

MERINOS,
MYTHS AND
MACARTHURS

*J.C. Garran
&
L. White*

SHEEP and their wool, the strong backbone that helped colonial Australia walk upright, have a proud place in Australian hearts and in the national record. But the romance of wool has often shrouded the hard facts, and the myths developed by and around the pioneers have distorted an important story.

John Garran, sheep-breeder and historian, was convinced that the history written from the study chair be corrected from the farm. He brought a critical eye, practical experience and a great interest in genetics to tracing the origins and development of sheep in Australia. This approach was complemented by the political economist Leslie White.

The particular focus of myth has been John Macarthur and the purity of the Merino breed. Australians have been taught that their nation has ridden to prosperity on the sheep's back, and that early sheep-breeders made a unique contribution in developing a pure breed — beliefs aired in controversies about the export of Merinos. But the earliest sheep in Australia were hairy sheep from the Cape of Good Hope and Bengal which had with an undercoat of fine wool, and these provided the base from which, by cross-breeding with Saxon Merinos and other breeds, the Australian Merino became so successful.

It is generally, but wrongly, assumed that all Macarthur's stud sheep were pure bred, unmixed descendants of Spanish Merinos he obtained from King George III. Macarthur has been credited with having a vision of a great Australian industry, and working untiringly to establish it on a permanent basis, and has gained a carefully fostered but unmerited reputation as a scientific breeder, a knowledgeable grazier and a producer of superior sheep. None of these assumptions is tenable, and *Merinos, Myths and Macarthurs* demolishes once and for all the claims by Macarthur and later advocates to his being the father of the wool industry in Australia. What is more, it was his wife Elizabeth who carried the burden of his sheep enterprise. Macarthur at last is shorn.

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*Merinos,
myths and
Macarthurs*

Merinos, myths and Macarthurs

Australian graziers and their sheep, 1788–1900

J.C. Garran and L. White



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Preface

John Cheyne Garran was a sheep farmer all his working life, except for his war service with the 8th Division, including four years as a POW in Changi and on the Burma railway.

Born in 1905, the second son of Sir Robert Garran, he spent a year at Melbourne University before working as a jackeroo at Mossgiel in western New South Wales. In 1929 he began farming on his own account on a rural lease close to Canberra.

John Garran's interest in Australian history, first inspired at university by Professor Ernest Scott, was further developed over the years by private reading. As a working grazier with a good knowledge of wool and a great interest in genetics, he was convinced that many aspects of the history of the Australian Merino and its fleece as told in standard references were incorrect because of misinterpretations by historians who were not au fait with the practical breeding and nurture of sheep.

In particular, the popular idea that the present-day Merino evolved from a few Spanish Merinos brought in from Cape Town and the flocks of King George III, ignoring the thousands of Indian and African sheep already in the colony, was to him practically and genetically untenable. This was the basis of the research that became the overriding interest of the last ten years of my husband's life, when he spent as many hours as he could spare writing this history.

A special grant made in 1975 by the Literature Board of the Australia Council enabled him to travel in Germany, France, Spain, South Africa and the United Kingdom, where he met with historians, agricultural researchers and farmers, visited institutions and inspected areas of relevance to his study. This tour provided many useful details of information that helped to confirm his interpretations of the evolution of the Australian Merino.

John Garran died in 1976, without seeing publication of the book which was the culmination of his abiding interest and years of intensive research. The formidable task of pruning, editing and making some alterations and additions to the manuscript was undertaken by Leslie White, as a visiting fellow in the School of History at The Australian National University and since. He did not depart substantially from the main outline laid down by John Garran, but judged participants more stringently, and he has made an inestimable contribution to the final form and substance of the book.

Leslie White was assisted in the early stages by D.I. McDonald, who checked and revised the extensive bibliography and references. My grateful thanks go to these two dedicated friends and scholars. Thanks are also due to those who

provided information and assistance during the study tour, particularly Dr M.L. Ryder, ARC Animal Breeding Research Organisation, Edinburgh; Dr J.E. Nel, Grootfontein College of Agriculture and Research Institute, Middelburg, Cape Province; The Association of German Sheep Breeding Societies, Bonn; The Ministry of Agriculture, Berlin, German Democratic Republic; The Ministry of Agriculture, Madrid.

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We must acknowledge the help provided by Ann Neale in editing and indexing and Marjorie Kesteven and Pat Tanner in typing the manuscript, and the assistance of the reference staff of the National Library of Australia, The Australian National University Archives of Business and Labour, and the Mitchell Library.

Winifred Garran
Canberra, April 1984

1 John Garran feeding sheep at his Canberra farm, 1970



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5: R. Lydekker, *The Sheep and Its Cousins*, p. 103

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8: Engraving from a sketch by Captain John Hunter

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Introduction

This work examines the origin and development of the sheep and wool industries in Australia and the myths that have arisen about them. It also examines the role of John Macarthur and others in the early colony; the policy of the British government; the part played by sheep from Britain and other countries; and the way in which graziers came to terms with their environment and the sheep at their disposal. Finally, it celebrates the development of the Australian Merino, the most productive sheep the world has seen.

Many of the myths were invented by Macarthur for his own purposes, and more have been added, even in recent times. They may be summed up in the words of S. Macarthur Onslow, 'John Macarthur of Camden, who introduced the merino sheep into Australia and founded the Australian wool trade'. In reality he was not the first to import Merino or other sheep to Australia, merely buying a few from those who did; he did not conceive the idea of a wool industry nor establish it; he was not the first to export wool; he was ignorant of animal husbandry; his ideas on breeding were primitive, even for his time; and his talk of pure-bred sheep would have been dangerous if it had not been disregarded, even by him. The major part of the credit for the control of his sheep in the formative years belongs to Elizabeth Macarthur. John's talent lay in his ability to persuade members of the British government that, if they gave him land and convicts, he would save them money. The fact that they accepted his absurd claims and promises shows their ignorance of the colony and their indifference to it. Historical justice would be served if his portrait on our \$2 note were replaced by one of a black sheep, as such sheep and their grey descendants produced the greater part of his wool.

The second set of myths clusters around the early sheep, the first of which came from Africa and Asia. The first Merinos came from Africa, the more important ones later from Saxony. Of the sheep that came from England, the Merinos were of little value, but the mutton sheep were of great importance, both in producing meat and in increasing the size of the midget Merinos. The best of the early flocks, appropriately enough for a penal colony, came illegally and secretly from India.

There were no plans for producing wool in the colony, despite one historian's claims based on the fact that sheep were brought in the First Fleet. As these sheep and almost all those imported during the first decade were hairy, he apparently thought the authorities wished to improve the morals of the convicts by dressing them in hair shirts.

According to early histories, most of the pioneers were far-sighted patriots. Surprisingly, a few of them, such as Arthur Phillip, Philip Gidley King and Samuel Marsden, were such, although they were not otherwise saintly. Equally worthy was Simeon Lord, who had travelled extensively if involuntarily, was a pioneer in both commerce and industry, and manufactured textiles for colonists as well as exporting wool to England; the British government tolerated this, so long as he did not use fine wool. The majority of free citizens, however, were interested mainly in making a fast (holey) dollar. Historians have disputed whether they were more interested in producing wool than mutton. As the return on wool was of the order of 5 cents per sheep, less than could be obtained for half a kilogram of mutton, these earthy people did not spend much time on the problem. Wool was the hobby of a few rich people with land to spare.

