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INVERTEBRATE FAUNA OF THE FRANKLIN RIVER AREA, TASMANIA

Report on the Australian and New Zealand Scientific Exploration Society (ANZSES) expedition 1983

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Introduction

In January 1983, the annual ANZSES expedition was to the Franklin River area of Tasmania. The aim of the three week scientific phase of the trip was to explore the area with regard to its geology, botany, ornithology and zoology. This article is a review of the findings of the Invertebrate Zoology group, to make the results more widely available to scientists who might otherwise not have access to them.

The main aim of the Invertebrate Zoology group on this expedition was to fill in some of the gaps in our knowledge of the Franklin River area, which until recently had been poorly represented in Australian invertebrate collections. Collecting methods were aimed at providing as complete a list as possible of the invertebrates in the area, with no attempt made to do quantitative or ecological studies.

Collecting was concentrated on the base camp (42° 27' 50''S 145° 46' 0''E) in as many habitats as possible. In addition, two nights were spent on the button grass plains, a light trap was set up for one night on the Jane River and collecting was done on Goodwins Peak, in nearby caves and along the track between the Gordon and Franklin Rivers. Collec-

ting took place between the 8th and 22nd of January 1983. Some further collections were made in the expedition phase (24th Jan. — 6th Feb.) by the group who explored the coast south of Macquarie Harbour.

Fifteen consecutive days of heavy rain during the scientific phase greatly decreased the numbers of invertebrates collected. Flying insects were scarce, terrestrial habitats were flooded and aquatic habitats had artificial boundaries and unusual volumes of water. The Franklin, Gordon and Jane Rivers along with temporary and permanent creeks were sampled and flying insects, ground and vegetation dwellers were collected from rainforest, button grass plains, caves, coastal areas and heathland.

Collection and Preservation

Standard invertebrate collecting methods included: sweep and dip nets, beating trays, Malaise net, pitfall traps, Berlese funnel, light trap and mercury vapour lamp.

Because of the very wet conditions, most of our material was collected straight into alcohol or formalin, some after appropriate relaxation methods.

Results

Thanks to the efforts made by various taxonomic experts interested in the Franklin area, much of our collection could be identified at least to generic level. The identifications are intended as a guide to what was collected, so that in the future, workers on a particular group will know whether any specimens of that group were found in the area and are awaiting further identification. Work is continuing on the collections, all of which are lodged at recognised institutions (mostly at the Museum of Victoria).

Phylum Mollusca (snails and slugs; 8 families, 12 species)

Both aquatic and land molluscs were surprising in the small number of specimens and species collected with some notable absences (e.g. Planorbidae, Ancyliidae). The only aquatic locality which yielded any snails was one of the permanent creeks running into the Franklin River. Lake *et al.* (1979) attribute this to the relatively low calcium content of the waters of south-west Tasmania, especially the acidic streams. Measurements of pH done on Wattle Camp Creek (no molluscs found) and the first main creek up river from the base camp showed values of 5-6 in both sites.

The molluscan fauna found was mainly as expected, the exception being an introduced slug *Arion intermedius* which would not be expected to be found in this 'wilderness' area.

The record of *Allocharopa legrandi* appears to be a new distribution record, the species not previously having been recorded in south-west Tasmania (B.J. Smith, pers.comm.).

Phylum Arthropoda

Class Insecta

As in any general invertebrate collection, insects were the most

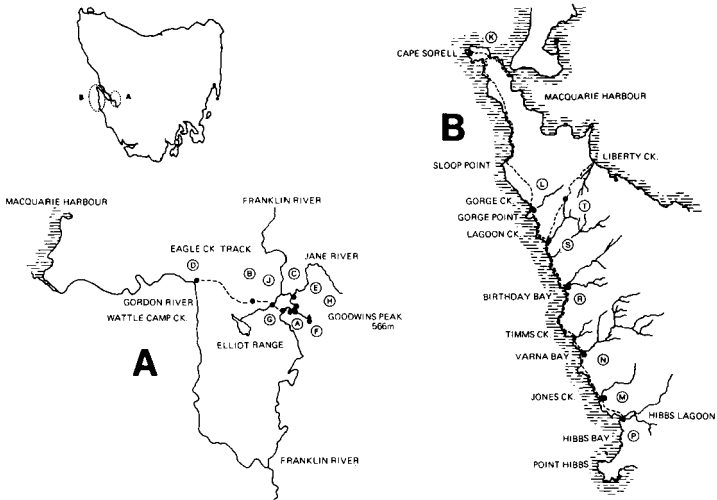


Figure 1. Locality map of area surveyed, showing collection sites.

numerous both in number of species and number of specimens. Over 1,000 specimens, 12 orders and over 100 families of insects were collected from all habitats.

