

Fig. 2. Trilobita. Diagrams showing the structure of a generalized trilobite. A, dorsal. B, ventral.

An, anus; Ant, antenna; Dbl, doublure; E, compound eye; Glb, glabella; H, head or prosoma; Lm, labrum or hypostome; Plr, pleura (not the pleuron of other arthropods); Pyg, pygidium; Rac, rachis or axis; Th, thorax.

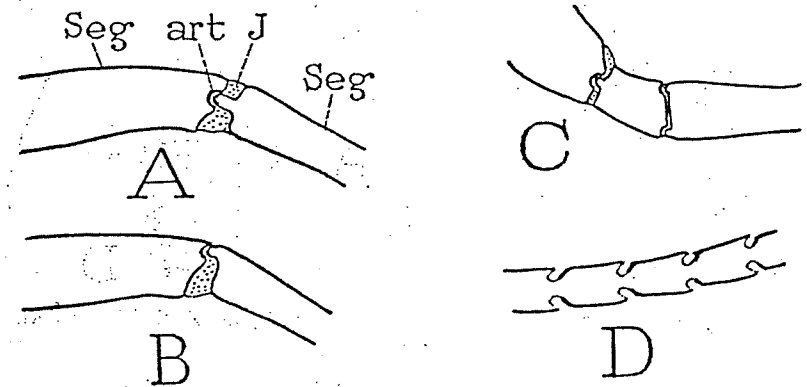


FIG. 18.—Limb segments, joints, and articulations.

A, Adjoining parts of two leg segments with articulated joint. B, Joint with single dorsal articulations. C, Double articulations, horizontal and vertical. D, Unarticulated joints of an antennal flagellum.

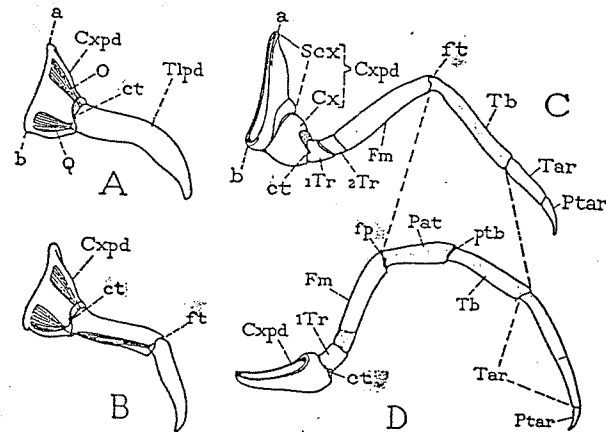


FIG. 43.—Diagrams of the evolution of the segmentation of an arthropod leg. A, theoretically primitive limb divided into coxopodite (*Cxpd*) and telopodite (*Tlpd*). B, the telopodite segmented at the femoro-tibial joint (*ft*). C, a primitive insect leg, with coxopodite divided into subcoxa (*Scx*) and coxa (*Cx*), the telopodite six-segmented. D, a typical arachnid limb with a patella (*Pat*) interpolated between femur and tibia.

