

LECTURE 11. Insect abdomen:

structure and its modifications

ABDOMEN

The dorsal and ventral abdominal segments are termed terga (singular tergum) and sterna

(singular sternum), respectively. Spiracles usually can be found in the conjunctive tissue

between the terga and sterna of abdominal segments 1-8. Reproductive structures are

located on the 9th segment in males (including the aedeagus, or penis, and often a pair of

claspers) and on the 8th and 9th abdominal segments in females (female external genitalia

copulatory openings and ovipositor).

MODIFICATIONS OF THE OVIPOSITOR

SEXUAL DIMORPHISM

Female (note the long ovipositor **Male** (two cerci at the end of Between the cerci) the abdomen)

Abdominal structures in insects

Basic structures

Segmentation is more evident in abdomen. The basic number of abdominal

segments in insect is eleven plus a telson which bears anus. Abdominal segments are

called uromeres. On eighth and ninth segment of female and ninth segment of male, the

appendages are modified as external organs of reproduction or genitalia.

These segments

are known as genital segments. Usually eight pairs of small lateral openings (spiracles)

are present on the first eight abdominal segments. In grasshoppers, a pair of tympanum is

CERCI

OVIPOSITOR

found one on either side of the first abdominal segment. It is an auditory organ. It is

obliquely placed and connected to the metathoracic ganglia through auditory nerve.

Modifications:

Reduction in number of abdominal segments has taken place in many insects. In spring tail only six segments are present. In house fly only segments 2 to 5 are visible and segments 6 to 9 are telescoped within others. In ants, bees and wasps, the first abdominal segment is fused with the metathorax and is called propodeum. Often the second segment forms a narrow petiole. The rest of the abdomen is called gaster. In queen termite after mating the abdomen becomes gradually swollen due to the enlargement of ovaries. The abdomen becomes bloated and as a result sclerites are eventually isolated as small islands. Obesity of abdomen of queen termite is called physogastry.

Sources

Qaddo, Ibrahim Al-Jubouri, Hussein Abbas Ali, Mustafa Kamal.1980. Book of General Entomology. University of Baghdad. Number of pages 395.

Nadu Tamil. General entomology. Government arts college (Autonomons) Coimbatore-641018.122 page.

Definition of entomology. <https://www.rvskvv.net>

Richards,O.W.and R.G.Davies.1977.Imms,general textbook of entomology.Imperial college.University of London.934 page.