

A Selection of Aquatic Macroinvertebrates of Illinois, USA

Organized by Illinois RiverWatch Taxa Categories

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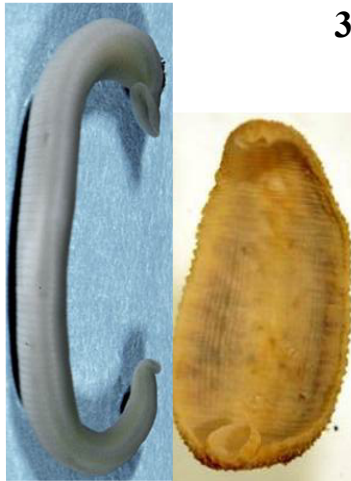
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Turbellaria
PLATYHELMINTHES
Flatworms



2

Oligochaeta
ANNELIDA
Aquatic worms



3

Hirudinea
ANNELIDA
Leeches



4

Isopoda:Asellidae
CRUSTACEA
Sowbugs



5

Amphipoda
CRUSTACEA
Scuds



6

Odonata: Anisoptera
INSECTA
Dragonfly larvae



7

Odonata: Calopterigidae
INSECTA
Broad-winged damselflies



8

Odonata: Coenagrionidae
INSECTA
Narrow-winged damselflies



9

Megaloptera: Coryalidae
INSECTA
Dobsonflies (Hellgrammites) and Fishflies



10

Megaloptera: Sialidae
INSECTA
Alderflies



11

Ephemeroptera: Oligonueriidae, Isonychiidae
INSECTA
Torpedo mayflies



12

Ephemeroptera : Ameletidae, Baetidae, Metretopodidae, Siphonuridae
INSECTA
Swimming mayflies

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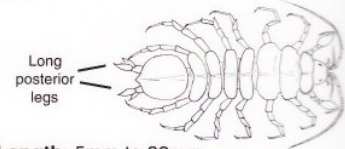
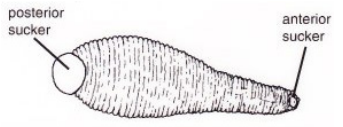
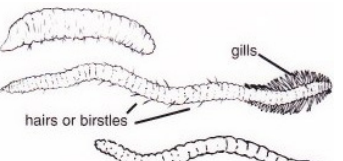

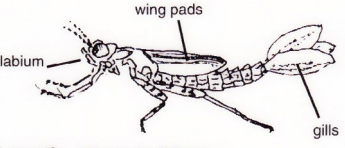
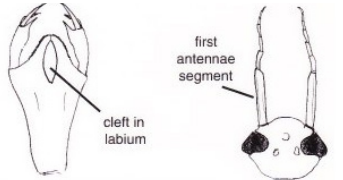
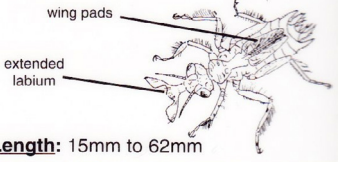
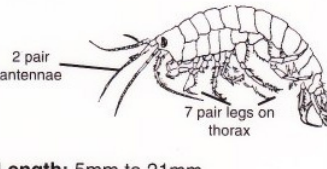

