

•2

ARTHROPODS OF PUBLIC HEALTH IMPORTANCE: KEY TO COMMON CLASSES AND ORDERS

Harold George Scott and Chester J. Stojanovich

1. Three or 4 pairs of walking legs (Fig. 1 A & B).....2
 Five or more pairs of walking legs (Fig. 1 C & D).....33

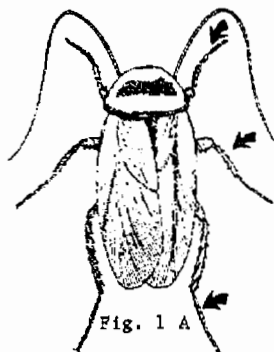


Fig. 1 A

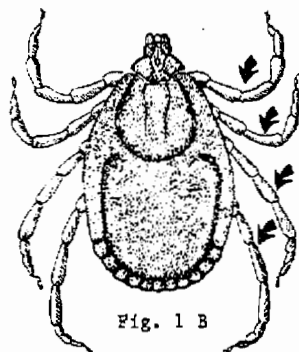


Fig. 1 B

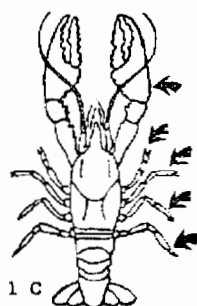


Fig. 1 C

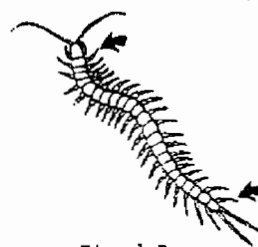


Fig. 1 D

2. Three pairs of walking legs (Fig. 2 A).....3
 Four pairs of walking legs (Fig. 2 B).....25



Fig. 2 A

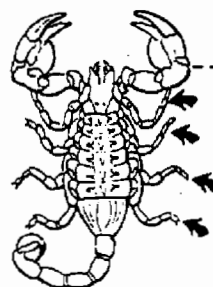


Fig. 2 B

-----mouthparts

3. Wings present, well developed (Fig. 3 A).....4
 Wings absent or rudimentary (Fig. 3 B & C).....13

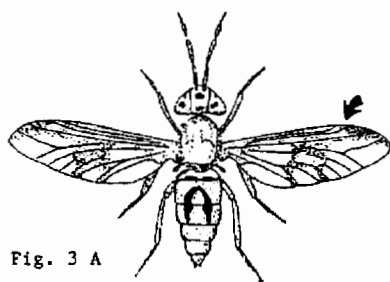


Fig. 3 A

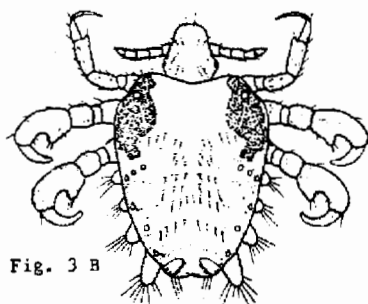


Fig. 3 B

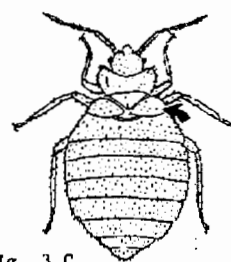


Fig. 3 C

4. With one pair of membranous wings (Fig. 4 A). ORDER DIPTERA.....5
 With two pairs of wings (Fig. 4 B & C).....6



Fig. 4 A

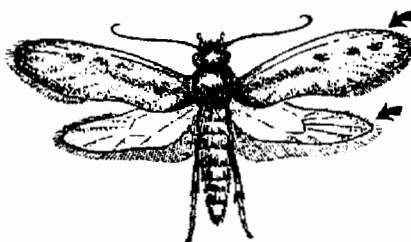


Fig. 4 B

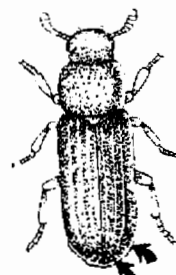


Fig. 4 C

5. Wings with scales (Fig. 5 A). FAMILY CULICIDAE.....MOSQUITO
 Wings without scales (Fig. 5 B). DIPTERA OTHER THAN MOSQUITOES.....FLY

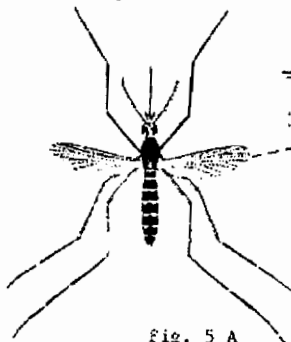


Fig. 5 A

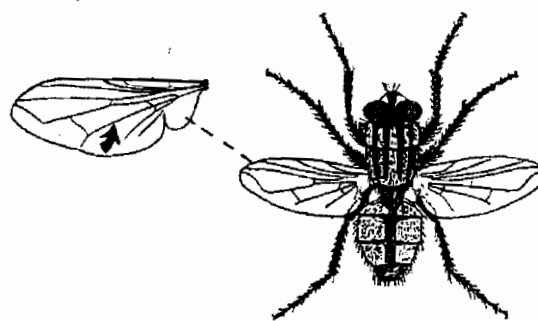


Fig. 5 B

6. Mouthparts adapted for sucking, with elongate proboscis (Fig. 6 A).....7
 Mouthparts adapted for chewing, without elongate proboscis (Fig. 6 B).....9

