

QUEENSLAND DEPARTMENT OF PRIMARY INDUSTRIES
DIVISION OF PLANT INDUSTRY BULLETIN No. 380

**MAMMALS, BIRDS AND REPTILES OF THE WARWICK
DISTRICT, QUEENSLAND. 1. INTRODUCTION AND
MAMMALS**

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SUMMARY

A survey of mammals of the Warwick district made during 1964-65 is described. Fifty-four species are recorded, including 2 Monotremata, 26 Marsupialia and 26 Eutheria, eight of the last introduced. Marsupials include 11 macropods and 4 dasyurids; Eutheria include 13 species of Chiroptera. Habitat types, and estimates of abundance ranging from scarce to abundant, are given.

I. INTRODUCTION

Since late 1959 field studies of macropod marsupials have been in progress with headquarters at Warwick, the work involving regular extensive traverses through much of the wildlife habitat in the vicinity of that city. These years of field work have provided a general knowledge both of habitat and of resident fauna in the district, which served as a background for a more detailed survey of the mammals, birds and reptiles undertaken from July 1964 to June 1965.

The Warwick district (Figure 1) is of some 2,000 square miles within an approximate radius of 30 miles of the city of Warwick, southern Queensland. Natural boundaries are provided by the Great Dividing Range in the north, east and south-east, and the Herries Range in the south and south-west. The western boundary was defined only arbitrarily, as a natural boundary lies some hundreds of miles to the west.

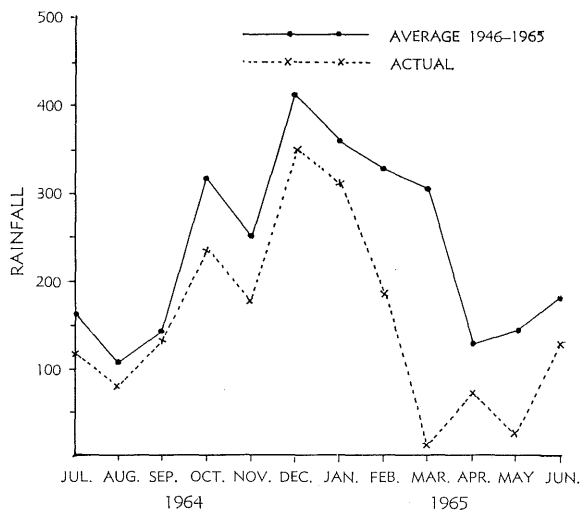


Fig. 2.—Monthly rainfall recorded at Hermitage Research Station, near Warwick, 1964-65. Rainfall is shown in points (100 points = 1 in.)

Topography is essentially a rolling downs bounded by low ranges on the north, east and south and traversed by the Condamine River and its many tributaries. Soils have been mapped (Skerman and Allen 1952); the main types are a grey basaltic loam ("blacksoil") in much of the northern half and a grey to grey brown stony clay loam ("traprock") in the south. Rocks of the district have been described (Hill and Denmead 1960); they include the tertiary basalt of the Dividing Range, Neranleigh-Fernvale equivalents of ? Silurian age in the traprock areas.

Rainfall and temperature data recorded at the Department of Primary Industries Research Station, Hermitage, are provided in Figures 2 and 3 as representative of the district.

For survey purposes, habitat types recognized were rain-forest, open forest, grassland and cultivation. Rain-forest is confined to the gullies and sheltered areas of the Dividing Range and includes a wide range of softwood species. Elsewhere the natural vegetation is an open eucalypt forest. Both forest types have been markedly reduced to make way for agriculture, and much of the eucalypt forest has been ring-barked and cleared to allow better development of native pastures. The whole district is devoted either to agriculture or to grazing by domesticated stock. The extent of each habitat type is indicated in Figure 1.

Five National Park Reserves involving some 2,000 acres, and seventeen Fauna Sanctuaries including approximately 80,000 acres, have been declared in the district (see Roff 1962). None of these reserves, however, is fully protected from grazing by domesticated stock.

II. METHODS

Areas representative of the main habitat types (see Figure 1) were selected for intensive study and provided most of the records. The remainder of the district was covered to check obvious differences from the studied areas. Random traverses, mostly during daylight or at night with the aid of a spotlight, were made at approximately fortnightly intervals through all intensively studied areas. Collections were effected with guns and rifles when possible, and for the more cryptic species break-back rat traps baited with either apples, sweet potato or leather soaked in linseed oil were used. Up to 150 traps were set in lines in selected sites and inspected daily for 1 week. Aerial mammals were taken after dark, using a spotlight and a shotgun.

Specimens of all species collected were deposited in the Queensland Museum, Brisbane, or were stored at the Research Station, Hermitage.

Four ratings indicating abundance were given, the broad basis for each being numbers observed and collected during each visit to, or trapping period in, any habitat type as follows:—

Abundant: Usually large numbers.

