

現在，脊椎動物の中で最も小さな種

***Paedocypris*, a new genus of Southeast Asian cyprinid fish with a remarkable sexual dimorphism, comprises the world's smallest vertebrate**

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Paedocypris is a new genus of paedomorphic cyprinid fish from highly acidic blackwater peat swamps in Southeast Asia. It includes two new species, one of which (*Paedocypris progenetica*) appears to be the smallest fish and vertebrate known, with the smallest mature female measuring a mere 7.9 mm. *Paedocypris* has many 'larval' features typically associated with paedomorphic fish (e.g. narrow frontals that leave the brain unprotected dorsally by bone and a precaudal larval-fin-fold), but, uniquely among fishes, males also possess highly modified pelvic fins with hypertrophied muscles and a keratinized pad in front of the pelvic girdle, which, we hypothesize, function together as a clasping or holding device, thereby suggesting an unusual reproductive mode. Unfortunately, habitat destruction jeopardizes the survival of these fishes and thus opportunities for further research.

Keywords: *Paedocypris*; Cyprinidae; peat swamps; smallest vertebrate; sexual dimorphism

Paedocypris progenetica と *P. micromegethes* の2種

* 酸性度の高い泥炭湿地に生息する

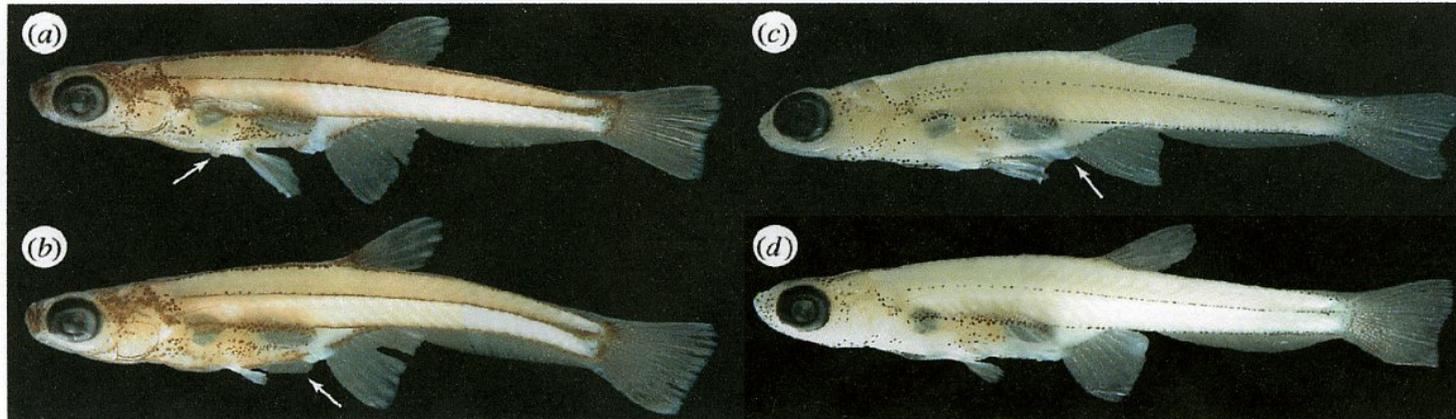


Figure 2. (a) *Paedocypris progenetica* holotype male, MZB 5998, 8.6 mm; arrow points to keratinized abdominal knob; (b) *Paedocypris progenetica* paratype female, ZRC 43199, 8.0 mm; arrow points to preanal larval-fin-fold; (c) *Paedocypris micromegethes* holotype male, ZRC 49869, 10.4 mm; arrow points to genital papilla; (d) paratype female, BMNH 2004.11.16.1-40, 10.0 mm.



Figure 1. Living *Paedocypris progenetica*, CMK 18496, (a, b) male, ca 9 mm; (c) female, ca 8.8 mm.

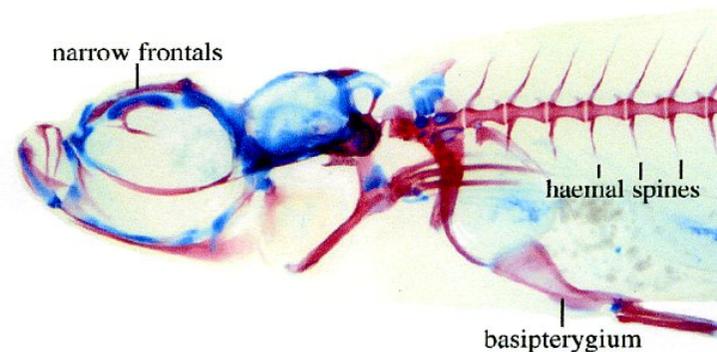


Figure 4. *Paedocypris micromegethes*, cleared and double stained paratype, male, BMNH 2004.11.16.41-60, 10.7 mm, cartilage in blue, bone in red, note largely cartilaginous roofless skull, haemal spines on abdominal vertebrae and hypertrophied basipterygium of pelvic girdle.

