

***Microphysogobio tungtingensis uchidai*, a Junior Synonym  
of *M. yaluensis* (Pisces, Cyprinidae)**

**Ik-Soo Kim and Hyun Yang**

(Faculty of Biological Sciences, Chonbuk National University, Chonju 561-756, Korea)

**ABSTRACT**

The gudgeon, *Microphysogobio tungtingensis uchidai*, originally described by Banarescu and Nalbant in 1973 is reduced to a junior synonym of *M. yaluensis* based on the 5 type specimens in the USNM. Confusion on the taxonomic position of *Microphysogobio t. uchidai* seems to have resulted from the inadequate description of the papillae of the upper lip and the reference to the small specimens.

Key words: gudgeon, Gobioninae, *Microphysogobio*, junior synonym, type specimens, Korea

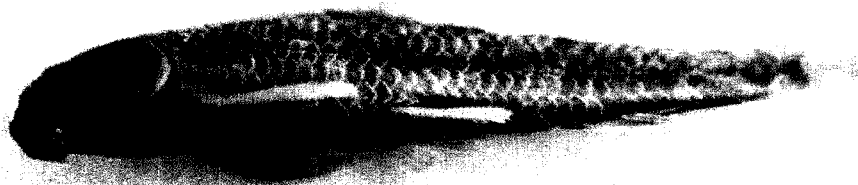
**INTRODUCTION**

The gudgeon, *Microphysogobio tungtingensis uchidai* was originally described by Banarescu and Nalbant (1973) on the basis of 5 specimens from the Naktong River drainage, which deposited in the United States National Museum of Smithsonian Institution. At the same time they treated *Microphysogobio* sp. Uchida (1939) as a synonym of *M. tungtingensis uchidai*. Since then many Korean ichthyologists have used the name of *Microphysogobio uchidai* or *M. tungtingensis* for *Microphysogobio* sp. Uchida (Kim, 1984; Jeon, 1990). In the present study we found that *Microphysogobio tungtingensis uchidai* was a synonym of *M. yaluensis* (Mori, 1927) based on the observation of the type specimens.

## MATERIALS AND METHODS

**Materials.** USNM (National Museum of Natural History, Washington D.C., U.S.A.) 162674 (holotype of *Microphysogobio tungtingensis uchidai*), 41.4 mm SL, Sinchon-ri, Korea, 35 16.5' N, 128 50.7' E, about 25 km west-northwest of Pusan (Fig. 1); USNM 204099 (paratype of the species), 34.9-36.9 mm SL, same data as USNM 162674. above specimens were collected by V. G. Springer. Comparative specimens, CNUC (Chonbuk National University, Chonju, Korea) 24425 (holotype of *Microphysogobio jeoni*) 63.2 mm SL, Andong-shi, Kyongsangbuk-do, Korea.

Counts and measurements followed Hubbs and Lagler (1964). In the counts of the scales above and below lateral line, a small scale at the origin of the dorsal or anal fin was made as one. The vertebral counts were taken from radiographs and the Weberian apparatus located at the anterior vertebral column was counted as four vertebrae. Measurements expressed as percentage of standard length (SL) or head length (HL) were given as range with mean  $\pm$ SD within parentheses.



**Fig. 1.** Holotype of *Microphysogobio tungtingensis uchidai* Banarescu and Nalbant, USNM 162674. 41.4 mm SL.

## RESULTS

**Description of USNM 162674 and 204099.** Dorsal fin rays iii 7, anal fin rays iii 6, pelvic fin rays 8, pectoral fin rays 13, lateral line scales 39-40, vertebrae 38-39. Body depth 16.5-18.6% of standard length, head length 22.7-24.7%, predorsal length 44.2-46.9%, prepectoral length 23.6-25.6%, prepelvic length 46.3-49.6%, preanal length 73.1-76.2%, caudal peduncle length 16.2-18.5%, caudal peduncle depth 7.7-7.8%. Snout length 35.2-39.3% of head length, eye diameter 28.1-31.3%, interorbital width 26.2-30.5%, barbel length 15.1-17.9%. Caudal peduncle depth 41.6-48.5% of caudal peduncle length.

Body deep and slightly compressed; snout rather point; mouth inferior, horse-shoe shaped; papillae on upper lip in one row, median papillae much larger; mental pad at middle heart shaped and well developed papillae at margin (Fig. 2); barbel small; eye large, high and lateral. Caudal pe-



**Fig. 2.** Mouth part of holotype in *Microphysogobio tungtingensis uchidai* Banareescu and Nalbant.



**Fig. 3.** Scale disposition on the breast in the holotype of *Microphysogobio tungtingensis uchidai* Banareescu and Nalbant.

duncle low and slightly long. Lateral line complete, straight. Margin of dorsal fin slightly concave and caudal fin forked deeply. Breast inside pectoral fins naked (Fig. 3).