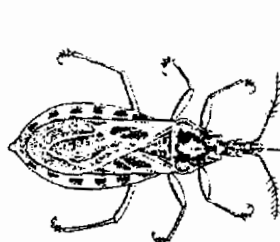


Fig. 6 A

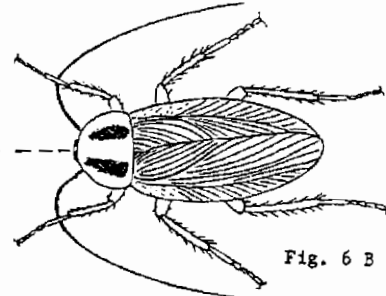
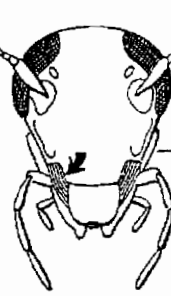
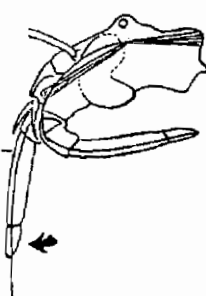


Fig. 6 B

7. Wings densely covered with scales; proboscis coiled (Fig. 7 A). ORDER LEPIDOPTERA.....
MOTH OR BUTTERFLY
 Wings not covered with scales; proboscis not coiled (Fig. 7 B).....8



Fig. 7 A

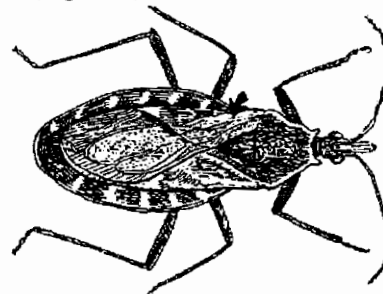


Fig. 7 B

8. Wing with fringe of long hair (Fig. 8 A). ORDER THYSANOPTERA.....THRIPS
 Wing without long hair (Fig. 8 B). ORDER HEMIPTERA.....KISSING BUG

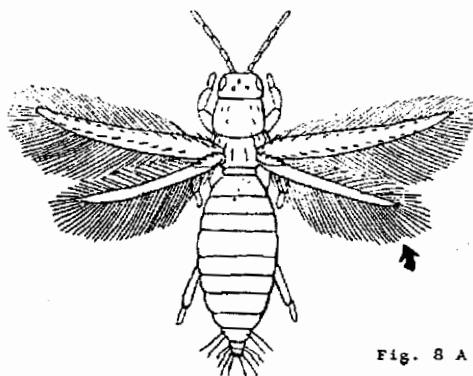


Fig. 8 A

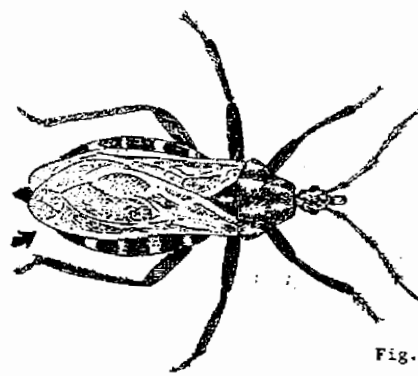


Fig. 8 B

●4

9. Both pair of wings membranous and similar in structure (Fig. 9 A).....10

Front pair of wings shell-like or leathery, serving as covers for the second pair (Fig. 9 B).....11



Fig. 9 A

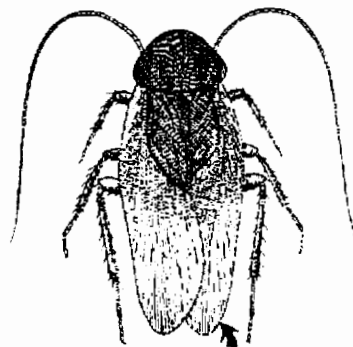


Fig. 9 B

10. Both pairs of wings similar in size (Fig. 10 A). ORDER ISOPTERA.....TERMITE

Hind wing much smaller than front wing (Fig. 10 B). ORDER HYMENOPTERA.....