Most of the animals, plants and seeds brought to the colony were unsuitable, until they had been selected in the local environment. The soil was poor and the climate too wet for sheep. Fortunately the first sheep were hardy and prolific to an extent that is not easily accepted by those who have not heard of Finnish Landrace sheep, which have up to 8 lambs at a time. The early Merinos, which were cross-breds from the Cape, were derived from the best Spanish sheep. For reasons that no one, except Gregor Mendel, could understand for over a hundred years, the offspring of these Merinos and hairy sheep were woolled sheep. Their grave deficiency was the lightness of their fleece.

The sheep industry had insoluble problems until it spread beyond the Blue Mountains, but it was quickly found that many sheep were then too far from Sydney to be marketed there and mutton eaters were increasing more slowly than the sheep. The early industry collapsed in the 1840s.

The growth of population, following the gold-rushes after 1850, revived the fortunes of sellers of mutton and live sheep, but the wool industry was not on a sound commercial footing until the 1860s. By this time the graziers understood the environment in which they and their sheep lived and breeders were producing sheep with increasingly higher yields of wool. Their masterpiece was the Peppin Merino (and finer-woolled sheep in a few regions), of which a champion ram may give twenty times as much wool as Macarthur's sheep. This was a triumph of cross-breeding, with genes from many types of sheep, including the most primitive. The method by which it evolved, at first by chance, now by scientific breeding, points to the way in which the low-yielding sheep of any country may be improved. In the way of rural life, with its swings in fortune, blowflies first began to be troublesome as the heavily woolled and more profitable sheep became established, and good husbandry and disease management have had to be developed along with better breeds.

Sheep farming in Australia began, of course, in the first settlement at Port Jackson, and gradually spread more widely to the outer reaches of the colony which later became the states of Tasmania and Victoria and to the separate South Australia. Developments in the other Australian states, though not dealt with in detail here, followed a similar pattern, as the characteristics and conditions of the pastoral industry were generally common to all areas. This account tells of the progress of sheep and wool growing from difficult beginnings through to

consolidation in the nineteenth century, and honours the resourcefulness and tenacity of the many who played a part.

In telling a story based very largely on the first-hand evidence of the participants, it seemed best to retain in the text the imperial measures and the currency used at the time; besides, it is difficult to convey values by conversion to present-day currency. A table of equivalents is therefore given below. There may be some anachronisms in the use of place names, e.g. Tasmania and Victoria were not officially called so until after separation in 1855 and 1851 respectively. Likewise, the term 'stud' has been used for the sake of continuity, although 'improved' and 'celebrated' flocks are the correct terms for the early period of the study. In all quotations we have retained the original spelling and punctuation.

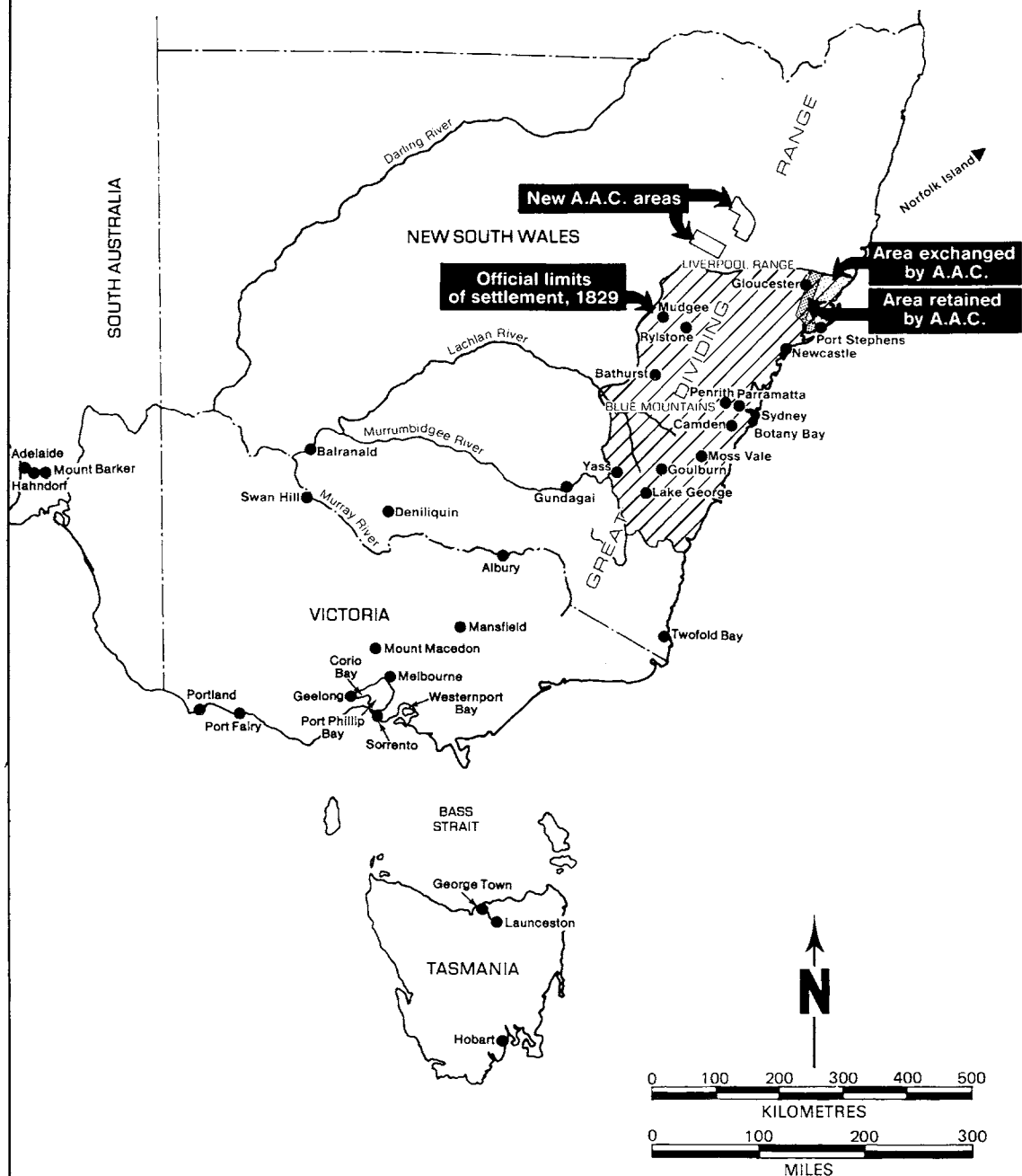
No historian works alone, and in a field such as this, one has a particular debt to those predecessors who began the painstaking work of tracing and deducing and measuring from the scattered grains of evidence so hard to find and so easily overlooked. In arguing a case based on firm evidence we have been able to build on the work of such writers as H.B. Carter, whose practical and scientific approach helped overcome the myths and claims falsely made by protagonists and recorders and provided a realistic framework in which our picture of events in Australia could be drawn. The *Australian Dictionary of Biography* was an invaluable reference, with its distillation of the work of so many historians. We have been most fortunate too in having the advice of Helen Newton Turner, a scientist whose knowledge of genetics, animal biology, and contemporary sheep-breeding programs has been generously shared.

