

HERPETOFAUNA OF THE SEYCHELLES

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The Republic of Seychelles (a member of the Commonwealth since 1976) covers over a hundred widely scattered islands in the western Indian Ocean. The islands lie between the latitudes of 4°S and 10°S, and hence have an oceanic tropical climate characterised by uniformly high temperatures and humidity with little variation in day length. They have a surprisingly diverse reptile and amphibian fauna with a total of at least 40 species described from the islands. There has been an upsurge of interest in the Seychelles herpetofauna over the last ten years, with results from several studies being published recently. A selected bibliography is given at the end of this article.

The islands of the Seychelles can be divided into three geomorphological types: the mountainous granite islands with their associated islets in the north-east where the vast majority of the human population live; the very low lying sand cays of the Amirantes and Farquhar groups, together with some other scattered cays such as Bird, Denis, Coëtivy and Platte; and the raised coral islands and atolls of Aldabra, Assumption, Cosmoledo, Astove and St. Pierre in the west.

Perhaps the most surprising feature of the herpetofauna is the presence of twelve species of Amphibia, a class generally absent from oceanic islands. In the Seychelles, amphibians are found only in the granitic island group. Eleven of these twelve species are endemic, and include an endemic family of frogs, the Sooglossidae consisting of three species from two genera known from the upland forest of Mahé and Silhouette.

The Sooglossid frogs are very small, indeed *Sooglossus gardineri* may be the world's smallest frog. The mode of reproduction of *Sooglossus sechellensis* is a remarkable example of convergent evolution (Nussbaum, 1984). The eggs are deposited by the female in a hidden terrestrial nest and are then attended by the male. When they hatch the non-feeding tadpoles climb onto the male's back where they remain until metamorphosis. This method of larval transport is also found in the poison dart frogs (*Dendrobatidae*) in Central and South America.

Seven species of caecilian, limbless amphibians of the order Gymnophiona, occur in the Seychelles from three endemic genera, and there is an endemic monotypic genus of tree frog, *Megalixalus sechellensis*. The affinities of the Sooglossid frogs and the caecilians are obscure and this, along with the very high degree of endemism, suggest an ancient origin for these groups. Probably these species or their ancestors were present when the granitic Seychelles became isolated from continental land masses some 75 millions years ago. The final amphibian species, the Mascarene frog *Rana mascareniensis*, is not well differentiated from African and Mascarene populations of this species and may well have been recently introduced by man. This is the most widespread frog species in the islands today.

Eighteen species of lizard are found in the islands comprising eleven geckos, six skinks and one species of chameleon. The lizards of the corraline and granitic islands show no overlap in species composition, other than through species probably recently transferred by man. The corraline islands generally have fewer species, and these are not endemic at the species level illustrating the recency of these islands. It is likely that all the sand cays were submerged by a higher sea level stand in the recent past, with the destruction of all their terrestrial fauna and flora. The raised atolls would have been

reduced to narrow land rims, but not totally covered, and this is reflected in the endemic subspecies of Abbott's day gecko *Phelsuma abbotti* on Aldabra and Assumption. All the native species in the granitic islands are endemic.

Lizards are a conspicuous and abundant part of the fauna in the Seychelles. First to be noticed by the visitor arriving on Mahé will probably be the brilliant green and red day geckos, *Phelsuma sundbergi* and *Phelsuma astriata*. These are very common in gardens and coconut trees and frequently enter houses. These species vary considerably in size and colour pattern between islands, and the races can be identified using my recently published key (Gardner, 1985). These day geckos have an unusual ability in digesting pollen and can be seen busily licking the flowers in any coconut inflorescence for pollen and nectar.

The other conspicuous lizards of the main granitic islands are the skink, *Mabuya sechellensis*, and the introduced house gecko, *Gehyra mutilata*. One needs to search rather harder to see the other species. The large Wright's skink, *Mabuya wrightii*, is very common on the seabird islands such as Aride and Cousin, as is the large nocturnal gecko, *Ailuronyx sechellensis*. The latter species is also usually to be seen in the Vallée de Mai National Park on Praslin.

