

LIST OF AMPHIBIANS AND REPTILES EITHER KNOWN OR THOUGHT TO HAVE BECOME EXTINCT SINCE 1600

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ABSTRACT

At least two amphibian and 28 reptile taxa are considered to have become extinct since 1600. Almost all of them were island forms and were heavily exploited by man until their number was so low that it no longer paid to hunt them. In connection with the exploitation of the island fauna and flora, man brought with him various domestic animals. Some of them—cats, dogs, goats and pigs—became feral thus creating, together with introduced rats and mice, another serious threat to endemic animals.

The deliberate introduction of the mongoose into the many islands of the West Indies amounted to a critical threat to forms which were not affected because of their economic value. At least in one case, mongoose were introduced into an island especially on purpose to get rid of the iguana and snakes. Man has also directly affected the existence of some forms by destruction of habitat and by shooting them for 'sport'.

INTRODUCTION

Except for a few gigantic land tortoises which became famous mainly through the reports of early travellers, there is comparatively little historical or biological background on extinct amphibians and reptiles. The origin of many giant land tortoises is rather difficult to determine as there was much traffic between islands, and large numbers of tortoises were turned loose at the end of the voyages.

It is also difficult to determine the exact species from old reports as the technical knowledge of the herpetofauna is relatively new.

The nomenclature of the larger tortoises follows Auffenberg (1974), using *Geochelone* Fitzinger 1835.

The purpose of this paper is to list all amphibians and reptiles which have become

extinct during the past few hundred years, and to discuss some taxa which are generally thought to be extinct (Honegger, 1975). The data are summarised in Appendix I.

A M P H I B I A

SALIENTIA

D i s c o g l o s s i d a e

Discoglossus nigriventer Mendelssohn & Steinitz 1943
Israel painted frog, Israel discoglossus

Distribution

Eastern shore of Lake Huleh, in northern Israel, and, possibly, in adjacent parts of Syria (Steinitz, 1955).

Remarks

Possibly extinct as a result of the swamp drainage (Steinitz, 1955) and change in ecology, i.e. because cattle no longer graze the area (H. Mendelssohn, pers. comm.). Since the species was discovered in 1940, only 5 specimens were recorded. *Discoglossus nigriventer* was also in competition with *Rana ridibunda* (H. Mendelssohn, pers. comm.).

The type is in the Collection of the Department of Zoology, Hebrew University, Jerusalem (Amphib. Discogl. No. 1) (Mendelssohn & Steinitz, 1943).

R a n i d a e

Rana pipiens fisheri Stejneger 1893
=*Rana onca* Cope 1875
Vegas valley (leopard) frog

Distribution

Under the name *Rana pipiens fisheri*, this species' range has been limited to isolated springs in the vicinity of Las Vegas, Nevada, United States. However, Pace (1974) placed *R.p. fisheri* in synonymy with *Rana onca*. As such, the range includes the vicinity of the Virgin River in Utah, Arizona and Nevada (Wright & Wright, 1949).

Remarks

This species has been reported as possibly extinct (US Department of the

Interior, 1973) or fully extinct. However, reference is made (US Department of the Interior, 1973) to the Vegas Valley population ('*Rana pipiens fisheri*'). The status of the population along the Virgin River is unknown. Capping of springs and other measures involving water control have largely eliminated the habitat of this frog. Introduced species in what is left of the habitat have no doubt also contributed to its elimination, since the introduced bullfrog *Rana catesbeiana* feeds on smaller frogs and the introduced trout eat the larvae (US Department of the Interior, 1973).

The holotype is kept at the US National Museum of Natural History, Washington under No. USNM 18957 (W.R. Heyer, pers. comm.).

R E P T I L I A

TESTUDINES

T e s t u d i n i d a e

Geochelone elephantopus abingdoni (Günther 1877)

Pinta Island giant tortoise

Distribution

Pinta/ Abingdon Island, Galapagos Islands, Pacific Ocean

Remarks

Extinct in the wild. The sole survivor, one male, is kept in the corrals of the Charles Darwin Research Station, on Sta Cruz, Galapagos. Extinction due to the wholesale export of living tortoises for food, and especially through influence of introduced goats (Snow, 1964; Honegger, 1972; MacFarland *et. al.*, 1974).

