

Protected Cultivation of Cacti and Other Succulents

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1. INTRODUCTION

Cacti have a peculiar beauty and attraction of their own imparted by strange morphological characteristics of the plants and often by unique magnificence of the flowers hardly paralleled by any other in the plant kingdom. The infinite and unique variation in shape, size and colour of areoles and spines make the plants look curious and interesting. It is not only that cacti are interesting, they can be very decorative house plants as well. The plants tolerate enforced neglect to a great degree as compared to any other else that can be grown. Cacti with their ability to withstand long periods without water or even care, can be cultivated by any one who loves beauty and brightness, forming a never-ending source of satisfaction and happiness (Shewell-Cooper & Rochford, 1973).

The succulents other than cacti form a large cultural group in a garden or green house as fleshy plants of ornamental value. These plants inhabit mostly dry desert localities and are capable of withstanding long spells of drought as they store sufficient moisture in their succulent body parts. In spite of extraordinary and unusual environment that influences the growth and development, succulents make some of the best house plants viz., *Beaucarnea recurvata*, *Dracaena draco*, *Yucca glauca*, howorthias, senecios etc.

Succulents are grown as specimen plants in lawns (e.g. variegated *Agave* and *Furcraea*) in pots and rock gardens. Many succulents such as species of *Agave* form an impregnable hedge, while others like *Echeveria* are very good plants for edging or bedding.

The wide ranging variations of soil types and climates which form the natural habitat of cacti demonstrate the adaptability of these remarkable plants. The 'cereoid' (columnar), 'globular' (rounded) and 'epiphytic' (segmented) cacti are found in the arid deserts of the USA, Mexico and Chile; on the inhospitable mountain slopes of the Andes and in the sub-tropical forests of Brazil. As these are the types of environments in which cacti thrive, the most successful conditions for growing them indoors or in the garden, will in all major aspects duplicate the soil and climatic characteristics of their native habitat

(Schuster, 1983). Unless otherwise specified, most of the cacti will grow and flower well if given the following basic conditions :

a. Protection from rain and direct exposure to intense light. b. A porous soil mix which allows rapid water drainage and easy proliferation of roots in the growing media. c. A soil type that has a slightly acid pH reaction, less of nitrogen, low humus content and an ample supply of potassium and phosphorus. d. A position with plentiful sun light and warmth even only for part of the day, combined with regular watering during active growth and flowering. e. A cool and dry, 'rest' with relatively less frequent watering during the inactive winter months. f. A basic protection from excessive heat in glass houses, over heating of roots of potted plants or frosts in cold regions. g. Prevention of mould, insect infestations and diseases.

However, succulents excluding those belonging to Cactaceae grow well in cool, humid and partially shaded situations. The growing medium must be porous with perfect drainage and poor in organic matter. They require more frequent watering in comparison to cacti. As a general rule, all succulents need plenty of air, sunshine, a porous compost and a relatively dry atmosphere.

Cacti and other succulents are cultivated by commercial nurseries, institutions, botanic gardens and individuals through-out India under a wide range of climatic conditions. This group of plants have adapted to varied climatic conditions and geographical situations to grow equally well when grown under protection in glass houses or polyhouses. Paradoxically, however, there are not many publications on culture of cacti and other succulents in Indian context except those by Randhawa and Mukhopadhyay (1986), Bose & Choudhury (1991), Das & Mukhopadhyay (1976), Lancaster (1945) and Bhattacharjee (1975 & 1991).

2. HOUSING OF CACTI AND OTHER SUCCULENTS

Many of the larger cactus collections are housed under the permanent protection of polythene or glass cover. Although expensive, these structures provide favourable growing conditions in areas where the maximum and the minimum temperature vary widely in summer and winter months. The conditions in a poly house or glasshouse also favour better germination of cactus seeds and growth of young seedling and sensitive types such as species of *Melocactus* and others that could not be grown outdoors. Plants are commonly grown in pots arranged on shelves or benches. Some growers prefer to raise plants in groups by planting them directly in raised beds or in the soil on the glass-house/polyhouse floor.

