



THE TASMANIAN NATURALIST

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OBSERVATIONS ON PLATYPUS

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The Inland Fisheries Commission operates a trout hatchery at Salmon Ponds adjacent to the Plenty River in the Derwent Valley. A series of wide cement lined channels run through the two large ponds where fish are kept for public display. These ponds are joined by a cement culvert approximately 50 cm in diameter and blocked at both ends by a metal grid. The channels also have metal grids across them at intervals separating them into different sections. A series of troughs are also present, separate from the channels, for raising fry. The drainage pipes from these run into a small channel which flows into the river but is filtered by a fine screen.

Greg French, a former employee at Salmon Ponds, estimates there are four pairs of platypus in the 450m section of the Plenty River adjacent to the trout hatchery. Platypus are regularly seen in the ponds and channels of the hatchery. There are distinct runways which the platypus use to come out of the river. They then go through holes in chicken wire netting inside a hawthorn hedge which runs alongside the river for much of the length of the hatchery complex. Platypus have been captured by officers of the Department of Parks, Wildlife and Heritage by simply placing treadle-activated cage traps, without bait, on the runways. With 10 traps two platypus can usually be caught in a night.

Staff regularly see platypus walk across the lawns and enter the ponds and channels during the day. Platypus have to come out of the channels to get around the grids and obvious wear marks are present at these places. These are particularly obvious where the main pond enters the culvert. At these exit points faeces can often be found, being flatish with a black waxy, plastic appearance.

On one occasion at 8.00 a.m., a platypus was observed coming out of the main pond next to the culvert and was followed across a gravel driveway alongside a building. It then entered the other pond and went into the channel getting out of the water, onto the bank and re-entering the water to get around each metal grid.

The channels have a cement bottom but a lot of debris has built up in them. Staff consider that the platypus feed on oligochaete tubifex worms which can be extremely abundant in the channels and ponds. Normally, the small channel which drains the dry troughs needs to be cleaned regularly. However, when platypus are present in this channel cleaning has been found not to be necessary. A platypus was once disturbed in this small channel and it sought refuge in an outlet pipe which consisted of a six inch diameter pipe with a two inch pipe within it. The platypus squeezed between the two pipes.

Platypus have also been observed in other areas moving between water bodies. Graham Sargison (Forestry Commission) reports seeing platypus on the road on the steep slope above the Tarraleah Power Station. There are also reports of platypus sliding across the snow at Ben Lomond and tracks can sometimes be found crossing between tarns here and at Mt Field. Ron Mawbey (University of Tasmania) has found a dead platypus beside a tarn at Mt Field and it appeared to have been fed upon by an eagle (probably *Aquila audax*). Andrew Sanger (Inland Fisheries Commission) has seen a platypus at Carters Lake on the Central Plateau come out of the water onto a small grassy island and re-enter the water about a minute later on the other side of the island.

In the river opposite the ponds at Salmon Ponds an old burrow and a burrow with recent diggings were located in a high bank about one metre above the water. Hawthorn occur here providing cover above the burrow entrance. There is a layer of rocky material in the lower layer of the soil extending down beneath the water level. The burrows were present in the upper layers of soil where no rock was present, about 40cm below the top of the bank. The burrows are an oval shape which mirrors the body outline of platypus.

Two decayed platypus carcasses were once found at Salmon Ponds in a four inch PVC outlet pipe which ran from a pond to the creek. A valve was present across the pipe at the channel end and at the creek outlet the pipe was overgrown by willow roots. It is presumed that the two animals squeezed into the pipe at the outlet but could not get out again due to the root blockage and their inability to turn around in the narrow pipe.

It is interesting to note that platypus at Salmon Ponds utilize channels made of concrete, even, according to staff, at times when little debris is present. We have found about six platypus killed on roads above concrete culverts at various locations around Tasmania. The platypus in these cases appear to prefer to get

out of the water and cross the road rather than go through the culvert. This certainly cannot be due to a dislike for confined spaces, as they use small channels and pipes at Salmon Ponds, or because they avoid dark places, as they are regularly seen in cave systems (Stefen Eberhard, pers. comm.). They may have some sort of dislike of concrete. However, it is possible that increased speed of stream flow at constricted culverts may deter platypus from entering.

