A New *Serranochromis* (Pisces, Cichlidae) from the Incomati River System, Eastern Transvaal, South Africa

by

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Tributaries of parts of the Limpopo and Incomati River systems have their sources in the ridge of high ground forming the Steenkampsbergen of the eastern Transvaal. As this range of mountains reaches to over 7,000 feet in places, many of these mountain streams are suitable for trout and a large hatchery is operated by the Provincial Fisheries Institute at Lydenburg.

Intensive river surveys carried out by biologists of the Transvaal Provincial Fisheries Institute have resulted in the discovery of isolated populations of some interesting fish species. In a tributary of the upper reaches of the Crocodile River, Incomati River system, a population of *Kneria auriculata* (Pellegrin) was discovered, as yet the only *Kneria* ever to have been collected south of the Sabi-Lundi River system in Rhodesia. The species is polytypic and these specimens differ from *K. auriculata* from the Gorongoza plateau, Portuguese East Africa, and the eastern highlands of Rhodesia only in having a slightly higher average scale count. It must be mentioned here that the original description of this species (Pellegrin, 1905) is incorrect. After examining a large number of specimens of *Kneria* from the vicinity of the type locality of *auriculata*, a request was submitted to Dr. M. Poll, Tervuren, Belgium, to examine the type specimens in the Paris Museum. This he very kindly carried out and discovered that the lateral line scale count was in the order of 80–85 and not 60 as stated.

In the upper reaches of the Blyde River, as well as in the Treur River, a tributary, and in each case above waterfalls which are today barriers to the upward movement of fish, there are dwindling populations of *Barbus treurensis* Groenewald, 1958, a unique endemic species which has not been discovered anywhere else in southern Africa. An isolated population of *Barbus neefi* Greenwood, 1962, was discovered in a small tributary of the Ohrigstad River, Limpopo River system. Specimens were sent to Greenwood who described this species from material received from the headwaters of the Upper Zambezi River. No *B. neefi* have been recognized from intervening points. Other examples of such a remarkable discontinuity in distribution are *Barbus argenteus* Günther, 1868, described from Angola and found also in the highveld tributaries of the Incomati and Pongolo River systems, and *Alestes lateralis* Boulenger, 1900, which occurs in the Upper Zambezi River system as well as parts of Zululand, Natal (Crass, 1964). On the other hand *Barbus unitaeniatus* Günther, 1866, originally described from Angola, occurs in all inland waters from the Upper Zambezi River to the Pongolo River.

Two species endemic to the Incomati River system are *Barbus annectens* Gilchrist & Thompson, 1917, and *Barbus brevipinnis* Jubb, 1966. The most surprising discovery made during a recent survey by members of the Transvaal Provincial Fisheries Institute was that of an undescribed *Serranochromis* in the Sabie and Sand rivers, tributaries of the Incomati River.

In her revision of the genus *Serranochromis* Trewavas (1964) has mapped the distribution of various *Serranochromis* species on pages 51–53. These have been combined in Figure 2, their distribution boundary to the south being outlined with dashes. The distribution of this new species of *Serranochromis* has been marked with an open circle and that of *Chetia flaviventris* Trewavas, 1961, with a cross. It will be seen that we have here another example of discontinuity in distribution, no representative of the genus *Serranochromis* ever having been found in the southern tributaries of the Middle and Lower Zambezi River systems, or any

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Figure 1. The distribution of some freshwater fishes in southern Africa

■ *Alestes lateralis*
▲ *Kneria auriculata*
○ *Barbus argenteus*
\+ *Barbus neefi*
● *Engraulicypris brevianalis*

Figure 2. Outline of the region where representatives of the genus *Serranochromis* occur north of the Incomati River system.