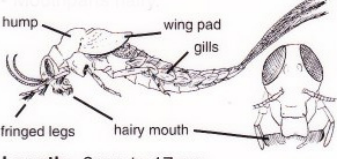
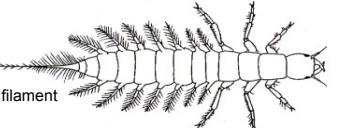
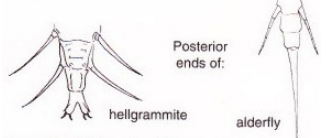
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<ul style="list-style-type: none"> Crustaceans related to pill bugs 7 pairs of legs on thorax; posterior legs longer than anterior legs; grasping claws on first pair of legs Six (6) pairs of appendages on abdomen; the last of which projects posteriorly Eyes unstalked and body dorso-ventrally flattened Brownish and often mottled in life Dull cream color when preserved  <p>Long posterior legs</p> <p>Length: 5mm to 22mm</p> <p>Isopoda CRUSTACEA Sowbugs</p> <p style="text-align: right;">4</p>	<ul style="list-style-type: none"> Segmented worms that are dorso-ventrally flattened (top to bottom) Suckers on both ends, on the ventral or bottom side. Anterior sucker small or large; posterior sucker always large May be solid brown or reddish, or brightly colored and patterned. Many turn gray or cream when preserved  <p>posterior sucker anterior sucker</p> <p>Length: 5mm to 40mm (may stretch out in life or contract and curl when preserved).</p> <p>Hirudinea ANNELIDA Leaches</p> <p style="text-align: right;">3</p>	<ul style="list-style-type: none"> Soft-bodied, many segments, and elongate No distinct head region May have bristles, hairs or gills when viewed under the microscope Beige to red when alive; gray when preserved Often curl into a "curly-Q" when preserved  <p>gills hairs or bristles</p> <p>Length: 5mm to 40mm</p> <p>Oligochaeta ANNELIDA Aquatic worms</p> <p style="text-align: right;">2</p>	<ul style="list-style-type: none"> Soft bodied, flat and non-segmented Gray, brown, or black, often mottled striped or spotted. Ventral usually gray May have two eyespots on the dorsal surface Appearance changes drastically when preserved; body goes gray, specimen curls into a "C" shape Specimens are fragile and easily destroyed in handling  <p>Length: 1mm to 30mm</p> <p>Turbellaria PLATYHELMINTHES Flatworms</p> <p style="text-align: right;">1</p>
<ul style="list-style-type: none"> Nymphs with slender bodies, three pairs of jointed legs, and well developed eyes Mask-like labium (lower lip) Lower lip is extensible for catching prey Distinct wing-pads on the thorax Three leaf like gills at the end of the abdomen  <p>wing pads labium gills</p> <p>Length: 10mm to 22mm</p> <p>Odonata: Coenagrionidae INSECTA Narrow-winged damselflies</p> <p style="text-align: right;">8</p>	<ul style="list-style-type: none"> Nymphs differ from narrow-winged damselfly nymphs by: Elongated first segment of the antennae Labium (lower lip) with a large, diamond shaped center cleft The middle gill filament is shorter than the lateral filaments Veins within the gill filaments are not apparent  <p>first antennae segment cleft in labium</p> <p>Length: 30mm to 40mm</p> <p>Odonata: Calopterygidae INSECTA Broad-winged damselflies</p> <p style="text-align: right;">7</p>	<ul style="list-style-type: none"> Nymphs with stout rugged bodies; three pairs of jointed legs; large well developed eyes Mask-like labium (lower jaw) that is hinged and often fanged Older specimens with distinctive wing pads on the thorax Three to five short pointed structures at the end of the abdomen  <p>wing pads extended labium</p> <p>Length: 15mm to 62mm</p> <p>Odonata: Anisoptera INSECTA Dragonfly nymphs</p> <p style="text-align: right;">6</p>	<ul style="list-style-type: none"> Shrimp-like crustaceans 7 pairs of legs on the thorax; 1st two pairs with grasping claws Head with unstalked eyes and two pair of antennae Bodies laterally flattened (from side to side); move along the substrate on their sides White, gray or cream colored when preserved  <p>2 pair antennae 7 pair legs on thorax</p> <p>Length: 5mm to 21mm</p> <p>Amphipoda CRUSTACEA Scuds</p> <p style="text-align: right;">5</p>
<ul style="list-style-type: none"> Three pairs of jointed legs each with a single claw Three tail-like filaments One pair of wingpads apparent Flattened gills along abdomen Head vertical with mouthparts pointing downward  <p>vertical head wing pad mouth</p> <p>Length: 3mm to 14mm</p> <p>Ephemeroptera: Ameletidae, Baetidae, Metreopodidae Siphonuridae: INSECTA Swimming Mayflies</p> <p style="text-align: right;">12</p>	<ul style="list-style-type: none"> Three pairs of jointed legs, each with a single claw Three tail-like filaments with dense fringe on inside edges One pair of wingpads present Flat gills with tufts along abdomen Thorax extremely hunched and head angle slightly beyond vertical Forelegs with dense comb; mouthparts hairy  <p>hump wing pad gills fringed legs hairy mouth</p> <p>Length: 9mm to 17mm</p> <p>Ephemeroptera: Oligoneuridae INSECTA Torpedo mayflies</p> <p style="text-align: right;">11</p>	<ul style="list-style-type: none"> Abdomen terminates in a single tail filament with setae (hairs) 6 to 8 filament on each side of abdomen All three thoracic segments are sclerotized (hardened) Gills are located at the base of each abdominal filament Color brownish; dorso-ventrally flattened  <p>tail filament</p> <p>Length: 10 to 28 mm</p> <p>Megaloptera: Sialidae INSECTA Alderflies</p> <p style="text-align: right;">10</p>	<ul style="list-style-type: none"> Elongated dorso-ventrally flattened; three pairs of jointed legs, each with two claws Abdominal segments 1-8 have two segmented lateral filaments End of last abdominal segment has fleshy, non-jointed prolegs Each proleg with a dorsal filament and two claws (hellgrammites) or a single, long filament (alderflies)  <p>Posterior ends of: hellgrammite alderfly</p> <p>Length: 30mm to 65mm or more</p> <p>Megaloptera: Coryalidae INSECTA Dobsonflies (Hellgrammites) and Fishflies</p> <p style="text-align: right;">9</p>