The culvert at which we found the most recent road kill, on the Deloraine bypass, was large and three-quarters full of water. The platypus could easily have swum through. The stream appeared to be slow flowing and did not seem to increase in velocity through the culvert.

Reactions of platypus to road culverts thus remain somewhat of a mystery and further investigation of this matter is warranted.

TASMANIAN FIELD NATURALISTS MAMMAL SURVEY GROUP

by D. Hird

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INTRODUCTION

The Tasmanian Field Naturalists' Club has recently formed a Mammal Survey Group. This group intends holding monthly excursions as well as encouraging the systematic recording of information gathered from all available sources. Details of activities will appear in the Club's Bulletin and the results published. Similar mammal survey groups have been established in other states for some decades.

The major activity of the mammal survey group on outings will be overnight studies of a nocturnal mammal fauna. Follow-up field studies in the local habitat examining other animals and plants will be encouraged.

OBJECTIVES

The principal aim of mammal survey is the study of faunal distribution. This applies both on a broad scale and locally between different habitats. Additionally a range of ancillary information may be collected in the survey process. For example, careful observation over a period of time may reveal interesting behaviour patterns and repeated surveys in an area may provide an indication of relative abundance and seasonal activity patterns. Other information may be

obtained including factors such as reproductive rate and timing which might in turn determine the ability of populations to recover from bushfires.

Tasmania's mammal species have held up remarkably well since European settlement. Only the thylacine has become extinct in Tasmania. Extinction rates and range reductions of mammals in mainland Australia have been much worse. Despite this there is no room for complacency as the rate of habitat change is still very high and several species have inadequate areas of reserved habitat, for example the eastern bettong.

The conservation of our natural heritage includes a requirement for habitat reservation for our native mammals. Mammal survey work can provide data to aid the identification of habitats occupied by various populations of species.

CAPTURE/RELEASE SURVEY TECHNIQUES

Techniques used during a survey should not harm animals, and should minimise any discomfort imposed. Handling of fauna will be restricted to experienced persons who hold relevant permits. This usually involves trapping animals in cages for a short period before examination and release.

Traps for live animals are available in several sizes. The smallest traps are suitable for mice while larger traps will cope with possums. The traps are usually baited. Peanut butter based baits work well for most small animals while meat or fish attracts medium-sized carnivores. Pitfall traps are also used, often in conjunction with a temporary fence to guide animals to the pit. While they need to be carefully designed they can be useful in suitable conditions for species which do not readily enter cages. Another method is the provision of nest or refuge sites from which animals may freely come and go. Nest boxes are well known for birds but many mammals will also use them. As well as physical boxes such things as suspended Hessian bags, for example, may be colonised by pygmy possums. These sites may be visited later in order to observe or examine the occupants.

DIRECT OBSERVATION TECHNIQUES

Larger mammals, such as wallabies and kangaroos, are easily observed by chance. Smaller mammals require more careful observation. For example, at dusk emerging nocturnal species may be observed in silhouette. By regularly visiting habitats under a range of conditions a careful observer may gain insights not apparent on more casual inspection. One example is platypus observation where patient inspection of quiet pools will often reveal animals in their characteristic feeding dive around dusk and dawn. Basking animals may also be seen under suitable conditions.

Road kills are perhaps the easiest way that wildlife may be seen in Tasmania.

While deaths in this way are unfortunate it at least indicates that there is a population of animals surviving in surrounding areas. Careful recording of details of road killed animals has revealed significant new information about species, and may indicate areas to survey further by other means.

Spotlight observation primarily relies on the reflection of light from nocturnal animals eyes. Good binoculars are important, as are warm clothes and plenty of patience.

