



Bi 6760
Základy entomologie
cvičení
Zadeček (abdomen)

2014

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evropský
sociální
fond v ČR



EVROPSKÁ UNIE



MINISTERSTVO ŠKOLSTVÍ,
MLÁDEŽE A TĚLOVÝCHOVY

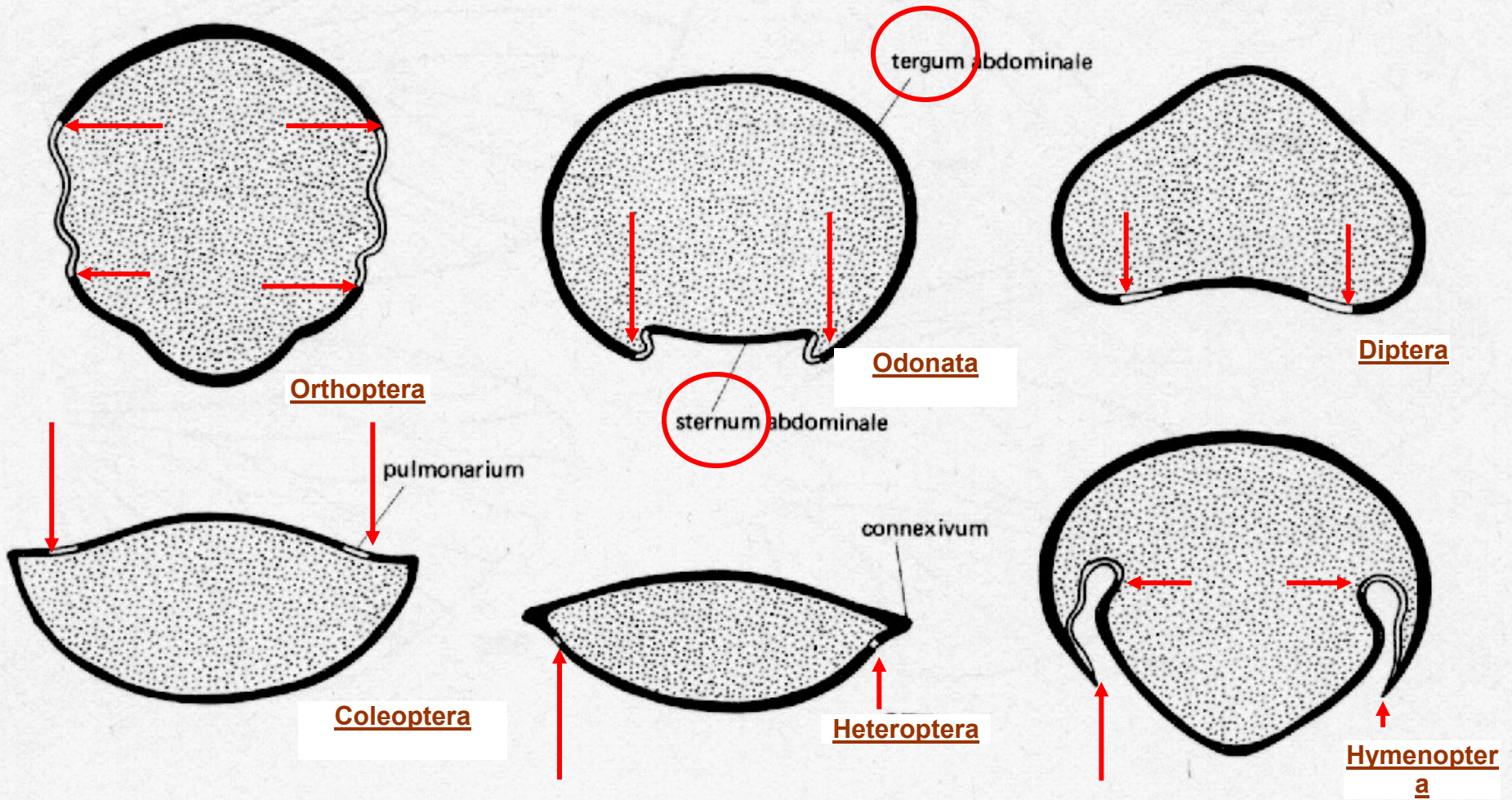


OP Vzdělávání
pro konkurenceschopnost



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Abdomen - modifikace terga a sterna