It is quite likely that in the process of domestication many of the cacti species have lost their natural adaptability as a result of favourable growing conditions available in cultivation. It is often observed that a cactus grown in semi-shade if suddenly removed to a more sunny situation develops burns due to scorching. It is for such reasons that the domesticated cacti should be housed in suitable locations. Cacti love sunshine,

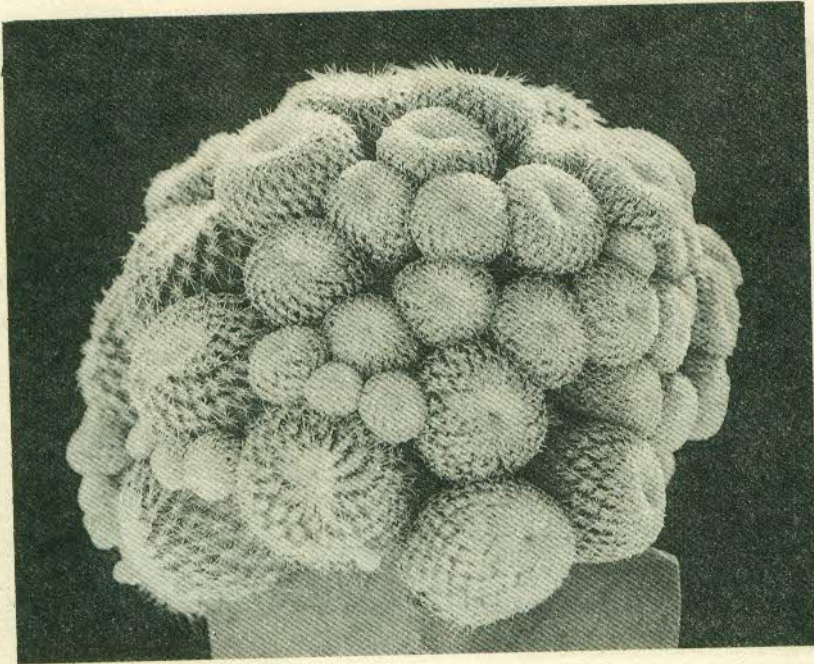


Fig. 1 : *Epithelantha micromeris*.

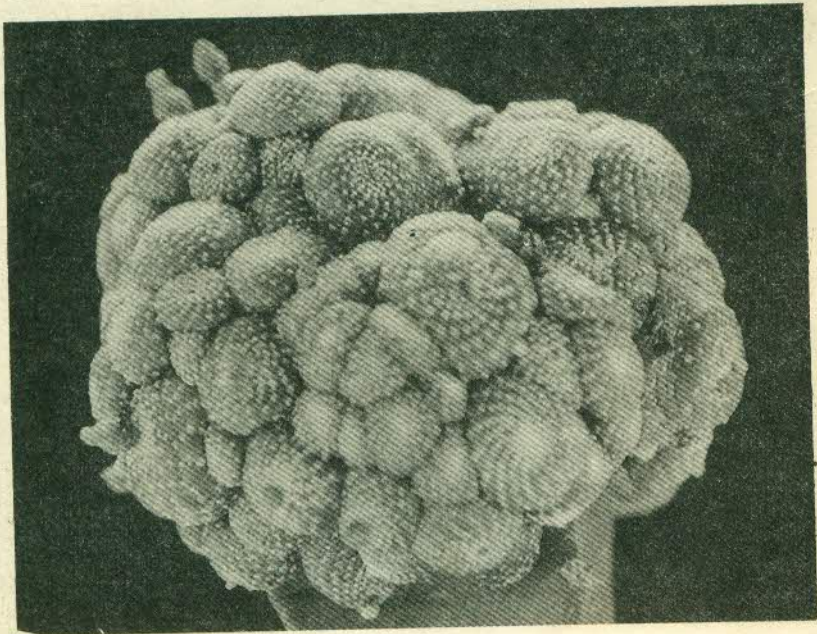


Fig. 2 : *Blossfeldia liliputana*.