Research article

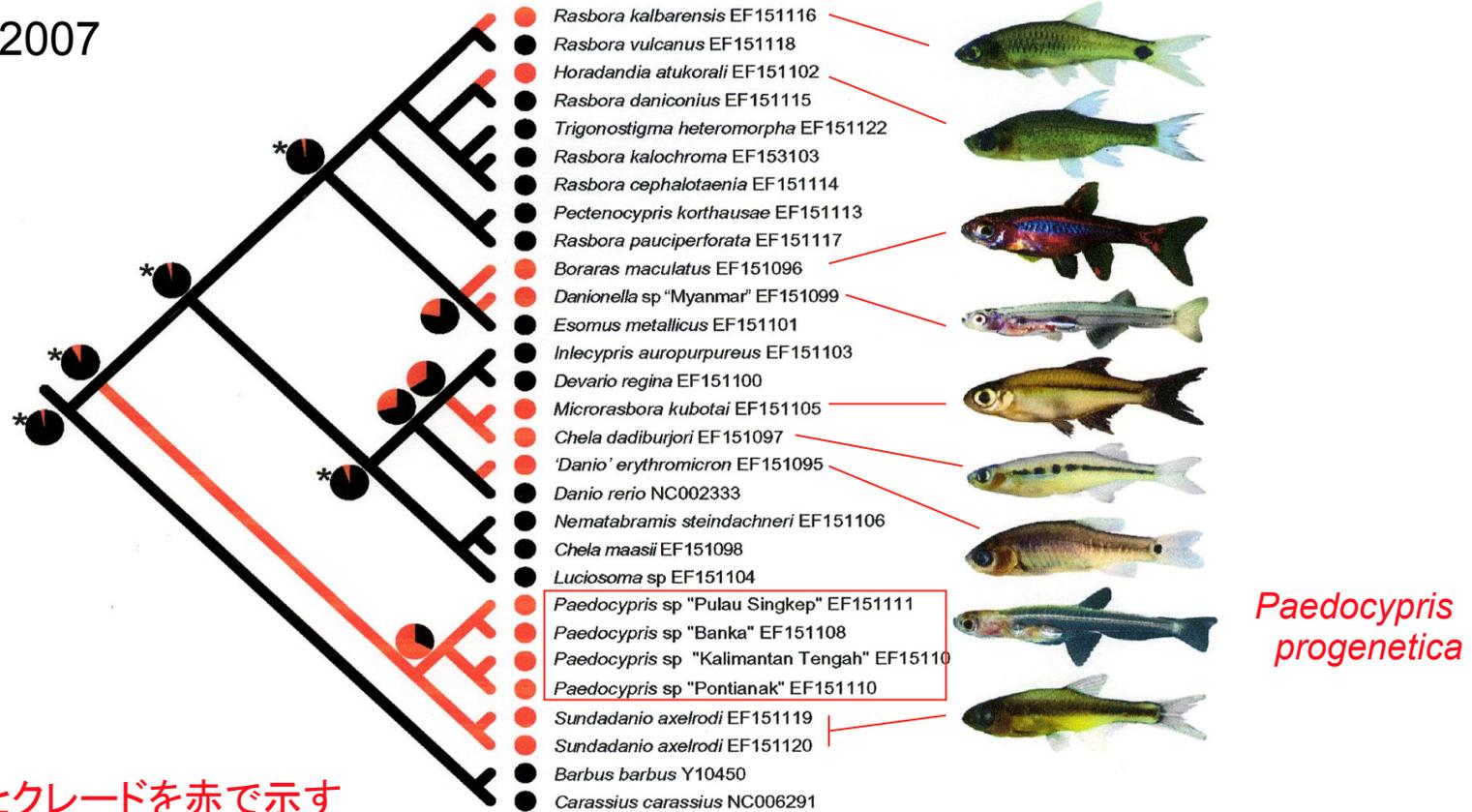
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Evolution of miniaturization and the phylogenetic position of *Paedocypris*, comprising the world's smallest vertebrate

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Rüber et al. 2007



小型化した種とクレードを赤で示す

Figure 3
Evolution of miniaturization in the rasborine clade A. Tracing the evolution of miniaturization on the ML topology (one of three ML topologies; choice of topology does not alter conclusions) of the rasborine data set (clade A). The state 'miniature' is given in red colour, whereas the state 'non-miniature' is given in black. Results from both, unweighted parsimony and ML (selected nodes only), are shown. Significant ML reconstructions are indicated with an asterisk. Photographs of selected miniature rasborines mentioned in the text are given behind taxon names: *Rasbora kalbarensis*, *Horadandia atukorali*, *Boraras brigittae*, *Danionella* sp 'Myanmar', *Microrasbora kubotai*, *Chela dadiburjori*, *'Danio' erythromicron*, *Paedocypris progenetica*, *Sundadanio axelrodi*.

