

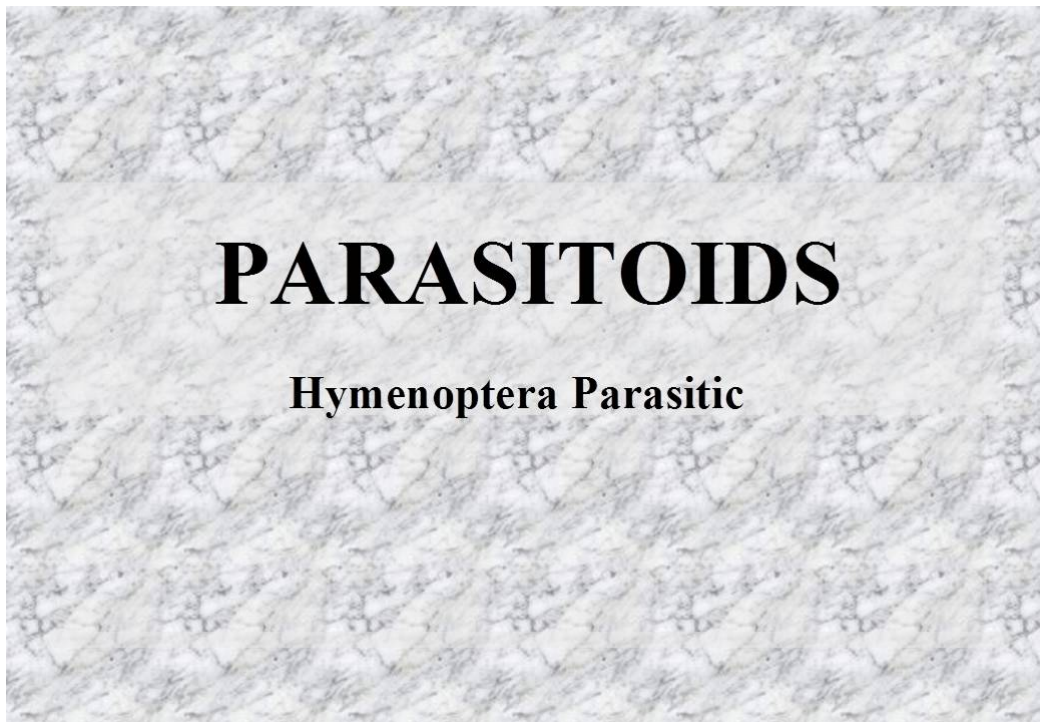
Review of "Parasitoids"

Carlos Henrique Marchiori¹

¹ Instituto Federal Goiano

Insect parasitoids have an immature life stage that develops on or within a single insect host, ultimately killing the host, hence the value of parasitoids as natural enemies. Adult parasitoids are free-living and may be predaceous. Parasitoids are often called parasites, but the term parasitoid is more technically correct. Most beneficial insect parasitoids are wasps or flies, although some rove beetles (see Predators) and other insects may have life stages that are

parasitoids. <https://biocontrol.entomology.cornell.edu/parasitoids.php>.



Caption

■ 1-Parasite

- .Organism usually smaller than host.
- .Can feed on one or more hosts.
- .Generally does not kill this host.
- .Can complete its life cycle on one or more hosts.

Caption

2-Predator

- .Free-living organism throughout the cycle.**
- .Development at the expense of several individuals - prey.**
- .Adult mobile immature stages and stages generally larger than those of prey.**
- .Larvae and adults (male and female) are predators.**
- .Requires more than one individual to complete development.**

Caption

3-Parasitoid (Reuter, 1913).

.Generally do not immediately kill their host, however, in the end, the host is killed.

The immature always kill the host.

.Only the female looks for the host.

.Different parasitoid species may attack different stages of the host life cycle (larva-nymph- pupa and adult).

.Your eggs or larvae are usually placed on, in or near the hosts.

.Adults are free living.

Caption

Parasitoids - Insect Class organisms that develop wholly or partially at the expense of an organism of another species, eventually causing their death and having a free life in adulthood (OVO-LARVA-PUPA-ADULT).

Parasitoids: Orders: Hymenoptera (microhimenoptera), Diptera, Coleoptera, Strepsiptera, Lepidoptera and Neuroptera.