Identification beyond the family level was only possible in certain groups. Only about 130 identifications were able to be made to generic or specific level, and those with interesting identifications or records are commented upon further below.

Order Diptera (flies; 27 families)

Culicidae (mosquitoes; 4 genera, 7 species). (Information and identifications from E. Marks, pers.comm.). All the species collected have a fairly wide geographical distribution within Tasmania. *Culiseta weindorferi* and *Aedes cunabulanus* are known only from Tasmania.

There are no published records of *Coquillettidia* from Tasmania (we found 5 specimens of a species near *linealis*). The adults probably have a restricted seasonal distribution which would help to account for their being missed by previous collectors.

Dobrotworsky (1966) records *Culiseta weindorferi* as a day-biting species; the collecting of this species in the tent suggests it is also a night-biter.

Order Hymenoptera (bees, ants & wasps; 13 families)

Formicidae (ants). Only 10 species (in 5 genera) were collected and this was considered a very low count by Dr. Majer who identified them. Although this could be partly a reflection of collecting effort, ants did not appear to play a major role in the ground fauna of the area.

Order Trichoptera (caddis flies; 12 families, 23 species)

The disappointingly low number of both adult and larval Trichoptera is directly attributable to the weather. The heavy rain meant firstly that the mercury-vapour lamp was either not run or ineffective in attracting the adult caddis-flies and secondly that the large volume of water in the river made the habitat of the larvae inaccessible to collection.

The most interesting specimen is that of *Tascuna ignota*. It is the only representative of the family Oeconesidae in Australia and is restricted in distribution to a small area of Tasmania between Cradle Mountain National Park and the Gordon-Franklin junction. All the other species collected are common from south-west Tasmania (A. Neboiss, pers.comm.).

Order Coleoptera (beetles; 26 families, 47 specific identifications)

The beetles were represented by a large number of families, most of which were unremarkable. In the family Staphylinidae, a specimen of *Myotophylus jonsoni* was found on *Mastocomys fuscus* (broad-toothed rat). Nothing is known of its biology but presumably it lives on fur debris.

Order Orthoptera (grasshoppers, crickets etc.; 4 families)

Notable in this order although not unexpected, were the specimens of the cave cricket *Micropathus tasmaniensis*. This is a dull brown cricket with very long antennae and adaptations to a life underground; an omnivorous scavenger on debris in and around caves.

Other aquatic orders — Ephemeroptera (mayflies), Odonata (dragonflies; 1 species), Plecoptera (stoneflies; 3 families)

All these orders were disappointingly scarce in the collections whereas Tasmania, particularly the south-west, is well endowed with species from these orders.

Of the specimens collected, *Synthemioptis gomphomacromioides* (Odonata) and *Eusthenia spectabilis* (Plecoptera) are endemic to Tasmania, the former favouring particularly the pools and runnels of the button-grass swamps.

Overall knowledge of taxonomy and distribution of the aquatic insects of south-west Tasmania is incomplete. In many cases it is virtually impossible to match larval or nymph forms with that of the adult, making identification difficult. Hence many of the larval specimens in our collection can only be entered under order as 'unidentified' to await further work.

Other insect orders

Other orders collected with no particularly remarkable records were: Collembola (springtails; at least 4 species from 2 families), Hemiptera (bugs; 13 families, 11 identifications to genus/species), Mantodea (mantises; family Mantidae), Neuroptera (lacewings; *Campion* sp.), Lepidoptera (moths and butterflies; 5 families).

Class Crustacea

Order Isopoda (slaters, etc.) (identification and information from A. Green, pers.comm.)

Five species from families Styloniscidae and Philosciidae were collected, all of which have been found in wet forest elsewhere in Tasmania. Four species have been recorded only from Tasmania while *Styloniscus squarrosus*

also occurs in Victoria.

