

Pollination mechanism of *Cynorkis fastigiata*, Orchidaceae*

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Cynorkis fastigiata の受粉様式*

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Introduction

Cynorchis consists of approximately 125 species and grow in Madagascar, the Comoros and East Africa. *Cynorkis fastigiata* Thou. is a terrestrial orchid and is distributed in Madagascar, the Comoros, the Mascarenes and the Seychelles.

Cynorkis fastigiata flowers all the year round. During the course of cultivation of *C. fastigiata* in the Hiroshima Botanical Garden, it was found that all flowers bore fruits and produced seeds with embryo.

Thus, the pollination mechanism of *C. fastigiata* investigated was reported here for the first time.

Observations and Discussion

When the flower of *Cynorkis fastigiata* opened, pollen grains purplish color had already been adhered on the stigma. If the flower had not opened yet and the pedicellate ovary had grown up to 25 mm long, the anther would have turned purple in color and have dehisced the ventral side and then, pollen grains would have been adhered on the stigma. However, if the pedicellate ovary had grown below 22 mm long, any pollen grains would have not yet been adhered on the stigma. At this stage the anther would have turned white to light purple in color and have not dehisced the ventral side.

Thus, *C. fastigiata* has a property of the self-pollination mechanism that the anther is dehisced and dropped pollen grains on to the stigma before the flower bud do not open.

Summary

1. The pollination mechanism of *Cynorkis fastigiata* was investigated here.

* Contributed from the Hiroshima Botanical Garden No.65

1) The Hiroshima Botanical Garden.

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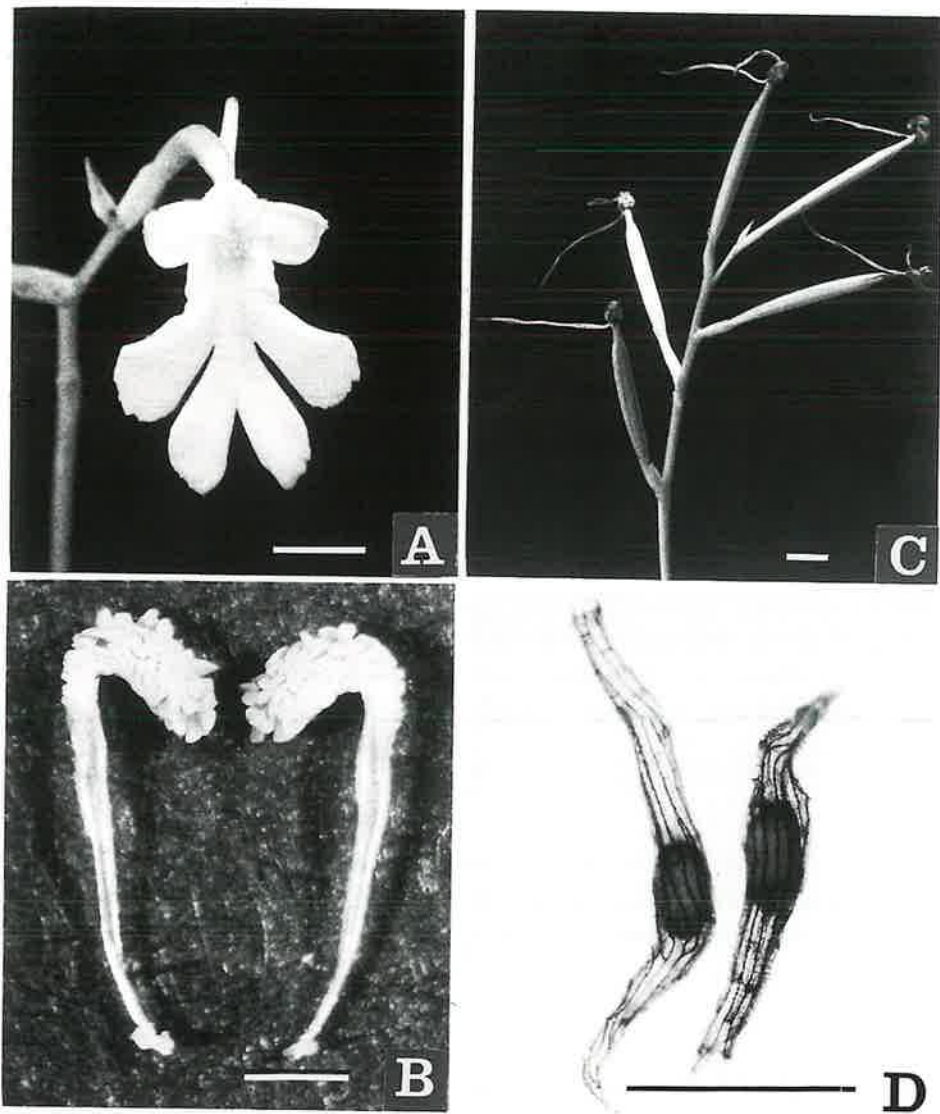


Fig. 1. *Cynorkis fastigiata*

A: Flower, B: Pollinaria, C: Fruits, D: Seeds. Bars indicate 5 mm in A, C and 0.5 mm in B, D.

