

C. cristata L. as distinct species, be maintained.

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EFFECT OF LOW TEMPERATURES ON THE SEED GERMINATION OF AN EXOTIC TEMPERATE SPECIES OF THE GENUS *HIBISCUS* L. AND ITS INTRODUCTION AT THE INDIAN BOTANIC GARDEN

The present note deals with the introduction and culture of an exotic temperate species viz., *Hibiscus lasiocarpus* Cav. in the Indian Botanic Garden, Botanical Survey of India, Howrah. Seeds of this species were obtained through the kind courtesy of the Museum National D'Histoire Naturelle, Paris, France, during March, 1975, in connection with our Seed Exchange programme with this esteemed institution.

Germination studies were conducted by keeping 20 seeds for each set of experiment. Seeds were sown in beds containing well-decayed farm-yard manure, loose earth and sand 1 : 1 : 1 proportion on 12.11.75, 18.12.75 and 6.2.76 but no germination was observed even after the expiry of about three months from the dates of sowings. Thereafter, attempts were made to raise the seedlings in laboratory condition, using specialised treatments. As the pretreatments with dilute sulphuric acid, potassium nitrate, thiourea etc. among the chemicals and cold and hot treatments may sometimes stimulate germination by breaking up the dormancy of seeds (Crocker & Barton, 1957, Mayer & Poljakoff-Mayer, 1963 and others), several

such treatments were made. Seeds were kept in dilute solution of sulphuric acid for 15 minutes and 30 minutes and then after washing the seeds were transferred on moist filter papers soaked with 0.01 M of potassium nitrate and kept in petridishes. The petridishes were then removed inside a refrigerator (6-8°C) and in a incubator (42-45°C) for varying number of days (1 day-5 days). Those seeds treated with dilute sulphuric acid for 15 minutes and kept in cold for 72 hours produced higher percentages of germination than those kept in the same solution for 30 minutes. The seeds which had hot treatments or were kept as controls in the laboratory did not germinate at all. The germination of seeds started after 48 hours and completed within 96 hours. Eight seedlings having radicles and small plumules were transplanted in a nursery bed on 3.4.76 of which only two could survive and produce plants. Among these two plants, one grew faster (about 3-4 cm per week) and attained a height of 72.3 cm by 20th October, 1976. Further growth in height could not be observed even on 20th December, 1976. The other plant exhibited slower growth rate and became 31.5 cm high only. The taller plant produced flower buds during

early November while the dwarfed plant produced buds in late November. Flowering and fruiting was completed within 45 days. An individual flower took 10-12 days to have full bloom starting from the tiny bud. Although several normal fruits were developed but none had seeds in them.

The main differences exhibited by this plant during the first year of its growth on the gangetic loam at tropical belt in comparison to its natural habitats, by producing slightly smaller flowers, late flowering and fruiting period and by non production of seeds.

The native home of *Hibiscus lasiocarpus* Cav. is in the United States of America where it is growing wild in moist and marshy places from S. Indiana to Missouri and southward to Florida to Texas (Rickett, 1965; Gleson, 1967. & others). As the plant producing beautiful flowers, it was introduced and cultivated in many parts of Europe and elsewhere.

Since this species has been described as a perennial one, further observations will be made for a few successive seasons to note its

flowering and seed setting. Besides this, attempts will also be made to multiply this evergreen plant with lovely flowers by means of specialised methods of vegetative propagations.

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NOTES ON *STEPHANIA DOLICHOPODA* DIELS

INTRODUCTION

Diels (1910) established the species *Stephania dolichopoda* from a material of Henry (Henry 12008 B) collected from China. The specimen described by him is a female plant. The description given by him for the species is as follows: "Foliorum petiolus ad 20 cm longus; lamina tenerime membranacea, glaberrima, lata ovato-orbicularis apicem versus angustata obsolete repando-lobata, circ. 18 cm longa et lata, nervi primarii 5-7 palmati. (Flores ♂ adhuc ignoti.). Inflorescentia ♀ disciformi-congre-

gata pedunculo 12 cm longo praedita.—(Drupae adhuc ignotae)."

It is found that on the basis of the above meagre description the species has been established by Diels. Recently two sheets of Henry bearing the number 12008 (Fig. 1), 12008B from the U. S. National Herbarium and another no. 12008B from the Missouri Botanical Garden Herbarium have been received for our study. All the three sheets were collected from Szemao, N. W. Yunnan, China. The material in sheet no. 12008 was collected on May 30, (year not mentioned). The following field note is seen: "Flowers, yellow, large climber." It