Leslie White
Canberra, April 1984

Table of equivalents

1d	=	0.83 cent
1s	=	10 cents
£1	=	\$2
1l	=	\$2
1 guinea	=	\$2.10
1 acre	=	0.405 hectare
1 inch	=	25.4 millimetres
1 foot	=	30.5 centimetres
1 yard	=	0.914 metre
1 mile	=	1.61 kilometres
1 ounce (oz)	=	28.3 grams
1 pound (lb)	=	454 grams
1 ton	=	1.02 tonnes
1 bushel	=	0.036 cubic metre

Map of southern Australia showing significant places mentioned in text



1

The early settlement

Traditionally historians held that the British government decided to settle Australia solely because it was a convenient dumping ground for criminals. In recent times this view has been challenged and additional reasons have been put forward. K.M. Dallas claimed there was the further motive of opening up trade with Asia and the Pacific, and Ged Martin thought China was the main market sought. Others have said the important factors were the desire to have a secure source of pine trees for masts and flax for sails, the need to forestall the French, and the desirability of establishing a naval base for access to the East Indies and Spanish America.¹

Although many influential advisers had pressed their views to members of the British government in the 1780s, no one knows for certain whether or to what extent their advice was accepted, whether the government had any systematic plans for settlement or merely made short-term plans in response to crises as they arose.² A few things are certain: Britain was very ignorant of the country and was determined to develop it as cheaply as possible for its own convenience and profit, and no one in Britain thought of Australia as a supplier of wool. If there were any firm plans, they were often reversed at short notice — the British had a long tradition of muddling through.

Few people in Britain at the end of the eighteenth century had any useful knowledge of Australian soils, vegetation, climate, water and other resources, nor were they aware of the danger of applying theories developed in Europe to Australian conditions. J.M. Powell has said:

Resource information, including commentary on the processes of exploration and the modes of settlement which were transforming the environment 'captured' from the Aborigines, was extensively documented in a wide range of literary and graphic sources at official and private levels ... the literary sources proved dangerous guides because of the bewildering and infuriating contemporary practice of reasoning from analogy and the equally confusing semantic problem. The first is best illustrated in the abuse of grossly simplified latitudinal zoning theories to predict suitable climatic regions for white settlement, and the second in the long-continued use of familiar and totally inappropriate terminology for the description of Australian topography.³

The most recent information about Australia before white settlement came from Captain James Cook and Sir Joseph Banks, who had examined a few places on the east coast. Captain Cook described Botany Bay as having 'as fine meadow as ever was seen'.⁴ A few years later a more careful observer disagreed:

It is impossible to tell what could have occasioned the description of Botany Bay that appears in the voyages of Captain Cook. The meadowland, after the most minute observation, is found to be nothing but a perfect quagmire.⁵

The trained and more precise observer, Banks, wrote:

The soil of New Holland we found to be rocky and sandy in many places, but at this bay [Botany] the adjacent country appeared ... well covered with trees ... On the surface of the earth we observed several kinds of grass growing plentifully, and in some places luxuriantly.⁶

Banks was an expert witness, but he does not seem to have taken the matter seriously for some time. James Matra, in making a proposal in 1783 for the settlement of Australia, claimed that 'Sir Joseph Banks highly approves of the settlement'.⁷ Banks did tell a committee of the House of Commons that Botany Bay was a suitable place to establish a colony of convicted felons, although the proportion of rich soil was small in comparison to the barren.⁸ He responded amiably to Governor John Hunter:

The climate and soil are in my own opinion superior to most which have yet been settled by Europeans. I have always maintained that assertion, grounded on my own experience, but have been uniformly contradicted except by Govr. Philips.⁹

In fact, Governor Arthur Phillip had written to Under-Secretary Nepean in July 1788, 'Sheep do not thrive in this country at present'.¹⁰ There was no reason for him to change this opinion during the rest of his term. However, when the advice of Banks was sought on a request by John Macarthur for a large tract of land on which to run sheep, Banks gave his considered opinion:

I have never heard of any luxuriant pastures of the natural growth of New South Wales at all fitted for the pasturage of sheep till I read of them in Capt. McArthur's statement, nor did I ever see such when in that country ... it will be found on enquiry that sheep do not prosper well there, unless in lands that have been cleared and manured, with some labor and expence.¹¹

This statement is still true of the land which Banks and Cook had described.

It must be kept in mind that the early settlers had no knowledge of the land beyond the Blue Mountains, which later proved to be suitable for sheep, unlike the narrow strip to which they were at first confined. T.M. Perry has described the land available to the first settlers.¹² The soils in the area near Sydney Cove were thin and poor and the farms developed there were soon abandoned. There was better soil at Parramatta and good alluvial soil on the banks of the Hawkesbury and Nepean Rivers, which were producing good crops by 1801 and were fully occupied by 1804. The main area available to the settlers was the

Cumberland Plain, which measured about 60 kilometres from north to south (Windsor to Appin) and 30 from east to west (Parramatta to Penrith), reaching a height of 75 metres near Camden. The soils in general are shallow and underlain by yellow clay, which drains poorly. There is good soil at the Cowpastures on the south of the plain; this was the land Governor King wished to reserve for government cattle and for farms, but most of it went eventually to the Macarthur family.

On the area of early settlement there is rain in all months, decreasing from east to west. The average annual rainfall in millimetres at South Head, Sydney is 1148, Parramatta 870, and Penrith 704. Further west, Lithgow has 721 and Cowra 574. The extreme variation in rainfall from year to year is shown by the rainfall for Sydney of 575 millimetres in 1888 but 2035 in 1890. There were regular droughts and floods in the early settlement, but finally it was a severe drought from 1813 to 1815, followed by a flood, which compelled settlers to seek a path over the Blue Mountains, although all the land on the Cumberland Plain was not occupied until 1823. As there were only a few other settlements from which food might be drawn, abundant harvests, for which it was hard to find markets, were followed by periods in which supplies had to be drawn from other countries.

The grasses in the Cumberland Plain grew in tufts, adapted to the soft tread of native animals. The hard hoofs of the introduced cattle, sheep and goats put great pressure on the soil and vegetation. The best of the grasses, such as kangaroo grass, were selectively grazed and became extinct in many areas. There were devastating attacks by indigenous caterpillars and army worms, which still damage pastures and crops in the area. The delicate balance between man and his environment maintained by the Aborigines was destroyed by white settlers, providing the setting for an inevitable conflict.

There was a further disability that no one was to understand until fairly recently; namely, that most of the animals and plants that were brought were not suitable for Australia until after a period of rigid selection in the environment in which they were to live. In the case of wheat this was not done satisfactorily until William Farrer began his wheat-breeding experiments in the late nineteenth century. Even into the second half of the present century animals were still being introduced from the cool climate of northern Europe to take their chance in the hot and harsh environment of northern Australia. The original introductions had been developed in countries in which hours of daylight, intensity of light and the pattern of rainfall were different from those of Australia. Many of the agricultural practices with which the few trained farmers and graziers were familiar were not suitable under Australian conditions.

