

EXISTING TASMANIAN MARSUPIALS.

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Within the last few years considerable attention has been directed to the present state of the Australasian marsupial fauna. The meetings held during the recent scientific congresses in Australia have served to stress the importance of our native animals and the need for a better system of conservation, for, with the advance of settlement, many forms of animal life are being reduced in numbers to a very considerable extent. This is particularly noticeable in the Australian zoo-geographical province.

Our fauna consists, to a very large extent, of archaic types, which, when brought into sudden contact with more advanced forms, rapidly decline. In addition to man, in the ordinary process of settlement, the native fauna has to contend with numerous introduced species, which latter almost invariably tend to displace the indigenous forms previously existing.

In view of the difficulty experienced in tracing the life histories and distribution of extinct and rare forms, a brief review of the present position of the Tasmanian marsupials may be useful not only for its present interest, but as a source of reference to workers in future years who may endeavour to trace the extent and distribution of our fauna, many forms of which will undoubtedly become rare if not extinct.

Since the settlement of Tasmania in 1803 the aborigines have vanished, the Tasmanian Emu has become extinct, and certain other forms greatly reduced. As is well known, several American expeditions have recently collected in Australia, and these observers have drawn attention to the lack of any systematic work as regards the distribution of the mammals of Australia (for instance Hoy, *Journal of Mammalogy*, Vol. 4, No. 3, p. 166). This is not as it should

be, and Australian Zoologists might well consider plans whereby at least an outline biological survey of our indigenous fauna could be attempted. In this instance it is desired to give a brief résumé of the Tasmanian *Marsupialia* as at present existing.

Macropus giganteus, var. *tasmaniensis* (Forester Kangaroo). The Forester Kangaroo formerly roamed over the greater part of Tasmania where conditions were suitable. It frequents, as a rule, more open country than *M. ruficollis*, and this fact, together with its larger size, is undoubtedly responsible for its decline. At the present time this species is met with only in a few localities in Tasmania. In some instances, the owners of large estates have taken an interest in the animal, and it is owing to the protection thus received that groups of this species exist to-day in certain places in the island.

In other parts where there are scattered mobs, such as in the extreme North-East of Tasmania, the advance of settlement is having its effect, for although the species is totally protected by law, the fact must be recognised that in the more distant country districts it is a matter of extreme difficulty to enforce the game laws.

Although very much reduced in numbers the Forester Kangaroo does not appear to be in any immediate danger of extinction, particularly if the landowners who have protected it in the past continue to recognise the variety as one worthy of being retained. Again, the species will probably be bred in local zoological gardens, and there is the still further possibility of this and other species being bred on a large scale and made an item of great economic importance to the State.

Macropus ruficollis, var. *bennettii* (Bennett's Wallaby). Commonly called the Kangaroo in Tasmania. This species is evenly distributed over the island except in certain of the more settled districts from which it has now vanished. In the North-West and South-West it is common. Extensive trapping takes place each open season, and the official returns* show large totals of skins upon which royalty has been paid.

*For returns of skins, etc., see Annual Reports of Police Department of Tasmania. A résumé of several years is given in Appendices 1 and 2 of the present paper.

Macropus billardieri (Rufous or Scrub Wallaby). The Scrub Wallaby frequents the denser bush and patches of scrub bordering the creeks and plains. It is evenly distributed and is plentiful in certain districts remote from settlement; but close to the settled areas its history is the same as the larger forms.

Bettongia cuniculus (Tasmanian Bettong or "Rat Kangaroo"). This species is still comparatively common, being well distributed throughout Tasmania.

Potorous tridactylus (Rat Kangaroo or "Wallaby Rat."), Common in many localities and evenly distributed in most localities suited to its habits. This and the preceding species are not trapped for commercial purposes as are the larger members of the *Macropodidae*, but they have to contend with many enemies consequent upon the advance of settlement.

Dromicia lepida (Lesser Dormouse Phalanger). Being of small size and living in the hollows of eucalypts and other such trees, this species is captured more by accident than by design. It appears to be evenly distributed, and is probably far more plentiful than is generally supposed.

Dromicia nana (Dormouse Phalanger). The remarks made concerning the previous form (*D. lepida*) are also applicable to this species.

Petaurus breviceps (Lesser Flying Phalanger). It is generally stated that this species was introduced into Tasmania from Victoria (Gould, *Mammals of Australia*, Vol. 1, p. 25 and p. 28). If such is correct the animal has spread throughout the island, as specimens have been secured in most districts—even from the extreme South.

Pseudochirus cooki (Ring-tailed Phalanger). The Ring-tailed Phalanger is to be found in practically every part of Tasmania suitable to its habits. In certain districts it is exceedingly plentiful, but extra safeguards may be needed in the near future, as since the introduction of acetylene flare lamps, this and the following species are greatly reduced in numbers during the hunting season.

