SHORT COMMUNICATION

THE Xyy<sub>p</sub> SEX DETERMINING MECHANISM FOUND IN
SCEPTICUS INSULARIS ROELOFS
(CURCULIONIDAE: COLEOPTERA)

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Diploid bisexual animals of Scepticus insularis Roelofs, a member of the Brachyderinae,
Curculionidae, have been reported to occur in two restricted areas; the gardens of a
Shinto shrine of Hiragishimachi in Sapporo and the Nakano Botanical Garden in Otaru
(Takenouchi 1968a, b). Four males obtained in the former locality and three males
from the latter in mid-June, 1965, were chromosomally studied in germ line. Squash
slides were made according to Smith’s method (1943) and stained with an aqueous solution
of 0.6% methyl green and 0.15% basic fuchsin (1 : 1).

Spermatogonium observed in a single male from the Botanical Garden showed 22
chromosomes of various sizes. All the elements were metacentric with a clear constriction in the middle (Fig. 1). The y chromosome is the smallest in the complement. The X chromosome is probably one of the smaller elements but is indistinguishable at this stage. Many first meiotic metaphases available for study were obtained in all males from the two localities. First metaphases from six insects showed 11 bivalents consisting of 10 autosomal elements of ring-shape and a sex-bivalent with a typical parachute form \((Xy_p)\) (Figs. 2 and 3). The first division produced two kinds of secondary spermatocytes, X- and y-class (Figs. 4 and 5). In striking contrast, there was one male obtained in the Botanical Garden which showed 10 autosomal bivalents and a \(Xyyp\) sex determining complex in every metaphase available for study (Fig. 6). In general appearance, the sex chromosome fairly corresponds to the temporary \(Xyyp\) which was discovered in a coccinellid beetle species, *Epilachna pustulosa* Kôno, by the author (Takenouchi 1969). At present, no favourable interpretation is available for this finding, though karyotype variation was reported by John and Shaw (1967) and Shaw (1968) in Dermestidae. Further investigation is needed with sufficient material.

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**LITERATURE CITED**


Takenouchi, Y., 1968b A chromosome study on bisexual and parthenogenetic races of *Sceopticus insularis* Roelofs (Curculionidae, Coleoptera). Japan J. Genetics **43**: 377–382.