Caption

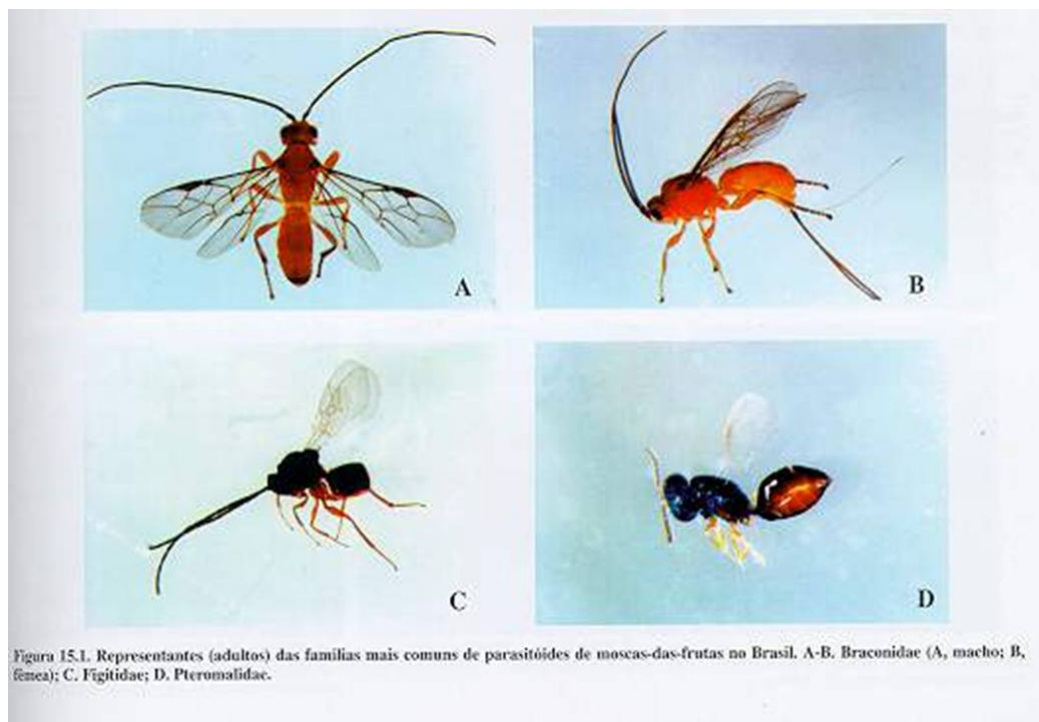
1-Egg Parasitoid - penetrates the egg and emerges from the egg or larva.

2-Larva parasitoid - penetrates the larva and emerges from the larva or pupa.

3-Pupa parasitoid- enters the pupa and emerges from the pupa.

4-Adult parasitoid - penetrates adult and emerges from adult.

