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THE PRESENT STATUS OF SOME TASMANIAN MAMMALS IN RELATION TO THE FUR INDUSTRY OF TASMANIA

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(With 10 Text Figures)

INTRODUCTION

In making a general survey of the status of an economically exploited species, several workers have made use of the returns made by commercial hunters. Examples of this are found in papers by Colman (1937 and 1949), Chitty and Elton (1937) and Chitty (1938, 1939, 1940). Colman evaluated the status of the Newfoundland Seal Industry while the other workers were engaged in the well-known Arctic Wild Life Enquiry. There is also a growing use of kill data as a basis for calculating the density of natural populations. I propose here to give an account of the status of some of the Tasmanian fur and game mammals, and to review the fur industry, using information derived from the fur and game statistics. In this paper I will not make any attempt to estimate total populations of the various species.

The fur industry in Tasmania at present is not very remunerative but it is of some importance in the highland country districts where it provides a supplementary income during the slack winter months.

The statistics of the industry are rather poor. I have not been able to obtain the details of catches prior to 1947. These returns once existed and were used by Pearson (1938), but all records up to and including 1946 were destroyed in 1947 and so details of the various licences issued before 1947 are not available. The authorities do not consider it necessary to preserve these records and they are destroyed from time to time, but some details, although inadequate, are recorded here for future workers.

The prevailing prices for skins are not shown in any statistical surveys issued by either the Commonwealth Bureau of Statistics or the Tasmanian Statistical Office. The total value of the skin industry is given by the former, but this sum includes rabbit as well as marsupial pelts and it is not possible to abstract details of each species. I have not been able to obtain the prices paid to trappers for pelts for the period 1923-1955.

Throughout this paper I intend to follow Troughton (1941), Guiler (1953), and others and use the term "possum" for the Australian phalangers, reserving the word "opossum" for the American Didelphids. The nomenclature used is that of Iredale and Troughton (1934).

THE ANIMALS

The fur industry at present exploits Bennett's Wallaby, *Wallabia rufogrisea* (Desmarest) v. *bennetti*, as one of the principal furbearers of the State. This species, although a wallaby, is known throughout Tasmania as the kangaroo or simply 'roo. The species is plentiful in many parts of the State and has reached pest numbers in north-eastern and north-western Tasmania. In the north-east and east there is a 12 month open season (1952-1955) and in the north-west, special hunting permits have been granted to landholders to kill *Wallabia* throughout the year. Troughton (1941) quoting Gould who wrote in the early colonial days, records that this species was hunted for food and skins, the latter being exported to England for manufacture into boots and shoes. The pelts then fetched 4d.-6d. each.

The smaller Thylogale, *Thylogale billardieri* (Desmarest) or Red-bellied Pademelon is also hunted for its pelt. This species is known locally as the wallaby. Troughton, again quoting Gould, notes that this species also was hunted for its skin in the early days of the colony.

Both of these macropods are extensively hunted for meat and sport. The large forester kangaroo *Macropus tasmaniensis* Le Souef used to be hunted commercially but the species is recorded by Troughton as "hunted to the verge of extinction". It is now a completely protected species and is found in the north-east corner of the State and also at Lake Tooms. The area in the north-east where the kangaroo is found has been declared recently as an area for agricultural development. It is therefore very doubtful if this species will survive in that area.

Pseudocheirus convolutor (Oken).

The Ringtail Possum is found throughout Tasmania with the possible exception of myrtle forest areas. In the past, this species was a major item in the Tasmanian fur industry, but in recent years (1950-55), due to the prohibition of the steel gin trap, these animals, which spend little time on the ground, have proved difficult to trap and are no longer hunted commercially.

Trichosurus vulpecula (Kerr).

This possum, the Brush, is larger than the Ringtail and is hunted commercially, having a more valuable fur. Three types of possum are listed in the skin returns. These are Ringtail, noted above, the Black Possum and the Grey Possum. Black and grey are the principal colour phases of the Brush Possum but are listed separately on account of the difference in value of the black and grey pelts. Pearson (1938), Huxley (1942) and Guiler (1953) have discussed the distribution of the black and grey varieties, in relation to climatic and other factors, the most recent work showing that the black phase is found in areas with high rainfall and humidity combined with suitable vegetation. The species is more omnivorous than the Ringtail and spends more time on the ground seeking food and so is easier to trap than *Pseudocheirus*. These animals can become friendly to humans, and one is well-known at a hiker's hut where it eats anything from lamb chops to sweet cakes.

Hydromys chrysogaster Geoffroy

This rodent, locally known as the water-rat, is highly esteemed for its pelt which is soft, dark on the back but golden-yellow on the belly. The species is generally distributed but is not plentiful in any one area. It inhabits rivers and creeks and has been seen fishing on the seashore. *Hydromys chrysogaster* is not confined to Tasmania but is also found on the mainland of Australia.

Oryctolagus cuniculus (L.)

The rabbit is important to the fur industry of Tasmania and during the War, trappers made much money from the sale of rabbit skins. The rabbit is found over a great area of Tasmania but is absent from rain forest areas and places isolated by these forests. It does not favour certain types of low quality scrub in the south and west of Tasmania.

Dama dama (L.)

The European Fallow Deer, *Dama dama* (L.), was introduced into the midlands district of Tasmania for sporting purposes. While this species is not utilized commercially, it is included in the present survey since it provides a source of revenue to the Government through licence fees.

Other Species

Previous to the introduction of protective regulations, many other species of mammals were killed for their pelts, in particular, the Forester Kangaroo, Tiger Cat and Native Cat. The platypus, *Ornithorhynchus anatinus* (Shaw and Nodder) was also extensively hunted. These species are now, along with all other marsupials and monotremes, wholly protected.

Seals, *Gypsophoca tasmanica* Scott and Lord, were exploited in the early days of the Colony, particularly in the Bass Strait Islands. This industry acquired a reputation not only for cruelty to the seals but also for the ruthlessness with which the hunting was carried out. Nowadays seals may be hunted under licence but very few licences have been issued since the War. Seals are often shot by fishermen, who regard them as a menace to fishing.

