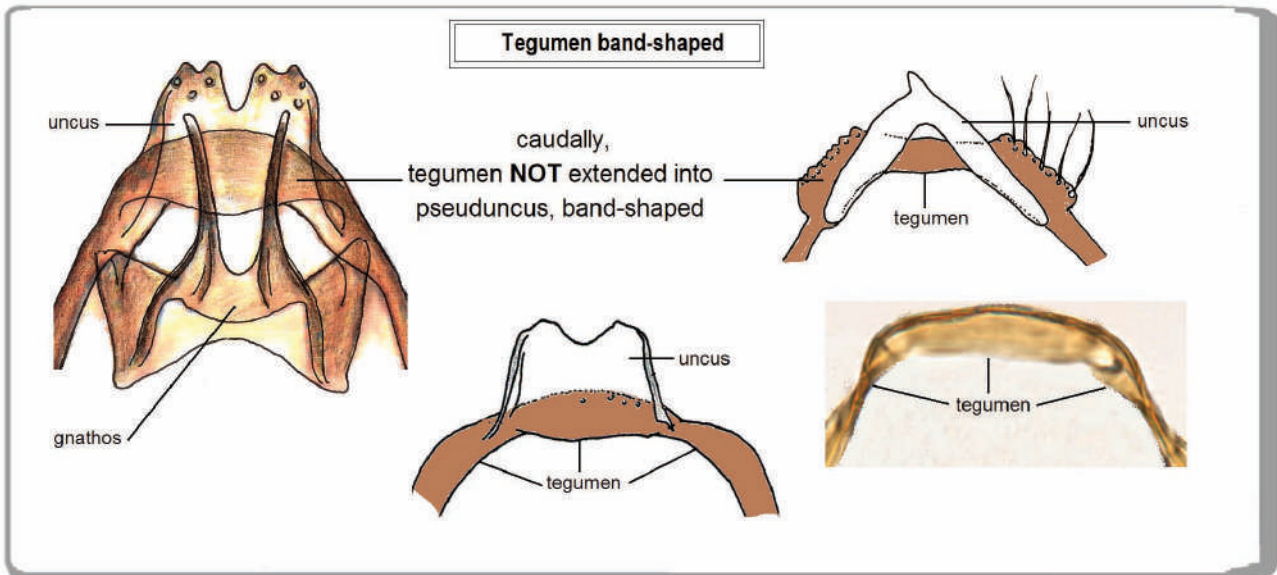


Figure 180. Tegumen of Nepticulidae: without pseuduncus and extended into a pseuduncus.