.....BEE, HORNET, WASP, YELLOW JACKET, OR ANT

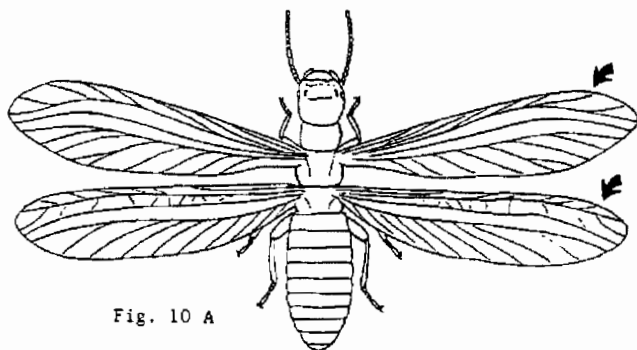


Fig. 10 A

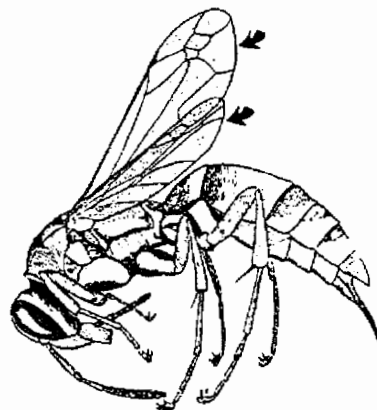


Fig. 10 B

11. Front wings horny or leathery, without distinct veins (Fig. 11 A).....12

Front wings leathery or paper-like, with distinct veins (Fig. 11 B). ORDER ORTHOPTERA.....COCKROACH

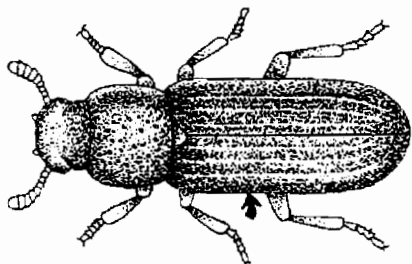


Fig. 11 A

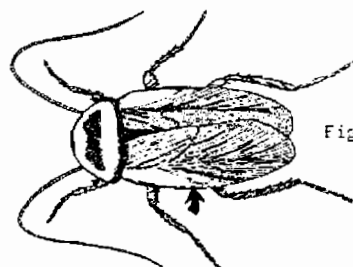


Fig. 11 B

12. Abdomen with prominent cerci; wings shorter than abdomen (Fig. 12 A). ORDER DERMAPTERA.....EARWIG

Abdomen without prominent cerci; wings covering abdomen (Fig. 12 B). ORDER COLEOPTERA.....BEETLE

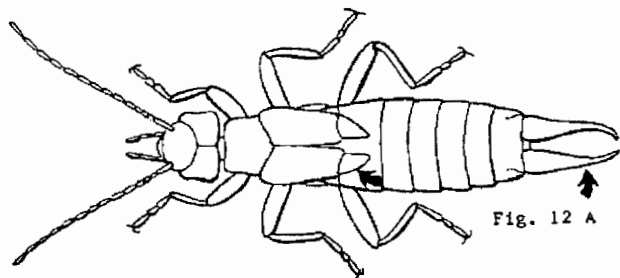


Fig. 12 A

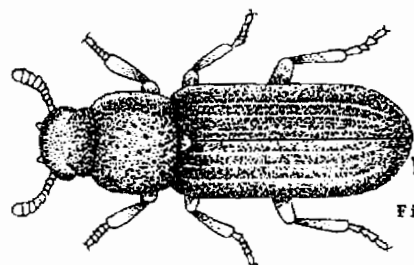


Fig. 12 B

13. Mouthparts with jaws for chewing (Fig. 13 A).....14
 Mouthparts with a long beak or stylets for sucking up food (Fig. 13 B).....21

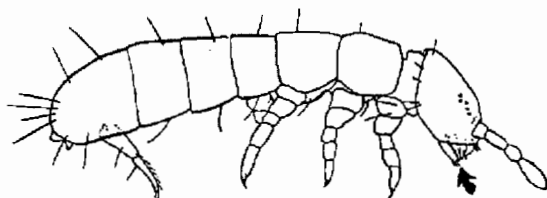


Fig. 13 A

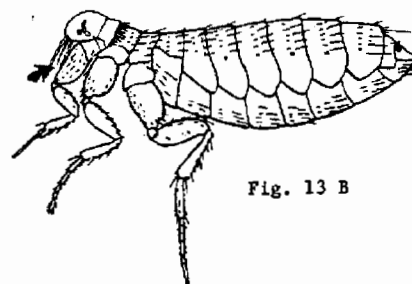


Fig. 13 B

14. With three long terminal tails (Fig. 14 A). ORDER THYSANURA.....SILVERFISH AND FIREBRAT
 Without three long terminal tails (Fig. 14 B).....15

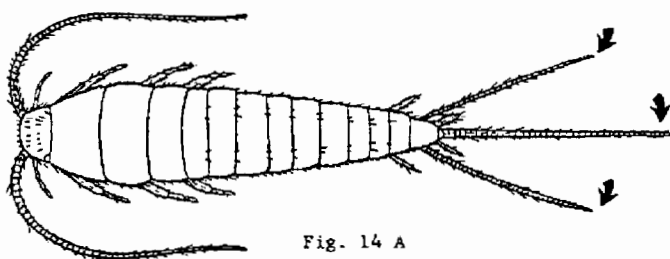


Fig. 14 A

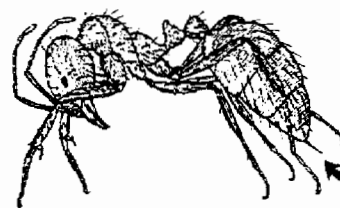


Fig. 14 B

15. Abdomen with prominent pair of cerci (Fig. 15 A). ORDER DERMAPTEPA.....EARWIG
 Abdomen without prominent pair of cerci (Fig. 15 B).....16

