

# 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

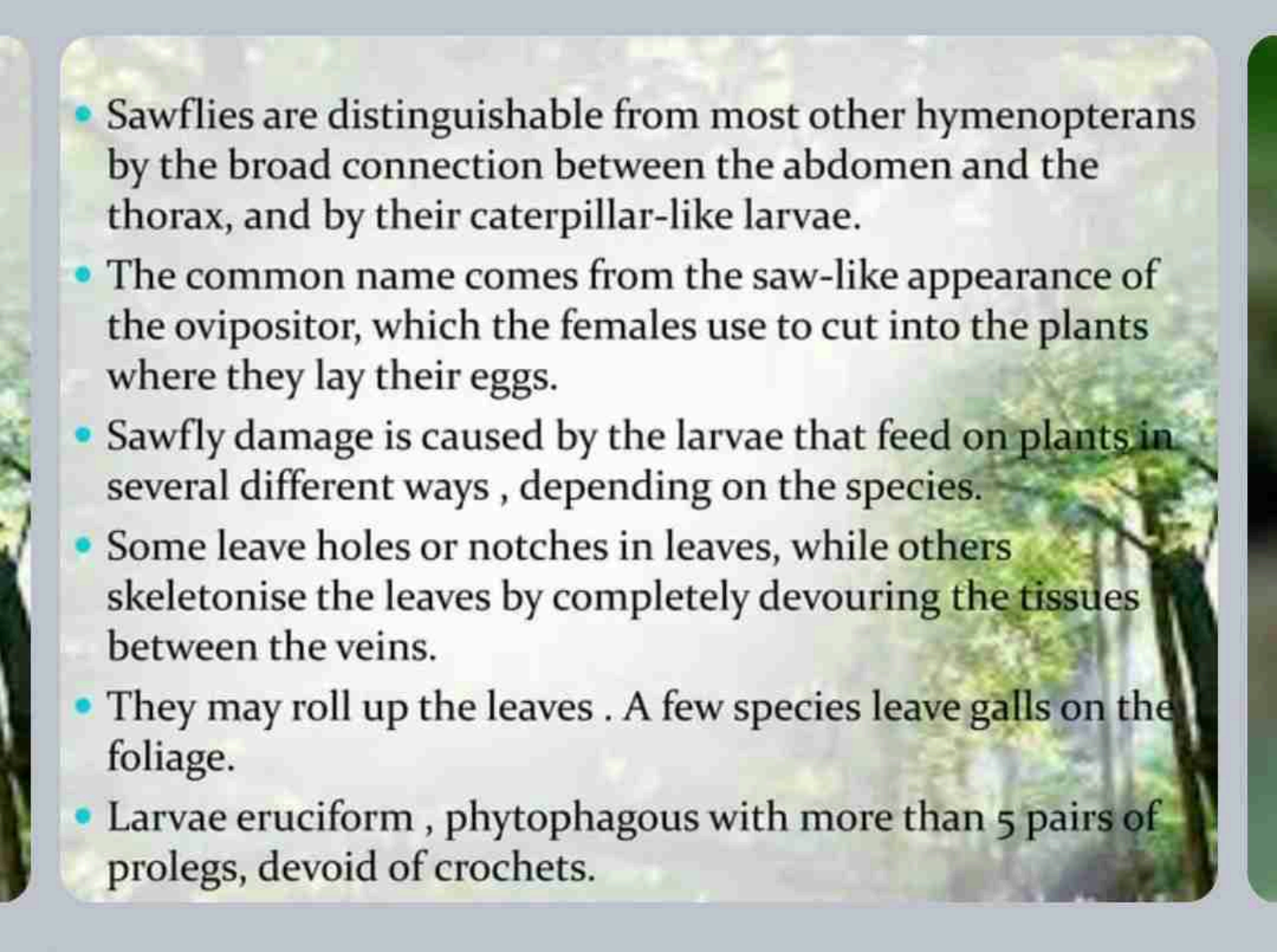
# FAMILY- TENTHREDINIDAE

- Commonly known as sawflies



# SCIENTIFIC CLASSIFICATION

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

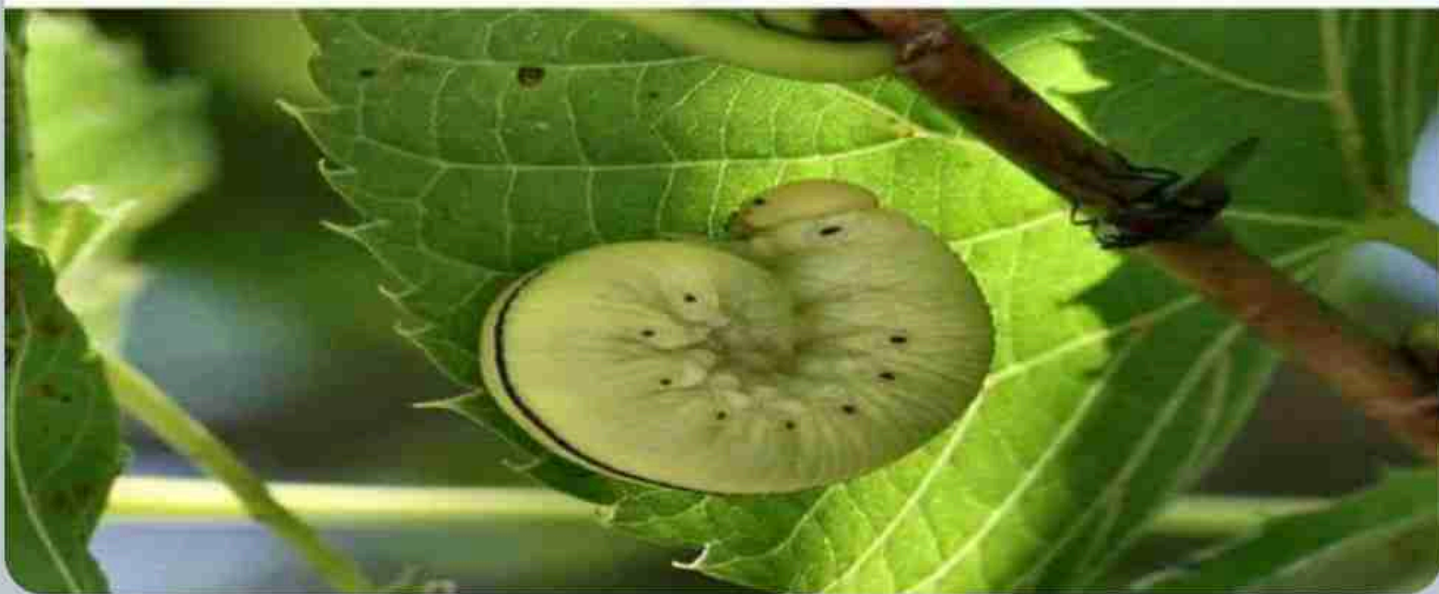
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- Sawflies are distinguishable from most other hymenopterans by the broad connection between the abdomen and the thorax, and by their caterpillar-like larvae.
  - The common name comes from the saw-like appearance of the ovipositor, which the females 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.



