

# Occurrence of *Temnocephala* (Platyhelminthes: Temnocephalida) in Immatures of *Kempnyia reticulata* (Enderlein) (Insecta: Plecoptera: Perlidae)\*

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**Abstract.** First register of *Temnocephala* (Platyhelminthes: Temnocephalida) in immature of *Kempnyia reticulata* (Enderlein) (Plecoptera: Perlidae). The insects were collected in rivers of Estação Biológica de Santa Lúcia, Santa Teresa, Espírito Santo, Brazil.

**Keywords:** Espírito Santo; Phoresy; Preserved streams.

## Primeiro Registro de *Temnocephala* (Platyhelminthes: Temnocephalida) em Imaturos de *Kempnyia reticulata* (Enderlein) (Plecoptera: Perlidae)

**Resumo.** Primeiro registro de *Temnocephala* (Platyhelminthes: Temnocephalida) em imaturos de *Kempnyia reticulata* (Enderlein) (Plecoptera: Perlidae). Os insetos foram coletados em um riacho da Estação Biológica de Santa Lúcia, Santa Teresa, Espírito Santo, Brasil.

**Palavras-Chave:** Espírito Santo; Foresia; Riachos preservados.

*Temnocephala* (Temnocephalida) is a genus of flatworms that have ectocommensals habits and live in aquatic environment of Tropical regions from America, Australia, New Zeland, New Guinea and Madagascar. In Neotropics, there are 19 species associated to different hosts, e.g. mollusks (Gastropod), crustaceans (Anomura and Brachyura), turtles (Chelidae) and insects (Heteroptera) (BRUSA & DAMBORENA 2000; VIANNA & MELO 2002; SOARES *et al.* 2007).

Phoresia is a kind of commensalism very common in the aquatic insects group. This association is found in larvae of many Diptera and nymphs of Plecoptera, Ephemeroptera and Megaloptera (ROQUE *et al.* 2004; SEGURA *et al.* 2007). For Plecoptera, DORVILLE *et al.* (2000) described relation of commensalism between immatures of *Kempnyia tijucana* Dorville & Froehlich and *Nanocladius* (Chironimidae). The same relation was recorded by ROQUE *et al.* (2004) with nymphs of *Anacroneuria* and *Nanocladius*. However, the relation between Plecoptera nymphs and Temnocephalida were unknown until now.

The material was collected from July 2008 to February 2009 in a section of first order of Córrego Bonito (19°58'28,4"S/40°31'54,4"W/elevation-712m), in Estação Biológica de Santa Lúcia (EBSL), Santa Teresa, Espírito Santo, Brazil (Figure 1). The study area belongs to the Atlantic rainforest. The nymphs were collected by manual method, with aid of forceps, and preserved in 80% ethyl alcohol. The material is deposited in the Coleção do Departamento de Entomologia, Museu Nacional/ Universidade Federal do Rio de Janeiro (MNRJ) and Coleção Helminológica do Departamento de Zoologia/ Universidade Federal do Rio Grande do Sul (CHDZ).

During this study, 29 nymphs of *Kempnyia reticulata* (Enderlein) were collected, but only five (17%) had *Temnocephala* sp. associated. These flatworms were found in the head, mesonotum and median legs (Figure 2A). One of *K. reticulata*, beyond to the adults, had a lot of eggs in the intrathoracic gills (Figure 2B). Nymphs of *Kempnyia* are usually found in the litter held in riffle areas of low order systems. However, in the present study, these nymphs were found in litter deposited in pool areas, those areas were interconnected by small gutters with low current and litter that were formed in the dry station.

Studies in Neotropical Region presented many species colonized by of *Temnocephala* (BRUSA & DAMBORENA 2000; VIANA & MELO 2002; ILÁRIO *et al.* 2006; NOVELLI *et al.* 2009). In these papers, numerous temnocephlans were found on the surface of their hosts [e.g. ILÁRIO *et al.* (2006) – 21 temnocephlans by *Pomacea lineate* Spix], but we identified a few temnocephlans in *K. reticulata*. Other species of Plecoptera (e.g. *Kempnyia gracilentia* Enderlein, *Macrogynoplax* sp. and *Anacroneuria* sp., *Tupiperla* sp. Froehlich) were collected in Córrego Bonito, but only *K. reticulata* had the *Temnocephala*.