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 <p style="text-align: right;">13</p> <p>Ephemeroptera: Heptageniidae INSECTA Clinging mayflies</p>	 <p>Type 1 (gill covers touching) 14</p>  <p>Type 2 (gill covers split to the side)</p> <p>Ephemeroptera: Caenidae and Leptohyphidae (Trichorythidae) INSECTA Crawling mayflies</p>	 <p style="text-align: right;">15</p> <p>Ephemeroptera: Ephemeridae, Palingeniidae, Polymitarcyda, Potamanthidae INSECTA: Burrowing mayflies</p>	 <p style="text-align: right;">16</p> <p>Ephemeroptera: Baetiscidae INSECTA Armored mayflies</p>
 <p style="text-align: right;">17</p> <p>Ephemeroptera: Ephemerellidae, Leptophlebiidae INSECTA Other mayflies</p>	 <p style="text-align: right;">18</p> <p>Plecoptera INSECTA Stoneflies multiple families</p>	 <p style="text-align: right;">19</p> <p>Tricoptera: Hydropsychidae INSECTA Hydropsychid caddisflies</p>	 <p style="text-align: right;">20</p> <p>Tricoptera: Helicopsychidae INSECTA Snail-case caddisflies</p>
 <p style="text-align: right;">21</p> <p>Tricoptera: Glossosomatidae INSECTA Saddlecase caddisflies</p>	 <p style="text-align: right;">22</p> <p>Tricoptera INSECTA Other caddisflies multiple families</p>	 <p style="text-align: right;">23</p> <p>Coleoptera: Elmidae and Dryopidae INSECTA Riffle beetles</p>	 <p style="text-align: right;">24</p> <p>Coleoptera: Elmidae and Dryopidae INSECTA Riffle beetles</p>

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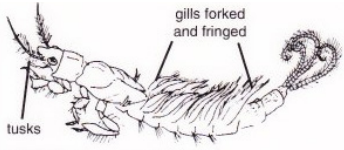
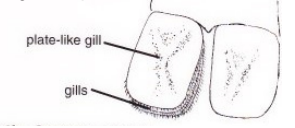
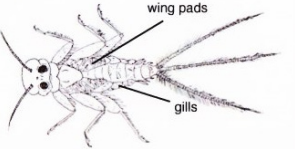
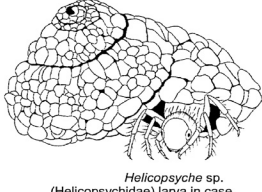
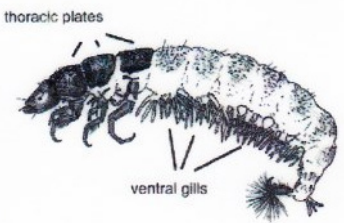
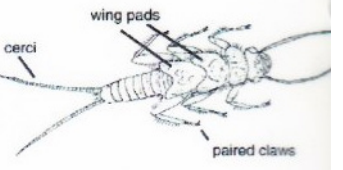
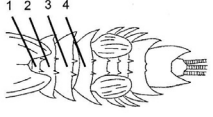