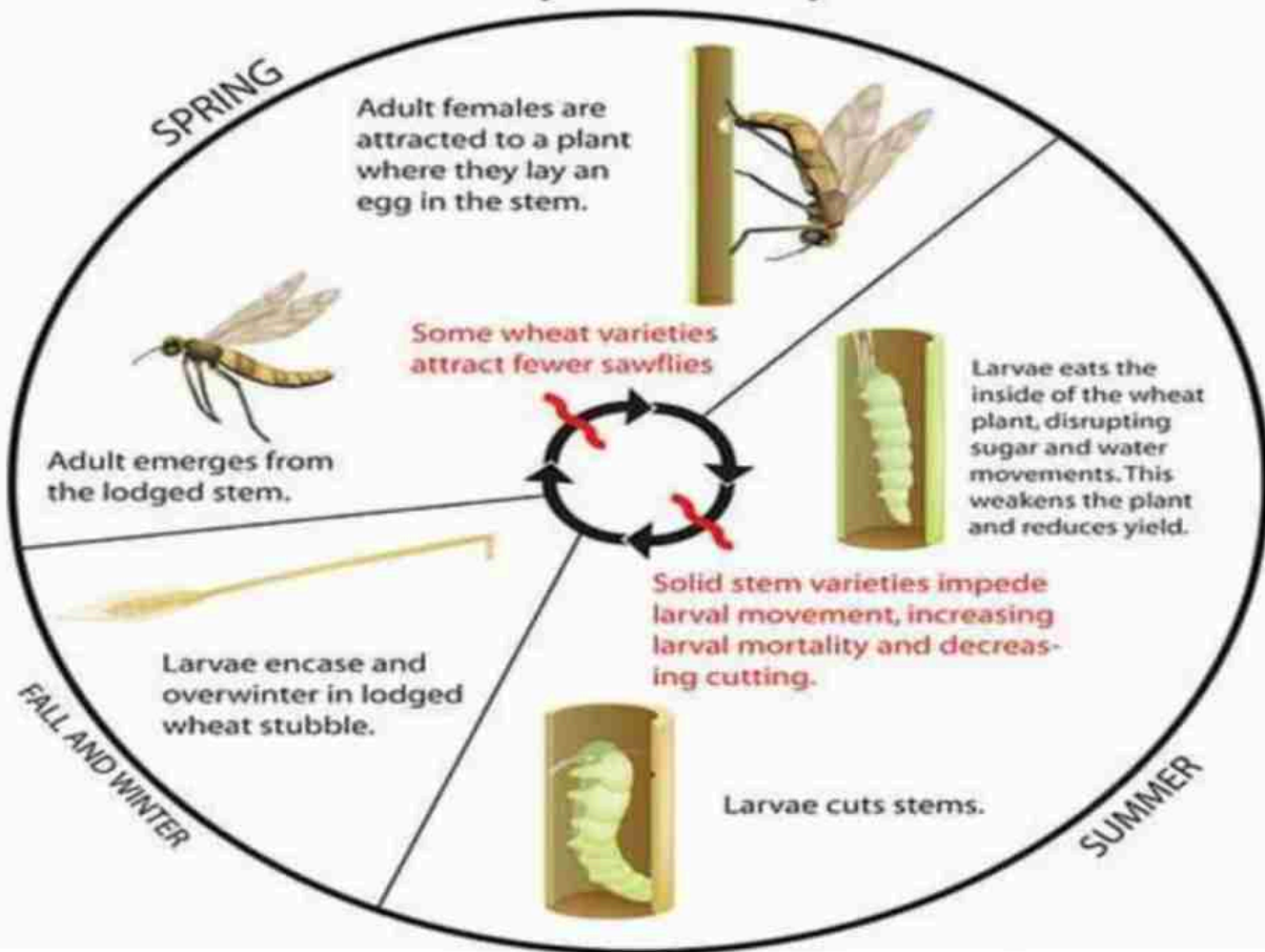








# Sawfly Life Cycle



[www.bumblebee.org](http://www.bumblebee.org)



sawfly saw





