

The Terrestrial Reptiles

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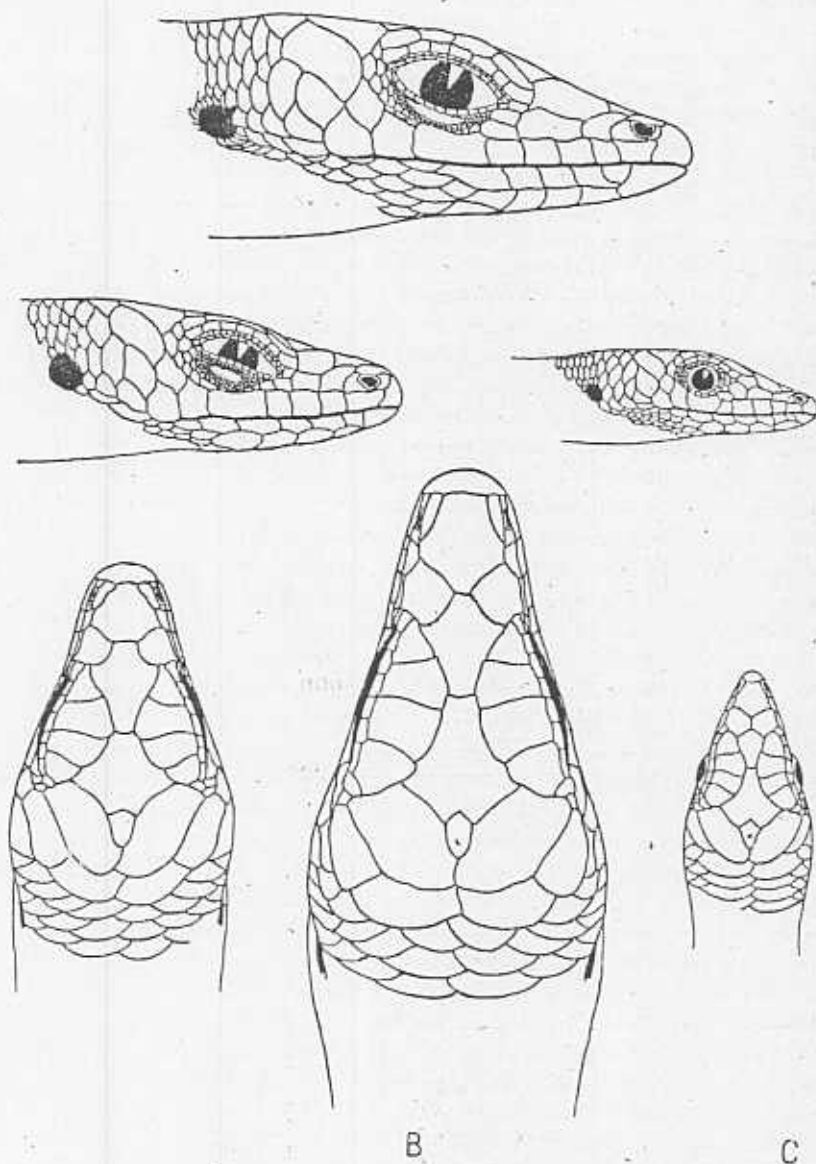
The first collection of reptiles from Christmas Island was made in January 1887 by the officers of the *Flying Fish*, under Captain Maclear. According to G. A. Boulenger it consisted of three species—*Gymnodactylus marmoratus*, *Lygosoma nativitatis* (nov. spec.) and *Typhlops exocoeti*. In September of the same year J. J. Lister visited the island and discovered two additional species, *Gecko listeri* (nov. spec.) and *Ablepharus egeriae* (nov., spec.). C. W. Andrews, in 1897-98, took examples of all the above, except *Gecko listeri*, and further specimens of a skink which was identified by Boulenger as the widely distributed *Lygosoma atrocostatum*. At some later date the Malayan house-gecko, *Hemidactylus frenatus*, reached the island, and it is now very plentiful in several areas.

In 1929 Malcolm A. Smith (Ann. Mag. Nat. Hist. (10) III, 1929) re-examined the Christmas Island skinks in the British Museum, together with a Raffles Museum collection made in 1923. He found that Boulenger's *nativitatis* was identical with *atrocostatum*, which is very variable in the number of the scale-rows, but that a second species peculiar to the island was then undescribed. To this latter form he gave the name *Lygosoma sinus*.

