

WELCOME





HYMENOPTERA

SOME SPECIAL FEATURES OF HYMENOPTERA:

- Wings membranous, hind wings , smaller than the fore wings ,which interlock by means of hamuli, venation reduced.
- Mouth parts primarily mandibulate, often modified for chewing and lapping
- Abdomen usually basally constricted and its first segment fused with metathorax forming propodeum
- Ovipositor in higher families modified into a sting
- Larvae generally apodous, rarely eruciform with more than 5 pairs of prolegs without crochets
- Pupae exarate and generally covered by cocoon
- Antennae are generally long and geniculate, tarsi 5 segmented, exhibit complete metamorphosis.

SUB ORDER-SYMPHYTA

- Abdomen broadly joins with thorax without any constrictions
- Hind wings with 2 or more closed basal cells , trochanter 2 segmented
- Ovipositor adapted for sawing or boring
- Larvae eruciform

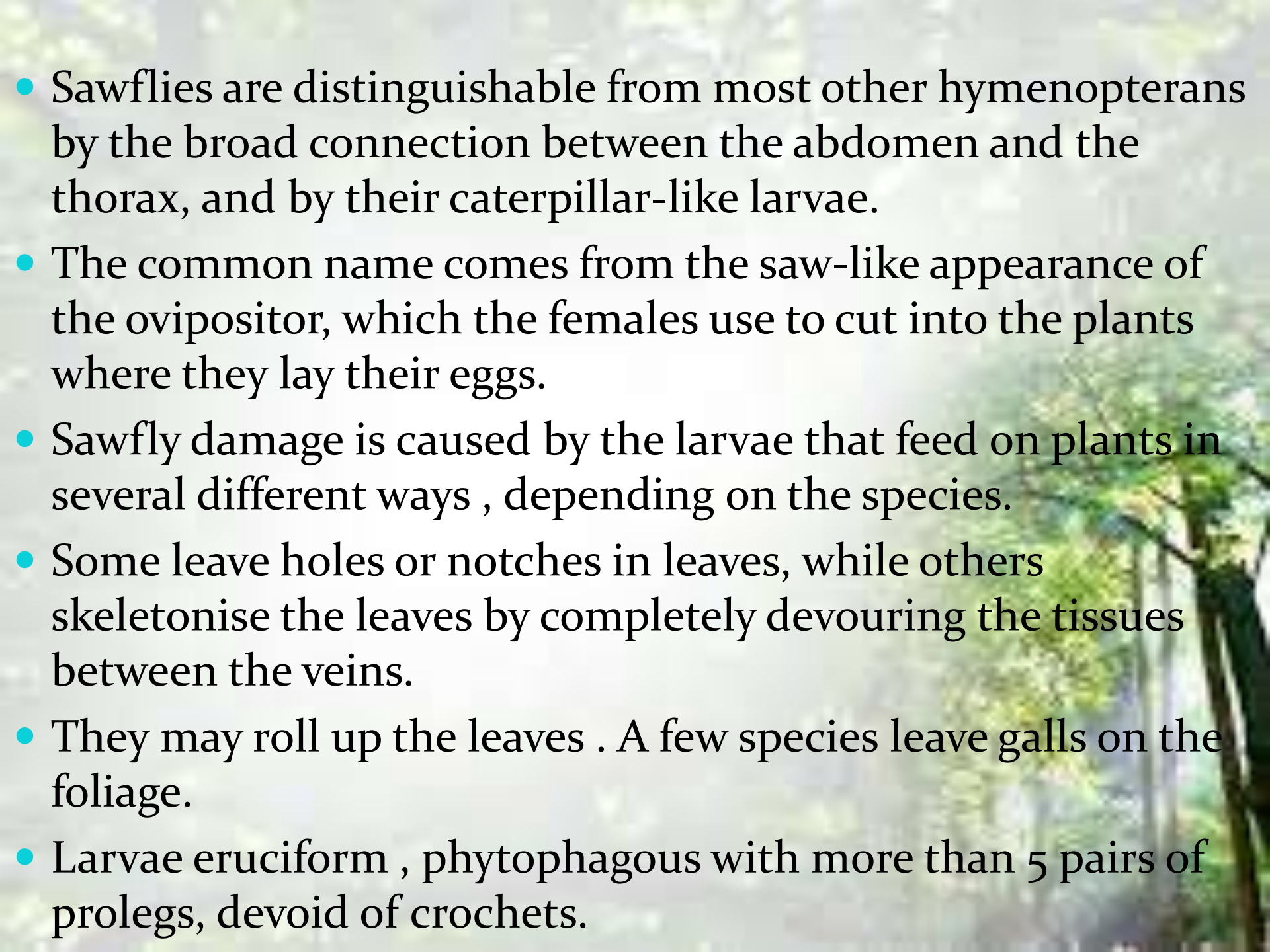
FAMILY- TENTHREDINIDAE

- Commonly known as sawflies



SCIENTIFIC CLASSIFICATION

- KINGDOM: Animalia
- PHYLUM: Arthropoda
- CLASS: Insecta
- ORDER: Hymenoptera
- FAMILY: Tenthredinidae

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- Sawflies are distinguishable from most other hymenopterans by the broad connection between the abdomen and the thorax, and by their caterpillar-like larvae.
 - The common name comes from the saw-like appearance of the ovipositor, which the females use to cut into the plants where they lay their eggs.
 - Sawfly damage is caused by the larvae that feed on plants in several different ways , depending on the species.
 - Some leave holes or notches in leaves, while others skeletonise the leaves by completely devouring the tissues between the veins.
 - They may roll up the leaves . A few species leave galls on the foliage.
 - Larvae eruciform , phytophagous with more than 5 pairs of prolegs, devoid of crochets.





