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THE FAUNA CORRIDORS AMONG FOREST FRAGMENTS IN LAGOA FARM - MONTE BELO - MG

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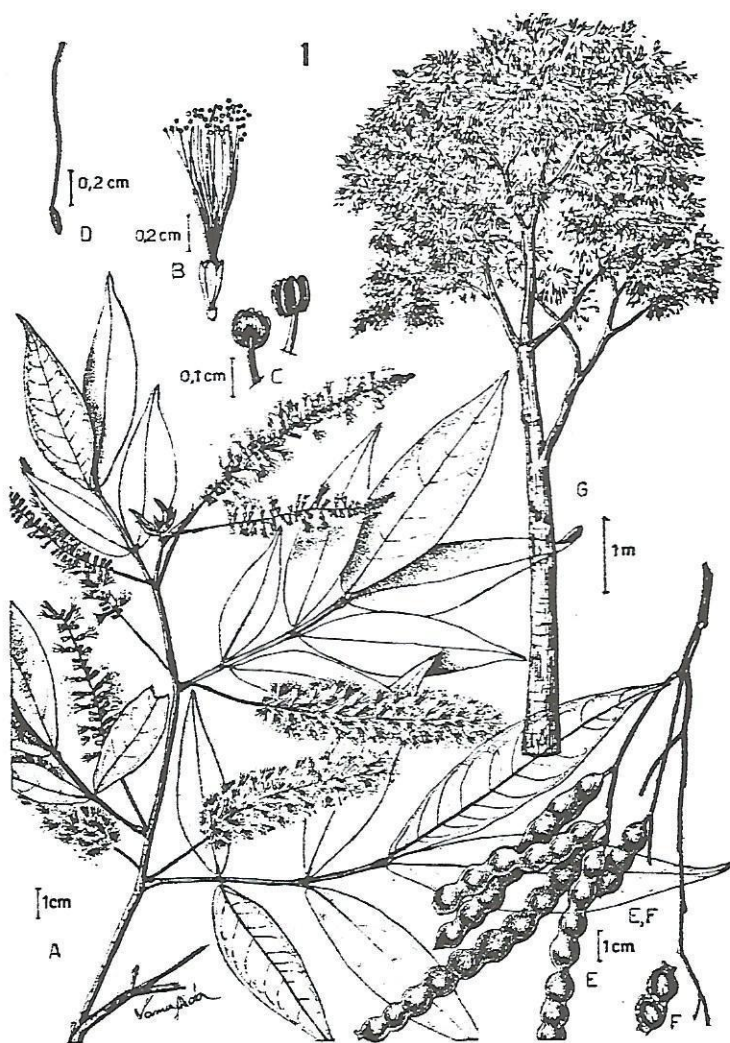
ABSTRACT - In order to connect the most important forest fragments in Lagoa Farm, Monte Belo, Minas Gerais, Brazil, a fauna corridor project is being developed since the 80's by the Institute Sul-Mineiro for Studies and Nature Conservation. The methodology is based on bibliographical research on the theme and on the native rare species. Fieldwork has been conducted to develop the reforestation project and monitor the vegetation development and fauna and flora colonization by species of the neighbour forests. The fauna corridors being set up in this farm already shows success indicators, such as the colonization of the area being artificially and naturally reforested by flora and fauna species which are typical of the native surrounding forest edges. The fauna corridors being created together with the existing expressive forest remnants from Lagoa Farm could form the core area for a broader network in the region.

Key words: Fauna Corridors, Forest Fragments. Reforestation - Revegetation

INTRODUCTION - Only a few forest fragments survived the predatory model of land use in southern Minas Gerais, by portuguese colonizers and their descendants (Vieira 1990). The few forest remnants are characterized as fragments of secondary forests with isolated populations of fauna and flora species (some in risk of extinction) therefore submitted to a process of genetic impoverishment. Studies of Island Biogeography alerted for the danger of species loss if an area becomes isolated. Many biologists, specialized in wildlife are worried with the fact that in spite of the efforts, a certain rate of extinction is inevitable if our national parks and reserves become islands in a sea of agriculture". (Breckwoltd, 1986). These forest fragments are more fragile and quite affected by cattle invasion and fires in the nearby pastures and sugarcane fields/ plantations.