řez v transversální rovině - posteriorní pohled

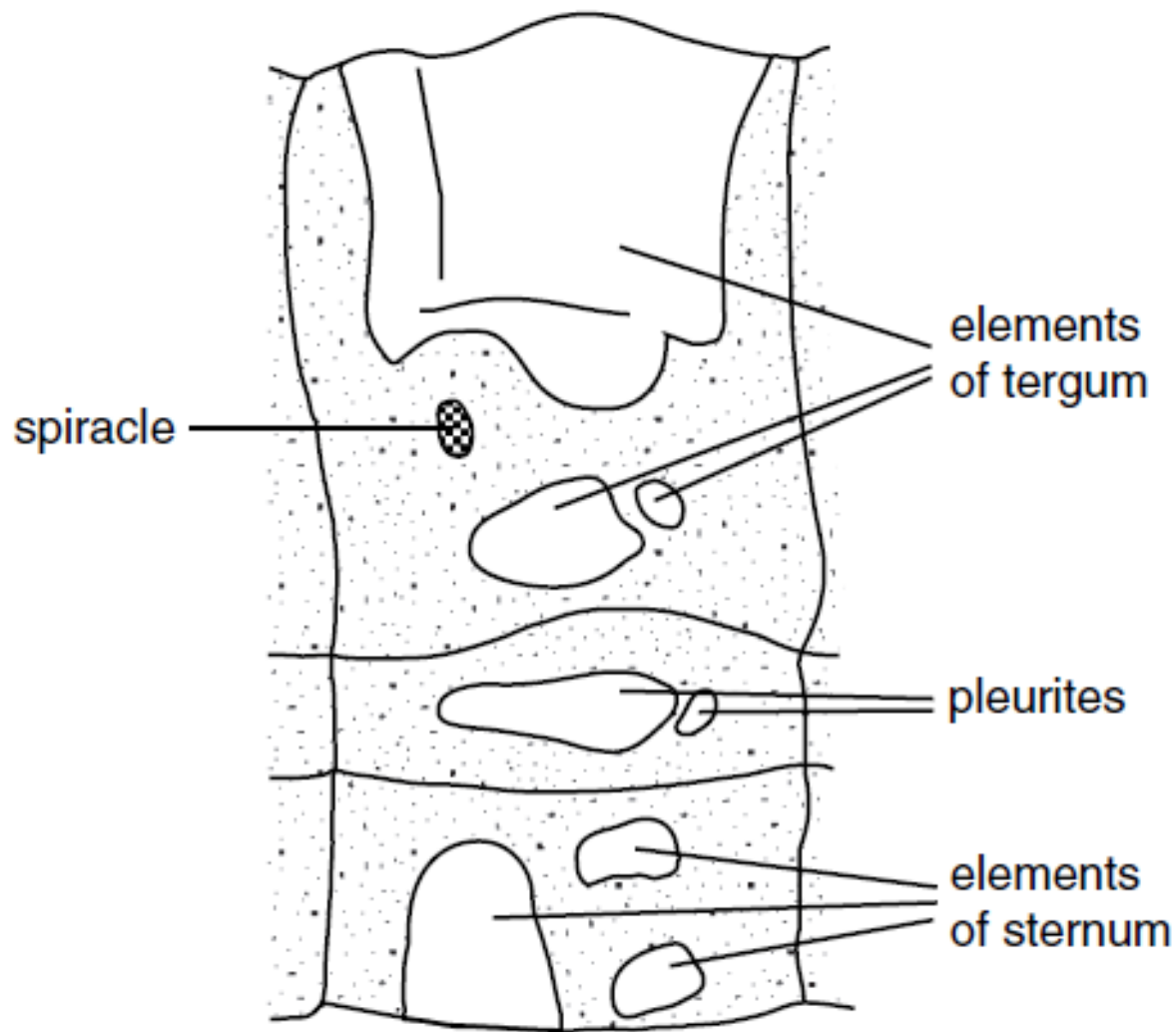
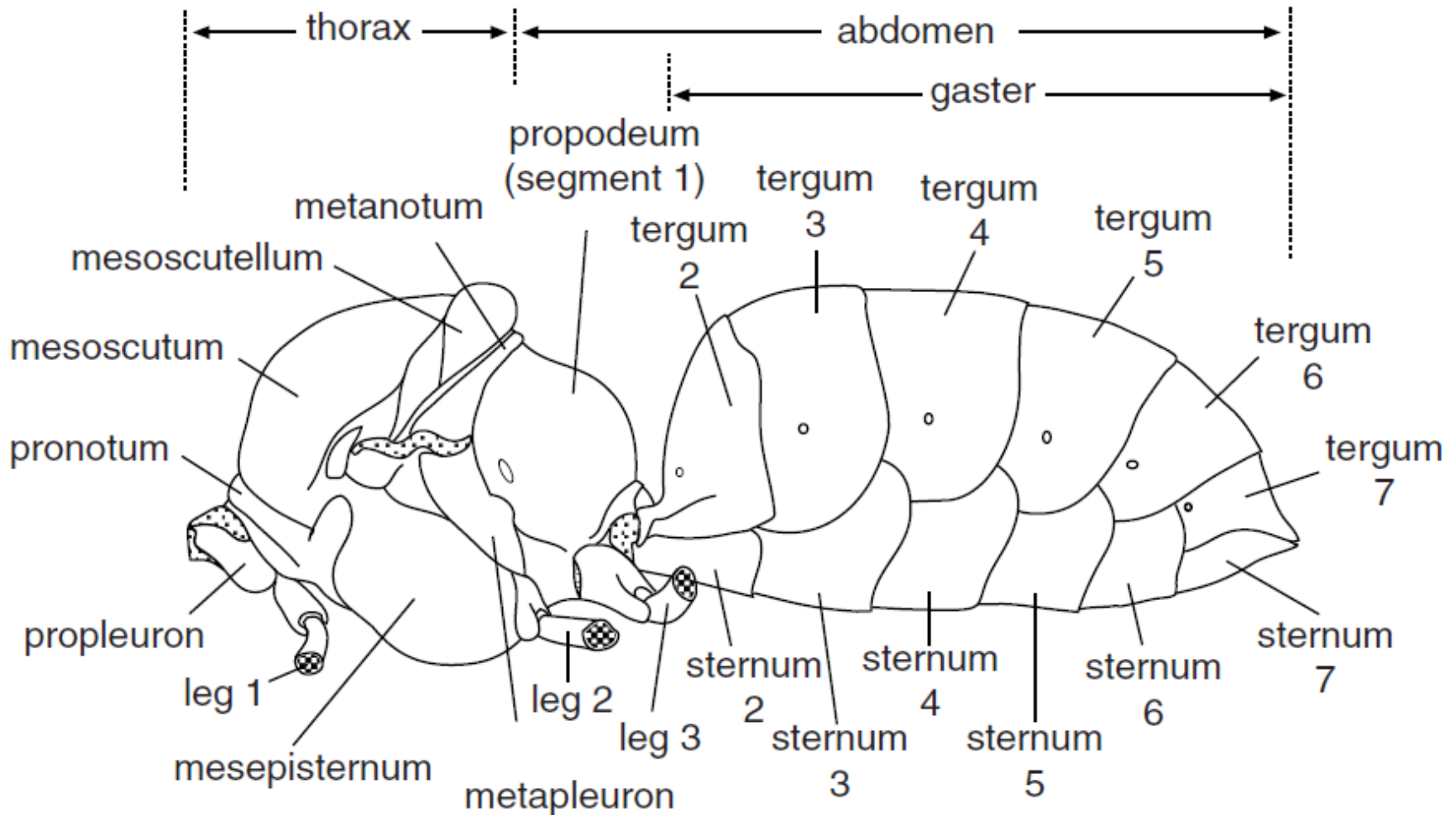
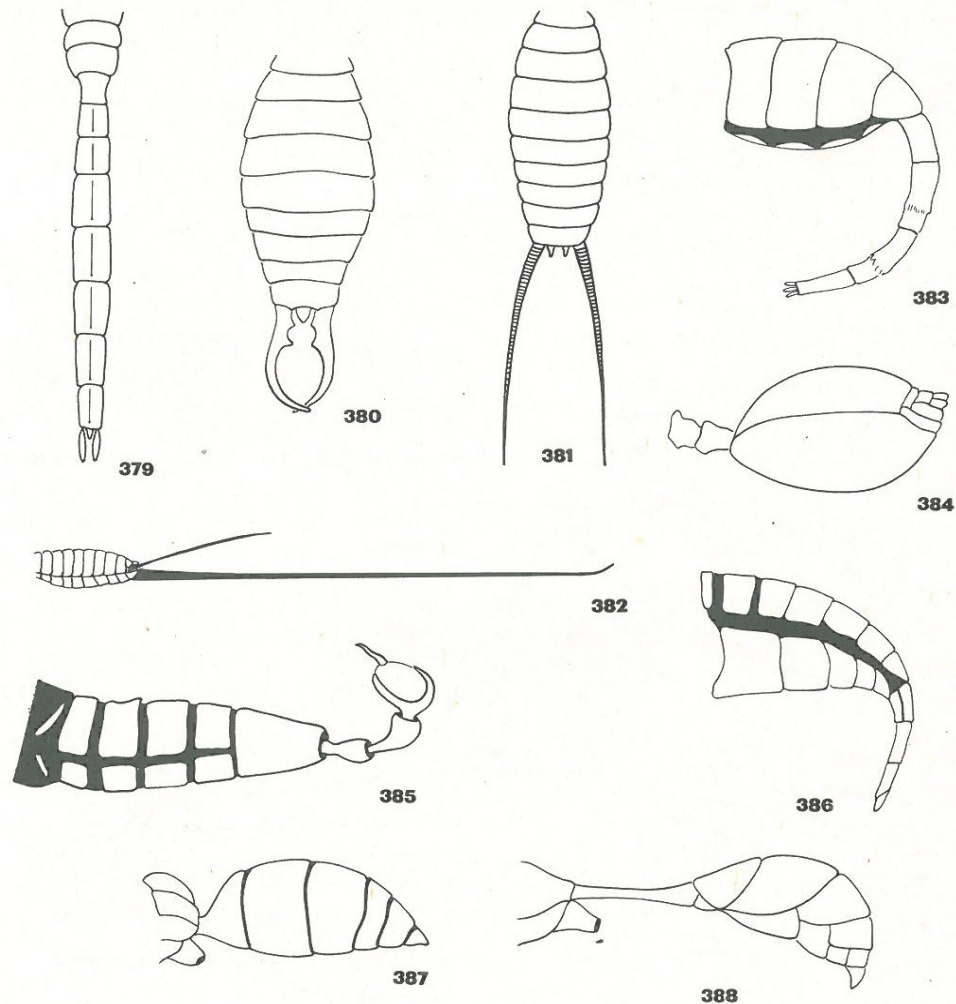


Figure 11.3 Small, sclerotized plates in an abdominal segment. Membrane stippled (larva of a beetle, *Calosoma*) (after Snodgrass, 1935).

