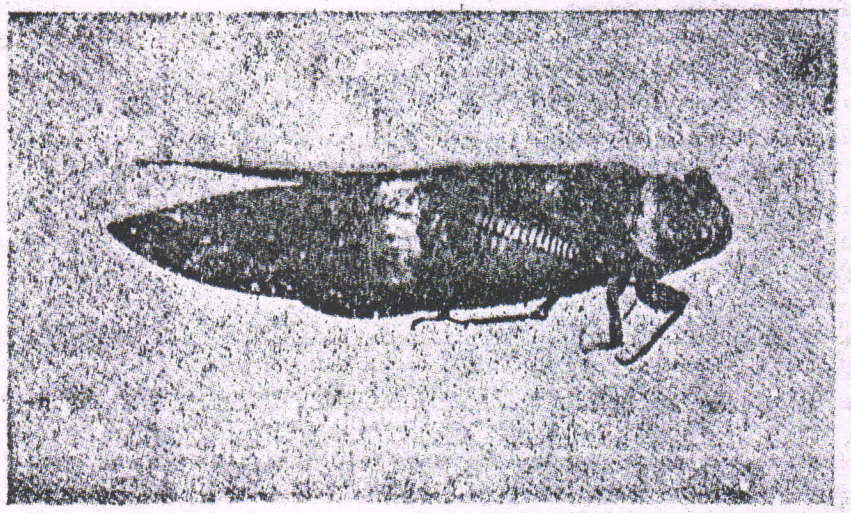
Popular notes

PULSATING SHRILLS OF CICADA

CASUAL visitors to the foothills of Arunachal Pradesh just at the onset of monsoon will receive a warm welcome with a shrill note of 'hello', which when heard from a distance reminds of a well orchestrated symphony. The noice may well be compared with the sound of an automobile engine, with a weak battery, which refuses to start in the early morning. One mistakes that the pulsating shrills are from birds. But a thorough investigation reveals that the source is nothing but a small dark insect with a rather broad and flattened body, slightly larger than a cockroach.



Known as cicada, the insect generally clings to trunks or branches of trees where it can derive sufficient camouflage and concealment. Cicadas belong to the family Cicadidae, a suborder of *Hemiptera*, and are mainly distributed in tropical areas. But they extend to temperate regions also. About 1,500 species are known all over the world.

The insects possess two pairs of large wings with a characteristic pattern of veins, which stop short of the edge so that there is a narrow margin for each wing without veins.

In some species, the wings are transparent and shiny with distinct veins, while in others these are coloured. For instance, some Indian species have dark wings with a yellow band. When the wings are coloured, the pigment cannot be rubbed off as in the case of butterflies and moths whose wings are covered with loosely attached scales.

The most interesting feature of cicada is its sound which can be heard hundreds of metres away for more than a month during monsoon when their activity is maximum — may be they enjoy the rain. In many species, the male is the vocalist, while the female is silent. In some, both the sexes are vocalists. Judging from the pitch of sound—it almost subdues the ordinary human conversation—one can presume that the method employed for sound generation is extremely efficient.

A brief anatomy of the insect shows that the shrill-producing apparatus consists of a pair of drum-like membranes, called tymbals, at the base of abdomen, each one supported by an elastic ring. A muscular band attached to the membrane pulls it. When relaxed, the membrane bounces back producing sound just like a vibrating tin-lid. The membranes oscillate at the rate of 100 to 500 times a second. The whole apparatus is enclosed in a pair of resonating chambers that are used for amplifying the sound. Each species is identified with a characteristic 'signature tune' and an entomologist recognises the cicada by its shrill just as an ornithologist does with the song of a bird.

Interestingly, if anyone approaches cicadas while they are "singing", the insects end up the chorus and fly off to more safe places. Similarly, when a metallic or wooden plank is held in the direction of sound, they immediately stop making noice. Even if a palm is held over the insect in different directions, the pulsations suddenly cease.

The mouth of the insects, which feed on plant sap from succulent shoots, are adopted for piercing and sucking. Since the sap contains large quantity of water and sugars, the insects suck a large quantity of sugary solution and also excrete a good amount of liquid in the form of fine drops. While standing under a tree in a tropical forest, sometimes if one wonders why it is drizzling when the sky is clear, it is probable that cicadas are feeding overhead.

The insects have a curious life cycle. They lay eggs in slits on branches of trees and after several weeks the nymphs hatch out and fall on the ground. They have broad legs powerful enough for digging, using which the nymph burrows

into the soil and feeds by extracting sap from roots of plants. The period of underground feeding varies from species to species. The nymph in some cases builds a chimney of earth projecting several inches above the ground. After feeding, the nymph comes out and climbs a tree where it rests and within days the skin splits and the adult, now a winged insect, emerges out.

The North American cicada is notorious for its 17-year life cycle. Its subterranean larval period is known to be as prolonged as 13 to 17 years, after which it comes out to the surface and lives for brief period as a noisy insect. This species is popularly known as the 17-year cicada and has a wide distribution over the United States. However, it does not appear every 17 years over the ground but is found frequently in numerous localities. Several breeds of this species are known to exist at present. □

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