Location of the type: British Museum (Natural History), London (Van Denburgh, 1914).

Geochelone elephantopus galapagoensis (Baur 1889)

Charles Island tortoise

Distribution

Charles Island/ Floreana (Floriana), Galapagos Islands, Pacific Ocean.

Geochelone abrupta (Vaillant 1885) and *Geochelone grandidieri* (Vaillant 1885) from Madagascar survived until about 2000 years ago (Mahé & Sourdat, 1973).¹⁴ C data for *G. grandidieri* suggest that it lived on for some time and may well have overlapped with man and been exterminated by him (E.N. Arnold, pers. comm.). *G. abrupta* is very similar to *Geochelone gigantea* and may be referable to the synonymy of this form (Arnold, 1979).

Remarks

Cookson reported in 1876 that the tortoises were extinct on Charles Island (Hendrickson, 1966).

'There can be little doubt this race is extinct' (Van Denburgh, 1914). Extinction due to wholesale export of living tortoises for food on boats, and through influence of introduced rats, cattle, goats, monkeys and hogs (Hendrickson, 1966).

Type: Skeleton of an old male in the Collection of the Boston Society of National History (Van Denburgh, 1914).

Geochelone elephantopus phantastica (Van Denburgh 1907)
Fernandina Island giant tortoise

Distribution

Fernandina/Narborough Island, Galapagos Islands, Pacific Ocean

Remarks

Presumably extinct. The only known specimen, a male, was collected in 1906 (Van Denburgh, 1914) and droppings were found in 1964 (Hendrickson, 1966). Several searches in the past few years of areas considered to be prime potential tortoise habitat have not revealed further signs, not even skeletal remains. Whatever the status of this race, its fate has been determined by natural causes (probably volcanism), because man has never exploited Fernandina island and no introduced mammals occur there (MacFarland *et al.*, 1974).

Location of the type: California Academy of Sciences, No. 8101 (Van Denburgh, 1914)

Geochelone gadowi (Van Denburgh 1914)
Gadow's giant tortoise

Distribution

Mauritius, Mare aux Songes, Indian Ocean.

Remarks

Probably extinct before the island was discovered by Europeans (Pritchard, 1967). According to ¹⁴C data (unpublished), it is very likely that this tortoise survived long enough to be exterminated by man. *G. gadowi* is probably conspecific with *Geochelone triserrata* (E.N. Arnold, pers. comm.).

Apparently killed for meat. Bones of this extinct tortoise were found in the Mare aux Songes in 1865.

The type (anterior part of plastron) is kept by the Museum of Zoology, Cambridge University, England (Auffenberg, 1974).

Geochelone gigantea gouffei (Rothschild 1906)
Farquhar Island giant tortoise

Distribution

Farquhar Island, Seychelles Archipelago, Indian Ocean (Auffenberg, 1974).

Remarks

Known only from a single very large (126 cm) specimen of uncertain origin (Auffenberg, 1974). In 1744, gigantic land tortoises were reported by Captain Lazare Picault from Farquhar Island (McEwen, 1961). As giant tortoises were frequently transported in former days and were sometimes released on remote islands to provide fresh meat for passing vessels, I am not at all convinced that the only specimen found on Farquhar Island certainly originated there.

The type (a mounted adult specimen) is kept by the Tring Museum, England (Auffenberg, 1974).

Geochelone indica (Schneider 1784)
Réunion Island giant tortoise

Distribution

Réunion Island, Mascarenes, Indian Ocean (Auffenberg, 1974).

Remarks

First reported 1611 by Verhuff. One inhabitant in Réunion about 1700, used altogether about 40,000 tortoises to feed his pigs (Boucher, in Sauzier, 1893). According to Sauzier, between 1701 and 1709 relatively abundant (Sauzier, 1893).

1713: tortoises rare, destruction by sailors; after 1728 only numerous in the west of the island. Extinct after 1773, nothing is known about this tortoise, no specimens known to have been preserved (Günther, 1877). After *Geochelone indica* became extinct on Réunion, around 1820 tortoises from the Seychelles were regularly imported into Réunion for wedding-feasts (Sauzier, 1893).

