

MORPHOLOGICAL DIFFERENCE BETWEEN FEMALE AND MALE OF *Sinodiantomus volkanoni* KIEFER (COPEPODA)

by
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Sinodiantomus volkanoni KIEFER is a fresh-water copepod widely distributed in the temperate zone of Asia. Rylov (1923) described *Diaptomus chaffanjoni* var. *volkanoni*, and later Kiefer (1928) proposed that the variety be an independent species, *Diaptomus volkanoni*.

Kikuchi (1928,1936) reported that *Sinodiantomus volkanoni* is widely distributed in the middle and western parts of Japan Islands southwest wards from Kanto District. He pointed out that the specimens in Japan are more closely allied to *D. chaffanjoni* than those in Manchuria. Japanese male specimens have more slender and longer 2nd segment of exopodite of the 5th feet than in Manchurian specimens.

This species is commonly found in irrigation ponds in Kinki District (Central Honshu), and the number is large in spring and autumn. The specimens in that area are completely identical with the description of Kikuchi (1928,1936) on the points of the 5th thoracic feet of the male and the joining part of metasome and urosome (anterior body and posterior body).

This study deals with the biometric difference between female and male of *Sinodiantomus volkanoni* collected in Central Japan. Materials were collected from an irrigation pond in Mihara, Hyogo, on April 29, 1967, when a large number of adult female and males were found. Sixty-nine adult female and sixty-four adult males were obtained, and their head length (HL), thorax length (TL), abdomen length (AL), body height (BH), and body length (BL=HL+TL+AL) were measured.

The mean ratio between body length and head length (HL/BL×100) was 23.68±1.618 in females and 25.01±2.082 in males. The mean ratio between body length and thorax length (TL/BL×100) was 46.54±2.437 in females and 41.98±2.896 in males. The mean ratio between body length and abdomen length (AL/BL×100) was 27.02±2.050 in females and 31.56±2.561 in males. The mean ratio between body length and body height (BH/BL×100) was 31.77±1.894 in females and 23.02±1.678 in males. F test was made on the above mean ratios (Table 1).

Table 1. F test of mean ratio between two sexes.

HL/BL					
	Sum of squares	Degree of freedom	Unbiased estimate	F ₀ calculated	F
Between classes	162.2509	1	162.2509		(1%)3.9184
Within classes	447.7644	129	3.4710	46.7447	(5%)6.8352
Total	610.0153				
TL/BL					
Between classes	679.0444	1	679.0444		(1%)3.9184
Within classes	925.1388	129	7.1716	94.6852	(5%)6.8352
Total	1604.1832				
AL/BL					
Between classes	676.5441	1	676.5441		(1%)3.9184
Within classes	695.2422	129	5.3895	125.3254	(5%)6.8352
Total	1371.7863				

BH/BL

Between classes	2509.6141	1	2509.6141		(1%)3.9184
Within classes	412.5233	129	3.1978	784.7940	(5%)6.8352
Total	2922.1374				

There are also characteristic difference in morphology between both sexes in this species. The first and second abdominal segments are extremely bent in female, while the two segments are only slightly bent in male. The female has a distinct process on the dorsal surface of the fifth thoracic segment (Fig. 1).

In the male the process on the external margin of the second segment of the fifth thoracic feet is very small, and the position of the process is close to the end of the third segment in male. A hyalin denticulate membrane is present on the third segment, and a small oricess is present on the 13th segment of the first antennae of the male (Fig. 2).

I would like to express my sincere thanks to Prof. S. Motoda of Hokkaido University for his guidance and reading through the manuscript. Thanks are also due to Prof. M. Yamada of Hokkaido University and Ass. Prof. K. Yamamoto of Kyoto University for his constructive advice.

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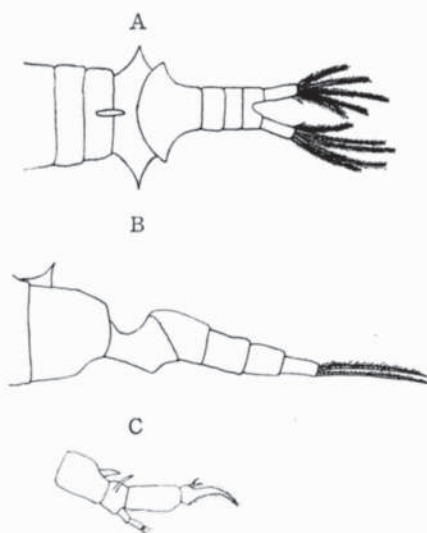


Fig. 1 Female.

- A. Dorsal view of posterior body
- B. Lateral view of posterior body
- C. 5th thoracic foot

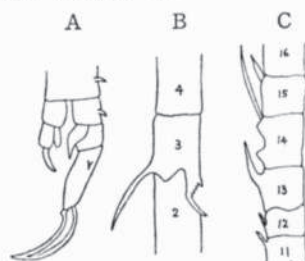


Fig. 2 Male.

- A. 5th thoracic feet
- B. 2nd—4th segments of 1st antenna
- C. 11th—16th segments of 1st antenna