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.

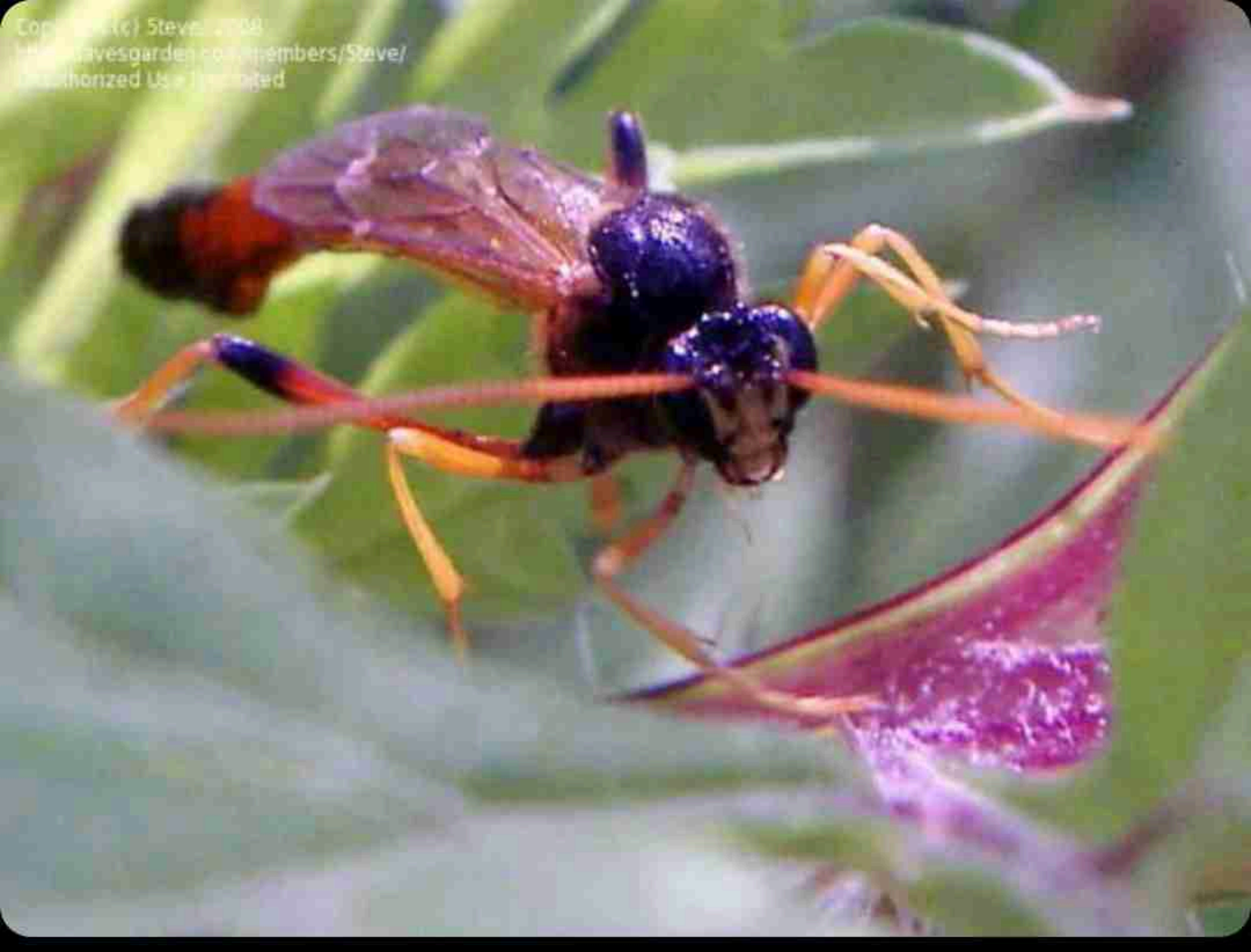
- Antennae long and filiform.