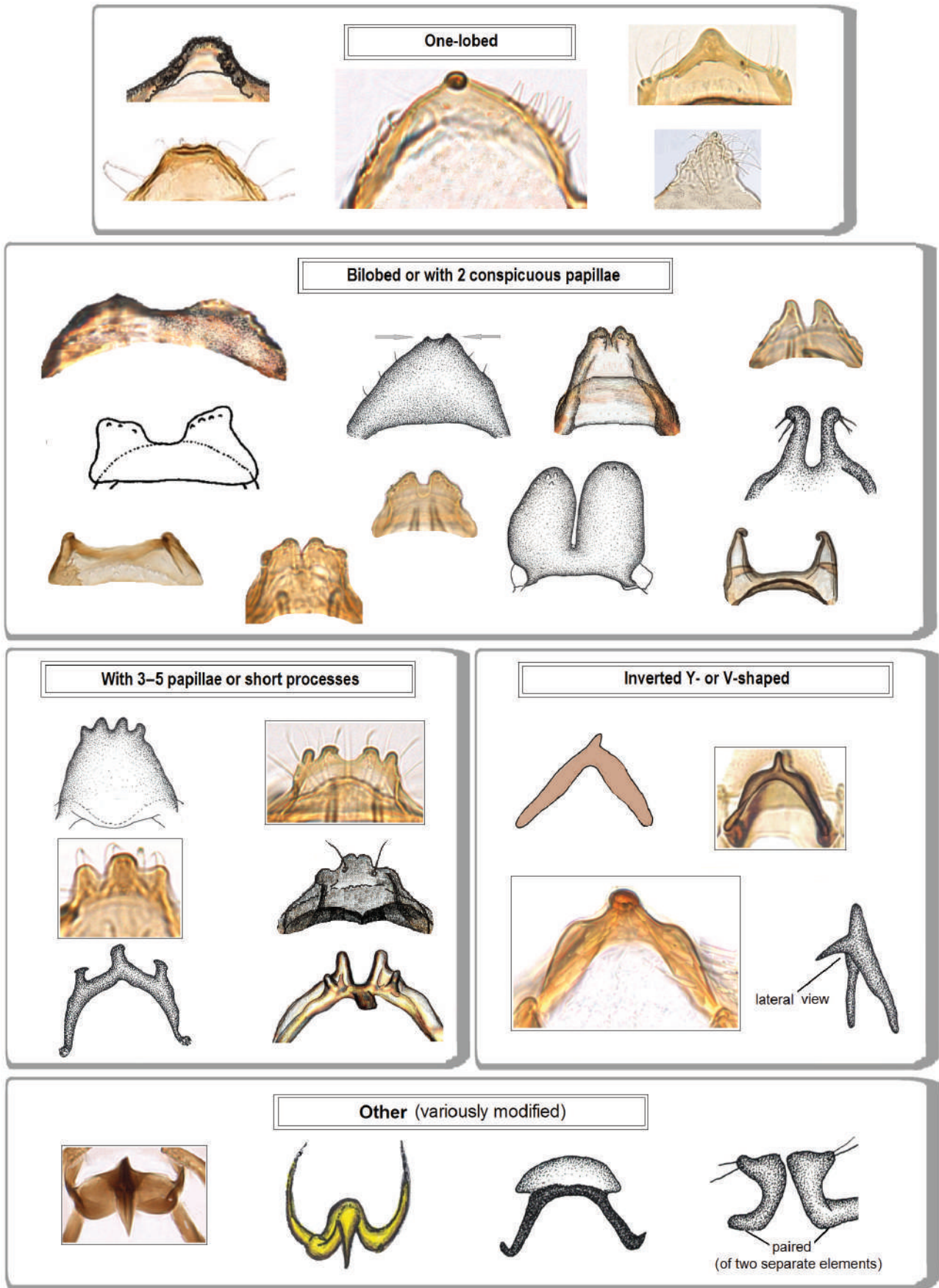


Figure 181. Main morphological types of the uncus of Nepticulidae.

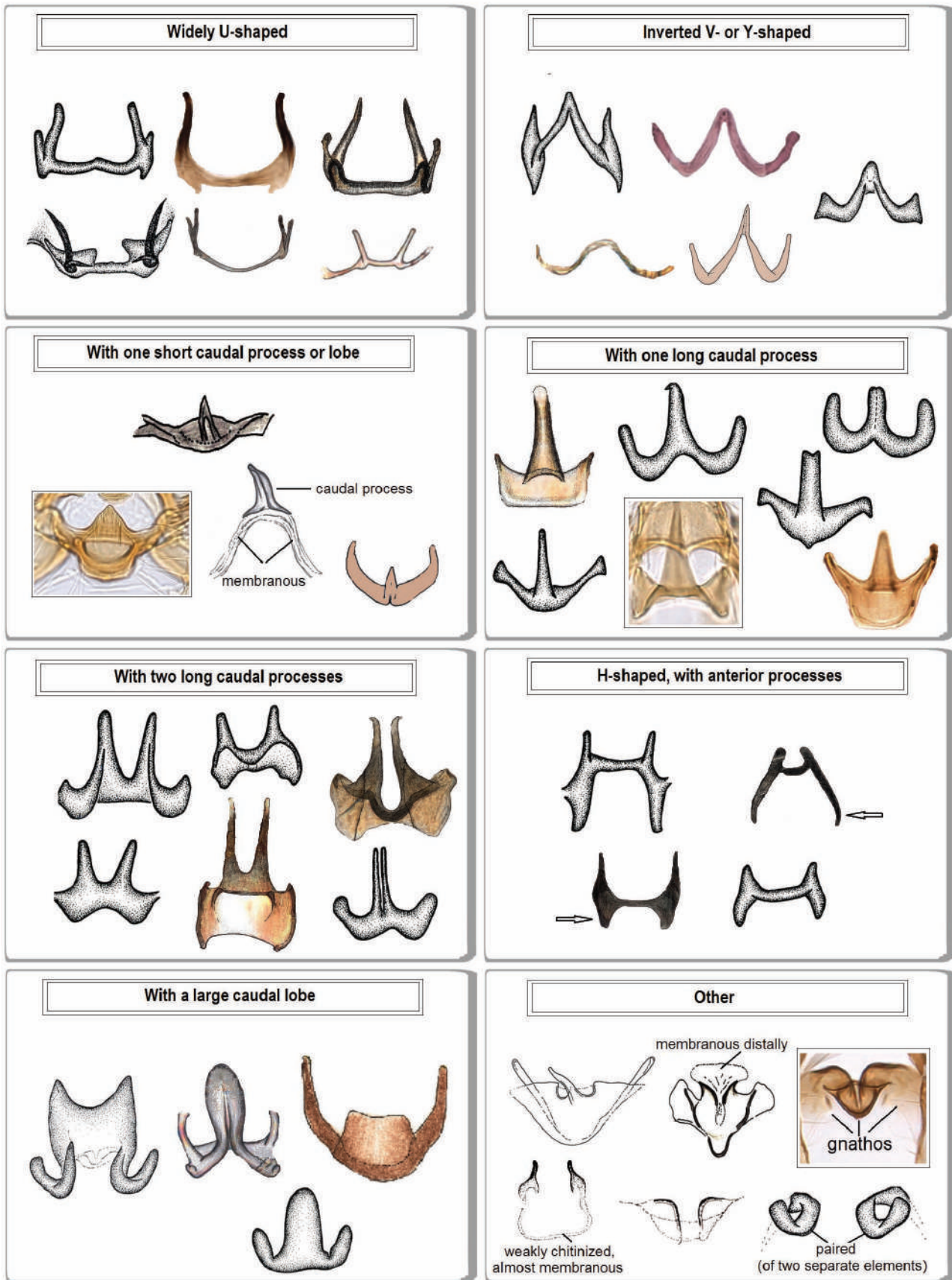


