

**MAMMALS, BIRDS AND REPTILES OF THE
WARWICK DISTRICT, QUEENSLAND.
3. REPTILES AND GENERAL
CONCLUSIONS**

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SUMMARY

Fifty-one species of reptiles, comprising one tortoise, 31 lizards and 19 snakes, are recorded. Habitat types and estimates of abundance are given.

The major effects of human settlement on the mammal, bird and reptile fauna of the Warwick district have been reduction of range of most forest-dwelling species and some extension of range for inhabitants of open country, with little change for most wetland species. Few, if any, species have disappeared. The main factors involved in survival of the fauna have been the availability of native habitat, including National Parks and Fauna Sanctuaries, and the tolerant attitude of the rural population to most native species.

Methods

Habitat types recognized and areas of intensive study have been described previously (Kirkpatrick 1966). Reptiles were collected on random traverses of intensively studied areas made at approximately fortnightly intervals. Collecting measures included turning logs and stones, stripping bark from trees, splitting logs and felling dead trees. Some specimens were collected in traps set for small mammals, roadside casualties provided many records, and several specimens were donated by local residents.

Abundance ratings abundant, common, uncommon and scarce were used as for mammals (Kirkpatrick 1966). The cryptic and nocturnal habits of some species, however, made abundance estimates based on numbers collected and observed unrealistic and for such species estimates are not given.

Specimens of all species collected are either in the Queensland Museum, Brisbane, or at the Department of Primary Industries Research Station, Hermitage.

Results

Species collected are listed below together with habitat types and estimated abundance. For those species which appeared to occupy specific microhabitats, these are given.

CHELONIA

Chelodina longicollis (Shaw). Common long-necked tortoise. Water; abundant.

SQUAMATA

LACERTILIA

Diplodactylus vittatus Gray. Open forest, under stones; common.

Gehyra australis Gray. Variegated gecko. Open forest, under bark; abundant.

Heteronota binoei Gray. Prickly gecko. Open forest, under fallen trees; abundant.

Oedura leseurii (Dumeril and Bibron). Leseur's gecko. Open forest, under bark; common.

Oedura tryoni De Vis. Open forest, under bark and stones; common.

Oedura robusta Boulenger. Open forest, under bark; one specimen collected.

Lialis burtonii Gray. Burton's legless lizard. Open forest; uncommon.

Ablepharus boutonii (Desjard). Wall lizard. Open forest, grassland and cultivation, on trees and posts; common.

Egernia cunninghamii (Gray). Cunningham's rock skink. Open forest on Dividing Range, under stones; common.

Egernia whiti Lacepede. White's skink. Open forest, under log; one specimen collected.

Egernia striolata Peters. Tree skink. Open forest, under bark and stones; abundant.

Egernia bungana De Vis. Scrub mullet. Rain-forest; uncommon.

Leiopisma aequale (Gray). Three-toed skink. Rain-forest, in litter; abundant.

Leiopisma metallicum (O'Shaughnessy). Open forest, in litter; uncommon.

Leiopisma guichenoti (Dumeril and Bibron). Common grass-skink. Open forest, in litter; common.

Leiopisma fuscum (Dumeril and Bibron). Jewel skink. Open forest, in litter; uncommon.

Leiopisma challengerii (Boulenger). Rain-forest, under log; one specimen collected.

Leiopisma mustelinum (O'Shaughnessy). Weasel skink. Rain-forest margin, on fallen log; one specimen collected.

- Lygosoma verreauxii* (Dumeril). Rain-forest margin, under logs; common.
- Lygosoma scutirostrum* Peters. Open forest, under litter; one specimen collected.
- Sphenomorphus tenuis* (Gray). Open forest on Dividing Range, usually on rock faces; abundant. Rain-forest, under logs; uncommon.
- Sphenomorphus lesuerii* (Dumeril and Bibron). Striped skink. Open forest and grassland; common.
- Sphenomorphus quoyi* (Dumeril and Bibron). Water skink. River and creek margins away from Dividing Range; abundant.
- Tiliqua scincoides* (Shaw). Common blue-tongue. Open forest and grassland; common.
- Amphibolurus barbatus* (Cuvier). Bearded dragon. Open forest; common.
- Amphibolurus muricatus* (Shaw). Tree dragon. Open forest; abundant.
- Diporiphora australis* (Steind.) Tommy round head. Open forest; abundant.
- Goniocephalus spinipes* (Dumeril). Rain-forest dragon. Rain-forest; uncommon.
- Physignathus lesuerii* (Gray). Water dragon. River and creek margins; abundant.
- Varanus gouldii* (Gray). Gould's goanna. Open forest away from Dividing Range; uncommon.
- Varanus varius* (Shaw). Lace monitor. Open forest; common. One specimen observed inside rain-forest.

