Short Communication

Length-weight relationship of *Schistura savona* (Ham.) from Song river of Garhwal Himalayas of Uttarkhand State, India

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Length weight relationship was derived from *Schistura savona* (Ham.) inhabiting Alaknanda river of Garhwal Himalayas. Sampling was done between April 2012 and June 2012. The result showed that the 'b' is significantly more than 3.0. The species exhibited an isometric growth pattern.

INTRODUCTION

Length-weight relationships (LWR) provide basic information in fisheries biology, being helpful to determine the weight of an individual fish of known length or total weight from length-frequency distribution, and to compare specific growth among different regions (Forese, 1998; Koutrakis and Tsikliras, 2003). This relationship is also helpful to study ontogenetic changes (Teixeira-de et al., 2006). In the Indian hill streams, the member of the family Balitoridae, subfamily Nemacheilinae and genus *Schistura* (McClelland) which includes the loaches, inhabiting in different water bodies, plays a significant role in maintaining the ecological balance of hill streams and acts as natural scavengers as they scrap the algal matter scum and mucous present on the stones for their food. Moreover, because of their unique colouration and surface scrapping habit, almost all the species of the genus Schistura McClelland are considered to be excellent aquarium fishes (Biswas et al., 2007). A perusal of literature has revealed that no work has been carried out in this species on the length-weight relationship, hence, the present study was undertaken to estimate the length weight relationships for species of *Schistura savona* from Song river of Garhwal Himalayas of Uttarakhand State.

MATERIALS AND METHODS

Fish samples were collected from Song river (Latitude 30° 19'48.93' and 78° 6'34.64' longitudinal) between April 2012 and June 2012 using different fishing gears (cast net, hand net and scoop net). The total length of each fish was measured to the nearest 0.01 cm, and individual body weight was recorded to the nearest 0.01 g. All length-weight relationships were calculated using the least square fitted method to log transform data using the function: $w=aL^b$, where W is the total weight of the fish in grams, L is the total length in cm, a is a coefficient related to body form, and b is an exponent indicating isometric growth. The parameters a and b were estimated by linear regression on transformed equation: LogW = loga + b logL (Le Cren, 1951).

RESULTS AND DISCUSSION

Length-weight analysis of 33 specimens of *Schistura savona* (Ham.) was collected and subjected to the length weight relationships study. The r value was recorded as 0.92. The values of the 'b' of length weight relationship of pooled data were:

W = 6.97686 + 3.92377 Log L

$$W = 3.05309 \ L^{3.92377}$$

The value of the exponent 'b' in *Schistura savona* has

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been recorded as 3.92377 clearly indicating that the species' increase in weight is much more than the cube law. The value of the exponent was significantly higher than 3.92377 which exhibited a positive isometric growth. Negi and Negi (2009) reported that the value of regression coefficient in *Puntius* was 3.0 from the lake of Nainital, India. In the present study, the value of exponent 'b' was observed to be well above 3. Johal et al. (2005) also reported cube value for the Mahseer of Pong dam reservoir, Himachal Pradesh. This indicates that the weight of the fish was higher as compared to the cube of its length which shows isometric growth of hill stream loaches. Similar findings were given by Naeem et al. (2010) who reported 3.32 value of 'b' for bighead carp. Even though the change of 'b' values depends primarily on the shape and fatness of the species, various factors may be responsible for the differences in parameters of length-weight relationship among seasons and years, such as temperature, salinity and food (Pauly 1984; Sparre, 1992). According to Goncalves et al. (1997) and Ozaydin and Taskavah (2007), the parameters of 'b' unlikely may vary seasonally and even daily, and between habitats. Sarkar et al. (2013) observed that there is slight variation in growth coefficient of same species occurring in three rivers. The information gained in the present study can enable fish biologists to derive weight estimate for the hill stream loaches that are measured but not weighed. The length-weight parameters hereby reported may be considerably use in exploitation of this fish in ornamental purpose.

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