CONTROL

The control of the trapping and killing of native animals is vested in the Animals and Birds Protection Board under the Animals and Birds Protection Act 1929. The Board issued new regulations under the Act in 1953 (Tasmanian Government Gazette). The Board consists of representatives of the skin dealers, trappers, scientists and of sporting bodies. The landowners and farmers are also represented and there is a Government nominee.

The Board, often referred to as the Fauna Board, is invested with the power of declaring open seasons, protecting animals and declaring sanctuaries. The issuing of various licences is also a function of the Board.

The Act is enforced by members of the Tasmania Police who are seconded to the Board as Inspectors. At present there are two Inspectors.

Licences are required to hunt wallaby, thylogale or possum and to sell the skins to dealers. Skin dealers require a licence to trade in skins. Dealers' agents also have to be licensed. It is not necessary to obtain a licence to hunt on private land, but it is necessary to have a licence to sell the skins caught there. Restricted licences are issued to enable an individual to purchase skins for private use.

Royalties are payable on all skins taken except those of the rabbit. The royalties can be paid at any police station by the hunter, dealer, or dealers' agent. The pelt is then stamped "Royalty Paid Tasmania" in a circular stamp.

The police officer, in making out the receipt for the royalty, records the number of pelts of each species and the locality whence they were taken. These records were utilized in the surveys of the colour phases of the Brush Possum mentioned above.

The open season for game is usually held during the winter months of June-July. At this time of the year, the pelts are in good condition, although the females of all species are usually carrying young. The pouch young of kangaroos vary considerably in size during these months, which points to a protracted breeding season (Asdell, 1946 and Zuckerman, 1953). The possum young are also in different stages of development, due to two breeding seasons per annum (Asdell, 1946). This makes it difficult to prevent the taking of females whilst they are carrying young.

Methods

(*a*) Wallaby and Thylogale

Under Section 44 of the Regulations all set snares or traps must be inspected at 36-hour intervals and animals removed therefrom. This regulation, necessary from the humanitarian viewpoint, often inflicts some handicap on highland trappers, necessitating trips around a 10-mile trap line in snowstorms and other adverse weather conditions.

Wallabies and thylogales are hunted by a variety of means. Some hunters maintain packs of dogs, which are of a "greyhound throwback" type and are used for running the wallabies to a standstill, when they are shot. Often small dogs called "yafflers", are used to put up the wallabies out

of thick scrub. Both these macropods are largely killed for their skins although some are sold for meat. Snares are used widely in the trapping of wallabies and thylogales for skins, the animals usually being skinned on the spot and the skins stretched at camp, the carcase being left in the bush.

Smoking out game is forbidden, as is the use of spears and chemicals. Lights for night shooting are prohibited.

(*b*) Possums

Section 40 of the 1953 regulations forbids the use of steel gin traps for taking these animals and this restricts the catch to Brush Possums since the Ringtails spend most of their time in trees and are difficult to snare. Shooting of possum is illegal (as is the possession of skins of animals which have been shot, Sections 38 and 39 of the Regulations). Largely on account of the difficulty of snaring Ringtails there has not been an open season for taking this species since 1949. Previously, the species was caught in ordinary rabbit traps.

The Brush Possum spends a proportion of his time on the ground and his home tree can be readily identified by the scratches on the side of the trunk. The animal climbs up the side of the trunk which has the least vertical slope and if a log is placed at an angle from the ground to this trunk, the possum will use it to gain its home. A wire running noose snare is placed on this log. The animal, usually dead, is removed and taken to camp before being skinned (local terminology—skun). Brush Possums have to be cold before skinning otherwise the fur tears out of the skin. The corpses may be fed to dogs, buried, or more often dumped in the bush. The methods of skinning closely follow those used in New Zealand and described by Pracy and Kean (1949).

(*c*) Water-Rat

The water-rat is snared on tracks on the banks of rivers, streams or swamps. The snare employed is a running noose arranged so that least damage will occur to the pelt.

(*d*) The Rabbit

The rabbit does not come under the regulations and any method may be used for killing or trapping the pest. Graziers run a furrow and free feed the rabbits on apples or carrots, then using some mixed with strychnine, poison them. The skins are not used and the corpses are buried or burned. Warrens are ploughed in or gassed, and the myxomatosis virus has been introduced in Tasmania with varying success. The poison "1080" (sodium monofluoro-acetate) has recently been used in place of strychnine and has yielded excellent results.

Trappers are employed by the sheep graziers. They are paid a wage and allowed to sell the skins and meat. They use rabbit traps, dogs, or ferrets and nets. The success of myxomatosis and "1080" poisoning has greatly reduced the number of trappers in Tasmania.

The pelts are detached and sold and the carcases are sold in grocers' and butchers' shops. In recent years, an export market to England has developed, the carcases being exported either frozen or canned.

One of the unfortunate features of the fur industry is that a number of other species which have no value commercially are caught and killed. Snares and rabbit traps account for most of these casualties. The Tasmanian Devil *Sarcophilus harrisii* Boitard is frequently caught, especially in the Great Lake-Bothwell area and the north-east coast.

Native cats, *Dasyurus quoll* (Zimmermann) and tiger cats, *Dasyurops maculatus* (Kerr) are also trapped as well as bandicoots, rat kangaroos and other small marsupials. The smaller marsupials, pigmy possums, marsupial mice and gliders, are only rarely trapped.

THE STATISTICS OF EACH SPECIES

It is not possible to give a detailed treatment of the figures available as several of the important elementary sets of figures are not available. The hunters' licence entitles the holder to take all game, and so it is impossible to calculate the number of persons engaged on any section of the industry. It is possible to abstract accurate figures for the number of water-rat and deer licences issued, but in the latter case there is no return kept of the number killed.

All licence statements prior to 1947 were destroyed by the Police Department so that these records are not available.

