Technical contribution

Length–weight relationships for five loach species collected from the Jinshajiang River, China

By B. Waryani[1,2,3], R. Dai[1], S. K. Panhwar[4], Y. Zhao[2], J. Zhang[2], C. Zhang[2] and W. Cao[5]

[1]*School of Life Science, Beijing Institute of Technology, Beijing, China;* [2]*Key Laboratory of Zoological Systematic and Evolution, Chinese Academy of Sciences, Beijing, China;* [3]*Department of Fresh Water Biology and Fisheries, University of Sindh, Jamshoro, Pakistan;* [4]*Center of Excellence In Marine Biology, University of Karachi, Sindh, Pakistan;* [5]*Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China*

Summary

Length–weight relationships were estimated for the first time for five loaches of the Jinshajiang River, China. Four of the species are endemic to China. The scientific names are: *Clea dabryi* (Sauvage, 1874); *Homatula variegata* (Dabry de Thiersant, 1874); *Sinibotia superciliaris* (Gunther, 1892); *Triplphysa anterodorsalis* (Zhu & Cao, 1989); and *Triplophysa leptosoma* (Herzenstein, 1888).

Introduction

The present study provides data for five species of the families Cobitidae and Nemacheilidae inhabiting the Jinshajiang River and its tributaries; four of the species are endemic to China. The Jinshajiang River is the mainstream section of the upper Yangtze River from Yushu in Qinghai to Yibin in Sichuan, China. With a length of 2300 km, the river runs through the four provinces (autonomous regions) of Tibet, Qinghai, Sichuan and Yunnan. No length–weight relationships for the five species were available in FishBase (Froese and Pauly, 2012).

Materials and methods

Samples were collected by electro-fishing, cast nets and gillnets during field surveys from February to April 2011, and April to July 2012. Specimens were preserved in 10% formalin and brought to the Zoological Museum of the Institute of Zoology, Chinese Academy of Sciences, Beijing, China. Specimens were identified with local keys in Chinese and measured to the nearest 0.01 cm and weighed to an accuracy of 0.01 g. LWR parameters were calculated using the equation $W = aL^b$, where W is the total weight, L the total length, a the intercept and b the slope of the log transformed equation: $\log W = \log a + b \log L$ (Le Cren, 1951; Koutrakis and Tsikliras, 2003).

Results

In the present study, 955 individuals from five species were examined. Length–weight parameters are given in Table 1. The species of concern are: *Clea dabryi* (Sauvage, 1874); *Homatula variegata* (Dabry de Thiersant, 1874); *Sinibotia superciliaris* (Gunther, 1892); *Triplpphysa anterodorsalis* (Zhu & Cao, 1989); and *Triplophysa leptosoma* (Herzenstein, 1888).

Discussion

The length–weight relationships of the five species in this study have not been recorded previously. According to Tesch (1971), the b values vary between 2 and 4, and mostly remain

Table 1
Descriptive statistics and estimated parameters of weight–length relationships ($W = aL^b$) for five freshwater fish species, Jinshajiang River, West China

| Species name | No | Standard length | | a | SE (a) | 95% Cl of a | | b | SE (b) | 95% Cl of b | | r^2 |
		Min	Max			Min	Max			Min	Max	
Claea dabryi [a]	426	2.3	8.5	0.011	0.023	−1.98	−1.88	3.11	0.035	3.047	3.18	0.947
Homatula variegate[a]	201	4.1	13.5	0.022	0.032	−1.72	−1.59	2.50	0.039	2.43	2.58	0.953
Sinibotia superciliaris	40	8.1	14.3	0.059	0.188	−1.60	−0.84	2.32	0.180	1.96	2.69	0.813
Triplophysa anterodorsalis·[a]	52	3.7	8.6	0.009	0.035	−2.10	−1.95	3.09	0.047	2.99	3.18	0.988
Triplophysa leptosome[a]	236	3.0	13.0	0.007	0.037	−2.21	−2.06	3.07	0.046	2.98	3.17	0.949

SL, Standard length; W, weight; N, number of specimens; a, intercept; b, regression slope; SE, standard error; r^2, coefficient of determination.
[a]Endemic species.

within the expected range of 2.5–3.5. The highest *b* value (i.e. *Claea dabry*) in this study is possibly due to the large sizes or length ranges of the samples. According to Froese (2006), weight–length relationships can change due to the size at that time of the individuals in the area. We hope this paper will help in further studies of these species.

References

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Author's address: Chunguang Zhang, Key Laboratory of Zoological Systematic and Evolution and National Animal Museum, Chinese Academy of Sciences, Beijing, China.
E-mail: fish@ioz.ac.cn