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## Réunion Island – Still a Land of Tortoises

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Réunion is an island of volcanic origin located 800 km east of Madagascar, and 220 km southwest of Mauritius. The island constitutes a French "Department d'Outre Mer", and has maximum dimensions of about 60 km by 45 km. Until the late eighteenth or early nineteenth century it was the home of the now extinct giant tortoise *Cylindraspis borbonica*.

It appears that, even after the extinction of the endemic tortoise species, tortoises did not pass from the consciousness of the people of Réunion, and for many years the inhabitants have imported live tortoises from neighboring islands, sometimes keeping large numbers of them in backyards. Most commonly, these imported tortoises are representatives of the beautiful Malagasy species *Geochelone radiata*, but some Aldabra tortoises (*Geochelone gigantea*) and even a few of the Malagasy spider tortoise (*Pyxis arachnoides*) are kept on the island.

It has been rumored for some time that ethnic Chinese residents of Réunion import or keep radiated and other tortoises primarily for food. However, my information suggests that the tortoises are kept primarily as "pets," although it does seem hard to reconcile this with the sheer numbers kept by some people on Réunion.

Prestige and pride of ownership seem to accrue to those who keep large collections of tortoises on Réunion, there being a definite feeling of "the more the better," without any particular drive towards greater diversity of species such as

motivates many tortoise hobbyists. A certain level of captive breeding occurs, and the hatchlings may be sold to friends or neighbors.

Although hundreds – even thousands – of tortoises are kept on the island, the casual visitor or even resident is unlikely to see any of them. They are almost never allowed to roam at liberty in gardens or yards, but rather are enclosed in pens behind the house, out of sight from the street.

In spring 1992, I visited six Réunion families who kept tortoises. Their combined collections totaled about 300 radiated (*G. radiata*), three Aldabra (*G. gigantea*), five spider (*P. arachnoides*), and two leopard (*G. pardalis*) tortoises, as well as two three-toed box turtles (*Terrapene carolina triunguis*), one red-footed (*G. carbonaria*), and two spur-thighed tortoises (*Testudo graeca*). Many other individuals reported that they, too, had collections of radiated tortoises. Unfortunately, time constraints did not allow me to visit their "backyard pens". I was left with the impression that there were literally many thousands of live radiated tortoises kept in captivity on Réunion. Some of these tortoise keepers reported that their animals reproduced every year; on the other hand, two individuals who had long-established groups of 10-15 radiated tortoises had never had successful captive reproduction.

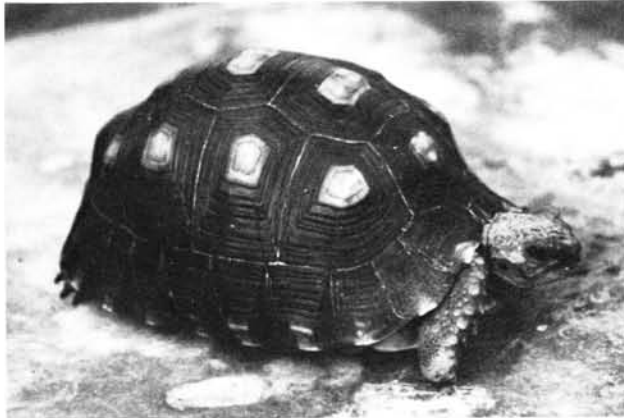
Tortoises were often maintained at high density, with both sexes together, and active manipulation was required if captive reproduction was to be successful. When an adult female is seen to be behaving unusually (e.g., pacing along perimeter of pen), it is taken out so that it can find a suitable place to excavate a nest in the garden. Often the owner will dig and moisten an area of soil and then place the female over this spot. She generally "takes the cue" and nests right there.

A typical nest will contain only three eggs, but clutches of up to seven are seen on occasion. Females are reported to nest every month of the year except during the (southern) summer, which is when hatching occurs. After oviposition is completed, the eggs are removed from the nest and placed in a receptacle filled with sand; this is kept indoors, but without special attention, until the eggs hatch.

Two of the most successful tortoise breeders on the island claimed that, despite the wide span of months over which nesting occurred each year, hatching generally occurred during the summer - whether the eggs had been laid four, six, or even eight months earlier. We did, however, visit one family whose tortoise eggs had hatched in May. Growth of the hatchlings is reportedly slow on Réunion.

I was greatly surprised to encounter two captive-hatched hybrid tortoises (Fig. 1) that were the product of a mating between a female radiated tortoise (*G. radiata*) and a male South American red-footed tortoise (*G. carbonaria*). The hybrids were about five years of age and seemed to be healthy, and had grown faster than typical hatchling radiated tortoises on Réunion. A third hybrid died shortly after hatching.

A nuchal scute was present in one of the hybrids, absent in the other (it may also be absent in *G. radiata*). The shape of the young tortoises was intermediate between that of the



**Figure 1.** One of two approximately five-year old hybrid specimens produced by captive mating between *Geochelone radiata* and *Geochelone carbonaria* on Réunion Island.

two parent species, but the coloration was more typical of *G. carbonaria* – i.e., a black carapace with a single yellow spot on the areola of each large scute. The hybrids were produced in a tortoise colony that included a single male carbonaria, kept with numerous radiated tortoises of both sexes.

A gardener whom I interviewed claimed that, at the property where he worked, there were a few tortoises in a backyard pen, one of which was much larger than the others. On visiting the property, I saw a group of ten radiated tortoises and a single large *G. gigantea* that had reportedly been imported from Mauritius as a hatchling 19 years earlier. Elsewhere on Réunion I encountered two hatchling Aldabra tortoises and received the impression that a fair number of individuals of this species, all brought from breeding colonies on Mauritius, were scattered over the island. I heard no reports of *G. gigantea* having reproduced on Réunion.

Small numbers of *Pyxis arachnoides* were also present on Réunion. A small group of this species had been purchased in a market in St. Pierre, and were now held by Mr. Manuel Rolland. He reported that eggs had been laid by

these tortoises during the preceding year, but they had failed to hatch. He was now incubating the current season's eggs, and hoping for better results.

Tortoises are rarely sold on Réunion, and during many visits to different markets I only saw eight individuals offered for sale, and only one of these was of reasonable size (possibly smuggled from Madagascar?), the remainder being hatchlings or juveniles almost certainly captive-produced on Réunion. I never saw tortoises in Réunion pet shops, and investigation of newspaper classified advertisements offering tortoises for sale resulted in the identification of only a few captive-born hatchlings, some still bearing the egg caruncle. Most tortoise owners had no interest in disposing of their animals, and even those who had a small surplus would dispose only of the hatchlings, and only to friends. But I did find cases of hatchling radiated tortoises being given to newlyweds, or to new parents, as a symbol of long life, much as happened in past times in the Seychelles.

In summary, there is apparently a demand for tortoises on Réunion, but this demand is satisfied for the most part by locally captive-bred animals. Nevertheless, high prices may be offered for tortoises on the island (\$200-400 for an adult; \$50-70 for a hatchling), and this has resulted in a certain level of smuggling from Madagascar. Most such animals, however, are apparently intercepted by customs officials and end up in the St. Dennis Zoo, which now has a large collection of radiated tortoises. So, by a combination of successful customs vigilance and increasing captive-breeding programs on the island, the smuggling trade is small and decreasing, but it could recrudescence if the captive-breeding efforts stopped or were curtailed. Possibly contraband tortoises may now be shipped to Mauritius in view of the restraints on the trade in Réunion.

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