Licences for Taking Possums, Wallabies and Thylogales

A licence is required for hunting on Crown land and another licence is necessary to be enabled to sell the pelts so taken. Similarly, a licence is necessary to sell skins taken on private property, but no licence is required to hunt there. The number of licences issued during 1949-55 is shown in Table 1. The years 1947-8 were open seasons only, on King Island and the number of licences issued was low.

An indication of the number of professional hunters working in the industry can be estimated approximately, by counting those licences both for hunting and selling which have been paid simultaneously by one person. These licences have been treated separately in the analysis of licence data and are shown as combined hunters' and sellers' licences in Table I. In 1949 Brush and Ringtail Possum, kangaroo and wallaby were open for hunting and a large number of hunters entered the industry. The years 1950-1 were closed for phalangers and the emphasis of hunting was on kangaroo and wallaby. There were very few professional trappers in the industry in 1955.

In some instances, trappers hunt both possums and kangaroos and others hunt only one species.

(*a*) The Water Rat

Prior to 1942 there are no figures available for the numbers of water rats captured. The figures since 1942 are shown in Table II and are graphed on figure 1.

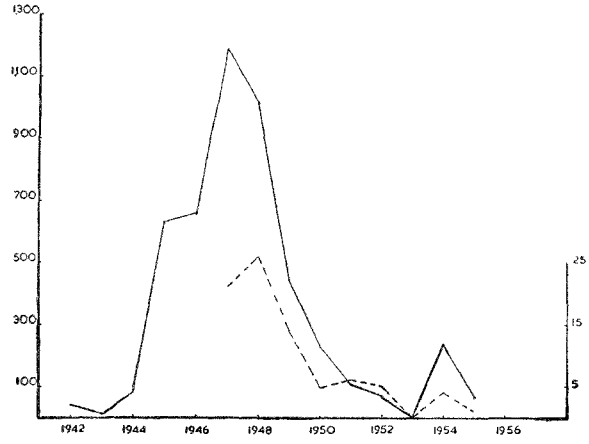

FIG. 1.—Total catch of water-rats for the period 1942 to 1952. The dotted line shows the number of licences issued for the period 1947 to 1951.

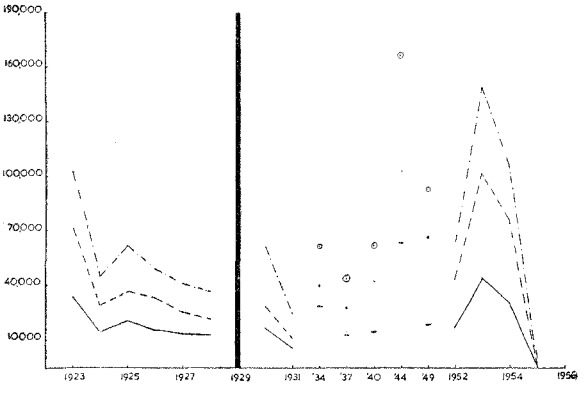

FIG. 2.—Total catch of Brush Possums for the period 1923-52. In this and figs. 3-9 a solid line indicates a closed season or seasons. The years 1946, 1947, 1950 and 1951 all had very low catches, see Table III, and are not shown on this graph. The continuous line indicates the catch of black possums, the broken line the catch of greys and the total catch is shown by the dot-dash line.

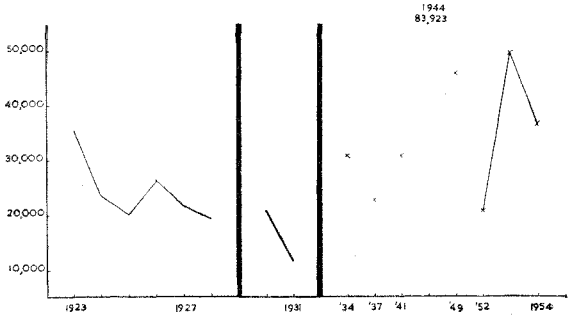

FIG. 3.—Catch per month of open season of Brush Possum for the period 1923-52.

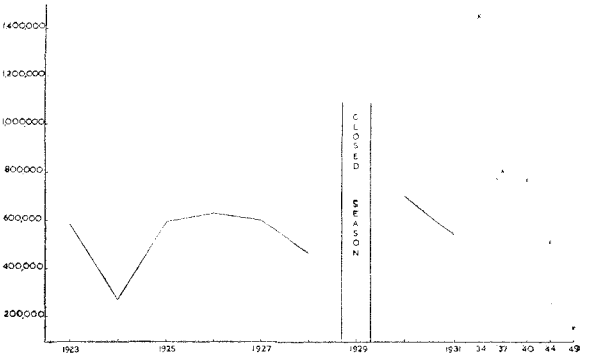

FIG. 4.—Catch of Ringtail Possums for the period 1923-49.

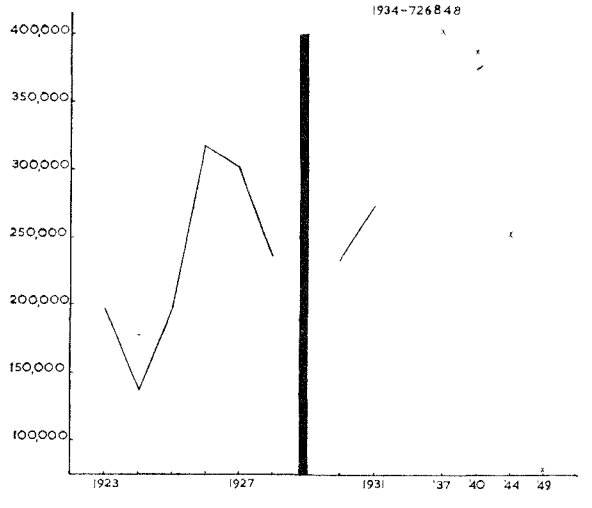

FIG. 5.—Catch per month of open season of Ringtail Possums for the period 1923-49.