Zadeček včely



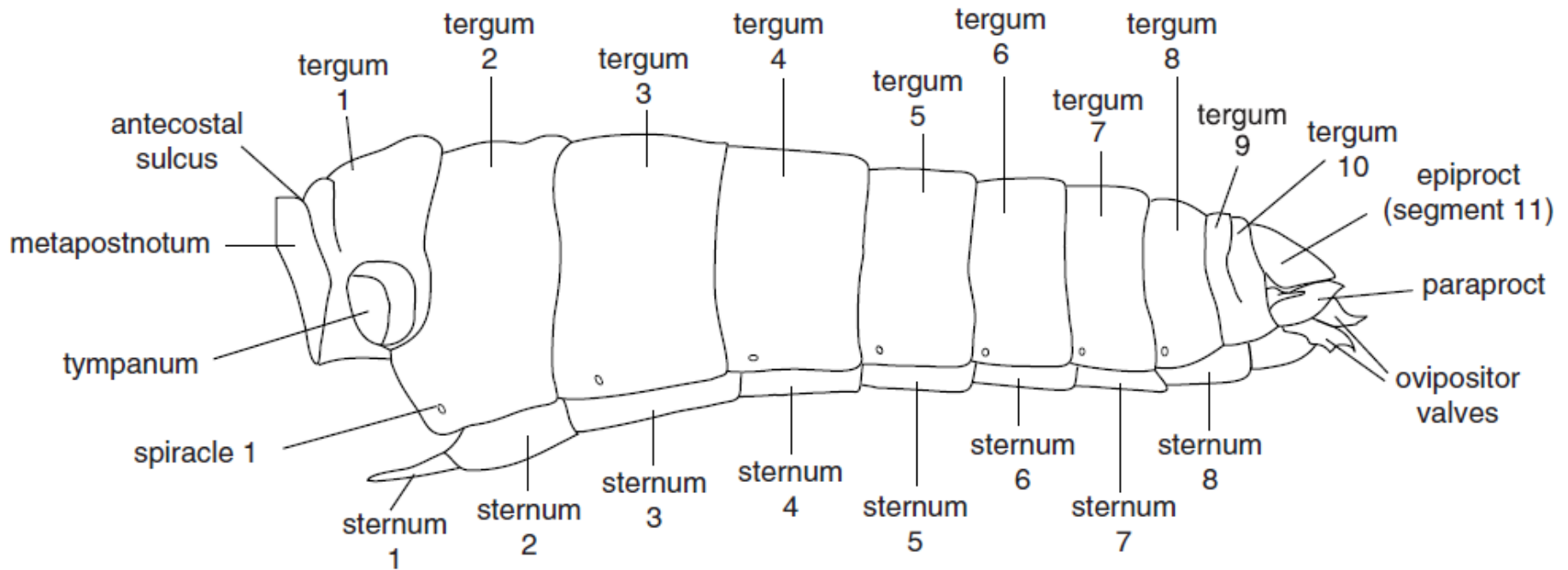
Typy abdomenů



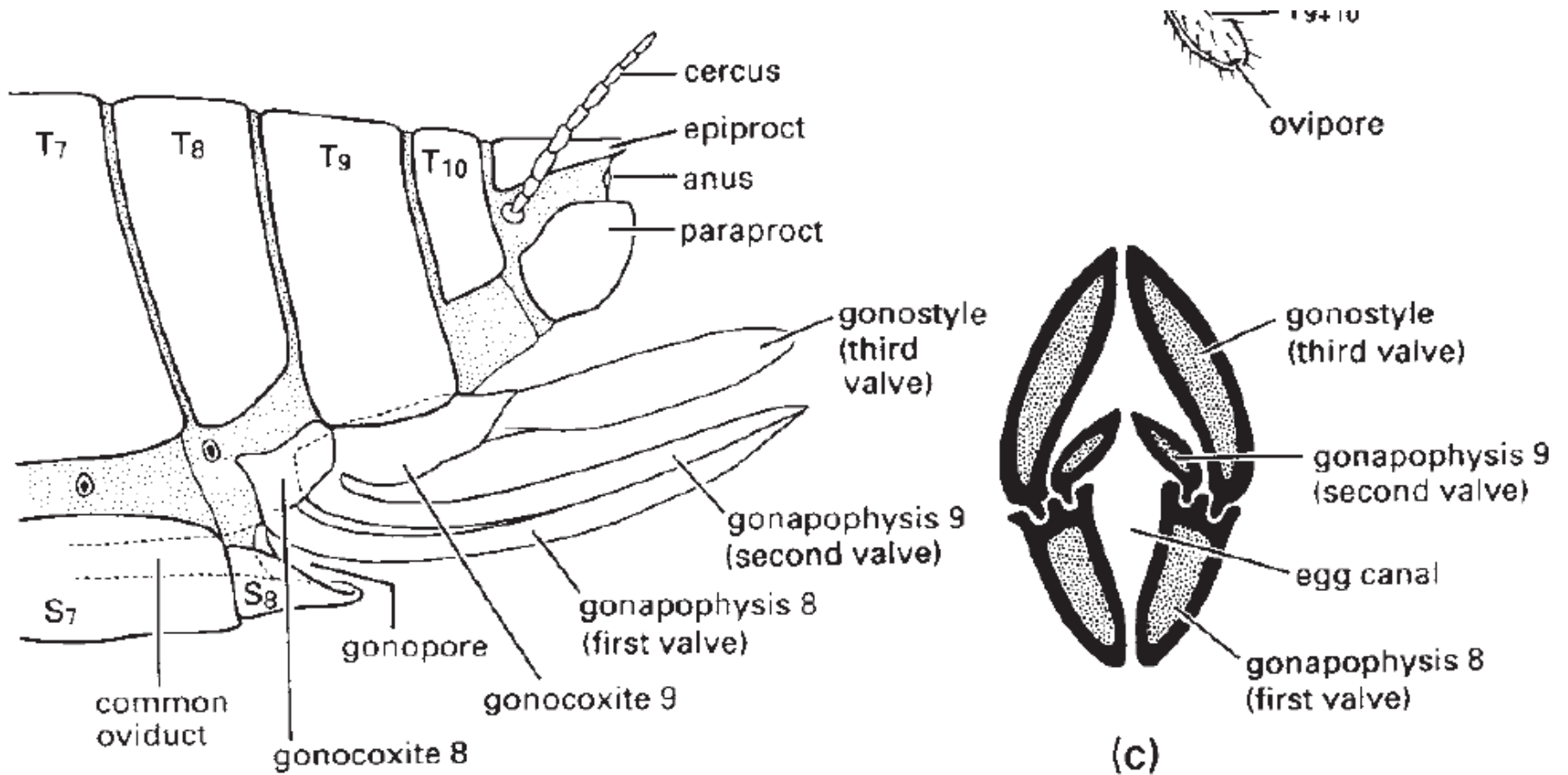
Figs. 379–388. Some types of insect abdomen. — 379: *Anax* (Odon.), 380: *Forficula* (Dermapt.), 381: *Nemoura* (Plecopt.), 382: *Ephemera* (Ephemeropt.), 383: *Musca* (Dipt.), 384: *Cryptocerus* (Hymenopt.), 385: *Panorpa* (Mecopt.), 386: *Cerambyx* (Coleopt.), 387: *Scolia* (Hymenopt.), and 388: *Calliphora* (Dipt.) (after Shumakov 292, 294, 296, 299).

Zadeček saranče (samice)

(a) grasshopper



Kladélko (ovipozitor) kobylyky



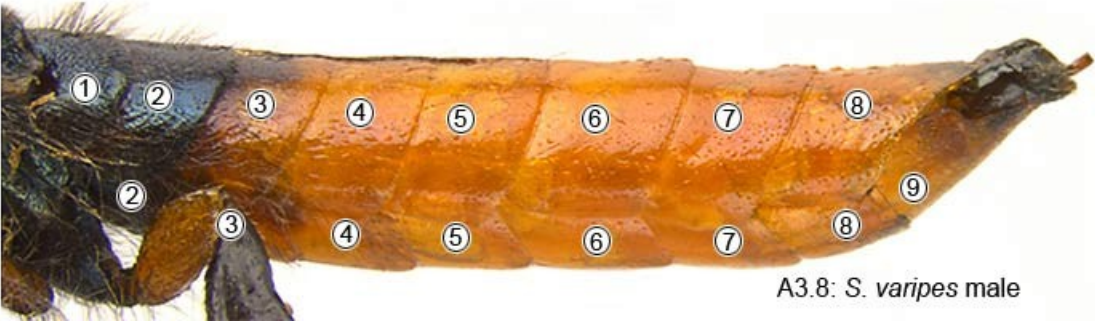
(b)

(c)

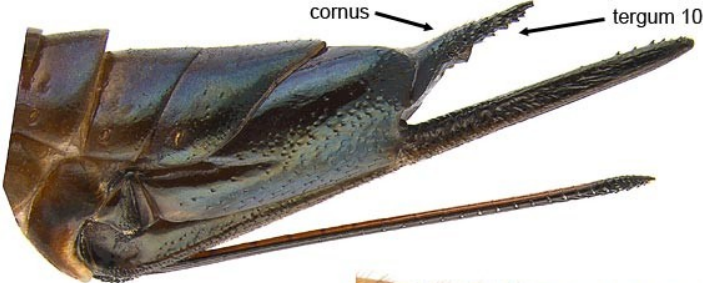
Zadeček pilořitky (Hymenoptera: Siricidae)