The relation between the two species possibly occurs because *K. reticulata* is the largest Plecoptera species (with 2.0 to 3.5 cm) found in these little pools of litter with low current that offer a better adherence to this flatworms. VIANNA & MELO (2002)

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suggested that the preference of *Temnocephala* by adults of Heteroptera may be associated with absence of moulting process during this stage of life. In the nymph, according to the same authors, during the moulting process that could be losses of the temnocephalids and eggs that could be present on them. This fact

could explain the low number of colonization found in this paper. Nevertheless, more studies are necessary to comprehend the relationship between the *Temnocephalidae* and the *Plecoptera*'s nymphs.

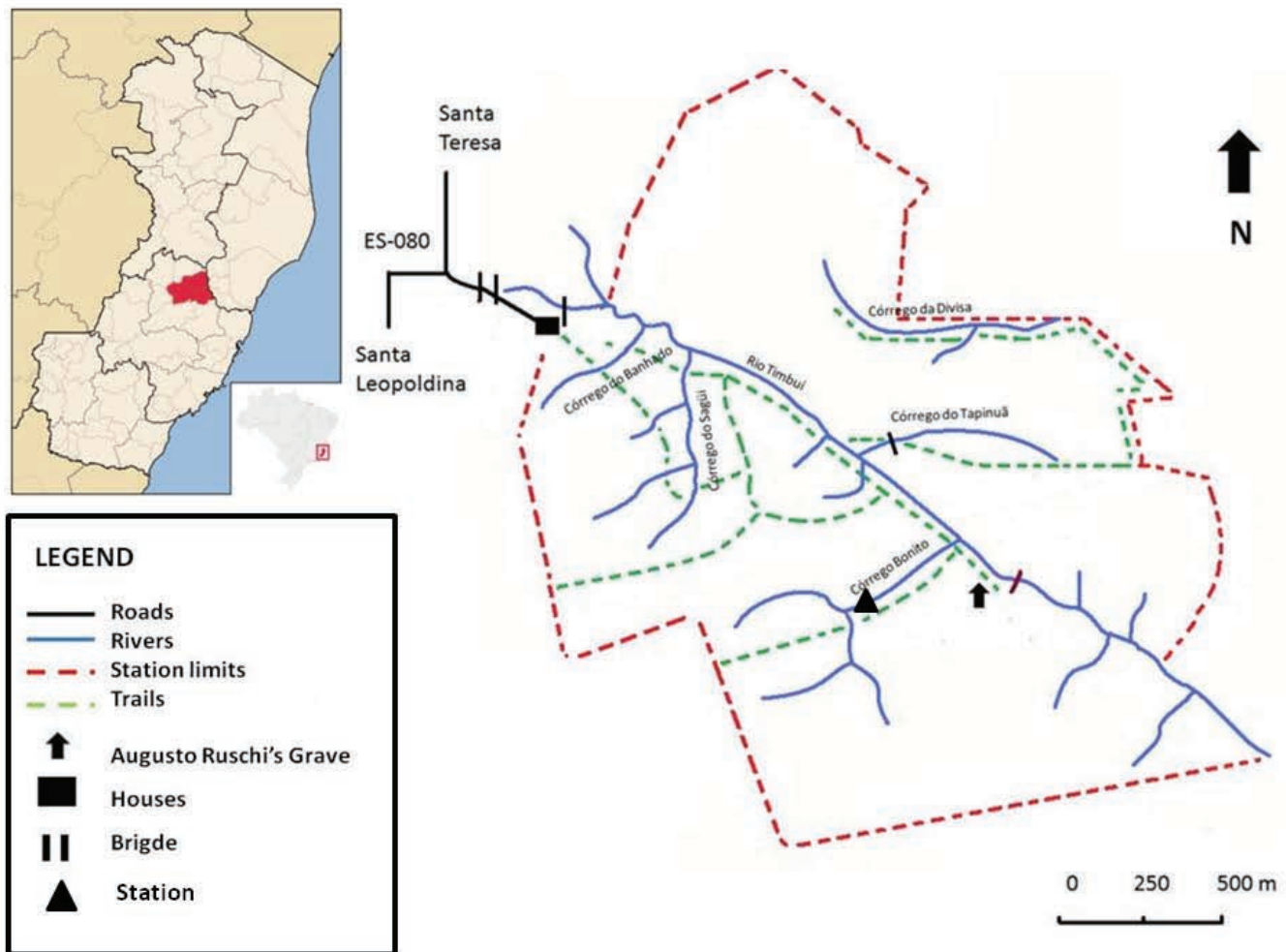


Figure 1. Locality of the study area, in Estação Biológica de Santa Lúcia, Santa Teresa, Espírito Santo, Brazil.

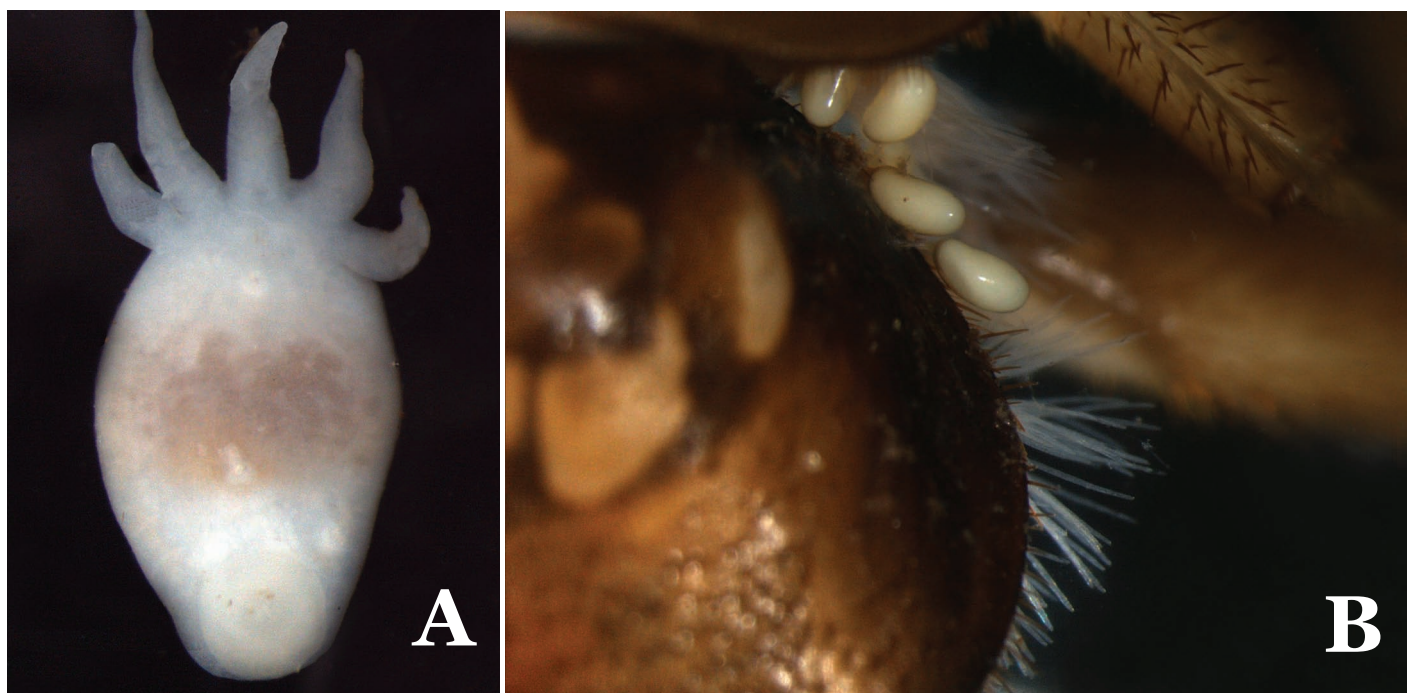


Figure 2. A - *Temnocephala* sp.; B - Eggs of *Temnocephala* sp. on *K. reticulata* mesonotum.

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