REEVALUATION AND EMENDED DIAGNOSIS OF ILLIOSENTS AND I. HETERACANTHUS (ACANTHOCEPHALA: ILLIOSENTIDAE)

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Abstract: Information on putative sympomorphies was used to distinguish between Dollosentsis, Illiosentsis, and Tegorynychus. Members of Tegorynychus and Illiosentsis possess a thick papillike vestibular muscle on the inner posterior wall of the trunk of female worms. The 2 genera differ in that the proboscs of members of Illiosentsis have ventral hooks in the posterior part of the cirrus that are greatly enlarged and male worms have a heavy muscular sheath covering the ventral duct, both of which are absent in members of Tegorynychus. Based on these features, Illiosentsis is formally reinstated, and the diagnosis of the genus is emended. Dollosentsis is characterized by members having vestibular muscles that are bandlike rather than papillike, normal-sized hooks in the posterior ring of the proboscis, and a crest of 6 large hooks on the ventral proboscis, posteriorly from the posteriormost ring of hooks. The heavy muscular sheath covering the ventral duct is not present in male worms of species of Dollosentsis. Type specimens of I. heteracanthus, originally described as I. heteracanthus but later transferred from Illiosentsis to Dollosentsis, and the material included in a recent redescription of D. heteracanthus possess the papillike vestibular muscle, greatly enlarged ventral proboscis hooks in the posterior part of the cirrus, and heavy muscular sheath covering the ventral duct that is characteristic of other members of Illiosentsis and lack the features characteristic of the other species assigned to Dollosentsis. Thus, Dollosentsis is removed from Illiosentsis and reinstated as I. heteracanthus.

The genus Tegorynychus Van Cleave, 1921, was designated to accommodate T. brevis Van Cleave, 1921, collected near the Juan Fernandez Islands, Chile (Van Cleave, 1921). Among the distinguishing features of the genus, female worms of T. brevis possess a thick papillike (originally called filament) muscle on the inner posterior wall of the trunk which, when teased, forms a genital vestibule. Illiosentsis Van Cleave and Lincicome, 1939, later was erected to contain I. farcactus Van Cleave and Lincicome, 1939. Female members of Illiosentsis also possess a similar papillike vestubular muscle. However, the authors (Van Cleave and Lincicome, 1939) did not mention this similarity and only noted that a conspicuous investing cuticula over the surface of the proboscis was a common feature of the 2 genera and that they could be distinguished on the basis of the basal circle of proboscis hooks (unspecialized hooks in Tegorynychus and greatly enlarged in Illiosentsis). Subsequent authors (Van Cleave, 1945a; Golvan, 1956, 1960; Cable and Linderoth, 1963; Amin and Sey, 1996) who made additions to Illiosentsis (I. esmeraldae Van Cleave, 1945; I. africanus Golvan, 1956; I. edmontoni Golvan, 1960; I. longispinus Cable and Linderoth, 1963; I. heteracanthus Cable and Linderoth, 1963; I. clavicornis Cable and Linderoth, 1963, and I. ibong Lampin and Sey, 1996), also did not mention any similarity in this feature between Tegorynychus and Illiosentsis. Ambiguity in the definition of the genus led Golvan (1969) to remove several species (I. longispinus, I. clavicornis, and I. heteracanthus) from the genus and transfer them to a newly proposed genus, Dollosentsis Golvan. 1969. Illiosentsis later was considered to be a junior synonym of Tegorynychus based on the abstract of an unpublished work presented at a meeting (Bullock and Maten, 1970). Although only informally delivered, the synonymy has received some acceptance (Haecker et al., 1978; Amin, 1985; Amin and Sey, 1996), but it has been questioned by others (Lampin et al., 1982; Monks et al., 1997; Monks, 2001). However to date, the arguments either in favor of or against the validity of this synonymy (Lampin et al., 1982; Amin and Sey, 1996; Monks and Pérez-Ponce de León, 1996; Monks et al., 1997; Monks, 2001) have been relatively brief.

Illiosentsis heteracanthus Cable and Linderoth, 1963, was described originally from relatively few immature specimens found in 4 species of marine fishes. As mentioned above, this species was later transferred to Dollosentsis, although Golvan (1969) did not provide justification for the move. Mature specimens of the species remained uncollected until Amin and Dailey (1996) found specimens in a fifth species of host, Albula vulpes Linnaeus. These authors expanded the original description to include additional features as well as details concerning reproductive structures that were not fully developed in the type specimens. However, other than mention of the genus in which the species was originally placed, Amin and Dailey (1996) did not address the taxonomic placement of the taxon by Cable and Linderoth (1963) or evaluate the appropriateness of Golvan's (1969) transfer of I. heteracanthus to Dollosentsis. As part of an ongoing study of phylogenetic relationships among acanthocephalans (Monks, 2001), the type specimens of I. heteracanthus and the specimens collected by Amin and Dailey (1996) were examined and found to possess features of Illiosentsis Van Cleave and Lincicome, 1939, as originally noted by Cable and Linderoth, 1963, and discussed below, rather than those of Dollosentsis. The purpose of the present paper is to review selected sympomorphies for Tegorynychus, Illiosentsis and Dollosentsis and to reinstate and emend Illiosentsis based on the possession of characters distinct from those of Tegorynychus and Dollosentsis. Illiosentsis heteracanthus is reinstated based on the possession of characters of Illiosentsis by specimens of the type series and by those collected by Amin and Dailey (1996). The species is redescribed from the aforementioned specimens.

MATERIALS AND METHODS

The following specimens were examined: holotype and paratypes of Tegorynychus brevis (Naturhistoriska Riksmuseet, Stockholm, Sweden [NRH]-4766, NRH-4767, NRH-4768; United States National Parasite Collection [USNPC]-37535, USNPC-81405); holotype and paratypes of Illiosentsis heteracanthus (USNPC-60943) from Gireses chernes (Walbourn), Parhyocephalus sp. (Cuvier and Valenciennes), Labrinthus inselbergi (Quoy and Gaimard), and Pseudophyllus aequalis (Agassiz) collected in Caraíbas; voucher specimens of I. heteracanthus (USNPC-