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### Repatriating a lost name: notes on McClelland and Griffith's *Cobitis boutanensis* (Cypriniformes: Nemacheilidae)

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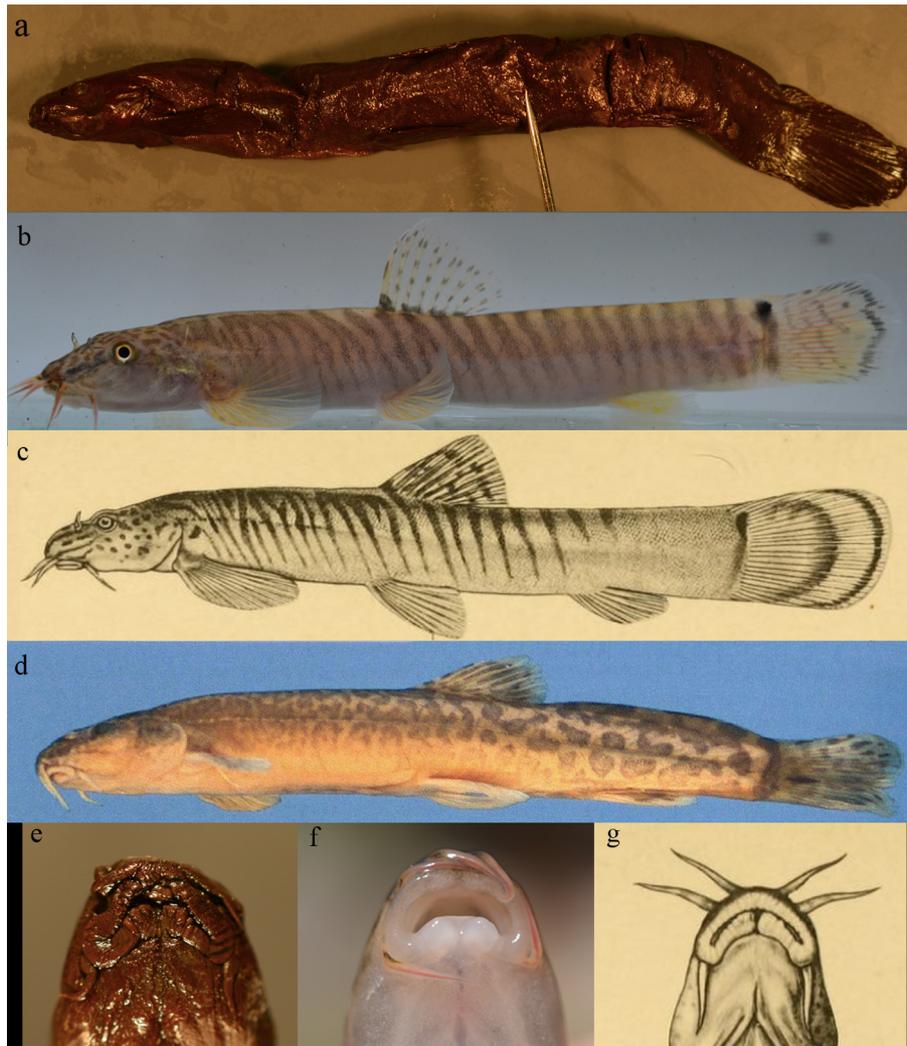
In 1842, a loach was described with great brevity in McClelland's "On the freshwater fishes collected by William Griffith during his travels from 1835 to 1842" (McClelland 1842). The species was named *Cobitis boutanensis* McClelland and Griffith 1842, presumably after the country where it was collected. At that time, there was not a consensus on the spelling of 'Bhutan', which appeared commonly as 'Bhotan', 'Bootan', or 'Boutan'. The locality of *Cobitis boutanensis* was described simply as "Boutan, on the Mishmee Mountains" (McClelland 1842). Hora (1928) subsequently amended the locality of the specimen to 'Bolan Pass' in what was then Afghanistan (now Pakistan). This amendment was based on the assumption that there was likely an error in spelling or interpreting the text in McClelland (1842). As a result, *Cobitis boutanensis*, now *Paracobitis boutanensis* in Eschmeyer (2015), has been referred to as a species endemic to Afghanistan for nearly 90 years.

Previous studies involving *Paracobitis* have indicated that *Paracobitis boutanensis* is a poorly understood taxon (Mousavi-Sabet et al 2013, Esmaeili et al 2014). This lack of understanding is due to the apparently limited distribution of the species and lack of collections beyond the holotype. However, after morphological examination of the holotype (Fig. 1), analysis of written communications between McClelland and Griffith, and cross referencing the description (McClelland 1842) with dates of Griffith's travel itinerary and map (Griffith 1847, 1848; Fig. 2), we conclude that the species in question was in fact collected in Bhutan and represents a population of a species recognized as *Aborichthys kempfi* Chaudhuri 1913. Consequently, *Aborichthys kempfi* is a synonym of *Aborichthys boutanensis* (Griffith and McClelland 1842).

Morphological characters of the holotype clearly support its placement in the genus *Aborichthys* as opposed to *Paracobitis*. Both genera are elongate and have an outward tapering caudal peduncle (dorsoventral deepening of caudal peduncle posteriorly). The deep caudal peduncle of *Paracobitis* is due to the presence of an adipose fin. The caudal peduncle of *Aborichthys* gradually tapers outward posteriorly and lacks an adipose fin. Species of *Paracobitis* have forked to truncate caudal fins. A rounded caudal fin is one of the most conspicuous diagnostic traits of *Aborichthys*.