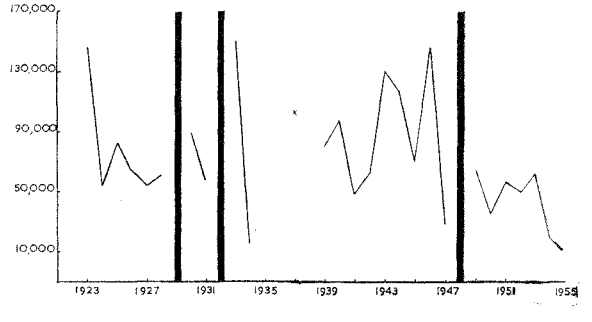

FIG. 6.—Catch of wallaby for the period 1923-52.

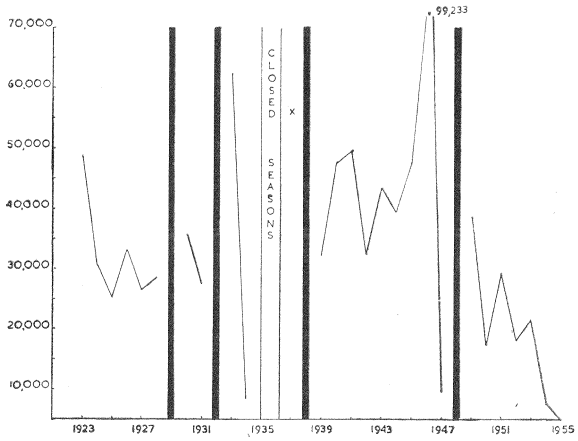

FIG. 7.—Catch per month of open season of wallaby for the period 1923-52.

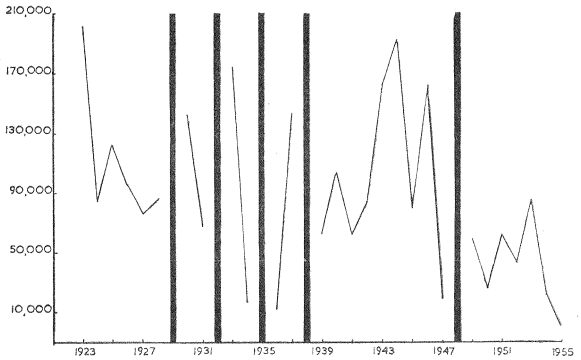

FIG. 8.—Catch of thylogales for the period 1923-52.

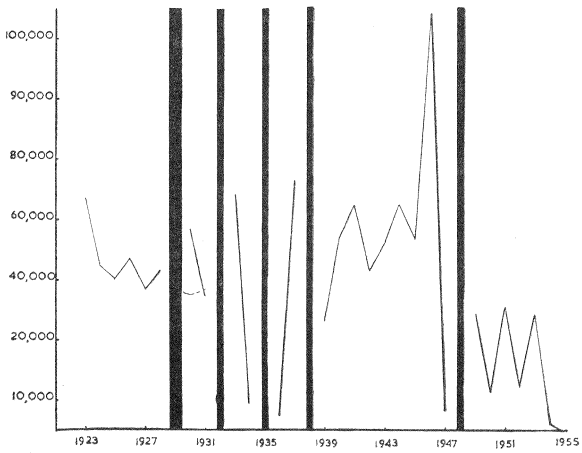

FIG. 9.—Catch per month of open season of thylogales for the period 1923-52.

The total number of pelts taken since 1942 is 4793. The number of licences issued since 1947 is also shown in Table II and these figures have been used to derive the catch per licence.

During the period 1947-52, the average number of pelts obtained per licence issued fell to 4·8. In 1948 there was an increase in the number of men working in the industry but not only was there a decrease in the return per licence but the total number of pelts taken was lower. A shorter period of the open season in this year helped to bolster up the monthly returns of pelts per licence. In 1949 fewer were engaged in the industry yet the return per licence was even lower than before, while the total number of skins taken was very much less. The year 1950 saw a sharp drop in the number of licences issued (5) and there was a recovery in the number of animals caught per licence, but 1951 saw a serious decline in the total number of skins taken as well as in the return per licence. The 1952 open season saw a further decline in this section of the industry. However, in view of the different lengths of time that the season is open each year, it is necessary to reduce the return per licence to a monthly basis. Since 1952 there has been a recovery in the number of pelts taken per licence, and the total of pelts taken has also increased.

The return per licence per month was 0·5 of a pelt higher in 1948 than in 1947. The year following was lower while the 1950 season reached the highest figures since records have been kept, though it must be realized that this figure was achieved by a very much smaller number of men. In 1951 this return showed a serious decline to 9·3 pelts per licence per month, while in 1952 this index was 4·2 pelts per licence per month, but since this date the return per licence has increased to about 20 pelts.

On the figures given above, the position of the water-rat in 1952 might have given rise to grave concern as all the evidence points to serious over-exploitation of the species. Not only had the total catch been falling but the index of yield per individual also fell. This is especially obvious in 1951 when in spite of a slight increase in men employed, the number of skins taken fell by 50 per cent. The extra men actually represent an increase of effort of 20 per cent over the previous year. A decrease of effort of 17 per cent in 1952 saw the index falling by nearly 50 per cent. The situation outlined above gives a false impression of the status of the water-rats. In those years that few rats were trapped the species was numerous and widespread in distribution. I have been informed by skin dealers that there was little demand for pelts during those years so it would appear that the principal factor affecting the catch of *Hydromys* is the economic pressure of demand.

(*b*) The Brush Possum

Records for this species commence in 1923. As noted above, the species is treated in the skin industry as two types—the black and grey. The prices given for the black pelt are greater than those paid for greys. The catch of this species is shown in Table III and figure 2.

The total number of pelts taken since 1923 is 1,062,513. The catch per month of open season is shown in Table VI.

The number of licences issued in 1949, 1950 and 1951 are not known. As noted above, issue of a hunter's licence entitles the holder to take possum, thylogale and wallaby so it is not possible to estimate accurately the number of trappers working in the hunting season.