Caption

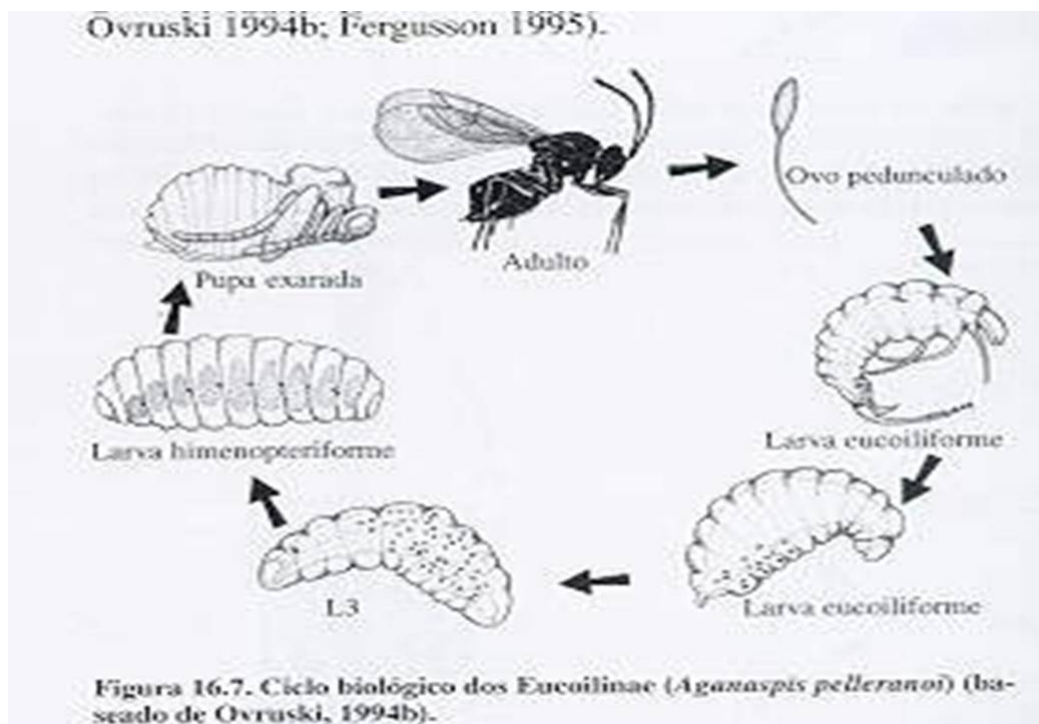


Caption



Brachymeria podagrica (Fabricius) (Hymenoptera: Chalcididae)

Caption



Caption



FIGURA 15.4

Seqüência de produção *in vitro* de *Trichogramma* (A-I) desde o parasitismo em ovos artificiais, larvas em diversos estágios de desenvolvimento até a secreção de grânulos escuros, pupas no início (olhos vermelhos) e final de desenvolvimento e emergência do adulto rompendo o plástico (ovo artificial) e novamente parasitando o ovo artificial (Cônoli, 1997).

