

A BRIEF ACCOUNT OF THE DEER IN AUSTRALIA

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No species of deer is indigenous to Australia, Tasmania, or any of the adjoining islands. The deer now established there were introduced during the nineteenth and twentieth centuries. No comprehensive record of their introduction, subsequent liberation, and present range exists. Little attention has been paid to the deer by naturalists recording the wildlife of Australia.

A number of factors contribute to this neglect. The foremost is that deer are not native to the country and therefore are lumped together with rabbit, hare, and fox under the heading of "introduced fauna" and classed as a pest. Supporting this official and quite general view is the wide recognition of the rather unique place held in the order of things by the native fauna. The Fisheries and Game Departments of the various states are, generally speaking, little concerned with the introduced species; the deer are not recognized as the magnificent game animals that they are, and consequently their control and management receives next to no attention.

Often deer were turned out in secret—a precaution taken to prevent valuable game from being destroyed by irresponsibles before it had sufficient time to become established. Because the acclimatisation movement was at its height at a time just beyond the range of present living memory, and because few records were kept, knowledge of many of the attempts to introduce game to Australia are lost to us. It is therefore difficult to collect the information necessary for a complete survey of deer in this area. The greater part of the work remains to be done.

METHODS AND MATERIALS

Since 1937, but excluding the war years, deer in Australia have been my major leisure-time interest, and the bulk of the information in the present paper is the result of my own observation and inquiry. The present paper is a summary of a mass of detail that I have gathered during these years. My initial knowledge of the acclimatisation

scheme and early shipments of deer came from the study of the Reports of the Royal Victorian Acclimatisation Society, 1870-74, from Edward Wilson's pamphlet *Acclimatisation* (Unwin, London, 1875), and from a seemingly endless search in the files of the Melbourne newspaper, *The Argus*, from about 1860 forward.

My next step was to duplicate a questionnaire that I posted to police officers, school principals, and to Lands Department and Forestry officers in districts where deer had been turned out or were rumoured to be. With the help of information supplied by these people, I was able to get in touch with individual persons who had local deer information. Sometimes I was fortunate and found persons whose parents or grandparents were responsible for having imported or liberated the deer. I also used the press and radio to find further sources of information. Finally, I made personal inquiry at, and sometimes hunted, practically all localities mentioned in the present paper, except those in Western Australia, Tasmania and Northern Territory.

THE ACCLIMATISATION SCHEME

In the latter half of the nineteenth century, the interest in transplanting animals, birds, and plants from one country to another was world-wide. Acclimatisation societies were formed in many countries with a view to the wider distribution of useful species.

In Australia, after the economy of the early settlements was secure, many of the more well-to-do colonists sought for their pleasure to introduce certain game animals and birds from the Northern Hemisphere. Many settlers, too, longed for the familiar sights and sounds of the faraway lanes and hedgerows of their native land. So, besides the shipments of deer, foxes, rabbits, and hares, came consignments of blackbirds, thrushes, linnets, skylarks, sparrows, and other common British birds to the new land in the south.

It was not long before individual effort along these lines became organized, for the

idea had many influential supporters. Foremost among these was Edward Wilson, philanthropist and one-time owner of the Melbourne newspaper *The Argus*. It was at a public meeting convened by this gentleman in 1861 that the Victorian Acclimatisation Society was formed. Edward Wilson continued his work throughout Australia, and eventually all the states had their own societies. These groups received support from the government by grants of land and money, and there developed a flourishing exchange and sale of fauna. Ships' captains, at government instigation, were instructed by the owners to offer every facility to persons and organizations shipping livestock between countries. Some lines serving Australian ports carried fauna free of charge.

Between 1860 and 1880 occurred the peak of importations of deer. After 1880, shipments declined and no record has been found of an importation between 1910 and the present time.

As most liberations of deer were made in Victoria, New South Wales, South Australia, and Queensland, it follows that the greatest concentrations occur in the timbered ranges of eastern and southeastern Australia.