Likely animal refuges may often yield useful observations. Common refuges include tree hollows and crevices under bark which are often used by arboreal animals and bats. Hollows are often surrounded by scratchings of animals using or exploring them. These usually seem subject to intense competition for occupation, with users often preferring a size in close proportion to their own body.

TRACKS AND SIGNS RECORDING

Tracks and signs often provide an preliminary indication of which species are present in an area. Tracks are usually footprints while signs may be a range of indirect indications of a species presence. Scats, bones, foraging signs such as diggings, burrows and hair samples are all examples of mammal signs. Sometimes these are clear and almost unmistakable, others are subtle and accurate interpretation relies on experience and deduction.

BOOK REVIEWS

Threatened Birds of Australia

edited by Joost Brouwer and Stephen Garnett

Royal Australian Ornithological Union and Australian National Parks
and Wildlife Service, RRP \$13.95

Reviewed by L.E.Wall

This is an annotated check list prepared at the request of the Royal Australian Ornithological Union and the Australian National Parks and Wildlife Service. It is proposed to produce an amended list as soon as possible and include sub-species where applicable.

As this publication is a collection of species-status estimates, a selection of abbreviated Tasmanian examples is presented in table 1 rather than a

formal review. Readers are invited to supplement or comment upon this information for potential inclusion in future editions.

- Macquarie Shag** Limited protection and knowledge of its habits so far.
- Freckled Duck** Very rare in Tasmania. Accidental(?) shooting although protected. Subject to wide fluctuation during droughts and floods.
- Hooded Plover** Indeterminate. Uncertain status but Tasmania best State. Danger from human interference, especially during breeding season.
- Eastern Curlew** Rare. Declining population in Tasmania. Shooting is an old problem.
- Pacific Gull** Insufficiently known. Considerable competition from Kelp Gulls.
- Fairy Tern** Rare. Declining seriously in Tasmania. Breeding areas being seriously interfered with by humans.
- Swift Parrot** Rare. Declining seriously in Tasmania. *Eucalyptus globulus*, the most used source of food and nesting site is being much reduced by harvesting. Orchard fruit is a minor food source. An almost complete migrant for winter months.
- Orange Bellied Parrot** Endangered. Latest information is that a good number of juveniles were seen at Port Davey in 1990, but lack of nesting sites in old trees destroyed by wildfires appears to be a problem. Current efforts to provide nesting sites appear to have been successful and more seem worthwhile. The artificial breeding program seems to have been successful but it is yet to be demonstrated that these juveniles can be successfully released back into the wild state. Already (1/2/1991) a few juveniles have been seen amongst adults at Port Davey. I have doubts about the value of the mosaic burning program of buttongrass and heathlands as recommended in the Orange Bellied Parrot Recovery Plan.
- Forty Spotted Pardalote** Endangered. The main habitats on Bruny and Maria Islands are maintaining good numbers but others at Lime Bay, Tinderbox, Conningham and Flinders Island continue to decline. Eucalypts besides *E. viminalis* are also used as food sources. Prime habitat on Bruny Island is in danger as land clearing for agriculture affects food trees and nesting sites.
- Ground Parrot** Threatened. Believed to be secure in Tasmania with a reasonably large population in the western half, most of which is protected in the World Heritage Area.

Table 1 Comments on birds found in Tasmania.

Aspects of Tasmanian Botany — a tribute to Winifred Curtis

edited by M.R. Banks, S.J. Smith, A.E. Orchard and G. Kantvilas

Royal Society of Tasmania, 247pp, RRP \$44.90

Reviewed by Philip A. Collier

This publication by the Royal Society of Tasmania is very timely since Winifred Curtis has just finished one of her major projects. This is the *Student's Flora of Tasmania*. The final volume, Part 4B has been sent to the printers, although we will have to wait until next year before we can purchase a copy.