○ The type locality of the new species *Serranochromis meridianus*

rivers south of this. There is, of course, *Chetia* Trewavas, 1961, a genus closely related to *Serranochromis* (Trewavas, 1964), whose distribution is restricted to parts of the Limpopo River system, and the Komati River, a large tributary of the Incomati River. It is interesting to note that this new *Serranochromis* and the Komati River *Chetia* species are not found together in the Incomati River system. In carrying out a detailed examination of specimens of *Chetia flaviventris* it has been found that a ventral vertebral apophysis is present on the third vertebra and the definition of *Chetia* should be amended accordingly. The status of the *Chetia* species from the Komati River is still under investigation as the material on hand shows certain differences from Limpopo River specimens.

Serranochromis meridianus sp. nov.

Holotype: Male 300 + 70 mm. from the Sabie River in the region of its confluence with the Sand River, both being tributaries of the Incomati River which enters the sea near Lourenco Marques, Portuguese East Africa. Collected by Mr. I. G. Gaigher in April, 1967, together with 25 paratypes. Albany Museum No. P.F. 913, paratypes Nos. P.F. 914.

One paratype has been deposited in the British Museum (Natural History).

The specific name refers to its distribution in relation to that of other representatives of the genus (See Figure 2).

Description: A *Serranochromis* with a remarkable superficial resemblance to *Serranochromis angusticeps* Boulenger, 1907, but differing in colour pattern, and in having a lower vertebral count, a lower number of scales along the lateral line series, and a lower number of rays in both the dorsal and anal fins.

In percentage of Standard Length: Depth of body 32 (60 mm. Std. L.)—42 (300 mm. Std. L.); length of head 39 (60 mm. Std. L.)—34 (300 mm. Std. L.); length of pectoral fin 20–24; length of caudal peduncle 16–18.

In percentage of length of head: Length of snout 37–42; length of premaxillary pedicels 39–42; diameter of eye 13 (300 mm. Std. L.)—25 (60 mm. Std. L.); interorbital width 19–22; length of lower jaw 47–56.

Mouth large, protractile with premaxillary pedicels extending well between the orbits. Maxillary extending to below or slightly posterior of nostril. Cleft of mouth 50°–60° with the horizontal.

Teeth (Figure 4) unicuspid, small and close-set, in two series in the upper jaw with intermediate teeth between the series in front, 50–80 teeth in the outer series of the upper jaw; lower jaw with two or three series. Gill-rakers (Figure 5) 10–12, short, stiff with extremities of upper 4–6 forked. Pharyngeal teeth (Figure 6) unicuspid, all slender. Pharyngeal bone slender, its width less than its median length.

Cheek deep, scales small and irregular with about 7–9 horizontal series. Lateral line series 34–36. Dorsal fin XIV–XV 12–13, anal fin III 8–10. In *S. angusticeps* the number of branched rays is higher, being 14–17 in the dorsal fin and 11–13 in the anal fin.

The number of vertebrae, taken from three specimens, including an X-ray photograph (Figure 7) is 32–33 as compared with 33–35 in the case of *S. angusticeps*. A ventral vertebral apophysis is present on the third vertebra.

In living material young fish are olive on the dorsal surface with silvery ventral surface, there being 7–8 vertical dark bars and 2 or 3 dark lateral stripes. At this stage specimens are easily confused with a species of *Chetia* found in the Komati River, a tributary of the Incomati River. Adult male *S. meridianus* are olive-brown on the dorsal surface, becoming silvery pale olive on the ventral surface. The fins are lemon-yellow to pale olive with numerous small red or orange-red spots on the dorsal, caudal and anal fins, the anal fin having at least 30–40 spots narrowly bordered with black. The dorsal fin is edged with orange. All scales, except those along the ventral surface and extreme dorsal surface have a distinct reddish centre. There is no

