100 COMMON ARTHROPODS OF NEW MEXICO FOR 4H YOUTH
Pt. 7--- Diptera through Hymenoptera

David B. Richman
College Professor Emeritus & Curator,
The Arthropod Museum (Retired)
New Mexico State University

Carol A. Sutherland
Extension Entomologist, NMSU & State Entomologist, NM Dept. of Agriculture

Scott Bundy
Associate Professor & Curator
The Arthropod Museum
New Mexico State University
Class Insecta, Order Diptera

Flies

• ‘Di’ = two; -’ptera’ = wings. Two-winged flies.

• Adults with one pair of membranous wings; wing veins can be helpful in identification. Some species wingless. Second pair of wings reduced to knob-like ‘halteres.’

• Mouthparts variable: sucking, sponging or piercing.

• Note: Although ‘fly’ is part of the common name for many insects, only in the Diptera can it stand alone in the common name---e.g. horse fly. In other order, it’s a suffix---as in dragonfly or butterfly.
Mosquito
Class Insecta, O. Diptera

Metamorphosis: Complete
Mouthparts: Sucking

House Mosquito
Yellow Fever Mosquito

Bodies very thin, fragile. Legs thread-like. Wings long, narrow, with scales along veins & Margins. In female, proboscis long, piercing-sucking (blood feeders); antennae, filamentous. Females may transmit certain diseases to humans, animals. Males with plumose antennae; nectar-feeders.
Black Fly
Class Insecta, O. Diptera

Metamorphosis: Complete  Mouthparts: Sucking

Adults usually <4mm long. Stocky body with ‘hump-back.’ Antennae short. Wings broad at base. Adults usually black, gray or yellow. Females are blood feeders.

Photo: JF Butler, Univ Florida, Dept Ent & Nematology
Horsefly
Class Insecta, O. Diptera

Metamorphosis: Complete  Mouthparts: Sucking

(Includes deer flies). Stout-bodied, often large (to 25mm long) flies with helmet-shaped Heads, especially in males. In life, eyes often iridescent, rainbow-striped. Third antennal Segment elongate. Proboscis elongate, blunt-tipped, often visible. Females suck blood.
Robber Fly
Class Insecta, O. Diptera

Metamorphosis: Complete
Mouthparts: Sucking

Head appears hollowed out on top between eyes. Face usually with ‘fuzzy beard.’ Third antennal Segment elongated. Pointed, visible proboscis. Some With elongated, thin abdomens; others fuzzy, bee-Like in appearance. Predators.

All Photos: D.B. Richman, NMSU
Bee Fly
Class Insecta, O. Diptera

Metamorphosis: Complete

Mouthparts: Sucking

Heads rounded. Stout bodied, usually hairy. Antennae short. Wings often mottled or with anterior dark-colored band.
Syrphid Fly
Class Insecta, O. Diptera

Metamorphosis: Complete
Mouthparts: Sucking

Small to medium-sized, often shiny flies, to 12mm long. Some bee-like; many with Yellow markings on abdomen. ‘Spurious (false) veins usually present on wings.
Picture-Winged Fly
Class Insecta, O. Diptera

Metamorphosis: Complete

Mouthparts: Sucking

Small to medium-sized flies with wings banded or spotted. Usually <10mm long.

Walnut husk fly. Photo: E. Mani, Swiss Fed Res Sta Fruit-Growing, Bugwood.org

Apple maggot. Photo: JBerger, bugwood.org
Louse Fly
Class Insecta, O. Diptera

Metamorphosis: Complete

Mouthparts: Sucking

Adults wings or wingless, depending on species. Body flattened dorsoventrally. Ectoparasites (blood feeders) of birds and mammals.
Muscid Fly
Class Insecta, O. Diptera

Metamorphosis: Complete    Mouthparts: Sucking

Small to medium gray flies, often with dark stripes on thorax. House flies and face flies with sponging mouthparts, but stable flies and horn flies are skin-piercing, blood-feeding pests of livestock; they also bite people.
Tachinid Fly
Class Insecta, O. Diptera

Metamorphosis: Complete  Mouthparts: Sucking

Small to large flies with stout bristles on the abdomen; with enlarged or fleshy postscutellum. Many are bee-like, but are black or dark brown. Body usually 7mm; occasionally longer.
Blow Fly
Class Insecta, O. Diptera

Metamorphosis: Complete

Mouthparts: Sucking

Similar to tachinids, but usually metallic blue or metallic green. Body usually 7mm or less.
Flesh Fly
Class Insecta, O. Diptera

Metamorphosis: Complete

Mouthparts: Sucking

Similar to muscid flies and some tachinid flies, but generally larger than muscids and lacking the heavy bristles of the tachinids. Many species with a checkerboard pattern on the gray abdomen; many also have a red tip on the abdomen.
Class Insecta, Order Siphonaptera

Fleas

• ‘siphon’ = sucking; ‘-a-’ = without; - ’ptera’=wings

• Always wingless adults

• Bodies flattened laterally; with strong jumping legs

• Antennae short, 3-segmented

• Blood feeders, potential disease vectors (especially plague).
Flea
Class Insecta, O. Siphonaptera

