From the Amazonriver to the Amazon molly and back again

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Poecilia kykesis nom. nov., a new name for Mollienesia petenensis Günther, 1866, and redescription, revalidation and the designation of a lectotype for P. petenensis Günther, 1866 (Teleostei: Poeciliidae)

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Summary

Poecilia petenensis Günther, 1866 (= Mollienesia gracilis Regan, 1913) is redescribed and is revalidated from synonymy of P. sphenops Valenciennes, 1846. A lectotype is designated. Mollienesia petenensis Günther, 1866 is renamed as P. kykesis to avoid homonymy with Poecilia petenensis.

Introduction

Günther (1866) used the number of dorsal fin rays as a means of distinction between Poecilia Bloch and Schneider, 1801 and Mollienesia LeSueur, 1821. This is illustrated when he described both Poecilia petenensis Günther, 1866, a relatively large, slender short-finned molly (Fig. 1) and Mollienesia petenensis Günther, 1866, an equally large, but high-built sailfin molly (Fig. 2).

Regan (1913) applied another morphological criterion for generic separation. His major distinction between Poecilia and Mollienesia was based on the shape of the gonopodial tip: smooth in Poecilia, and with extrusions in Mollienesia (cf. Hubbs, 1926; Miller, 1975). Regan, therefore, allocated both species of Günther (1866) to Mollienesia, renaming the slender P. petenensis as M. gracilis.

Rosen and Bailey (1963) did not apply any specific criterion for their genera (cf. Rivas, 1978). They considered the slender and the sailfin molly from Pétén still as congeneric but placed in Poecilia. Rosen and Bailey also synonymized 35 taxa, including M. gracilis, into the single species P. sphenops. This rendered both original names as synonyms, so Rosen and Bailey (1963) chose the name P. petenensis (although preoccupied by the slender species) for M. petenensis in order to “retain at least one of the names given by the original author.” Their action, however, was nomenclatural incorrect. Together with the resurrection of the slender Pétén molly from synonymy of P. sphenops, this mistake is corrected in the present paper. Quite unnecessary, Brett and Turner (1986) renamed M. gracilis Regan, 1913 (= P. petenensis Günther, 1866) as “P. gracilis”, i. e., between quotation marks. Re-allocating M. gracilis to Poecilia will render it the name P. petenensis. The sailfin Pétén molly, however, is renamed herein to avoid homonymy with the slender Pétén molly.
Material examined

Poecilia kykesis. Mexico, Guatemala.


Poecilia petenensis: Lake Pétén, Guatemala.

BMNH 1864.1.26.377 (lectotype by present designation, former syntype of P. petenensis Günther, 1866), Lake Pétén, coll. Salvin, no date.

BMNH 1864.1.26.378-379 (4 Paralectotypes of P. petenensis), same data as BMNH 1864.1.26.377; GCRL 6856 (35 ), Lake Pétén, no further data.

Systematic section

Poecilia kykesis nom nov.

Mollienesia petenensis Günther, 1866: 348 (Type locality: Guatemala, Lake Pétén); Poecilia petenensis (Günther, 1866); Rosen and Bailey, 1963: 55 (pre-occupied by Poecilia petenensis Günther, 1866)

Diagnosis

A. 9; D. 12-16; C. 18-22; L.L.S. 28-29; C.P.S 20. Nearly no body pigmentation, except for black margined scales. In males these black margins can form spots, extending the rows of spots found on the caudal fin. Also the dorsal fin is spotted in the male. The caudal fin exhibits a slightly produced lower margin in adult males.

The gonopodium is like in P. petenensis (Fig. 2), but with more unserrated segments distally on ray 4p (modally 12 versus modally 10-11 in P. petenensis). The gonopodium has more or less cubicle segments in rays 4a and 4p, which is rare, if not unique in the subgenus.

Distribution

Poecilia kykesis occurs from the tributary of Rio Usumacinta and nearby lakes, Pétén, Guatemala to the Yucatan Peninsula, Mexico.

Etymology

“Kykesis” is Greek for “a mixing”, reflecting the confusing mixture of homonyms, caused by the double recognition Poecilia petenensis and Mollienesia petenensis as congeneric.
Figure 1a. Habitus of *Poecilia kykesis* nom. nov. Male (ZMA 121.855)

Figure 1b. Habitus of *Poecilia kykesis* nom. nov. Female (ZMA 121.856)
**Poecilia petenensis** Günther, 1866

*Poecilia petenensis* Günther, 1866: 342-343 (Type locality: Guatemala, Lake Pétèn)

*Mollienesia gracilis* Regan, 1913: 1012 (replacement name for *Poecilia petenensis* Günther, 1866); *Mollienesia sphenops gracilis*; Hubbs, 1935; *Poecilia* "gracilis"; Brett & Turner, 1983: 128.

*Poecilia sphenops* (non Valenciennes, 1846, in part); Rosen & Bailey, 1963: 52.

**Diagnosis**

A. 8 or 9, D. 10 or 11 (modally 10), CPS. 16, CS 18 (modally), LLS. 27 to 30. Morphometric data in Figure 1 and in Table I. The sides are spotted, in females more than in males. In large females the spots and a cross-hatched pigment pattern on the dorsum of the body form a diamond pattern. In smaller specimens, the diamond pattern is weaker. The fins have little pigment, no spots or blotches are present (Figure 2).

![Figure 2. Habitus of *Poecilia petenensis*. Male (Lectotype, BMNH 1864.1.26.377)](image)

The gonopodium is sharp, with both a membranous hook at ray 3 and a spinal hook at ray 5p. The distal 4 to 7 segments on ray 3 are unserrated, as well as all segments on ray 4a. At ray 4p, the terminal 9-12 segments are unserrated, followed by 10-12 dorsally serrated segments. Ray 5a has 12 unserrated terminal segments, followed by 5 or 6 ventrally serrated segments. Ray 5p is unserrated (Figure 2a).

The inner jaw teeth are unicuspid.

Largest specimens examined: female: 119.0 mm SL., male: 93.0 mm SL..
Comparisons
Although Günther (1866) stated that “males are higher and shorter than females”, the males are also relatively large. In his description, he mentioned that the dorsal fin begins above the 11th or 12th scale of the lateral line. When this character was checked, it was found above the 10th or 11th scale.

*Poecilia petenensis* has more dorsal fin rays than most other species of the *P. sphenops* complex, modally 10 or 11 (average 10) versus modally 9 or 10 (average 9.5) in other species. It is large and has a relatively slender body. The dorsal and anal fin positions are anterior compared to those fins in *P. gillii* (Table 1). Greenfield (1990) found the body of *P. teresae* Greenfield, 1990 very similar to *P. petenensis*, but *P. teresae* had “a shorter head, a more slender and shorter caudal peduncle and a more slender body”. His data also showed that both species differed from *P. mexicana* (Greenfield, 1990: 451, table 1). Another large and elongated species is *P. catemaconis* Miller, 1975, which has a tricuspid inner jaw dentition.

The gonopodium differs in a larger number of unserrated segments terminally on ray 4p (in *P. mexicana* modally 8-9). This number is more like the number of unserrated segments found in the *P. latipinna* group: in *P. kykesis* (a sympatric species of broad-finned molly, Figure 3b) this number is 12-14 (Figure 2c).

Distribution
This species appears to be endemic to Lake Pétén, Guatemala.

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Figure 3. Tips of the gonopodia
(a) *Poecilia kykesis*, (b) *P. petenensis*
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References


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