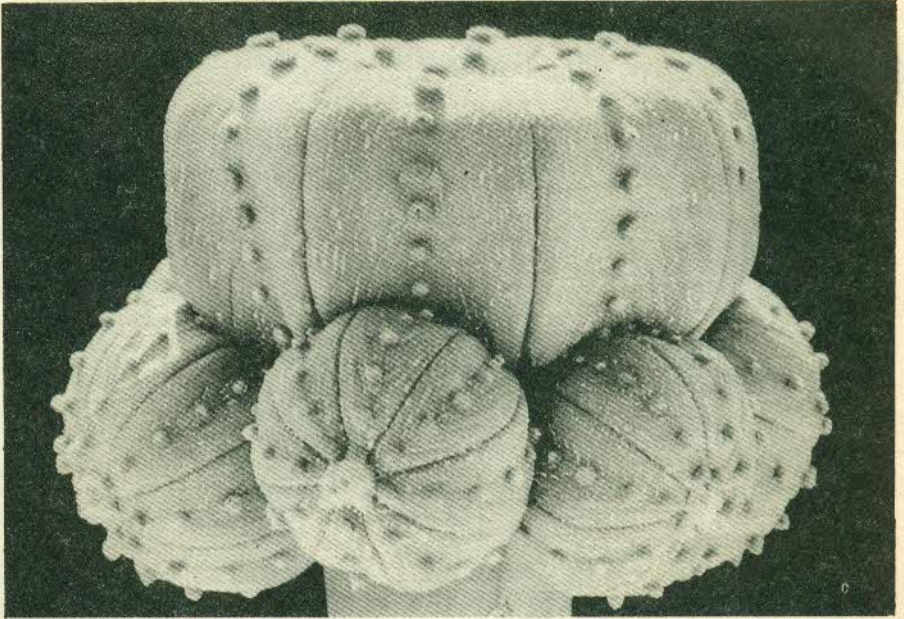


Fig. 3 : *Astrophytum asterias*.

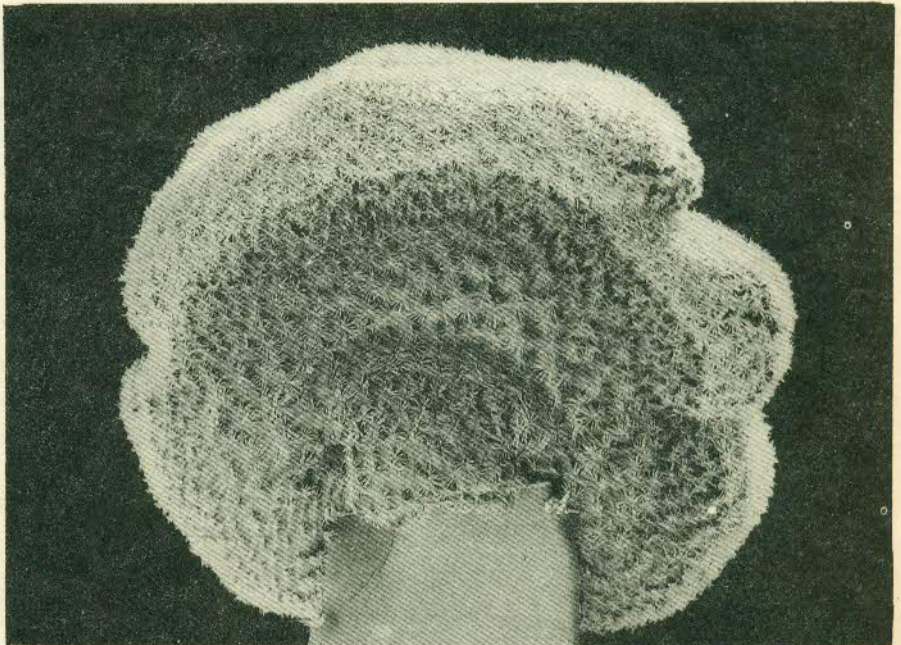


Fig. 4 : *Echinocereus pectinatus* 'Cristate'.