Trichosurus vulpecula, var. *fuliginosus* (Tasmanian or Brush Phalanger). Whilst not as common as *P. cooki*, the Brush Phalanger, which may be either black or grey in colour, is found in most parts of Tasmania. It is absent in certain areas, for instance Bruny Island. In the South-West of Tasmania it does not occur west of the Marawaylee (or New) River, but is present north of Rocky Point on the

West Coast. Owing to the high value placed on its fur the remarks made regarding the previous species apply with added force in the present instance.

Phascolomys tasmaniensis (Tasmanian Wombat). The Wombat is distributed throughout Tasmania, and even manages to exist in bush areas close to settled localities. In the Western highlands the wombat is exceedingly numerous in places. Its pelt is not considered of commercial importance. This is largely owing to the coarseness of the fur and the difficulty of skinning the animal. Trappers, however, destroy large numbers of wombats on account of the damage which they do to their snares. The Flinders Island wombat has been introduced, and there is a small colony of the Flinders Island form at Eddystone Point, North-East Tasmania. They were liberated here by the lighthouse-keepers.

Perameles obesula (Short-nosed Bandicoot) and *Perameles gunni* (Tasmanian Striped Bandicoot) are to be met with throughout the island. The former appears to be the more common and evenly distributed form.

Thylacinus cynocephalus (Tasmanian Marsupial Wolf). When John Gould described this animal (*The Mammals of Australia*, Vol. 1, p. 53) he wrote:—"When the comparatively "small island of Tasmania becomes more densely populated "and its primitive forests are intersected with roads from the "Eastern to the Western Coast, the numbers of this singular "animal will speedily diminish. Extermination will have "its full sway and it will then, like the wolf in England and "Scotland, be recorded as an animal of the past."

Such was undoubtedly a true forecast, for the animal is confined practically to the rugged western portion of the island. From the more settled districts it has long since disappeared, and even in the more distant sheep runs it has been trapped out, owing to the destruction which it caused among the flocks. It is now also being killed out even in the rugged and more inaccessible parts of the country, which tends to reduce still further the remnants of this species. The explanation of this is that the Thylacine interferes with the trappers' snares. As a result, a powerful "springer" snare is set often in the vicinity of their "skinning yards," which are situated every quarter of a mile or so along the lines of snares. Thylacines or other animals caught in these powerful snares are, as a rule, too severely injured to be kept alive as specimens for zoological gardens, even if the trappers would take the trouble to bring them in. The

extended trapping of recent years will tend, therefore, to restrict the Thylacine to the most rugged and unsettled portions of the West of the island. Here it may survive as a living species for years to come, but its eventual doom seems apparent unless such attempts as are being made at present by Mr. A. R. Reid (Curator of the Beaumaris Zoo, Hobart) to breed these animals in captivity are successful. Should success be attained in this direction, a most interesting species will be retained for a much longer period than would otherwise be the case.

It is doubtful if the shy animal will breed within the confines of a Zoo, and it would be in the interests of science if a reserve could be set aside and netted in in order to prevent total extermination. Such a reserve would only need to be a few acres in extent in suitable country, but the question of supervision and feeding is important. If funds were available an area in the National Park might well be considered for such a reserve.

As the animal is found in a living state, only in Tasmania, a few general remarks concerning its habits may well be added. The Thylacine, which is a timid animal, hunts chiefly at night, but it may be met with occasionally in the day time. Generally it hunts alone, but a family pack of four or five has been noted. It covers a large area of ground in its hunting excursions, usually scouring the plains at night and returning during the day to a cave amid the rocks in the hills or amid the thick timber of the gullies. During the breeding season a male Thylacine has even been known to follow the same route across many miles of country, and one particular animal used to regularly leave a trail of slaughtered sheep along the same line of march each year, but he was trapped eventually. If a Thylacine kills a sheep it will usually only suck the blood, and may also take a little of the kidney fat.

Usually four young are reared at a time. They have very pronounced stripes, and a distinct terminal crest on the tail. It is often stated that a Thylacine can be grasped by the tail in the same manner as *Sarcophilus*, but this is by no means a general rule, as those who have had to handle the animals know to their cost.

As regards osteological details, the skull of a Thylacine, to the casual observer, appears very like that of a dog, but the expanded zygoma, contracted parietals, incurved lower jaw, and the eight upper incisors and molars, serve, among

other things, to immediately distinguish the marsupial wolf. Another interesting feature is that the epipubic bones of *Thylacinus* are not ossified, but are represented by cartilaginous members.

Sarcophilus harrisi (Tasmanian Devil). Of much smaller size but of fierce disposition, the Tasmanian Devil will probably survive for many years. Its hardy nature both in captivity and in its wild state cause one to wonder how it came about that this species became extinct on the mainland within comparatively recent geological times. It cannot be considered a pleasant animal to have much to do with, and numbers are killed by trappers in the course of their work. In the rougher sections of the country this species exists in fair numbers and there is every prospect of it remaining an inhabitant of such places for years to come.