Figure 182. Main morphological types of the gnathos of Neptculidae.

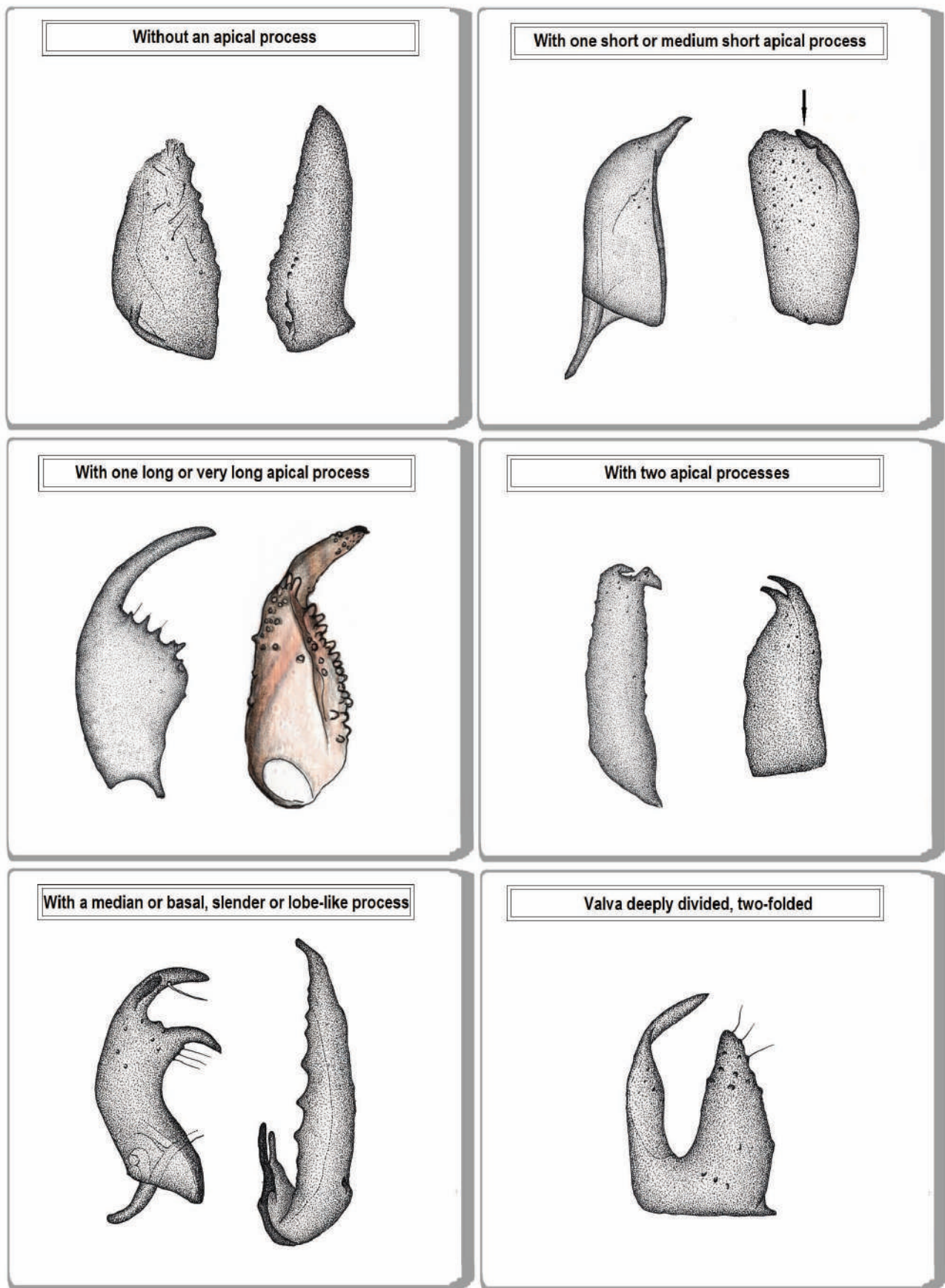
