#246

Reptile Records for the Heathlands Area, Cape York Peninsula

P.J. Couper[1], M.P. Cohen[2], S.E. Williams[2], and K.L.D. Couper[1]
[1]*Queensland Museum, PO Box 3300, South Brisbane Q 4101*
[2]*Zoology Department, James Cook University, Townsville Q 4811*

Abstract *The results of field surveys conducted between 14 January and 4 February 1992 have been combined with specimen records from the holdings of the Queensland and Australian Museums to expand on existing reptile species lists for the Heathlands area. A strong link exists between the reptile faunas of northern Cape York Peninsula and New Guinea, with 32/51 of the Heathlands species being shared between the two land masses. This link results from past land bridges across Torres Strait.* Anomalopus pluto *was recorded from three new localities. The most recent record of* Emydura subglobosa *is provided, and the range of* Carlia jarnoldae *has been extended.*

Findings

The results of a reptile survey conducted in the Heathlands area of Cape York Peninsula (11°08'S, 142°21'E; 11°50'S, 142°51'E) are set out in Table 1. The fieldwork for this survey was conducted by representatives of the Queensland Museum and James Cook University between 14 January and 4 February 1992. This study was run in conjunction with the Royal Geographical Society of Queensland's 1992 'wet season' Cape York Peninsula Scientific Expedition. Collecting activities for this survey were covered by Queensland National Parks and Wildlife Service Permit No. 1425. Standard sampling techniques were employed - searching roads, day and night; spotlighting; pitfall trapping; walking in selected habitats and searching beneath ground cover. Voucher specimens of most of the smaller species encountered are lodged in the reptile collection of the Queensland Museum (see Appendix 1). Many of the larger species were captured, photographed (M.C. & S.W.) and released. As well as the species encountered directly by members of the survey team, reliable sightings by other expedition members have also been included in Table 1. The table is further supplemented by specimens lodged in the collections of the Queensland and Australian Museums and also by species recorded in previous surveys (Anon. 1975).

The scientific names used follow Covacevich and Couper (1991b) and Cogger (1992).

In Table 1, each species has been assigned a coding depending on the nature of the record and the habitat from which the species was recorded. Due to the great diversity of habitats sampled, it has been necessary to generalise the habitat listings. The following codes apply to Table 1:

Nature of Record: 1 = collected as a voucher specimen for the Queensland Museum's reference collection; 2 = identified and released; 3 = sighting; 4 = material already lodged in museum collections; 5 = recorded in previous fauna survey; 6 = photographed.

Habitat: A = heath; B = improved pasture; C = open forest; D = closed forest; E = *Melaleuca* swamp; F = riparian vegetation; G = epacrid scrub; H = littoral zone.

Abundance: * = Indicates a species is regarded as common. It was not possible to assess abundance for all species encountered.

Additional codes: NG = The species also occurs in New Guinea.

The vegetation of the Heathlands area has been described by Lavarack (1977). Researchers requiring more detailed habitat information for species listed in Table 1 are advised to consult the Queensland Museum's reptile data base.

Table 1: Reptile records for the Heathlands area, Cape York Peninsula.

Family	Species	Nature of Record	Habitat	New Guinea
CROCODYLIDAE	*Crocodylus porosus*	3	H	NG
CHELIDAE	*Elseya latisternum*	4		
	Emydura subglobosa	4		NG
GEKKONIDAE	*Gehyra dubia*	1	C	
	Nactus pelagicus ✳	1,2,4,5	A,C,D,F	NG
	Nephrurus asper	1,2,6	A	
	Oedura castlenaui	4,5		
	Oedura rhombifer ✳	1,2,4,5	A,C	
	Pseudothecadactylus australis ✳	1,2,4,5,6	C,D	
PYGOPODIDAE	*Lialis burtonis*	1,4,5,6	B,C	NG
SCINCIDAE	*Anomalopus pluto*	1,3,4,5,6	A,C,D,G	
	Carlia jarnoldae	1	A	
	Carlia longipes ✳	1,2,3,4,5	C,F	
	Carlia storri ✳	1,2,3,4,5	C,E	NG
	Cryptoblepharus litoralis ✳	1,4	H	NG
	Cryptoblepharus virgatus ✳	1,2,3,4,5	C,F	
	Ctenotus spaldingi ✳	1,3,4,5	A,B,C	NG
	Egernia frerei ✳	1,2,3,4,5	C,D,F	NG
	Emoia longicauda	1,3,4,5,6	D,F	NG
	Lygisaurus sesbrauna ✳	1,3,4	D,F	
	Glaphyromorphus pumilus	4,5		
	Glaphyromorphus nigricaudis	1,4,5	F	NG
	Tiliqua scincoides	3	A,C	
AGAMIDAE	*Chlamydosaurus kingii*	2,3,4,5,6	C,D	NG
	Diporiphora bilineata ✳	1,3,4,5	A,B,C	NG
	Gemmatophora temporalis	1,2,3,4,5	A,B,C,F	NG
VARANIDAE	*Varanus gouldii* ✳	3,5	A,B,C	NG
	Varanus indicus	2,3,6	D	NG
	Varanus panoptes	2	A,B	NG
	Varnaus scalaris	1,2,3,6	C,D	NG?
TYPHLOPIDAE	*Ramphotyphlops polygrammicus*	1	F	NG
ACROCHORIDAE	*Acrochordus arafurae*	4		NG
BOIDAE	*Aspidites melanocephalus*	2,5,6	A,C	
	Morelia amethistina ✳	2,6	D,F	NG
	Morelia mackloti	2,6	B	NG
	Morelia maculosa	4		
	Morelia spilota	2,6	F	NG