Most of the early sheep brought to Australia were very hardy, but even they could not survive the droughts, the scanty pastures and the sometimes excessive rainfall. In addition there was an enormous disability arising from the spread of internal parasites, whose growth was favoured by the damp climate. Diseases were spread by the practice of penning sheep during the night in fixed folds, to save them from attacks by wild dogs. Disease was the main factor in driving graziers inland when the losses of their sheep became too heavy.

It was to this country that Governor Phillip set out in hope, with instructions that included two that indicated the colony was to be developed by peasant

farming and that convicts were not to be used for private profit.

... the productions of all descriptions acquired by the labour of the convicts should be considered as a public stock ...

... To every male [emancipated convict] shall be granted 30 acres of land, and in case he shall be married, 20 acres more; and for every child who may be with them ... a further quantity of 10 acres ...

As befitted the Age of Enlightenment, Phillip was also instructed to command everyone to live in amity and kindness with the Aborigines and to punish anyone who killed them without reason or interfered with their occupations.¹³

The early governors were strictly instructed to forbid soldiers from using convicts for private profit or engaging in trade. In 1799 Portland, Secretary of State for Home Affairs, instructed Hunter:

I trust that the order which prohibits any officer, civil or military, from being allowed to receive provisions from the public stores for more than two convicts of any description whatever has been strictly enforced.¹⁴

Two years later Portland similarly enjoined the new governor, Philip Gidley King:

Considering Captain McArthur in the capacity of an officer on duty with his regiment, I can by no means account for his being a farmer to the extent he appears to be.¹⁵

The British government faced great difficulties in dealing with a country which none of its members had seen. They were oppressed by what Geoffrey Blainey has called the tyranny of distance. It was common for a governor to write a report to an English minister who was out of office at the time the report was written. As ministers sometimes changed positions rapidly it was difficult to maintain continuity of policy. As an example of the problems that arose from vast distances and poor communications, Governor Ralph Darling wrote in 1828 that farmers on the Hawkesbury (60 kilometres from Sydney) paid a freight rate almost equal to that from Van Diemen's Land to Sydney.

Although the commission given to each governor seemed to arm him with great power, in practice this was limited in many important ways. He had great responsibilities, as he was blamed for any shortcomings in the colony, but he could be overruled by the British authorities. Moreover, critical decisions could be made without reference to him, against the policy he was trying to pursue. As it was an age of patronage, some of the decisions in England were taken to oblige friends, without consideration of the repercussions. The decision of Lord Camden, Secretary of State for War and the Colonies, implemented in 1805, to grant 5000 acres of land at the Cowpastures to John Macarthur and to indulge him with thirty convicts was against the recommendation of the Privy Council, the advice of Joseph Banks and the land policy of Governors King, Bligh and Macquarie. The result, as F.M. Bladen noted, was that officers

devoted themselves to the pursuit of agriculture under the most favourable conditions — the land, in the first instance, was given to them; convicts (clothed and fed by the Crown) were employed in clearing and cultivating their grants; and finally, the crops were purchased by the Government.¹⁶

The failings of early governors have been minutely examined, often without consideration of their ambiguous position and the poor quality of their military and civil administrators. Not only were the powers of the governors limited, but it was uncertain whether the common and statute laws of Britain applied to the colony, apart from the question of whether it was practicable to enforce them in a convict settlement. The legal position was not improved by the fact that Richard Atkins, who arrived in the colony in 1791 with a reputation of being 'addicted to liquor, immorality and insolvency' and had no legal training and an insignificant knowledge of the law, was appointed a magistrate. He soon became deputy judge-advocate and the colony's principal legal officer. His proposal for dealing with Aborigines was to 'pursue and inflict such punishment as they merit, without any regard to the law'.¹⁷

The governor could not be certain that a court, mainly comprising military officers, would be impartial when a fellow officer or friend was involved, or the members were pursuing one of the numerous vendettas that arose in a small community. H.V. Evatt commented on the procedure followed when Macarthur and his fellow officers used the court to pursue a vendetta:

Macarthur was permitted to give evidence as to a conversation, not between the thief and his brother (inadmissible) ... but between himself and his servant Smith as to what the brother said to Smith about what the thief had said to his brother.

I do not suppose that in the whole history of any criminal court in the British Empire has similar evidence — hearsay upon hearsay upon hearsay — ever been admitted.¹⁸

The ineptitude of the planning for the colony is perhaps best shown by the fact that no currency was provided for it. For some years goods were exchanged by barter (generally valued in money) or in return for promissory notes issued by individuals, which were of uncertain value and were sometimes repudiated. They were always at a discount in relation to sterling, as they could be used to buy only local goods.

The funds which paid for a large part of goods produced in the colony and for most of those imported were provided by the British government. The government paid the military and civil officers in sterling and financed the shipment of stores and equipment and purchases by the governors of food and other goods needed for the authorities. Receipts were given for the latter, redeemable in sterling. From 1786 to 1836 the British expenditure for New South Wales and Van Diemen's Land was £6 million, of which £5 million was paid for bills drawn by governors and commissaries in the colonies.¹⁹ Other sources of sterling income, such as exports and investments, were negligible for some years. The few people, mainly military officers, who were able to obtain the greater part of this income were the only ones who were able to import goods (rum being only

one) on which great profits could be made in the early years. Wool and other export industries were developed mainly as a means of obtaining sterling funds to pay for imports. This dependence lasted until gold was discovered.

The early governors had no training in administration, except what they had obtained as officers in the navy or army, and their officials were often untrained, incompetent or corrupt. Few of the governors enjoyed their tenure of office, as they faced great problems, were responsible to a government that had little understanding of these problems, and had to deal with people many of whom had more influence with members of the British government than they had. Their achievements in these circumstances have often been undervalued.

The labourers available to the early governors were of poor quality because the majority were town criminals, of poor physique and with few suitable skills or training. It is true that most of them had been convicted more than once, but whether this shows they were depraved is now treated with more scepticism than in the past.²⁰ The children of convicts tended to be of good physique, to work hard and avoid crime, but it was some years before this better labour became available.²¹ A more serious problem was the scarcity of women and their low social and economic status. This was a great handicap both in establishing peasant farms and in producing household and other goods in which women were especially proficient, as machine production was limited.

One of the great problems the governors faced was that the policy of the British government changed several times, and the colony had to adapt as best it could. The early governors were instructed to foster self-sufficient agriculture, but the gift of 5000 acres of land to Macarthur in 1805 foreshadowed and encouraged the change in the 1820s to development through big holdings worked by convicts. Norfolk Island was settled only a few weeks after the First Fleet had landed at the mainland, to provide flax and probably for commercial and defence purposes. It proved to have a dangerous harbour and the attempt to manufacture linen came to nothing, but by an odd chance Norfolk Island became an important centre for the dispersal of the early sheep.

