DICHOTOMOUS KEY
TO STREAM MACROINVERTEBRATES

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1. A. Segmented legs.......................... go to 2
   B. No segmented legs.......................... go to 14

2. A. 6 legs........................................ go to 3
   B. More than 6 legs.......................... go to 23

3. A. No wings, or wings not fully developed and do not cover entire body........ go to 4
   B. Wings cover entire body (but not legs), may appear beetle-like........... go to 26

4. A. Body longer than it is wide........ go to 5
   B. Body oval & flat; head & legs concealed beneath body.......................WATER PENNY
      (a type of beetle larva)
      Order Coleoptera, Family Psephenidae
      Feeding Group: SCRAPER

5. A. 2 or 3 distinct hairlike tails; tails not fleshy or hooked, but may be fringed with hairs.......................... go to 6
   B. Not as above.................................. go to 7

6. A. 2-3 tails; platelike or hairlike gills along sides of abdomen.......... MAYFLY LARVA
      Order Ephemeroptera
      Feeding Group: VARIES*
   B. 2 tails; may have hairy gills under thorax...................... STONEFLY LARVA
      Order Plecoptera
      Feeding Group: VARIES*

* If feeding group varies, see picture key on pages 155-157 for more information.
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7. A. 3 oar-shaped tails (gills) at end of abdomen; no gills along sides of abdomen

.......................... DAMSELFLY LARVA
Order Odonata, Suborder Zygoptera
Feeding Group: PREDATOR

B. Not as above.......................... go to 8

8. A. Fat abdomen; large eyes; mask-like lower lip............ DRAGONFLY LARVA
Order Odonata, Suborder Anisoptera
Feeding Group: PREDATOR

B. Not as above.......................... go to 9

9. A. May be hiding in case made of gravel or plant parts; abdomen ends in pair of prolegs which may be hidden by hairs; each proleg has single hook on end, sometimes fused together

.......................... CADDISFLY LARVA
Order Trichoptera
Feeding Group: VARIES*

B. Not as above.......................... go to 10

10. A. Well developed lateral filaments extend from abdominal segments........ go to 11

B. No lateral filaments along abdomen; body is hardened & stiff; tip of abdomen has small plate-like opening with hooks and filaments.

.......................... RIFFLE BEETLE LARVA
Order Coleoptera, Family Elmidae
Feeding Group: GATHERER COLLECTOR

*If feeding group varies, see picture key on page 158-161 for more information
(all drawings on this page from McCafferty: Aquatic Entomology, except as noted)
11. A. Fluffy or branched gill tufts under abdomen..............DOBSONFLY LARVA
       ("Hellgrammite")
       Order Megaloptera, Family Corydalidae
       Feeding Group: PREDATOR

       3/4"-4"
       (from IWL)

       B. Not as above............................................go to 12

12. A. Abdomen ends in single, unforked,
       long, hairlike tail....ALDERFLY LARVA
       Order Megaloptera, Family Sialidae
       Feeding Group: PREDATOR

       up to 1"

       B. Not as above............................................go to 13

13. A. Abdomen ends in a pair of prolegs, each
       with 2 hooks..............FISHFLY LARVA
       Order Megaloptera, Family Corydalidae
       Feeding Group: PREDATOR

       up to 1 1/2"

       B. Not as above; large, obvious mouthparts
       .........................AQUATIC BEETLE LARVA
       Order Coleoptera
       Feeding Group: PREDATOR

       1/4"-1"
       (from IWL)

14. A. Has small but distinct head; body less
       than 1/2" long.................................go to 15

       B. Appears not to have a head, although it
       may be retracted into body............go to 16

15. A. Body widens at bottom end (bowling
       pin shaped); may be attached to sub-
       strate; dark head....BLACK FLY LARVA
       Order Diptera, Family Simuliidae
       Feeding Group: FILTERER COLLECTOR

       larva
       up to 1/2"

       pupa

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15. B. Both ends of body about the same width; tiny pair of prolegs under head & at tip of abdomen... **MIDGE LARVA**
   **Order Diptera, Family Chironomidae**
   Feeding Group: GATHERER COLLECTOR

16. A. Fleshy Caterpillar-like body........ go to 17
   B. Body not caterpillar-like........... go to 18

17. A. Two feathered "horns" at back end; caterpillar-like legs
       .................. **WATERSNIPE FLY LARVA**
       **Order Diptera, Family Athericidae**
       Feeding Group: PREDATOR

       B. Can be up to 4" long; head not apparent because it is retracted into body; may have fleshy, finger-like extensions at one end
       .................... **CRANEFLY LARVA**
       **Order Diptera, Family Tipulidae**
       Feeding Group: SHREDDER OR PREDATOR

18. A. Body without hard shell........... go to 19
   B. Body with hard shell.............. go to 21

19. A. Flattened, unsegmented, worm-like body; distinct eye spots; gliding movement
       ...................... **PLANARIAN**
       (Flatworm)
       **Class Turbellaria**
       Feeding Group: PREDATOR or PARASITE

   B. Segmented body..................... go to 20

20. A. Flattened body with suckers at each end
       ...................... **LEECH**
       **Class Hirudinea**
       Feeding Group: PREDATOR or PARASITE

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20. B. Segmented, earthworm-like body

.................AQUATIC EARTHWORM
Class Oligochaeta
Feeding Group: GATHERER COLLECTOR

21. A. Snail-like..........................go to 21

B. Body enclosed within two hinged shells
......FRESHWATER CLAM or MUSSEL
Class Pelecypoda
Feeding Group: FILTERER COLLECTOR

22. A. Has operculum (hard covering used to
    close the opening)............GILLED SNAIL
Class Gastropoda, Order Prosobranchia
Feeding Group: SCRAPER

B. No operculum; may be spiral-shaped,
    limpet-like, or coiled in one plane
.................LUNG-BREATHING SNAIL
Class Gastropoda, Order Pulmonata
Feeding Group: SCRAPER

23. A. Looks like spider; may be very tiny; has
    8 legs..........................AQUATIC MITE
Class Arachnida, Order Hydracarina
Feeding Group: PREDATOR

B. Not as above..........................go to 24

24. A. Lobster or shrimp-like..................go to 25

B. Armadillo shaped body, wider than
    high; crawls slowly on bottom
.................AQUATIC SOWBUG
Subphylum Crustacea, Order Isopoda
Feeding Group: SHREDDER

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25. A. Looks like tiny shrimp; swims quickly on its side.......................SCUD Subphylum Crustacea, Order Amphipoda Feeding Group: SHREDDER

B. Looks like small lobster; has 2 large front claws (10 legs total).......CRAYFISH Subphylum Crustacea, Order Decapoda Feeding Group: GATHERER COLLECTOR

26. A. Beetle-like, crawls slowly on bottom........................................RIFLE BEETLE ADULT Order Coleoptera, Family Elmidae Feeding Group: SCRAPER or GATHERER COLLECTOR

B. Beetle-like, swims quickly...........go to 27

27. A. Wings meet along the midline of back side of body, they do not overlap..........................................................BEETLE ADULT Order Coleoptera Feeding Group: MOST ARE PREDATORS

B. Wings overlap on backside, usually form a visible triangular pattern just below head.......................................................go to 28

28. A. Front legs are shorter than mid and hind legs; propels itself with oar-like strokes,....................................................WATER BOATMAN Order Hemiptera, Family Corixidae Feeding Group: VARIES

B. Similar to backswimmer but swims upside down, on its back.........................................................BACKSWIMMER Order Hemiptera, Family Notonectidae Feeding Group: PREDATOR

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