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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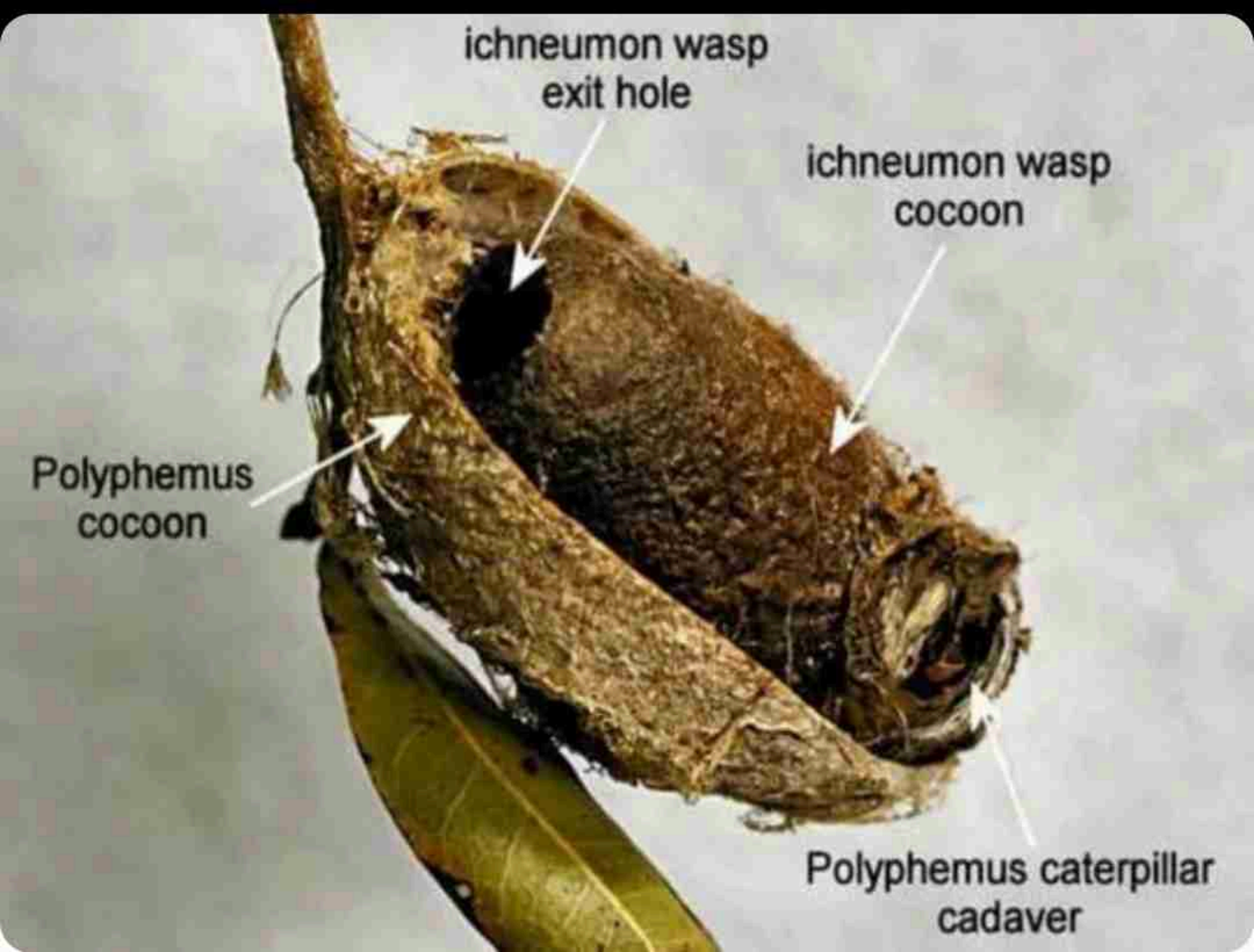
12a