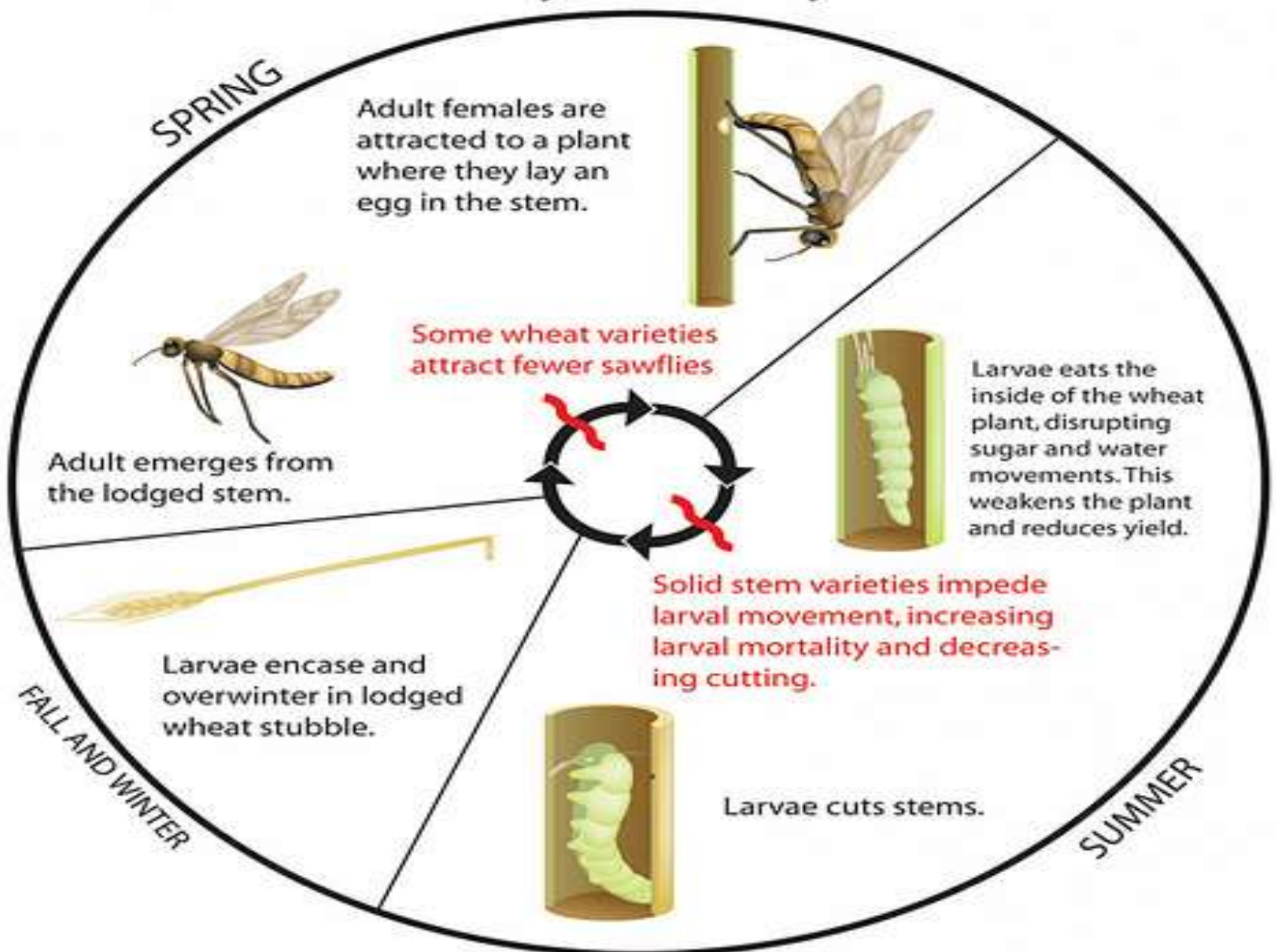








Sawfly Life Cycle



www.bumblebee.org





Green sawfly



The larvae feeding or
damaging the plants.



SUBORDER-APOCRITA

- Base of the abdomen constricted or petiolate
- Hind wings with not more than 2 basal cells.
- Larvae-grub like maggot like.

FAMILY- ICHNEUMONIDAE

- Commonly called as Ichneumonflies.



SCIENTIFIC CLASSIFICATION

- KINGDOM: Animalia
- PHYLUM: Arthropoda
- CLASS: Insecta
- ORDER: Hymenoptera
- FAMILY: Ichneumonidae

- They are solitary insects, and most are parasitoids, the larvae feed on or in another insect which finally dies.

- Antennae long and filiform.

The female finds a host and lays an egg on, near , or inside the host's body.

Upon hatching, the larva feeds either externally or internally , killing the host when it is ready to pupate.

- Larvae are parasitic on immature stages of other insects.
- Various ichneumonids are used commercially as biological control agents.