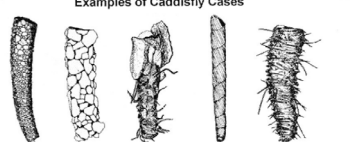

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<ul style="list-style-type: none"> • Three pair of jointed legs, each with a single claw • 1 pair of wing pads apparent • Thorax developed into an armor-like shield extending over abdominal segment 5 • Caudal filaments are relatively short and covered with fine hairs  <p>Length: 4mm to 14 mm</p> <p>Ephemeroptera: Baetiscidae 16 INSECTA Armored mayflies</p>	<ul style="list-style-type: none"> • Three pairs of jointed legs, each with a single claw • Three tail-like filaments • One pair of wingpads apparent • Forked gills along abdomen • A pair of tusks projecting forward from mouthparts and visible from above • Body pale cream colored or tan with brown and white markings  <p>Length: 8mm to 32 mm</p> <p>Ephemeroptera: Ephemeridae, Palingeniidae, Polymitarciya, Potamanthidae 15 INSECTA:Burrowing mayflies</p>	<ul style="list-style-type: none"> • Three pairs of jointed legs, each with a single claw; • Three tail-like filaments • One pair of wingpads apparent • Gills hidden under plate-like or triangular gill covers on abdominal segment 2 • (Caution: if gill covers present on segment 3 or 4, then the nymph should be identified as "other mayflies")  <p>Length: 2mm to 10 mm</p> <p>Ephemeroptera: Caenidae, Leptohyphidae (Trichorythidae) 14 INSECTA Crawling mayflies</p>	<ul style="list-style-type: none"> • Three pairs of jointed legs, each with a single claw • Three tail-like filaments • One pair of wingpads apparent • Flattened gills on abdomen • Body and head dorsoventrally (top to bottom) flattened • Large eyes on top of head  <p>Length: 5mm to 22 mm</p> <p>Ephemeroptera: Heptageniidae 13 INSECTA Clinging mayflies</p>
<ul style="list-style-type: none"> • Coiled case in the shape of a snail shell • Head protrudes from one end • Extremely small (up to 8mm) • Light colored and j-shaped larva  <p>Length: to 8mm</p> <p>Tricoptera: Helicopsychidae 20 INSECTA Snail-case caddisflies</p>	<ul style="list-style-type: none"> • Caddisfly larvae with no case, except when ready to pupate • Thorax with three hardened plates • Feathery gills on ventral side of abdomen  <p>Length: 2mm to 40mm</p> <p>Tricoptera: Hydropsychidae 19 INSECTA Hydropsychid caddisflies</p>	<ul style="list-style-type: none"> • Insect nymphs with 3 pairs of jointed legs, each with paired claws • 2 pairs of wingpads (developing wings) present on thorax • 2 cerci (tails) on end of abdomen • No gills along abdomen; some families have gills along thorax  <p>Length: 5mm to 35mm</p> <p>Plecoptera 18 INSECTA Stoneflies</p>	<p>Spiny Cralwer mayflies:</p> <ul style="list-style-type: none"> • Gills absent on second abdominal segment  <p>Abdomen of <i>Eurylophella doris</i> (Ephemerellidae) larva, Dorsal View.</p> <p>Prong-gilled mayflies:</p> <ul style="list-style-type: none"> • Gills on first abdominal segment narrow and finger-like • Gills on segments 2-7 variable in shape • Fine hairs on each segment of the terminal filaments <p>Ephemeroptera: Ephemerellidae, Leptophlebiidae 17 INSECTA: Other mayflies</p>
<p>Larvae</p> <ul style="list-style-type: none"> • Dark to tan tube-shaped larvae with leathery appearance • Three pairs of jointed legs, each with a single claw • End of abdomen with a trapdoor-like operculum that can close cover over anal gills  <p>Length: 1mm to 10mm</p> <p>Coleoptera:Elmidae and Dryopidae 24 INSECTA</p>	<p>Adults</p> <ul style="list-style-type: none"> • Small, slightly elongate, hard bodied, dark colored beetle • May have yellowish markings • Long legs, each with two large claws  <p>Length: 1 mm to 8 mm</p> <p>Coleoptera:Elmidae and Dryopidae 23 INSECTA</p>	<ul style="list-style-type: none"> • Caddisfly larva look superficially like a grub or caterpillar but they have jointed legs • Hardened head capsule; • Fleshy abdomen ending in proleg, often with a claw • 3 pairs of jointed legs • builds cases of sand, or stones, or twigs  <p>Length: 3 mm to 30 mm</p> <p>Tricoptera 22 INSECTA Other caddisflies</p>	<ul style="list-style-type: none"> • Caddisfly larva with case resembling a tortise shell(arched on top, flat on the bottom) • Head protrudes from the anterior of the case; • end of abdomen protrudes from the rear of the case If larva not attached to case it will have a hardened dorsal plate on the first thoracic segment and the last abdominal segment  <p>Length: 5 to 10 mm</p> <p>Tricoptera:Glossosomatidae 21 INSECTA Saddlecase caddisflies</p>

