

**Studi Morfometri dan Fungsi Antena Jangkrik Gua
(*Rhaphidophora* sp.) pada Stadium Awal, Juvenil, dan Dewasa
dari Gua Sumitro, Kulon Progo**

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INTISARI

Rhaphidophora sp. merupakan serangga anggota Famili Rhaphidophoridae yang hidup di Gua Sumitro, Kulon Progo. Keadaan gua yang gelap memaksa *Rhaphidophora* sp. beradaptasi dengan memanfaatkan reseptornya untuk dapat bergerak dengan keadaan gua yang gelap atau minim cahaya. Spesies ini memiliki antenna yang asimetri, diduga menyebabkan perbedaan fungsi dari antenna kanan dan kiri. Penelitian ini bertujuan untuk mempelajari struktur morfologi antenna kanan dan kiri pada beberapa stadium jangkrik gua dan mempelajari fungsi antenna kanan dan kirinya. Penelitian ini dilakukan dengan pengamatan dan pengukuran terhadap antenna jangkrik gua. Pengamatan dilakukan dengan menggunakan kamera infra merah dan kamera biasa dengan bantuan cahaya lampu dan hasilnya ditampilkan dalam bentuk potongan video. Jangkrik ditangkap dan difiksasi menggunakan larutan Bouin dan direndam dalam alkohol 70%. Pengukuran pertama berupa panjang tubuh, massa basah tubuh, dan panjang antenna. Antenna kemudian dipotong dari tubuh dan diukur luas elemen antenna dan dihitung jumlah sensillanya menggunakan bantuan mikroskop yang terhubung kamera serta dengan bantuan software AmScope 3.7.3036. Hasil dari penelitian menunjukkan tidak ada perbedaan morfologi antara antenna kanan dan kiri untuk setiap stadium perkembangan dan jenis kelamin. Akan tetapi, terdapat perbedaan ukuran dan densitas sensilla di setiap elemen antenna. Antena jangkrik gua (*Rhaphidophora* sp.) yang berbeda ukuran (asimetri) diduga mendukung keluasaan jangkauan untuk eksplorasi lingkungan. Antena panjang digunakan untuk meraba obyek dengan jangkauan yang lebih jauh, sedangkan antenna yang pendek untuk meraba obyek yang lebih dekat.

Kata kunci: gua, *Rhaphidophora* sp., morfometri, antenna, asimetri.

Morphometric and Functional Study of Camel Cricket's (*Rhaphidophora* sp.) Antennae at Early Nymph, Juvenile, and Mature Stage from Sumitro's Cave, Kulon Progo

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ABSTRACT

Rhaphidophora sp. is member of Rhaphidophoridae family which could be found at Sumitro Cave, Kulon Progo. The cave environment provide almost no light available, forced cricket to adapt to the situation. The camel cricket had adapted to optimize its receptor to be able to move in the cave. One of the adaptation is the utilization of asymmetric form of right and left antennae, which probably also exhibit the different function of the antennae. This research aims to study the morphology of the right and left antennae structure, at some of development stage of the camel crickets. This research was carried out by observation and measurement of antennae structure and morphology. Observations were made using an infrared and ordinary camera. The results were presented on video record. Camel crickets were caught and fixed in Bouin solution and washed in alcohol 70%. Measurements were conducted for body length, bodymass, and the antenna length. The antennae were removed from the body. The number of antennae sensilla were measured by using microscope connected to camera and observed with the AmScope 3.7.3036 software. The results show that there were no differences in morphology of left and right antennae, in every developmental stage and also on male and female camel cricket. However, there were differences in size and density of sensilla in every elements of the antennae. The result suggest that different sizes of the antennae support its function related to the long and short range coverage area to be scanned by the cricket.

Keyword: cave, *Rhaphidophora* sp., morphometry, antennae, asymetry.