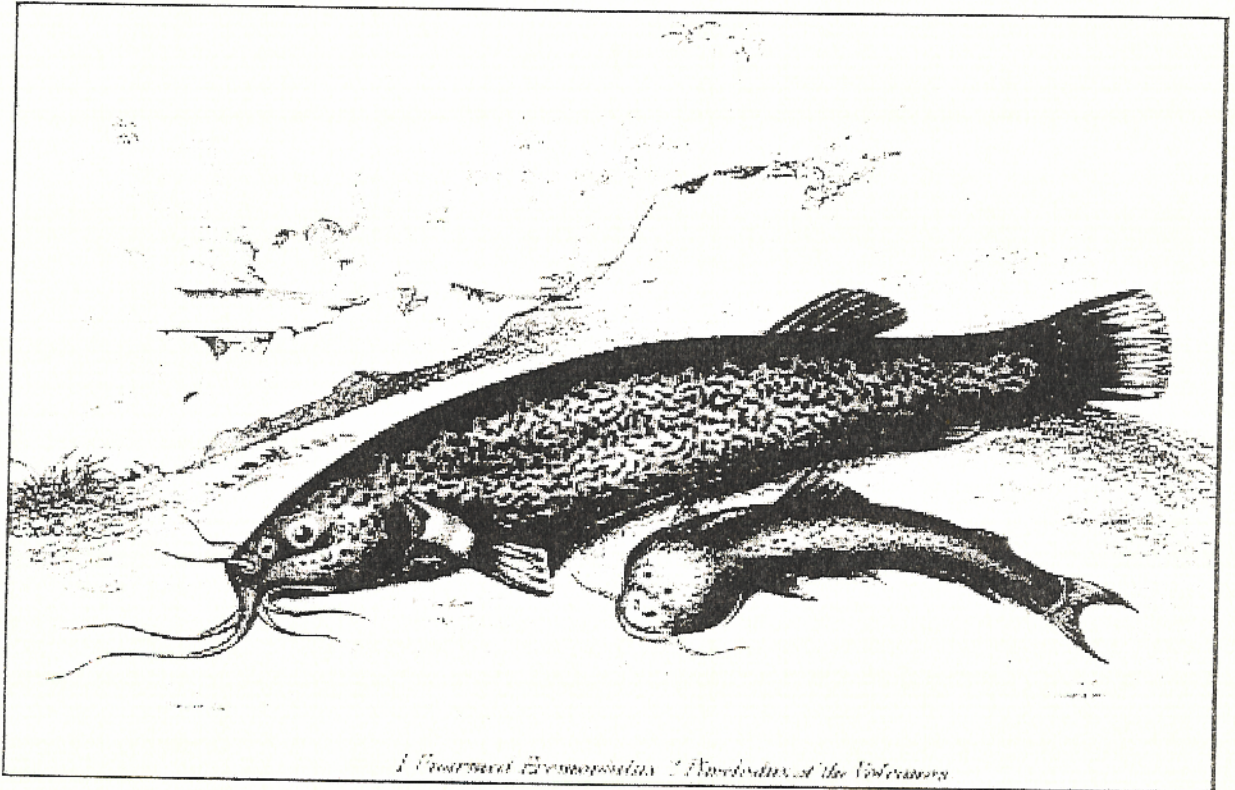


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Front Cover

Schomburgk's interpretation of the "Pimelodus of the Volcanos."

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HUMBOLDT'S ALLEGED SUBTERRANEAN FISH FROM ECUADOR

by Aldemaro Romero & Kelly M. Paulson

HUMBOLDT AND HIS REPORT

Friedrich Wilhelm Heinrich Alexander von Humboldt (b. Berlin, Germany, 14 September 1769; d. Berlin, 6 May 1859) was one of the most respected scientists of his time. Humboldt made enormous contributions to geography and natural history and could be considered the last great polymath of the natural sciences. His travels of exploration through the American continent and central Asia are among the most famous scientific explorations ever. Even Charles Darwin felt greatly influenced by him (Brent 1981: 98).

Among the many contributions made by Humboldt there is a paper, "Dissertation on a new species of pimelodid, thrown out by the volcanoes of the Kingdom of Quito" (*Memoire sur une nouvelle espece de Pimelode, Jetee par les volcans du royaume de Quito*) (Humboldt 1805). There, after describing volcanoes in general, he claims that among the things they spew forth are an "innumerable quantity of fish" (*une innombrable quantite de poissons*). Further, he says that although he had not witnessed this phenomenon himself during the year he spent in Quito, "volcanoes vomiting fish is such a common phenomenon, and so well-known among all the local inhabitants, that there can not be the slightest doubt of its authenticity" (*les poissons vomis par les volcans sont un phenomene si commun et si generalement connu de tous les habitans de ce pays, qu'il ne peut pas rester le moindre doute sur son authenticite*).