A3.7: *S. nigricornis* female



A3.8: *S. varipes* male



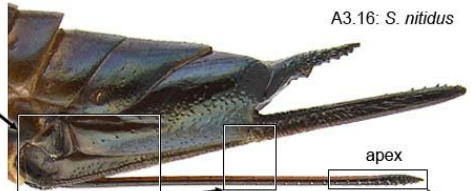
A3.9: *S. nitidus* female



A3.10: *S. nitidus* male



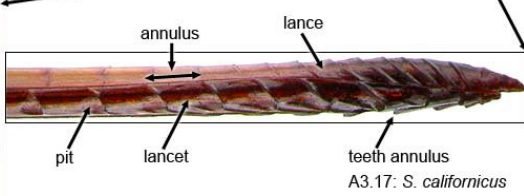
A3.16: *S. nitidus*



A3.16: *S. nitidus*

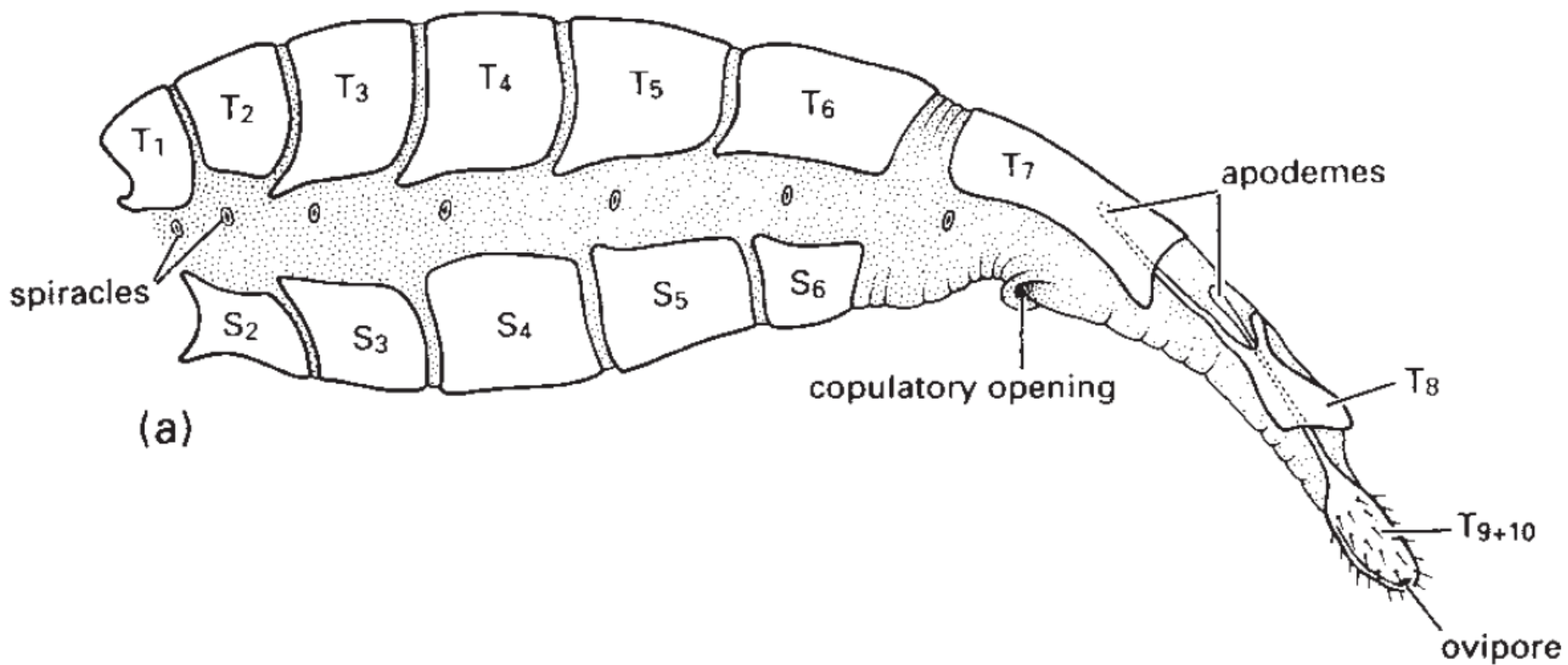


A3.16: *S. nitidus*

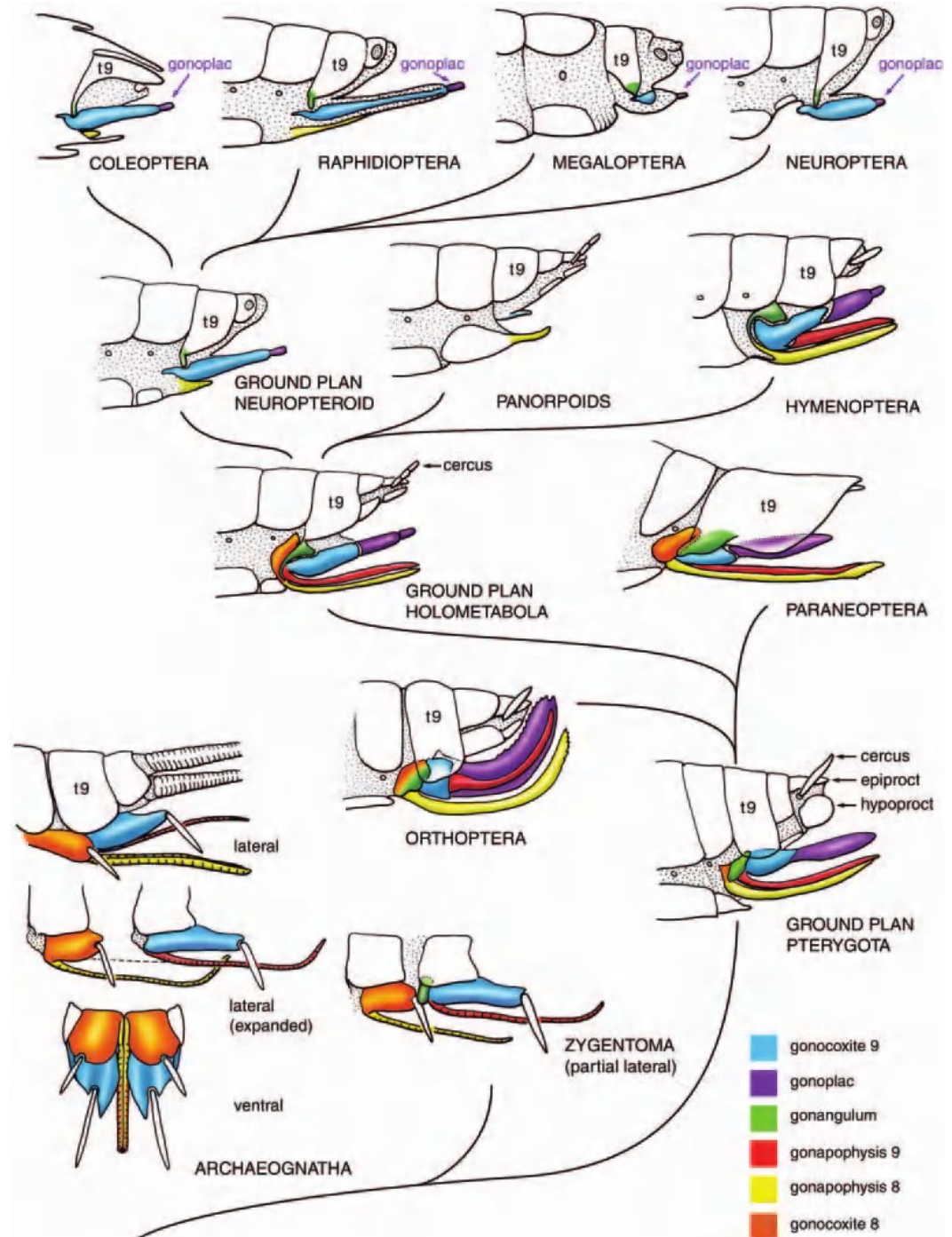


A3.17: *S. californicus*

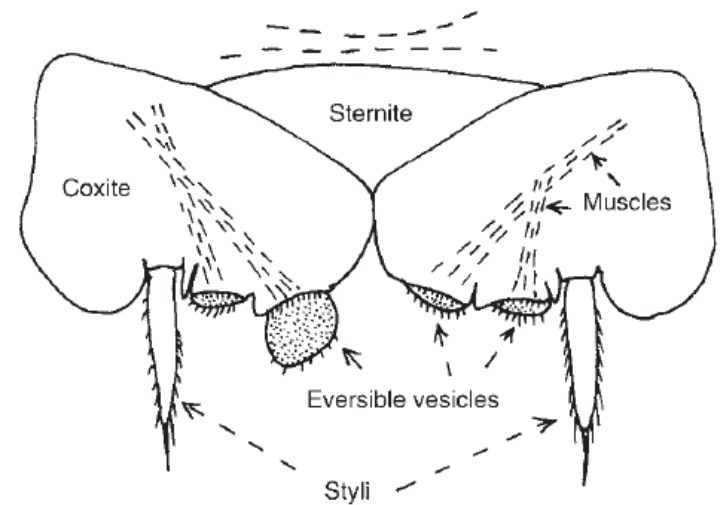
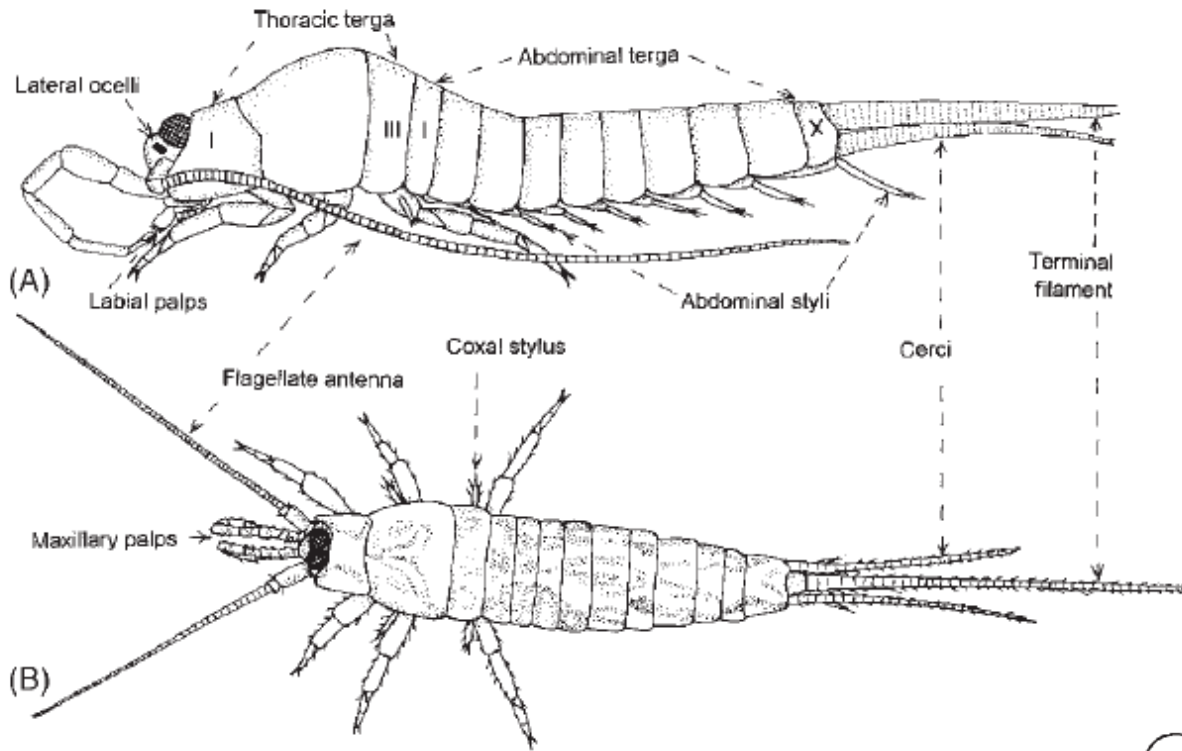
Zadeček bekyně (samice) (Lepidoptera: Lymantriidae)
Sekundární kladélko - *oviscapt*