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12b





ichneumon wasp  
exit hole

ichneumon wasp  
cocoon

Polyphemus  
cocoon

Polyphemus caterpillar  
cadaver







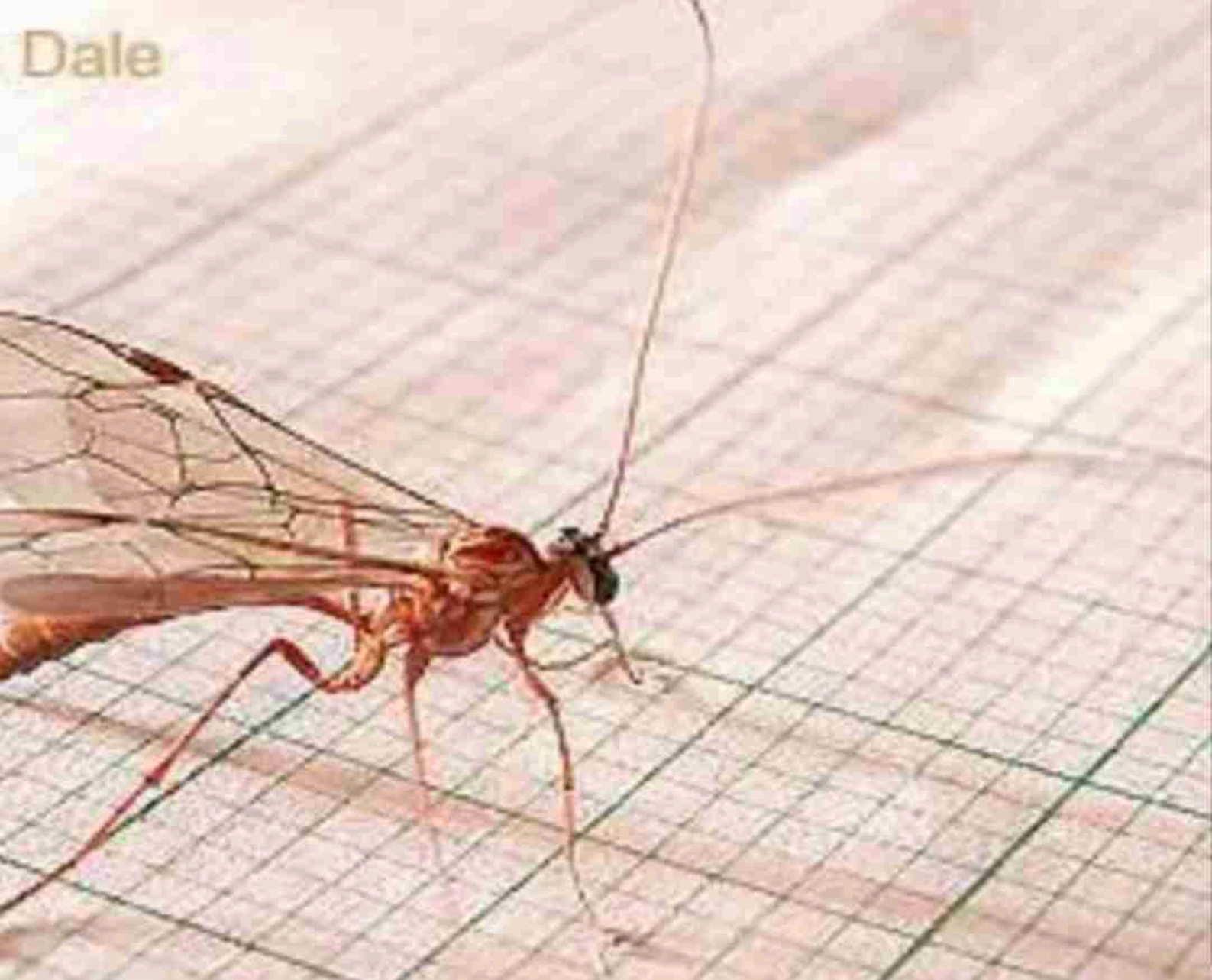


15mmBL excl ovipositor.





