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Rediscovery of the Bitterling, *Tanakia lanceolata*, in China (Pisces, Cyprinidae)

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Tanakia lanceolata (Temminck and Schlegel, 1846) is distributed in Korea and Japan (Mori, 1936; Uchida, 1939; Nakamura, 1969; Arai and Akai, 1988). Mori (1935) reported one specimen of *Acheilognathus lanceolata* (=*Tanakia lanceolata*) from Feng Cheng (Fenhuang-chung, 40°28′N, 124°03′E), Liaoning Province, China, as *A. lanceolata intermedia*, although it had been previously reported as *A. signifer* (see Mori, 1928). There were, however, no descriptions of characters, except barbel length, based on that specimen. Thereafter Mori ignored his own record of *T. lanceolata* from China, and records of the species have not yet been included in any Chinese literature. As regards *Tanakia* species in China, *Tanakia himantegus* (Günther, 1868) has been considered to be the only species distributed in Kiangsu, Ahnwei and Fukien Provinces and Taiwan (Günther, 1868; Miao, 1934; Woo, 1964; Wu and Shen, 1984; Chen et al., 1990).

Recently, *Paracheilognathus himantegus* (=*Tanakia himantegus*) was reported from Ai He River, Yalu River System, Liaoning Province, northern China (Xie, 1987), a geographically interesting record owing to the species having been considered to be subtropical. Upon reexamination of 17 specimens of *Tanakia himantegus* sensu Xie (1987), the specimens from Liaoning Province were found to be *Tanakia lanceolata* (Fig.1).

Methods

Counts and measurements followed Hubbs and Lagler (1947). The positions of the first dorsal and anal fin ray pterygiophore (D-PTG-1 and A-PTG-1, respectively) were examined from radiographs. When the proximal radial of D-PTG-1 was inserted between neural spines of the nth and (n+1)th vertebral centra, the position of D-PTG-1 was expressed as D-PTG-1=n. When the proximal radial of A-PTG-1 was inserted between haemal spines of the mth and (m+1)th vertebral centra, or in front of the first haemal spine being supported by vertebral centrum (m+1), the position of A-PTG-1 was expressed as A-PTG-1=m.

Institutional abbreviations are as follows: IHAS, Institute of Hydrobiology, Academia Sinica, Wuhan, China; NSMT, National Science Museum, Tokyo; RIFFL, Research Institute for Freshwater Fisheries of Liaoning Province, China; RMNH, National Museum of Natural History (Leiden), Leiden; YCM, Yokosuka City Museum, Yokosuka, Japan.

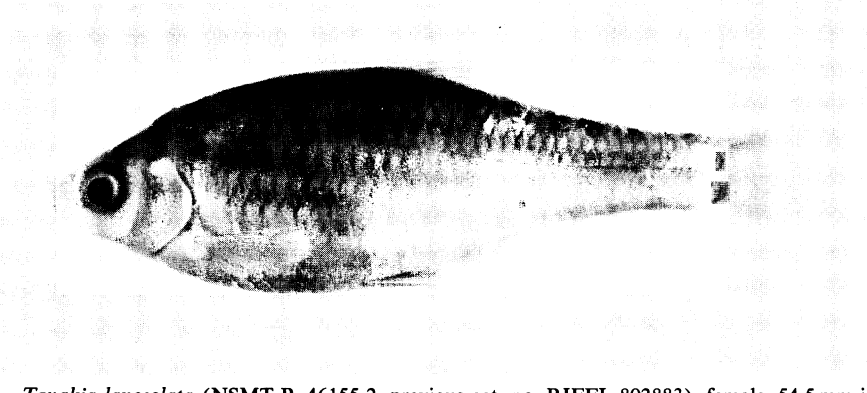

Fig. 1. *Tanakia lanceolata* (NSMT-P. 46155-2, previous cat. no. RIFFL 802883), female, 54.5 mm in SL, from Ai He River, Liaoning Province, China.

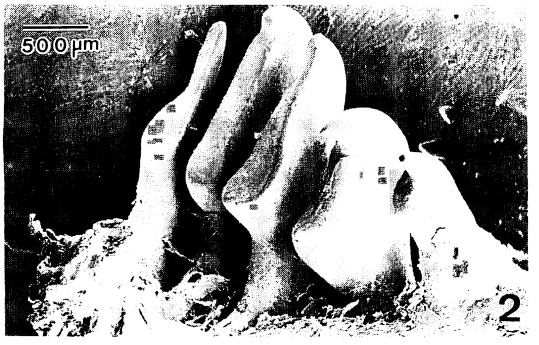

Fig. 2. Pharyngeal teeth of *Tanakia lanceolata* (NSMT-P. 46156-1, previous cat. no. RIFFL 802868), male, 48.6 mm SL, from Liaoning Province.