OPHIDIA

- Typhlops bituberculatus* (Peters). Open forest; one specimen collected.
- Typhlops diversus* Waite. One specimen collected under railway sleeper.
- Typhlops ligatus* Peters. Open forest, under logs and stones; common.
- Typhlops nigrescens* (Gray). Open forest, under log; one specimen collected.
- Typhlops proximus* Waite. Open forest, under stone; one specimen collected.
- Typhlops weidii* Peters. One specimen collected under railway sleeper.
- Morelia spilotes* (Lacepede). Carpet python. Rain-forest and adjacent habitat types; uncommon. Open forest elsewhere; scarce.
- Aspidomorphus diadema* (Schlegel.) Red-naped snake. Open forest, under logs and stones; common.
- Demansia psammophis* (Schlegel.) Yellow-faced whip snake. Open forest on Dividing Range; two specimens collected.
- Demansia textilis* (Dumeril and Bibron). Common brown snake. Cultivation and grassland; abundant. Open forest; uncommon.

- Tropidechis carinatus* (Krefft). Rough-scaled snake. Rain-forest; uncommon.
- Pseudechis porphyriacus* (Shaw). Black snake. Creek margins on slopes of Dividing Range; abundant. River and creek margins elsewhere; common. Rain-forest; common.
- Pseudechis guttatus* De Vis. Spotted black snake. Open forest away from Dividing Range; common.
- Notechis scutatus* (Peters). Tiger snake. Rain-forest margin; one specimen collected.
- Denisonia maculata* (Steind.) Ornamental snake. Open forest; one specimen collected.
- Denisonia signata* (Jan.). Swamp snake. Rain-forest and margins; common.
- Denisonia nigrescens* (Gunther). Small-eyed snake. Open forest at foot of Dividing Range; two specimens collected.
- Hoplocephalus bitorquatus* (Jan.) Pale-headed snake. Open forest, usually in trees; common.
- Vermicella annulata* (Gray). Bandy bandy. Open forest, under stones and litter; uncommon.

Discussion

The 51 species recorded include most of those which could be expected from the district on the basis of known distributions, although the cryptic habits of reptiles generally and the tendency for distributions to be extremely local make it probable that proportionately more reptile species than birds and mammals were overlooked. An extensive search was made, however, for several unrecorded species, including the death adder (*Acanthopis antarcticus* (Shaw)) and the broadheaded snake (*Hoplocephalus stephensii* (Krefft)), and these species, if present, are certainly not common. Other unrecorded species which might be expected from the district include *Sphenomorphus tryoni* (Longman), *Egernia major* (Gray) and *Lygosoma truncatum* Peters; the type of a subspecies of the last-named was from Wilson's Peak, which is in one of the areas of intensive study.

Most species recorded are found commonly in eastern Australia; the majority are also found nearer the coast. The presence of the tiger snake (*Notechis scutatus*) only was unexpected; this species is probably confined to the ranges as elsewhere in Queensland. Other species commonly identified by local residents as the tiger snake include the spotted black snake (*Pseudechis guttatus*), which occurs in a wide range of colour patterns, the rough-scaled snake (*Tropidechis carinatus*) and banded specimens of the common brown snake (*Demansia textilis*).

The common brown snake is the most conspicuous reptile in the district, being found abundantly in cultivation and grassland and near buildings, even in the larger towns, and is the most common roadside casualty. Other common

roadside casualties are the bearded dragon (*Amphibolurus barbatus*), the black snake (*Pseudechis porphyriacus*) and, at certain times of the year, the long-necked tortoise (*Chelodina longicollis*).

Although some reptiles were recorded from the collection of only a few specimens, there is little reason to believe any of the species collected, with the possible exception of the tiger snake, are in fact scarce in the district. Overall, the reptile fauna compares favourably with the mammal and bird fauna already discussed in that most easily collected species are common in their preferred habitat.

Additional Mammal and Bird Records

Since publication of parts 1 and 2 of this series (Kirkpatrick 1966, 1967) the following have been collected.

Mammals

MARSUPIALIA

Antechinus stuartii Macleay. Brown marsupial mouse. Rain-forest, one specimen collected.

Birds

Tringa nebularia (Gunnerus). Greenshank. Open water margins, uncommon.

Erolia acuminata (Horsfield). Sharp-tailed sandpiper. Open water margins, common.

Chlidonias hybrida (Pallas). Marsh tern. Open water and margins, abundant.

Accipiter cirrhocephalus (Vieillot). Collared sparrowhawk. Open forest, uncommon.

General Conclusions from Survey

The survey described in this and the two preceding papers (Kirkpatrick 1966, 1967) was undertaken as part of a plan to survey the fauna of Queensland, and to provide an opportunity to examine the effect of European settlement on survival and distribution of the native fauna. The results are also available as a factual and published record with which the findings of future surveys can be compared.