Life in the early settlement was dominated by the necessity of feeding an irregularly increasing number of people, who were sent without regard to the possibility of doing this from local sources. They were placed in an area which was not very suitable for agriculture or pasturing sheep and was hemmed in by mountains. The voyage from England was long and hazardous and vital supplies were sometimes omitted. Nearer sources of supply, such as the Cape of Good Hope, India and China, were developed, but trade with them was hindered by the monopoly of the East India Company. It was not an environment which encouraged dreams of future export industries.

The physical equipment supplied for starting a settlement was meagre. Seeds for crops and inferior equipment were loaded on the First Fleet, and farm animals were bought during the voyage, at the Cape of Good Hope. Captain Arthur Phillip was the only officer known to have had any agricultural experience. During a period of fifteen years' retirement on half pay, he had occupied himself as a gentleman farmer in Hampshire. He took with him to New South Wales as his personal servant Henry Dodd, an experienced farm hand, who was found to be the only free man who might be employed 'in cultivating the lands on the public

account'.²² There were no experienced farmers to direct the agriculture and it was left to the settlers to acquire as best they could some competence. Of the early colonists, Lieutenant Philip Gidley King became a capable agriculturist, as did later arrivals such as the Reverend Samuel Marsden, Elizabeth Macarthur and Lieutenant John Macarthur.

The first livestock imported into the colony in 1788 had been embarked at the Cape of Good Hope, and had been bought on account of the government as well as by Phillip and the officers. At the time it was the custom for officers on remote stations to be permitted to engage in commercial enterprises, and Phillip had set an example by his purchases of livestock. The livestock purchased on government account

amounted nearly to one stallion, three mares, three colts, six cows, two bulls, forty-four sheep, four goats and twenty-eight hogs. The officers on board the transports, who were to compose the garrison, had each provided themselves with such live stock as they could find room for, not merely for the purpose of living upon during the passage, but with a view of stocking their little farms in the country to which we were going; every person in the fleet was with that view determined to live wholly on salt provisions, in order that as much live stock as possible might be landed on our arrival.²³

The fleet as it left Table Bay 'having on board not less than five hundred animals of different kinds ... put on an appearance which naturally enough excited the idea of Noah's ark'.²⁴ Some of the livestock died on the passage, but the survivors included about 100 sheep, 6 head of cattle, and goats, pigs, rabbits, turkeys, geese, ducks and fowls.

Only one description of the sheep of the First Fleet has been found, and that in the diary of a seaman, John Easty, who wrote while at Cape Town: 'Mutton is very Cheap hear [,] the Sheaps tails are the Longest heare of any Place in the world [,] thay grow to 14 or 16 Pounds Each'.²⁵ There were two types of Cape or Africander sheep, and Easty's observation identifies the Namaqua species. The tails of Cape sheep have been described in recent years:

The Ronderib (so called on account of the shape of the chop bones) and the Namaqua were the original species found in this country when the white people settled here. The Namaqua is now extinct. I saw them in my young days, about 50 years ago. They had long fat tails, running straight down, sometimes touching the ground. When chased, the tail sometimes broke off from the back ... The Ronderib has a rounder compacter tail, reaching to the ankles, turning back 1/3 the length, and a thin whip hanging down about 2 inches.²⁶

Paintings of Cape sheep dated about 1811 are said to depict white sheep with relatively broad fat tails like the Ronderib. Although the tails are turned up like that of the Ronderib, there is also a tendency towards a corkscrew turn.

John Barrow, the founder of the Royal Geographical Society, travelled widely through South Africa and in 1801 described the sheep of the Cape as being marked

with every shade of color; some are black, some brown, and others bay; but the greatest number are spotted: their necks are small and extended, and their ears long and pendulous: they weigh from sixty to seventy pounds each when taken from their pasture ...

The wool of the sheep is little better than a strong frizzled hair ...

These sheep were, Barrow observed, 'long-legged, small in the body, remarkably thin in the fore quarters and across the ribs', with fat found upon the hind quarters and the 'short, broad, flat' tail weighing in many instances more than 12 pounds.²⁷ In contrast to Barrow's description of the wool as being 'little better than a strong frizzled hair', a Dutch farmer remarked that the sheep had an outer hairy coat with a well-developed inner coat: a description which could be given only by a person having a knowledge of wool and who had actually handled the sheep. Many primitive types of sheep have this woolly undercoat, which was generally present in the Cape sheep of the 1790s and which is found among present-day Africander sheep. The earliest known sheep were of this type and their wool was plucked or combed until about 1000 BC, when a new type of sheep with a continuously growing fleece appeared and shears were invented.

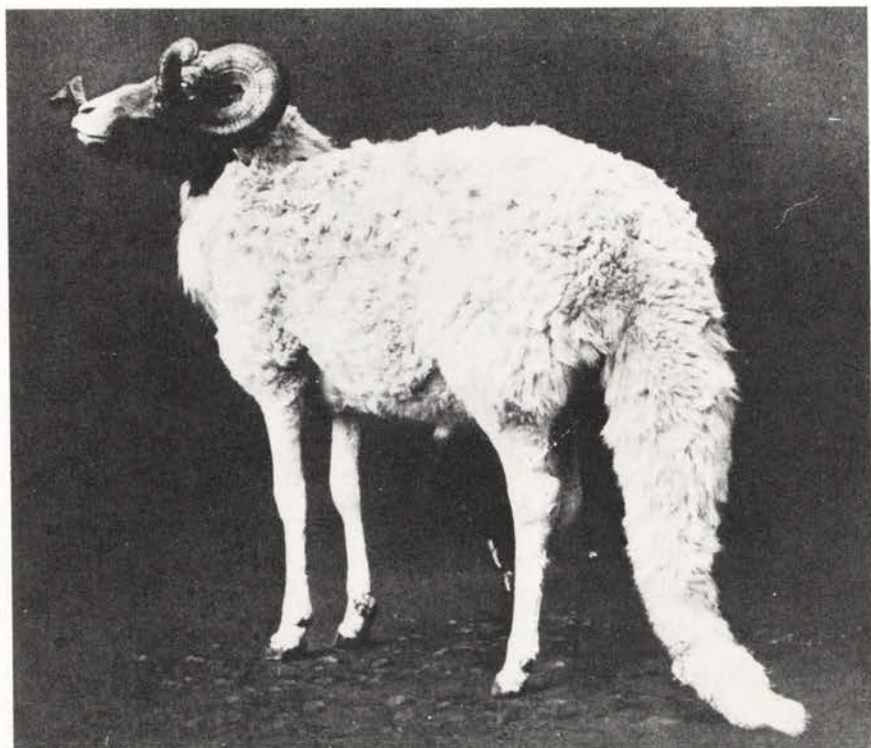
In New South Wales the Cape sheep were used solely for mutton: they shed their coats in the summer and their wool was never a matter for consideration.

It would seem from Easty's account that some at least of the First Fleet sheep were of this remarkable long-tailed breed and it is surprising that, of the many diarists who have left accounts of the voyage, Easty alone considered that these unusual animals were not adequately described by the single word 'sheep'. They certainly had attracted the attention of a farmer's son when he had seen them seventeen years earlier — Captain James Cook at Cape Town in April 1771 noted: 'The sheep are clothed with a substance between wool and hair, and have tails of an enormous size; we saw some that weighed twelve pounds, and were told that there were many much larger'.²⁸ It will be seen that, besides his remarks about the sheep's tails, Cook's observations on the coat of the Cape sheep were more pertinent than those of the colonists; perhaps he knew more about sheep and wool than any of them.