シラスウオ(スズキ目ハゼ科)

2004年

**The World's Smallest Vertebrate, *Schindleria brevipinguis*,
A New Paedomorphic Species in the Family Schindleriidae
(Perciformes: Gobioidae)**

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ABSTRACT. *Schindleria brevipinguis* n.sp., from the Lizard Island-Carter Reef vicinity of the Great Barrier Reef, Australia and from Osprey Reef nearby in the Coral Sea, is a small, unpigmented gobioid species distinctive in having fewer dorsal- and anal-fin rays and a deeper body with larger eyes than the other described species, *S. pietschmanni* and *S. praematura*. The urogenital papilla of male *S. brevipinguis* has a markedly different shape from those of the other two species. *Schindleria brevipinguis* apparently provides an even more extreme example of paedomorphosis than its congeners, and with males maturing by 7 mm and the largest specimen only 8.4 mm, it almost certainly is the world's smallest fish and smallest vertebrate.

WATSON, WILLIAM, & H.J. WALKER JR., 2004. The world's smallest vertebrate, *Schindleria brevipinguis*, a new paedomorphic species in the family Schindleriidae (Perciformes: Gobioidae). *Records of the Australian Museum* 56(2): 139-142.

世界で最も小さな脊椎動物は？

Trimmatom nanus



写真は FishBaseより

Paedocypris progenetica



Schindleria brevipinguis

Watson & Walker: *Schindleria brevipinguis*—the smallest vertebrate 141

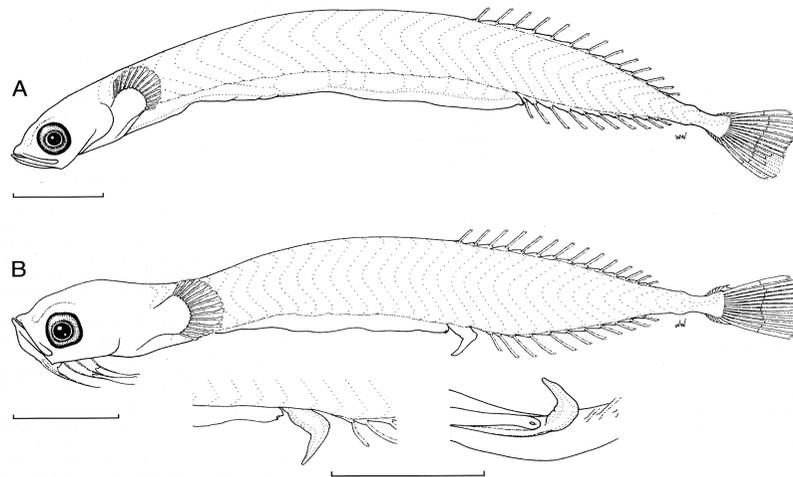


Fig. 1. *Schindleria brevipinguis* n.sp. (A) Holotype, AMS I.23552-006 (8.4 mm, female), from vicinity of Carter Reef, Great Barrier Reef, Queensland, Australia; (B) paratype, AMS I.26323-003 (6.6 mm, male; note that branchiostegal area is somewhat damaged) from Carter Reef vicinity, Great Barrier Reef. Enlarged lateral (left) and ventral (right) views of urogenital papilla are shown below paratype. Scale bar = 1 mm.

* 2004年



Figure 1. Living *Paedocypris progenetica*, CMK 18496, (a, b) male, ca 9 mm; (c) female, ca 8.8 mm.

熟卵をもった雌の最小個体は...(Kottelat et al., 2006)

第1位 *Paedocypris progenetica* 7.9 mm (標準体長)



Figure 1. Living *Paedocypris progenetica*, CMK 18496, (a, b) male, ca 9 mm; (c) female, ca 8.8 mm.

第2位 *Trimmatom nanus* 8.0 mm



第3位 *Schindleria brevipinguis* 8.4 mm

Kottelat et al. (2006) によると...

* 最小個体 7 mm は、雄の成熟個体とされたが、生殖突起を詳しく調べておらず、成熟個体であるかは怪しい

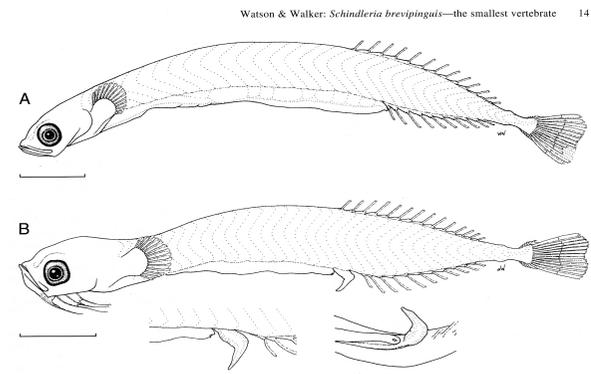


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