A feature of the catch per month of Brush Possums has been the remarkable steadiness of the total number of skins trapped. Apart from the years 1923, 1931, 1934, 1944 and 1949 the monthly catch has been in the region of 20,000-30,000 skins (fig. 3). There is very little evidence of any cycle in the variation of numbers of this species and the short period of records with many closed seasons does not give any helpful indications of such a rhythm. The species appears to be in little danger of extermination.

In 1955 the number of animals caught was extremely low. This can be ascribed to the very low price being paid for skins in that year, with a consequent drop in the number of persons engaged in trapping. Although the price paid to trappers for possum skins is not known, all persons interviewed stated that it was not worth their while going after possum, due to the poor reward.

The figures for the number of pelts of Ringtails on which royalties are paid are available from 1923 onwards and are shown in Table V and in figure 4.

The total number of pelts taken since 1923 is 7,409,351. The catch per month of open season is shown in Table VI and figure 5.

The catch per month of open season of this species shows a considerable variation but due to the short period for which records are available, no rhythm can be observed. Prior to 1949, the catch was always greater than 100,000 pelts, in one year even reaching 726,000 pelts. The low catch in 1949 may be due to the condition of the pelts and to a prevailing low price. All Ringtail hunters state that the pelt varies considerably in its quality over a period of years. The trappers with whom I have discussed this problem state that at irregular intervals the Ringtail Possums deteriorate in condition and die off in large numbers. However, Ringtails are numerous throughout the country and the four years closed season has enabled the species to become very plentiful in some areas.

(*d*) Wallaby

The number of wallaby skins taken since 1923 is shown in Table VII and figure 6.

The total number of skins taken since 1923 is 2,039,200. The catch per month of open season is shown in Table VIII and on figure 7.

The number of licences issued to individuals engaged in wallaby hunting is shown in Table IX, together with the average return per licence issued.

(*e*) Thylogale

The number of thylogale skins taken since 1923 is shown in Table X and figure 8.

The total number of skins taken since 1923 is 2,547,529. The catch of thylogales per month of open season is shown in Table X and on figure 9.

The numbers of individuals engaged in this part of the industry cannot be separated from those engaged in the wallaby industry. These numbers, with the return per licence issued are shown in Table XII. The return for the 1949 season was obtained by calculating the average number of licences issued over the three year period.

Since thylogales and wallabies are usually hunted together, the returns for each species must be added together to give the total return to each hunter as in Table XIII.

The return to trappers since 1950 shows a very considerable variation from a maximum 73·1 pelts per licence in 1951 to 37·4 pelts per licence in 1952. There is no purpose to be served by calculating the return per licence per month for 1953-5 since the season has been permanently open over much of the State in those years. The figures do not extend over a sufficiently long period of time to warrant any conclusions being drawn from them.

There is no need for any concern about the immediate future of the *Wallabia* and *Thylogale*. Both species are increasing and in the north-west of the country, where they are present in pest dimensions, a permanent open season has been declared. In other parts of the country the species are plentiful.

Deer

Deer hunting licences are issued at a charge of 2s. 6d. and entitle the holder to take one male deer per day during an open season. The carcase with head attached has to be produced at a police station where it is examined as to maturity. No figures are kept relating to the catch and this species is utilized for sporting purposes only.

MEAT

Several species of Tasmanian mammals are used in the meat trade. The wallaby and thylogale are used to some extent for supplying meat, but there is some difference of opinion as to the appetizing and sustaining value of macropod meat. The hindquarters only are sold, hunters receiving about 1s. per pound weight for them. It is not possible to obtain statistical figures for this aspect of the industry as it is a rather spasmodic and casual business. It is often difficult to transport the meat to the market from the somewhat inaccessible hunting areas. The meat is hung for several days and this greatly increases the danger of it being "blown" by blowflies. In spite of these difficulties, some hindquarters appear in Hobart shops during the open seasons.

The most usual method of preparation of kangaroo meat is for it to be minced, and bacon, ham, potato and seasoning added. This mixture is then fried and served as patties. The end product is very tasty but with so many added flavourings it would be surprising if it were not so. Gould records that kangaroo meat was favoured among early settlers, but this may have been because of the absence of any other meat. One bushman told me that he considered "'roos were good to help you get home but fit for nothing else".

Some bushmen enjoy kangaroo meat, while others consider that " a week of 'roo makes you appreciate mutton ". Kangaroo tail soup is considered by some to be a delicacy. Young Thylogale hindquarters roasted on the spit over an open fire are delicious.

Rabbits are eaten extensively throughout Tasmania. The carcases are available from most butchers' and grocers' shops in the towns and cities. The recent introduction of myxomatosis and the poison " 1080 " has resulted in some decline in the demand for rabbits.