SPECIES OF DEER INTRODUCED

RED DEER (*Cervus elaphus*).—The red deer in Australia are descendants of animals from Windsor Great Park and Knowsley Park, England. The original animals were, in many cases, presented to the acclimatisation societies by the late Queen Victoria. The finest herd to be raised from a nucleus of Windsor Park deer was that established at Werribee Park, Victoria, by the late Thomas Chirside. Deer from this herd roamed the rich plains of western Victoria around the turn of the century. Closer settlement of the area has since driven the deer into the cover of the ranges. Deer from Werribee Park were distributed to other owners of large properties in the Western District, and stags were shipped to New Zealand in an attempt to improve the Otago herd there.

Knowsley Park deer were imported by the Melbourne Hunt Club to form a herd to be used for stag hunting. It has not been possible to trace the fate of all these animals, but there is little doubt that Victoria's present red deer population owes something to the Hunt Club.

The species is plentiful in Queensland in the mountainous country at the head of the Brisbane River. In 1915, the Queensland government liberated a number of red deer on Hinchinbrook Island off the coast. The animals were intended to be a source of food for any persons unfortunate enough to be shipwrecked on Hinchinbrook. This large island is mountainous and covered by dense tropical vegetation. As it is uninhabited and visited only by prospectors and occasional fishermen, it is not definitely known if deer still survive on the island. There is evidence to suggest that the deer have crossed to the mainland—this entailing a swim of one or one and one-half miles at the narrowest part of the strait.

In South Australia, red deer were once numerous in the southeastern part of the state. Their origin is somewhat obscure, and it is thought by some residents of the locality that they migrated from the Western District of Victoria. This suggestion is not improbable, but it is more likely that the deer are descendants of animals sent from the Werribee Park herd to some of the larger stations in this part of South Australia. The red deer in the southeastern part of this state are steadily decreasing, and there may have been some movement westward. This is supported by a reliable report that a herd of about 12 red deer was seen some miles northwest of Lake Bonney. Here there is a vast area where the species could easily become established.

At least two concentrations of red deer occur in New South Wales. The first of these is located in and about the national park south of Sydney. Although red deer are often blamed for damage to crops and gardens in this area, fallow deer predominate there. To date it has not been possible to define accurately the range limits of the national park deer; there appears to be a definite spread toward the south.

The second concentration of this species in New South Wales is located in the southeastern part of the state near the Victorian border in the area known as the Quidong. The deer are descendants of a number that were kept in enclosures on a station property near Bombala before the 1914-18 war. Occasionally, deer escaped from the enclosures and in 1918, when the property was sold, the deer were liberated into the bush. They appeared to thrive, and groups of up to ten

animals have been sighted. There are indications that the deer have penetrated into Victoria and are moving south down the Bemm and Brodribb rivers.

Red deer from Werribee Park, Victoria, were sent to West Australia and turned out near Pinjarra where they quickly became established. In recent years little has been heard of them. It does seem certain that they still exist in the waste land toward the coast from Pinjarra, but nothing is known of their numbers. Certainly they are not nearly so numerous near Pinjarra as formerly. A possible explanation for their decrease may lie in the presence in this area of the zamia palm (*Macrozamia fraseri*), a poisonous plant that causes partial paralysis of animals that feed on it. Cattle will survive for several years when so afflicted, but the effects on deer may be more severe.

FALLOW DEER (*Dama dama*).—Fallow deer are widespread in the eastern midlands of Tasmania. Their main range can be defined by a line drawn from Campbell Town to Evandale, Lake Leake, Swansea, and Ross. However, they do occur outside this area. The herds originated from English importations about 1850. They were intended for hunting, and during the hunts bucks escaped into the bush. Subsequently, does were liberated intentionally so that the species would become established in a wild state. Shipments of fallow deer were sent to other parts of Australia from Tasmania. At least one consignment was sent to the South Island of New Zealand for liberation at Culverden.

Until the winter of 1953 it was thought that the fallow deer, which were once plentiful in the hills about Adelaide, South Australia, were shot out. In that winter, however, a small group was sighted north of the city. By far the largest concentration is located in the pine forests and scrub country within the general boundary of a triangle formed by a line from Mount Gambier to Millicent and Naracoorte. Another large herd is running on private property near Two Wells, having been first liberated in this locality in 1917.