Dale





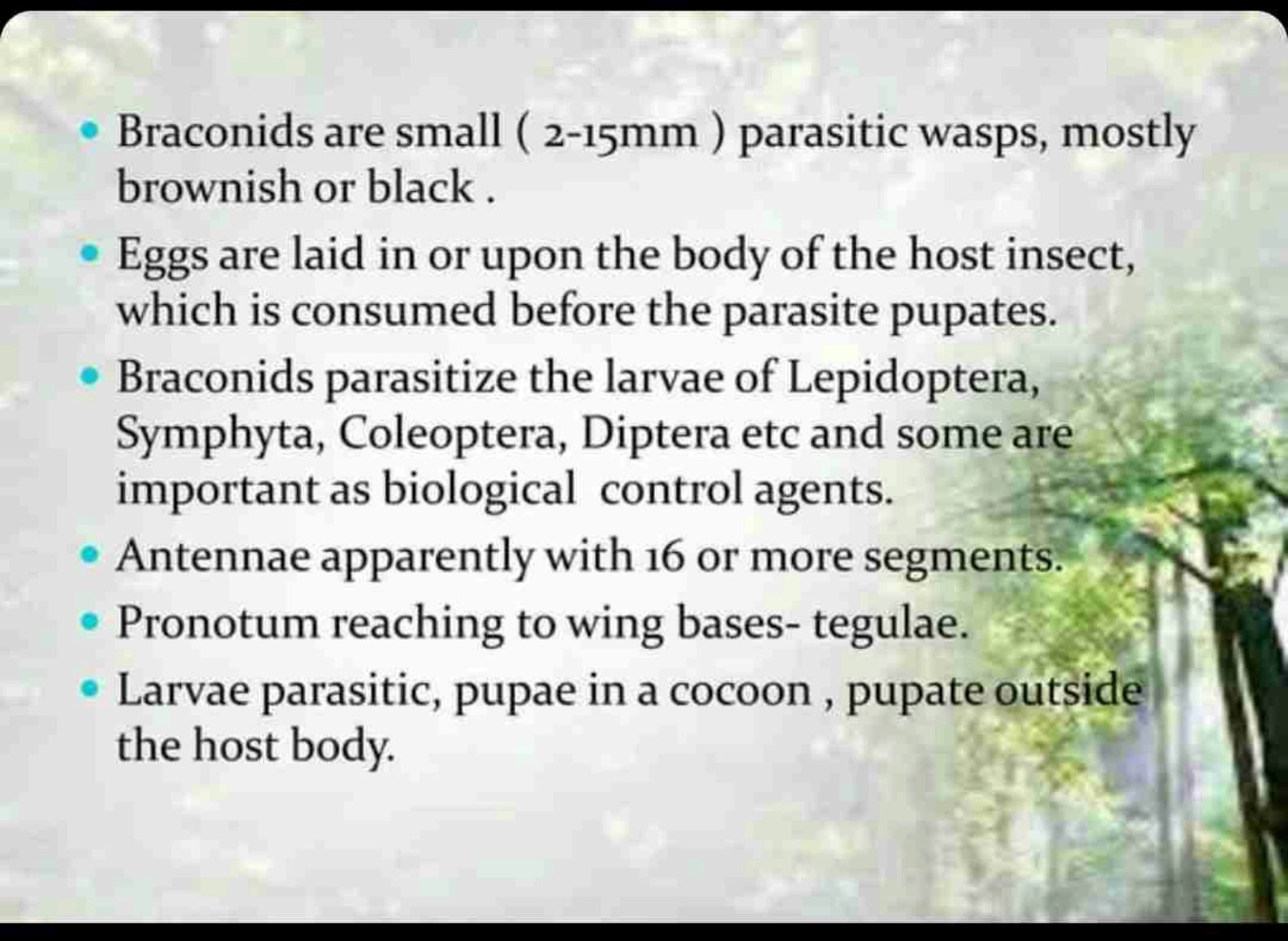
# FAMILY- BRACONIDAE

Commonly called as Braconids



# SCIENTIFIC CLASSIFICATION

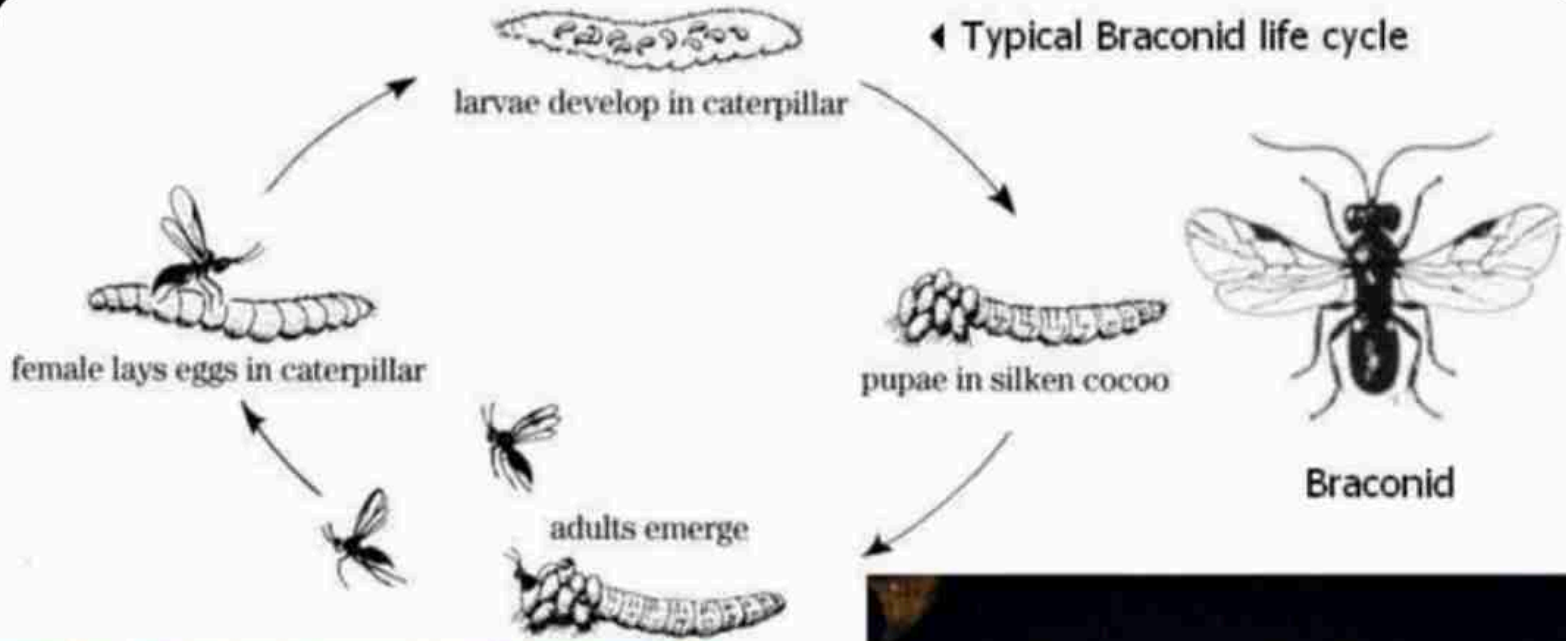
- KINGDOM- Animalia
- PHYLUM- Arthropoda
- CLASS: Insecta
- ORDER: Hymenoptera
- FAMILY: Braconidae