Location of the type (a shell) unknown (Auffenberg, 1974).

Geochelone inepta (Günther 1873) and
Geochelone triserrata (Günther 1873)
Mauritius tortoise

Distribution

Mauritius Island, Indian Ocean.

Remarks

'The data available show that all insular tortoise populations are more variable than those of the mainland. This greater variation has led to considerable

taxonomic confusion regarding tortoise populations in the Mascarenes and Aldabra. The Mauritian tortoises were inferior in size to those of Aldabra and Rodriguez, the majority of their remains belonging to individuals with carapaces from 2 to 3 feet long; specimens above this size must have been exceedingly rare'. (Günther, 1877).

Several names have been assigned to the Mauritius tortoises:

<i>Geochelone graii</i>	(Duméril & Bibron 1835)
<i>Geochelone grayi</i>	(Günther 1877)
<i>Geochelone leptocnemis</i>	(Günther 1877)
<i>Geochelone microtympanum</i>	(Boulenger 1890)
<i>Geochelone sauzieri</i>	(Gadow 1894)
<i>Geochelone gadowi</i>	(Van Denburgh 1914)

1676: Perrault gave the first description of giant land tortoises on Mauritius. 1740: tortoises in abundance for provisioning of vessels. Hatchlings and eggs were destroyed by introduced cats and by pigs trampling (Sauzier, 1893). 1865: Bones found in the Mare aux Songes. 1877: Not a single live specimen found on the island. 1894: The Royal Geographic Society wrote a petition to the Government of Mauritius for the protection of the tortoises there.

The types are in the Zoology Department of the British Museum (Natural History) (E.N. Arnold, pers. comm., 1979).

Geochelone peltastes (Duméril & Bibron 1835)
Rodriguez tortoise

Distribution

Rodriguez Island, Mascarenes, Indian Ocean.

Remarks

A relatively small tortoise, length only up to 42 cm (Arnold, 1979).

1691: 'There are such plenty of land tortoises in this isle that sometimes you see two or three thousand in one flock, so that you may go above a hundred paces on their back'. (Leguat, 1708).

1725: Export of land tortoises to Réunion and Mauritius by the 'French East India Co'. Establishment of a small garrison for that purpose.

1737: The Government of Mauritius supplies boats to hunt and kill land tortoises on Rodriguez.

1761: Tortoises were constantly transported from Rodriguez to Mauritius for food in hospitals (Sauzier, 1893).

After 1761, 'their numbers appear to have been rapidly diminished, old ones were captured by man, the young ones devoured by pigs. Numbers must have succumbed

in consequence of the numerous conflagrations by which the rank vegetation of the plains was destroyed to make room for the plantations of the settler. Early in the present century, the work of extermination appears to have been accomplished' (Günther, 1877).

The type (dried specimen, less head and tail) is in the Museum of Natural History, Paris (Auffenberg, 1974).

Geochelone sumeirei (Sauzier 1893)
Seychelles (?) Island giant tortoise

Distribution

Seychelles Archipelago? (Granitic Islands), Indian Ocean (Auffenberg, 1974).

Remarks

'A note on the type specimen, a mounted adult tortoise, at Tring Museum, states that it is one of the five specimens taken from the Seychelles to Mauritius by Chevalier Marion de Fresne in 1766 as a gift for the Port Louis Garrison. This is the famous "Marion's tortoise", which died accidentally after 152 years, in 1918, in captivity'. (Auffenberg, 1974).

Between 1786/87 giant tortoises were reported as still plentiful on the Granitic Islands (St Anne, Ile Moyenne, Silhouette, Ile du Nord, Récife, Frégate, Praslin, Aride, Soeurs, Felicité, Marianne, La Digue, Vache marine).

