

Threatened fishes of the world: *Tanichthys albonubes* Lin 1932 (Cyprinidae)

Xu-Fang Liang · Guo-Zhu Chen ·
Xiang-Lin Chen · Pei-Qi Yue

Received: 7 December 2006 / Accepted: 10 August 2007 / Published online: 11 October 2007
© Springer Science + Business Media B.V. 2007

Abstract The white cloud mountain minnow *Tanichthys albonubes* Lin is an endemic species to southern China and the genus has two species, *Tanichthys albonubes* Lin and *Tanichthys micagemmae* Freyhof et Herder. The distribution range of *T. albonubes* Lin and *T. micagemmae* is very narrow and only found in the mountain brooks of Baiyunshan Mountain (White Cloud Mountain), Huaxian Country and the vicinity of Guangzhou in Guangdong Province and Halong, Quang Ninh Province, Vietnam respectively. The wild populations of this fish had already been on the verge of extinction when Shu-Yan Lin first discovered it in 1932 at the Baiyunshan Mountain. It was believed to be extinct in the wild because there were no reports of this fish in the wild since 1980. In September 2003, a small and isolated population of the fish was discovered in a mountain puddle in the north vicinity of Guangzhou. Additional studies are needed to determine the survival and

propagation of the released fish. The protection of their natural habitat should be implemented.

Keywords *Tanichthys albonubes* Lin · Identification · Distribution · Habitat and ecology · Reproduction · Threats · Conservation

Common name: White cloud mountain minnow (Fig. 1). **Conservation status:** Endangered, China Red Data Book, Endangered in National Environmental Protection Agency and Endangered Species Scientific Commission PRC (Yue and Chen 1998). **Identification:** Small, compressed, elongate slender body, maximum 30 mm (Weitzman and Chan 1966). D iii/6, A iii/7–8, P i/9–11, V i/6, vertebrae 4+29, 30–32 lateral scales, gill rakers 8–10 (Zhen 1989; Chen 1998), mouth strongly oblique and protractile downward, lower jaw projecting and spatulate with soft round margin, smooth, thin lips, no barbels. No lateral line. Body green with golden horizontal lateral. Dorsal and anal fins green with transparent edges, large red rounded caudal spot (Lin 1932, 1935; Weitzman and Chan 1966). **Distribution:** Endemic to southern China (Yue and Chen 1998; Freyhof and Herder 2001; Kottelat 2001) in mountain brooks of Baiyunshan Mountain (White Cloud Mountain), Huaxian Country and near Guangzhou in Guangdong Province and Halong, Quang Ninh Province, Vietnam (Pan et al. 1991; Yi et al. 2004; Kottelat 2001). **Abundance:** Wild populations always limited (Shu-Yan Lin 1932) and believed extinct since 1980. A small isolated population recently discovered

X.-F. Liang (✉) · G.-Z. Chen
Department of Biology and Institute of Hydrobiology,
Jinan University,
Guangzhou 510632, People's Republic of China
e-mail: tliangxf@jnu.edu.cn

X.-L. Chen
College of Life Science, South China Normal University,
Guangzhou 510631, People's Republic of China

P.-Q. Yue
Institute of Hydrobiology, Chinese Academy of Sciences,
Wuhan 430072, People's Republic of China

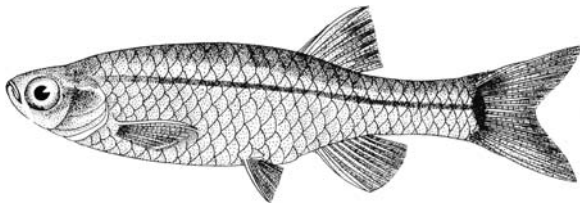


Fig. 1 White cloud mountain minnow

near Guangzhou (Yi et al. 2004). Widely distributed in the ornamental fish trade. **Habitat and ecology:** Clear, slow-moving mountain brooks with thick weed growth. Feeds on plankton, meiobenthos and larvae of aquatic insects (Yi et al. 2004; Chen 2006). **Reproduction:** Spawns several times a year, from March to October (Shi 2006), on plants (Chen et al. 2004; Sado and Kimura 2005). **Threats:** Easily bred in captivity but limited reproductive capacity in the wild (Shu et al. 2006). Destruction of forests and soil erosion from irrigation dams have altered mountain streams, or diverted water to rice fields. **Conservation actions:** Captive breeding program established (Weitzman and Chan 1966) by the Guangzhou City Government should be monitored, and the natural habitat should be protected.

References

- Chen Y-Y (1998) Cypriniformes II of Fauna Sinica. Science Press, Beijing
- Chen W-X (2006) Study on natural habitat and food habit of *Tanichthys albonubes* Lin. M Sc Thesis, Jinan University
- Chen G-Z, Fang Z-Q, Ma GZ (2004) Embryonic development of *Tanichthys albonubes*. J Fish Sci China 11:489–495
- Freyhof J, Herder F (2001) *Tanichthys micagemmae*, a new miniature cyprinid fish from Central Vietnam (Cypriniformes: Cyprinidae). Ichthyol Explor Freshw 12:215–220
- Kottelat M (2001) Freshwater fishes of northern Vietnam. A preliminary check-list of the fishes known or expected to occur in northern Vietnam with comments on systematics and nomenclature. The World Bank, Washington
- Lin S-Y (1932) New cyprinid fishes from White Cloud Mountain, Canton. Lingnan Sci J 11:379–383
- Lin S-Y (1935) Contribution to a study of cyprinidae of Kwangtung and adjacent provinces. Lingnan Sci J 14:403–414
- Pan J-H, Zhong L, Zheng CY, Wu HL, Liu JZ (1991) The freshwater fishes of Guangdong Province. Guangdong Science and Technology Press, Guangzhou
- Sado T, Kimura S (2005) Developmental morphology of the cyprinid fish *Tanichthys albonubes*. Ichthyol Res 52:386–391
- Shi F (2006) Study on the microstructure of larval otoliths and age structure of wild population in *Tanichthys albonubes* Lin. M Sc Thesis, Jinan University
- Shu H, Meng Z-N, Yi Z-S, Zhang Y, Liu X-C, Lin H-R (2006) The genetic diversity of wild and cultivated population of *Tanichthys albonubes* by random amplified polymorphic DNA (RAPD) method. Acta Scientiarum Naturalium Universitatis Sunyatseni 45:77–81
- Weitzman SH, Chan LL (1966) Identification and relationships of *Tanichthys albonubes* and *Aphyocypris pooni*, two cyprinid fishes from south China and Hong Kong. Copeia 1966(2):285–296
- Yi Z-S, Chen X-L, Wu J-X, Yu S-C, Huang C-E (2004) Rediscovering the wild population of white cloud mountain minnows (*Tanichthys albonubes* Lin) on Guangdong Province. Zoological Research 25:551–555
- Yue P-Q, Chen Y-Y (1998) Pisces. In: Wang S (ed) China red data book of endangered animals. Science Press, Beijing
- Zhen C-Y (1989) Fishes of the Pear River. Science Press, Beijing