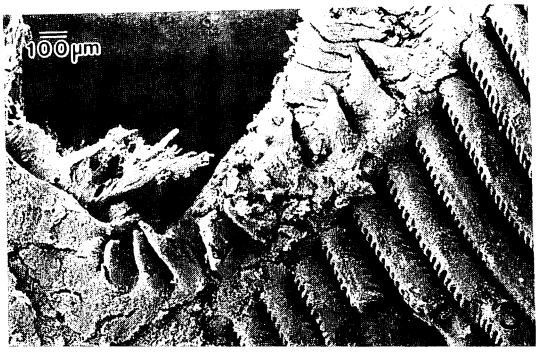

Fig. 3. Gill rakers of *Tanakia lanceolata* (NSMT-P. 46156-1).

Classification of genera of the subfamily Acheilognathinae follows Arai and Akai (1988).

Results

Morphometric and meristic data and body color of 17 specimens from Liaoning Province, China, are shown in Table 1. The dental formula of the pharyngeal teeth was 0.0.5–5.0.0, and five teeth being arranged in a row on the pharyngeal bone on each side (Fig. 2). They agreed well with those of *Tanakia lanceolata* (Suzuki and Hibiya, 1985). The number of gill rakers on the external side of the first gill arch was 10 (Fig. 3). A transverse row of black spots was present on the fin membrane of the dorsal fin. The barbel length ranged from 1.5 to 2.8 in the eye diameter.

Discussion

As shown in Table 1, the 17 Chinese specimens described herein belong to the genus *Tanakia* and agree well with *Tanakia lanceolata*, differing from *T.*

Table 1. Comparison of characteristics of *Tanakia lanceolata* and *T. himantegus*. Figures in parentheses indicate number of specimens

Locality	*T. lanceolata*					*T. himantegus*	
	Japan			Korea	China	Fukien Province	Taiwan
	Kyushu		Honshu				
No. of fish	1[a]	3	6	2	17	2	8
Dorsal fin	iii, 8	iii, 8	iii, 8–9	iii, 9	iii, 9	iii, 8	iii, 8–9
Anal fin	iii, 9	iii, 9–10	iii, 10	iii, 10	iii, 9–11	iii, 10	iii, 10–12
br. A–br. D	1	1(2), 2(1)	1(5), 2(1)	1(2)	0(3), 1(13), 2(1)	2(2)	2(5), 3(3)
D-PTG-1	11	11(3)	10(6)	11(2)	10(2), 11(12), 12(3)	11(2)	11(7), 10(1)
A-PTG-1	18	17(2), 18(1)	17(1), 18(5)	19(2)	18(6), 19(11)	15(1), 16(1)	16(7), 17(1)
Vertebrae[b]	36	35(2), 36(1)	36(3), 37(3)	36(1), 37(1)	36(8), 37(8), 38(1)	34(2)	33(3), 34(4), 35(1)
LLSc[c]	34	35(3)	35(2), 36(4)	36(2)	35(2), 36(14), 37(1)	32(1), 33(1)	31(2), 32(5), 33(1)
Color of preserved speimens							
Longitudinal lateral band				short, narrow		long, wide	
Black spot anteriorly on body				absent		present	
Black margin on anal fin of the male				narrow, indistinct		wide, distinct	
Black band on caudal fin				absent		present	

[a] Holotype; [b] number of total vertebrae, including Weberian complex and a terminal pleurostyle; [c] number of longitudinal scales.

himantegus in the number of scales in the lateral series, total vertebrae, the position of A-PTG-1, the number of branched anal fin rays minus the number of branched dorsal fin rays (br. A–br. D), and the body color. A figure of *Paracheilognathus himantegus* (Xie, 1987: 139, fig. 94) corresponds to other known *T. himantegus*, but differs from *Tanakia* specimens collected from Liaoning Province.

The present specimens also differed from *T. koreensis* and *T. limbata* in the number of branched dorsal fin rays (9 vs 8 in *koreensis* and *limbata*), the number of br. A–br. D. (1 vs 2–3 in *koreensis* and *limbata*), and color pattern (Kim and Kim, 1990). The present specimens can also be distinguished from *T. tanago* owing to the complete lateral line.