His sources were the archives of small villages around Cotopaxi, where he sometimes came upon notes regarding fish that came from the great depths of the earth. Some went into greater detail: the rotting fish strewn across the earth created a great stench; fish were enveloped in volcanic mud. Some natives assured him that sometimes the fish would still be alive after their trip through the hot core of the volcano, through the air, and then onto the ground.

He goes on to describe a new fish species, *Pimelodus cyclopus* known today as *Astroblepus cyclopus*. Other synonyms include

Cyclopium chimborazoi and *Astroblepus chimborazoi*. This species is known in Ecuador as Prenadilla ("the little pregnant one").

SCHOMBURGK'S POPULARIZATION OF THE TALE

Humboldt's publications, which he financed himself, were very limited in the number of copies printed. Thus, his report of this fish did not achieve full notoriety until it was summarized in the English literature by Robert Hermann Schomburgk (b. Freyburg am der Unstrut, Saxe-Albertine, Germany, 5 June 1804; d. Schoneberg, near Berlin, 11 March 1865). Although German-born, he would later become British and famous for his explorations of the then British Guiana from 1841 to 1895 as well as those of the British Virgin Islands, Santo Domingo (today the Dominican Republic) and Southeast Asia. His most famous ichthyological work was his *Natural History of the Fishes of Guiana* (Schomburgk 1841-43). There, he gives Humboldt's fish an English name: "The Pimelodus of the Volcanoes" and summarized Humboldt's tale by stating that:

The singular fact in the history of this fish is, that from the volcanos in the vicinity it is, during the periodical eruptions, discharged in thousands; and in a state so perfect, as to show little mutilation either from scorching or from the effects of the hot water with which it is discharged. Baron Humboldt states, that in turning over the records kept by the small villages in the vicinity of Cotopaxi, he found mentioned, that, on the lands of the Marquis Selvage, so large a quantity was thrown, that a putrid odour was spread over the country. The almost extinct volcano of Imbaburu, in 1691, discharged thousands over the plains surrounding the village of Ibarra, and the miasmata which occurred from them, fevers were attributed; and from another volcano, in 1698, thousands were also thrown, encased in algamaceous balls. Humboldt is of opinion that these volcanos contain subterranean lakes, from whence the supply is afforded, the numbers in the little rivulets around being comparatively small; he adds, many of these rivulets may communicate with these subterranean caverns; and that the first Pimelodi which have stocked them must have ascended against the stream."

MYTH AND REALITY

Obviously no fish can be "vomited" by volcanoes. The temperature alone (ca. 1,500° C) would disintegrate any living organism. As

Schomburgk states in his narrative, Humboldt went into great pains in trying to explain this phenomenon. His explanation may have been influenced by stories made popular by Athanasius Kircher (1602-1680) whose highly speculative, and often wrong, interpretations about subterranean waters were very popular into the eighteenth century (Romero 2000).

Having said that, though, the fish that Humboldt described from the rivers around Quito is not only real but it has also been found in caves. At the British Museum of Natural History in London, there is a specimen of *A. cyclopus* catalogued as BMNH 1977.5.24.13 collected in a cave north of Puyo, quite far away from the localities mentioned by Humboldt. Cave individuals of the genus *Astroblepus*, whose species has yet to be determined, have been cited as occurring in Peru (Vilchez Murga 1968, Ribera, & Belles 1984). Also, two troglobitic species of the genus *Astroblepus* have been formally described: *A. pholeter* by Collette (1962) in Latas, 4 km north of Archidona, Napo Province, eastern Ecuador (again far away from Humboldt's localities and *A. riberae* by Cardona, & Guerao (1994) for Peru. *A. cyclopus* has also been reported in rivers of Colombia.

Therefore, Humboldt's account of these subterranean fishes being spewed from volcanoes can be considered more a myth than a fact based on local legends. These types of accounts are not unusual in the literature (see Romero 1999a, b, 2000; Romero & Lomax 2001), and represent styles of scientific reporting typical of times when facts were not necessarily checked before being published.

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PIMELODUS CYCLOPUM



Humboldt's original illustration of "*Pimelodus cyclopum*"