In 1980 began the first reforestation project in Lagoa Farm in a deforested slope, aiming to allow and promote a forest recolonization of the area.

This area was protected against fires and it was not used for pasture anymore. Since 1980, more than 1000 trees have been planted. It became the Fauna Corridor between the Lagoa Forest - a forest fragment of 150 ha and a small scrub. Later in the 90's was established the Fauna Corridor II between this same scrub and another Forest Fragment of 17 ha (Olaria Forest). The Fauna Corridors in Lagoa Farm were designed aiming to attract mainly birds and monkeys species, specially those in danger of extinction.



Inga marginata Willd. (Leguminosae-Mimosoideae) ingá. A - ramo florido, B - flor, C - estames, D - gineceu, E e F - frutos, G - árvore. Ex Carauta & Rocha, *Albertoa* 1 (11): 115, 1988.

MATERIAL AND METHODS

Methodology: I - Field Work. I I - Agroforestry and Silvicultural Practices including collection of seeds; production of seedlings in the nursery, tree care; management of the tree plantation area (pest control, weeds control fertilization)

I - II - Scientific observation on: - Flora phenology of the vegetation of the nearby native forests as well as of the reforestation area; - Vegetation succession and Ecological restoration; - Fauna presence in the Corridors and in the borders of neighbour forests.

Only a few activities are employed in the management of the area in order to allow a restoration of the vegetation as close as possible from the original one, such as: ants control and hoeing of the areas around the young trees and along the environmental education trail. The seedlings were planted with approximately 1 year old and at 30/50 cm height at the time of the rainy season.

Methodology II - Bibliographical research in the relevant pertinent literature has been made do identify appropriate species of the native flora to be planted as well to evaluate the diet of the fauna to be attracted and also to select methods for natural restoration monitoring.

RESULTS AND DISCUSSION - Along the last 12 years, in the area where is now located the Fauna Corridor there is happening a successful process of forest recolonization favored by the proximity of native forests in good conservation status and incentived by the plantation of trees (mostly native) every year.

VEGETATION - The plant physiognomy of the landscape that is coming back to its original vegetation cover presents and alternate crop rotation between patches of antropic vegetation (with the dominance of grasses and a few trees) and secondary forest in act of forming with planted trees and several colonizers from the nearby native forests.

FLORA - In the 3 characteristical forest strata the flora is so divided:
 Forest plants
 - The Herb stratum - Graminae (dominant); Ferns and Herbs ; Rare terrestrial orchids
 - The Bush stratum - Not yet well defined with: Young trees and vines,
 - The Tree Stratum - Planted trees native and exotic.

FAUNA - 27 species of birds have been identified divided among: Insetivorous - 15; Nectarivorous - 7; Granivorous - 4 and Frugivorous - 1. (See Table 2)

Observations were made on the use of the corridors by primate species (*Cebus apella nigritus* and *Callicebus personatus*). It is estimated a less intraspecific and interspecific competition of monkeys and birds from the small forest fragment " Mata da Olaria" (17 ha) due to a profit of space and food offered by the corridors.

The ecological restoration in the Fauna Corridors Reforestation area will allow among other advantages / benefits:

- Soil conservation and soil erosion control both in the steep area where the reforestation is being made as well as in the wetlands below.
- Genetic exchange among populations of monkeys and birds species from the neighbour forests.

- Facilitation / promotion of the native forest plants / flora dissemination through pollinization and seed dispersal.
- Increase of the Life Territory for fauna and flora species of regional / local native forests.

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THE FLORA OF THE FAUNA CORRIDORS

PT = planted tree; NR = natural regeneration

| FAMILY | SPECIES | |
|---------------|------------------------------------|-------------|
| Anacardiaceae | <i>Manquifera indica</i> | PT |
| Anacardiaceae | <i>Schinus molle</i> | PT |
| Bignoniaceae | <i>Tabebuia</i> sp | PT |
| Bombacaceae | <i>Chorisia speciosa</i> | PT |
| Bombacaceae | <i>Pseudobombax</i> sp | PT |
| Boraginaceae | <i>Cordia</i> cf <i>ecalculata</i> | NR |
| Compositae | Cf. <i>Mikania</i> sp | NR |
| Ebenaceae | cf. <i>Dyospiros inconstans</i> | NR |
| Euphorbiaceae | <i>Croton floribundus</i> | NR |
| Lauraceae | <i>Persea gratissima</i> | PT |
| Lecythidaceae | <i>Cariniana legalis</i> | PT (Fig. 3) |
| Lecythidaceae | <i>Cariniana estrellensis</i> | PT |
| Leguminosae | <i>Acacia polyphylla</i> | PT |
| Leguminosae | <i>Bauhinia forficata</i> | PT |

