

Wruuph

Anatomy

The Wruuph's whole body is covered a thick exoskeleton with thin but powerful arms and legs that can support their frame with ease.

Head

The Wruuph have round head with the antennas on the top with a swept back look, the mouth of the Wruuph had four massive mandibles that rip their food into smaller more easily digestible bits, they have two compound eyes one on each side of their head.

The Wruuph have small antennae that follow the head back that give the Wruuph odorant receptors, which identify different aromatic compounds and pheromones; gustatory receptors, that distinguish between different tastes and react to some pheromones; and the ionotropic glutamate receptors, which are narrowly tuned to various poisonous and toxic compounds.

Eyes

The Wruuph's compound eyes are composed of a number of individual lenses, rather than a single lens as in a human's eye, the number of separate visual elements in adults are 28,000 per single eye.

This creates a considerable difference in the presentation of light stimulus to the Wruuph's brain, however the ability of the Wruuph to navigate the world by means of visual stimuli suggest that they have overcome the problems inherent in this multi-faceted perception.

Much like human eyes, the eyes of the Wruuph, can be divided into four basic parts: the supportive material that keeps all the parts together; a light gathering part; a light receptor that converts the received light into electrical energy; and the nerves that carry the electrical impulses to the brain for analysis. In the compound eyes of Wruuph these parts are repeated numerous times side by side in a space saving hexagonal pattern.

The lens is formed by a transparent and colourless cuticle and it is usually biconvex, beneath this is the crystalline cone normally functions as a secondary lens.

The receptive parts of a Wruuph's eye are the retinula cells. Each ommatidium normally has eight retinula cells arranged to leave a central core space in the centre of the ommatidium, into which each retinula cell projects a series of microvilli, these microvilli are the actual light detecting part of the cells.

The corneal lens is supported by primary pigment cells and by secondary pigment cells. The retinula cells are connected to axons at the base of the eye, it is these which carry the information collected by the lenses and converted into electrical impulses to the brain, thus allowing the Suu to see.

Mandibles

The mandibles constitute the moveable aspects of the insect mouth, the mandibles are the equivalent of jaws with the exception that they move transversely.

Mandibles are used not only for feeding but also for attack and defence, and for manipulation of materials as in the nest building.

Thorax (chest)

The Wruuph's thorax has the four arms of the species and the four wings, the thorax has the vital organs of the Wruuph under the thick exoskeleton and is vertical to the ground.

The thorax is the main engine room of the Wruuph. The thorax is built up of a series of concave upper and convex lower integumental plates. The thorax can be conveniently divided into three separate and normally easily visible sections called from the front, the prothorax the mesothorax and the metathorax.

Lower Arms

- The Coxa, this is the most basal aspect of the arms and joins the leg to the abdomen.
- The Trochanter is usually small and serves as a joint between the coxa and the Humerus.
- The Humerus is usually long and stouter than the other segments and contains the main muscles used in digging, lifting and holding weapons if needed.
- The Radius is also generally long serving to increase the length of the leg, as well as adding an extra joint and thus extra flexibility and are connected to the hands.

Upper Arms

- The Coxa, this is the most basal aspect of the arms and joins the leg to the abdomen.
- The Trochanter is usually small and serves as a joint between the coxa and the Humerus.
- The Humerus is usually long and stouter than the other segments and contains the main muscles used in digging, lifting and holding weapons if needed.
- The Radius is long and ends in a sharp point, the exoskeleton turns the Radius more into a slightly curved blade that can tuck into the rest of the upper arm when not in use.

Hands

The Wruuph's hand are two fingers one thumb.

Wings

The wings are long, veined and membranous, narrower at the tip and wider at the base. The hindwings are broader than the forewings and the venation is different at the base. The veins contain haemolymph and both stiffen and strengthen the wings. The leading edge of each wing has a node where other veins join the marginal vein, and the wing is able to flex at this point.

Elytra

Wruuphs have a shell, or hard case, that protects their wings. The Elytra is exactly the same on the right side as it is on the left, they are a mirror image, or symmetrical, to one another.

abdomen

The abdomen has the four legs spread apart or better stability, this is also where the Wruuph can store nutrients for later need, it is the biggest part of the Wruuph and is horizontal to the ground.

The abdomen is built up of a series of concave upper integumental plates and convex lower integumental plates, the whole being held together by a tough yet stretchable membrane. It contains the insect's digestive tract and reproductive organs.

Legs

The legs are split into different parts.

- The Coxa, this is the most basal aspect of the leg and joins the leg to the abdomen.
- The Trochanter is usually small and serves as a joint between the 'coxa' and the 'femur'.
- The Femur is usually long and stouter than the other segments and contains the main muscles used in running, jumping and digging.
- The tibia is also generally long serving to increase the length of the leg, as well as adding an extra joint and thus extra flexibility.
- The Tarsus is the foot of the insect leg and can consist of five segments.
- The Claws are situated at the end of the tarsus and serve to assist the insect in holding onto a substrate. Between the claws may be found a special pad which acts using suction developed by large numbers of minute tubular hairs to help hold the insect to smooth substrates.

Cardiovascular and Digestive Systems

The Wruuph have an open circulatory system which differs in both structure and function from the closed circulatory system found in humans and other vertebrates. In a closed system, blood is always contained within vessels. In an open system, blood spends much of its time flowing freely within body cavities where it makes direct contact with all internal tissues and organs. The circulatory system is responsible for movement of nutrients, salts, hormones, and metabolic wastes throughout the Suu's body. In addition, it plays several critical roles in defence:

- It seals off wounds through a clotting reaction,
- It encapsulates and destroys internal parasites or other invaders,
- The hydraulic properties of blood are important as well. Hydrostatic pressure generated internally by muscle contraction is used to facilitate hatching, molting, and expansion of body after molting, physical movements, reproduction,
- Aids in thermoregulation, it can help cool the body by conducting excess heat away from active flight muscles or it can warm the body by collecting and circulating heat absorbed while basking in the sun.

A dorsal vessel is the major structural component of a Wruuph's circulatory system. This tube runs longitudinally through the thorax and abdomen, along the inside of the dorsal body wall, it is a fragile, membranous structure that collects haemolymphs in the abdomen and conducts it forward to the head.

The Wruuph's digestive system is a closed system, with one long enclosed coiled tube called the alimentary canal which runs lengthwise through the body. The alimentary canal only allows food to enter the mouth, and then gets processed as it travels through the body. The alimentary canal has specific sections for grinding and food storage, enzyme production and nutrient absorption. Sphincters control the food and fluid movement between three regions. The three regions include the foregut, the midgut, and the hindgut.

Mating and reproduction

The male engages the female in courtship dance, to change her interest from feeding to mating. Courtship display has also been observed in other species, but it does not hold for all mantises.

The mating season in temperate climates typically begins in autumn. To mate following courtship, the male usually leaps onto the female's back, and clasps her thorax with his forelegs. He then arches his abdomen to deposit and store sperm in a special chamber near the tip of the female's abdomen. The female then lays between one to five eggs. Eggs are typically deposited in a frothy mass that is produced by glands in the abdomen. This froth then hardens, creating a protective capsule. The protective capsule and the egg mass is called an ootheca.

Life Cycle

The race in general can live for around 100 years

Nymph

When born to twenty five, the Wruuph are in the Nymph form and haven't fully developed wings or the size.

The nymph and adult insect are structurally quite similar, except that the nymph is smaller and has no wings or functional genitalia.

adult

From twenty five to one hundred, the Wruuph work in this time helping the hive and only recently to other planets and stars as the warriors, the adults normally form tight bonds with the others in their crew or group depending on their work.

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