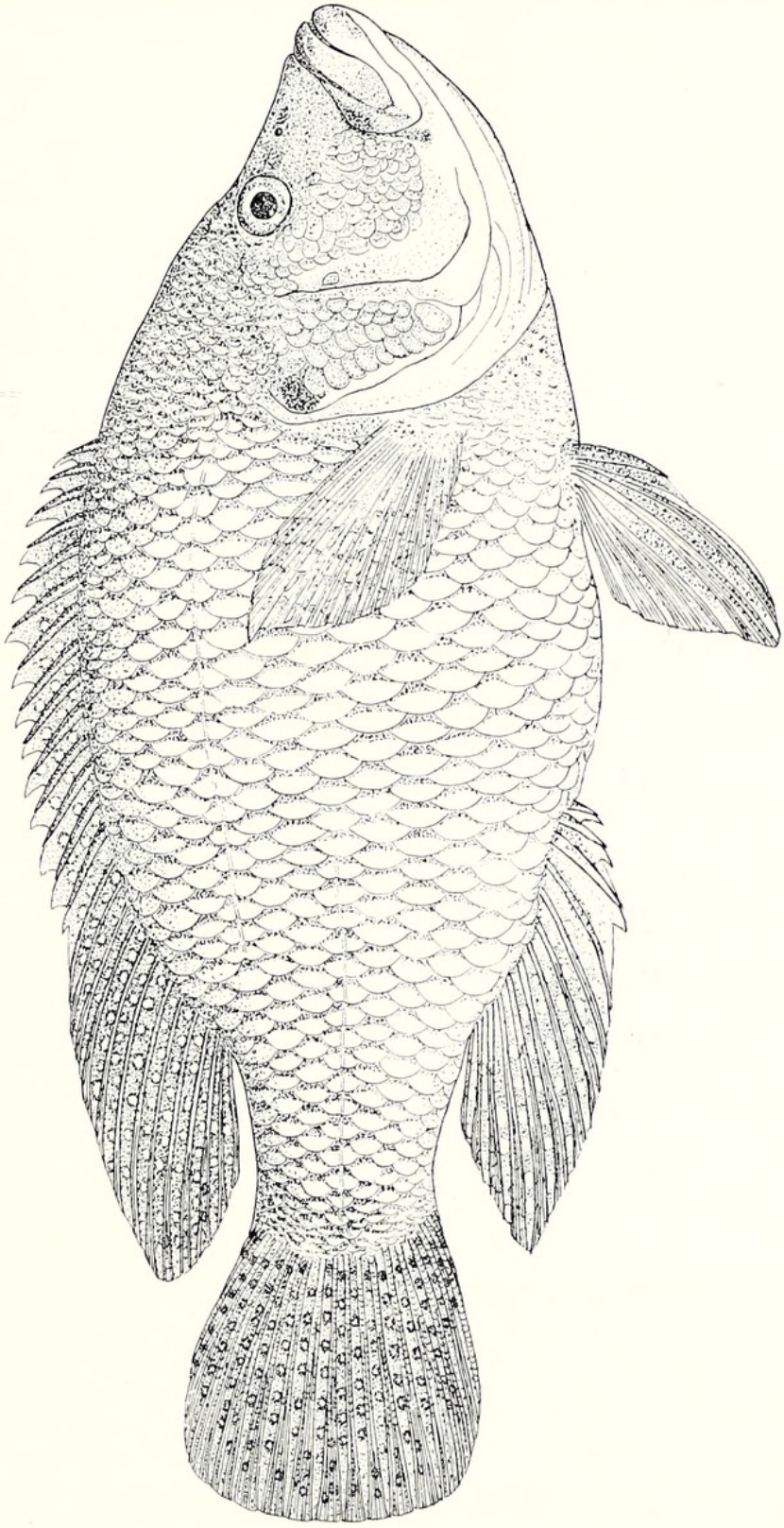

Figure 3. Type specimen *Serranochromis meridianus* sp. nov. Standard length 300 mm

