COMMENT

On the generic placement of 'Livoneca sp.':
a critique of Colorni et al. (1997)

Ernest H. Williams Jr1*, Lucy Bunkley-Williams2

1Department of Marine Sciences, University of Puerto Rico, PO Box 908, Lajas, Puerto Rico 00667
2Caribbean Aquatic Animal Health Project, Department of Biology, University of Puerto Rico, POB 9012, Mayagüez, Puerto Rico 00681

It is refreshing and encouraging to see the biology of a cymothoid isopod emphasized in a paper (Colorni et al. 1997). The article is interesting and useful but, reluctantly, we must disagree with the generic placement of the isopod, correct some pertinent literature omissions, and comment on a few other aspects of Colorni et al. (1997).

We recently attempted (Bunkley-Williams & Williams 1998) to clear up old errors and misstatements concerning fish-associated isopods that are found in semi-popular textbooks addressing this topic. Many of these problems were due to the use of outdated or misquoted primary literature, but some were mistakes in the literature itself. Having seen how these mistakes are perpetuated and magnified in the semi-popular literature that reaches the public, we have become concerned about irregularities in the primary literature.

We disagree with the generic placement of 'Livoneca sp.' Bruce (1990), overlooked by Colorni et al. (1997), reduced the number of species in the genus Livoneca to 2 (we suggest that 3 occur [Williams & Bunkley-Williams 1999]). Livoneca appears to be a New World genus. The morphology of the female 'Livoneca sp.' pictured by Colorni et al. (1997) differs from almost all characters of the generic diagnosis of Bruce (1990) by having: cephalon immersed in pereon, body not twisted to one side, posterior margin of cephalon not trilobed, coxal plates not as long or longer than respective segment, and pleon immersed in pereon. Also, females of the genus Livoneca occur in the gill cavity and not on the tongue of fishes.

The Livoneca sp. of Colorni et al. (1997) was subsequently described as a new species, L. paperna (Trilles et al. 1999). Trilles et al. (1999) cite Bruce (1990), but they place their new species in Livoneca as a provisional genus, just the type of confusion that Bruce (1990) attempted to resolve. The genus diagnosis of Livoneca by Bruce (1990) could hardly be modified to accommodate the species L. paperna.

Stunting or any impairment of the host by the isopod is rejected by Colorni et al. (1997) based on the condition factors of parasitized and non-parasitized fish. Some infected hosts are uniformly or proportionally stunted (slowed growth), and this effect is not evident in simple condition-factor measurements (Romestand & Trilles 1979). Ageing of hosts by otoliths or other methods is necessary to demonstrate proportional stunting. We studied hundreds of doctorfish Acanthurus chirurgus (Bloch) in Puerto Rico parasitized by 0 to 7 cymothoid isopods (0 to 4 large female cymothoids per host) (Anilocra acanthuri Williams and Williams, 1981 and Agarna cumulus [Haller, 1880]). The condition factors of non-parasitized and parasitized doctorfish did not significantly differ, but the most heavily parasitized hosts were clearly proportionally stunted (Bunkley-Williams & Williams unpubl. data). Cero (mackerel) Scromeromorus regalis (Bloch) (Scombridae) only show condition-factor differences between parasitized and non-parasitized hosts when a female-male pair of Livoneca redmani (Leach, 1818) occur in each gill cavity, destroy most of the gill filaments, and the host is near death (Williams & Bunkley-Williams 1996). Condition factor is not a very sensitive measurement of isopod impairment in many hosts.

Colorni et al. (1997) reported that juveniles were attached to the host. Juveniles often escape from the brood pouch (see 'burst release' of Williams & Williams 1985) and attach to the host, divers in the water, or any available substrate during capture. The attachments reported may not have occurred until the hosts were collected. Juvenile cymothoids appear to occur rarely on hosts and can be lethal in groups (Williams & Bunkley-Williams 1994).

Colorni et al. (1997) concluded that the presence of a female isopod on the tongue did not affect the feeding of the host. We found that jacks (Caranx spp., Carangidae) infected with Cymothoa oestrum (Linnaeus, 1793) ate about the same amount of food, but food items differed from those eaten by non-parasitized jacks (Kimmel & Arneson 1978, Bunkley-Williams & Williams 1994). Examination of stomach contents of the fish by Colorni et

*E-mail: bert@rmocfsis.uprm.edu

© Inter-Research 2000
Resale of full article not permitted
might have been acceptable (we prefer the term ‘juveniles’), but not such a variety in the same paper. At the bottom of page 67, the term ‘male’ has been put in place of ‘female’.

With the exception of these problems, the paper (Colorni et al. 1997) is an outstanding contribution to science. We only wished to correct these few errors.

Acknowledgements. We thank Niel L. Bruce, Primary Industries, Australia, for reviewing this manuscript.

LITERATURE CITED


Bunkley-Williams L, Williams EH Jr (1994) Parasites of Puerto Rican freshwater sport fishes. Puerto Rico Department of Natural and Environmental Resources, San Juan, Puerto Rico, and Department of Marine Sciences, University of Puerto Rico, Mayagüez, Puerto Rico


Williams EH Jr, Bunkley-Williams L (1996) Parasites off shore, big game sport fishes of Puerto Rico and the Western North Atlantic. Puerto Rico Department of Natural and Environmental Resources, San Juan, Puerto Rico, and Department of Biology, University of Puerto Rico, Mayagüez, Puerto Rico


Editorial responsibility: Wolfgang Körring, Hannover, Germany

Submitted: May 5, 1999; Accepted: August 23, 1999
Proofs received from author(s): March 7, 2000