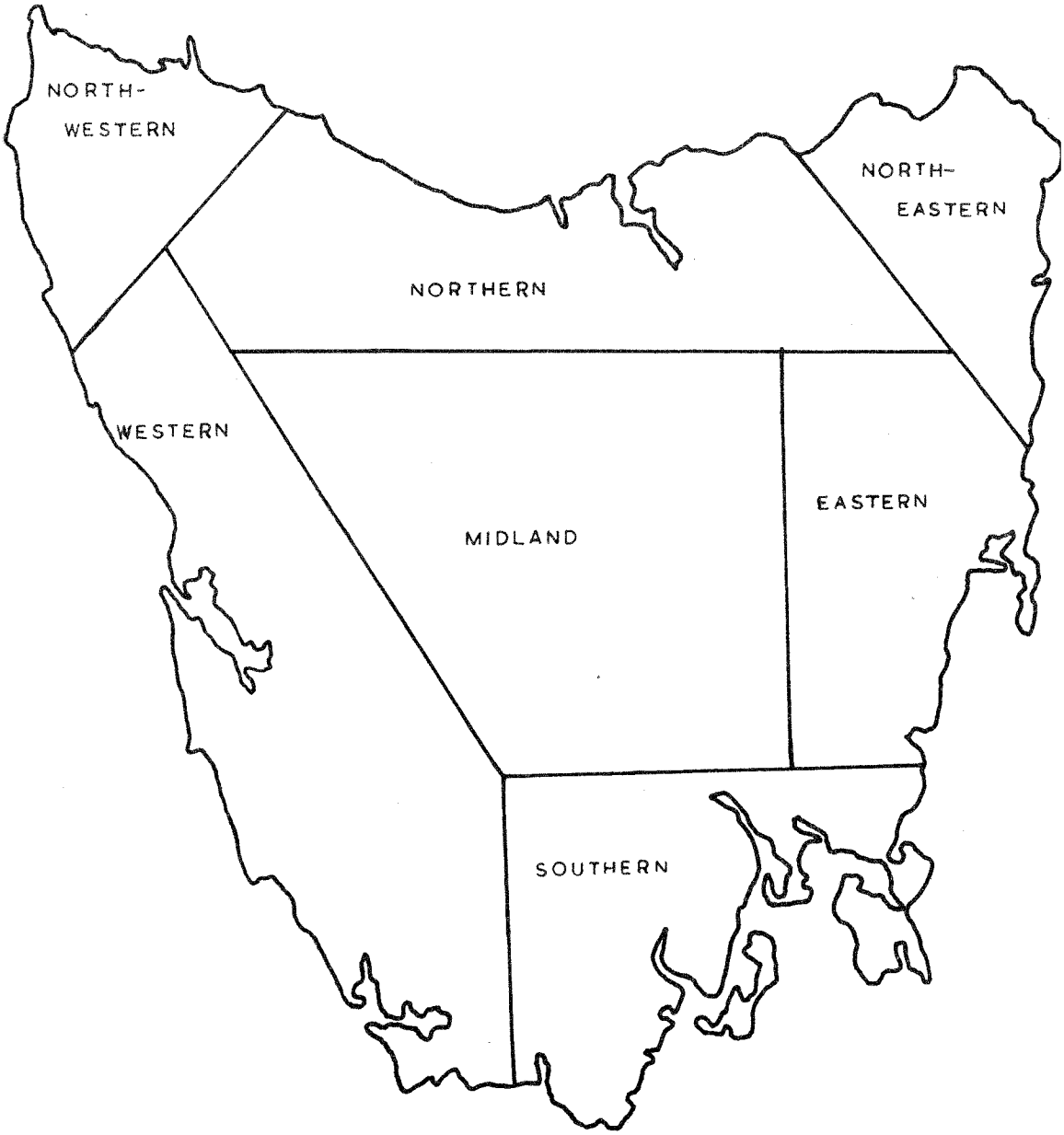

FIG. 10.—The hunting areas of Tasmania.

HUNTING AREAS

(*a*) General

It is possible to gain an estimate of the areas in which most game hunting takes place by the number of hunting licences issued in any particular area.

The duplicates of all hunting licences issued have been examined and the number of licences issued at each issuing centre for the years 1949-1952 inclusive, has been calculated. Tasmania is divided into eight areas (fig. 10) based on geographical and population regions and the number of licences issued in each of the areas, extracted (Table XIV).

From the table it can be seen that the greatest hunting activity takes place in the northern area and the midland area. The north-eastern and north-western areas are considerably hunted but the eastern and western areas are very little exploited.

(*b*) Deer

The most interesting feature of Table XV is the swing in the emphasis of hunting away from the northern to the midland area. In the five years 1947-1951 the number of licences issued in the midland centres was 34, 51, 50, 64 and 95 per cent of the totals issued in the north, ultimately in 1955 becoming almost twice as many as issued in the north. However, these figures present an untrue picture; since there are no deer in the southern area it is a reasonable presumption that licences issued in the south (mostly in Hobart) are used for hunting in the midlands whereas those issued in the northern area are used in that area. By totalling the number of licences issued in the southern and midlands areas, the revised percentages are 66, 81, 89, 93 and 149 per cent, respectively. These figures further show the change in deer hunting from the northern to the midlands area.

POPULATION VARIATIONS

Examination of the available data does not show the presence of any well-defined rhythm in the population numbers of any of the fur-bearing species, though there is a possibility that a 10-11 year sunspot cycle exists as has been shown in other mammals (Elton, 1925). However, there are one or two interesting points to be noted from examination of the monthly kill of animals as shown in figs. 4, 5, 7 and 9. In these figures with the exception of fig. 5, the general pattern of the annual variation in numbers of animals is closely similar. In 1923 a large number were taken, dropping until 1925 when there was a slight increase followed by a further fall. The years 1930-1 showed a sharp drop in numbers of Brush Possums, thylogales and wallaby caught, though the number of Ringtail Possums caught showed a sharp increase.

After 1931, the records for both species of possum are irregular due to frequent closed seasons but both the wallaby (*Wallabia*) and the thylogale catches show a very similar pattern up to 1952. The Brush Possum shows a similar trend during the few years it was allowed to be trapped.

There are two possible explanations of this similarity in catches. The first is that all the four important fur-bearing species are acting in response to some external rhythm-inducing factor or factors resulting in a similar pattern of population density. This explanation does not appear correct as it seems unlikely that four species of different families and of different habits should all respond to a similar stimulus, though it must be born in mind that the species are either herbivorous or largely so (*Trichosurus*).

I have not been able to trace any records of the population of higher animals from different families and of different ecological habits varying in numbers at the same time in response to a similar set of conditions. There is no predator-prey relationship such as can be seen in the Arctic Fox fur industries (Elton, 1925).

The second possibility is that the economic demand for furs is reflected in the effort by trappers. The sharp decline of the catch of pelts during the economic depression years 1930-1 is found in all but one of the fur-bearing species for which records are available. The Ringtail Possum is the exception where there was an increase in the catch of skins in 1932. The Ringtail skin is cheaper than the Brush Possum pelt and poorer economic conditions would lead to a demand for the cheaper material. The low price for *Trichosurus* pelts during 1955 resulted in a record low catch which further supports the theory of economic pressure affecting the industry.