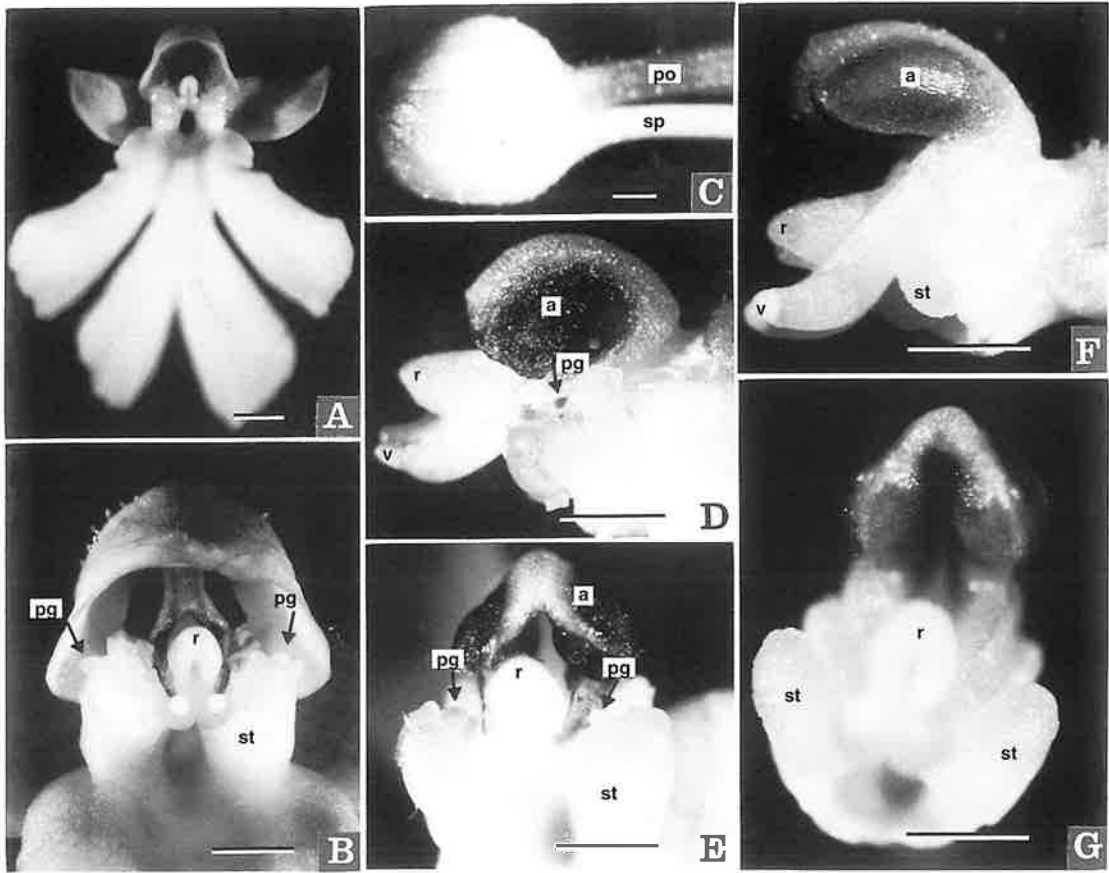


Fig.2. *Cynorkis fastigiata*

A: Flower, B: The stigma of flower opened. Pollen grains purplish color were adhered on the stigma, C: Flower bud, D, E: Side and front views of a stigma of flower bud of which the pedicellate ovary has grown up to 25 mm long. The anther turned purple in color and dehisced the ventral side and then pollen grains adhered on the stigma, F, G: Side and front views of a stigma of flower bud of which the pedicellate ovary has grown below 22 mm long. Any pollen grain has not yet been adhered on the stigma. At this stage the anther had turned white to light purple in color and had not dehisced the ventral side. Bars indicate 2 mm in A and 1 mm in B-G. a: anther, pg: pollen grain, po: pedicellate ovary, r: rostellum, sp: spur, st: stigma, v: viscidium.

2. When the flower bud has not opened and the pedicellate ovary has grown up to 25 mm long, its pollen grains have dropped from the anther on the stigma.
3. *Cynorkis fastigiata* was autogamous.

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摘 要

1. *Cynorkis fastigiata* Thou.の受粉様式を調査した。
2. つぼみがまだ開かず、花柄子房が長さ25mmになったとき、花粉粒が葯から柱頭に落下することがわかった。
3. *Cynorkis fastigiata* は自家受粉を行っていた。