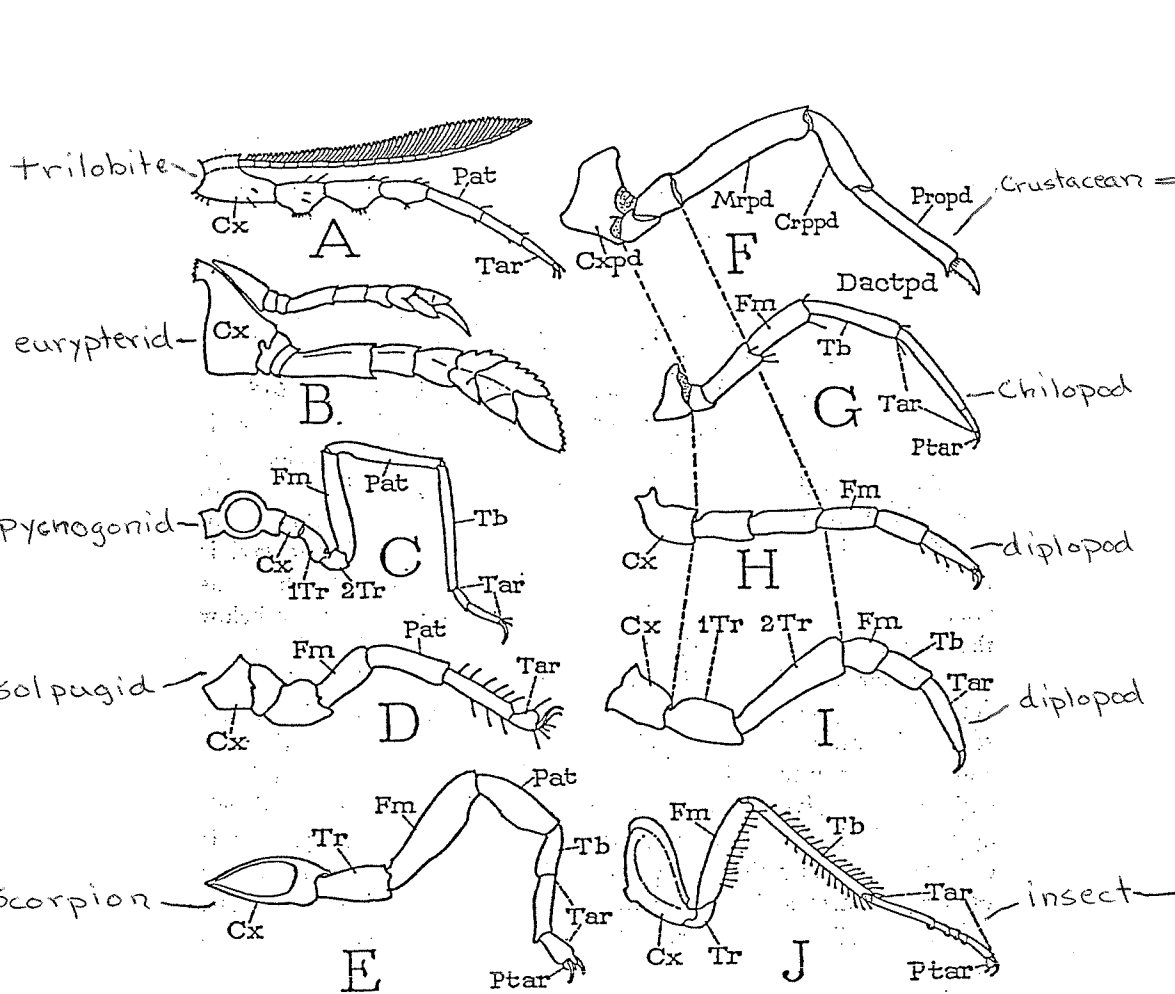


FIG. 19.—Comparative leg segmentation.

A, Leg of a trilobite, apparently 8-segmented, with coxal epipodite (from Störmer, 1939). B, Fifth and sixth legs of a eurypterid, apparently 9-segmented (from Clarke and Ruedemann, 1912). C, 8-segmented leg of a pycnogonid. D, 8-segmented leg of a solpugid arachnid. E, 7-segmented leg of a scorpion. F, 7-segmented leg of a crustacean, *Cambarus*. G, 7-segmented leg of a chilopod, *Lithobius*. H, Leg of a julid diplopod, 7 subequal segments. I, Leg of a polydesmoid diplopod, 7 segments of unequal length. J, Typical 6-segmented insect leg, *Periplaneta*.

