



Four new species and a new record of Cryptoniscoidea (Crustacea: Isopoda: Hemioniscidae and Crinoniscidae) parasitising stalked barnacles from New Zealand

ANDREW M. HOSIE

Marine Biodiversity and Biosecurity, National Institute of Water and Atmospheric Research Ltd (NIWA), Private Bag 14901, Kilbirnie, Wellington, New Zealand. E-mail: a.hosie@niwa.co.nz; andrew.hosie@yahoo.co.nz

Abstract

Four new species of the families Hemioniscidae and Crinoniscidae are described from New Zealand waters: *Crinoniscus politosummus* sp. nov., *C. cephalatus* sp. nov., *Scalpelloniscus vomicus* sp. nov. and *S. nieli* sp. nov. Mature males and females are described for all species, and the epicaridium larva is described for *S. vomicus* sp. nov. Males of the two species of *Scalpelloniscus* can be distinguished from *S. penicillatus* and *S. binoculis* by coxal plate dentition, relative sizes of propodus and dactylus. *Crinoniscus politosummus* sp. nov. and *C. cephalatus* sp. nov. can be separated from the only other congener *Crinoniscus equitans* by the body shape of the mature females, and shape of antennule article 1 of the males. A single specimen tentatively identified as *S. cf. penicillatus* is also recorded from New Zealand waters. These species are the first records of cryptoniscoid isopods infecting thoracic barnacles from the South West Pacific.

Key words: Isopoda, Epicaridea, Cryptoniscoidea, Crinoniscidae, Hemioniscidae, *Scalpelloniscus*, *Crinoniscus*, parasite, barnacles, New Zealand

Introduction

Isopods of the superfamily Cryptoniscoidea are parasites and hyperparasites of a wide variety of crustaceans including ostracods, amphipods, barnacles, mysids and other isopods; one exceptional undescribed cryptoniscoid species has even been reported in the cephalopod *Loligo gahi* d'Orbigny, 1835 in Férussac & d'Orbigny 1835–1848 (see Pascual *et al.* 2002). Cryptoniscoids are poorly known and believed to be rare being often mentioned only in passing when found (e.g. Pyefinch 1939; Newman 1974; Markham 1979). Early literature on the group is sparse, and has often lacked sufficient detail necessary for a natural arrangement, leading to a taxonomic structure based largely around host species (Nielsen & Strömberg 1965, 1973a; Williams & Boyko 2006). Coupled with this are numerous nomenclatural issues (see Grygier & Bowman 1990, 1991; Grygier 1993).

The cryptoniscoid life cycle involves two hosts, beginning with the pelagic epicaridium larvae finding a host, typically a copepod, and moulting to the microniscus stage. The microniscus stage then moults to the cryptoniscus stage when it leaves the copepod in search of the definitive host where it will mature. Adult male Cryptoniscoidea, are inseparable from the cryptoniscus larva, unlike the Bopyroidea in which males develop into the bopyridum adult (see Trilles 1999). Owing to the pelagic stages there are two streams of cryptoniscoid literature: one based on pelagic or free living stages (e.g. Hansen 1916; Schultz 1977) and the other based on material collected with the definitive host (see Nielsen & Strömberg 1965, 1973a). The planktonic species are typically based on the juvenile stages and few have been reconciled with adults associated with definitive hosts (see Strömberg 1983). Being protandric sequential hermaphrodites, distinguishing sexes can be difficult,