The general pattern of the catch for Brush Possum, kangaroo and wallaby is very similar and even the Ringtail Possum shows a somewhat similar pattern. The absence of complete statistical records of the financial aspect of the industry is to be deplored as it is impossible to correlate the value and demand for furs with the catch and so this possibility must remain a conjecture. It is significant that the variation in catches is so uniform. At the present time (1956) *Wallabia* and *Thylogale* are so common that they have become a pest in certain parts of the State and permanent open seasons operate in the north and east of Tasmania. Poisoning of these species is permitted under special permit. The Brush Possum is very common in some parts, notably the Huon area and there are a lot of Ringtails in the country. None of these species is in danger of over-exploitation at present.

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SUMMARY

1. Notes are given on the animals which are exploited in Tasmania, namely the Ringtail Possum, *Pseudocheirus convolutor*, the Brush Possum, *Trichosurus vulpecula*, Ben-

nett's Wallaby, *Wallabia rufogrisea*, the Thylogale, *Thylogale desmarestii* and the water rat, *Hydromys chrysogaster*. The deer, *Dama dama*, is hunted for sporting purposes.

2. The control of the exploitation of Tasmanian mammals is outlined.
3. The number of pelts of each species taken since records became available is given together with, where possible, the return per licence per month of open season.
4. The fur-bearing species are in little present danger of over-exploitation, though a dangerous situation could develop if the demand for furs became great.
5. Most hunting in Tasmania takes place in the northern and midlands areas but an interesting change of locality of deer hunting has taken place from the northern to the midland area.
6. No statistics are available to enable the cash return to hunters to be calculated.

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TABLE I

Number of licences issued for the period 1949-55

	1949	1950	1951	1952	1953	1954	1955
Hunter's licence	785	98	212	156	....	204	323
Private land licence	809	278	407	586	....	460	233
Combined Hunter's and Seller's	665	203	210	139	....	306	59
	2,259	579	829	881	....	970	615

TABLE II

Catch of water-rats for the years 1942-55

Year	No. of skins taken	Duration of open season (months)	No. of licences issued	Catch per licence	Catch per licence per month
1942	41	2	....	....	....
1943	15	2	....	....	....
1944	86	2	No licence returns available		
1945	627	1½	....	....	....
1946	660	1½	....	....	....
1947	1,190	3	21	56·6	18·8
1948	1,010	2	26	38·6	19·3
1949	443	2	14	31·6	15·8
1950	229	2	5	45·8	22·9
1951	112	2	6	18·6	9·3
1952	72	3	5	14·4	4·8
1953	....	3	....	No return	
1954	244	3	4	61·0	20·3
1955	64	3	1	64·0	20·0

TABLE III

The number of Trichosurus *taken during the period* 1923-55

Year	Blacks	Greys	Species total	Season length
1923	34,094	71,874	105,968	3
1924	16,324	30,813	47,137	2
1925	21,326	38,866	60,192	3
1926	17,327	34,210	51,537	2
1927	15,434	27,183	42,617	2
1928	15,197	23,245	38,442	2
1929		Closed		
1930	19,490	30,680	50,170	2½
1931	8,711	14,827	23,538	2
1932				
1933				
1934	21,036	40,419	61,455	2
1935				
1936				
1937	17,810	26,596	44,406	2
1939				
1940	18,318	42,739	61,057	2
1941				
1942				
1943				
1944	63,221	104,262	167,847	2
1945				
1946	....	355	355	1½
1947	33	99	132	3
1948		Closed		
1949	22,792	68,023	90,815	2
1950	34	38	72	2
1951	39	1	40	2
1952	18,186	43,171	61,357	3
1953	45,829	103,623	149,452	3
1954	31,950	78,340	110,290	3
1955	57	14	71	4½

TABLE IV

Number of Trichosurus *pelts taken per month of open season for the period* 1923-55

Year	Length of season in months	Blacks	Greys	Total
1923	3	11,365	23,958	35,323
1924	2	8,162	15,406	23,568
1925	3	7,109	12,955	20,064
1926	2	8,663	17,105	25,768
1927	2	7,717	13,591	21,308
1928	2	7,598	11,628	19,226
1929	....	....	....	....
1930	2½	7,796	12,272	20,068
1931	2	4,355	7,414	11,769
1932	....	....	....	....
1933	....	....	....	....
1934	2	10,518	20,209	30,727
1935	....	....	....	....
1936	....	....	....	....
1937	2	8,905	13,298	22,203
1941	2	9,159	21,369	30,528
1944	2	31,610	52,313	83,923
1949	2	11,396	34,011	45,407
1952	3	18,186	43,171	61,357
1953	3	15,276	34,541	49,817
1954	3	10,650	26,113	36,763
1955	4½	14	3	17

TABLE V

Total number of Pseudocheirus *pelts taken during the period* 1923-52

Year	No. of Skins	Length of Season
1923	587,179	3
1924	276,261	2
1925	596,526	3
1926	634,620	2
1927	603,863	2
1928	472,260	2
1929	Closed	
1930	701,059	3
1931	544,077	2
1932		
1933		
1934	1,453,697	2
1935	Closed	
1936	Closed	
1937	804,701	2
1938	Closed	
1939	Closed	
1940	773,277	2
1941	Closed	
1942	Closed	
1943	Closed	
1944	504,745	2
1945	Closed	
1946	Closed	
1947	Closed	
1948	Closed	
1949	158,145	2
1950	Closed	
1951	Closed	
1952	Closed	

TABLE VI

Catch of Pseudochirus *per licence per month of open season during the period* 1923-49

Year	Length of season in months	Catch per month
1923	3	195,726
1924	2	138,130
1925	3	198,842
1926	2	317,310
1927	2	301,931
1928	2	236,130
1929	Closed	Closed
1930	3	233,606
1931	2	272,038
1934	2	726,848
1937	2	402,355
1940	2	386,638
1944	2	252,372
1949	2	79,072