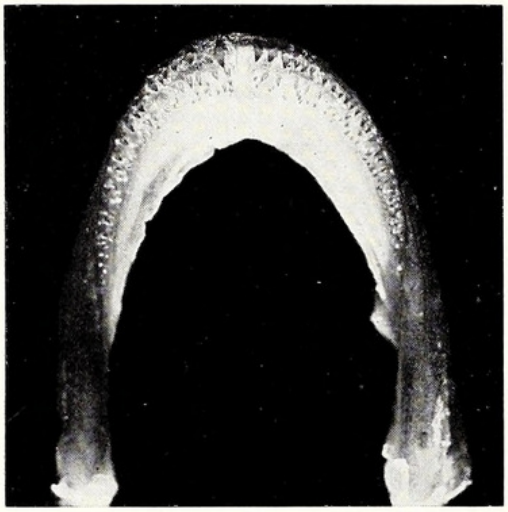

Figure 4. Upper jaw of a specimen of *S. meridianus* Standard length 195 mm.

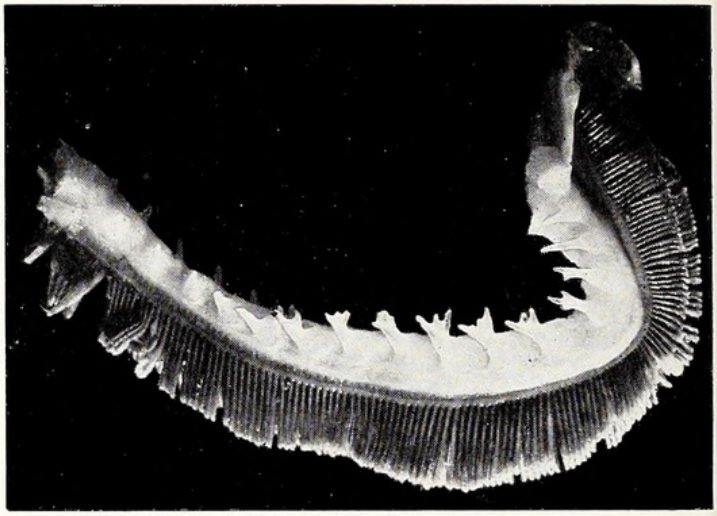

Figure 5. Anterior gill-raker of a specimen of *S. meridianus* Standard length 195 mm.

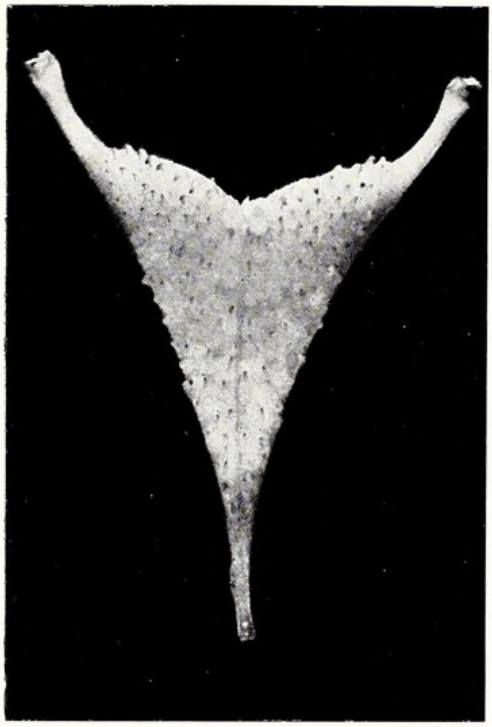

Figure 6. Pharyngeal teeth of a specimen of *S. meridianus* Standard length 195 mm.

oblique dark line through the eye as in *Chetia*. Young males have the red or orange-red spots developed to a lesser degree and are much darker due to the vertical bands and lateral stripes which fade in the adult. Adult females are pale olive to light lemon-yellow in colour with 30–40 small red or orange-red spots on the anal fin, the spots on the dorsal and anal fins being black. The dorsal fin is not edged with orange and the scales do not have reddish centres.