Chaudhuri (1913) diagnosed *Aborichthys* based on three characters: 1) vent situated anteriorly, near mid-point of body, 2) dorsal-fin origin situated posterior to vertical from pelvic-fin insertion, and 3) lateral line much higher on the body than in other Cobitidae. All of these characters are present in Griffith's specimen (Table 1). The description of *A. kempfi* can be seen in Chaudhuri (1913). As *Aborichthys* was a monotypic genus when described, the main diagnostic traits for *A. kempfi* were also diagnostic of the genus. *Aborichthys boutanensis* fits the major morphological dimensions of *A. kempfi* except for body depth, for which *A. boutanensis* appears to be slightly shallower-bodied than *A. kempfi* (body depth roughly 1/9 SL versus 1/7 SL). However, this difference could be attributed to the deterioration of Griffith's specimen, measurement error, or intraspecific variation. Body depth of the holotype was previously recorded as 1/6 SL (Gunther 1868) and 1/11 SL (Day 1872).

A closer examination of McClelland's (1842) original description of *Cobitis boutanensis* reveals that in addition to being given the locality "Boutan, on Mishmee Mountains", the specimen is also listed under the heading "Khasya, Boutan, and Mishmee collections", and is the only species with 'Boutan' as a locality (McClelland 1842, pg. 568). The fact that 'Boutan' is a spelling of Bhutan is confirmed by multiple uses of that form in referring to McClelland's 1836-8 travels northeast of Calcutta (McClelland 1842, pg. 560). Although southeastern Bhutan is separated from the Mishmi Hills by the Assam Plain, Griffith's trips were sequential, and he often referred to them together (Griffith 1847, 1848). It seems evident that in giving this heading, locality, and name to *Cobitis boutanensis*, the intent was to group it among the eastern collections, not with the Afghan collections made more than 1500 miles to the west.



**FIGURE 1.** Comparison of *Aborichthys boutanensis* holotype to other cobitids. (a) *Aborichthys boutanensis* holotype, BMNH1860.3.14.775, 104.7 mm SL; (b) *A. boutanensis*, CNR (College of Natural Resources, Bhutan) 13551, 101.6 mm SL; (c) drawing of *A. boutanensis*, labeled *Aborichthys kempi* in Chaudhuri (1913); (d) *Paracobitis atrakensis* from Esmaili et al (2014) with permission of the author; mouth structures of (e) *A. boutanensis*, holotype; (f) *A. boutanensis*, CNR 13551; and (g) *A. boutanensis* from Chaudhuri (1913).

Griffith's travels in Bhutan with the Pemberton mission (January 3–May 18, 1838) ranged from Dewangiri in southeastern Bhutan to Trashiyangtse, west to Punakha, and south to Buxa, then part of Bhutan (Griffith 1847, Long 1979). If the Griffith collection was made in the currently known range of what is referred to as *Aborichthys kempi* in Bhutan, based on the field notes of the first author (RJT; Fig. 2), then it was collected sometime between January 3 and 27, 1838, either outside Diwangiri (in the Darrang or Deo Rivers of the Pagladia River drainage) or between Chungkar and Sassi (in what Griffith (1847) calls the 'Chilluree' or 'Dimree', tributaries of the Manas River drainage). Interpreting 'Boutan' as the Bolan Pass (Hora 1928) stripped Bhutan of its only endemic fish species at the time, and for more than 100 years the only fish specimen known to be collected in Bhutan. Further, it removed from Bhutan a species that correctly bears its name.

#### *Aborichthys boutanensis* (McClelland & Griffith 1842)

*Cobitis boutanensis* McClelland and Griffith in McClelland 1842: 586, Boutan[Bhutan], on Mishmee Mountains

*Nemachilus butanensis* (McClelland).—Günther 1868: 358. Locality: Butan

*Nemacheilus butanensis* (McClelland).—Day 1872: 196. Locality: Bútan

*Nemacheilus butanensis* (McClelland).—Day 1873: ccxcviii. Locality: Bootan

*Nemacheilus butanensis* (McClelland).—Day 1888: 621. Locality: Boutan

*Nemachilus butanensis* (McClelland).—Day 1889: 236. Locality: Bhutan

*Aborichthys kempi* Chaudhuri 1913: 245, Pl. 7, figs. 1-1b. Localities (multiple syntypes):Egar Stream between Renging

and Rotung, Aunachal Pradesh; Dihang River, near Yembung; Sirpo River near Renging, Abor Hills, India  
*Adiposia boutanensis* (McClelland).—Hora 1928: 483. Locality: Helmand basin probably in the neighborhood of the Bolan Pass  
*Paracobitis boutanensis* (McClelland).— Bănărescu & Nalbant 1995:443; Kottelat 2012: 99. Locality: Bolas Pass, Helmand drainage [based erroneously on Hora (1928)]



**FIGURE 2.** Map of Griffith's expedition (base map from Griffith and McClelland 1848) through Bhutan, and a generalized range map of *Aborichthys boutanensis* in southern Bhutan (lighter oval) based on observations of first author (RJT). Bhutan's modern border is superimposed (green area). The brown line is the path taken by Griffith.

**TABLE 1.** Morphometric and meristic characters for *Aborichthys boutanensis*.

	<i>Aborichthys boutanensis</i> holotype BMNH1860.3.19.775
Morphometrics (mm)	
Standard length	104.7
Head length	18.6
Predorsal length	47.9
Snout length	7.1
Prepelvic length	47.3
Preanal length	78.4
Prevent length	55.6
Body depth	11.5
Body width	10.5
Caudal-peduncle depth	12.9
Caudal-peduncle length	19.9
Pectoral-fin length	15.0
Pelvic-fin length	13.2
Orbital width	2.0
Interorbital width	5.0
Meristic counts	
Branched dorsal-fin rays	7
Branched anal-fin rays	5
Branched pectoral-fin ray	12
Branched pelvic-fin rays	8
Branched caudal-fin rays	16

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