



First Record of *Calydiscoides difficilis* (Yamaguti, 1953) Young, 1969 (Monogenoidea, Polyonchoinea, Diplectaniade) on Gills of Three Fish species off Marine Waters of Iraq

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Abstract: A parasitological examination of two species of lethrinid fishes; Pink ear emperor *Lethrinus lentjan*, Spangled emperor *L. nebulosus* and Areolate grouper *Epinephelus areolatus* caught in Iraqi marine territorial waters from January to December 2020, revealed that the gills of the fishes were infected with diplectanid monogenoid, which is identified as *Calydiscoides difficilis* (Yamaguti, 1953) Young, 1969. This study redescribed the parasite and for the first time described the egg and confirmed that the species has a wide range of dimension resulting from intraspecific variations. The measurements of hard and soft parts of the parasite collected from *L. lentjan* are smaller than those from *L. nebulosus*. In addition, the measurements from *E. areolatus* are close to that from *L. lentjan* or intermediate between *L. nebulosus* and *L. lentjan*. The past record of *C. difficilis* from *L. havak* is discussed and hence *L. nebulosus* and *L. lentjan* are considered as new records to the Arabian Gulf. Dimensions of the eggs of the parasite in the current study is given here for the first time. The occurrence of *C. difficilis* from Epinephelidae is considered as a new host family record.

Keywords: Ectoparasite, *Epinephelus areolatus*, Fish, Gills, *Lethrinus lentjan*, *Lethrinus nebulosus*.

Introduction

The family Lethrinidae has five genera and 44 valid species in the world (Fricke *et al.*, 2022). They are distributed in the tropical waters of the Indo-Pacific. Lethrinids are bottom-feeding, carnivorous, near reefs; they typically feed primarily at night on benthic invertebrates or fishes (Froese & Pauly, 2022). Pink ear emperor *Lethrinus lentjan* (Lacepède, 1802) is a marine, brackish water, reef-associated; non-migratory fish. It is distributed in the Indo-West Pacific, widespread from the Red Sea, Arabian (Persian) Gulf and East Africa. It is a

sandy bottoms dweller in coastal areas, deep lagoons and near coral reefs; feeds primarily on crustaceans and molluscs but echinoderms, polychaetes and fishes are also consumed in considerable quantities (Carpenter *et al.*, 1997).

Spangled emperor *Lethrinus nebulosus* (Forsskål, 1775) is a marine, brackish, reef-associated and non-migratory species. It is distributed in the Indo-West Pacific, the Red Sea, Arabian Gulf, East Africa to southern Japan and Samoa. It feeds on echinoderms,