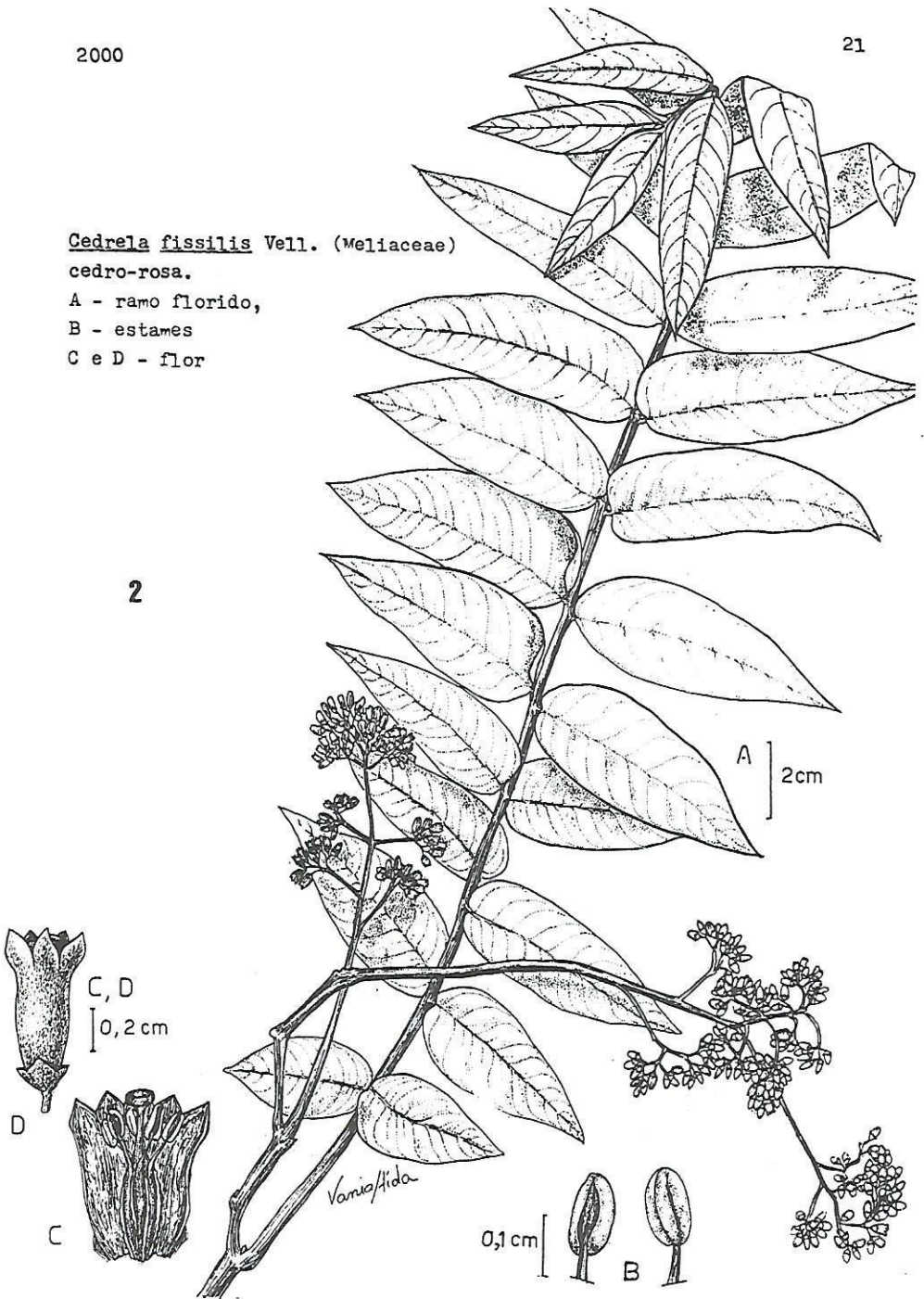
Cedrela fissilis Vell. (Meliaceae)

cedro-rosa.

