

## CAATINGA:

### IDENTIFICATION OF LEGUMINOSAE WITH HIGH FORAGE POTENTIAL

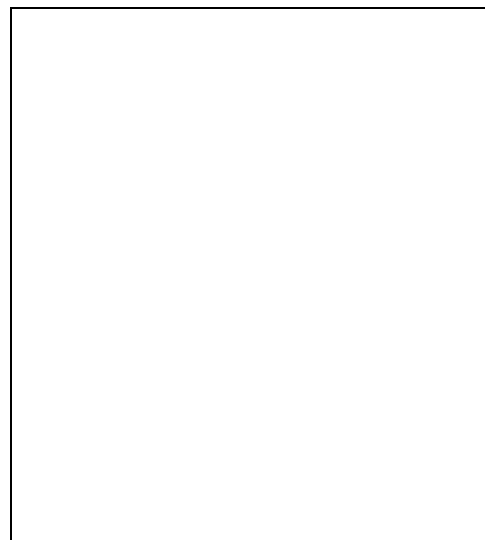
Around half of the north-east region of Brazil is covered by semi-arid caatinga - plains of thorny, scrubby, open woodland. The economic activities in this area are predominantly subsistence agriculture and extensive livestock ranching. The irregularity and unpredictability of rainfall with long periods of drought, has contributed significantly to the failure of agricultural projects in the region, whilst the natural plant resources are poorly utilized by the rural population.

Some of these features include:

- drought resistance - lots of species are deciduous, but many others, for example, camaratuba (*Cratylia mollis*), carrancudo (*Poecilanthe ulei*), surucucu (*Piptadenia viridiflora*), jurema-preta (*Mimosa tenuiflora*), desmanto (*Desmanthus virgatus*), keep their leaves even during long periods of drought.
- a high protein content due to their capacity to develop an association with nitrogen fixing bacteria.
- capacity for resprouting and
- agressiveness in colonisation.

Extensive field work is being carried out to identify leguminosae with high forage potential as well as ways in which they can be reproduced through their seeds. This information is being collected and stored in a database.

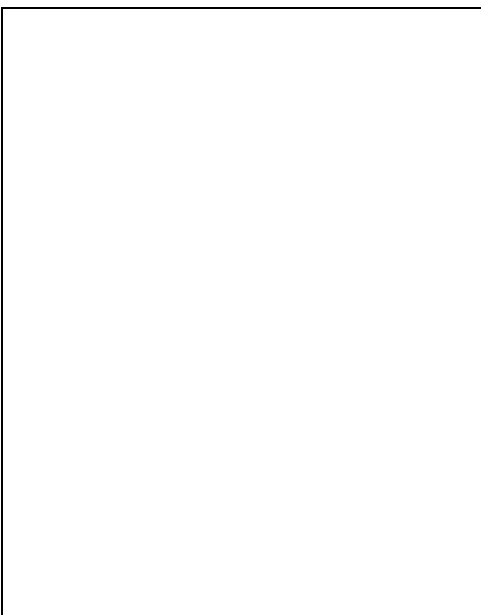
As a result of this work some woody species - camaratuba (*Cratylia mollis*), carrancudo (*Poecilanthe ulei*), mucunã (*Dioclea grandiflora*), jurema-branca (*Acacia bahiensis* e *A. piauhiensis*), jurema-preta (*Mimosa tenuiflora*), surucucu (*Piptadenia viridiflora*), miroró (*Bauhinia* sp.) - have been identified as best adapted to the caatinga, with an excellent capacity for resprouting, producing young branches with soft or few thorns.



*Small livestock in dry Caatinga*

The more herbaceous species (except for desmanto - *Desmanthus virgatus*), tend to show less resistance to drought than woody species, but are an important source of animal feed in humid and less dry periods. They are however better adapted to drought than the pasture grasses commonly used in the region. Included among these are feijão-de-porco (*Canavalia brasiliensis*), *Galactia jussiaeana*, *Macroptilium bracteatum*, *Zornia myriadena* and *Stylosanthes viscosa*.

The information gathered indicates that there are significant advantages for rural farmers to maintain part of their plots under native vegetation, and that this, if correctly managed can serve as an important food reserve for livestock during periods of drought.



*Dr. Luciano Queiroz and team collecting plants*

The dominant plant group in the caatinga is the Leguminosae. They are the main plant family of the semi-arid native flora and have characteristics which make them an important food source for livestock.

The PNE biodiversity project entitled "Floristic Diversity and Plant Distribution in the Chapada Diamantina" is carrying out detailed botanical inventories of high diversity sites in the Chapada Diamantina mountain zone of Bahia state in Brazil.

The project is centred in the Botany Department of the Federal University of Bahia (UFBA) in Salvador, with funds from The Rufford Foundation. Other participating institutions are: the Cocoa Research Institution (CEPEC), the State University of Feira de Santana (UEFS), the Brazilian Geographical and Statistics Foundation (IBGE), the Chapada Diamantina Foundation (FCD), the University of São Paulo (USP) and The Royal Botanic Gardens, Kew, England.

One of the first aims of the project is to carry out a comparative survey of the flora of two mountains close to the field station in Lençóis with contrasting exposure to human pressure. These are 'Morro do Pai Inácio peak' - much visited by tourists and 'Chapadinha', almost untouched by human activities.

Monthly visits have been undertaken by all the participating institutions since the project commenced in July '94, and some very surprising finds have already been made. Species typical of the humid Atlantic Forests which fringe the coast of Brazil, and even species known from the Amazon have recently been found.

