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Threatened fishes of the world: *Stygichthys typhlops* Brittan & Böhlke, 1965 (Characidae)

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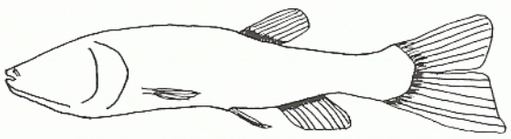

Common name: Brazilian blind characid (E). **Conservation status:** Data deficient (World Conservation Monitoring Centre). **Identification:** This is one of the two species of troglobitic (subterranean blind, depigmented) characid described so far. The following description is based on the only specimen of this fish ever captured. It is 23.6 mm SL. Body slightly elongated. Head height and length very similar. On the right premaxillary there are seven teeth in the inner of two series, most of the teeth are tricuspid but the medial cusp is missing from the first tooth. The second tooth shows indications of two extra shoulders making it quincuspid and the final lateral tooth is unicuspid. The outer premaxillary series on the right side consist of three unicuspid teeth and the posterior one half of the bone, and on the left side three unicuspid teeth near the center of the bone; there definitely are additional empty tooth pockets on both sides, and they were originally more outer premaxillary teeth. On the right maxillary there are ten unicuspid teeth along about one half of the lower free edge of the bone; a number of teeth are missing from the left maxillary bone. The lower jaw in the right side has thirteen teeth, which range in size from the largest at the interior midline to the smallest posteriorly; they grade gradually downward inside through the first seven, and then there is somewhat of a break in size, the eight and succeeding teeth being smaller. The anterior teeth are tricuspid, the posterior teeth unicuspid. Circumorbital bones are absent. One pair of very small nostrils at the tip of the snout in the upper lip. A second much larger pair of nostrils on upper surface of snout just before elevation of forehead. Nostrils rounded each covered by dermal flap. D iii, 7, A iv, 8, P ii, 10, V ii, 5, C i, 15, i. No externally visible eyes. There is no distinct lateral-line system. There is a short isolated ossified segment, suborbital in position above the posterior half of the maxillary; it consists of a short tube with a pore at each end, plus a basal flange. The function of this organ is unknown. Gill rakers 4 + 9 on the first gill arch, the raker at the angle of the arch counted with those of the lower limb. Totally unpigmented. **Distribution:** In one well location at Jaiba, Minas Gerais, Brazil. **Abundance:** No data available. **Habitat and ecology:** Groundwater, obtained from a well drilled at 30 m. Although the teeth structure seems to indicate a mostly vegetarian diet, it is unlikely that they maintain such diet in the underground environment. This may be a relictual morphological feature. **Threats:** The major threat to the species comes from the fact that we know virtually nothing about it. Even the exact location where this fish was found is unknown. Only one specimen was captured in May 1962 and since then no other specimens have been reported. **Conservation action:** The most urgent need is to obtain further information about this species and its habitat before we can ascertain a conservation plan. **Conservation recommendations:** The furthering of research of this species represents a challenge in terms of developing techniques of population studies of a species whose habitat is not accessible to humans. Collecting for scientific/educational purposes should be highly restricted and aimed only to recovery/conservation programs. Collecting for other purposes should be totally banned until more information on population sizes is available. Water table and quality should be carefully monitored and maintained. **Remarks:** Blind, depigmented species of fish captured accidentally by pumping out water from wells is not totally unusual. At least 7 other troglobitic species have been captured in that way. This is the second species of troglobitic characid. It shows features such as the lack of circumorbital bones which suggest a much more advanced stage of adaptation to the underground environment than the other troglobitic characid, the blind, cave form of the Mexican tetra, *Astyanax fasciatus*, which shows only partial fragmentation of those very same bones. This is a character associated with the loss of eyes among cave fishes. Unlike the Mexican cave tetra, the ancestral form of this fish has yet to be determined. The Brazilian blind characid has a number of features typical of the Tetragonopterinae. More specifically, it may be related to the *Hyphessobrycon-Hasemania* complex, because of this group's reduction in the circumorbital bones; however that just may be a coincidence given that the reduction of those bones is a convergent feature among cave fishes. They also differ from other Tetragonopterinae in the large number of inner premaxillary and maxillary teeth, as well as the small number of anal rays which are unusual for this group of characids.

Brittan, M.R. & J.E. Böhlke. 1965. A new blind characid fish from southeastern Brazil. Notulae Naturae (380): 1–4.

Romero, A. 1985. Ontogenetic change in phototactic responses of surface and cave populations of *Astyanax fasciatus* (Pisces:Characidae). Copeia 1985: 1004–1011 (other references on cave fishes found here).