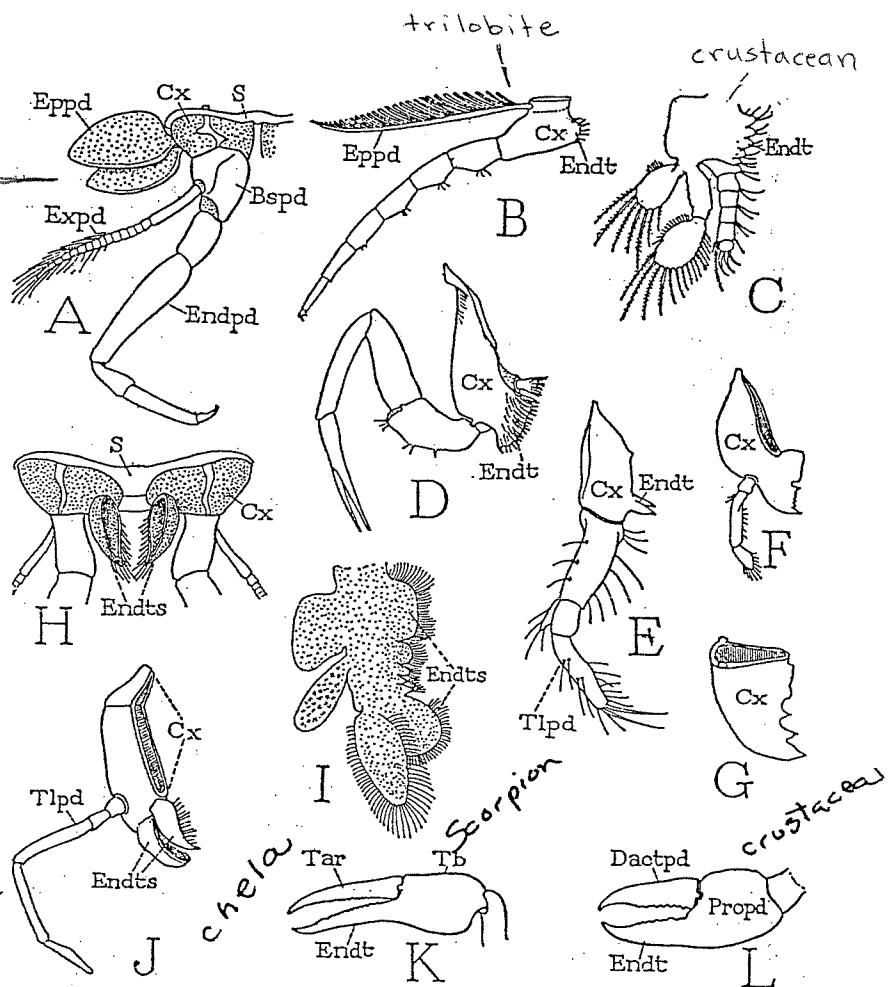


FIG. 21.—Development of exites and endites on arthropod limbs.

A, A biramous crustacean limb, left pereopod of *Anaspides*, posterior. B, A uniramous trilobite leg with coxal exite and endite (from Störmer, 1939). C, Thoracic limb of the primitive crustacean *Hutchinsoniella*. D, Fourth leg of *Limulus*. E, Leglike mandible of an ostracod, *Philomedes*. F, A crustacean mandible with reduced telopodite. G, An insect mandible, telopodite eliminated. H, Bases of sixth or seventh thoracic limbs of *Anaspides* with coxal endites. I, A phyllopodial branchiopod limb with segmental endites, segmentation suppressed. J, An insect maxilla. K, Pedipalp chela of a scorpion. L, Chela of a decapod crustacean.

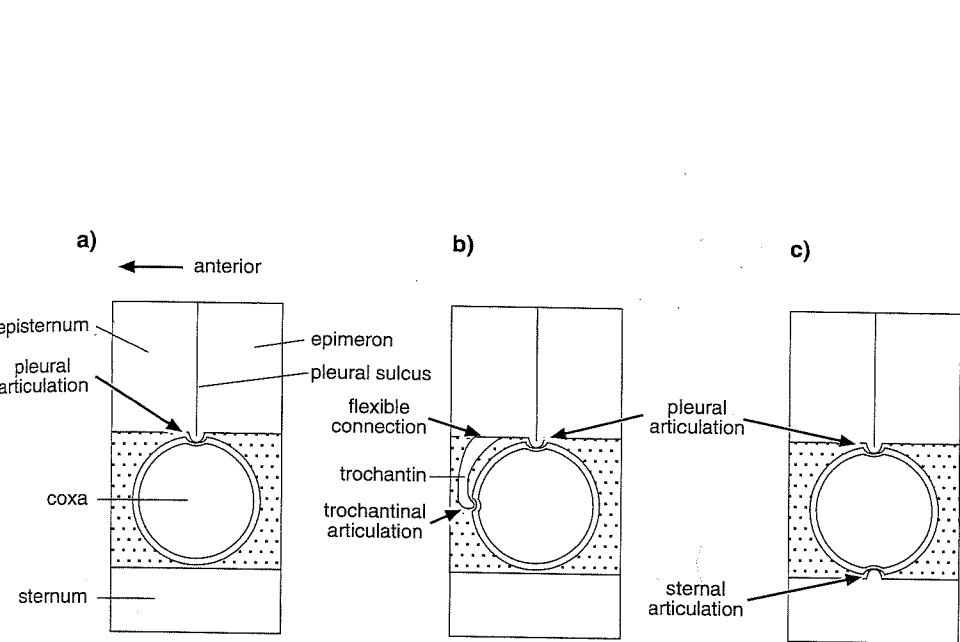


Fig. 8.2. Three types of coxal articulation with the thorax. Points of articulation shown by arrows. Membranous regions stippled (after Snodgrass, 1935).