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- 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.





◀ Typical Braconid life cycle



# Braconid wasps



**Adult**



**Larvae feeding on a caterpillar**









# FAMILY- CHALCIDIDAE

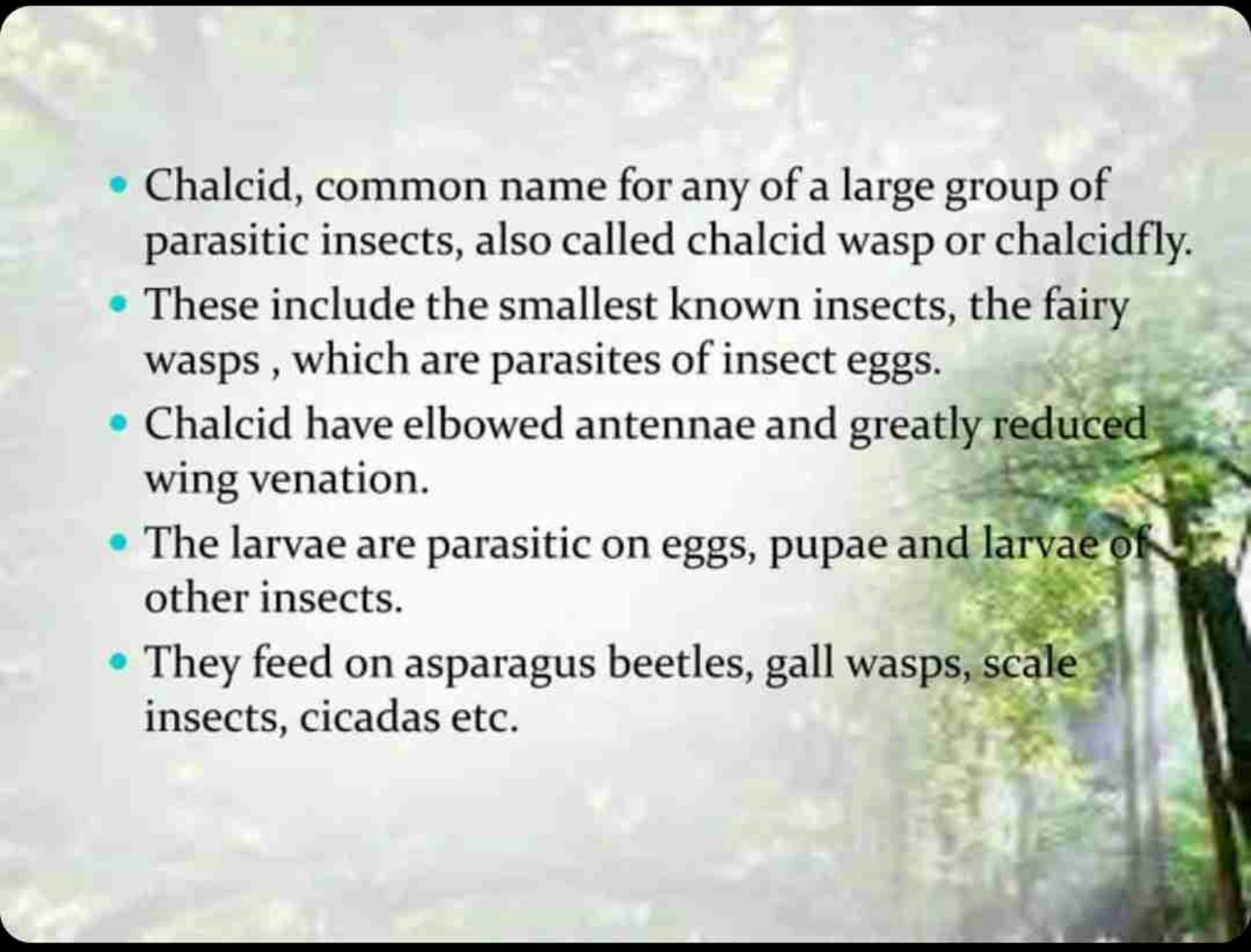
- Commonly called as chalcids





# SCIENTIFIC CLASSIFICATION

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