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12a



12b



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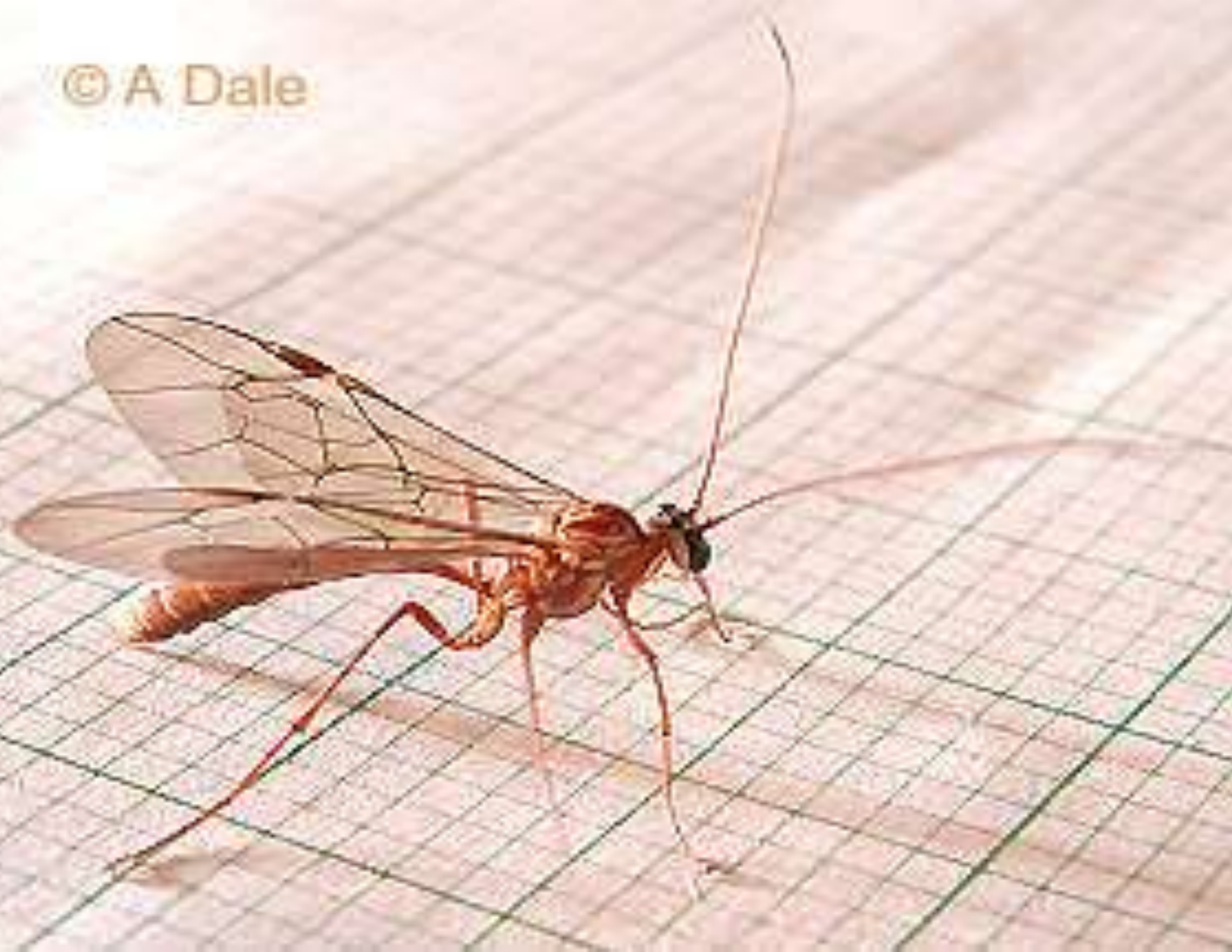


15mmBL excl. ovipositor





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FAMILY- BRACONIDAE

- Commonly called as Braconids



SCIENTIFIC CLASSIFICATION

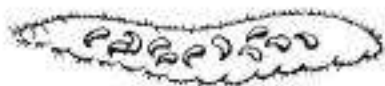
- KINGDOM- Animalia
- PHYLUM- Arthropoda
- CLASS: Insecta
- ORDER: Hymenoptera
- FAMILY: Braconidae

- Braconids are small (2-15mm) parasitic wasps, mostly brownish or black .
- Eggs are laid in or upon the body of the host insect, which is consumed before the parasite pupates.
- Braconids parasitize the larvae of Lepidoptera, Symphyta, Coleoptera, Diptera etc and some are important as biological control agents.
- Antennae apparently with 16 or more segments.
- Pronotum reaching to wing bases- tegulae.
- Larvae parasitic, pupae in a cocoon , pupate outside the host body.

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◀ Typical Braconid life cycle



larvae develop in caterpillar



pupae in silken cocoon



Braconid



adults emerge



female lays eggs in caterpillar



Braconid wasps



Adult

Larvae feeding on a caterpillar















FAMILY- CHALCIDIDAE

- Commonly called as chalcids



SCIENTIFIC CLASSIFICATION

- KINGDOM- Animalia
- PHYLUM- Arthropoda
- CLASS- Insecta
- ORDER- Hymenoptera
- FAMILY- Chalcididae

- Chalcid, common name for any of a large group of parasitic insects, also called chalcid wasp or chalcidfly.
- These include the smallest known insects, the fairy wasps , which are parasites of insect eggs.
- Chalcid have elbowed antennae and greatly reduced wing venation.
- The larvae are parasitic on eggs, pupae and larvae of other insects.
- They feed on asparagus beetles, gall wasps, scale insects, cicadas etc.