Family	Species	Nature of Record	Habitat	New Guinea
COLUBRIDAE	*Boiga irregularis*	1,2	A,C	NG
	Dendrelaphis calligastra	1,3,5,6	F	NG
	Dendrelaphis punctulata	1,3,5	C,F	NG
	Enhydris polylepis	5		NG
	Stegonotus cucullatus *	1,2,4,5,6	C,F	NG
	Tropidonophis mairii *	1,2,4	E,F	NG
ELAPIDAE	*Acanthophis praelongus* *	1,2,6	A,C	NG
	Furina tristis	1,2,6	D	NG
	Oxyuranus scutellatus	2,6	B	NG
	Pseudonaja nuchalis	1,6	A,B	
	Rhinoplocephalus boschmai	1,6	A	
	Rhinoplocephalus nigrostriatus	1,6	A	NG
	Vermicella annulata	4,5		
HYDROPHIIDAE	*Astrotia stokesii*	4,5		NG

Discussion

Table 1 expands on the anonymous reptile list (1975) compiled for the Heathlands area. The majority of reptile species recorded have a much wider distribution on Cape York Peninsula (Covacevich & Couper 1991a), and well over half (32/51) have ranges extending into New Guinea. This 'New Guinea connection' with the flora and fauna of northern Australia is both well-known and well-documented (eg. Covacevich 1986). Land bridges existed almost constantly between Australia and New Guinea from 10,000-80,000 years BP (Covacevich & McDonald 1991). These were at their most extensive from 17,000-20,000 years BP, a period of maximum aridity. It was at this time that the greatest potential for faunal interchange existed (Covacevich & Ingram 1980). The prevailing aridity associated with the land bridges across Torres Strait was also responsible for the contraction of rainforests. In arid times northern Cape York Peninsula has not been moist enough to support large (perhaps even small) blocks of rainforest. This explains why, with the exception of one species of Leaf-tailed gecko from McIlwraith Range (Couper & Covacevich, in prep), there are no endemic reptiles in these forests. The species which are strongly associated with rainforests (*Emoia longicauda*, *Eugongylus rufescens* and *Morelia viridis*) of northern Cape York Peninsula are all 'shared' with New Guinea. None of these are obligatory rainforest species and only *E. longicauda* was recorded from the survey area. In contrast, the Wet Tropics rainforest block (Cooktown - Townsville) of southern Cape York Peninsula is rich in endemic reptiles and has undoubtedly existed for much longer. Even in arid times when the rainforests have contracted, pockets have survived at high altitudes or in deep valleys (these form the relict areas we know today).

Anomolopus pluto is the only reptile species endemic to northern Cape York Peninsula. This poorly-known, burrowing skink was rated 3 ('... species with a range greater than 100km in Australia ...'), K ('poorly known species ... At present accurate field distribution information is inadequate.') by McDonald *et al.* (1991). This field work, which added three additional collection sites to its known distribution, resulted in the allocation of a new ranking 2K (Couper 1992), (2 = 'species with a very restricted distribution in Australia and with a maximum geographic distribution of less than 100km ...'). The previous ranking at 3 by McDonald *et al.* was in error, based on specimens supposedly from Weipa. The limits of the distribution of this species are not known but available data suggests that it is confined to sandy substrates, independent of vegetation type.

Emydura subglobosa, a chelid turtle widespread in New Guinea, remains poorly-known in Australia and appears to be confined to the Jardine River drainage system. Prior to 1987

this species was only known from a small, shallow, temporary lagoon near the Jardine River Crossing. In October 1987, the Queensland Museum received colour transparencies of this species (QM photographic index NE 250 - NE 268) from Klaus Uhlenhut, naturalist at the Cape York Wilderness Lodge. The specimens photographed were collected and released at a permanent lagoon close to the Jardine River Crossing. These represent the most recent Australian record of this species.

The record of *Carlia jarnoldae* warrants special note. This is the northern-most record for a species previously thought to extend as far north as Weipa Mission, 12°44'S, 142°05'E (Cameron & Cogger 1992).

All previous fauna surveys of the Heathlands area have been conducted in the dry season. The Royal Geographic Society of Queensland's 'wet season' trip was designed to provide an opportunity to comment on wet/dry changes in the abundance and activity patterns of the herpetofauna of this area. Unfortunately the 1991/92 wet season was very late and had not commenced while the reptile survey was taking place. Wet season changes in the occurrence of reptile species could not, therefore, be addressed.