LACERTILIA

The following measurements, covering the lizards occurring on Christmas Island, represent the average of ten adult specimens; they are given in millimetres.

	Total length	Tail	Length of Head	Width of Head	Fore-limb	Hind-limb
<i>Gymnodactylus marmoratus</i> ..	173	94	20	14.5	30	38.5
<i>Gecko listeri</i> ..	81	40	12.5	8.5	12.5	15.5
<i>Hemidactylus frenatus</i> ..	102	47	13.5	11	16.5	22.5
<i>Lygosoma atrocostatum</i> ..	201.5	126	15.5	10.5	25.5	34
<i>Lygosoma sinus</i> ..	217	130.5	20.5	13.5	32	47
<i>Ablepharus boutonii</i> ..	118.5	72.5	10	6	18	22.5



Lateral and dorsal aspects of heads (A) *Lygosoma atrocostatum*, (B) *Lygosoma sinus* and (C) *Ablepharus boutonii egeriae*, from specimens taken on Christmas Island. All are shown three times life size.

Gymnodactylus marmoratus Kuhl.

This gecko is fairly common, and evenly distributed over the whole of the inland plateau. It is usually found on the trunks of the larger trees in the slightly thicker portions of the jungle, and is most often seen during the rainy season.

The colour is rather variable, although the pattern is fairly constant. The ventral surface, and the ground-colour of the other parts are off-white. The flanks are speckled with dark brown or off-black, and the limbs roughly ringed with the same shade. There is a sequence of short transverse bars, off-white, mid-grey-brown and dark brown or off-black, along the line of the vertebral column from the neck to well beyond the first half of the tail. The head is marked with the same colours, with a dark band running from the ear to the nostril broken by the lower curve of the eye; above this is an off-white streak and above this again a dusky band along the dorso-lateral angle of the face.

Gecko listeri Blgr.

This species would seem to be the least plentiful of the lizards on the island. It was described from a single male taken by Lister, in September 1887. No exact locality is given, but it was no doubt caught on the north coast. Andrews was not able to find any examples, but the two Dayaks who visited the island in 1923 returned with seven mature specimens. According to the labels these were taken mostly in the neighbourhood of Panchoran Bay and on the inland plateau around Phosphate Hill.⁽¹⁾ I found only twelve specimens in eighteen months' collecting: eleven of these were adults, taken mostly on the plateau in the vicinity of Ross Hill and above Dolly Beach and Smith Point: the twelfth, which was immature, came from the face of the inland cliff overlooking North-east Point. All were found under the bark of dead trees, some standing and some fallen.

The ventral surface is white, with small brownish blotches. The dorsal surface is pale grey-brown, with seven or eight pairs of dark brown, slightly indistinct, roughly crescentic, spots.

1. The Dayaks also visited the Cocos-Keeling Islands on the same expedition, spending thirty-six hours ashore there. Among the specimens which they brought back were two examples of *Gecko listeri*, said to have been taken on the atoll. This species was not recorded from the islands by Dr. F. Wood-Jones, who worked there from June 1905 to September 1906, and I did not find it in eleven months from December 1940 to November 1941. It is possible that the specimens were taken on the atoll (the Dayaks were obviously much more successful in detecting this gecko than any Europeans who have searched for it), but until further examples are obtained from there it would, I think, be advisable to regard it as peculiar to Christmas Island.

There is also a white spot immediately behind each dark one, and a band of scattered white spots lateral to each row of dark spots, spreading out anteriorly over the head.

Hemidactylus frenatus Dum. and Bibr.

This, which is now by far the commonest gecko, seems to have been imported some time after Andrews's first visit. It is very plentiful in houses on both sides of the island, and has spread into the jungle over most of the north coast, the east of the inland plateau and the slope dropping down to Smithson Bight. In these latter situations it is usually found under the bark of dead, or dying, trees. In cracks and crevices it lays from two to three eggs, white, thin-shelled and measuring 8.5-9 by 7 mm. The eggs take from 62 to 63 days to hatch, and the newly emerged young are about 41 mm. long.

In adult specimens from Christmas Island the ventral surface is off-white to pale primrose yellow, except for the submental area which is pinkish. The dorsal surface is very variable, and can be lightened or darkened slowly, to suit the tone of the surroundings. Usually, the back is a rather dull greyish-brown, with five longitudinal rows, each of about eight paler spots. Of the five rows one is vertebral, one lateral along each flank, and one lateral on the dorso-lateral angles of the body. The first and last spots in the vertebral line are generally paired. Slightly darker streaks may unite these spots, and there is a similar streak from the nostril to the lower border of the eye which is continued posteriorly above the ear to the level of the fore-limb. There is also a darker Y-shaped mark on the dorsal surface of the head, lying with the long limb running back in the midline and the points directed towards the eyes.

