

HUBUNGAN KEKERABATAN ANGGOTA ORDO ODONATA ENDEMIK JAWA

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INTISARI

Capung merupakan salah satu kelompok serangga yang sangat erat kaitannya dengan air. Capung bermanfaat bagi kehidupan manusia yaitu sebagai bioindikator kualitas lingkungan akuatik. Lebih dari 5000 jenis capung terdapat di seluruh dunia. Indonesia terdapat sekitar 750 jenis capung, beberapa diantaranya endemik Sulawesi *Gynacantha Penelope*, endemik Jawa *Rhinocypha fenestrata*, *Nosostica insignis*, *Drepanosticta sundana*, *Gomphidia javanica*, *paragomphus reindwardtii*. Spesies endemik yang ditemukan merupakan hal yang perlu dikaji kembali baik berdasarkan karakter morfologi maupun molekular. *Gen Cytochrome c Oxidase sub unit 1 (COI)* memiliki sifat yang memenuhi syarat untuk digunakan menentukan identitas suatu spesies. Tujuan penelitian untuk mengetahui kemiripan karakteristik morfologi dan hubungan kekerabatan anggota Ordo Odonata endemik Jawa. Lokasi pengambilan sampel berasal dari Yogyakarta (Sleman) dan Jawa Tengah (Purworejo, Wonogiri), Pulau Karimun Jawa, Pulau Bawean, Lampung, Palembang, Makasar, Bali, Lombok, Sulawesi, Papua, Papua Barat, Pulau Roon, Pulau jepen. Prosedur kerja: koleksi sampel, identifikasi sampel, karakterisasi morfologi, karakterisasi molekular, analisis data: software MVSP 3.1A, PFE, Cluster X 2.1, MEGA 5.1, Phytid dan Paint shop. Capung endemik Jawa *Paragomphus reindwardtii* memiliki hubungan kemiripan *Ictinogomphus decorates* (Famili Gomphidae), *Drepanosticta sundana* memiliki hubungan kemiripan *Drepanosticta quadrata* (Famili Platystictidae), *Nosostica insignis* memiliki hubungan kemiripan *Prodasineura homeralis* (Famili Protoneuridae), *Rhinocypha fenestrata* memiliki hubungan kemiripan *Rhinocypha monochroa* (famili Chlorocyphidae). Capung endemik Jawa *Drepanosticta sundana* memiliki hubungan kekerabatan *Drepanosticta clavata* (Famili Platystictidae) memiliki bersifat monofiletik. *Nosostica insignis* (famili Protoneuridae) memiliki hubungan kekerabatan *Indolestes* sp. (famili Lestidae) bersifat parafiletik. *Paragomphus reindwardtii* (famili Gomphidae) memiliki hubungan kekerabatan *Rhinocypha fenestrata* dan *Heliocypha fenestrata cornelli* (famili Chlorocyphidae) bersifat parafiletik. *Rhinocypha fenestrata* memiliki hubungan kekerabatan *Heliocypha fenestrata cornelli* bersifat monofiletik.

Kata kunci: Odonata, Endemik Jawa, Fenetik, COI.

PHYLOGENY RELATIONSHIP OF JAVA ENDEMIC ODONATA MEMBERS

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ABSTRACT

Dragonfly is one of insects group which most related with aquatic environment. Dragonfly also useful role as water quality indicator. More than 5000 dragonflies species spread out of around the world. There are 750 dragonflies species in Indonesia, some of them are endemic species in Sulawesi (*Gynacantha penelope*) and endemic in Java (*Rhinocypha fenestrata*, *Nosostica insignis*, *Drepanosticta sundana*, *Gomphidia javanica*, and *Paragomphus reindwardtii*). These endemic species are something important to be studied forward based on morphological and molecular characteristic. Cytochrome c Oxidase subunit 1 (CO1) gene, a molecular data, was used in present study. This research aimed to know similarity and phylogeny relationship of members of Java endemic Odonata Order. Sample was taken from Yogyakarta (Sleman) Central Java (Purworejo and Wonogiri), Karimun Jawa Island, Bawean Island, Lampung, Palembang, Makasar, Bali, Lombok, Sulawesi, Papua, Papua Barat, Roon Island and Japen Island. morphological characterization, molecular characterization, data analysis using MVSP 3.1A, PFE, Cluster X 2.1, PHYLIP v3.6.9, MEGA 5.1, Phydit and Paint software. Results shown that *Paragomphus reindwardtii* has similarity relationship with *Ictinogomphus decorates* (Famili Gomphidae), *Drepanosticta sundana* has similarity relationship with *Drepanosticta quadrata* (Famili Platystictidae), *Nosostica insignis* has similarity relationship with *Prodasineura homeralis* (Famili Protoneuridae), *Rhinocypha fenestrata* has similarity relationship with *Rhinocypha monochroa* (Famili Chlorocyphidae). Phylogeny relationship between *Drepanosticta sundana* and *Drepanosticta clavata* (Famili Platystictidae) was monophyletic. Phylogeny relationship between *Nosostica insignis* (famili Protoneuridae) *Indolestes* sp. (famili Lestidae) was paraphyletic. Phylogeny relationship between *Paragomphus reindwardtii* (famili Gomphidae), *Rhinocypha fenestrata* and *Heliocypha fenestrata cornelli* (famili Chlorocyphidae) was paraphyletic. Phylogeny relationship between *Rhinocypha fenestrata* relation of phylogeny *Heliocypha fenestrata cornelli* was monophyletic.

Key words: Odonata, Endemic Java, Fenetic, COI