On 30 January 1788 the livestock embarked in the First Fleet were brought ashore at Sydney Cove. Their numbers were soon reduced. Just one week later, as Surgeon Arthur Bowes reported,

about 12 o'clock in the night one severe flash of lightening struck a very large tree in the centre of the Camp, under which some places were constructed to keep the sheep and hogs in. It split the tree from top to bottom, killed five sheep belonging to Major Ross, and a pig of one of the Lieutenants.

The following day a great parade was held to hear the reading of Phillip's commissions and later in the day, in honour of the occasion, 'all the officers dined with [Phillip] on a cold collation; but the mutton which had been killed yesterday morning was full of maggots'.²⁹ This celebration had accounted for the loss of 4 more sheep. Then, at the end of April, Phillip returned from an expedition of exploration around Port Jackson, Botany Bay and Broken Bay and 'had the mortification to find that five ewes and a lamb had been killed in the middle of the



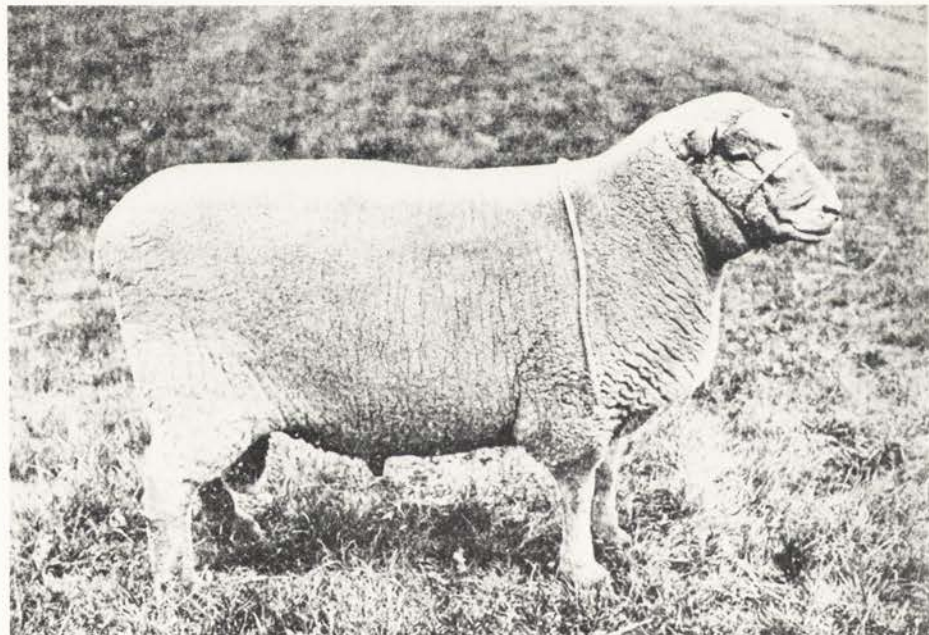
2 Africander fat-tailed ram



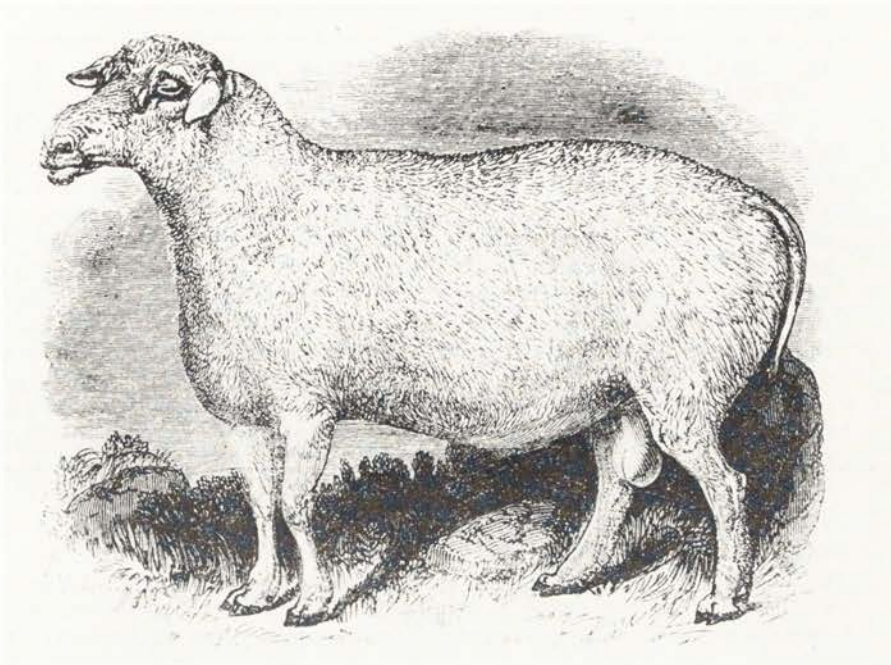
3 Modern small, prolific, native sheep from Bangladesh, whence 'Bengal' sheep were shipped to the early colony. No illustrations of Bengal sheep are known.



4 Early South African Merino ram



5 Southdown ram



6 Teeswater ram



7 First cross Africander $\times$ Merino sheep, in South Africa

day, and very near the camp'.³⁰ At first it was believed that native dogs were responsible, but later Phillip formed the opinion that the sheep may have been killed by either natives or 'some of our people'. The ration was issued once weekly; many convicts ate it during the first part of the week and became so hungry that they would take any risks to get food.³¹

The sheep were not thriving, and besides such sudden deaths were dying from more insidious causes. When the fleet arrived at Sydney Cove, the country was covered with thick scrub rather like that found in present-day Ku-ring-gai Chase, unpalatable for sheep. By July, of the 100 or so sheep bought at the Cape, 29 remained. In September Phillip wrote: 'one sheep only remains of upwards of seventy which I had purchased at the Cape on my own account and on Government's account'. He believed that it was the rank grass found under the trees which led to the death of so many sheep, since 'those who ha[d] only one or two sheep which [had] fed about their tents [had] preserved them'.³²

Meanwhile the cattle (2 bulls and 8 cows), being unattended for a short while, had strayed and become lost, and Phillip had by now given up hope of recovering them. There was, however, one bright note, as he observed:

Hogs and poultry thrive and increase fast. Black cattle will thrive full as well, and we shall be able in future to guard against their straying, your Lordship will please to determine whether it would not be necessary to order any ship that was coming to the settlement with provisions to purchase at the Cape as many cows as could be conveniently received on board, with a couple of young bulls.