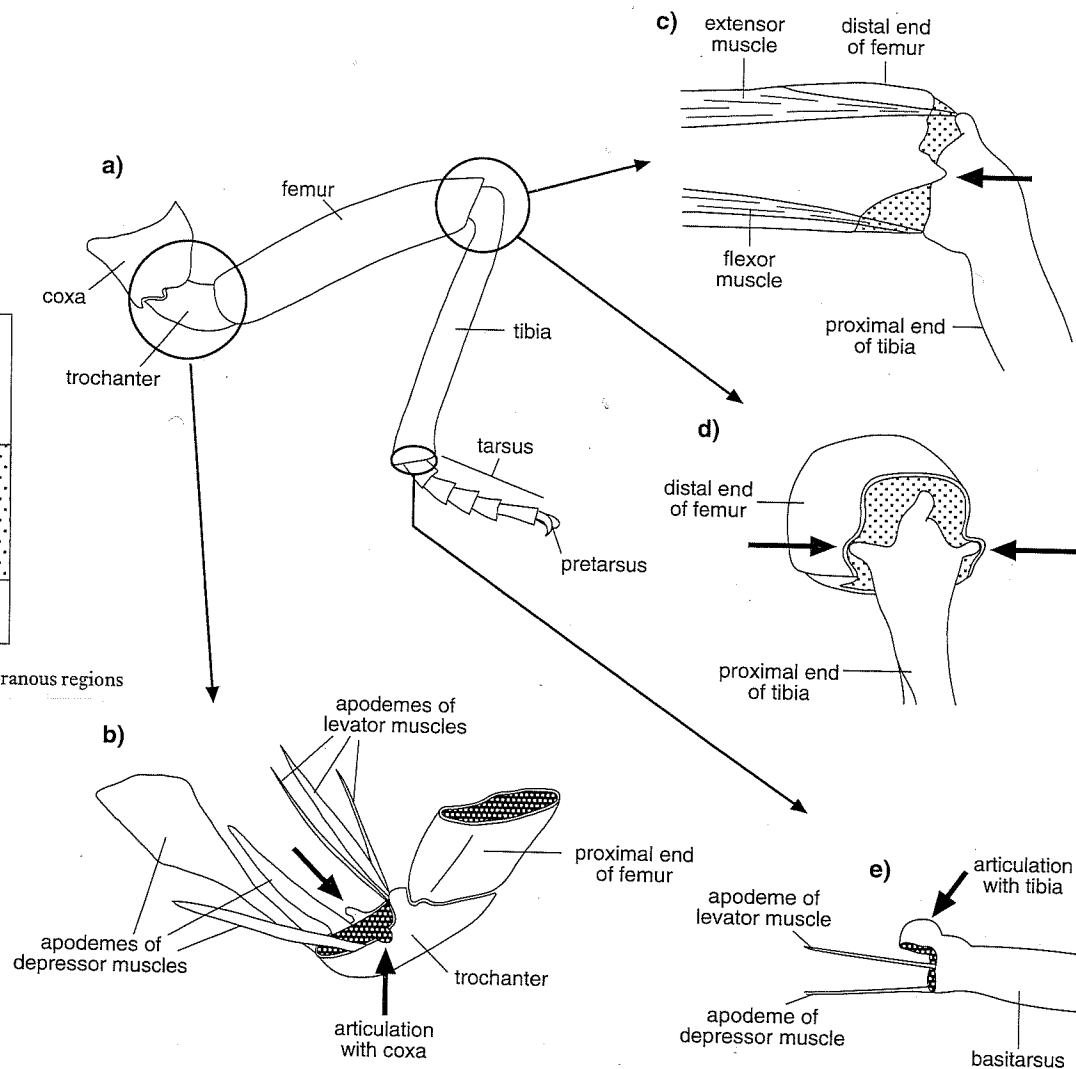
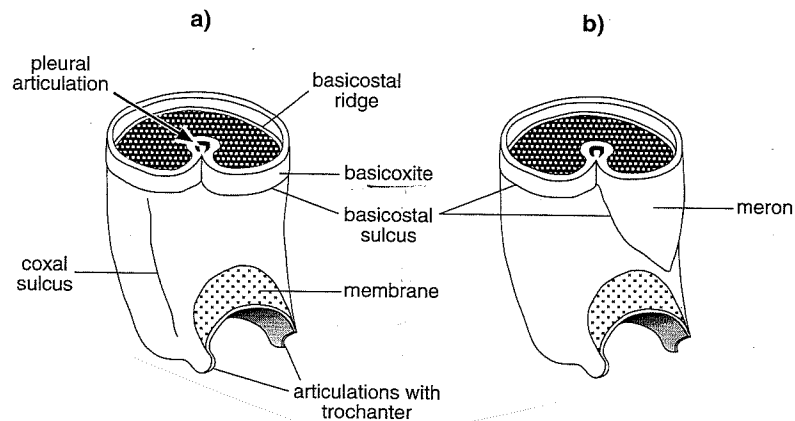
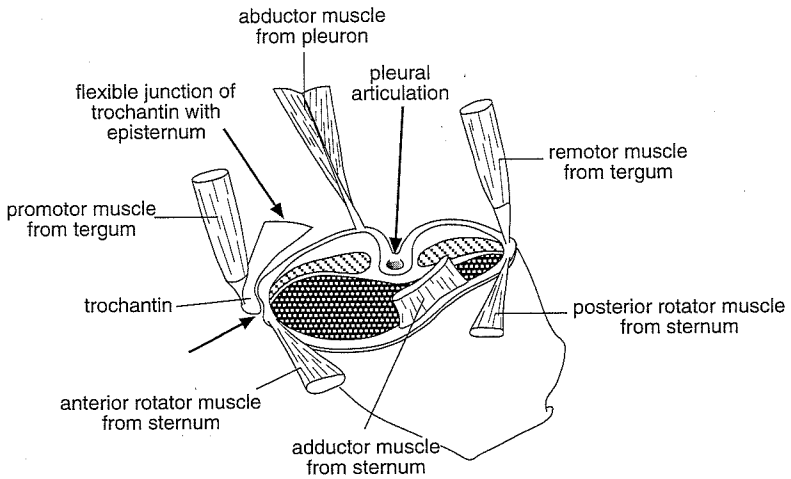
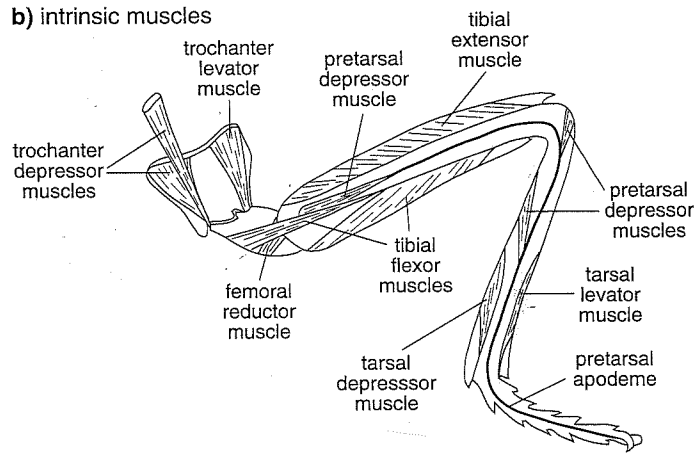