As regards classification of *T. signifer* and *T. lanceolata*, however, there may be some problems. Uchida (1939: 139–140) reported *T. signifer* to be very similar to *T. lanceolata lanceolata*, which has not yet been reported from Korea, in many morphological characters, but separated the two species on the basis of color pattern. The present specimens agreed well with *T. intermedia* sensu Uchida (1939) in morphological characters and color pattern, but differed from *T. signifer* in the number of branched dorsal fin rays (9 vs 8 in *signifer*) and color pattern. Conspicuous, wide black dorsal and anal fin margins, which are characteristic of male *A. signifer*, were absent in the males examined here. A recent study on the development of *T. signifer* suggested that species to be more similar to *T. tanago* than to *T. lanceolata* and *T. limbata* (Suzuki and Jeon, 1988; Kim and Kim, 1989).

Although Uchida (1939), followed by most Korean ichthyologists, treated *T. intermedia* as different from *T. lanceolata*, the classification of *T. lanceolata* by Nakamura (1969) is adopted here. *T. intermedia* sensu Uchida (1939) is considered to be *T. lanceolata*. On the basis of the above, it was concluded that *T. lanceolata* and *T. signifer* are both valid species.

Mori (1935) reported *T. l. intermedia* from Huchang (41°30′N, 127°05′E), on the Korean side of the Yalu River system. Records of Mori (1928, 1935) and the present records suggest that *T. lanceolata* is distributed widely in the Yalu River system.

Materials Examined

Tanakia lanceolata—RMNH 2501 (holotype of *Capoeta lanceolata*), 61.9 mm SL, Japan; NSMT-P. 29542, 67.2 mm SL, Kumamoto City, Kyushu, Japan; NSMT-P 29883 (2 specimens), 38.9–45.0 mm SL, Chikugo River, Fukuoka Pref., Kyushu, Japan; NSMT-P 44568 (7), 47.5–59.5 mm SL, Mobara City, Chiba Pref., Honshu, Japan; YCM-P 12701, 88.7 mm SL, Korea, and YCM-P 12705, 91.4 mm SL, Korea; RIFFL 802867, 802869, 802877, 802880, 802894, 802899, 802909, 802923, 802935, and 802944, 38.8–48.4 mm SL, Ai He River, Yalu River System, Feng Cheng Xian, Liaoning Province, China, coll. by Yuhao Xie, 19 Oct. 1980; NSMT-P 46155 (5) (previous cat. no. RIFFL 802836, 802883, 802889, 802900 and 802933), 35.3–54.5 mm SL, collection data as for RIFFL specimens; NSMT-P 46156 (2) (previous cat. no. RIFFL 802868 and 802878), dissected, 45.8–48.6 mm SL, collection data as for RIFFL specimens.

Tanakia himantegus—NSMT-P 47675 (8), 29.4–51.1 mm SL, Taiwan; IHAS 0877 and 0878, 44.8–45.9 mm SL, Longyan City, Fukien Province, China.

Acknowledgments

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中国産ヤリタナゴの再発見

新井良一・解　玉浩・赤井　裕

1928年，森為三博士は中国の遼寧省鳳城で採集した1尾の標本を *Acheilognathus signifer* と同定したが，1935年になってこの標本をヤリタナゴに分類し直した．しかし，この標本について，同定の根拠となるデータは示されなかった．中国産ヤリタナゴの報告は，現在にいたるまで，この1標本のみで，中国の魚類学者は中国におけるヤリタナゴの分布を認めていない．

1987年，著者の1人，解は森博士の標本採集地と同水系と推定される，遼寧省鳳城県鴨緑江水系の愛河からタイワンタナゴ *Tanakia himantegus* を報告しているが，これらの標本を再精査したところ，ヤリタナゴであることが判明した．これで中国産 *Tanakia* 属はタイワンタナゴとヤリタナゴの2種となる．そこでタイワンタナゴと，中国，韓国，日本のヤリタナゴの標本を比較した．なお，森 (1935) は鴨緑江上流域の厚昌（北朝鮮）産ヤリタナゴを報告しているが，1928年の森博士の報告および今回の再発見とを考慮すると，ヤリタナゴは国境をはさんで鴨緑江水系に広く分布している可能性がある．

（新井：〒169 東京都新宿区百人町 3–23–1　国立科学博物館動物研究部．現住所：〒113 東京都文京区本郷 7–3–1　東京大学大学院理学系研究科生物科学専攻；解：中華人民共和国遼寧省遼陽市　遼寧省淡水水産研究所；赤井：〒260 千葉市中央区青葉町 955–2　千葉県立中央博物館）