

The first record of water mites from the Chatham Islands, New Zealand (Acari, Hydrachnellae)

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ABSTRACT

Arrenurus rotoensis Stout is the first water mite species reported from the Chatham Islands. In addition, a number of notes are made on morphological variation in *A. rotoensis*.

Key words: water mites, Chatham Islands, *Arrenurus rotoensis*, variation.

INTRODUCTION

The Chatham Islands are a group of small islands, situated 800 km east of Christchurch. They have never been examined for water mites. Through the courtesy of Rob Schuckard, I received a small collection of water mites, all from the same location. As can be expected from such an isolated group of islands with rather extreme climatic conditions, the number of species is low. Only *Arrenurus rotoensis* Stout could be found. This species is not uncommon in ponds and small lakes in the South Island, New Zealand (Smit 1996). On the Chathams the species has been collected in lake Te Roto, a small, clear lake with vegetation of water milfoil, *Myriophyllum*. All other ponds and a stream that were also examined contained no water mites. Most of the ponds were rather eutrophicated, with an abundant growth of filamentous algae.

Although the description of Stout (1953) is sufficient to identify *A. rotoensis*, there are a number of details which were not or insufficiently described by her. Further, there are a small number of differences between the specimens from the Chathams and the mainland of New Zealand. These differences will be discussed below. All material has been deposited in the Zoological Museum of the University of Amsterdam.

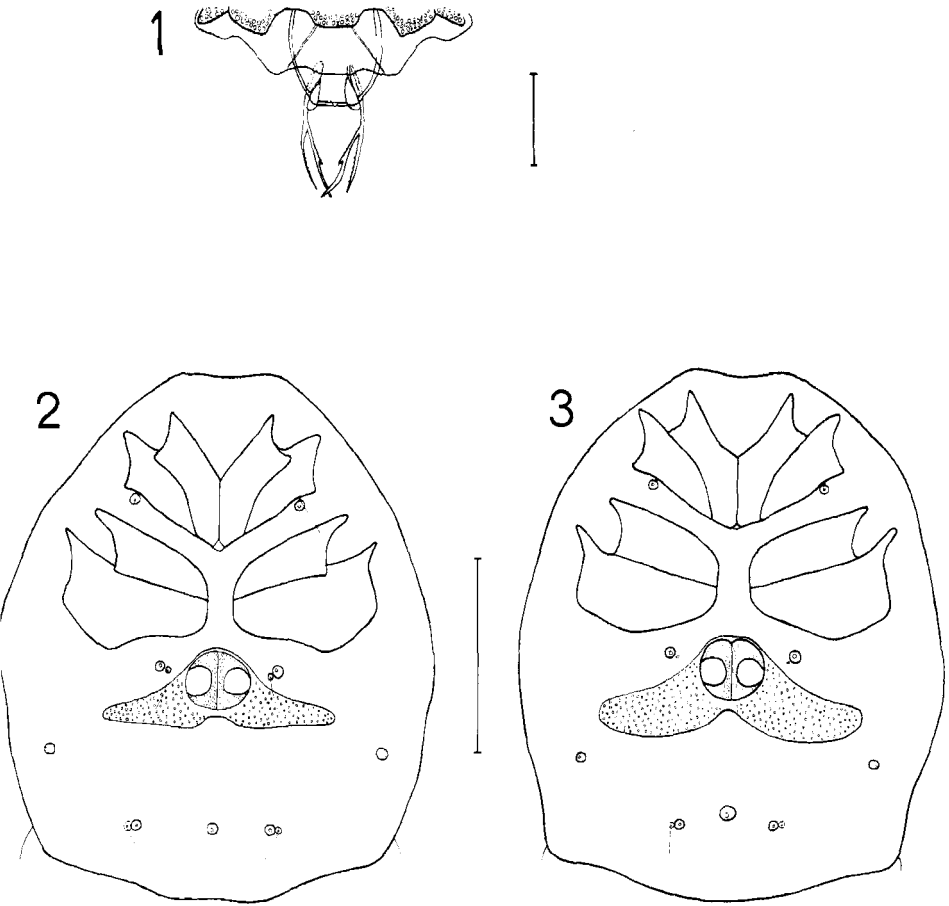
VARIATION IN *ARRENURUS ROTOENSIS* STOUT

Material examined

4♂♂, 3♀♀, 1 nymph, Te Roto, Chatham Islands, 20.xi.1994, leg. R. Schuckard; 22♂♂, 28♀♀, 1 nymph, Te Roto, Chatham Islands, 22.xi.1994, leg. R. Schuckard.

Males

The petiole of the male has a peculiar antler-like bristle, well described by Stout (1953). However, she did not mention that the bristles are lance-shaped and serrated at the distal end. This is only visible in lateral view or on specimens with rotated bristles. These bristles are inserted on the ventral side of the petiole. Stout mentioned that the ligulate process is rounded at the end and extending nearly to the posterior margin of the petiole. In fact, the ligulate process consist of two blade-like structures. The ligulate process of the Chatham Islands specimens extends beyond the posterior margin of the petiole. Mainland specimens have either a more elliptical petiole (as described by Stout) with a short ligulate process, not extending to the posterior margin of the petiole, or a broader and more rounded petiole, with a ligulate process extending beyond the posterior margin of the petiole. The width of the petiole varies from 116 to 126 µm in the Chatham Island population, and from 87 to 116 µm in the mainland population. Ventrally, the petiole has two ridges, forming a groove. Males with a short ligulate process



Figs 1-3: *Arrenurus rotoensis*. 1, ♂, detail of petiole and hyaline membrane; 2, ♀, ventral view of Chatham Is specimen; 3, ♀, ventral view of South I. specimen. Scale: 100 μm in 1, 500 μm in 2 & 3.

and a narrow petiole, have also short pygal lobes. Therefore, I suppose these and the male illustrated by Stout (1953) to be immature males.

The presence of a hyaline membrane is not mentioned nor illustrated by Stout (1953). For the shape of the hyaline membrane see Fig. 1.

The measurements of the Chatham Island males are of the same magnitude as the South Island population. Males from the Chathams vary from 1044-1176 μm in length and 912-1020 μm in width. According to Stout (1953) the species is 1120 μm in length and 1090 μm in width. My own specimens from the South Island vary from 989-1152 μm . The small males in my collection have an elliptical, narrow petiole which has been discussed above.

Females

Females from the Chatham Islands are in most aspects similar to the female described by Stout, but differ in size. Those from the Chathams are a little larger, varying from 1320 - 1512 μm long and 1080 - 1212 μm wide. According to Stout, females of *A. rotoensis* are up to 1140 μm long and 1050 μm wide. My own specimens from the South Island vary from 1200-1392 μm in length and 1051-1212 μm in width.

Females exhibit much variation in the shape of the coxal and genital plates. Mites from the Chathams have short, narrow genital plates, 204-286 μm in length (see Fig. 2), while those from South Island have broader and longer genital plates, 281-330 μm in length (see Fig. 3). Some of the females from South Island have a medial margin of the fourth coxal plate larger than the medial margin of the third coxal plate, but in others they are of equal length. None of the examined females have the distance of the fourth coxal plates as narrow as illustrated by Stout (1953), nor is the genital field located as close to the coxal field. However, all females have the typical pigmentation of the genital valve.

The differences between the two populations are small and do not justify a different taxonomic rank of the Chatham Island specimens. Besides, there is much variation in some characters, e.g., shape of the genital plates. Therefore, all are assigned to *A. roloensis*.

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REFERENCES

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