For three years the colony was faced with famine. Other than Phillip, none of the officers believed the colony could survive, and their few remaining sheep were killed for mutton. Lieutenant Watkin Tench, visiting Rose Hill in November 1790, wrote: 'They have not at this time either horse, cow, or sheep here'.³³ In contrast, an examination of the stock returns shows that, like the pigs and poultry, goats were rapidly increasing. As of 1 May 1788 there were 19 goats in the colony, but six years later the number had risen to 522.³⁴

On 15 March 1791 HMS *Gorgon* sailed from England for Sydney Cove carrying thirty-one male convicts. Calling at the Cape, where she remained six weeks, she took on 'three bulls, twenty-three cows, sixty-eight sheep, eleven hogs ... and other articles for the colony'. Shortly after her arrival P.G. King, later to become Governor of New South Wales, reported to Sir Joseph Banks that a number of animals were lost on the voyage but

a very fine Bull Calf, 17 Cows (4 of which in Calf) and 1 Cow Calf with about Sixty Ewes are now grazing in the Park at Parramatta, and are very sleek and thriving.³⁵

The sheep from the *Gorgon* seem to have been of the Ronderib breed, although there are no colonial reports which would support that surmise. There is, however, some genetic evidence that sheep of this breed were among the foundation stock, for vestiges of the twisted tail still occur occasionally among Australian flocks. At the marking of Merino lambs, a few might be found with a definite twist or kink in the tail. The usual explanation offered is that the lamb

must somehow have broken its tail, although there is never any sign of injury. Garran's observation was that about 2 lambs in 1000 have this kink, which, however, is not evident among adult flocks since the whole tail is removed at lamb marking: that kink provides evidence of the distant ancestry.

The fat tail, like the hump of a camel, provides a reserve of nourishment on which the sheep can survive in times of stress, so that the Cape sheep were particularly adapted for being carried on ships, where the provision of fodder would be restricted. The sheep aboard the *Gorgon* survived the passage to Port Jackson and were sent to the recently discovered fertile country near Parramatta. Here, in contrast to the first sheep which had starved at Sydney Cove, they prospered. Six months later, by which time he had hoped for the first lambs to be born, Phillip noted that 'the English ewes would do better in this country than the Cape ewes, which grow too fat to breed'.³⁶ With unlimited pasture, the fat tail became so big that service by a ram was difficult. Cape rams, however, remained fertile and when ewes from India arrived they were often successfully crossed with those rams.

Late in 1791, Phillip sent the *Atlantic* to Calcutta for stores and livestock and here she embarked 20 sheep (2 rams and 18 ewes), 2 bulls, a cow with calf, and 20 goats. She returned to Sydney in the following June when it was found that 12 of the sheep and 3 of the cattle had survived the voyage. The cow, however, was so weak that she was lost shortly after being landed when she fell into the water when going for a drink. Another problem arose: Phillip reported that 'the bulls being of the buffalo breed will not connect themselves with our cows, which are of the European breed'.³⁷ The cattle in the colony thus consisted of cows but no bulls of the European breed and bulls but no cows of the buffalo breed. The sheep in the colony at this time consisted of fat-tailed sheep from the Cape and a few small hairy sheep from India which interbred with them.

The most immediate problem to be solved in the colony was the employment of the labourers, who were mainly convict in origin for a considerable time. In 1828, 57 per cent of adult males over 12 were convicts, while of the non-convict adult males 24 per cent were free settlers, 58 per cent ex-convicts and 18 per cent born in the colony. The convicts were first employed in making roads and buildings and on government farms. In the first hungry years large numbers were sent to Norfolk Island, which was found to be fertile. Its population reached 1115 in 1792 and they were practically self-supporting from agriculture, forestry and fishing; later pigs and sheep were kept.

As the fear of hunger disappeared, people began to seek a means of satisfying their other needs. Importing basic and luxury goods became the most profitable economic activity in the colony. The civil and military officers were well placed to take advantage of this as they were paid in British currency and could have their salaries paid in England, if they wished. John Macarthur was representative of those who dominated this import trade. For some time the government was the main source of British currency, through its purchases of some of the things needed for the civil and military establishment. A difficulty arose about this source of funds when Philip Gidley King became governor in 1800 and responded to the ever recurring plea of governments that expenditure must be reduced. Treasury bills issued by the governor averaged about £31,000 a year between 1798

and 1800, but only £15,000 a year during the period King was governor from 1800 to 1806.³⁸ The result was that traders were unable to sell the goods they had imported, prices fell and imports were curtailed. This shortage of funds may well have been the reason Macarthur in 1800 made the first of his offers to sell all his sheep to the government. Characteristically, he asked an excessive price.

The first exports of seal oil, skins and sandalwood were made by Robert Campbell and by Simeon Lord in 1805 and they were soon followed by others. There was some discussion of wool as a potential export industry, but the first commercial shipment was not made until 1811 and shipments remained small for many years. The life of importers, in spite of some fluctuations in funds, was fairly easy until 1810, but then war in Europe, attacks on ships by the French and an American Embargo Act led to financial panic. Established merchants in India sought to recover their losses by increased trading with New South Wales. Macarthur was one of those who were unequal to this professional competition and he lost heavily in trading. The days of easy money from monopoly trading were over and he was forced to take a serious interest in producing wool, for which he was well placed because of his large landholding.

Developments within the colony during the early years of settlement show the physical and economic constraints on the development of a wool industry but a more important hindrance was the policy of the British government. It has often been assumed that from the time Merinos landed in Australia in 1797 most of the graziers were anxious to produce fine wool; likewise, that the British government was willing to foster the industry from the time Macarthur presented his vision splendid in 1803. Both views have only a tenuous relationship with reality. British commercial supremacy had been built on the production of wool, and a main object of policy for hundreds of years had been to protect its woollen industry. Britain had no intention of relinquishing this policy lightly and, in fact, it continued to produce more wool than Australia until 1870.

It was made clear from the beginning that New South Wales was a colony of Britain, settled by the British for British purposes. The tone was set in a despatch from the British government to King in 1802:

The exertions which have been made by certain of the settlers to improve the growth of wool are highly creditable to the individuals, and cannot be too much encouraged with a view to the future exportation of the finest quality of that article for the market of this country, rather than for the employment of it in the manufactures of the colony, which should be confined to the coarser kind of cloth.³⁹

The same message was given by J.T. Bigge in dealing with the wool industry in his report on agriculture in 1823:

The manufacture of it [wool] in the colony is not an object that is much to be desired ... and it will be much more conformable to its real interests ... to profit ... by remitting to England fine wool in its raw state, and in receiving in return the same or other produce in their manufactured state.⁴⁰

The wool industry, which was the premier English industry from the twelfth to the nineteenth centuries, was strictly controlled, first by the guilds and then by

the State, because of its importance in providing employment at home and as a means of advancing the interests of the government abroad. The policy decided upon throughout the period was to control farmers, traders and workers so that woollen manufacturers might have the undisputed possession of markets at home and abroad;⁴¹ for instance, the English threat to withhold supplies of raw wool from the manufacturing towns of Flanders detached them from their allegiance to the French king. The import of woollen goods into England was strictly forbidden. The Weavers Act of 1555 made it unlawful for anyone to set up a weaving business unless he had passed an apprenticeship of seven years. An important Act for Apprentices of 1563 made it compulsory for certain classes of workers to undertake an apprenticeship, if required.