A - ramo florido,

B - estames

C e D - flor





Cariniana legalis (Mart.) O. Kuntze (Lecythidaceae) Jequitibá. A - ramo florido, B - flor, C - pétala isolada, D - urcéolo (andróforo), E - estame isolado, F - gineceu, G - fruto, H - semente, I - árvore. Ex M.R.V. Barbosa, Flora, Alguns Estudos 1: 10, 1982.

THE FLORA OF THE FAUNA CORRIDORS

| | | |
|--|-------------------------------------|-----------------|
| Leguminosae | <i>Centrolobbium robustum</i> | PT/NR |
| Leguminosae | <i>Erythrina</i> sp | PT |
| Leguminosae | <i>Holocalix balansae</i> | PT |
| Leguminosae | <i>Hymenaeae</i> sp | PT |
| Leguminosae | <i>Inga marginata</i> | PT (Fig. 1). |
| Leguminosae | <i>Inga</i> sp | PT/NR |
| Leguminosae | <i>Myroxylon peruiferum</i> | PT |
| Leguminosae | <i>Platycyamus regnellii</i> | PT/NR |
| Leguminosae | <i>Poecilanthe parviflora</i> | PT |
| Leguminosae | <i>Senna</i> sp | NR |
| Lythraceae | <i>Laffoensia pacari</i> | PT |
| Meliaceae | <i>Cedrela fissilis</i> | PT/NR (Fig. 2). |
| Meliaceae | <i>Trichillia catigua</i> | PT |
| Meliaceae | <i>Trichillia claussemi</i> | NR/PT |
| Meliaceae | <i>Trichillia pallida</i> | NR |
| Moraceae | <i>Artocarpus integrofolia</i> | PT |
| Moraceae | <i>Maclura tinctoria</i> | NR |
| Moraceae | <i>Morus nigra</i> | PT |
| Moraceae | <i>Soroceae</i> sp | NR |
| Myrtaceae | <i>Eugenia jambolana</i> | PT |
| Myrtaceae | <i>Eugenia uniflora</i> | PT |
| Myrtaceae | <i>Psidium guayava</i> | NR |
| Rutaceae | <i>Citrus</i> sp | NR |
| Sapindaceae | <i>Allophylum</i> cf <i>edulis</i> | NR |
| Ulmaceae | <i>Celtis</i> cf <i>iguanae</i> | NR |
| Ulmaceae | <i>Trema micrantha</i> | NR |
| Verbenaceae | <i>Aloysia chamaedrifolia</i> | NR |
| Verbenaceae | <i>Cytharexylum myrianthum</i> | PT |
| HERBS PT = planted tree; NR = natural regeneration | | |
| FAMILY | SPECIES | |
| | | |
| Acanthaceae | <i>Ruellia</i> sp | NR |
| Asclepiadaceae | <i>Asclepias curassavica</i> | NR |
| Commelinaceae | cf <i>Commelina</i> sp | NR |
| Compositae | <i>Bidens</i> sp | NR |
| Compositae | <i>Emilia</i> sp | NR |
| Compositae | <i>Kosmos</i> cf <i>bipinatus</i> | NR |
| Onagraceae | <i>Ludwigia</i> sp | NR |
| Solanaceae | <i>Solanum</i> sp | NR |
| Verbenaceae | <i>Lantana</i> cf <i>camara</i> | NR |
| | | |
| VINES | | |
| FAMILY | SPECIES | |
| | | |
| Bignoniaceae | <i>Arrabidea</i> sp | NR |
| Bignoniaceae | cf <i>Pyrostegia venusta</i> | NR |
| Bignoniaceae | <i>Mendoncia</i> cf <i>puberula</i> | NR |
| Euphorbiaceae | <i>Dalachampia</i> sp | NR |
| Leguminosae | <i>Dioclea</i> cf <i>virgata</i> | NR |
| Sapindaceae | <i>Serjania</i> sp | NR |
| Verbenaceae | <i>Petrea racemosa</i> | NR |