1770: permanent settlement started on these islands. In 1797, M. de Malavois reported on the wholesale destruction of the tortoise population, and mentioned that one of the principal sources of food for the population was liable to disappear. Between 1784 and 1789, at least 13,000 giant tortoises were carried away by sailing ships. Malavois suggested that several thousand were collected on the main islands and liberated as breeding stock on smaller islands, such as St Anne, Cerf Island and Flat Island. He further proposed to liberate a number for breeding purposes on all islands of the archipelago where tortoises were not found, and to pass an edict prohibiting the whites or their slaves to hunt tortoises, and forbidding pirogues to transport them to passing ships (McEwen, 1961).

As elaborated in an earlier paper (Honegger, 1967), I still support the opinion expressed by Günther (1877) that these tortoises, and those now living on Mahé and the various Granitic Islands under semi-domesticated conditions, are descendants of tortoises originating from Aldabra.

The type is in the British Museum (Natural History) (E.N. Arnold, pers. comm.).

G. sumeirei (Sauzier, 1893) was separated from *G. gigantea* partly because the type lacks the nuchale scale. This may vary within an island population, as it has been shown by Honegger (1967) and Gaymer (1968) from Aldabra. Arnold (1979) refers this species to *G. gigantea*.

Geochelone vosmaeri (Shaw 1802)
Vosmaer's giant tortoise

Distribution

Rodriguez Island, Mascarenes, Indian Ocean (Auffenberg, 1974).

Remarks

A medium-sized land tortoise with a maximum length of 85 cm and strong, raised frontal parts (Arnold, 1979).

Around 1759, during 18 months, more than 30,000 tortoises were exported from Rodriguez to Mauritius (Gadow, 1901).

1786: Fossil bones of tortoises were found, probably of *Geochelone vosmaeri*. Becoming very rare after 1815–1838; feral cats were eating young tortoises or eggs (Sauzier, 1893).

The type (shell, skull and bones) is in the British Museum (Natural History) (Auffenberg, 1974).

S Q U A M A T A

SAURIA

G e k k o n i d a e

Phelsuma edwardnewtoni (Vinson 1969) Boulenger 1884 (syn. *Phelsuma newtonii* Boulenger 1884)

Newton's day gecko.

Distribution

Rodriguez Island and outlying islets. Mascarenes, Indian Ocean.

Remarks

This relatively large day gecko probably became extinct before 1874 on the main island; it was last seen on the neighbouring island Ile aux Frégates in 1917, and not found in 1963 during an intensive search especially for this species. Only six specimens of this bright green day gecko, with a profuse spotting of bright blue spots, reaching a snout-vent length of 108 mm (male) are known. Leguat (1708) described this diurnal arboricolous lizard 'very tame, coming to eat fruits in one's hand', *Phelsuma edwardnewtoni* was probably destroyed by the introduced rats and cats which swarmed in the wild during the 18th and 19th centuries.

The type, a male, is in the British Museum (Natural History) No. 1946.8.13.44 (Vinson & Vinson, 1969).

Phelsuma gigas (Liénard 1842)
Giant day gecko

Distribution

Rodriguez Island and Iles aux Frégates, Mascarenes, Indian Ocean.

Remarks

Common around 1691 and 1693; by 1761, this gecko had become extremely rare on the main island, surviving only on Ile Frégates; 1842 described by Frances Liénard as *Gecko gigas*. 1874 probably already extinct. This gigantic, dull-coloured species, nocturnal in habits, reached a total length of 379 mm. The length might be slightly exaggerated, as based on very few bones only (E.N. Arnold, pers. comm.). Rats may have been responsible for the elimination of the species.

The type material is in the British Museum (Natural History) (Vinson & Vinson, 1969).

I g u a n i d a e

Cyclura collei (Gray 1845)
Jamaica iguana

Distribution

Jamaica, including Goat Island and Little Goat Island (Schwartz & Thomas, 1975).

Remarks

Considered to be extinct (Schwartz & Thomas, 1975). Mittermeier (1972) accounts the extinction of this fairly large species (total length 113 cm) to heavy hunting of the adults by man for food and 'sport', and loss of eggs and young (and perhaps even adults) to the mongoose.

Barbour (1910) reported *Cyclura collei* as very rare and restricted to Goat Island and the Hellshire hills where he said the mongoose did not occur.