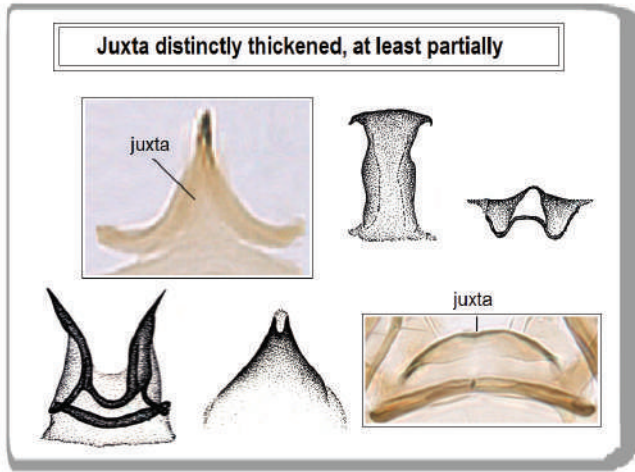
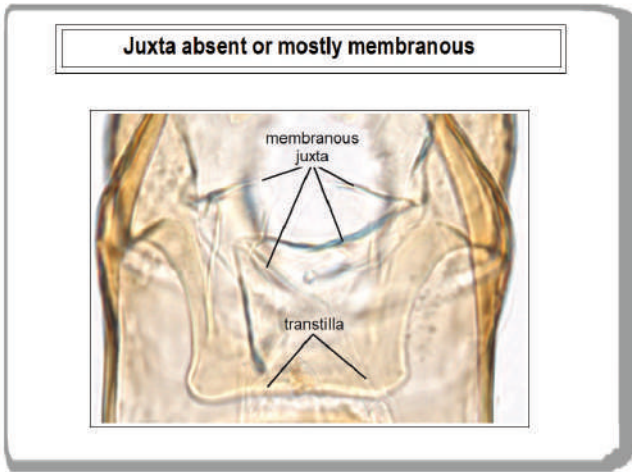
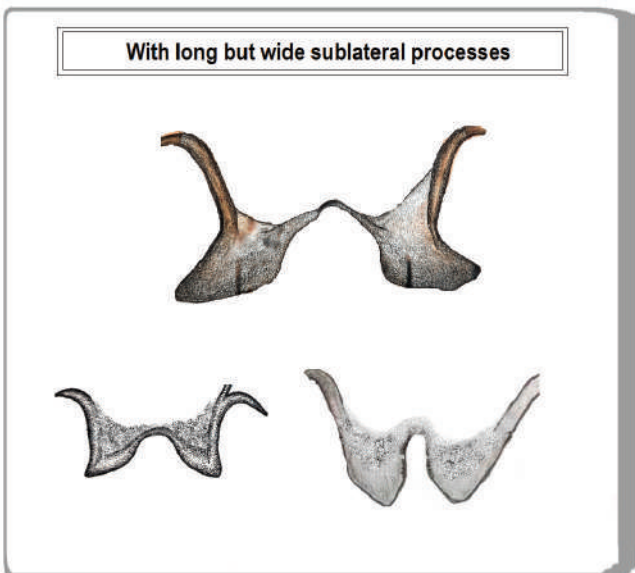
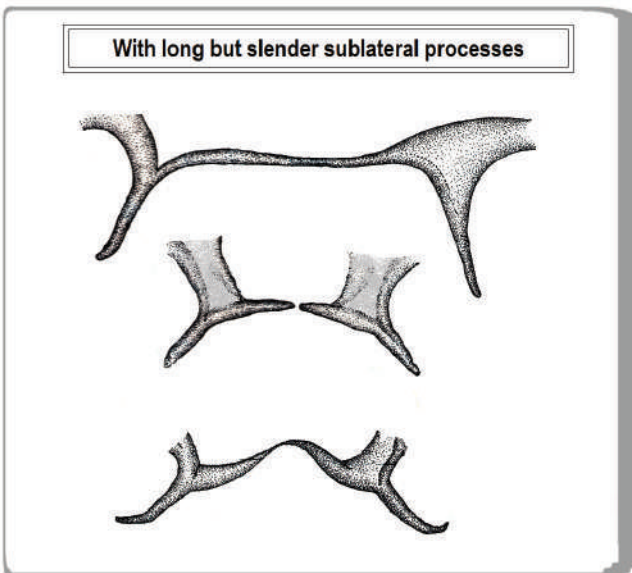