Fig. 8.1. Leg and articulations. Points of articulation shown by bold arrows (mainly after Snodgrass, 1935, 1952). (a) Typical insect leg. (b) Dicondylic articulation of trochanter with coxa and the apodemes of muscles moving the trochanter. Notice that the femur is united with the trochanter; there is no moving joint. (c), (d) dicondylic articulation of tibia and femur, (c) side view, (d) end view. (e) Monocondylic, ball articulation of tarsus with tibia.

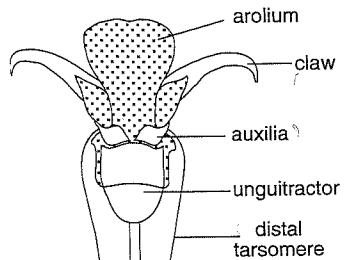
a) extrinsic muscles



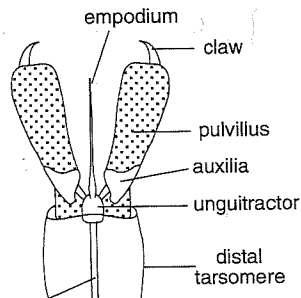
b) intrinsic muscles



a) *Periplaneta*



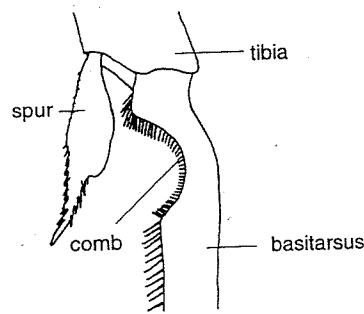
b) Diptera



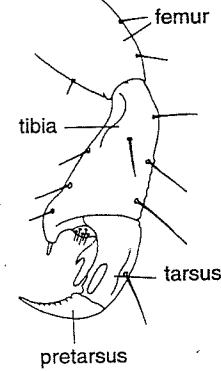
apodeme for attachment of pretarsal depressor muscle