Lynn & Grant (1940) saw only two specimens on Goat Island, and wrote that the mongoose was abundant, having been introduced by the local fishermen to get rid of iguanas and snakes.

In 1944, Dr C. Bennard Lewis conducted a survey on Goat Island, and found a 'handful' of adults, but no signs of young or partly grown animals. C.B. Lewis (pers. comm.) in 1968 considered the Jamaica iguana to have been exterminated by the introduced mongoose. Mittermeier (1972) found no signs of iguanas. In 1970, members of the University of Kingston, Jamaica, found only one mummified specimen.

The Wildlife Conservation Act of Jamaica lists this species as a protected animal.

The holotype is in the British Museum (National History) No. 1936.12.3.108 (Schwartz & Thomas, 1975).

Cyclura cornuta onchiopsis (Cope 1885)

(*Cyclura nigerrima* Cope 1886)

Navassa iguana

Distribution

Navassa Island, West Indies, USA.

Remarks

Possibly extinct (Thomas, 1966). Reason unknown, but probably due to introduced rats, cats and goats. Five specimens known from museum collections (Carey, 1975).

The syntypes of *Cyclura onchiopsis* are in the US National Museum, No. 9977, 12239, and the Museum of Comparative Zoology, No. 4717. The holotype of *Cyclura nigerrima* is in the US National Museum, No. 9974. (Schwartz & Thomas, 1975).

Leiocephalus eremitus Cope 1868

Distribution

Navassa Island, West Indies, USA.

Remarks

Extinct (Thomas, 1966). Possibly exterminated by introduced domestic cats (A. Schwartz, pers. comm.).

The type is in the US National Museum under No. 12016 (Thomas, 1966; Schwartz & Thomas, 1975).

Leiocephalus herminieri Dumeril & Bibron 1837

Distribution

Martinique.

Remarks

Extinct. This lizard must have become extinct at about the time the original material was collected. The types collected before 1837 must have been the last

Cyclura mattea Miller 1918 from St Thomas, Virgin Islands and *Cyclura portoricensis* Barbour 1919 from Puerto Rico, are known only from kitchen middens or fossil bones, and thus became extinct in prehistoric times.

specimens collected, and it is doubtful that man had any serious effect on the population (A. Schwartz, pers. comm.).

The types are kept at the Natural History Museum, Paris, under Nos 1826, 2389 and 6829 (Schwartz & Thomas, 1975).

L a c e r t i d a e

Podarcis lilfordi rodriguezi (Müller 1927)

Ratas Island lizard

Distribution

Ratas Island in the bay of Mahon, Minorca, Mediterranean.

Remarks

Extinct (Honegger, 1978). Habitat (small oceanic rock-like island) destroyed in the rebuilding of Port Mahon (A. Salvador, pers. comm.).

The type is kept at the Zoologische Staatssammlung, Munich (No. ZSH 1540) (U. Gruber, pers. comm.).

Podarcis sicula sanctistephani (Mertens 1926)

San Stephano lizard

Distribution

San Stephano Island, near Ventotene, Tyrrhenian Sea (Mediterranean) (Mertens & Wermuth, 1960).

Remarks

The sub-species *sanctistephani* is now replaced by the sub-species *Podarcis sicula sicula*. Extinction may have been caused by predation by feral cats and the snake *Coluber viridiflavus carbonarius* or by an increasing number of individuals with limited reproductive potential, and then an epidemic wiping out practically the entire population. Any remaining lizards probably interbred with accidentally introduced specimens of *Podarcis sicula sicula* (Mertens, 1965). The small island of 0.3 km² is under the jurisdiction of the Italian Ministero di Giustizia in Rome and is not readily accessible (Honegger, 1978).

The type is kept at the British Museum (Natural History) under No. 1917.5.II.82. (K. Klemmer, pers. comm.).

T e i i d a e

Gallotia simonyi (Steindachner 1889) was considered extinct. See Böhme & Bings (1975) on its recent discovery.

Ameiva cineracea Barbour & Noble 1915*Distribution*

Grand Islet off Petit-Bourg on the east coast of Basse-Terre, Guadeloupe.