Common: Always at least one, often more.

Uncommon: Not every visit, but more than twice during the survey.

Scarce: Not more than twice during the survey.

Ratings uncommon and scarce were highly subjective and were used with caution. No estimate of abundance was provided for apparently uncommon species for which a thorough search was not made.

III. RESULTS

Species collected are listed below, together with habitat and estimated abundance in each habitat type. An asterisk indicates that the record is based on sighting only. Names for all species other than Chiroptera are after Iredale and Troughton (1934); those for Chiroptera were provided by the Queensland Museum.

MONOTREMATA

**Ornithorhynchus anatinus* Shaw and Nodder. Platypus. Rivers and streams; two sightings during survey but intensive search not made.

**Tachyglossus aculeatus* Shaw and Nodder. Echidna. Open forest; common.

MARSUPIALIA

- Antechinus flavipes* Waterhouse. Yellow-footed marsupial mouse. Open forest; common.
- Phascogale tapoatafa* Meyer. Brush-tailed phascogale. Open forest; uncommon.
- Sminthopsis murina* Waterhouse. Slender mouse-sminthopsis. Open forest; one specimen collected.
- Dasyurops maculatus* Kerr. Tiger cat. Rain-forest and adjacent habitat types; uncommon.
- Isoodon obesulus* Shaw and Nodder. Short-nosed bandicoot. Rain-forest and adjacent habitat types; common.
- Isoodon torosus* Ramsay. Giant brindled bandicoot. Rain-forest; one specimen collected.
- Perameles nasuta* Geoffroy. Long-nosed bandicoot. Open forest on Dividing Range; uncommon.
- Acrobates pygmaeus* Shaw. Pigmy glider. Open forest; uncommon.
- Petaurus norfolkensis* Kerr. Squirrel glider. Open forest; one specimen collected.
- Petaurus breviceps* Waterhouse. Sugar glider. Open forest; common.
- Pseudocheirus laniginosus* Gould. Common ring-tail. Rain-forest; abundant.
- Schoinobates volans* Kerr. Greater glider. Open forest on ranges; common.
- Trichosurus vulpecula* Kerr. Common brush-tailed possum. Open forest and towns; abundant.
- Trichosurus caninus* Ogilby. Short-eared possum. Rain-forest; common.
- Phascolarctos cinereus* Goldfuss. Koala. Open forest away from ranges; uncommon. Open forest on Dividing Range; scarce.
- Aepyprymnus rufescens* Gray. Rufous rat-kangaroo. Open forest on Dividing Range; common.
- **Potorous tridactylus* Kerr. Potoroo. Rain-forest margins. Two sightings during survey, other eyewitness records, but not collected.
- Petrogale penicillata* Griffith Smith and Pidgeon. Bush-tailed rock-wallaby. Rocky slopes and cliffs on Dividing Range; abundant. Elsewhere; scarce.
- Thylogale stigmatica* Gould. Red-legged pademelon. Rain-forest; abundant.
- Thylogale thetis* Lesson. Red-necked pademelon. Rain-forest; abundant.
- Wallabia bicolor* Desmarest. Black-tailed wallaby. Open forest; uncommon.

Wallabia rufogrisea Desmarest. Red-necked wallaby. Open forest, abundant.

Wallabia doralis Gray. Black-striped wallaby. Rain-forest and open forest with underbrush; uncommon.

Wallabia elegans Lambert. Whiptail wallaby. Open forest high on Dividing Range; common. Open forest elsewhere; scarce.

Osphranter robustus Gould. Wallaroo. Open forest, particularly near gullies; common.

Macropus giganteus Shaw. Grey kangaroo. Open forest except on Dividing Range; abundant.

EUTHERIA

Hydromys chrysogaster Geoffroy. Water rat. Rivers and streams; abundant.

Rattus assimilis Gould. Allied rat. Rain-forest; abundant.

Rattus lutreolus Gray. Eastern swamp rat. River and stream margins; uncommon.

Rattus rattus Linne. Ship rat, all colour forms. All habitat types, including rain-forest margins but not rain-forest; abundant.

Mus musculus Linne. House mouse. Cultivation and towns; abundant.

Melomys cervinipes Gould. Scale-tailed rat. Rain-forest; abundant.

Lepus europaeus Linne. Hare. Cultivation and open forest; common.

Canis dingo Meyer. Dingo. Open forest on Dividing Range, including rain-forest margins; common. Open forest elsewhere in district; scarce.

Vulpes vulpes Linne. Fox. Cultivation and open forest; abundant.

Felis catus Linne. Cat. Cultivation, common. Open forest; uncommon.

Cervus dama Linne. Fallow deer. Open forest on Dividing Range, Freestone area only; uncommon.

Capra hircus Linne. Goat. Open forest, in gullied areas; uncommon.

**Sus scrofa* Linne. Pig. Open forest, usually near farms; uncommon.

Pteropus poliocephalus Temminck. Grey-headed flying-fox. Throughout district; common.