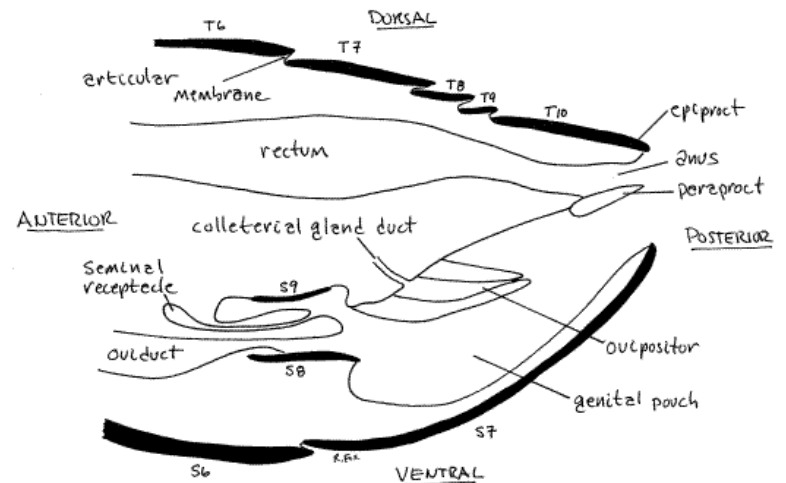
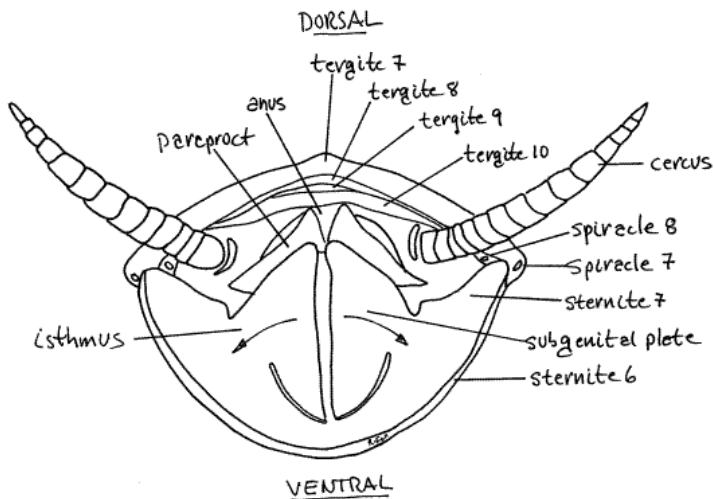
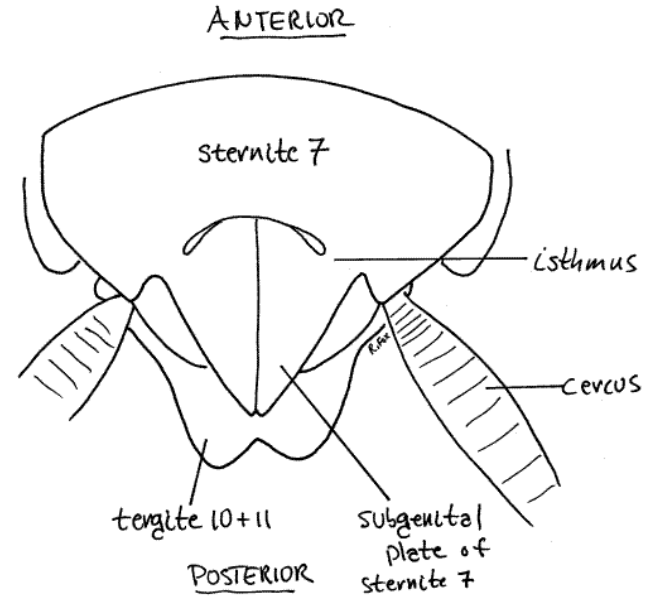
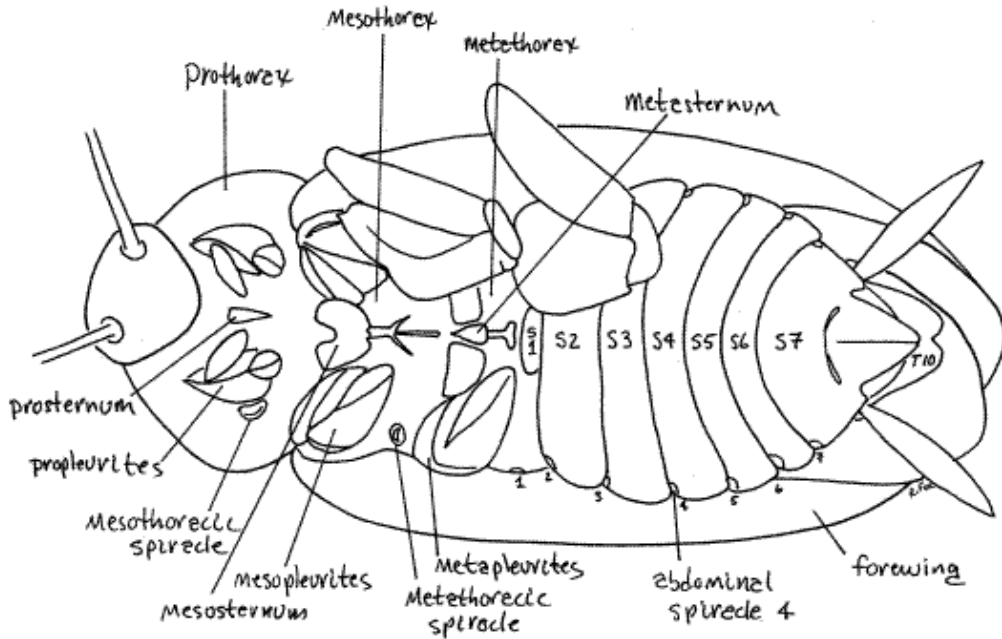
Evolve kladélka



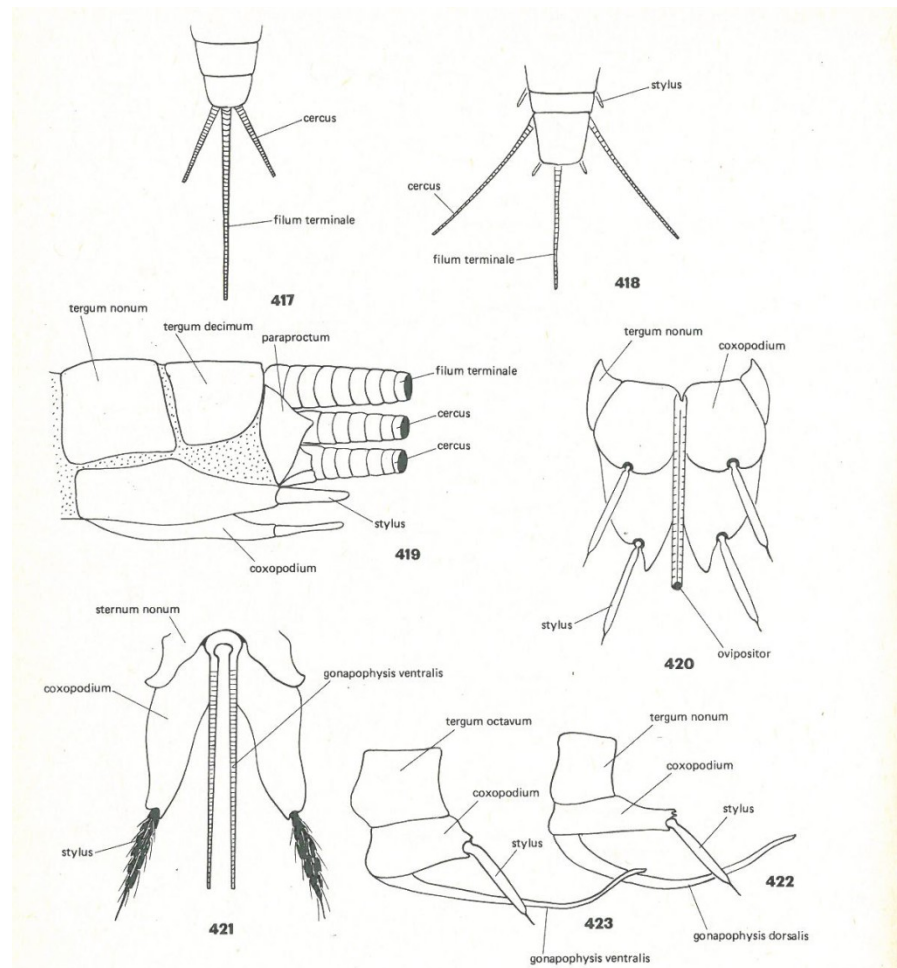
Archaeognatha - chvostnatky



Šváb (samička)

