



A Chromosome Study of a Parthenogenetic Weevil *Scepticus insularis* Roelofs found in Namioka-machi, Aomori Prefecture, Japan (Curculionidae : Coleoptera)

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A Chromosome Study of a Parthenogenetic Weevil *Scepticus insularis* Roelofs  
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(Curculionidae : Coleoptera)

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竹内 恭：青森県浪岡町産単為生殖型クワヒョウタンゾウムシの染色体研究

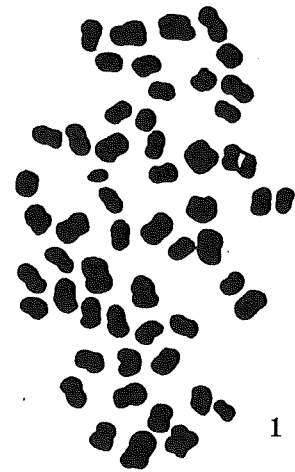
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**Abstract**

I have been studied the chromosomes of a Japanese weevil, *Scepticus insularis* Roelofs, in female materials from Aomori Prefecture, and have found pentaploid parthenogenetic race ( $5x=55$ ) in Namioka-machi. This species is now known to have three parthenogenetic races,  $3x$ ,  $4x$  and  $5x$ , as well as a diploid bisexual race in Honshu. In Hokkaido, on the other hand, there are four parthenogenetic races,  $2x$ ,  $3x$ ,  $4x$  and  $5x$ , as well as a diploid bisexual race. Blakiston's line runs between Hokkaido and Honshu.

*Scepticus insularis* Roelofs is one of the native Japanese species of curculionid weevil belonging to the subfamily Brachyderinae. The species has five races : pentaploid, tetraploid, triploid and diploid parthenogenetic as well as a diploid bisexual one. The basic chromosome number is 11 (Takenouchi, 1968, 1980, 1983). These data have mainly been obtained from insects obtained in central and southern Hokkaido and Niigata and Yamagata Prefectures in Honshu. No information has been obtained from other localities. However, in order to establish the detailed distribution of the weevils it is necessary to check the chromosome constitution of insects from the northern part of Honshu and several collections have been made at different times in several localities in Aomori Prefecture. To make these collections has not been easy but this time I have had a chance to study the chromosomes of the species in Aomori Prefecture.

Six females were collected in a bushy area at Namioka-machi, located between Aomori and Hirosaki, on May 17, 1974. Ovaries with mature eggs of females which had been fixed in modified Allen-Bouin's solution were treated with the routine paraffin method, and stained with Heidenhain's iron-haematoxylin. Two ovaries observed in two females showed the oogonal metaphase having 55 well-defined chromosomes of different sizes (Fig. 1). This number indicates that these specimens are undoubtedly pentaploid reproducing parthenogenetically. There is no evidence for the occurrence of the male in Namioka-machi area. I add a map of Hokkaido and the northern part of Honshu (Japan-Hondo) (Fig. 2), from where the cytologically studied *Scepticus insularis* originate and plot onto this map the known localities of different degrees of polyploidy (including unpublished data). With reference to various races of *S. insularis* shown on the map, if we take a large view of the situation, they are, in fact, separated by Blakiston's line. Namely, northern Honshu has three parthenogenetic races, 3x, 4x and 5x, as well as a diploid bisexual race, while Hokkaido has four parthenogenetic races, 2x, 3x, 4x and 5x, as well as a diploid bisexual race. The polyploid animals are evidently larger than the diploid bisexual ones.



**Fig. 1** Oogonal metaphase of *S. insularis* in Namioka-machi, showing 5x=55 chromosomes ( $\times 3,600$ ).

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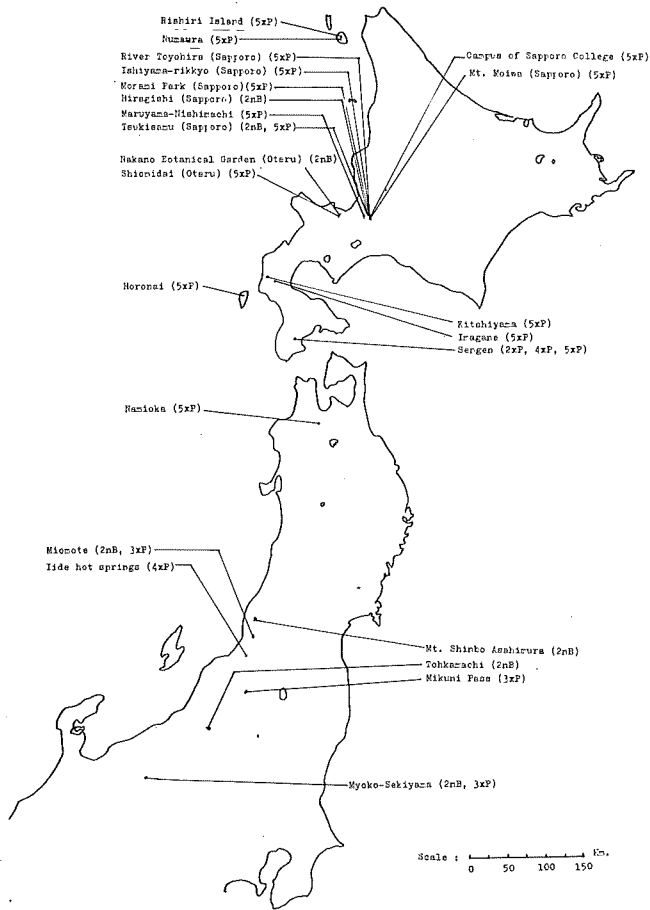


Fig. 2 Map of Hokkaido and northern Honshu showing collecting localities and distribution of different races of *S. insularis*.