TABLE VII

The number of wallaby skins taken during open seasons for the period 1923-55

	Year	No. of skins	Length of season
	1923	146,236	3
	1924	61,559	2
	1925	75,979	3
	1926	66,114	2
	1927	53,471	2
	1928	57,746	2
King Is.	1929	3,399	3
	1930	189,571	2½
	1931	54,685	2
King & Fl.	1932	11,365	3
	1933	150,796	2½
	1934	17,121	2
King & Fl.	1935	5,807	3
King & Fl.	1936	5,390	3
King & Fl.	1937	112,182	2
King & Fl.	1938	3,953	3
	1939	80,004	2½
	1940	94,692	2
	1941	49,850	1
	1942	64,581	2
	1943	130,426	3
	1944	118,621	3
	1945	70,195	1½
	1946	148,849	1½
	1947	29,728	3
King & Fl.	1948	23,580	2
	1949	67,374	2
	1950	34,294	2
	1951	58,794	2
	1952	54,468	3
	1953	64,780	3
	1954	22,690	3
	1955	10,900	4½

TABLE VIII

Number of Wallabia *caught per month of open season for the period* 1923-55.

Year	Length of Season in months	Catch per month
1923	3	48,745
1924	2	30,779
1925	3	25,326
1926	2	33,057
1927	2	26,735
1928	2	28,873
1929	3	1,133 King Is. only
1930	2½	35,828
1931	2	27,342
1932	3	3,788 King & Flinders Is.
1933	2½	62,266
1934	2	8,560
1935	3	1,936 King & Flinders Is.
1936	3	1,799 King & Flinders Is.
1937	2	56,091
1938	3	1,318 King & Flinders Is.
1939	2½	32,001
1940	2	47,346
1941	1	49,850
1942	2	32,290
1943	3	43,475
1944	3	39,540
1945	1½	47,797
1946	1½	99,233
1947	3	9,909
1948	2	11,790 King & Flinders Is.
1949	2	38,687
1950	2	17,147
1951	2	29,397
1952	3	18,156
1953	3	21,593
1954	3	7,563
1955	4½	2,422

TABLE IX

Average returns of skins to Wallabia *professional hunters per licence issued per month of season* 1950-55.

Year	No. of licences	Return per licence	Return per licence per month
1950	579	59·2	29·6
1951	827	70·9	35·5
1952	881	61·9	20·6
1953			
1954	306	74·1	24·7
1955	59	184·9	41·0

TABLE X

The number of thylogale skins taken since 1923.

Year	No. of Skins	Length of Season
1923	201,365	3
1924	88,441	2
1925	121,245	3
1926	94,531	2
1927	75,402	2
1928	87,944	2
1929 (K.I. only)	19,665	3
1930	142,203	2½
1931	69,950	2
1932 (K.I. only)	10,250	3
1933	172,219	2½
1934	18,358	2
1935 (K.I. & Fl. Is.)	7,386	3
1936	14,188	3
1937	146,445	2
1938 (K.I. & Fl. Is.)	5,739	3
1939	65,228	2½
1940	106,650	2
1941	62,335	1
1942	86,918	2
1943	162,832	3
1944	192,405	3
1945	80,510	1½
1946	162,431	1½
1947	19,224	3
1948	23,161	2 K.F.
1949	59,206	2
1950	27,324	2
1951	62,412	2
1952	44,611	3
1953	88,423	3
1954	20,563	3
1955	7,956	4½

TABLE XI

Catch of thylogale for month of open season for period 1923-55.

Year	Length of Season in Months	Catch
1923	3	67,122
1924	2	44,220
1925	3	40,415
1926	2	47,265
1927	2	37,701
1928	2	43,972
1929	3	6,555 King Island
1930	2½	56,881
1931	2	34,875
1932	3	3,416 King & Flinders Is.
1933	2½	68,887
1934	2	9,179
1935	3	2,462 King Island
1936	3	4,729
1937	2	73,223
1938	3	1,913 King & Flinders Is.
1939	2½	26,091
1940	2	53,316
1941	1	62,335
1942	2	43,459
1943	3	52,943
1944	3	64,135
1945	1½	53,673
1946	1½	108,287
1947	3	6,408
1948	2	11,580 King & Flinders Is.
1949	2	29,603
1950	2	13,662
1951	2	31,206
1952	3	14,870
1953	3	29,474
1954	3	6,854
1955	4½	1,768

TABLE XII

Return per licence per month of open season to thylogale hunters for the period 1949-55.

Year	No. licences issued	Return per licence	Return per licence per month
1949	763	50·7	25·3
1950	579	47·2	23·6
1951	829	75·3	37·6
1952	881	50·7	16·8
1953			
1954	306	67·2	....
1955	59	134·8	....

TABLE XIII

Total return to thylogale and wallaby hunters 1950-2

	1950	1951	1952
Wallaby return per licence	59·2	70·9	61·9
Thylogale return per licence	47·2	75·3	50·7
TOTAL	106·4	148·2	112·6
Wallaby return per licence per month	29·6	35·5	20·6
Thylogale return per licence per month	23·6	37·6	16·8
TOTAL	53·2	73·1	37·4

TABLE XIV

Number of licences issued in each hunting area of Tasmania for the period 1949-52.

	1949	1950	1951	1952	Total
Northern Area	437	143	204	236	1,020
Eastern Area	74	23	23	41	161
Southern Area	207	49	58	76	390
Midland Area	382	120	168	241	911
N.W. Area	208	56	151	123	538
N.E. Area	373	186	115	121	795
Western Area	84	30	24	31	169
Islands	41	39	73	50	203

TABLE XV

Number of deer hunting licences issued at various centres in Tasmania for the period 1947-1955.

Area	1947	1948	1949	1950	1951	1952	1953	1954	1955
Northern	117	137	195	200	184			210	281
Eastern	11	13	23	36	10			47	68
Southern	37	40	73	59	99			190	219
Midlands	41	71	99	127	175			428	481
TOTAL	208	261	390	422	468			825	1,047