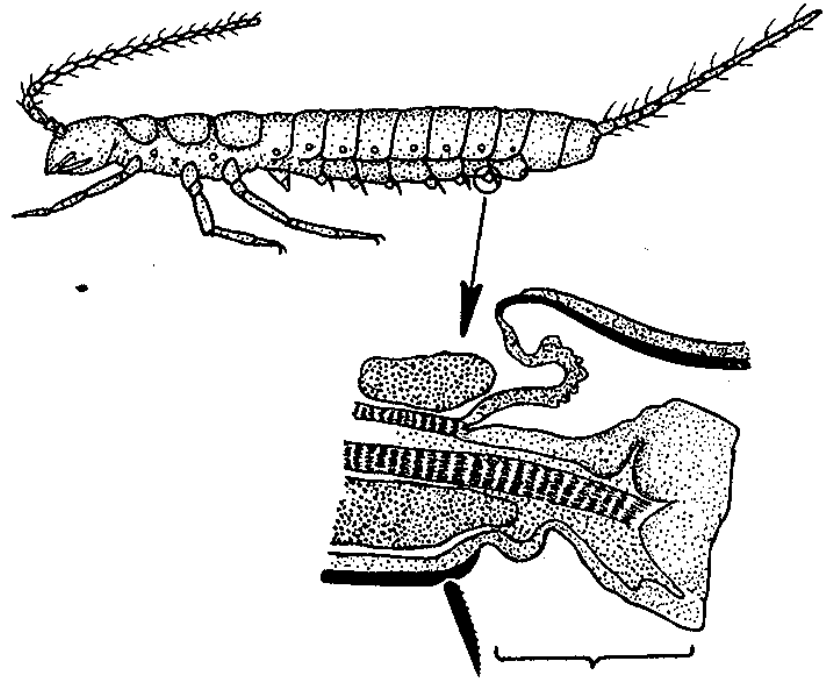
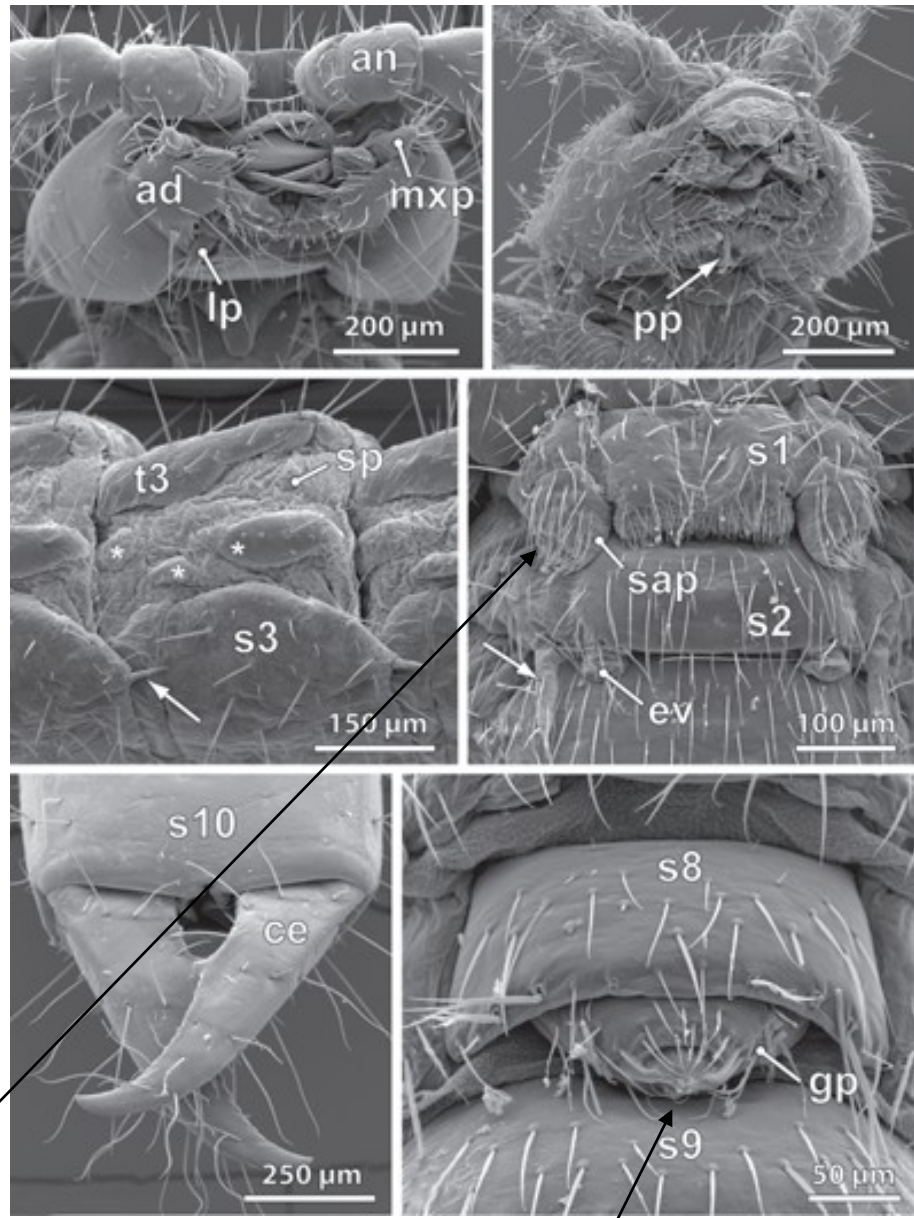


Archaeognatha, Zygentoma



Figs. 417–423. Abdominal end with genital apparatus of Thysanura. — 417: *Machilis*, male, 418: *Lepisma*, male in dorsal view, 419: *Machilis*, male in lateral view, 420: *Petrobius*, female, 421: *Thermobia*, female in ventral view, 422–423: gonapophyses (after Denis 419, and Snodgrass 420–423)