## *Campo Rupestre eco- richest centres of*

These occur mainly in the unique ecosystem of the grotto forests which are found in deep crevasses at the summit of some of the mountains near Lençóis.

The Chapada Diamantina, which has recently become a tourist attraction due to its rich natural diversity and to the splendour of its unspoilt scenery, includes one of Brazil's richest centres of plant diversity, the 'Campo Rupestre' ecosystem. This vegetation occurs over wide expanses of rocky areas and elevated grasslands at altitudes up to 2000m. It is noted for the striking species of orchids, vellozias, bromeliads and many other interesting groups of plants such as the "sempre vivas" (everlasting-flowers) a

## *system is one of Brazil's plant diversity*

good number of which are unique to very localized areas of the mountains. Apart from the Campo Rupestre, there are extensive areas of upland savanna woodland (cerrado), and various other types of forest.

The project is providing valuable training opportunities for Brazilian botany students. It is hoped that the plant data gathered, together with the training element and planned publication of a popular booklet about the more important useful plants of the area will promote awareness of the value of the natural resources. This should encourage a balanced policy of rational management for the benefit of science and for sustainable use by local communities.

## UPDATE

REVIEW OF PROGRESS 1994 TO MARCH 1995

Over the past 15 months Programme PNE has made considerable progress. Significant milestones have been:

◆ July 1994 - Plantas do Nordeste officially became established as an Association in Brazil with charitable and legal status.

◆ Most encouraging support from CNPq, the National Centre for Science and Technological Development of Brazil, who have undertaken to provide research and training grants of nearly £0.5 million for 1995, with a commitment for 1996 as well. ◆ Initiation of two biodiversity projects, focusing on the Chapada Diamantina mountain range in Bahia and the Brejos of Pernambuco, with UK funds from the Rufford Foundation and the Darwin Initiative (Dept. of Environment) respectively. ◆ Successful continuation of the 8 economic botany projects focusing on medicinal and forage plants, where objectives are being met and dissemination products are now being prepared. ◆ Preparation of a new generation of project proposals, where the elements of biodiversity, economic botany, information management, dissemination and training will all be integrated, in differing ratios depending on the nature and topic of the project. ◆ Submission to ABC of a major proposal to raise funds for expanding PNE's information, training and dissemination activities, thus bringing the benefits of new knowledge to local people. ◆ Preparations for selecting a Brazilian General Coordinator to be responsible for on-going development of the programme and taking it into the 21st century. It is hoped that this individual will be in place by mid 1995.

## NEWS

### NEW CENTRE FOR RBG KEW

The Kew component of Plantas do Nordeste is part of the new Centre for Economic Botany (CEB). Other than PNE, activities within the Centre include:

◆ **Sepasal** (Survey of Economic Plants for Arid and Semi-Arid Lands), a major economic botany database focusing on the use of approximately 6000 useful dryland species of the world.

◆ **Plato**, an image based database developed in association with the U.K. National Poisons Unit to assist the medical profession with the rapid identification of poisonous plants and fungi.

◆ **Ethnobotanical Research**, including a study on anti-malarial plants of the Brazilian Amazonia in collaboration with several local institutions such as the museum Integrado de Roraima.

◆ **Economic Botany Bibliographic Database**, which currently contains citations to more than 150,000 references dealing with plants of economic value (including those of arid and semi-arid lands).

◆ **An Enquiry service**, answering questions from scientific, public and commercial bodies.

For further information please contact Centre for Economic Botany, Royal Botanic Gardens, Kew Richmond, Surrey, TW9 3AE. Tel: (0181) 332 5000 Fax: (0181) 332 5278.

### Medicinal Plant Project

BBC radio world service broadcasted on 15/12/94 news about medicinal plants with reference to Prof. Matos' 'Living Pharmacies' and their link with Plantas do Nordeste.

### Plant Conservation Techniques Course 1995

The 1995 course will run from 10th July - 1st September '95. For further information please direct enquiries to **Gail Bromley Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AE, UK.**

## SCIENTIFIC PUBLICATIONS

### ☒ PILOSOCEREUS

(Cactacea) The genus in Brazil by Daniela C. Zappi.

This work comprises a complete taxonomic revision of the Brazilian species, based on extensive field and herbarium studies, and presents a comprehensive survey of seed-morphology, and cladistic analyses to determine relationships between and within the groups to identify sister taxa. Keys, descriptions, ecological data, distribution maps, cladograms and illustrations of these taxa are presented, together with a list of new names and an index to specific epithets. Price: £18.00

### ☒ THE GENUS MELOCACTUS

(Cactacea) in Central and South America by Nigel P. Taylor.

The book contains a full revision of 24 species and 10 subspecies based on extensive field study. An appendix deals with the 7 Caribbean Island endemics. Each taxon is described, with full synonymy, distribution map and specimen records. Introductory sections deal with History, Seed Morphology, Reproductive Biology, Systematic position of the genus and Infrageneric Relationships. There is a Key to the species, colour and black-and-white photographs, and 176 scanning electron micrographs of seeds. Price: £9.00

To order write to:

Mail Order Service, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, England.

## WHAT IS PNE?

PNE is a multidisciplinary research programme contributing to the identification and sustainable use of plant resources in the North-east region of Brazil, combining conservation and improvement of ecosystems with positive socio-economic benefit to the local community.