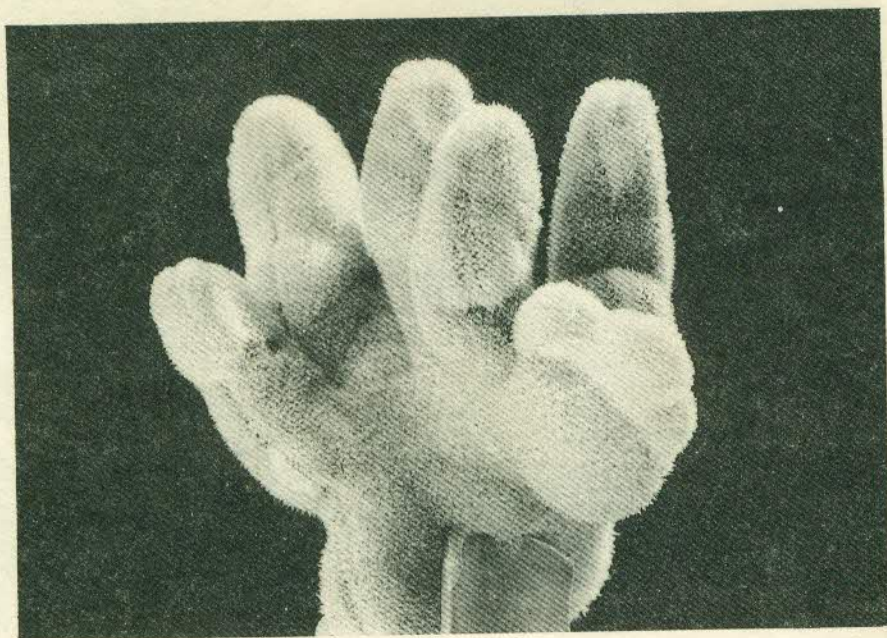


Fig. 5 : *Pygmaocereus densiaculeatus* 'Cristate'.

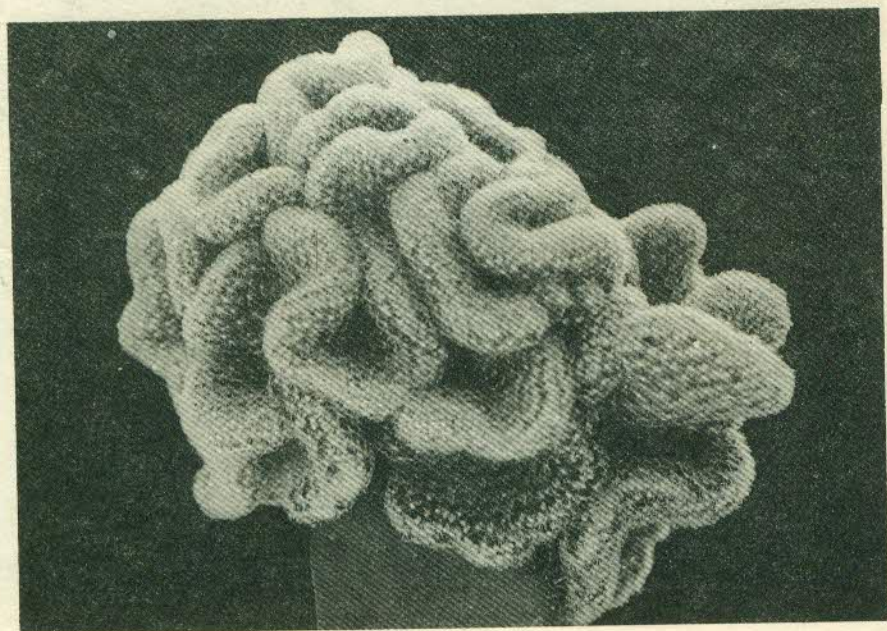


Fig. 6 : *Mammillaria elongata* 'Cristate'.