**Pteropus scapulatus* Peters. Collared flying-fox. Throughout district; several sightings only.

Nyctophilus timoriensis Geoffroy. Large long-eared bat. Open forest; one specimen collected.

Nyctophilus geoffroyi Leach. Geoffroy's long-eared bat. Open forest; one colony collected.

Eptesicus pumilis Gray. Little bat. All habitat types; abundant.

Pipistrellus tasmaniensis Gould. Pipistrel. Three specimens collected adjacent to rain-forest.

Chalinolobus gouldii Gray. Gould's lobe-lipped bat. Rain-forest and open forest; common.

Nycticeius orion Troughton. Eastern broad-nosed bat. Open forest; two specimens collected.

Nycteceius rupellii Peters. Greater broad-nosed bat. Open forest; three specimens collected.

Miniopterus schreibersii blepotis Temminck. Bent-winged bat. One specimen collected in house.

Taphozous flaviventris Peters. Yellow-bellied free-tailed bat. Open forest; abundant.

Tadarida norfolkensis Gray. Mastiff bat. Open forest; one specimen collected.

**Rhinolophus megaphyllus* Gray. Horseshoe bat. One small colony found in cave in Dividing Range.

IV. DISCUSSION

The mammal fauna of the district as revealed by this survey is diverse and representative of Queensland as a whole. Of the 24 species of Macropodidae recorded in the State, for example, 11 are present, most of them common in their preferred habitat types.

The few species with uncommon or scarce ratings may well prove to be more abundant in more productive years (the second half of the survey period was unseasonably dry, Figure 2) and more intensive trappings in other areas at different times of the year could reveal higher levels of abundance. Observations on Chiroptera are least reliable, as these animals were collected fortuitously. Two species, *Taphozous flaviventris* and *Pipistrellus tasmaniensis*, are of particular interest, the former not usually considered common (Troughton 1954) and the latter apparently not previously recorded from Queensland. The paucity of records of cave-dwelling bats reflects the scarcity of suitable caves in the district.

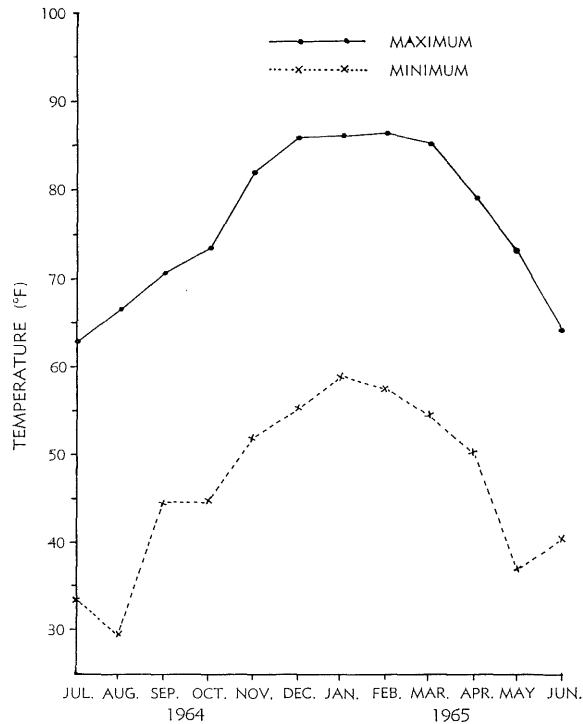


Fig. 3.—Monthly average temperatures recorded at Hermitage Research Station, near Warwick, 1964-1965.

The influence of settlement is seen both in the reduction of native habitat and in the presence of such introduced species as the ship rat, the house mouse, the hare and the fox, all of which are common to abundant throughout all habitat except the rain-forest, which appears not to be invaded by introduced species. Reduction of native habitat is extensive but all types are still represented. The survival of native mammals in the district will undoubtedly depend on the continuing availability of suitable habitat.

Some comments seem justified on the few species which might be expected from this district on the basis of known distributions and past records but not found during this survey.

The bridled nail-tail wallaby (*Onychogalea frenata* Gould) has not been recorded from Australia for many years (see Marlowe 1958) and may never have occurred in this district. *Antechinus laniger* Gould, *Antechinus maculatus* Gould and *Sminthopsis crassicaudata* Gould may occur, as these species tend to have restricted local distributions. Similarly, species of *Thetomys* which are extremely local may have been overlooked. More specialized trapping methods than those used are probably required for these species. *Rattus sordidus* Gould, described in 1858, is known from only two specimens collected on the Darling

Downs, possibly from near Westbrook, by the naturalist Gilbert. Distribution of the black flying fox (*Pteropus gouldii* Peters) recorded by Nelson (1965) included the Warwick district, and although this species was not collected during this survey it undoubtedly occurs in the district.

V. ACKNOWLEDGEMENTS

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