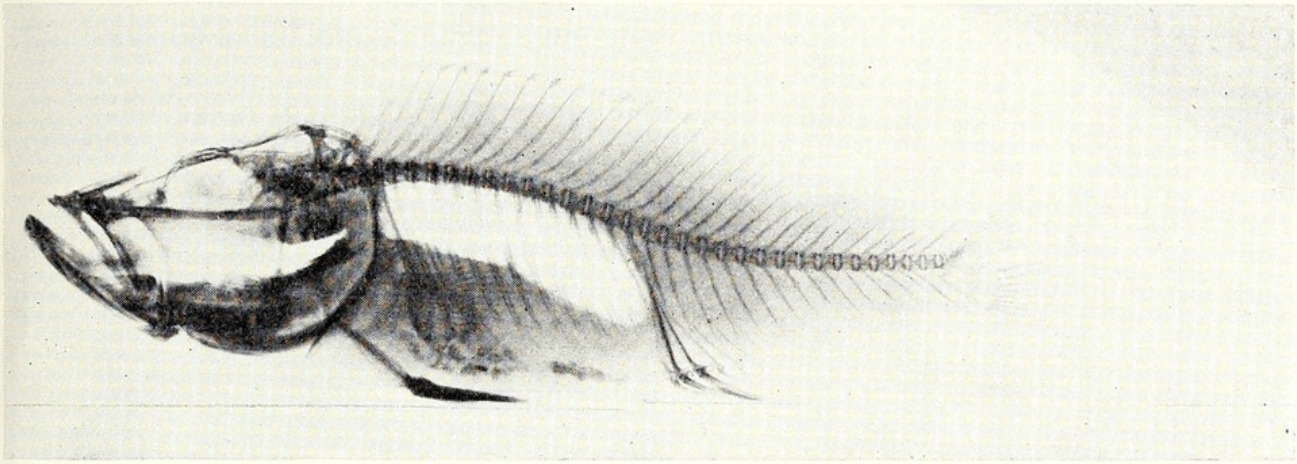

Figure 7. X-ray photograph of a specimen of *S. meridianus* Standard length 135 mm.

Ecology: In spite of intensive collecting in the region this *Serranochromis* is known only from the Sabie and Sand rivers in the vicinity of their confluence, approximately 1,000 feet above sea level. Pienaar (*in press*) has described the Sabie as a perennial river which, during the dry season, is placid-flowing with occasional rapids, the water at this stage being clear. The Sabie is subject to flooding during the summer months. Nothing is known of the breeding habits of *S. meridianus* but other representatives of this genus are mouth-brooders. From stomach contents these fish, even at a small size, predate mostly on other fishes.

Affinities: Referring to Trewavas' (1964) diagram (Fig. 1, p. 8) of the relationships of the species of *Serranochromis*, as well as the key for identification (p. 50), it will be seen that *S. meridianus* belongs to the group *S. angusticeps*, *S. spei*, *S. stappersi* and *S. janus*. Of these *S. spei* and *S. stappersi* occur in the eastern Congo River system, *S. janus* in a restricted portion of the Malagarazi River which flows into Lake Tanganyika, and *S. angusticeps* occurs in a much wider region which embraces the Cunene River, the Okavango, Upper Zambezi River system, the Kafue River and Lake Bangweulu. *S. meridianus* is the most southern representative of this group as well as of this genus.

ACKNOWLEDGEMENTS

The taxonomy of the freshwater fishes of southern Africa is part of a research programme carried out at the Albany Museum, and which is sponsored by the Council for Scientific and Industrial Research, Pretoria. I am indebted to the Senior Fisheries Officer, Mr. P. le Roux, of the Provincial Fisheries Institute, Lydenburg, and the Biologist, Dr. U. de V. Pienaar of the Kruger National Park, for material and data relating to this new species. The drawing of the type specimen was kindly prepared by Mrs. H. M. Jubb, and the X-ray photograph by Mr. F. L. Farquharson.

This paper is published by courtesy of the Director of the Albany Museum, Mr. C. F. Jacot Guillarmod.

Jubb, R. A. 1967. "A new Serranochromis (Pisces, Cichlidae) from the Incomati River system, eastern Transvaal, South Africa." *Annals of the Cape provincial Museums* 6(5), 55–62.

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