Fig. 8.5. Leg muscles. (a) Extrinsic muscles of coxa as seen from the midline of the insect. Muscles arising from the areas marked with diagonal hatching are omitted (from Snodgrass, 1935). (b) Intrinsic muscles. Note that one trochanter depressor muscle is extrinsic (after Snodgrass, 1927).

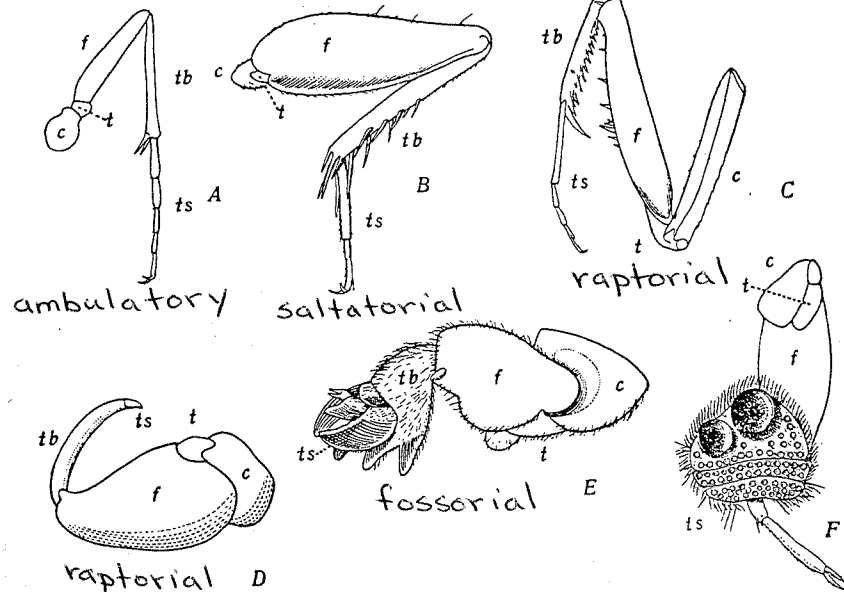
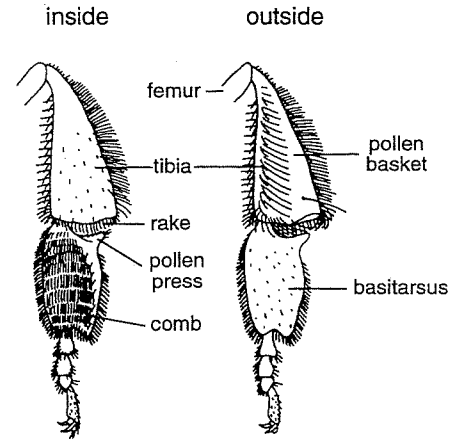
c) grooming



b) grasping



d) pollen collecting



a) digging

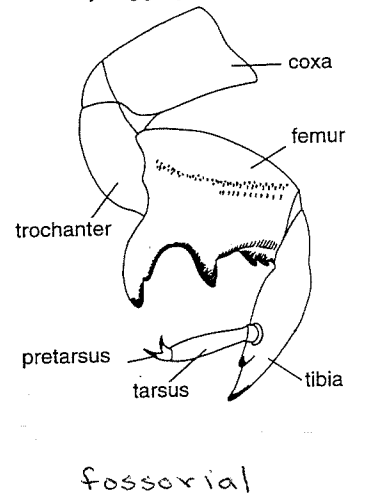


Fig. 64. Legs of insects adapted for: A, walking; B, jumping (hind leg of cricket); C, grasping (front leg of mantid); D, clasping (front leg of bug); E, digging (front leg of mole cricket); F, holding fast by suction (front leg of male diving beetle). c, coxa; f, femur; s, spur; t, trochanter; tb, tibia; ts, tarsus. (From Folsom and Wardle, Entomology, by permission of The Blakiston Co.)