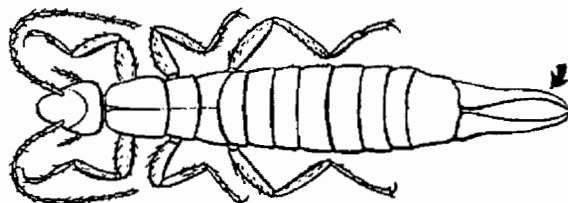


Fig. 15 A



Fig. 15 B

16. With narrow waist (Fig. 16 A). ORDER HYMENOPTERA.....ANT
 Without narrow waist (Fig. 16 B).....17



Fig. 16 A

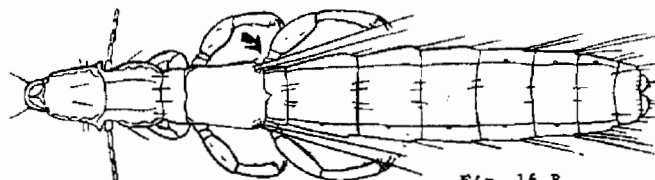


Fig. 16 B

•6

17. Antenna with fewer than 8 segments (Fig. 17 A).....18
 Antenna with more than 8 segments (Fig. 17 B).....19



Fig. 17 A

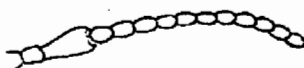


Fig. 17 B

18. Abdomen with 6 or fewer segments (Fig. 18 A). ORDER COLLEMBOLA.....SPRINGTAIL
 Abdomen with more than 6 segments (Fig. 18 B). ORDER MALLOPHAGA.....CHEWING LOUSE

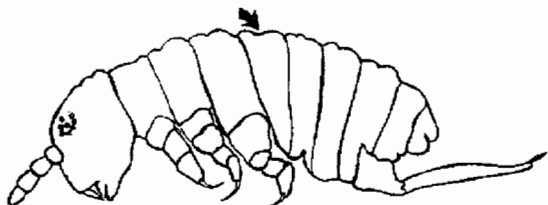


Fig. 18 A

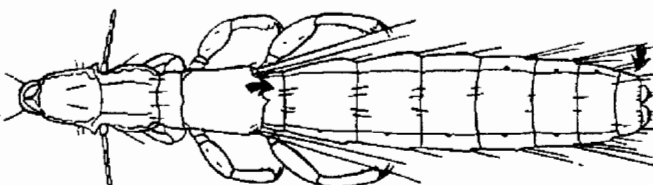


Fig. 18 B

19. Tarsus with 4-5 segments (Fig. 19 A).....20
 Tarsus with 1-3 segments (fig. 19 B). ORDER PSOCOPTERA.....BOOK LOUSE OR PSOCID



Fig. 19 A

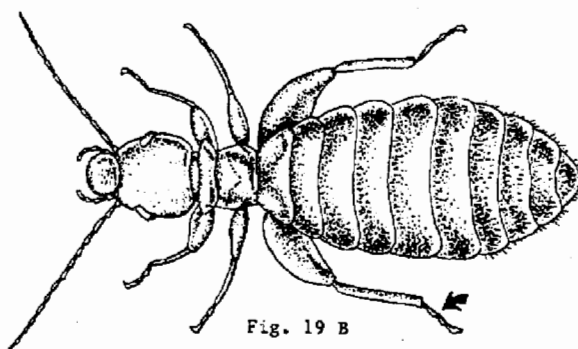


Fig. 19 B

20. Pronotum narrower than head, never covering head (Fig. 20 A). ORDER ISOPTERA.....TERMITE
 Pronotum broader than head, often covering head (Fig. 20 B). ORDER ORTHOPTERA.....COCKROACH

