Karyomorphological observation on 14 species of subtribe Stanhopeinae, Orchidaceae*

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Abstruct

Fourteen species of the subtribe Stanhopeinae, Orchidaceae, were karyomorphologically observed by aceto-orcein squash method. Chromosome numbers of 11 species in nine genera were revealed for the first time; 2n=38 for *Coeliopsis hyacinthosma* and *Gongora armeniaca*, and 2n=40 for *Acineta barkeri*, *Cirrhaea loddigesii*, *Kegeliella atropilosa*, *Paphinia grandiflora*, *Polycycnis barbata*, *Shlimia alpina*, *Stanhopea cirrhata*, *S. guttulata* and *S. pulla*. Karyotypes of all the 14 species were similar to each other; while chromosome features at resting stage and mitotic metaphase showed slight variations. From the above results, it was suggested that three genera of *Cirrhaea*, *Polycycnis* and *Schlimia* were not closely related among the members of subtribe Stanhopeinae.

Introduction

Karyotype morphology of the living collection at Hiroshima Botanical Garden has been studied (Karasawa 1979, Hashimoto 1982, Sera & Karasawa 1984, Ishida 1990, 2001 Aoyama 1989, Hamatani 2011, etc.). These studies were carried out on Orchidaceae, Araceae, Gesneriaceae, Liliaceae and so on in order to contribute to plant science by revealing the relationship among species and accumulating the basic knowledge about plants.

In this study chromosomal observation has been made on 14 species of 10 genera of Stanhopeinae Bentham, one of a subtribe belonging to the tribe Maxillarieae of the Orchidaceae (Dressler 1993). Chromosomes of three species among the 14 examined here have been reported previously, so that the present survey increases our knowledge about plants as well as a series of studies held at the Hiroshima Botanical Garden.

Material and methods

All the plants examined in this study were grown in cultivation at the Hiroshima Botanical Garden and listed in Table 1.

Chromosome counts and observation were made from the aceto-orcein squash method as same as those of Hamatani and Aoyama (2012). Karyotype morphology in the nuclei at resting and chromosome at mitotic prophase and metaphase were described and classified according to Levan *et al* (1964) and Tanaka (1971, 1980).

Results

Chromosome numbers of the 14 species counted in this study were listed in Table 1 and their karyotypes were described as follows.

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