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- 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.





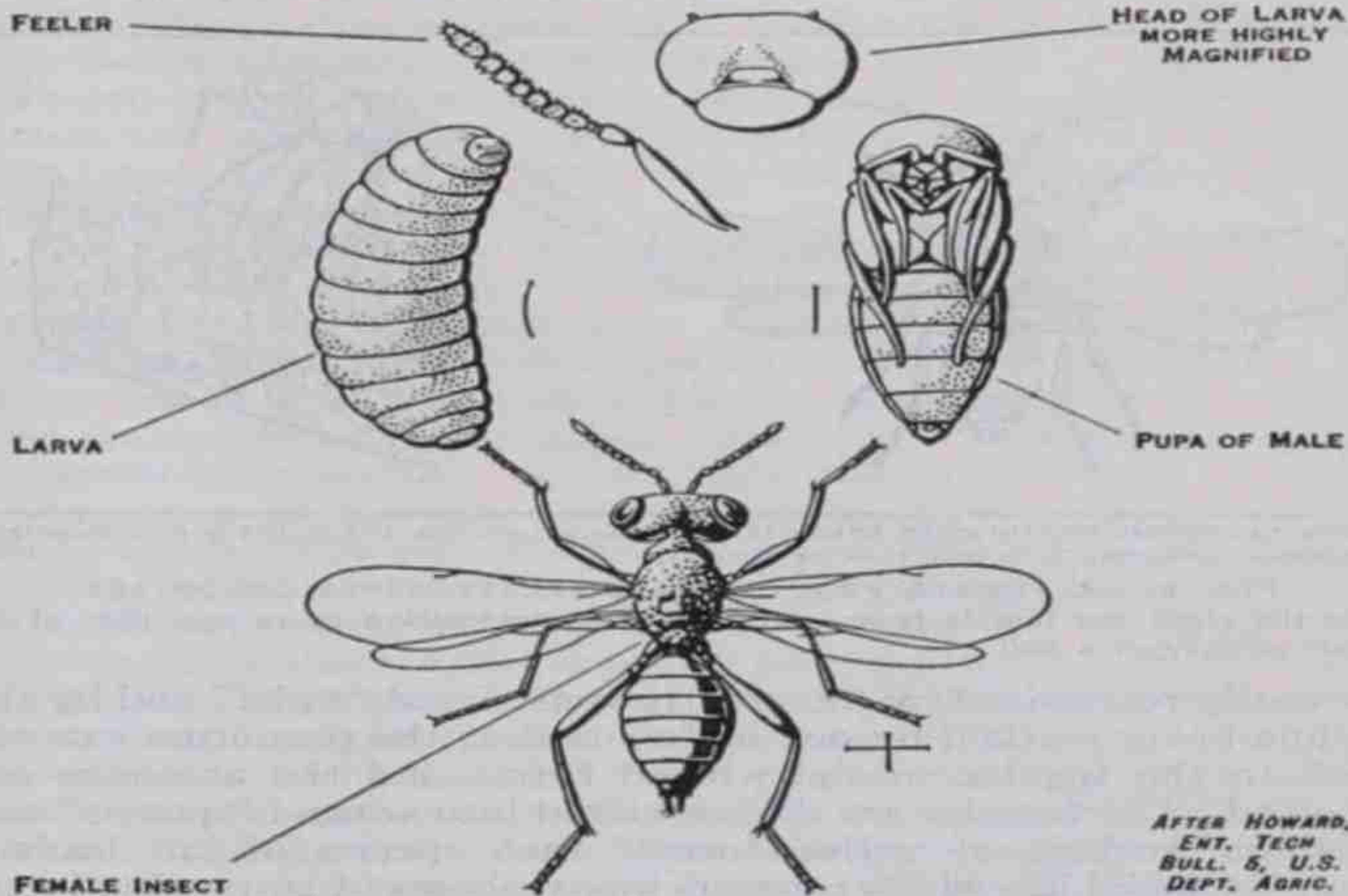


FIG. 5.—LIFE HISTORY OF CHALCID (*DIBRACHYS CAVUS*)

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

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