**Colour in alcohol.** dark above lateral line and pale below of it. An inconspicuous lateral stripe on middle of body side. Dorsal and caudal fin with black small spots; anal pale.

## DISCUSSION

Uchida (1939) reported that *Microphysogobio* sp. collected from the Naktong River and the Taedong River, Korea differed from *M. koreensis*, *M. yaluensis*, and *M. longidorsalis* in Korea based on the papillae of upper lip and absence of scales on the breast between the origin of pectoral fins. Banarescu and Nalbant (1973) described firstly *Microphysogobio tungtingensis uchidai* from the five specimens (USNM) collected from the Naktong River, Korea as a distinct subspecies. They pointed out that *Microphysogobio tungtingensis uchidai* was similar with *M. tungtingensis* in the shape of mouth and the disposition of papillae and it was similar with *M. t. amurensis* in the color patterns of the body. And *Microphysogobio* sp. Uchida (1939) was treated as a junior synonym of *M. t. uchidai* (Banarescu and Nalbant, 1973; Kim, 1984). And then Jeon (1990) assumed that *Microphysogobio tungtingensis uchidai* was distributed in the Naktong River and *M. t. tungtingensis* was occurred in the Han River in Korea. Recently after the examination of the type specimens, we knew that the type specimens of *M. t. uchidai* were the young specimens of *M. yaluensis* based on the color patterns and the papillae of upper lip (Figs 1-2). And those were also included into *M. yaluensis* in the body proportion and the meristic counts (Kim and Yang, 1999). It was considered that such confusion had been resulted from the inadequate identification between two species, *Microphysogobio yaluensis* and *Microphysogobio* sp. Uchida, which differ from each other in the lip papillae (Uchida, 1939; Kim and Yang, 1999). We conclude that *Microphysogobio* sp. Uchida is not a junior synonym of *Microphysogobio tungtingensis uchidai*, but is a distinctive species, *Microphysogobio jeoni* which described from the Naktong, Keum, and Han River of Korea by Kim and Yang (1999).

## ACKNOWLEDGMENTS

We appreciate to Drs Victor G. Springer and Susan L. Jewett of the National Museum of Natural History of the Smithsonian Institute in U. S. A. for the loan of type specimens of *Microphysogobio tungtingensis uchidai*.

## REFERENCES

- Banarescu, P. and T. T. Nalbant, 1973. Pisces, Teleostei, Cyprinidae (Gobioninae) Das Tierreich. Lieferung 93. Walter de Gruyter, Berlin, 304 pp.
- Hubbs, C. and K. F. Lagler, 1964. Fishes of the Grate Lakes region. Ann Arbor: Univ. Mich. Press. **XV**+213 pp.
- Jeon, S. R., 1990. Morphological studies on the *Microphysogobio tungtingensis* (Pisces; Cyprinidae) from Korea. J. Basic Sci. Sangmyung Women's Univ. **4**: 29-35 (in Korean).
- Kim, I. S. and H. Yang, 1999. A revision of the genus *Microphysogobio* in Korea with description of a new species (Cypriniformes, Cyprinidae). Kor. J. Ichthyol. **11**: 1-11.

- Kim, I. S., 1984. The taxonomic study of the gudgeons of the subfamily Gobioninae (Cyprinidae) in Korea. Bull. Kor. Fish. Soc. **17**: 436-448 (in Korean).
- Mori, T., 1927. On the classification of cyprinid fishes from the Yalu River, Korea with description of new species. J. Chosen Nat. Hist. Soc., **6**: 54-70.
- Uchida, K., 1939. The fishes of Tyosen. Part 1. Nematognathi, Eventognathi. Bull. Fish. Exp. Stat. Gov. Gener. Tyosen. **6**: 458 pp. (in Japanese).

RECEIVED: 18 August 2000

ACCEPTED: 20 September 2000

돌마자 *M. yaluensis* (어상강, 잉어과)의 동종이명,  
*Microphysogobio tungtingensis uchidai*

김 익 수 · 양 현

(전북대학교 자연과학대학 생물과학부)

요 약

1973년 Banarescu and Nalbant는 우리나라 낙동강에서 채집된 모래무지아과의 어류 표본 5개체를 근거로 하여 *Microphysogobio tungtingensis uchidai*로 기재 발표하고, Uchida가 미확인종으로 보고한 땡경모치 *Microphysogobio* sp.를 *M. t. uchidai*의 동종이명으로 처리하였다. 그러나 *Microphysogobio t. uchidai*의 type specimens의 모식 표본들의 입술의 유두돌기를 포함한 계수 및 계측 형질을 비교 검토한 결과 *M. t. uchidai*는 돌마자 *M. yaluensis*의 동종이명임을 확인하였다.