Metamorphosis: Complete   Mouthparts: Sucking

Photo: Stephanie Leisner, NMSU
Class Insecta, Order Hymenoptera

Ants, Wasps, Bees, Parasitoids

- ‘hymen’ = membrane; -’ptera’ = wings
- Two pairs of membranous wings, sometimes wingless.
- Ovipositors often long; females of many species sting using their ovipositors and modified accessory glands (sources of venoms).
- Mouthparts chewing or modified chewing (as in the bees)
Mostly small, slender parasitoids with one recurrent vein (above) in each forewing. Antennae filamentous, with 16 or more segments. To 15mm in length. Many species black or brown; several reddish.
Ichneumon Wasp
Class Insecta, O. Hymenoptera

Metamorphosis: Complete
Mouthparts: Chewing

Small to very large (40mm), slender parasitoids with 2 recurrent veins (above) in each forewing. Antennae filamentous, with 16+ segments and often half as long as body. Very large Family in North America. Colors and patterns vary widely by species.
Chalcidid Wasp
Class Insecta, O. Hymenoptera

Metamorphosis: Complete   Mouthparts: Chewing

Mostly small to medium sized (<7mm), relatively robust adults with very few wing veins. Antennae short, with 13 or fewer segments. Hind femora greatly swollen & toothed below. Hind coxae much longer than front coxae.
Tiphiid Wasp
Class Insecta, O. Hymenoptera

Metamorphosis: Complete  Mouthparts: Sucking

Usually 10+mm; elongated abdomen. Mesosternum with 2 posterior lobes or anterior Abdominal segments highly constricted. Antennae 12-13 segmented. Often black & yellow banded.

Photo: D.B. Richman, NMSU
Scoliid Wasp
Class Insecta, O. Hymenoptera

Metamorphosis: Complete
Mouthparts: Chewing

Large, hairy, robust wasps (20-30mm long). Meso- and metasternum form a ventral plate divided by a transverse suture. Antennae 12-13 segmented. Wing membrane beyond cells wrinkled (male velvet ants have smooth wing tips). Color often black and red or yellow.
Velvet Ant
Class Insecta, O. Hymenoptera

• Metamorphosis: Complete
  Mouthparts: Chewing

Small to large (20mm), very furry wasps, often brightly colored with red, yellow or orange on Black. Antennae 12-13 segment. Females wingless, with painful sting. Males winged, with Wing membrane beyond cells smooth (male velvet ant has wrinkled wing tips).
Worker ants wingless, small to medium size with 1-2 ‘knots’ at waist. Antennae 6-13 segmented, Elbowed. Queens & males winged initially, but lose their wings after mating. Most bite, many will sting. Most live in colonies of dozens to many thousands of workers.
Spider Wasp
Class Insecta, O. Hymenoptera

Metamorphosis: Complete

Medium to large wasps (to 40mm) with very long legs. Mesopleura with transverse suture. Wings not folded when resting. Most dark blue or black; many with bright reddish or orange wings. Females with curled antennae, potent sting. Males with thread-like antennae, cannot sting.

Mouthparts: Chewing

Tarantula Hawk Wasp
Photo: D.B. Richman, NMSU
Vespid Wasp
Class Insecta, O. Hymenoptera

Metamorphosis: Complete        Mouthparts: Chewing

Common social or solitary wasps with long first discoidal cell in front wing. Pronotum not collar-like. Size usually around 10-20mm. Often with patterns of brown & yellow or black & yellow or orange. Build and live in or near paper-like nests made of chewed wood and other cellulose materials.

Photo: D.B. Richman, NMSU
Sphecid Wasp
Class Insecta, O. Hymenoptera

• Metamorphosis: Complete  Mouthparts: Chewing

Common solitary wasps (may nest in groups) with short discoidal cell in forewing. Pronotum often distinctly collar-like. Often, but not always, ‘thread-waisted.’ Usually 10-30mm long. Color and pattern varies by species. Many with patterns of black & yellow, gray & red or brown & yellow or orange. Many species ground nesters; others build mud nests.
Halictid Bee
Class Insecta, O. Hymenoptera

Metamorphosis: Complete
Mouthparts: Chewing

Mostly small bees, often metallic green or partially so. Most dark-colored. Smallest species 4-5mm. Largest are 15mm.
Leafcutting Bee
Class Insecta, O. Hymenoptera

Metamorphosis: Complete
Mouthparts: Chewing

Stout-bodied, medium-sized bees (usually 10+mm often) with 2 submarginal cells in forewings. Pollen carried on underside of abdomen. Abdominal segments usually distinctly outlined; Abdomen may appear up-turned. Females cut leaf-disks from leaves & flowers, lining their tubular nests.
Honey, Bumble & Carpenter Bees

Class Insecta, O. Hymenoptera

(Manual says not carpenters, but we’re including them)

• Metamorphosis: Complete

Mouthparts: Chewing

Stout-bodied, medium to large bees with 3 submarginal cells in their forewings. Pollen is carried on the hind legs. Honey bees & bumble bees are social insects with a reproductive Queen & sterile female workers; males produced seasonally. Honey bees usually 8-10mm long with yellow-brown & gray-black bands on abdomen. Bumble bees (20-25mm) usually very furry, often yellow & black banded, sometimes with red spots on abdomen. Carpenter bees are either all-over blue-black or all-over brown fuzzy bees up to 20-25mm long, with apical spurs on the hind tibiae. Their wings usually are translucent smoky gray.
The END---YIPPEE!!

But what insect is this?