Remarks

Extinct. The islet was destroyed by a hurricane in the early part of this century and the lizard with it (A. Schwartz, pers. comm.). The holotype is kept at the Museum for Comparative Zoology, Harvard University, No. 10577. (Schwartz & Thomas, 1975).

Ameiva major (Duméril & Bibron 1839)

Martinique giant ameiva

Distribution

Probably Martinique (Schwartz & Thomas, 1975).

Remarks

Apparently now extinct. Reason unknown (mongoose?).

The holotype is kept at the Natural History Museum, Paris (MNHN 1491) (Schwartz & Thomas, 1975).

A n g u i d a e

Diploglossus occiduus (Shaw 1802)

Jamaican giant galliwasp

Distribution

Jamaica

Remarks

'This gigantic anguid lizard species was not collected for about a century; it probably became extinct before the mongoose took possession of the island.' (A. Schwartz, pers. comm.).

Believed to be still around in 1872, but to be an easy prey of the newly introduced mongoose. Its survival in the isolated parts of Hellshire hills seems unlikely (Mittermeier, 1972).

The holotype is kept at the British Museum (Natural History) No. BMNH XV. 1189 (Schwartz & Thomas, 1975).

S c i n c i d a e

Gongylomorphus bojerii borbonica Vinson 1969

Réunion skink

Distribution

Réunion

Remarks

Certainly extinct. The type was collected during the last century. This ground-dwelling skink had a snout-vent length ranging from 30 to 70 mm. First reported by Desjardins in 1831.

The holotype is with the Natural History Museum, Paris, No. A.2885 (Vinson & Vinson, 1969).

Macroscoincus coctei Duméril & Bibron 1839

Cape Verde giant skink

Distribution

Branco and Razo Islands, Cape Verde Archipelago, Atlantic Ocean (Mertens, 1955, Greer, 1976).

Remarks

Presumably extinct. The first specimens were brought to Lisbon in 1789 by the naturalist Joao Silva Feijo. In 1908, the Basel Zoo, Switzerland, acquired one live specimen for SFr. 15. In 1913, some specimens were reported living in the Frankfurt Zoo (Mertens, 1955). Since then, no specimens have been seen or collected on the islands. There are only very few data on the biology and the ecology of this gigantic species (Mertens, 1955, Schleich, 1979, pers. comm., E. Tschudin, pers. comm.).

SERPENTES

C o l u b r i d a e

Alsophis ater (Gosse 1851)

Jamaica tree snake

Distribution

Jamaica

Remarks

Probably at one time island-wide, now apparently extinct (Schwartz & Thomas, 1975). Extinction probably caused by mongoose (*A. Schwartz, pers. comm.*), which was probably a prime factor in the decimation of this species; but man also

Didosaurus mauritianus (Günther 1877): This giant skink probably became extinct long before the early voyagers called on Mauritius. Only known by subfossil remains.

Type: British Museum (Natural History).

undoubtedly played a role. Like most snakes, it was killed on sight (Mittermeier, 1972).

The syntypes are kept at the British Museum (Natural History) Nos. 1946.1.4.65; 1946.1.5.6 (Schwartz & Thomas, 1975).

Alsophis sancticrucis (Cope 1863)

St Croix racer, St Croix tree snake

Distribution

St Croix, US Virgin Islands.

Remarks

Probably extinct (Schwartz & Thomas, 1975). Extinction brought by mongoose and man (A. Schwartz, pers. comm.).

The syntypes are No. 5404 at the Academy of Natural Sciences, Philadelphia (Schwartz & Thomas, 1975).

Dromicus cursor (Lacépède 1789)

(Syn. *Leimadophis cursor*)

Martinique racer

Distribution

Martinique and its satellite Rocher de Diamant.

Remarks

Probably exterminated by the introduced mongoose. The only recent specimens were taken in 1962 on the Rocher de Diamant (Lazell, 1967; Schwartz & Thomas, 1975).

Syntypes No. 5580 are at the Academy of Natural Sciences, Philadelphia.

Dromicus ornatus Garman 1887

(Syn. *Leimadophis ornatus*)

St Lucia racer.

Distribution

St Lucia, Lesser Antilles.

