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A Tripartite First Metaphase Plate Found in a Parthenogenetic Weevil, *Callirhopalus minimus* Roelofs (Coleoptera: Curculionidae)

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単為生殖型チビスグリゾウムシに見られた三分型第一成熟分裂

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Since Suomalainen's pioneer work (1940) the chromosomes of 56 parthenogenetic curculionid weevil species and races have been known from Europe, Canada, the U. S. A., and Japan. Excluding diploid races of European *Polydrosus mollis* Stroem, and Japanese *Scepticus insularis* Roelofs with $2x = 2n = 22$ chromosomes, remaining 54 species and races are polyploids : 32 triploids, 15 tetraploids, 5 pentaploids, and 2 hexaploids (Suomalainen, 1969 ; Takenouchi, 1974 ; Petryszak, 1972, 1975).

In the first metaphases of several polyploid parthenogenetic species Suomalainen (1940) found some first metaphases consisted of two or three plates. Then, Seiler (1947) and Takenouchi (1969, 1970, 1977) reported the same phenomena in other parthenogenetic weevil species. This time I investigated the tripartite metaphase plates in another parthenogenetic curculionid species, *Callirhopalus* (= *Pseudocneorhinus*) *minimus* Roelofs belonging to the tribe Callirhopalini, subfamily Eremninae. The species has two parthenogenetic races : the one is a triploid ($3x = 33$), and the other is a tetraploid ($4x = 44$) (Takenouchi, 1974). No males were hitherto observed in this species as other parthenogenetic curculionid species and races.

The female specimen was captured in the bush of Teine in the suburbs of Sapporo, in mid-July, 1968 and kindly identified by Dr. K. Morimoto, Kyūshū Branch, Government Forest Experiment Station, Kumamoto. Mature eggs were fixed in Allen-Bouin's solution modified by Momma (1954) and sectioned to obtain first meiotic metaphase chromosomes. The slides were stained with Heidenhain's iron-haematoxylin. The number of the chromosome was confirmed as $4x = 43$ and 44 as that of the specimens collected from most other localities. As seen in Fig. 1, one egg provided the first metaphase consisted of three plates : two with 11 and one with 22 chromosomes. This is the first case showing such a situation in a single photomicrograph, though several drawings were shown by Suomalainen (1940), Seiler (1947), and Takenouchi (1970, 1974). So far, such a phenomenon was observed in the following curculionid species : (Subfamily Otiorrhynchinae) *Otiorrhynchus dubius* Ström., *O. ligustici* L., *O. scaber* L., *O. sulcatus* F. ;

(Subfamily Brachyderinae) *Catapionus gracilicornis* Roel., (Subfamily Cylinorrhinae) *Listroderes costirostris* Schönh., and (Subfamily Eremninae) *Callirhopalus bifasciatus* Roel. (Suomalainen 1940, 1969 ; Seiler 1947 ; Takenouchi 1969, 1970, 1974, 1977). Although, as mentioned above, these six species belong to four different subfamilies meiotic metaphases with two- or three-partite plates were observed. Therefore, I suppose if we study numerous first meiotic chromosomes in the eggs of other polyploid parthenogenetic curculionid species we can find the same phenomena in them.

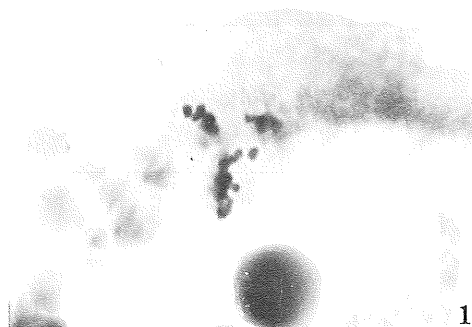


Fig. 1. A tripartite first meiotic metaphase of *Callirhopalus minimus*. (×500).

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Errate to Vol. 27, No. 1 : pp. 1-3.

The female material, *Catapionus gracilicornis* Roelofs, used in the investigation was a pentaploid animal with 55 chromosomes obtained from Kamiyonai, Iwate Prefecture. Accordingly, Fig. 1 shows 55 chromosomes.