

# Rodrigues: can its

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Rodrigues, the smallest of the three Mascarene islands, is in immediate danger of losing most of its native vegetation due to the activities of man and introduced cattle and goats. The endemic fauna has mostly disappeared, leaving two endangered land birds and a fruit bat, and most of the plants may soon follow: seven native species are known only from five or fewer individuals. The author visited Rodrigues for two weeks in June and July 1982 with the Director of the Conservatoire Botanique of Stangalarch, Brest, France, in an effort to locate and propagate many of the rare species.

Rodrigues, an island dependency of Mauritius located 353 miles (568 km) to its east and covering 42 sq miles (109 sq km), has most problems that occur on islands (principally invasions by supertramp species upsetting the fine balance of a closely evolved flora and fauna) but is closer than most to becoming an island much like any other—a fate sure to befall all islands if conservation measures are not implemented. Described by one of its first colonists, François Leguat, in 1691, as a veritable paradise, Rodrigues today is floristically impoverished with vestigial pockets of vegetation in the crevices caused by the volcanic nature of the land. Plagued by cyclones and drought, cattle, goats and man, most of the native vegetation is extinct or severely threatened. Only two endemic birds and a fruit bat, all capable of living in exotic forests, remain; at least 11 species of birds, two giant lizards and perhaps three species of tortoises are extinct.

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The vegetation may have a similar extinction record but Leguat briefly mentioned only ten plants. Balfour (1879) was the first to describe the flora on the Transit of Venus expedition and by then the vegetation was already largely depauperate forest, devastated by fire and continuous human colonisation dating from 1750 (when a colony was established to engage in the tortoise trade). At least eight plant species recorded by Balfour have not been recorded and others listed as common or abundant are now down to a single individual. Of 40 endemic angiosperms, 36 are threatened and the other four, while relatively common on Rodrigues, should be listed by *Red Data Book* criteria as rare, for nothing is 'not threatened' on Rodrigues. Of seven species only five individuals of fewer are known and, while more exploration is needed, the pockets of native vegetation are so small that it is unlikely that many more individuals will be found.

The most poignant case is that of *Ramosmania heterophylla* (Balf.f.) Tirvengadam & Verdcourt (*Randia heterophylla* Balf.f., Rubiaceae), the 'café marron'. Described by Balfour as 'one of the prettiest and most interesting plants from Rodrigues, belonging, as it does, to a genus hitherto unknown to the Mascarene islands . . .' this small tree was rediscovered after believed possibly extinct, by the side of a road. It was carefully fenced with a bed of white sand placed at its base. The sand was eventually removed but more seriously, one branch of the remaining two was stolen one week before we arrived on Rodrigues. Whether this was done in order to propagate the species or whether the person thought that the plant had magical properties is not known. In any case there was not sufficient plant to take cuttings;

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only three small branches supporting three beautiful white flowers were left. *Ramosmania* is not known to set seed and the insect that might pollinate the flowers could very possibly be extinct. Therefore we could only leave the caged plant to nature and, given the recent history of the famous *Hibiscus* which follows, it seems likely that the world will lose another species very soon.

The last wild individual of the 'mandrinette' *Hibiscus liliiflorus* Cav. (Malvaceae) is now dead, showing how a little publicity can hasten a plant's demise. A huge shrub of this species which adorned the south-east cliff of Grande Montagne (one of the last bastions of the island's native vegetation) was publicised as the last of its kind. The plant soon became a favourite terminus for picnickers, some of whom broke off a branch either as a souvenir or in an attempt to propagate it. Even after the Forestry Department had

stepped in and fenced the plant, branches were still taken. Finally the tree succumbed and only one cutting, carefully tended under wire in the garden of a Catholic brother at Rodrigues, has survived. Fortunately a grafted tree at the Royal Botanical Garden at Pamplemousses in Mauritius of which the scion comes from Rodrigues still survives and is being propagated by the Forestry Department. Thus it seems as if this beautiful plant will persist in cultivation. Two more plants have recently been discovered in a priest's garden in Mauritius and hopefully these too will be propagated.

A more hopeless case is that of *Dombeya rodriguesiana* F. Friedmann (Sterculiaceae), the 'bois pipe'. Only one individual is known, at Grande Montagne, a tree easily recognised by its beautiful iron-red pubescent leaves. Unfortunately it is a male, and while a female was known to grow a mile away, that tree was felled two years ago and no cuttings were taken. The male tree will probably go in the next cyclone since both branches are rotten. Although cuttings of this tree have taken, the species is doomed unless another female is discovered.

The most exciting part of our expedition was the discovery of *Gouania leguatii* J. Guého (Rhamnaceae), a woody climber endemic to Rodrigues not seen since 1942 and believed extinct (it was not even common in Balfour's time). This plant, surrounded by brambles on a rocky cliff near the Cascade Mourouk, is fairly well protected from goats although nothing seems to be immune from these creatures. Cuttings were taken and roots were layered in an effort to propagate this only known individual, and it is encouraging to know that plants of this species



*Ramosmania heterophylla* in flower (Carl Jones).

