



New records of suctorians (Ciliophora: Suctoria) as epibionts of aquatic true bugs (Hemiptera: Prosorrhyncha: Nepomorpha) from two regions: Mexico and Eastern Europe

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Abstract

Here, we provide new records of suctorians (Ciliophora: Suctoria), epibionts of aquatic true bugs (Hemiptera: Prosorrhyncha: Nepomorpha) collected in Ukraine, Belarus and Mexico. The worldwide distribution of the 16 species we found is updated, from which, 15 species are new records as epibionts of 15 species of aquatic true bugs. Only for the suctorian *Discophrya gessneri* Matthes, we confirm the previous record (epibiont of *Aphelocheirus aestivalis* Fabricius). We conclude that the relationship between the suctorians and aquatic true bugs is poorly studied and some suctorian genera (*Discophrya* Lachmann and *Periacineta* Collin) inhabit as nepomorphans as other aquatic insects (Coleoptera). However the high degree of specificity at the species level of these genera is evident, for which we provide some possible explanations according to the group of basibiont.

Key words: Suctorian, nepid, epibiosis, epibiont-basibiont system, Mexico, Ukraine, Belarus

Introduction

There are approximately 8,000 species of ciliated protozoa (Lynn, 2008), and some of them are symbionts of other organisms. Epibiotic suctorian ciliates of aquatic insects (such as hemipterans) are poorly understood worldwide, and few studies have been done for the genera *Corixa* Geoffroy, *Sigara* Fabricius, *Notonecta* Linnaeus, *Plea* Leach, *Nepa* Linnaeus, *Naucoris* Geoffroy and *Aphelocheirus* Westwood (Matthes *et al.* 1988). Recently in Mexico, Mariño-Pérez & Mayén-Estrada (2009) recorded *Discophrya elongata* (Claparède et Lachmann) and *Acineta tuberosa* Ehrenberg as epibionts of the water boatman *Corisella edulis* (Champion). In the Ukraine, Dovgal (1987, 1991) reported *Discophrya lichtensteinii* (Claparède et Lachmann) (under synonym name *D. wrzesniowskii*) as an epibiont of the water scorpion *Ranatra linearis* (Linnaeus), *D. ochthebii* Matthes as an epibiont of the pygmy backswimmer *Plea leachi* McGregor & Kirkaldy, *D. gessneri* as an epibiont of *Aphelocheirus aestivalis*, *Periacineta buckei* (Kent) (under name *P. nepae*) on the water scorpion *Nepa cinerea* Linnaeus, and *Ranatra linearis* and *Periacineta notonectae* (Claparède et Lachmann) as epibionts of the water boatman *Corixa* sp. Only two of these suctorians, *Discophrya lichtensteinii* and *Periacineta buckei* were recorded on *Nepa cinerea*, from Lake Khotin, high-water bed of river Desna, near village Timanovka, Sumy region (Dovgal, 1987). Also, Dovgal (1987, 1991) reported for the first time *D. lichtensteinii* and *D. ochthebii* as epibionts of true bugs.

The aims of the present study are to update and compare the records and distribution of epibiont suctorian attached to some aquatic insects, from two biogeographical areas.