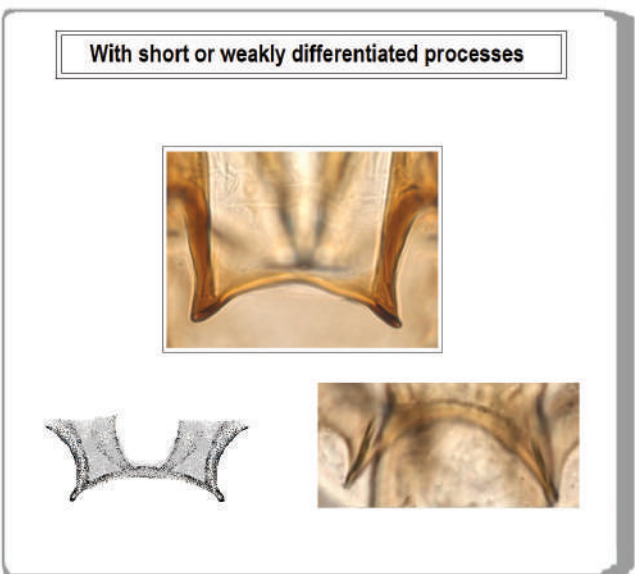
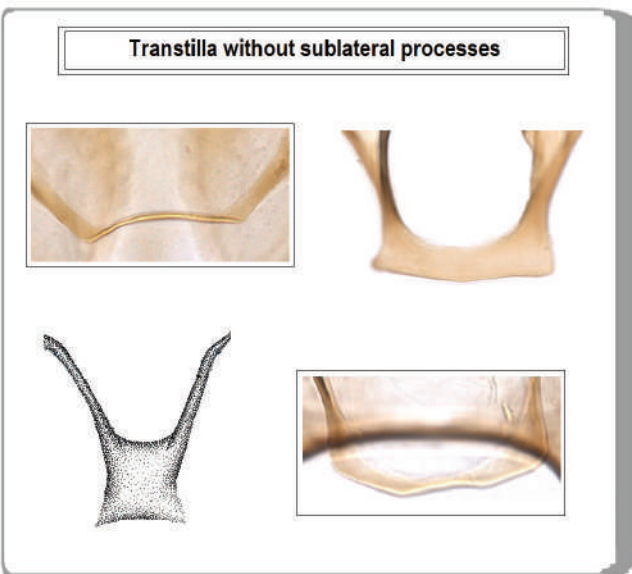


Figure 183. Valva of Nepticulidae.