In Victoria the species is limited to three comparatively small areas. The first is in the ranges about Healesville in east-central Victoria. The second is a small "overflow" herd from New South Wales and is located west

of Albury on the Murray River. The third is a penetration from southeastern South Australia into the country near Casterton.

Four localities in New South Wales hold fallow deer: (1) the country along the eastern bank of Lake George, (2) the national park in New South Wales, (3) the hills east of Albury along the northern bank of the Murray River, and (4) the New England ranges about Glen Innes, where six deer were first liberated in 1926, and 300 were counted a few years ago during a severe winter. Reports of individual animals from the Monaro Plains in southern New South Wales may indicate the location of another herd or herds there.

In Queensland, fallow deer are well established near Toowoomba. In 1916, along with the sambar and barasingha deer, 50 fallow deer were released on the Coburg Peninsula in the Northern Territory. There are recent and reliable reports of deer on the peninsula, but no description accompanies them. This is another area from which detailed reports are exceedingly difficult to obtain. Three or four liberations of fallow deer were made at Cape Leeuwin, West Australia, in the last century. About the time of the 1914-18 war the Acclimatisation Society reported that they were thriving.

SAMBAR DEER (*Cervus unicolor*).—In Australia the stronghold of this big deer is Victoria. The greatest numbers are to be found in the Gippsland forest in eastern Victoria. There are also two localities in the western part of the state where they occur—in the Grampians and in the timbered country at Mount Cole. They are also plentiful on French Island off the southern coast. This species was also released in West Australia, in New South Wales in the national park, and on the Coburg Peninsula in the Northern Territory. Only from the last-named locality have animals fitting the sambar's description been recently reported.

MOLUCCAN RUSA (*Cervus timorensis moluccensis*).—In 1910 this variety of deer was liberated on Friday Island off Cape York Peninsula, North Queensland. They did remarkably well and spread to adjoining Prince of Wales Island, swimming about three-quarters of a mile in shark- and crocodile-infested water to do so. Both islands are now well stocked. Around 1914 a number of

these deer were taken from Friday Island and turned out on Possession Island, some miles away, where they are still established. Between Possession Island and the mainland are a number of islands that may form a convenient line of migration to the mainland. A deer was once seen swimming in the sea near these islands by the crew of a small ship. Sambar and rusa were turned out in the same area in Gippsland, Victoria, and it is possible that they have crossbred. Although a few rusa are shot in this area, they are becoming quite rare. Rusa were also liberated in the New South Wales national park, and they are still established there.

HOG DEER (*Axis porcinus*).—This species is well established in many localities in southeastern Victoria. It prefers the grassy coastal flats and has not penetrated far into the foothills. Hog deer are also numerous on some of the islands off the southeastern coast. An unconfirmed report locates the species in a locality near Holbrook in New South Wales (approximately 50 miles north of Albury).

AXIS DEER OR CHITAL (*Axis axis*).—To date only two herds of axis deer have been located. One herd, the larger of the two, is near Charters Towers in Queensland. It was established about 1866 by the introduction of a stag and two hinds by William Hann. The other herd is located in the Grampians, a mountain range in western Victoria. The size of this herd is not known, but individuals from it are seen frequently. They are not hunted, as the area is a sanctuary.

BARASINGHA (*Cervus duvaucelii*) and JAPANESE SIKA (*C. nippon*).—Both of these species were liberated in Australia in the last century, and a few years later they were reported to be doing well. In southern

Gippsland the writer has seen deer that closely resemble the sika. It is not unlikely that both species are established somewhere in Australia.

ECOLOGICAL NOTES

Natural Enemies of the Deer in Australia.

—These are very few. Wild dogs, a term that includes the dingo (*Canis dingo*), may be the most important, although it is difficult to appraise their exact effect on deer populations. In eastern Victoria, as close as 50 miles from Melbourne, there are many wild dogs. These are domestic dogs "gone bush" with an odd dingo here and there among them. They may account for a few sambar calves; but wallabies, kangaroos, and other native animals would be their staple food. Dingos do prey on the herd of axis deer located near Charters Towers in Queensland. Crocodiles (*Crocodylus porosus*) will undoubtedly take a few of the rusa on Friday and Prince of Wales islands. It is possible that bush fires would destroy a number of deer in some localities. Deer in Queensland are frequently infested by cattle ticks and have been noted to be in poor condition.