One as yet undescribed species of *Styloniscus* was collected. One coastal species was also found, the typical form of *Ligia australiensis* or shore slater and 2 other families were each represented by one specimen.

Order Decapoda (crabs, crayfish, etc.)

Only one specimen from this order was collected. It is *Engaeus* sp., one of the burrowing land crayfish. Lake *et al.* report that the 2 species of *Engaeus* found in south-west Tasmania are "confined to the lowland forest areas" but this specimen was collected in a pitfall trap on the button-grass plain.

Order Amphipoda (landhoppers, etc.)

Representatives of this group were scarce because our collecting techniques were not geared towards the mostly minute species. The terrestrial amphipods (8 species from family Talitridae) have been identified by Dr. J. Friend who is currently working on the taxonomy of this group.

Class Arachnida

Order Araneae (spiders)

Specimens from 19 families of spiders were collected, ranging from the tiny flower spiders (Thomisidae) to the larger wolf-spiders (Lycosidae) and huntsmen (Sparassidae). While the species were mostly expected, interesting specimens among the collection were the 3 long-legged cave spiders *Hickmania troglodytes* found in a couple of caves in the collecting area.

Mites and Ticks

Most of the free-living mites could not be identified past sub-order (over 20 families). The tick, *Ixodes tasmani*, although collected from the ground and bushes, is a parasite on a variety of animals, most commonly the native mammal families Dasyuridae and Phalangeridae (Roberts, 1970).

Other Classes/Orders

Further specimens were obtained from the following groups: Diplopoda (millipedes; at least 4 families from Order Polydesmida), Chilopoda (centipedes; 4 orders), Pseudoscorpionida (pseudoscorpions; 2 families).

Phylum Annelida

Class Oligochaeta (earthworms)

All the worms collected are from the indigenous family Megascolecidae and the provisional identifications show that some are clearly new species (B. Jamieson, pers.comm.).

Class Hirudinea (leeches)

A small collection of leeches was made but are as yet unidentified.

Phylum Platyhelminthes

Class Turbellaria

Aquatic flatworms

Identifiable only to family Dugesiidae which is the only family represented in Australia (R. St.Clair, pers.comm.)

Terrestrial flatworms (information and identifications from L. Winsor, pers.comm.)

The land planarians include at least 4 species of the family Geoplanidae. There are 20 species from this family recorded from Tasmania and our lack of variety may reflect some degree of seasonality noted during the drier months. The only other family known from Tasmania, The Rhynchodemidae, was not represented in our collections.

Phylum Onychophora (information and identifications from L. Winsor, pers.comm.)

Five specimens of the one species *Peripatoides leuckarti* (Sanger) of 'peripatus' were collected and represent the first fully documented account of this species in Tasmania. The only previous record is of a bleached specimen from 'Tasmania' lodged in the Macleay Museum, Uni. of Sydney, and collected nearly a century ago.

This species can be readily distinguished from the other 2 species known from Tasmania as it has 15 pairs of legs and they have only 14. It can also be separated from other eastern Australian species with 15 pairs of legs because it is viviparous whereas the others are oviparous.

Dissection of the specimens and jaw preparations showed a jaw morphology most closely approaching specimens of the same species from the Kirrama Range, N.E. Queensland.

Conclusion

A full species list is available, keyed to collecting methods and sites and number of specimens and will be published in due course by ANZSES.

The above summary of results shows that even with inexperienced collectors, a wealth of information can be obtained about an area. New species and new locality records will continue to emerge as the material is worked on further.

Acknowledgements

I am particularly indebted to Dr. Brian Smith and Miss Elizabeth Matheson for assistance with equipment, identifications and report writing, to Ms. Rhyllis Plant for preparation of the locality maps and to the experts who did the identifications. Acknowledgement is due to ANZSES for permission to publish this report.

References

- Dobrotworsky, N.V. 1966. Mosquitoes of Tasmania and Bass Strait Islands. *Proc. Linn. Soc. N.S.W.* 91:121-146.
- Lake, P.S., Swain, R., Richardson, A.M. and Coleman, D. 1979. Freshwater Environments and their Fauna. In: Gee, H., Fenton, J., (eds.), *The South-West Book*, Wm. Collins & ACF, pp.103-108.
- Roberts, S.H.S. 1970. *Australian Ticks*. CSIRO, Melbourne.