One or more Tasmanian Devils will often follow a Thylacine on its hunting excursions. The Thylacine will kill a wallaby or other small animal, select a few choice morsels, and pass on. The Devils will carry on the feast and consume the remnants, bones and all. It would be difficult to find an animal with a more powerful jaw than *Sarcophilus*; its gripping and breaking powers are astonishing considering its size.

Dasyurus maculatus (Tiger Cat). The enemy of the settler's chickens, it is only natural that this species should be reduced in numbers, especially in the settled districts. Even so, this hardly accounts for the scarcity of this species in the more Southern Tasmanian localities in the last few years. In the North-West the species is still fairly common.

Dasyurus viverrinus (Native Cat). Of smaller size and not of quite such a destructive nature as the former species, the native cat still exists in fair numbers in even the more settled districts.

Phascologale swainsoni (Swainson's Pouched Mouse). This interesting animal appears to be fairly evenly distributed throughout the island; in the Cox Bight and Port Davey region it is common.

Phascologale minima (Little Pouched Mouse). Further research is needed in regard to this and the following species—

Sminthopsis leucopus (White-footed Pouched Mouse). These small forms not often captured, and it would be a matter of some difficulty to define their distribution and

numbers. In a general way, however, it is often found upon investigation that such small forms as these are far more numerous and more generally distributed throughout the country than is generally supposed.

General. Generally speaking, it may be said that as far as the smaller marsupials are concerned, they still exist in fair numbers in the less settled districts. Certain larger forms, however, such as the Thylacine (*T. cyanocephalus*) and the Forester Kangaroo (*M. g. tasmaniensis*) are sadly reduced in numbers and may be in danger of extinction unless protection is afforded or some other means found of conserving the continuity of such species. The National Park will assist in this direction, and several sanctuaries have been proclaimed in addition. Certain of these are of little value, however, for they are in isolated positions and lack a permanent guardian. A sanctuary can never claim to be such unless a resident ranger is placed in charge of the area. In this respect the Tasmanian National Park at Mount Field (38,500 acres) may be mentioned, as through the enthusiasm of the ranger (Mr. W. A. Belcher) the area is a sanctuary in effect as well as in name, and such species as *M. ruficollis* and *M. billardieri* have increased considerably in recent years. Our animals appear quick to appreciate the areas in which they are not disturbed, and in this connection attention may be drawn to the fact that the Brush Opossums (*T. vulpecula*) inhabiting the bush in the vicinity of the huts at Lake Fenton have become so tame that they will even enter the huts during the evening and allow visitors to feed them.

Another factor which would tend to the conservation of our fauna if it were recognised more fully is its great economic importance. At present our methods in regard to hunting and trapping are crude and wasteful. A country depends for its progress on production, which naturally divides into five main divisions, the first being hunting. A more business-like method of dealing with the produce of this division would not only assist the State in regard to revenue, but would tend to the better conservation of our wild life.

Tasmania's topographical formation supplies extra reasons for the consideration of some such scheme, for, owing to its peculiar hilly character and masses of rugged mountainous country, a large percentage of its acreage is quite useless for agricultural or other purposes. If mineral wealth is not found in these areas they will remain unproductive for many years to come unless other plans are carried out.

It would appear that such areas could be turned to good account by the formation of game reserves and by conducting trapping, etc., on business lines, with due consideration to conservation and a limited yearly return of skins, etc. Present methods are wasteful and constitute a source of economic loss as well as tending to the ultimate extinction of the larger marsupials.

The main difficulty in dealing with questions in relation to our fauna is that they are subject to political considerations, and the annual return in licence fees is given more consideration than the capital sum. In short, the total capital value of our fauna appears nowhere on the Treasury books as such and is disregarded. Not only is the yearly interest on this capital spent, but the capital sum is itself being seriously depleted. On economic grounds alone, apart from purely scientific or sentimental reasons, our native fauna and particularly the marsupial section, may well claim considerably more attention in the future than has been bestowed upon it in the past. We, as Australians, have been placed in charge of a wonderful heritage, and it rests with us to respond to the trusteeship which has been granted us.

APPENDIX 1.

The following gives the returns from Wallaby and Phalanger hunting for the years 1923 to 1926 inclusive:—

	(Bennett's Wallaby) <i>M. ruficollis</i>	(Scrub Wallaby) <i>M. billardieri</i>	(Brush "Opossum") <i>T. vulpecula</i>	(Ringtail "Opossum") <i>P. cooki</i>
1923 ..	146,236	201,365	105,968	587,179
1924 ..	59,448	86,393	45,978	273,421
1925 ..	75,979	121,245	60,212	596,526
1926 ..	66,114	94,531	49,737	634,620

APPENDIX 2.

Fees collected by Government in 1923 to 1926 in relation to marsupials:—

	Licence Fees.	Royalties.
1923 ..	£4,119	£15,878
1924 ..	£1,974	£6,928
1925 ..	£2,500	£11,148
1926 ..	£2,402	£10,382