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Figures 184, 185. Juxta and transtilla of Nepticulidae: 184 – juxta; 185 – transtilla.

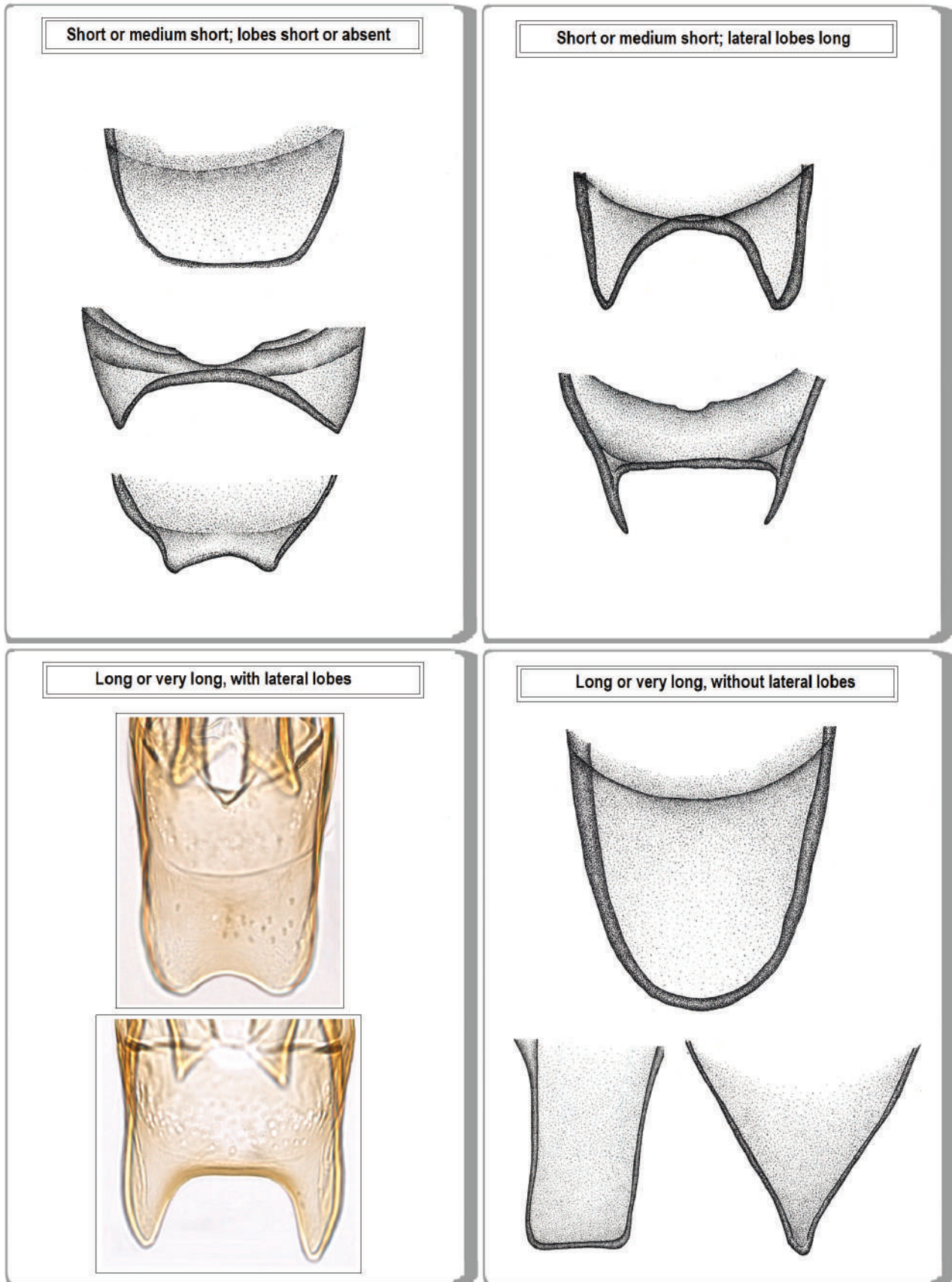


Figure 186. Vinculum of Nepticulidae.