



MACRO-INVERTEBRATES OF THE LAGUNA

LA HESPERIA CLOUD FOREST RESERVE

Author: Ingmar Rondeel, 2019

Pictures: bugguide.net

Information: Book of Freshwater Invertebrates of North America.





Larvae



Adult



True flies: Tipulidae

Characteristics

1. legs are not present
2. often a white colour
3. At tail end is a union like ring with tentacles
4. no clear head

Habitat: In sand, gravel or organic debris.

The size of this larvae is bigger than the Simuliidae larvae.



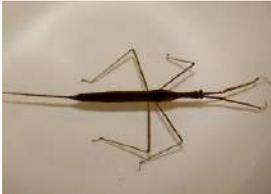
Aquatic earthworms: Oligochaeta

Characteristics

1. Elongated, cylindrical body
2. Body divided into parts(segmented)
3. No clear head
4. no visible differences between body parts

Habitat: soft substrates like mud, silt or sand

Can grow to 15 cm long!



True bugs: Nepidae

Characteristics

1. Brown coloured
2. Slender and long body shape
3. two long tubes from tail
4. long legs

Habitat: In the water plants of the Laguna

Those species can give a painful bite



True bugs: Notonectidae

Characteristics

1. Elongated, Cylindrical body shape
2. Big eyes
3. Really long hind legs, which serve as peddles
4. Swim upside down

Habitat: slow flowing aquatic habitat

These insects can give a really sharp bite



True bugs: Naucoridae

Characteristics

- 1 tube like mouth
2. Round, flat bodied
3. sharp, powerful front legs
4. Hard body wings

Habitat: Mostly in vegetation or algae

Unlike the Corydalidae, the bite of this species can be painful



True bugs: Vellidae

Characteristics

1. Middle legs are really long
2. Causes circles in the water
3. Long antenna
4. Move really fast

Habitat: On the water surfaces or near the shoreline on still water

You can find them in big groups



Larvae



Adult



Dragonflies: Libellulidae

Characteristics

1. stubby and broad body
2. no clear antenna
3. no external gills
4. spoon-cup shaped labium

Habitat: In vegetation near the bottom or lied buried in debris

You will find a lot of empty dragonfly skins at the edge of the streams and Laguna.



Arachnida: Fishing spiders

Characteristics

1. small to medium size
2. 4 pair of legs
3. Body with white spots and stripes
4. Green/brown legs

Habitat: At the edges of the Laguna, in bushy areas.

Those spiders can be really quick and escape from your net.



Cichlidae: Tilapia fish

Characteristics

1. Long dorsal fins and spines
2. Orange coloured
3. Always swimming in groups
4. different sizes

Habitat: Everywhere in Laguna

Tilapia is also a popular dish in Ecuador



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Larvae



Adult



Caddisflies: Hydropsychidae

Characteristics

1. very short antennae
2. hairs on prolegs
3. no case
4. slender body

Habitat: Found in streams on wood snags with algae.

Good indicators for water quality

1.



2.



Case making caddisflies:

1. Helicopsychidae

Characteristics

1. Small size
2. have a spiral snail shaped case made of sand

2. Calamoceratidae

Characteristics

1. medium to large sized
2. case made of hollow twigs or leaf fragments

Habitat: In moderate riffles and currents

Good indicators for water quality



Larvae



Adult



Stoneflies: Perlidae

Characteristics

- 1 Two tail filaments
2. very fast
3. Long antennae
4. big eyes

Habitat: Beneath and alongside river gravel beds

Good indicators for water quality



Larvae



Adult



Mayflies: Ephemeroptera

Characteristics

1. three tail filaments, middle one shorter
2. gills at sides which differ in hairs, round and operculate
3. small wings present on thorax
4. slowly crawling

Habitat: Underside rocks or woody debris/within leaf packs

Good indicators for water quality



Larvae



Adult



Coleoptera: Psephenidae

Characteristics

1. round & flattened
2. shape of a coin
3. very slow moving
4. Hard-scaled

Habitat: On rocks or large pieces of wood

Good indicators for water quality



Larvae



Adult



Beetles: Elmidae

Characteristics larvae

1. Body is hard and consist of 9 parts
2. Small antennae

Characteristics adult

1. Small size beetle
2. Orange, long legs with hooks

Habitat: On rocks or woody debris in swift water

Both the adults and larvae can be found in the streams



Larvae



Adult



Beetles: Gyrinidae

Characteristics

1. small to medium size
2. Oval and black-coloured
3. really active and fast
4. front legs are longer than other legs

Habitat: Like water skaters, on surfaces of slow streaming water

Only the adults can be found in the streams



Larvae



Adult



Megaloptera: Corydalidae

Characteristics

- 1 heavily sclerotized head
2. big mandibles
3. big long filaments at sides of abdomen
4. cylindrical worm-like

Habitat: In loose sand and on rocky bottoms

Can grow really big and can bite when picking up



Larvae



Adult



True flies: Simuliidae

Characteristics

1. legs are not present
2. fat, round tail
3. elongated worm like
4. Clear head with hairs?

Habitat: Attached to rocks and other hard surfaces

Adults feed on blood of animals and humans



Larvae



Adult



True flies: Tipulidae

Characteristics

1. legs are not present
2. often a white colour
3. At tail end is a union like ring with tentacles
4. no clear head

Habitat: In sand, gravel or organic debris.

The size of this larvae is bigger than the Simuliidae larvae.



True bugs: Vellidae

Characteristics

1. Middle legs are really long
2. Causes circles in the water
3. Long antenna
4. Move really fast

Habitat: On the water surfaces or near the shoreline on still water

You can find them in big groups



True bugs: Naucoridae

Characteristics

- 1 tube like mouth
2. Round, flat bodied
3. sharp, powerful front legs
4. Hard body wings

Habitat: Mostly in vegetation or algae

Unlike the Corydalidae, the bite of this species can be painful



Larvae



Adult



Damselflies: Calopterygidae

Characteristics

- 1 slender and elongated
2. thick straight antenna
3. Three tail-like gills
4. Flat labium

Habitat: In vegetation areas or quiet backwaters

Bigger and longer than the Libellulidae family



Larvae



Adult



Dragonflies: Libellulidae

Characteristics

- 1 stubby and broad body
2. no clear antenna
3. no external gills
4. spoon-cup shaped labium

Habitat: In vegetation near the bottom or lied buried in debris

You will find a lot of empty dragonfly skins at the edge of the streams.



Flatworms: Planariidae

Characteristics

1. eye spots
2. angular head
3. Shape changed from elongate to flat
4. no hard skeleton

Habitat: Underside rocks or on wood

Really abundant in the streams



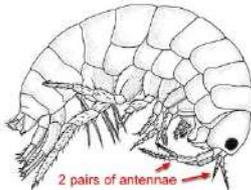
Crayfish: Hyallelidae

Characteristics

1. move crawling
2. antennae really long
3. 8 pairs of legs
4. Mostly white/orange coloured

Habitat: Marginal vegetation, under rocks, burrowed in loose sand

Really abundant in streams with sunlight.





Snails and slugs: Physidae

Characteristics

- 1 small, oval snail
2. Opening of shell at the left
3. Colour of shell is grey to brown
4. Different spots on the shell

Habitat: Really abundant at water temperature between 17-21 degrees

On left picture, Physidae is the right shell which has the opening at the left.



Adult



Andean Catfish (Preñadilla)

Characteristics

- 1 small sized fish
2. soft/smooth skinned (but don't touch)
3. whiskers at the mouth

Habitat: Between rocks, stones, gravel and mud, and water plants.

This is the only fish species in the Andean mountains