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 <p>25</p> <p>Coleoptera: Gyrinidae INSECTA Whirligig beetle adult</p>	 <p>26</p> <p>Coleoptera: Gyrinidae INSECTA Whirligig beetle larvae</p>	 <p>27</p> <p>Coleoptera: Psephenidae INSECTA Water penny</p>	 <p>28</p> <p>Diptera: Tipulidae INSECTA Craneflies</p>
 <p>29</p> <p>Diptera: Ceratopogonidae INSECTA Biting midges; no-see-ums larva</p>	 <p>30</p> <p>Diptera: Chironomidae INSECTA Bloodworm midges larva</p>	 <p>31</p> <p>Diptera: Chironomidae INSECTA Non-biting midges</p>	 <p>32</p> <p>Diptera: Simuliidae INSECTA Black flies Larva Pupa</p>
 <p>33</p> <p>Diptera: Athericidae INSECTA Snipe flies larva</p>	 <p>34</p> <p>Diptera:multiple families INSECTA Other flies larva</p>	 <p>35</p> <p>Gastropoda: mutiple families MOLLUSCA Left-handed, right-handed, operculate, planorbid snails</p>	 <p>36</p> <p>Gastropoda:Ancylidae Unionidae: mussels MOLLUSCA Limpets</p>

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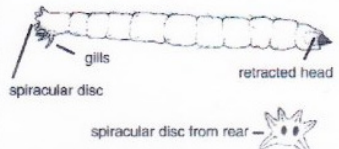
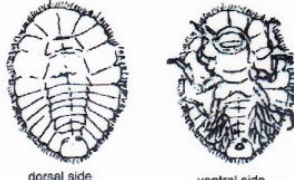
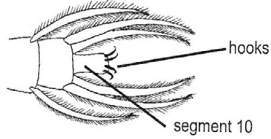
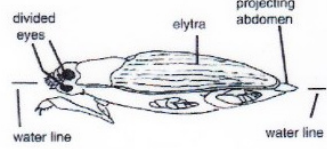
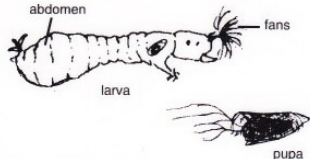
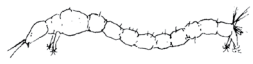
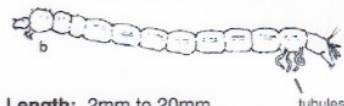