Food Plants.—In Australia the deer population is not large and only makes itself felt in isolated localities. Complaints of deer damage come mainly from potato growers and orchardists. No timber trees are damaged by them in southeastern Australia, as the native eucalypts are unpalatable to deer. There is a wide variety of native plants that are plentiful and favored by the deer, including two or three kinds of ferns, several native grasses, and a number of shrubs. There is an abundance of food, and a "poor" deer is never seen, except in the tick-infested country of Queensland.

TABLE 1. — HUNTING TAKE BY ONE HOUND PACK IN GIPPSLAND¹

Year	Months Hunted	Number of Sambar Deer Taken			
		Stags	Hinds	Sex Unknown	Total
1954	March to December	23	18	3	44
1955	January to December	33	24	1	58
1956	January to September	15	14	3	32
Totals taken		71	56	7	134
Per cent by sex		56	44	—	100

¹ Owned by S. A. Ashford of Gembrook, to whom the author is much indebted for his cooperation in this study.

TABLE 2.—REPRODUCTIVE CLASSIFICATION OF SOME SAMBAR DEER KILLED IN VICTORIA SINCE 1950¹

	Months												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Number of stags killed	9	2	9	11	9	12	15	10	5	3	3	5	93
Antler development													
None	—	1	—	—	—	—	—	1	—	2	1	—	5
Under one-half	2	1	1	6	—	3	—	—	—	—	—	2	15
Over one-half	1	—	7	4	3	3	2	—	—	—	—	1	21
Complete ²	6	—	1	1	6	6	13	9	5	1	2	2	52
Number of hinds killed	1	2	5	8	9	17	15	12	2	2	4	3	80
Fetal development													
None	—	—	—	3	1	3	4	5	1	1	—	—	18
Less than half	—	—	—	1	1	2	1	—	—	—	3	—	8
Half to full	1	—	3	2	5	7	3	3	—	—	1	2	27
Young calves	—	2	2	2	2	5	7	4	1	1	—	1	27
Total both sexes	10	4	14	19	18	29	30	22	7	5	7	8	173

¹ Includes animals shown in Table 1.² Antlers fully developed, hard and clean.

Hunting.—Of all deer concentrations in Australia, there is little doubt that the sambar and the hog deer in Gippsland sustain the heaviest hunting pressure. They have been legally hunted for upwards of 30 years without regard for sex or season. It is the opinion of hunters of long experience that there are as many sambar in Gippsland today as at any time previously but that they are much more widespread.

The much-hunted hog deer has also increased its range, to the east along the coastal flats. Its numbers are sustained by a natural movement from the Wilson's Promontory National Park and possibly from one or two close-lying islands which are also sanctuary for this species.

Elsewhere in Australia, with the possible exception of Tasmania, hunters' toll would have no pronounced effect on the deer population under conditions prevailing at the time of my writing (1956).

In Victoria the best deer country is heavily timbered, steep, and has thick undergrowth. Because of this, hounds are used to hunt deer. They are usually foxhounds or bloodhound-foxhound crosses; and they are, of course, followed on foot. It is a strenuous sport. In other states of Australia, deer are walked-up or still-hunted. The number of sambar taken by one pack of five hounds

in Gippsland is shown in Table 1. There are probably 12 to 15 similar packs hunting in Gippsland but not all with such success. Most hunting is carried on during the cooler months of March to October. In one sample that I studied (Table 2), 55 per cent of the stags taken possessed fully developed antlers and 64 per cent of the hinds had calves or fetuses.

SUMMARY

The peak of importations of deer in Australia took place between 1860 and 1880, the last of record being before 1910. Red deer are plentiful in mountainous terrain at the head of the Brisbane River, are decreasing in South Australia and West Australia, and occur in two concentrations in New South Wales. Fallow deer are well established in Tasmania and in Queensland, hog deer and sambar deer mainly in Victoria, and rusa deer mostly on islands. Axis deer persist in only two places. Wild dogs, including dingo, may possibly be the most important natural enemies of deer. Cattle ticks may have a detrimental effect on them in Queensland. The deer herds are not large and do little damage to timber, much of which is unpalatable to these animals.

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