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On a New Species of Water Mites, *Partnunia uchidai* n. sp. from Hokkaido [1]

By

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(With 7 Text-figures)

In 1893 F. Koenike described a water-mite under the name of *Thyas angusta* from the lake Partnun, Rhätikon, Austria. In 1896 R. Piersig referred the species to a new genus *Partnunia*. Afterwards C. Walter (1906) added one more species, *P. steinmanni* to this genus from Zermatt, Switzerland. The water-mite belonging to the genus has not yet been recorded in the orient. But lately a water-mite belonging to the genus happened to be found by the writer in a cold spring (6°C) of Kamikoshi, Hokkaido, and it seems to be a new species as described in the following.

Before proceeding further the author wishes to tender his cordial thanks to Professor Tohru Uchida for his kind guidance.

Partnunia uchidai n. sp. [2]

Male (type, prep. 348)

Body (Fig. 1) almost elliptical, 1080 μ long, 660 μ wide and 620 μ high. A slight constriction exists approximately at one-fourth of the total length measured from the anterior extremity. Posterior half encircling a coarsely circular margin but the anterior margin concave a little in the middle region. Skin soft, generally having no chitinous plates and platelets but rarely one or two unpaired irregular shaped chitinous plates or platelets on the ventral posterior surface. Frontal organ very small, hardly

1) The writer owes this research to a grant from the Expenditure of the Scientific Research of the Ministry of Education, to which the writer expresses his hearty thanks.

2) The species is named in honour of Dr. Tohru Uchida, Professor of the Hokkaido University.

distinguishable from a skin-papilla and lying a little posterior to the line connecting the composite eyes. The whole surface of the body, except the epimera and the genital area, is provided with small conical papillae which are thickly set and of which tips are directed posteriorly. Palpi, maxillar organ, epimera and legs coarsely porose. Eyes (Fig. 1) situated on shoulder margins aparting 350 μ each other, double and covered with two-sided capsule, which is measured 58 $\mu \times$ 41 μ in diameter. Maxillar organ (Fig. 4) broad, 220 μ long 146 μ wide, provided with a short rostrum. Mandibles (Fig. 5) 180 μ long, shorter than the palpi, each provided with a gently curved, stout claw 64 μ long. Hyaline protrusions narrow and considerably elongated. Palpi (Fig. 3) somewhat slender, the lengths of the palpal segments are as follows (in μ):

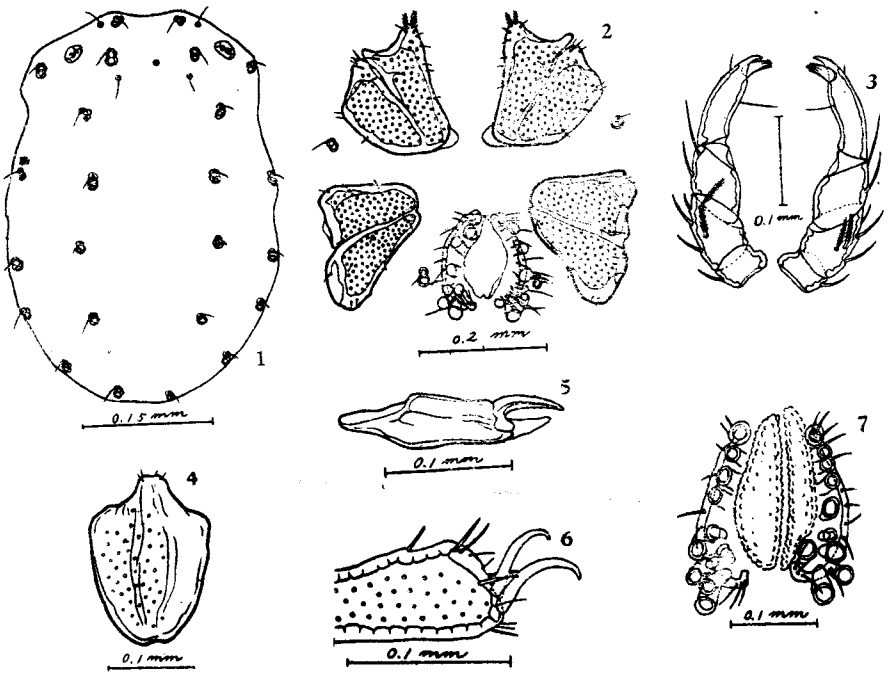
	I	II	III	IV	V
Extensor side	28	95	54	129	34
Flexor side	27	21	54	75	34

The side view of the 2nd segment, the broadest of all, is trapezoidal in form and is provided with 7 bristles, of which 4 are situated on its sides and are feathered. In the 3rd segment 2 long bristles are present, the terminal one slightly longer than the other. The 4th segment becomes thin in its end, forming a cheliform structure with the 5th segment. The 1st segment bears a short pectinate spine on the dorsal side.

