https://www.reference.com/science/compound-eyes-362b8e2642846797#

Web Reference

What Are Compound Eyes?

Compound eyes are types of eyes made up of many repeating units called ommatidia. These types of eyes are mainly present in insects, although some crustaceans, such as crayfish, also possess them. A single compound eye can have as many as 30,000 ommatidia. The quality of vision of these eyes is lower in resolution than that of vertebrates, but compound eyes can pick up the smallest movements that others miss.

Each ommatidium contains its own lens, crystalline cone, visual cells and pigment cells. A single ommatidium is responsible for only a tiny section of the visual field. The compiled information from all the ommatidia in each compound eye creates a composite image. Greater numbers of ommatidia produce a higher-quality picture than fewer ommatidia. An insect, such as a grasshopper, with fewer ommatidia has a coarser, lower-quality image than an insect with more ommatidia, such as a honeybee. Although the honeybee may have good vision compared to other insects, its vision still has only one-sixtieth of the resolution of a human eye. Compound eyes also give insects a bigger field of vision, sometimes almost encompassing an entire sphere around an insect.

Insects can see color and other forms of light with their compound eyes. A honeybee can see most colors, except for red. Additionally, insects such as honeybees and monarch butterflies can see ultraviolet light. The ability to see ultraviolet light is essential to organisms that navigate using the light of the sun.