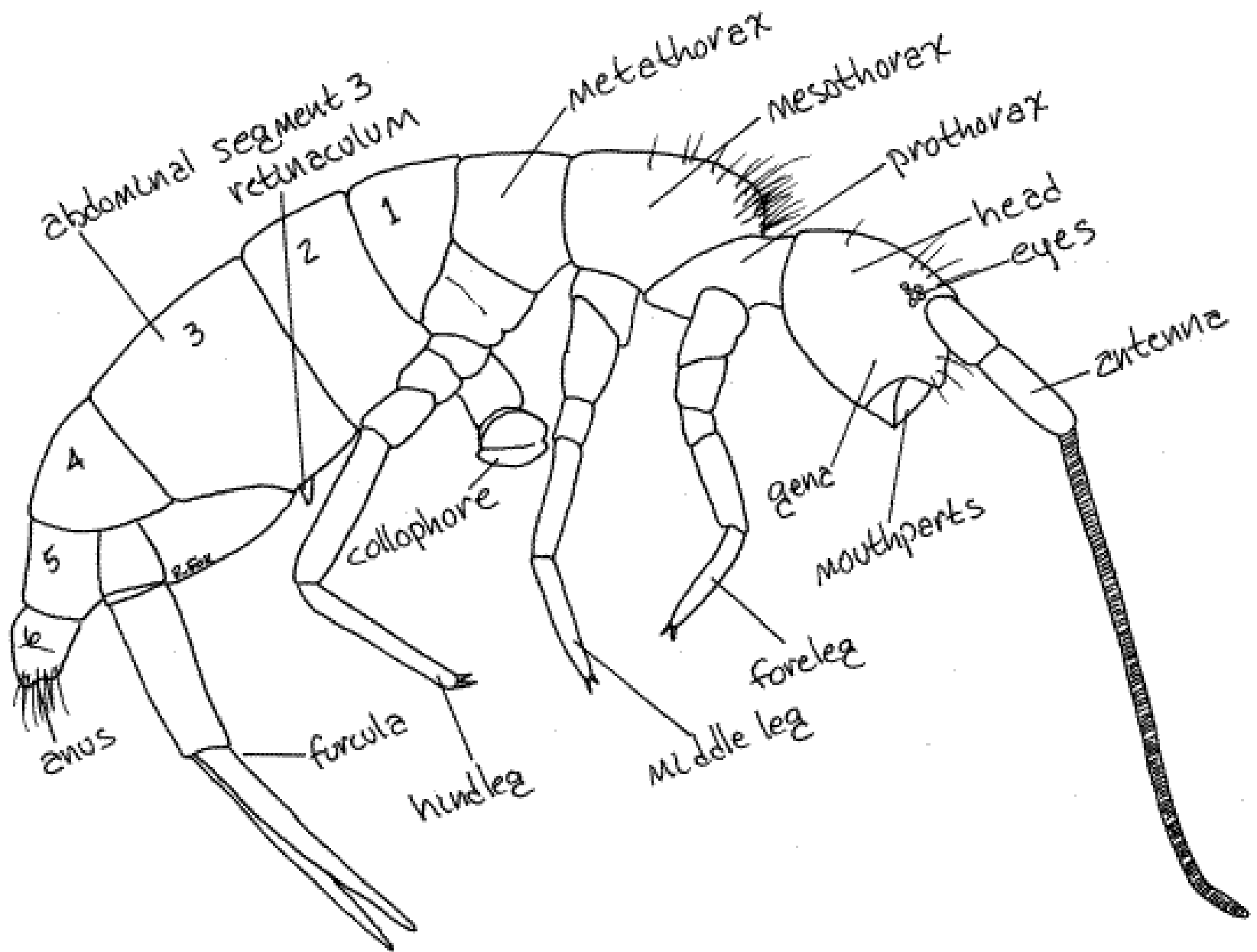
Diplura – vidličnatky

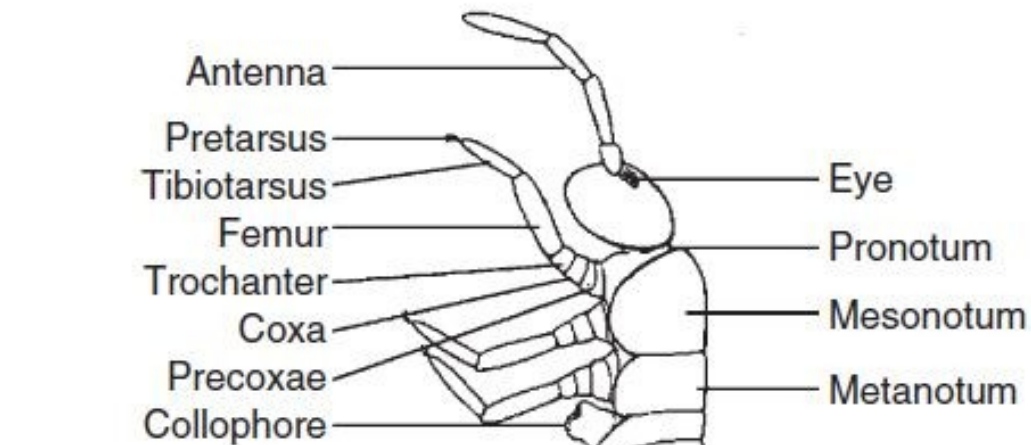


vychlípené kyčelní váčky (Cb) slouží přijímání vody z povrchu

genitální papila

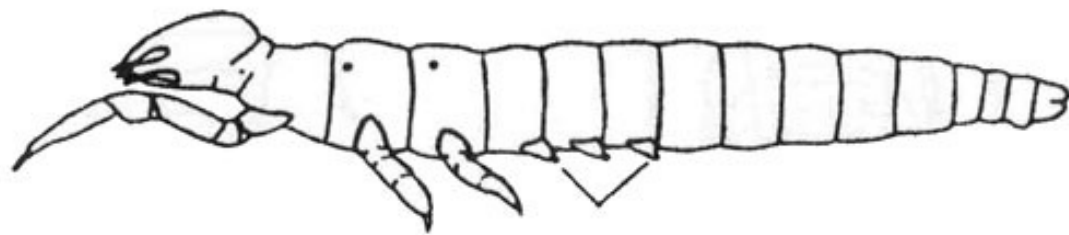
Collembola





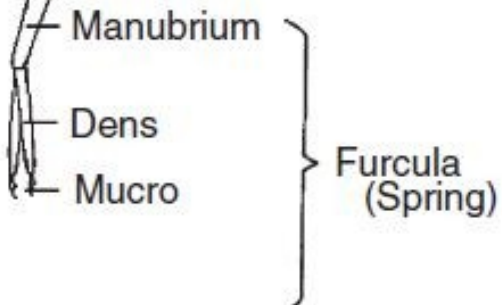
Tenaculum (catch)

PROTURA



rudimenty končetin

COLLEMBOLA



Protura – hmyzenky

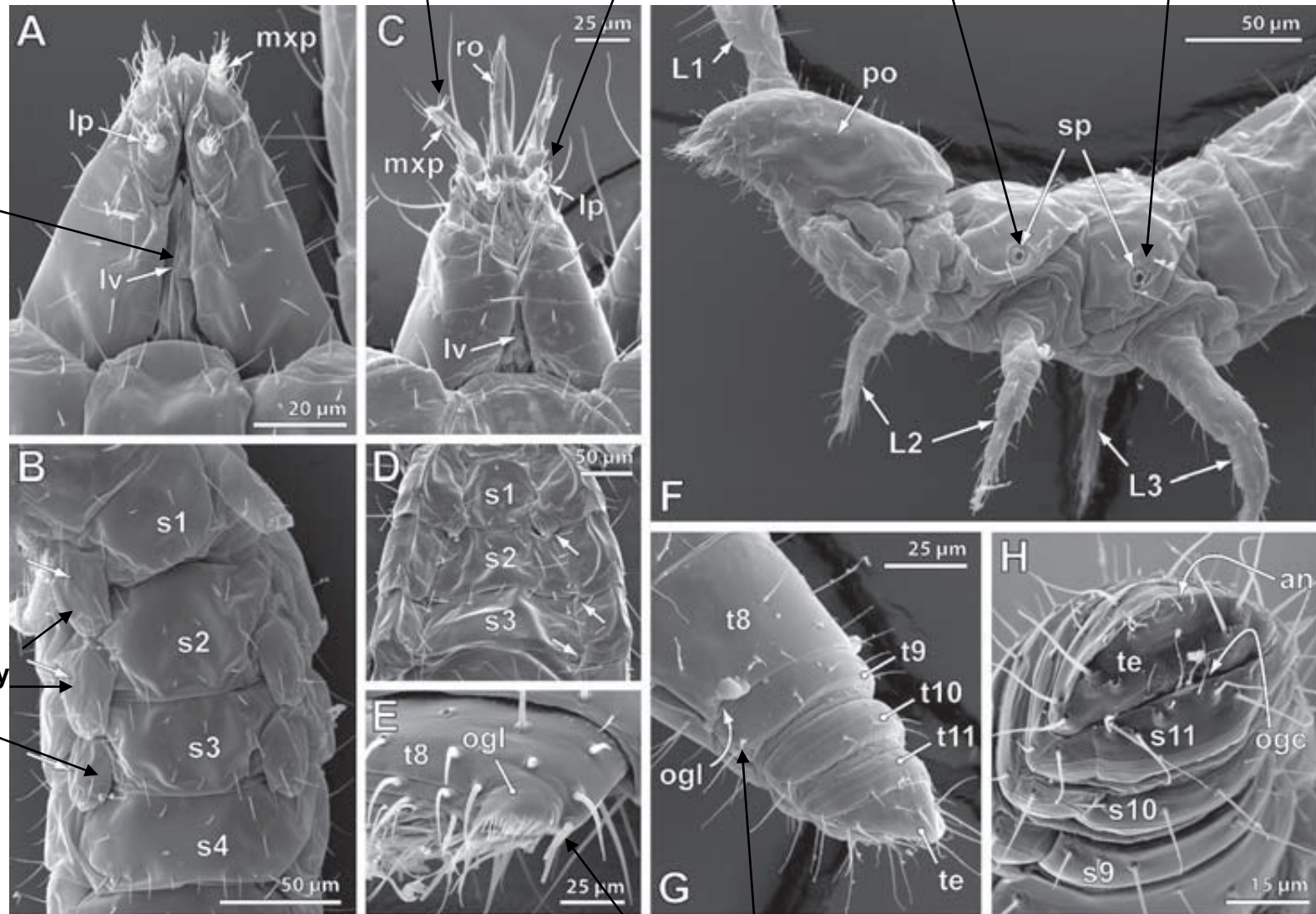
stigmata laterálně na tergitech středo- a zadohrudi

čelistní a pysková makadla

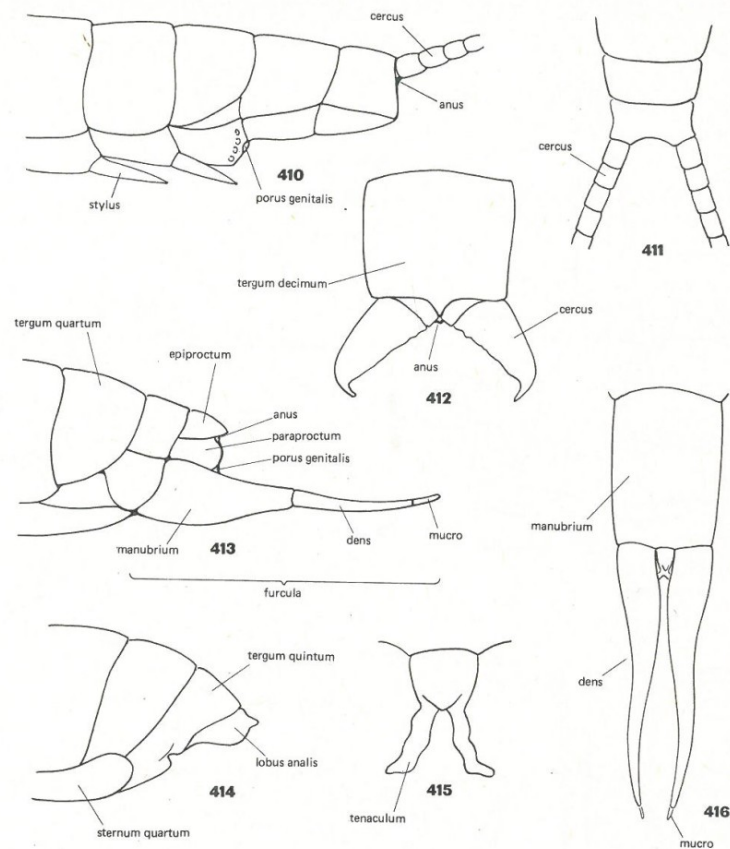
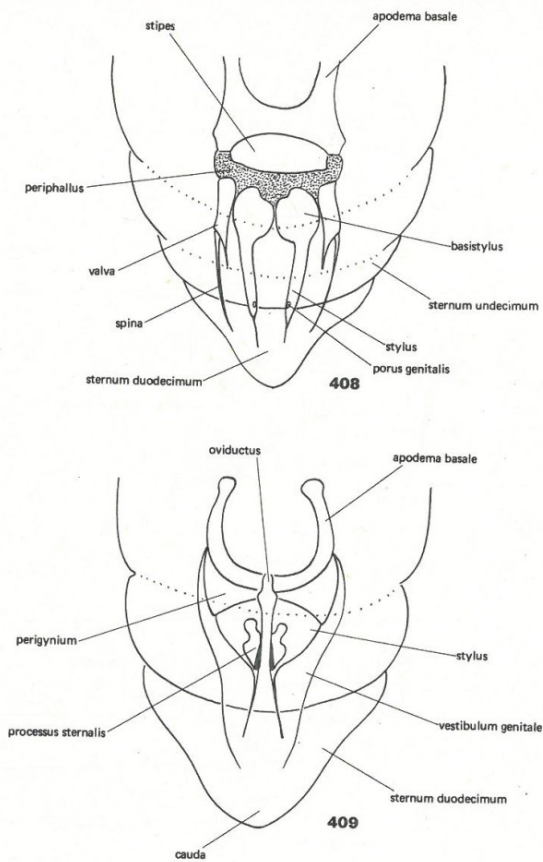
linea ventralis