Epimera (Fig. 2) in four groups. The anterior pair is situated closely in position and a pair of the posteriors stands apart each other, putting a genital area between them.

The anterior two groups are almost triangular in form and have a transparent protrusions on the postero-inner end. The 1st epimera, of which inner edges are united with the maxillary base, are trapezoid in shape, and are furnished with some spines on the inner margin and on the anterior distal end, of which two spines are thick and feathered. The 2nd epimera are also trapezoidal in shape and are provided with some spines on the margin especially at the anterior corner. The posterior two groups are also triangular in shape. The 3rd epimera are gradually narrowed to the median portion, the anterior margins are straight and are furnished with some spines on their margin. The 4th epimera, located conspicuously obliquely in body axis are the most slender of all and bear some spines on their margin. Legs short and devoid of swimmng hairs, but are furnished with short and stout claw-like spines and are found around the distal margin and on outer side of segments. The lengths of the legs are (in μ): I. 595, II. 629, III. 697, IV. 935. The last segment in all the legs is considerably thickened towards the distal end, which is provided with 2 strong

sickle-shaped claws (Fig. 6). Gentital area, 172 μ long and 145 μ wide, lying about in the middle of the space between the posterior groups of epimera. A pair of poorly developed genital plates is present, enclosing



Text-Figs. 1-6. *Partnunia uchidai* n. sp. (♂). 1. Dorsal view of body. 2. Epimeral plates and genital area. 3. Lateral view of palpi. 4. Ventral view of maxillar organ. 5. Lateral view of mandible. 6. Distal end of IInd leg. 7. Genital area of ♀.

all the outer margin of the genital area. These plates are represented by only narrow chitinous stripes, just enough to bear bristles, which are about 12 in number, forming a single row. Acetabula arranged in a row on the boundary of the genital lips, each stipitate with an oval head. The longest stalk 23 μ long and the number of acetabula in various specimens is counted as follows;

No. of prep.	166	168	179	224	227
Left	8	6	8	7	9
Right	7	8	9	8	8

The inner wall of the genital opening is devoid of filiform papillae as

in the genera *Protzia* and *Calonyx*. Penis scafold 162 μ long. Excretory pore lying nearly in the midway between the genital area and the posterior margin. Colour vermilion red. Eyes black.

Female (allotype, prep. 326)

The female differs, except in its larger size, a little from the male. Body 1340 μ long; 900 μ wide and 780 μ high. The maxillar organ 232 μ long, 155 μ wide and the mandible 203 μ long. The palpal segments being (in μ):

	I	II	III	IV	V
Extensor side	29	100	64	139	41
Flexor side	34	32	64	81	41

The length of the legs is measured (in μ); I. 709, II. 787, III. 825, IV. 1262.

Genital organ (Fig. 7) broad and oval, and the length of the vulva measuring 168 μ. Genital plates exactly similar to the male. The number of acetabula is rather numerous than the male and counted in various specimens as follows:

No. of prep.	175	176	181	182	326
Left	7	10	10	10	8
Right	8	9	11	10	8

The genital lip is furnished with conical papillae like those on the other part of the body as in the genera *Protzia* and *Calonyx*.

Locality. Many males, females and nymphs were collected by the author under stones and between sphagnum, which were submerged in the water of the cold spring (6°C) 750 m above the sea-level in Kamikoshi, Kamikawa-gun, Hokkaido on June 29, 1947, and some larvae on the water surface of the same spring on July 16, 1948.

Remarks. This species is very similar to *P. angusta* and *P. steinmanni* except in the genital area. Genital plates and the genital lips resemble the above mentioned 2 species in shape, but the genital acetabulae are very large and few in number, and their stalks are shorter than those of the 2 species previously described.

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