OBITUARY — M.S.R. SHARLAND

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Michael Stanley Reid Sharland, one of the old school of bird students, a senior member of the Royal Australasian Ornithologists Union and a past office-bearer of the Tasmanian Field Naturalists Club, died at Hobart on Wednesday, 11 February 1987 at the age of 87 years.

He was a man of many parts with a deep history in his native State of Tasmania as well as in ornithology as a whole, and he was one of Australia's foremost photographers with wonderful photos of birds and historical subjects.

He was a journalist by profession, although in more recent times his chief concern was the maintenance of our historical heritage as former secretary of the Scenery Preservation Board. This work included the restoration of several buildings as part of the convict settlement of Port Arthur and the old home "Entally" as Hadspen, which was one of his dearest loves. Tasmanian national parks also came under his control.

His early training in journalism was with Hobart's daily paper, "The Mercury", with which he was closely associated for over sixty years, and he has always been highly regarded in that field. In 1927, he transferred to "The Sydney Morning Herald" before moving again to Melbourne where he was employed by "The Argus" and for a short time also as a correspondent of Reuters in London. It was in his very early days at Campbell Town in the Tasmanian Midlands that he took a keen interest in natural history, particularly in birds, and it did not take him long to bring his knowledge in this field to the attention of "The Mercury", as a result of which he started contributing a column under the name of "Peregrine" to that paper's weekly magazine, "The Illustrated Tasmanian Mail", and this continued in Saturday's "Mercury" after the magazine ceased publication in about 1931. "Peregrine's" nature notes continued without a break for 60 years, which is believed to be a record.

During World War II he served as Chief Photographer with the Australian Paratroop Battalion. On the cessation of hostilities, he returned to Tasmania and his old friends at "The Mercury" for a brief period before accepting the position of Secretary to The Scenery Preservation Board which he held from 1947-1961. During this time he also held appointments as a member of the

Animals and Birds Protection Board, the Nomenclature Board and as Honorary Ornithologist to the Tasmanian Museum.

In addition to his other posts, he took an active interest in the Royal Zoological Society of N.S.W. whilst he resided in Sydney and was elected a Fellow of that Society. On his return to Tasmania he was instrumental in rejuvenating the Tasmanian Field Naturalists Club and in 1971 in the formation of the Bird Observers Association of Tasmania. He was elected a Life Member of both these bodies.

Michael Sharland was a regular contributor to "The Emu" for many years and his papers were often illustrated with his excellent photographs which became well-known. In later years, he won two international awards with his bird photographs which were always in black-and-white. He claimed that this medium allowed him greater definition and character. He also wrote articles for the "Tasmanian Naturalist", "Gould League (N.S.W.) Notes", "Australian Museum Magazine", "The Bird Observer" and "Australian Bird Watcher", and for the now-defunct magazines "Wildlife" and "Walkabout".

Not only was he a regular contributor to "The Emu", he also acted as Tasmanian State Secretary of the R.A.O.U. from 1945-1963 and as such was a member of Council. He was President of the R.A.O.U. during 1949-1951.

He undertook the following expeditions in connection with his ornithological pursuits:—

1924 — Lake Eyre (4 months)

1926 — Lord Howe Island (2 months)

1947 — Kimberleys (6 months)

1948 — Great Australian Bight Islands (1 month)

1967 — Cape York.

Additionally, he made a number of overseas visits, primarily for family reasons, but always paying close attention to natural history subjects. These included United Kingdom, Europe, North and South America, Africa and New Zealand.

He was the author of the following books:— Tasmanian Birds (1945, 1958, 1981); Stones of a Century (1952); Tasmanian Wild Life (1961); A Territory of Birds (1964); Tasmania (1966); Oddity and Elegance (1966); Birds of the Sun (1967); These Verdant Plains (1971); Tasmanian National Parks (1972); Once Upon a Time (1976); and Tracks of the Morning (1981).

His official duties with the Tasmanian Field Naturalists Club included:— President (1945-1948; 1954-1955), Vice President (1922-1924; 1949-1953; 1965-1972), Honorary Secretary (1941-1942) and Editor of the Tasmanian Naturalist (1946-1950; 1965-1968).

Our sympathies are expressed to his wife, Iris, who often accompanied him on his excursions, his son, Roger, and his daughter, Elizabeth.