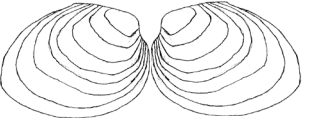




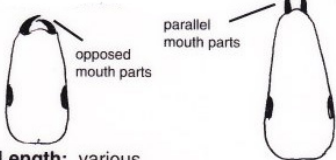
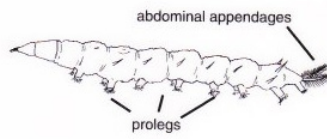
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<ul style="list-style-type: none"> Soft-bodied, elongate fly larvae with heads that are usually retracted into the thorax Conspicuous spiracular disc at the posterior end. May be lobed or fringed. May have delicate gills on the last abdominal segment Colors may be brown to white  <p>Length: 10mm to 50mm</p> <p>Diptera: Tipulidae 28 INSECTA Craneflies larvae</p>	<ul style="list-style-type: none"> Oval, extremely dorsoventrally (top to bottom) flattened Mouth parts and three pairs of jointed legs only visible from ventral side Five pairs of finely branched gills visible on the ventral side  <p>Length: 4mm to 40mm</p> <p>Coleoptera: Psephenidae 27 INSECTA Water penny larvae</p>	<p>Larvae:</p> <ul style="list-style-type: none"> Long, slender, pale colored larvae with three pairs of segmented legs Lateral unsegmented gill filaments on abdomen End of abdomen bears two pair of sickle-shaped hooks  <p>Coleoptera: Gyrinidae 26 INSECTA Whirligig beetles larvae</p>	<p>Adult:</p> <ul style="list-style-type: none"> Shiny, black, oval-shaped beetle with abdomen projecting out behind the wing covers Eyes divided so that they appear to have two pairs of eyes, one looking up and the other looking down  <p>Length: 10 mm to 30 mm</p> <p>Coleoptera: Gyrinidae 25 INSECTA Whirligig beetles adult</p>
<ul style="list-style-type: none"> Soft-bodied fly larvae with bulbous, rounded abdomen Head well developed, usually with a pair of foldable fans on the anterior end Triangular shaped pupa with conspicuous gills originating from the anterior end of the thorax; found in a woven cocoon attached to the substrate  <p>Length: 3mm to 15mm</p> <p>Diptera: Simuliidae 32 INSECTA Black flies larva and pupa</p>	<p>Midges:</p> <ul style="list-style-type: none"> Elongated, worm-like fly larvae with well developed head Paired prolegs on first thoracic segment and last abdominal segment  <p>Length: 2mm to 30mm</p> <p>Diptera: Chironomidae 31 INSECTA Non-biting midges larva</p>	<ul style="list-style-type: none"> Bright red midge larvae that fade to brown or gray when preserved in alcohol Two pairs of ventral tubules on the 8th abdominal segment Hardened head capsule Worm-like body  <p>Length: 2mm to 20mm</p> <p>Diptera: Chironomidae 30 INSECTA Bloodworm midges larva</p>	<ul style="list-style-type: none"> Elongate fly with well developed head capsule Most are thin and needle-like with no prolegs. May have bristles or hooks on the posterior end If prolegs are present, unpaired on the first thoracic segment. Species with prolegs have long conspicuous spines on the body segments  <p>Length: 3mm to 12mm</p> <p>Diptera: Ceratopogonidae 29 INSECTA Biting midges; no-see-ums larva</p>
<p>Limpets: uncoiled, very low cone shaped shell 2 to 5 mm</p>  <p>Freshwater mussels</p> <ul style="list-style-type: none"> 2 hinged shells 2.5 to 30 cm shell highly variable  <p>Gastropoda: Ancyliidae 36 Unionidae: mussels MOLLUSCA Limpets</p>	<p>Snails: muscular body called a foot, and a shell coiled into a spire</p> <p>Operculate snails: with a small plate on the upper side of the foot. When snail retracts it seal off the shell</p>  <p>Right handed snails: no operculum, opening of the shell on observers right when the spire is pointed upward</p>  <p>Left-handed snails: no operculum, opening of the shell is on the observers left when the spire is pointed upward</p>  <p>Planorbid snails: have no spire</p>  <p>Gastropoda: multiple families 35 MOLLUSCA Left-handed, right-handed, operculate, planorbid snails</p>	<ul style="list-style-type: none"> Usually elongate, worm-like, soft bodies rounded abdomen No jointed thoracic legs. May have unjointed prolegs May be naked and smooth, or may have tubercles, spines, or scales Head may be well developed or vestigial. Mouthparts either opposed and hooked or parallel  <p>Length: various</p> <p>Diptera: multiple families 34 INSECTA Other flies</p>	<ul style="list-style-type: none"> Fly larvae with the last abdominal segment ending in two long fringed appendages Abdomen with well developed prolegs Head not well developed; mouth parts are parallel hooks Elongate, cylindrical, and slightly flattened; anterior end is tapered  <p>Length: 12mm to 18mm</p> <p>Diptera: Athericidae 33 INSECTA Snipe flies</p>