rudimenty končetin

ústí párových žláz s odpudivým sekretem na zadečce



Protura

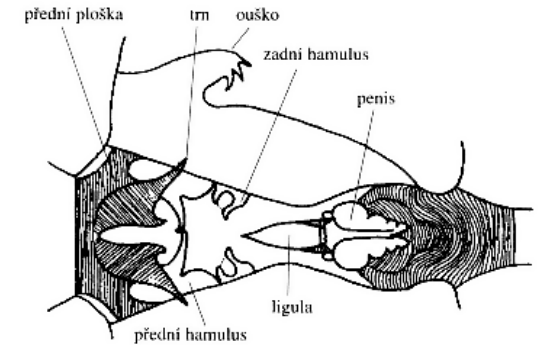
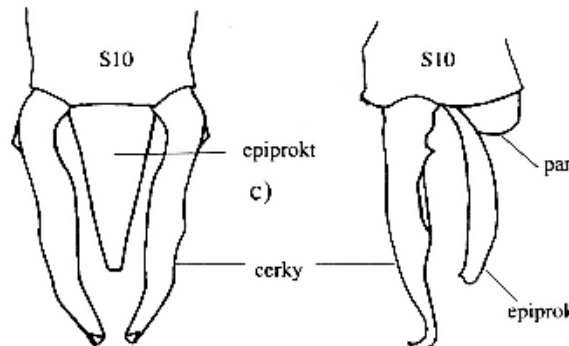
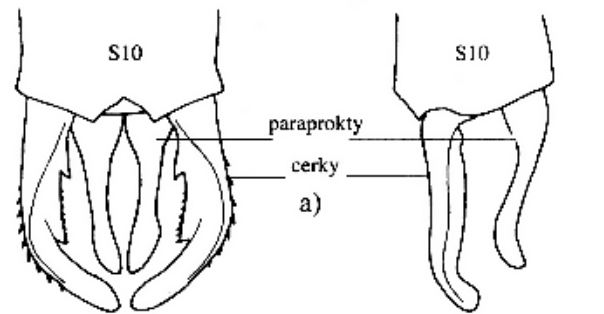
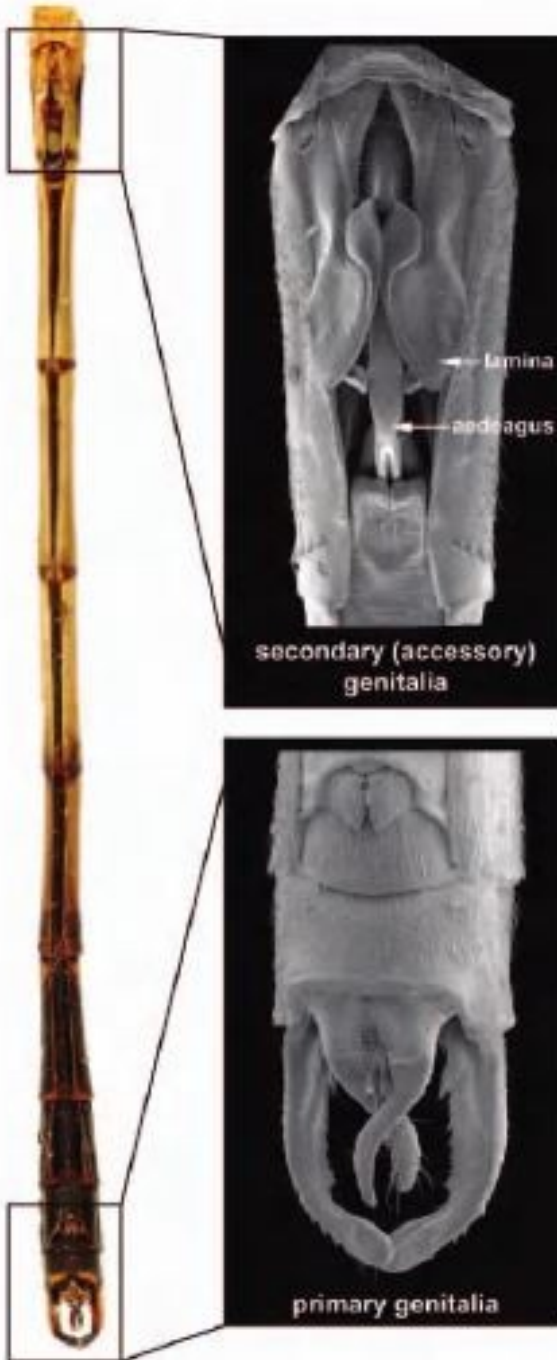


Figs. 408–409. Abdominal end of Protura in ventral view, 408: male, and 409: female (after Tuxen)

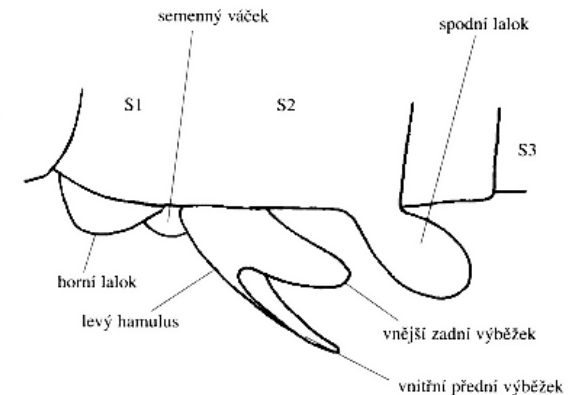
Figs. 410–416. Abdominal end of Diplura and Collembola. — 410–412: Diplura, 410–411: Campodea, 410: male, and 411: female, 412: Heterojapyx, female. 413–416: Collembola, 413: Podura, female, 414–416: Tomocerus, 414–415: male in lateral and dorsal view, and 416: female in dorsal view (after Snodgrass 410–412, and Shvanvich 413–416)

Řád ODONATA - abdomen

- samci: sekundární samčí kopulační orgány na 2. a 3. článku



Obr. 17
Vnější kopulační ústroje samečka šídla sitinového (*Aeshna juncea*, ♂)

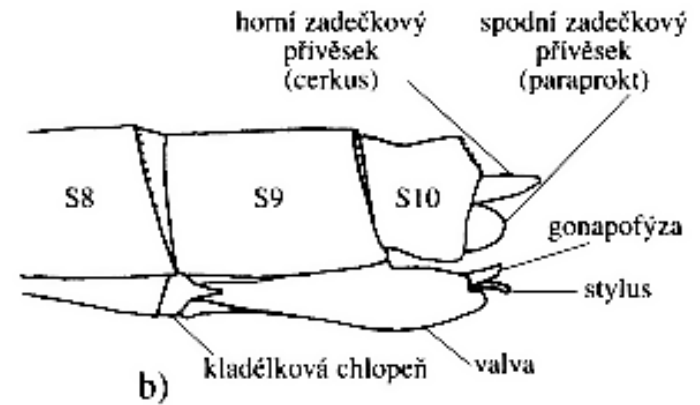
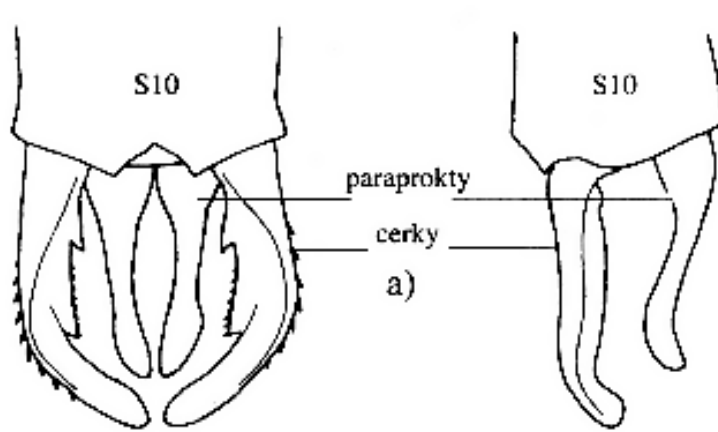


Obr. 18
Samčí přídatné orgány u vážky žíhané (*Sympetrum striolatum*), boční pohled zleva

Grimaldi & Engel 2005
Hanel & Zelený 2000

Vážky - Odonata

Zygoptera



Epiprocta