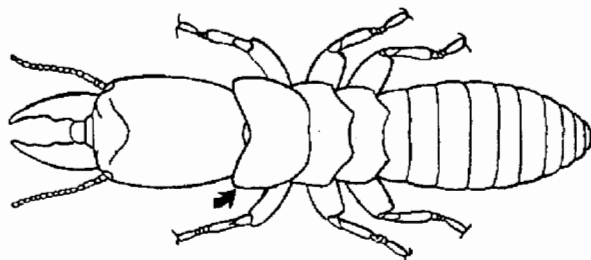


Fig. 20 A

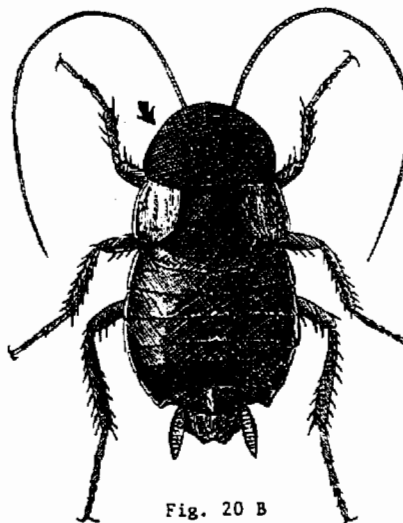


Fig. 20 B

21. Flattened laterally (Fig. 21 A). ORDER SIPHONATERA.....FLEA
 Flattened dorso-ventrally (Fig. 21 B).....22

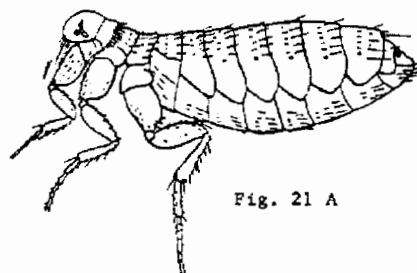


Fig. 21 A

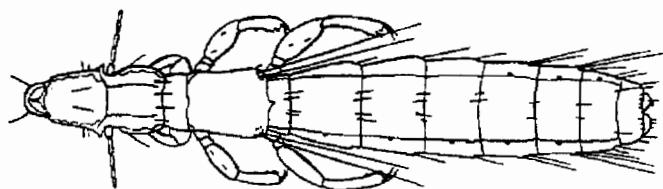


Fig. 21 B

22. Foot terminating in protrusible bladder (Fig. 22 A). ORDER THYSANOPTERA.....THRIPS
 Foot not terminating in protrusible bladder (Fig. 22 B).....23

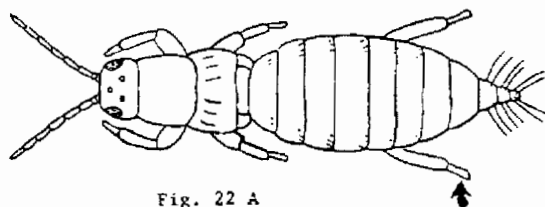


Fig. 22 A

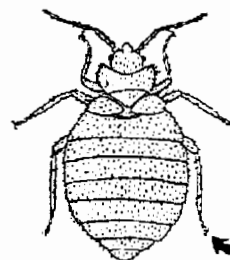


Fig. 22 B

23. Beak jointed (Fig. 23 A). ORDER HEMIPTERA.....BEDBUG
 Beak not jointed (Fig. 23 B).....24

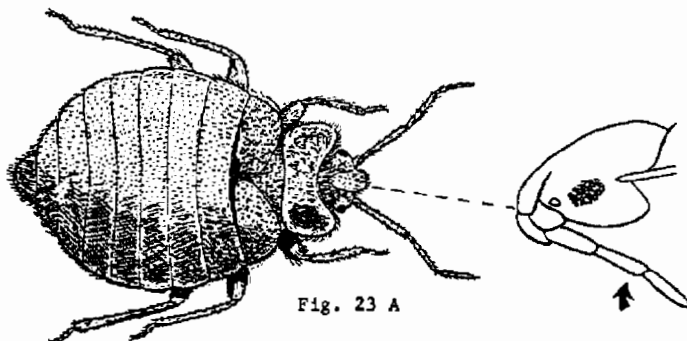


Fig. 23 A

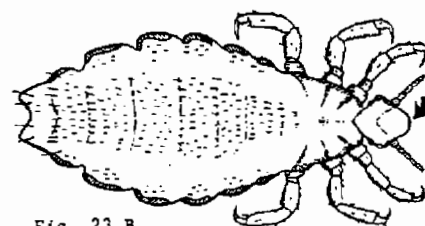


Fig. 23 B

24. Mouthparts retracted into head (Fig. 24 A). ORDER ANOPLURA.....SUCKING LOUSE
 Mouthparts not retracted into head (Fig. 24 B). ORDER DIPTERA.....KED OR LOUSE FLY

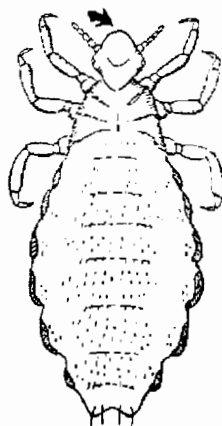


Fig. 24 A

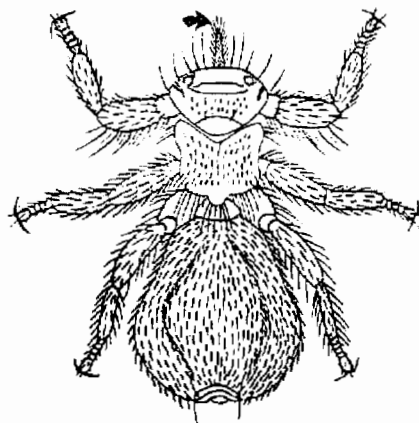


Fig. 24 B

●8

25. Abdomen well-developed (Fig. 25 A). CLASS ARACHNIDA.....26
 Abdomen peg-like (Fig. 25 B). CLASS PYCNOGONIDA.....SEA SPIDER