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believed extinct may still be discovered despite the small amount of native vegetation that remains. Many cuttings of *Gouania* are now ready for replantation if a reserve is established.

However, even the rockiest terrain cannot deter the goats. We found between several boulders on one hillside a patch of badly gnawed orchids, the rare *Oeniella aphrodite* (Balf.f. & S. Moore) Schlechter. Two almost leafless plants were brought back to Mauritius and in less than two weeks over one inch of leaf growth had occurred, a graphic example of what may happen once goat grazing pressure is removed.

Habitat destruction also takes its toll as we observed on a huge tree, the 'bois lubine' *Poupartia castanea* (Baker) Engl. (Anacardiaceae), observed by Balfour as 'a rare tree about 20 to 30 feet high found only in two localities'. Today this endemic is just as rare—four trees are known, all isolated from each other so that cross-pollination must be negligible. A fifth tree was known at the bottom of the Cascade St Louis but bees constructed a nest in its trunk and the tree was burnt and chopped down in order to obtain the honey.

However, conservation steps in Rodrigues have been attempted although some have been misguided. One was the introduction of the palm *Dictyosperma album* (Bory) H.Wendl. & Drude ex Scheff. var. *album* from Mauritius to supplement the small population of *D. album* remaining in Rodrigues. But the two palms are of different varieties and may hybridise. This introduction took place only ten years ago thus perhaps the Mauritian variety has not yet reached reproductive age, but more research needs to be done to learn if this variety endemic to Rodrigues is truly gone forever.

Even the first goat-gnawed tree one sees standing alone in a field outside the airport gate may soon be removed from the roll-call of this island's rapidly diminishing flora. Only one other individual of this tree, *Antirrhoea bifurcata* (Desr.) Hook.f. (syn. *Antirrhoea frangulacea* DC., Rubiaceae) was known last year but a recent search concluded that it had been cut down, another victim of the pressing need for firewood. The species also exists on Mauritius where it is not very endangered, but differences in number of

inflorescences and fruit shape have been noted. However, if this tree dies perhaps only herbarium material will be available to decide if there ever was a variant endemic to Rodrigues.

Finally, the one species from Rodrigues that made the 1978 IUCN Plant Red Data Book, *Zanthoxylon paniculatum* Balf.f. (Rutaceae), 'bois pasner', was listed as two trees known and no seedlings found. Today three trees are known in the small river valley of Anse Quitor which contains a number of native trees but is also full of squatters continually looking for firewood. This tree has a beautiful young growth form (most plants at Rodrigues display marked heterophylly



*Poupartia castanea*—this tree was later burnt and chopped down to obtain honey. Only four other individuals of this species are known (Joseph Guého).

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between young and old forms) and hopefully will be propagated. The cultivation should be *in situ* at Rodrigues for while smaller plants may be raised in greenhouses elsewhere, trees are impractical—but in the absence of forest reserves at present the question is where.

A major step for plant conservation at Rodrigues would be the creation of a fenced reserve where a replantation and weeding programme could be established. The logical site would be Grande Montagne, the only locality where one can still find most of the indigenous plants except for those of the littoral (for those species one of the islets, although badly degraded by invasive exotics such as *Leucaena leucocephala* (Lam.) DeWit, would serve admirably).

Grand Montagne is one of the best sites which has been suggested as a reserve since at least 1975, yet no action has been taken and already a few houses have been built at its base—the encroachment of the rapidly increasing population on the last vestige of native vegetation. A goat-proof fence needs to be erected and a guard provided to prevent wood-cutting. In the future limited wood-cutting on the mountain could be permitted once there were native plants available for replantation, since many exotics, primarily *Litsea glutinosa* (Lour.) C.B. Robins, grown on the mountain. One side of the mountain is invaded by the highly aggressive aloe *Furcraea foetida* (L.) Haw. and the aloes are beginning to appear on the other side. If unchecked they will invade the rest of the mountain, forming dense stands that are difficult to walk through and in which growth of other species is impossible. *Furcraea* invasion can be controlled by cutting the flowering stalk so as to slow down dispersal of the plant (small plantules drop by hundreds from the stalk).

Finally, a replantation programme could be instituted in a weeded and guarded site. Perhaps even the last *Ramosmania* could be translocated and protected. Such a move would be risky, for the plant may die, but if it is left where it is at the roadside it could easily be cut down. I believe that the odds are more favourable for moving the plant, with the right techniques and utmost precautions.

The charm of Rodrigues is immediately sensed by  
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all who visit the island, but for its flora the last hour has come. No area has been set aside for nature conservation—apart from the Isles aux Cocos and Sables as sea-bird sanctuaries—although there has been much discussion over the years. However, given the present economic problems, nature conservation is not top priority; if any action is to occur to save the flora of Rodrigues, funding must come from external sources. Although the flora of Rodrigues will never return to Leguat's Eden, a managed reserve at Grande Montagne and on one of the islets could still succeed in being smaller versions, provided action is taken soon.

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