ON FERTILIZING ORCHIDS

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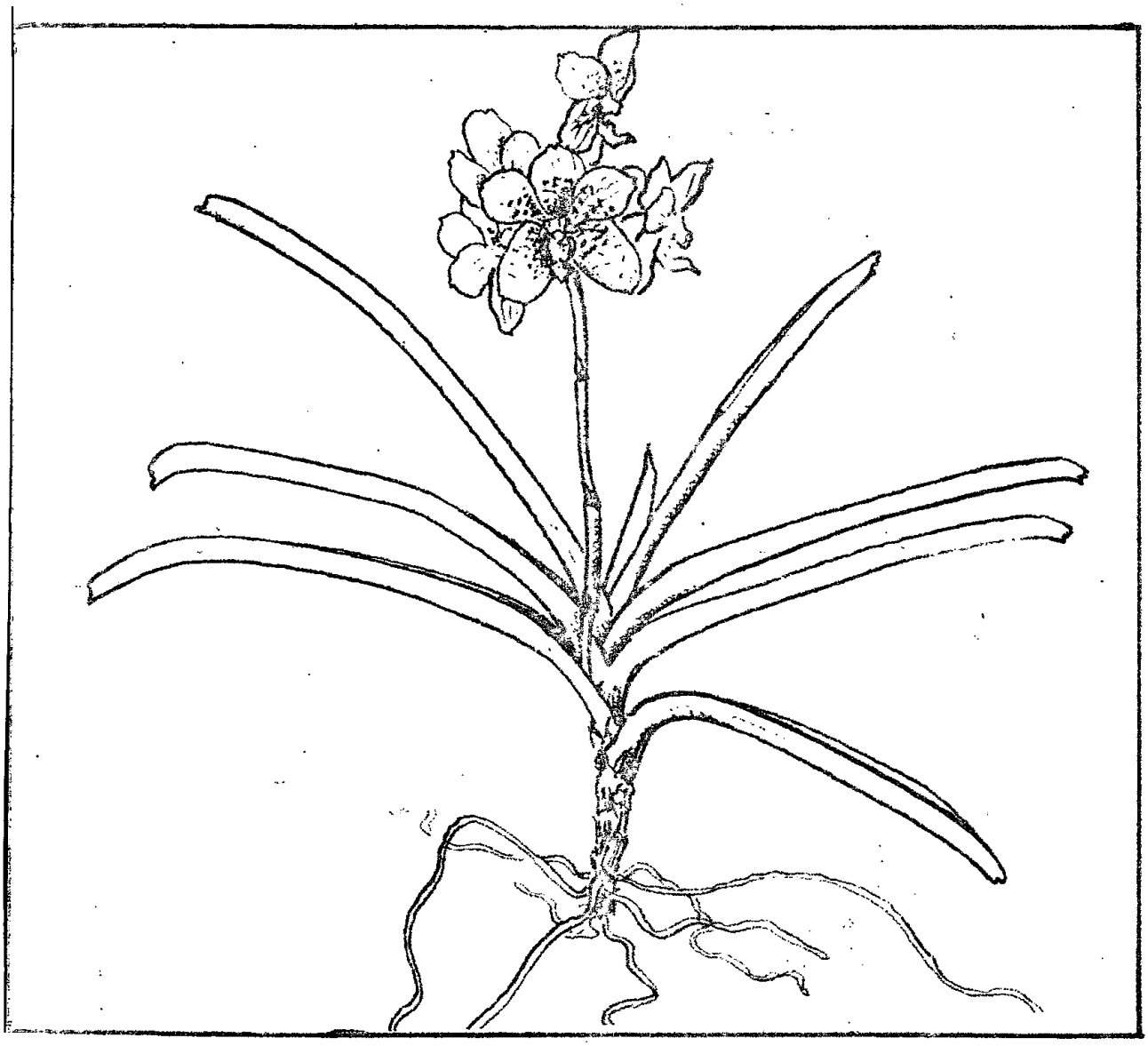

Correct fertilizing is one of the most important aspects of modern commercial orchid growing. The term "feeding" is generally used to mean the supply of the various elements necessary to the growth of orchid plants through the addition of an organic or inorganic food or fertilizer. This may be a natural substance like cow manure or chemicals like Ammonium sulphate, Potassium chloride and Super phosphate.