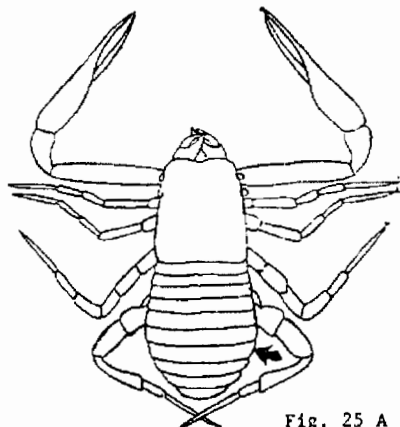


Fig. 25 A

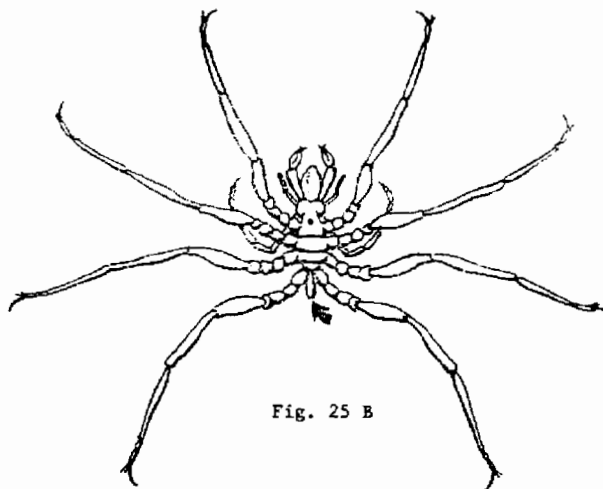


Fig. 25 B

26. Abdomen distinctly segmented (Fig. 26 A).....27
 Abdomen not distinctly segmented (Fig. 26 B).....31

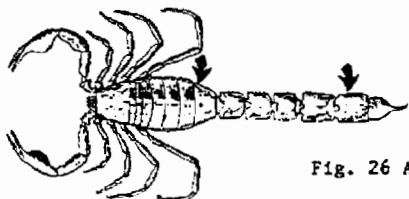


Fig. 26 A

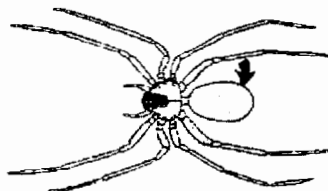


Fig. 26 B

27. Abdomen lengthened to form a long tail (Fig. 27 A).....28
 Abdomen not lengthened to form a long tail (Fig. 27 B).....29

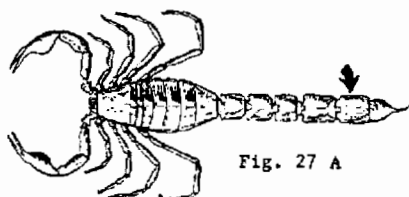


Fig. 27 A

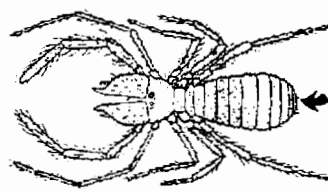


Fig. 27 B

28. Tail with stinger (Fig. 28 A). ORDER SCORPIONIDA.....SCORPION
 Tail without stinger (Fig. 28 B). ORDER PEDIPALPIDA.....WHIP SCORPION

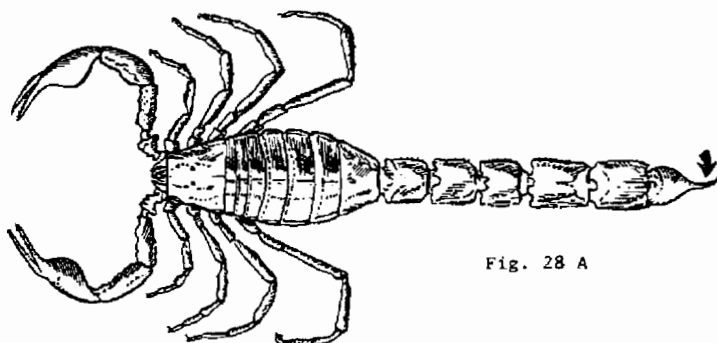


Fig. 28 A

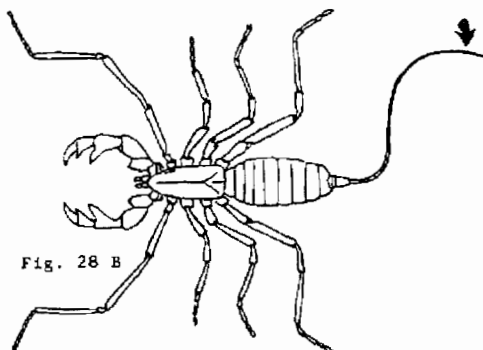


Fig. 28 B

29. With large pincer-like claws (Fig. 29 A). ORDER PSEUDOSCORPIONIDA.....PSEUDOSCORPION
 Without large pincer-like claws (Fig. 29 B).....30

