

quantitative errors present when using ichthyocides in population studies. The records given here indicate a further possible source of error, especially relevant in long-term studies. This factor is the obvious marked difference in the susceptibility of fish to different types of ichthyocides, or even possibly different production batches of the same product.

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A new species of *Afrolernaea* (Copepoda:Lernaeidae), a gill parasite of mormyrid fishes

J.G. van As

Research Unit for Fish Biology, Rand Afrikaans University,
P.O. Box 524, Johannesburg 2000, Republic of South Africa

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Fryer (1956) described a new crustacean copepod genus and species parasitic on the gills of the mormyrid *Mormyrus longirostris* Peters from Lake Nyasa, which he named *Afrolernaea longicollis* Fryer. At that stage this was the only species assigned to the genus. During 1959 afrolernaeid

parasites were found in Lake Bangweulu on the gills of *Marcusenius macrolepidotus* (Peters) (Fryer 1959). These specimens differed from the *A. longicollis* from Lake Nyasa in having a neck which is both relatively and absolutely shorter, a longer posterior sac and transparent cephalic hooks as compared to bright green hooks in the case of the *A. longicollis* types. The three body regions, cephalothorax, neck and posterior sac of the type specimens of *A. longicollis* comprised 4; 78 and 18% of the total body length respectively (Fryer 1956). The respective lengths expressed as percentages of the body regions of three specimens found on *M. macrolepidotus* in Lake Bangweulu are 4; 59; 37; 4; 60; 36 and 4; 56; 40% (Fryer 1959).

On the basis of this information Fryer decided to provisionally assign all specimens studied by him to *A. longicollis* although distinct differences did exist in the body dimensions of the specimens of these localities. However, he recognized the possibility that subsequent findings may necessitate specific differentiation (Fryer 1959). Dollfus (1960), apparently unaware of the work of Fryer (1956, 1959) described a new genus and species which he named *Delamarina nigeriensis* Dollfus. This parasite, found on the fins of *Mormyrus rume* Cuvier in the Niger system, is now known to be a species of the genus *Afrolernaea*. It is closely related to *A. longicollis* and is recognized as *Afrolernaea nigeriensis* (Dollfus) (Fryer 1982). The two specimens described by Dollfus (1960) are 14 and 17 mm long, the percentage lengths of body regions, head plus neck and posterior sac of these specimens are 67; 32 and 37; 26% respectively.

Recently Fryer (1982) described a third afrolernaeid species, *A. brevicollis* Fryer. This species is very small (2.5 mm total length) and has, relative to the other species of *Afrolernaea*, a short neck. It was found on the fins of the mormyrid *Stomatorhinus corneti* Boulenger in the Ogowa system in Gabon, West Central Africa. According to Fryer (1982) it is the most primitive of the three known species and with its short neck, it is adapted to life as a fin parasite.

During a recent investigation on fish ectoparasites in Luphephe Dam, an irrigation reservoir in the Luphephe River, a tributary of the Limpopo River in Venda, northern Transvaal, afrolernaeid parasites were found on the gills of the mormyrid *Marcusenius macrolepidotus*. These parasites do not conform to the description of any of the three known species of *Afrolernaea*. They do, however, correspond to the afrolernaeid which Fryer (1959) found in Lake Bangweulu on the same host and which was provisionally placed under *A. longicollis*. The new information now available from Luphephe Dam necessitates the description of this parasite as a new species closely related to *A. longicollis* but which is even more specialized and, on the available evidence, specifically adapted to mormyrid fish hosts with short gill filaments.

Description

Afrolernaea mormyroides sp. n.

This description is based on 15 egg-bearing adult females collected from the gills of *Marcusenius macrolepidotus* from Luphephe Dam, Venda, northern Transvaal.

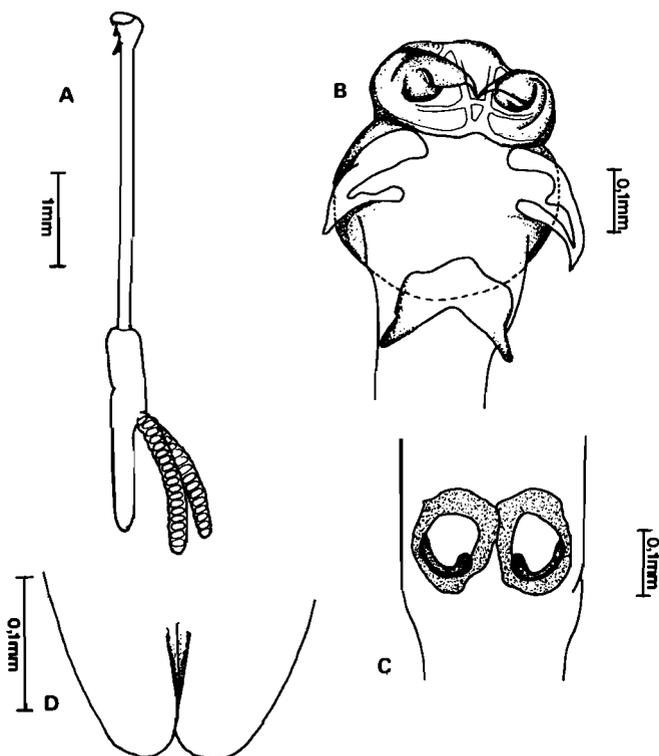


Figure 1 *Afrolernaea mormyroides* sp. n. A – adult female; B – cephalothorax of adult female, ventral; C – oviducal pores and chitinous plates; D – posterior end of body.

Minimum and maximum measurements (in mm) are given, followed in parenthesis by the arithmetic mean and standard deviation.

Type specimens: Holotype No. 82/7/10–1 and paratype No. 82/7/19–2 and 82/7/19–3 in the collection of the Department of Zoology of the RAU, Johannesburg.

Adult Female: Total body length 4,77 to 6,58 ($5,73 \pm 0,51$). Long and slender, consisting of a small cephalothorax 0,28 to 0,45 ($0,34 \pm 0,04$), a long neck region 2,52 to 4,00 ($3,19 \pm 0,40$) and a swollen posterior sac 1,97 to 2,48 ($2,20 \pm 0,20$) (Figure 1A). These topographic regions comprise a mean of 6; 55 and 39% of the total length respec-

tively. Topographic regions do not necessarily correspond with the tagma, head, thorax and abdomen. Cephalothorax (Figure 1B) almost spherical divided into two distinct regions of which the anterior bears a pair of robust maxillae, each swollen at the base and terminating in a stout terminal claw. Ventral surface of this region supported by chitinous ribs. Posterior part of the cephalothorax armed with two pairs of stout, chitinized, sharp pointed hooks. Posterior pair fused at the base and situated at the juncture of the cephalothorax and neck. No antennules or antennae present and no eye spot could be detected in any of the 15 specimens studied. There are also no traces of thoracic appendages.

Neck slender, circular in section, maintaining the same diameter from cephalothorax to posterior sac and largely occupied by the alimentary canal. Posterior sac at least twice the diameter of neck. Oviducal apertures situated approximately half-way along dorsal length of posterior sac, each surrounded by a plate of thickened cuticle (Figure 1C). Maturing eggs in ovaries confined to region of posterior sac anterior to oviducal apertures. Eggs produced in two uniseriate strings with up to about 18 eggs per string, projecting only slightly beyond posterior end of body.

Dorsal wall of posterior sac constricted directly behind genital pores, to reduce diameter of the posterior half of sac by about one third. Posterior end of body (Figure 1D) without furcal rami. Colour of body and cephalic hooks of live specimens dirty yellow.

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