FEELER

HEAD OF LARVA
MORE HIGHLY
MAGNIFIED

LARVA

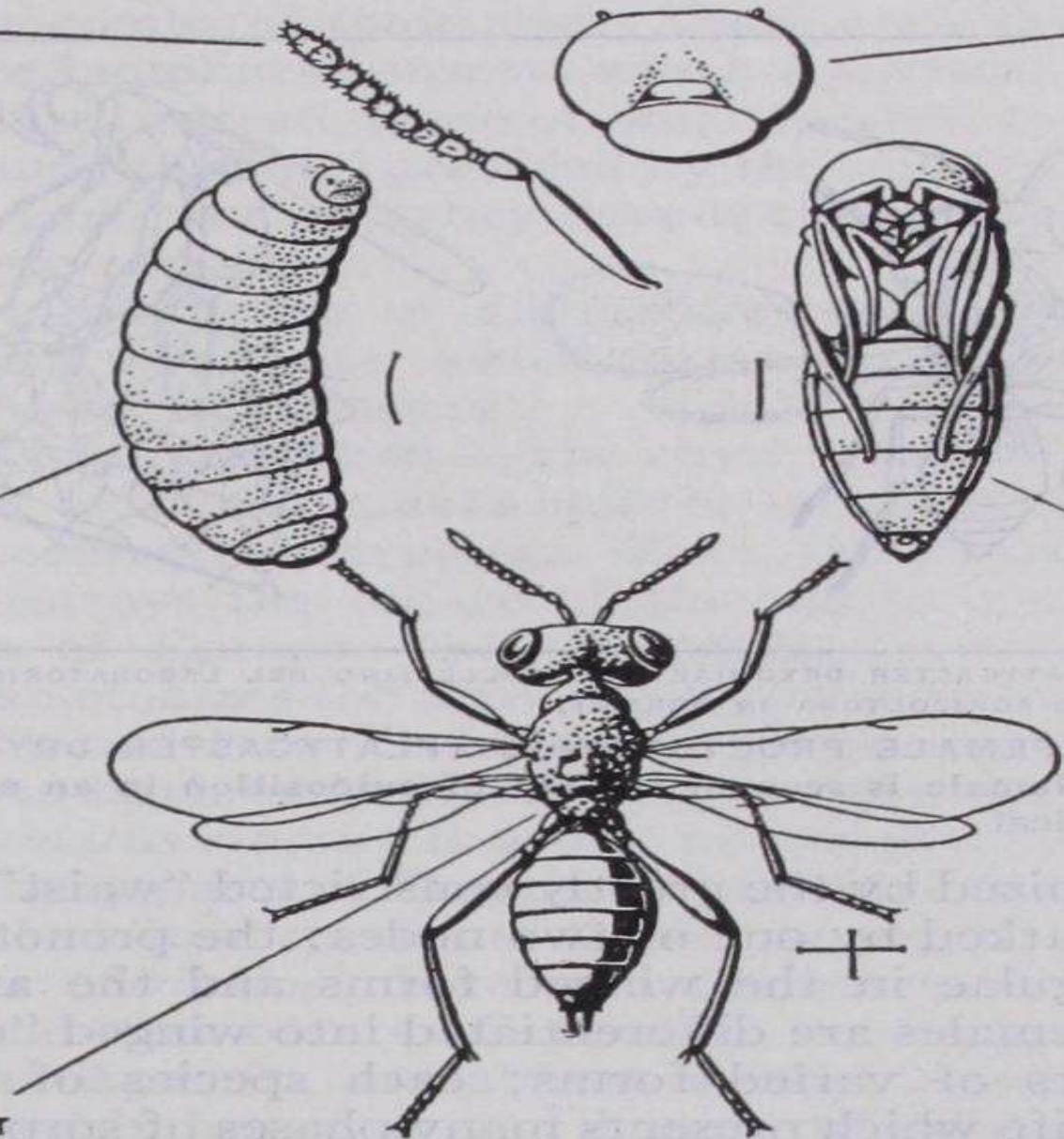
PUPA OF MALE

FEMALE INSECT

AFTER HOWARD,
ENT. TECH
BULL. 5, U.S.
DEPT. AGRIC.

FIG. 5.—LIFE HISTORY OF CHALCID (DIBRACHYS CAVUS)

The sub-order Apocrita is chiefly characterized by the narrowly constricted waist of the adult and by the legless condition of the larvae













Thank you
-Nanditha G.B
UHS14UG2334