Caption

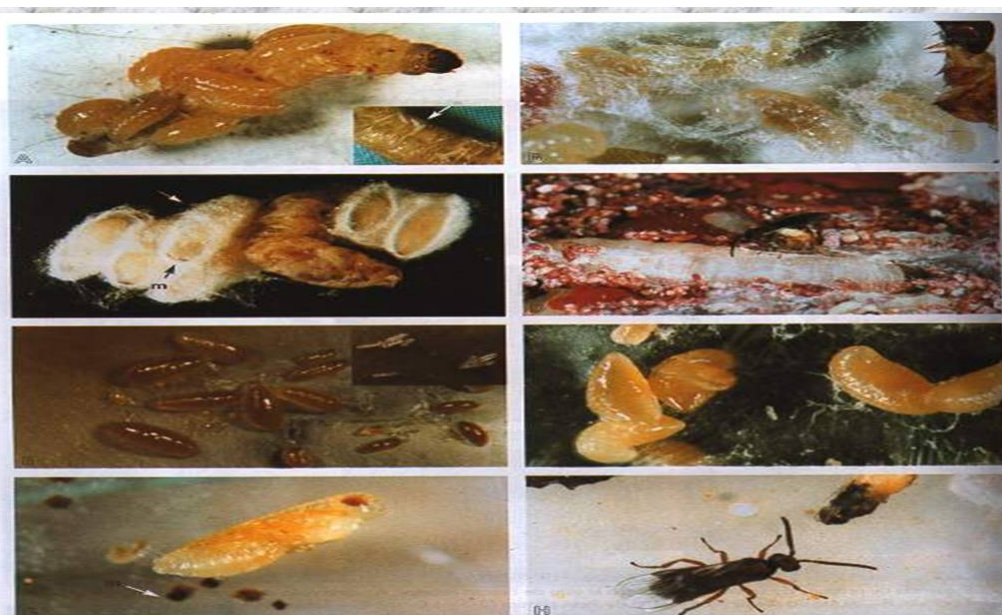


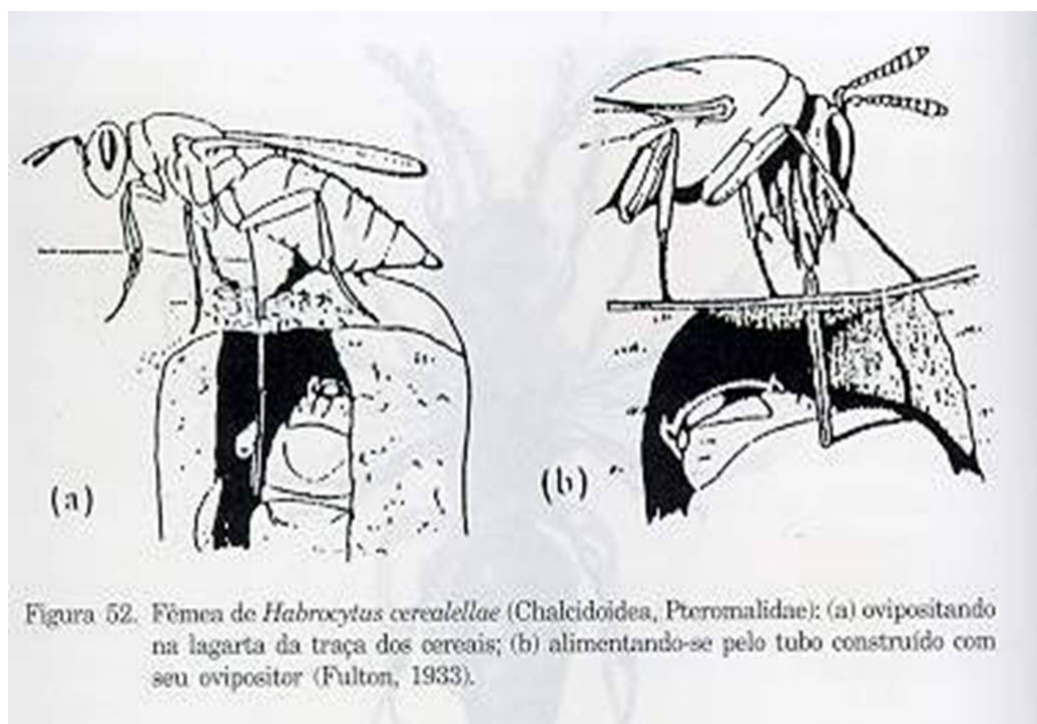
FIGURA 16.2

Desenvolvimento de *Bracon hebetor* no hospedeiro natural, *Anagasta kuehniella* (A-D), e em dieta artificial (E-H). Detalhes em: A – ovos de *B. hebetor*; B – formação de casulo (larvas com 96-100 horas); C – casulo(c) e mecônio(m); D – adultos. E – ovos sobre a dieta; F – larvas em “início” da formação do casulo (120-124 horas); G – Pupas sem casulo (m-mecônio); H – adultos

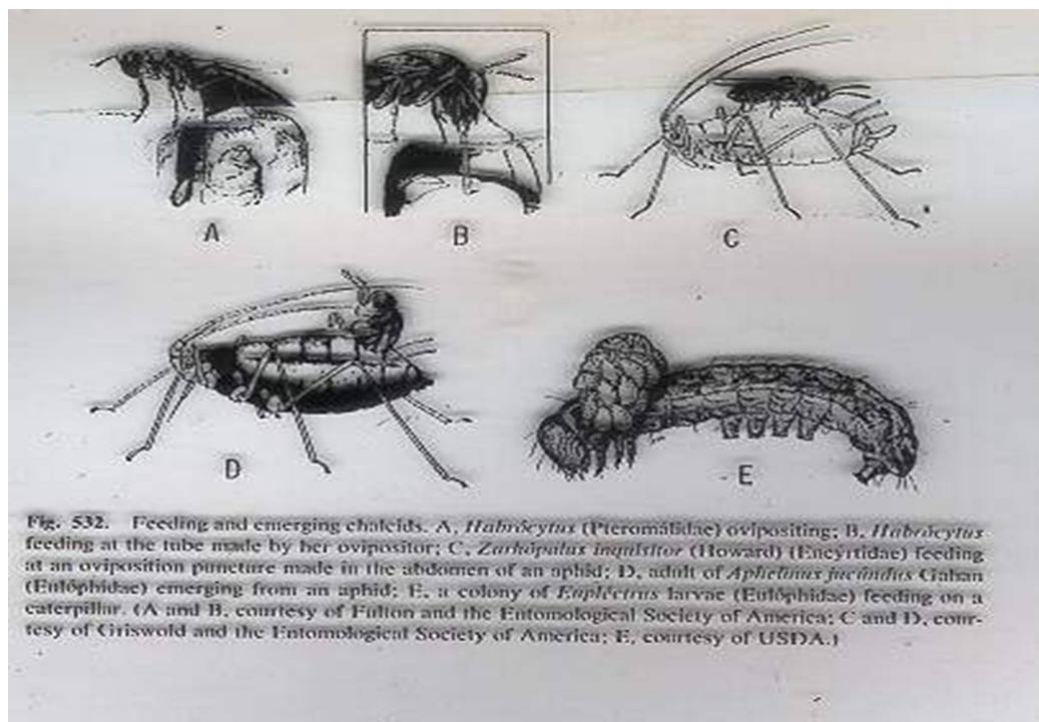
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