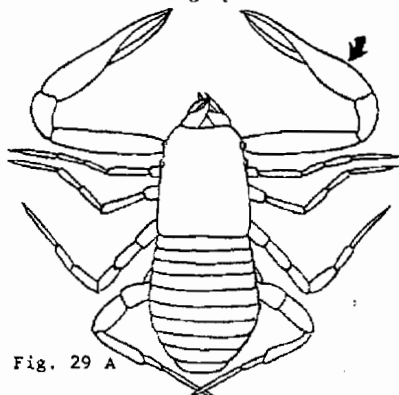


Fig. 29 A

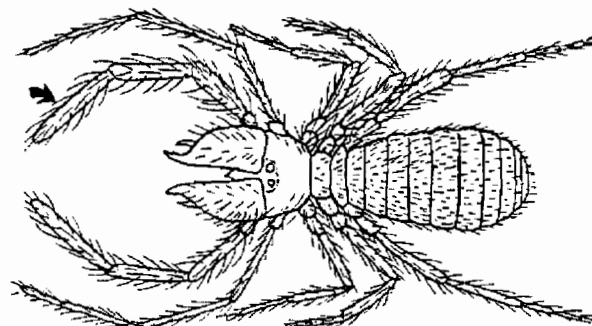


Fig. 29 B

30. Legs not longer than body (Fig. 30 A). ORDER SOLPUGIDA.....SUN SPIDER
 Legs much longer than body (Fig. 30 B). ORDER PHALANGIDA.....DADDY LONG-LEG SPIDER

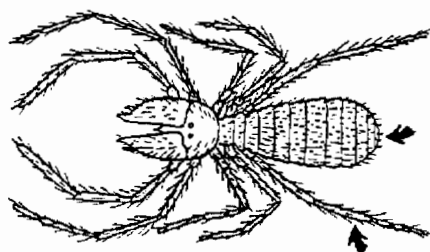


Fig. 30 A

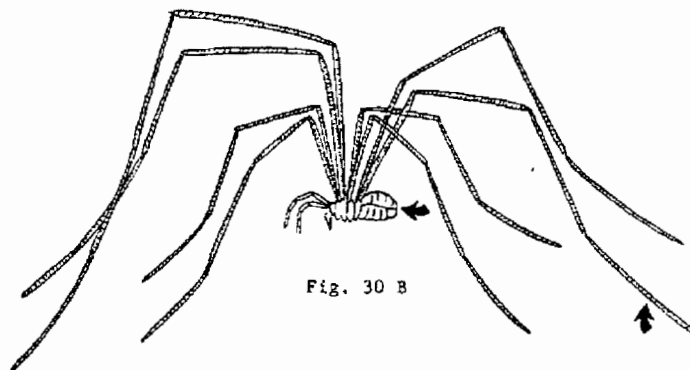


Fig. 30 B

31. Abdomen constricted to form a narrow waist (Fig. 31 A). ORDER ARANEIDA.....SPIDER
 Abdomen not constricted (Fig. 31 B).....32

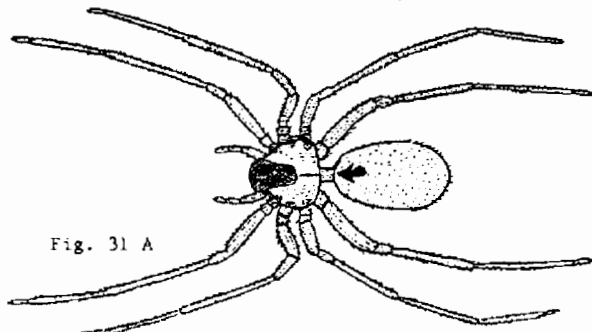


Fig. 31 A

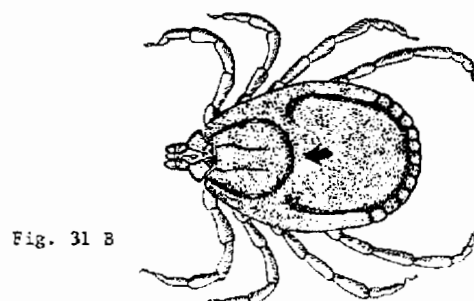


Fig. 31 B

32. Body with long hair; Haller's organ absent (Fig. 32 A). ORDER ACARINA.....MITE
 Body without hair or short hair; Haller's organ present (Fig. 32 B). ORDER ACARINA.....TICK

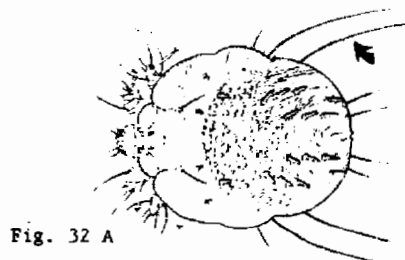


Fig. 32 A

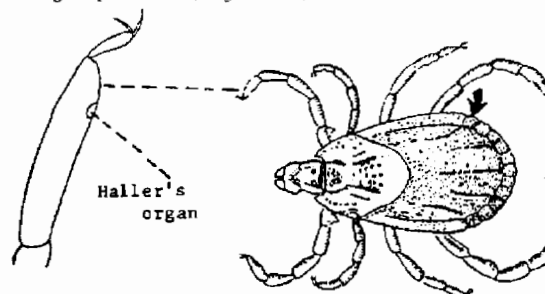


Fig. 32 B

• 10

33. Five to 7 pairs of walking legs (Fig. 33 A). CLASS CRUSTACEA.....34
 More than 14 pairs of walking legs (Fig. 33 B).....36