The survey has refined knowledge of species' distributions and extended the known ranges of *Anomalopus pluto* and *Carlia jarnoldae*. It has also provided samples of specimens for future taxonomic research.

A list of the frog species recorded from the Heathlands area is provided by Cohen and Williams, elsewhere in this volume.

Acknowledgments

The authors wish to thank Wayne Longmore for his assistance in the field, Ross Sadlier for providing information on the Australian Museum's collection, and Jeanette Covacevich and Glen Ingram for their constructive criticism of the manuscript.

References

ANON. (1975) Interim report of work carried out on "Capelands" pastoral lease in connection with a biological resources study project on the ecological biogeography of Cape York Peninsula, July 2-15, 1975. Unpublished report, University of Queensland, St Lucia, Brisbane.

Cameron E.E. & Cogger H.G. (1992) The herpetofauna of the Weipa region, Cape York Peninsula. *Technical Reports of the Australian Museum* 7: 1-200.

Cogger H.G. (1992) **Reptiles and Amphibians of Australia**. 5th ed. A.H. & A.W. Reed, Sydney.

Couper P.J. (1992) *Anomalopus pluto* Ingram, a poorly known skink from Cape York Peninsula. *Memoirs of the Queensland Museum* 32(1): 54.

Couper P.J., Covacevich J.A. & Moritz C. (in press) A review of the leaf-tailed geckos endemic to eastern Australia: a new genus, four new species, and other new data. *Memoirs of the Queensland Museum.*

Covacevich J.A. (1986) Aspects of the biogeography of the Elapid snakes of northeastern Australia. In Longmore R. (ed.) **Atlas of Elapid Snakes of Australia**. Australian Government Publishing Service, Canberra: 20-23.

Covacevich J.A. & Couper P.J. (1991a) The reptile records. In Ingram G.J. & Raven R.J. (eds) **An Atlas of Queensland's Frogs, Reptiles, Birds and Mammals**. Queensland Museum, Brisbane: 45-140.

Covacevich J.A. & Couper P.J. (1991b) Checklist of reptiles. In Ingram G.J. & Raven R.J. (eds) **An Atlas of Queensland's Frogs, Reptiles, Birds and Mammals**. Queensland Museum, Brisbane: 356-359.

Covacevich J. & Ingram G.J. (1980) The endemic frogs and reptiles of Cape York Peninsula. In Stevens N.C. & Bailey A. (eds) **Contemporary Cape York Peninsula**. Royal Society of Queensland, Brisbane: 49-57.

Covacevich J. & McDonald K.R. (1991) Frogs and reptiles of tropical and subtropical eastern Australian rainforests: distribution patterns and conservation. In Werren G. & Kershaw P. (eds) **The Rainforest Legacy, Australian National Rainforest Study**, Vol 2. Australian Government Publishing Service, Canberra: 281-309.

Lavarack P.S. (1977) Vegetation of the Jardine River catchment and adjacent coastal areas. *Proceedings of the Royal Society of Queensland* 88: 39-48, pl.10.

McDonald K.R., Covacevich J.A., Ingram G.J. & Couper P.J. (1991) The status of frogs and reptiles. In Ingram G.J. & Raven R.J. (eds) **An Atlas of Queensland's Frogs, Reptiles, Birds and Mammals**. Queensland Museum, Brisbane: 338-341.

Appendix 1

Specimens collected 14 January - 4 February 1992

Species	Museum Reg. Numbers
Gehyra dubia	QM J54021, J54026, J54078
Nactus pelagicus	J54018-19, J54023, J54029, J54037, J54084, J54102
Nephrurus asper	J54644
Oedura rhombifer	J54012, J54020, J54038
Pseudothecadactylus australis	J54079, J54104
Lialis burtonis	J54072
Anomalopus pluto	J54040, J54082, J54083, J54213
Carlia jarnoldae	J54124
Carlia longipes	J54024-25, J54036, J54056, J54060, J54085-86, J54092
Carlia storri	J54094-99
Cryptoblepharus litoralis	J54111-14
Cryptoblepharus virgatus	J54033
Ctenotus spaldingi	J54005, J54008-09, J54058-59, J54105
Egernia frerei	J54110
Emoia longicauda	J54004, J54093
Lygisaurus sesbrauna	J54027, J54030, J54066-67, J54107, J54108, J54109, J54185
Glaphyromorphus nigricaudis	J54103
Diporiphora bilineata	J54006-07, J54011, J54057, J54068, J54123
Gemmatophora temporalis	J54014, J54022, J54071
Varanus scalaris	J54013
Ramphotyphlops polygrammicus	J54031, J54041
Boiga irregularis	J54075
Dendrelaphis calligastra	J54028
Dendrelaphis punctulata	J54118
Stegonotus cucullatus	J54076-77
Tropidonophis mairii	J54054
Acanthophis praelongus	J54143
Furina tristis	J54003
Pseudonaja nuchalis	J54010
Rhinoplocephalus boschmai	J54126
Rhinoplocephalus nigrostriatus	J54074