The Warwick district is one of the oldest areas of settlement in Queensland and is intensively farmed, with about half the total surveyed area under cultivation (see Figure 1, Kirkpatrick 1966), much of it for more than a century, and with the remainder of the area grazed by domesticated stock. The extensive areas of continuous forest cover remaining in the district are on the Dividing Range and its western escarpment, which includes all habitat types recognized, and in the relatively infertile traprock country in the southern part of the district, which includes all habitat types except rain-forest. Many forest reserves have been established in these areas, the rate of attrition of habitat is slow and regrowth of both open forest and rain-forest is occurring. The greater

part of the native fauna lives in these areas, with the Dividing Range and its escarpment of major importance. All the mammal species found in the district, with the possible exception of a few bats, are found there, together with all but a few of the birds and reptiles. The traprock area harbours the majority of species other than rain-forest inhabitants, with some more abundant than on the Range, including the grey kangaroo (*Macropus giganteus* Shaw), the wallaroo (*Osphranter robustus* Gould) and the koala (*Phascolarctos cinereus* Goldfuss).

The smaller patches of eucalypt forest which occur in predominantly farmed areas provide refuge for a smaller range of species. The red-necked wallaby (*Wallabia rufogrisea* Desmarest) appears to be the only large macropod which can survive in small areas of forest; most mammals other than macropods will survive in such areas. A wide range of smaller birds, mostly honeyeaters and insectivorous species, are as much at home in small patches of forest as in the larger areas, as are most small lizard species. Few native animals actually reside in cultivation and other areas where major habitat alteration has occurred. Some, including the brush possum (*Trichosurus vulpecula* Kerr) and several bats, have adapted sufficiently to inhabit human dwellings, a number of birds (including the quails and bush larks) and the brown snake (*Demansia textilis*) live in and near cultivation, but the most abundant inhabitants of such areas are the introduced mammals. Many native species, however, invade crops from adjacent forest, particularly during dry weather. These include the grazing macropods and a wide range of graminivorous birds, some of which have become major pests. The phascogale (*Phascogale tapoatafa* Meyer) and the tiger cat (*Dasyurops maculatus* Kerr) occasionally raid fowl roosts, and the hawks and owls present in the district take large numbers of mice from cultivation.

The inhabitants of wetlands seem to be least affected by settlement. Loss of habitat caused by drainage and silting has been largely counteracted by the establishment of town and farm water impoundments, and most species recorded are abundant in the district.

Only two species known to have occurred in the district seem to have disappeared; both were from open forest on black soil, which has now been almost completely cleared for cultivation and invaded by introduced species. These are *Rattus sordidus* (Gould) and *Thetomys gracilicaudatus* (Gould), both collected last century for the only time from the district.

In summary, the effects of settlement have been the reduction of range for most forest-dwelling species, extension of range for inhabitants of grassland, improvement of conditions for many graminivorous and raptorial species and little change for inhabitants of wetlands. Few if any native species have disappeared, and 13 exotic species have been recorded as feral in the district, most living in and near farmland. The main factor involved in survival of the fauna has undoubtedly been the retention of large areas of native forest in

near-primitive condition. Other factors include the establishment of National Parks and Fauna Sanctuaries, which are fairly well respected, and the tolerant-protective attitude of the rural population to the majority of native species.

Other recent surveys of mammals (Calaby 1966) in an adjacent area of New South Wales, and of mammals and birds in north Queensland (Lavery 1968; Lavery and Johnson 1968), have demonstrated the survival of the great majority of native species in those areas to the present time, again with the retention of native habitat a significant factor.

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REFERENCES

- CALABY, J. H. (1966).—Mammals of the Upper Richmond and Clarence Rivers, New South Wales. *Tech. Pap. Div. Wildl. Res. C.S.I.R.O. Aust.* No. 10.
- KIRKPATRICK, T. H. (1966).—Mammals, birds and reptiles of the Warwick district, Queensland. 1. Introduction and mammals. *Qd J. Agric. Anim. Sci.* 23:591-8.
- KIRKPATRICK, T. H. (1967).—Mammals, birds and reptiles of the Warwick district, Queensland. 2. Birds. *Qd J. Agric. Anim. Sci.* 24:81-91.
- LAVERY, H. J. (1968).—Mammals and birds of the Townsville district, north Queensland. 2. Birds. *Qd J. Agric. Anim. Sci.* 25:243-54.
- LAVERY, H. J., and JOHNSON, P. M. (1968).—Mammals and birds of the Townsville district, north Queensland. 1. Introduction and mammals. *Qd J. Agric. Anim. Sci.* 25:29-37.

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