Remarks

Considered to be extinct (Parker, 1936) mainly through mongoose predation. One specimen collected in 1973 on the Maria Island off eastern St Lucia coast.

Syntypes No. 6135-6137 at the Museum of Comparative Zoology, Harvard University (Schwartz & Thomas, 1975).

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APPENDIX 1
SUMMARY OF CAUSES AND DATES OF EXTINCTION OF 2 AMPHIBIA AND 28 REPTILIA TAXA

Species	Cause of extinction	Approximate date of extinction	Distribution
AMPHIBIA			
<i>Discoglossus nigriventris</i>	Agricultural development	1940-1960	Israel, Syria
<i>Rana pipiens fisheri</i>	Change of habitat Introduced species	20th century	Nevada, US
REPTILIA			
<i>Geochelone e. abingdoni</i>	Slaughter and feral goats	1960-1972	Abingdon, Galapagos
<i>Geochelone e. galapagensis</i>	Slaughter and export as live specimens	19th century	Floreana, Galapagos
<i>Geochelone e. phantastica</i>	Volcanism	End 19th century	Fernandina, Galapagos
<i>Geochelone gadowi</i>	Slaughter for meat	16th century	Mauritius
<i>Geochelone g. gouffei</i>	Slaughter for meat	19th century	Farquhar Island
<i>Geochelone indica</i>	Slaughter for meat	19th century	Reunion
<i>Geochelone inepia</i>	Slaughter for meat	Early 19th century	Mauritius
<i>Geochelone iriserrata</i>	Feral domestic animals	Early 19th century	Mauritius
<i>Geochelone peltaastes</i>	Slaughter for meat Feral domestic animals	Early 19th century	Rodriguez
<i>Geochelone sumeirei</i>	Slaughter for meat	19th century	Seychelles
<i>Geochelone vosmaeri</i>	Slaughter for meat	Early 19th century	Rodriguez
<i>Phelesuma edwardnewtoni</i>	Feral domestic animals	Mid-19th century	Rodriguez, Frégate Island
<i>Phelesuma gigas</i>	Introduced rats and domestic cats	Mid-19th century	Jamaica, Goat and Little Goat Islands
<i>Cyclura collei</i>	Introduced rats Adults hunted for meat; destruction of eggs and young by introduced mongoose	1950+	
<i>Cyclura cornuta onchiopsis</i>	Competition by feral goats, introduced rats and feral cats and dogs	End 19th century	Navassa Island, US
<i>Leiocephalus eremitus</i>	Predation by feral cats	Early 19th century	Navassa Island, US
<i>Leiocephalus herminieri</i>	?	Early 19th century	Martinique
<i>Podarcis lilfordi rodriguezi</i>	Habitat destruction	Mid-20th century	Ratas Island, Minorca
<i>Podarcis sicula sanctistephani</i>	Predation by feral cats, suppression by other subspecies artificially introduced	1960 +	San Stephano Island, Tyrrhenian Sea

(Contd.)

APPENDIX 1—Contd.
SUMMARY OF CAUSES AND DATES OF EXTINCTION OF 2 AMPHIBIA AND 28 REPTILIA TAXA

Species	Cause of extinction	Approximate date of extinction	Distribution
<i>Ameiva cinctracea</i>	?	20th century	Guadeloupe, Grand Islet
<i>Ameiva major</i>	Unknown (mongoose?)	1950+	Martinique
<i>Diploglossus occidentus</i>	Unknown (mongoose?)	19th century	Jamaica
<i>Gongylomorphus bojerii borbonica</i>	Unknown (feral domestic animals?)	Mid-19th century	Reunion
<i>Macrosclincus coctei</i>	Human predation?	1910+	Cape Verde Islands
<i>Alsophis ater</i>	Mongoose predation, human predation	1950+	Jamaica
<i>Alsophis sancticrucis</i>	Mongoose predation, human predation	20th century	St Croix, US
<i>Dromicus cursor</i>	Mongoose predation	1970 +	Martinique, Rocher de Diamant
<i>Dromicus ornatus</i>	Mongoose predation	20th century	St. Lucia, Lesser Antilles