Lygosoma atrocostatum (Less.).

This lizard is by far the most plentiful of the local species: it is well distributed over the whole island. It is commonest in the small clearings and along the paths, and where the jungle floor is more rocky. It is particularly abundant in the neighbourhood of drains and sewers. It also occurs in the vicinity of all the beaches, and in Flying Fish Cove can be found under boulders on the foreshore.

The colour is slightly variable. In some specimens the throat, and ventral surface down to the level of the pectoral girdle, are dull white, or a very pale yellow, while the remainder of the undersurface is a rich, golden yellow. In others the whole ventral surface is pale, silvery yellow. Specimens intermediate in colour between the two extremes are common. The dorsal surface is iridescent mid-brown, spotted on the back with paler scales; the flanks and limbs are speckled with golden and black scales which are fewer in some specimens. In young individuals the back

is lighter. In specimens in which the belly is pale there is usually no gold on the flanks, these then being mottled with fawn, brown and grey. The scales on the digits are pale ochre-brown conspicuously edged with black. The free borders of the eyelids are lemon-yellow, the colour being stronger in the smaller specimens. When the tip of the tail has been renewed the regrown part of the tail is at first blackish; later, it turns pale, almost pinky, brown beneath.

Lygosoma sinus M. A. Smith.

This species, peculiar to Christmas Island, has a limited local distribution. It occurs only along the coast, and principally on the east side of the island. It is, in fact, found only in the vicinity of the sea, and I have never found it in the jungle proper. It is most plentiful in the immediate neighbourhood, and on the fore-shore, of Ethel, Panchoran, Lily, Greta and Dolly Beaches, where it is very abundant, and Flying Fish Cove, where it is much less common. On the beaches it ventures well within range of the sea spray. The diet includes small fish, and I have several times seen specimens on the edge of the rock-pools on the Lily Beach reef with small (35 mm.) jumping-fish, *Periophthalmus* sp., alive in their mouths. Throughout its local range, except on the shore at Greta Beach, *sinus* exists side by side with *atrocostatum*. It appears in the open most frequently on slightly duller days, and is more active and difficult to catch than the other two skinks.

The coloration is fairly constant. The ventral surface is very pale platinum-grey, almost white, with a salmon, orange or pink bloom of varying intensity on the belly and tail. The general colour elsewhere is silver-grey, which darkens on the back to form a broad vertebral band, speckled with a few pale and a few black scales. Dorso-laterally there is a second wide band of black scales, irregular in outline, running from the eye backwards to about the level of the posterior limbs. The narrow area between the two lateral bands is uniformly silver-grey. The dorsal surface of the limbs is also darkened like the spine. The superior palpebral scales are tinged with yellowish.

Ablepharus boutonii egeriae Blgr.

This lizard is fairly common over the whole island. It is usually found in the more open places, and is fond of sunning itself on banks and tree-stumps.

The coloration is relatively constant. The ventral surface is a pale yellow-green, almost white. The limbs are speckled with olive green and dark umber to black. The dorsal surface of the head is bronze, the colour continuing, growing progressively greener, as a black-edged vertebral band. This is divided from the sides of the body, which are freckled with blackish and

pale greenish spots, by a light greenish dorso-lateral band. The tail is blue-green at the base, changing to a brighter blue towards the tip, with a dorsal and lateral rows of black spots. A regrown tail-tip is blackish.

OPHIDIA

Typhlops exocoeti Blgr.

The snake, which is fairly common, is usually found in dampish situations under the trunks of fallen trees. It only comes out into the open on dark, overcast days, or during heavy rain. When disturbed it is very agile. It is a good swimmer.

The general colour of the adult is a pale, nondescript brown, with a pure brown spot on each scale. These spots are larger and darker in the dorsal region where they form a series of longitudinal lines. Young specimens, up to at least 155 mm. in length, are pale bluish grey on the ventral surface and dark purple-brown, almost black, on the dorsal surface. A very young specimen (total length 93 mm. diameter of body, 2 mm.) taken under a fallen tree near Rocky Point on October 22nd, was pale bluish grey on both dorsal and ventral surfaces. The forked tongue is pale putty colour. A typical specimen measures 372 mm., with 20 scale-rows at mid-body.