

A THESIS

entitled

THE FEEDING BEHAVIOUR OF THE
ASIATIC ELEPHANT IN SOUTHEASTERN
CEYLON.

presented by

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SYNOPSIS

The origin, prehistory, history and biology of the Ceylon elephant have been briefly dealt with together with a comprehensive account on previous studies on the feeding behaviour of elephants. The history and development of agriculture in Ceylon have been reviewed with the aim of gaining an insight into the "ecological past" of the island.

The vegetation of southeast Ceylon is quite diverse in species as well as cover types. This diversity may be due to the presence of a variety of soils and variable climatic conditions. Improvement of irrigation facilities together with settled agriculture during the past century has had a profound effect on the vegetation of southeast Ceylon.

Indirect methods (plot sampling) were used to study food plants, elephant woody-plant relationship and trends in habitat utilization. It was discovered that elephants feed on about 225 species of trees, shrubs, creepers, vines, herbs and grasses. The methods by which the animal obtains the desired portion of the vegetation have been described in detail. There is a reduction in the number of shrubs, trees and herbs fed upon during the wet season, which is accompanied by an increase in grass

FEEDING BEHAVIOUR OF THE ELEPHANT IN THE GAL OYA NATIONAL PARK

feeding. The feeding on certain plant species is subjected to seasonal variations.

Trends in habitat utilization bring to light the part played by the elephant in the functioning of the forest ecosystem, while trends in elephant woody-plant relationship clearly show the effect of elephant activity on the physiognomy and succession of the vegetation.

A brief study on the short-range movements, activity and time-and-energy-budget, has shown that an elephant spends about 19 to 20 hours a day in continual feeding. Using data on feeding rates, it follows that on an average an elephant consumes about 150 Kgs of wet weight of vegetation per day. Data on defaecation show that an elephant defaecates about 80 Kgs per day. Using these figures the "ecological dynamics" of the feeding behaviour for a few herds of elephant in the Gal Oya area have been worked out.

Of the four herds of elephant that reside in the Gal Oya area, the Air Port Herd is seen to exist below a threshold level of environmental requirements and hence is in immediate danger. A preliminary calculation on the grass requirements of the Kossapola/Hatpata herd and the other two herds of the Gal Oya National Park has shown that they are not existing below threshold environmental requirements.