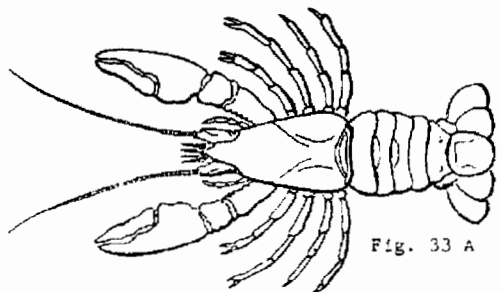


Fig. 33 A

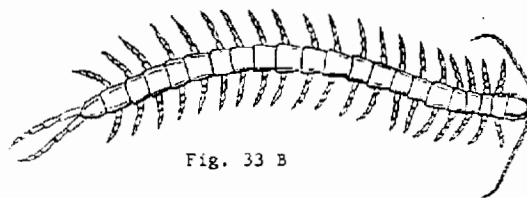


Fig. 33 B

34. Abdomen without appendages (Fig. 34 A). ORDER COPEPODA.....COPEPOD
 Abdomen with appendages (Fig. 34 B).....35

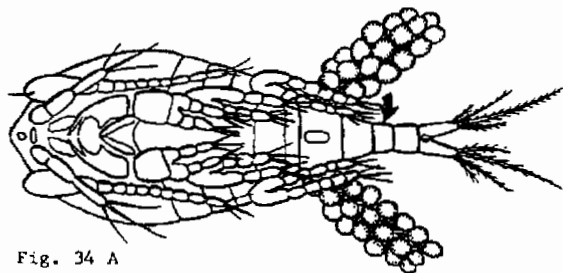


Fig. 34 A

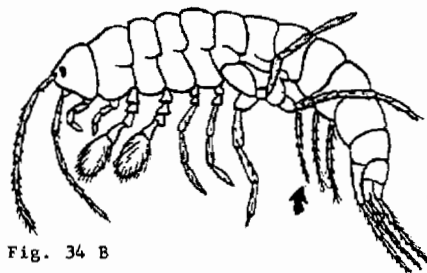


Fig. 34 B

35. Thorax covered with a fused plate; eyes, when present, on movable stalks (Fig. 35 A & B).....
 ORDER DECAPODA.....LOBSTER, CRAB, CRAYFISH, SHRIMP, ETC.
 Thorax not covered with a fused plate; eyes, when present, not on movable stalks (Fig. 35 C & D)...
 ORDER ISOPODA.....SOWBUG, PILLBUG

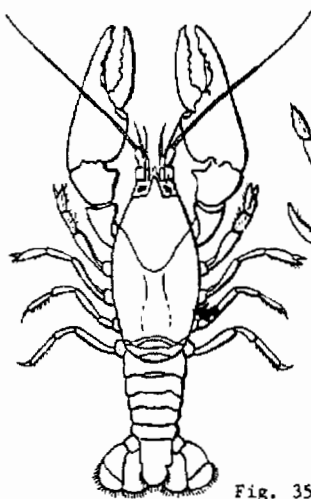


Fig. 35 A

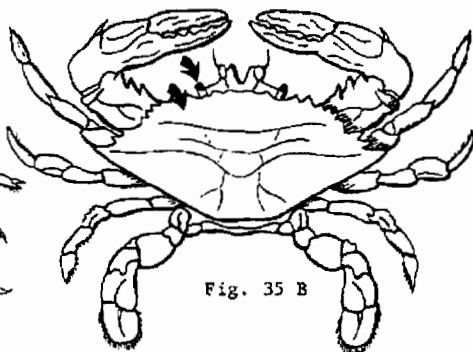


Fig. 35 B

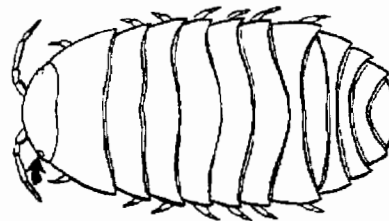


Fig. 35 C

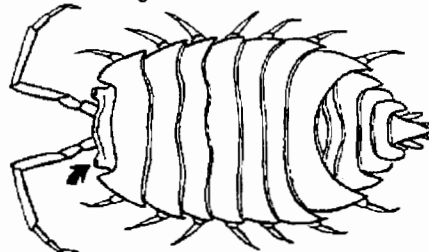


Fig. 35 D

36. One pair of legs per body segment (Fig. 36 A). CLASS CHILOPODA.....CENTIPEDE
 Two pairs of legs per body segment (Fig. 36 B). CLASS DIPLOPODA.....MILLIPEDE

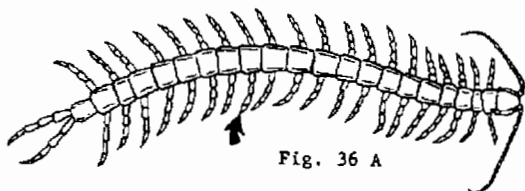


Fig. 36 A



Fig. 36 B