Two species of litter dwelling skink, *Scelotes gardineri* and *Scelotes braueri*, occur. The former species is common under leaves on La Digue, Curieuse and Aride. A tiny gecko species, *Urocotyledon inexpectata*, which has twin pads under each toe and an additional adhesive pad under the tip of the tail, may be found under flakes of granite, or bark of dead trees during the day. The species of chameleon, *Chamaeleo tigris*, is found on Mahé, Silhouette and Praslin. Although seldom seen the chameleon occurs in almost all vegetation types from sea level to the hill tops.

Two further species of day gecko occur in the coralline islands. The brilliantly coloured gold-dust day gecko, *Phelsuma laticauda* is found in the Farquhar group, as well as on Madagascar and the Comores. This species is bright green with red dorsal markings. The upper back is dusted with golden scales and the eye rings and toes are bright blue. The duller blue-grey Abbott's day gecko *Phelsuma abbotti* is found on Aldabra and Assumption as well as in NW Madagascar. The Assumption species is about double the size of that on nearby Aldabra and is much brighter with a golden undersurface. The small, pantropical skink *Cryptoblepharus boutonii* is found on many of the outer islands, and the Madagascan species *Zonosaurus madagascariensis* occurs on Cosmoledo. Three species of small, brown *Hemidactylus* geckos occur on the coralline islands and one, apparently all female, population of the parthenogenetic species *Lepidodactylus lugubris* occurs on Coëtivy.

Three species of snakes, all of them harmless, are found in the granitic islands. These are the Seychelles wolf snake *Lycognathophis sechellensis*, the Seychelles house snake *Boaedon geometricus* and an introduced worm snake *Ramphotyphlops braminus*. In the marshes of the wetter islands are found three species of fresh water turtle (*Pelusios* spp), all endemic at either species or sub-species level. In former times, there were abundant giant land tortoises and crocodiles (*Crocodylus niloticus*), but these were exterminated by man. The taxonomy of the extinct Seychelles land tortoises is not clear. There may have been several species, but too few specimens were preserved before their disappearance. The tortoises now living on Curieuse, Cousin, Frigate and in the botanic gardens of Mahé are all of the Aldabran species, *Dipsochelys elephantina*. On their native island, these tortoises are very numerous and Aldabra is a most unusual ecosystem in having a reptile as the top herbivore!

The remaining reptiles are two species of sea turtle, the green turtle *Chelonia mydas* and the hawksbill turtle *Eretmochelys imbricata*. The green turtle was heavily exploited for meat and callipee, and probably no longer nests in the granitic islands. Some are still

taken from the outer islands, particularly Cosmoledo, and their meat is highly regarded by the Seychellois. The hawksbill is exploited for 'tortoiseshell' bangles and for selling as stuffed, polished specimens. A long term study on hawksbill nesting is in progress on Cousin where they receive effective protection.

The Seychelles herpetofauna has survived the arrival of man remarkably well, especially when compared with the extinctions on Mauritius and Rodrigues. The only species known to have been lost are the crocodile and the giant tortoises. However the combined effects of the loss of habitat and the depredations of introduced predators such as black rats, feral cats and tenrecs has led to some species becoming rare.

In particular two species of caecilian have not been recorded since 1910 (*Grandinsonia brevis* and *Praslinia cooperi*) and may be extinct. The Sooglossid frogs are largely dependent on the mountain moss forest, which has suffered some destruction and fragmentation and has been invaded by several exotic species. The effects of this invasion on the frogs are hard to predict. Other caecilians and the freshwater turtles have lost considerable areas of their former range through the draining of marsh land. *Ailuronyx sechellensis* and the *Scelotes* species are now rare on Mahé and Praslin, probably through predation by introduced mammals. However the sheer abundance, tameness and beauty of the reptiles and amphibians in their exquisite tropical setting cannot fail to delight the visiting herpetologist.

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