Orchid plants in common with most other plants are made up from about fifteen different elements; some in large proportions, and others in small quantities. Of the main elements, carbon, hydrogen and oyxgen are derived from the atmosphere or from soil water while the others are obtained through the roots either as substances in the potting medium or as dissolved minerals in the water. Nitrogen, phosphorus and potassium denoted as N-P-K form the primary food elements, while calcium, magnesium and sulphur are known as secondary plant food elements. Boron, manganese, copper, zinc, iron, molybdenum and chlorine are the micro or trace elements which are normally present as impurities in chemical fertilizers.

Nitrogen is necessary for optimum plant growth and this element appears to be the chief element in controlling vegetative or flowering growth. Deficiency of nitorgen produces stunted growth and overall yellowing of leaves while an adequate supply shows vivid green leaves and rapid growth of the plants. Excess of nitrogen stimulates vegetative growth and suppress flowering.

Phosphorous balances the effect of nitrogen and promote the growth of roots and flowering. Deficiency of phosphorous will produce stunted growth and inhibition of flowering.

Potassium gives vigour to the plant, builds resistance to diseases and improves the quality of flowers. A deficiency of potassium results in stunted and weak growth, followed by browning of leaf edges.

Fertilizers are of 2 types, organic and chemical. The organic types include cow-manure, fish emulsion,bone meal and other processed natural products. They are cheap, long lasting and are generally suitable for terrestrial orchids. The chemical fertilizers are more stable,exact and the strength of the application can be controlled. They are manufactured according to formulae varying from N.P.K. 10-10-10; 30-10-10, 10-30-10; to 20-20-20.

A 20-20-20 formula contain 60 units of fertilizer of which 20% is nitrogen, 20% phosphorous, and 20% potassium. The balance 40% consists of minor elements, trace elements, chelates of iron and inert material. The term "complete fertilizer" is being used to describe those formulations that contain N-P-K together with most of the other 15 elements. A 30-10-10 N-P-K formula is suitable for feeding young plants, while 20-20-20 N-P-K formula is an all-purpose formula which can be recommended for adult flowering plants. Formulations containing more phosphorous for flowering should be used in controlled doses. Good commercial fertilizers contain iron chelate which is an organic compound that combines with iron, making it available to plants.

In orchid growing dry chemical fertilizers are not used because they can scorch the roots, leaves and the stem, and for this reason water soluble chemical fertilizers are applied. Water soluable fertilizers are absorbed readily by the roots.

Regarding the frequency of feeding, it has been generally accepted that small, frequent feedings are better than occasional feedings. Most commercial growers feed about every other watering. Feeding is recommended in bright, sunny weather when plants are growing rapidly. An occasional through leaching with water will remove the accumulated salts. Generally potassium and phosphorous are not readily leached out as is introgen.

Besides complete fertilizers, orchid plants are benefited by supplying them with what are known as "foliar feeds", There are several commercial brands of foliar feed available to the orchid grower. These foliar feeds are sprayed on to the leaves in the diluted liquid form and nutrients they contain are directly absorbed by the leaf surface perhaps through the stomata. Reliable foliar feeds contain enzymes, hormones, magnesium, calcium, sulpher, iron, boron, manganese, molybdenum, zine and copper. These foliar feeds are generally applied in between the application of complete fertilizers. Foliar feeds

are also recommended for application on newly-potted plants since the hormones they contain promote early rooting. Foliar feeds are also suitable for spraying adult flowering plants because they increase the yield and quality of flowers.

Some growers prefer to use organic fertilizers like cow-dung, fish meal and pig dung. Singapore growers use pig-dung with fine success. Some Sri Lankan growers had trouble with diseases by using organic fertilizers. Well seasoned slurry cow-dung is beneficial for terrestrial orchids if it is applied with a fungicide.

Cost of production of flowers can be reduced if a long lasting fertilizer is available and this may be the answer for orchid fertilizing of the future.

BONSAI - TRAY PLANTS

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Introduction:

Bonsai is the Japanese word for plants grown in trays or shallow pots. The art of growing plants in shallow pots originated in China as a traditional Horticultural practice, dating from the beginning of 13th Centuary. Bonsai plants over thousand years are living today successfully in Chaina. Japan and Singapore. They are becoming popular in many parts of the world.

Bonsai as an art form is an attempt to bring the vast forests in diminitive form to the living room. The fast urbanization of most countries like Japan and Singapore has deprived many people having large gardens attach to their houses due to very limited space. Decorating their flats with Bonsai is the only way to grow plants inception of Bonsai is found in nature. Trees that grow on rocks and high mountains remain dwarf and stunted. They