The *Student's Flora* is not the only major Tasmanian botanical work completed during Winifred's distinguished career. Her biographer in this volume, Gintaras Kantvilas, indicates that the *Endemic Flora of Tasmania* in six volumes interrupted the work on the *Student's Flora* between 1967 and 1978. In many ways the *Endemic Flora* may be seen as at least an equal achievement. It contains beautiful illustrations by Margaret Stones, and some delightful personal descriptions of the illustrated plants by Winifred. These descriptions pay appropriate attention to precision characterised by the work on the Flora, but also illustrate the warm and helpful personality behind the technical work.

Many members of the botanical community will have fond memories of field outings and personal contact with Winifred. My favourite memory is one day at Mount Field National Park, when someone pointed to a low-growing shrub. Winifred said words to the effect: "I remember naming that plant, but I can't think of the name for a moment". To me this comment epitomises the greatness of the lady we hold in fond regard as so few are entitled to make such a statement. The shrub was *Helichrysum backhousii* var. *backhousii*; Winifred was responsible for the three varieties of this species.

This special volume published by the Royal Society is a compendium of 28 papers by authors from Tasmania, the Australian mainland and overseas. A great variety of topics are addressed. A few papers mention non-vascular plants, one of which is a checklist of the mosses which are known to occur in the State. About half of the papers are mainly concerned with taxonomy of Tasmania's higher plants. Other papers are concerned with plant distributions and conservation. A few provide in-depth analysis and discussion of one or more native plant species. Towards the end are two papers with historical interest, one concerning Gunn's visit to Port Phillip in 1836 and another concerned with fossil evidence of plants from the super-continent Gondwanaland.

The taxonomy papers in this volume range from technical renaming of species to those which describe plants which have only been discovered or noticed recently. Amongst the papers of a technical (and somewhat annoying) nature is one by Dennis Morris. For a few species this paper reinstates old names

which have been overlooked and out of use for many years. We find that *Gahnia graminifolia* (the grass-leaved gahnia – a very descriptive name) should be called *Gahnia rodwayii*, despite the fact Rodway said “for various reasons I have preferred to change its name”. Apparently such behaviour is out. Even more confusing is that *Restio monocephalus* (single-headed cord rush) has been used for the wrong species for many years. (The situation here has been uncomfortable for many years, since plants we had been calling by this name have several heads.) Now *Restio monocephalus* is the name we should use for erstwhile *Restio glaber*, which does have a single head, while erstwhile *Restio monocephalus* (the one with many heads) should be called *Restio hookeri*!

Several of the papers which deal with newly described taxa are very welcome to me since they clarify problems which have been apparent for many years. When visiting the western mountains, particularly on poor soils derived from quartzite, a form of *Cyathodes petiolaris* has looked quite different from that typical on dolerite mountains elsewhere. The leaves have a very plain white midrib. This plant is now described by S. J. Jarman and C. M. Mihaich as *Cyathodes sulcata*. Also in the mountains there is a treatment of the “prostrate form” of *Leucopogon collinus*. I was surprised to find that two new taxa have been described to deal with these populations. In a different habitat at the coast a very large buzzy (or biddy-widdy) may be seen binding the sand-dunes. We now learn that this should be called *Acaena pallida*, which was formerly thought to be restricted to New Zealand.

A volume of this sort would not be complete without a new species being named after Winifred Curtis. J. G. West has named a plant discovered in recent years in the midlands as *Colobanthus curtisiae*. This plant is rare and endangered, according to the paper only two plants are known from any conservation area, and very few localities are known in total.

Amongst the non-taxonomy papers is a detailed study of the flora of the Cradle Mountain–Pencil Pine area. This includes vegetation maps and a plant census for the area. Another paper which may be of interest to amateurs discusses four of Tasmania’s cushion plants. Any thoughts that this paper may offer the magic recipe for identifying these species when not in flower is dispelled since much of the discussion focuses on microscopic features.

Papers relevant to Tasmania similar to those in this book are published regularly in a range of scientific journals. This book provides an opportunity to capture a good cross section of these papers in one volume. There are many interesting topics covered in this book which I have not mentioned. Much of it is accessible to the amateur and with the addition of the biography of Winifred Curtis I can recommend it as an interesting and significant work in the history of botany in Tasmania.