By the end of the eighteenth century the woollen manufacturers were strong enough to compete with the world and these unrepealed Acts of earlier times hindered their business. Workers whose livelihood was threatened by the new industrial system sought to use the old legislation to insist that no one should work in a textile mill unless he had served a seven years' apprenticeship. It was gradually accepted that the Acts would not apply in factories making cotton, silk and linen goods, as there was said to be an unlimited quantity of raw material, which could be used to maintain employment. In the wool industry, however, workers claimed that the supply of the raw material could not be increased rapidly enough to maintain employment when labour-saving machinery was introduced, because flocks grew slowly and because the imports from Europe were at hazard in time of war. In 1803, at a time when John Macarthur fortuitously had been sent under court martial to England, an inquiry was being held into petitions to repeal the old legislation on compulsory apprenticeship, limitation of looms and prohibition of certain textile machinery. The manufacturers were seeking evidence to show that an increasing quantity of raw wool could be produced within the Empire and they saw that Macarthur could be of use to them, but less clearly than Macarthur saw that he could use them to obtain a grant of land and other privileges.⁴²

The British policy of favouring wool manufacturers, even at the expense of farmers, resulted in legislation which made it illegal to export sheep from England. In Britain's wars of the late eighteenth century, first with the United States and then with France, the markets for coarse woollen goods had been so affected that the price of long wool had been halved. The farmers of Lincolnshire, the centre of the coarse-wool growing area, thought that prices would be improved if a limited export of wool were permitted. They appealed to Sir Joseph Banks to help them in seeking an amendment to the laws operating since 1614 which put an embargo on the export of wool.⁴³ As a landowner Banks absorbed himself in the problems of his fellow landowners and thus began his interest in the wool industry, which had such important consequences for Australia. On this occasion he was not successful, as he was opposed by a well-organised lobby of manufacturers, who began their campaign in 1781 at a meeting in Leeds which agreed to a resolution

That on the adjournment of this meeting, a committee of merchants be appointed who, in conjunction with the committee of woollen manufacturers, are requested to

open a correspondence with the other merchants and manufacturers of this kingdom, requesting their concurrence and assistance in opposing any attempt to obtain a law for leave to export wool, or prohibiting the importation of Irish woollen yarn into this kingdom.⁴⁴

In the course of the campaign it became clear that, although coarse wool was bringing more than three times as much on the continent as in England, continental manufacturers were more interested in Spanish fine wool than in English coarse wool. The growers and manufacturers of fine wool in England also opposed the export of coarse wool, as this would cause some fine-wool growers to change to its production. The manufacturers were successful, in spite of the efforts of Banks and Arthur Young, and in 1788 the Wool Act was passed which forbade the export of wool and sheep from England.⁴⁵ This Act was not repealed until 1824, so that John Macarthur and others needed special approval, not provided for in the Act, to export Merino sheep to New South Wales.

Although anxiety in Britain about supplies of wool from Spain may have played some part in the search for alternative sources of supply, imports from Spain actually followed a rising trend throughout the French War period. Imports of Spanish wool by Britain reached their highest level in 1807 and remained high until the 1820s when they were overtaken by those from Germany, which from the early 1820s to the late 1840s were much larger than those from Spain had ever been. England showed no special interest in fostering the wool industry in New South Wales rather than importing from competing countries. It imposed a small uniform rate of duty on all wool in 1804, which was unchanged to 1823; then the rate on colonial wool was left at 1d per pound, while that on foreign wool was increased to 6d, but a uniform rate of 1d per pound was again fixed in 1825.

The British government was persuaded to take an interest in the production of fine wool in Australia, although with some misgivings. It had become

8 Sydney Cove, August 1788



convinced that it required some Merino wool for the fine cloth trade, but the attempts at breeding Merinos in England were on a small scale and did not give much hope of success. The earliest Merino flock in England was that of King George III, and he produced only about 2000 pounds (clean) of wool between 1798 and 1804. These operations were insignificant in comparison with those of France, the country whose competition was feared: in 1811 France produced almost half its consumption of fine wool and had ten imperial Merino studs, which were turning out 1200 Merino rams a year. Even though large numbers of Merinos became available after the defeat of the Spanish army by the French in 1808 and the dispersal of the flocks, Britain's climate was not suitable for them. By the end of 1811 Britain had received 12,000 Negretti and Paular Merinos, which were among the best in Spain, and the Merino Society was founded in the same year. However, by 1821 the Society came to an end, lacking the leadership of Banks, who had died in June 1820. There are now no commercial flocks of Merinos in England.

It was thus by chance that the Merino breed survived long enough in England to supply a few to New South Wales, although they were not the earliest to arrive and were of only minor importance.

The founding flock

All the Cape sheep which had arrived with the First Fleet died or were eaten. A few small lots from the Cape and India took their place and were joined by 100 Indian sheep (or Bengal as they were usually called) which arrived at Port Jackson in February 1793 in the ship *Shah Hormuzear* and became the foundation flocks of Australia. Historians have paid little attention to those sheep, since official references to their arrival were suppressed. Their importation provides a classic example of the clandestine activities of the officers of the New South Wales Corps as well as those of captains of merchant ships carrying the flag of the East India Company.

By royal charter this Company enjoyed a monopoly of trade between England and all ports of the Indian and Pacific Ocean regions, and thus the new convict settlement of New South Wales was within the sphere of its operations. The right of the Company to all trade in the East Indies was confirmed by Act of Parliament, given in consideration of interest-free loans of £5.2 million from the Company to the British government.¹ A monopoly secured for such a sum was not to be regarded lightly by the government; there was no doubt the Company would fight to preserve its rights.

A clause was inserted in Governor Phillip's Instructions prohibiting trade between the new settlement at Botany Bay and any of the Company's ports without the Governor's expressed permission. No ships were to be built that could so trade. Only the Company's ships, the East Indiamen, which sailed from London to eastern ports, were authorised to round the Cape of Good Hope. Besides the East Indiamen, there was in the eastern seas a fleet numbering 600 ships, trading from Madagascar to China, acting as feeders to the East Indiamen in what was known as the 'country' trade. In spite of such safeguards the Company was fearful that it might lose some of its jealously protected trade and was concerned about the future of the colony, which its chairman referred to as the 'serpent we are nursing at Botany Bay'. Furthermore, corruption was rife throughout the East Indian service and, almost without exception, officers of the Company engaged in some form of mercantile activity to their personal advantage. Ships' captains were in an advantageous position to engage in contraband trade on a grand scale.

One of the convict transports of the Third Fleet was the East Indiaman *Pitt*, under the command of Captain Edward Manning. In July 1791 she was ready to sail from England with 356 male and 56 female convicts, together with supplies of salted beef and pork sufficient for 400 convicts for twelve months, and a vessel in frames. However, Governor Phillip was informed that the tonnage of cargo shipped 'ha[d] prevented [his] receiving by this opportunity some articles, particularly the clothing for the convicts now embarked, which could not, from the want of room, be taken on board'. Phillip, somewhat tersely, reported back that

the private property sold in this settlement [out of the *Pitt*] amounted to upwards of four thousand pounds ... Many of the most necessary articles which had been put on board that ship were afterwards landed, and yet the stowage of those articles would not have taken up one-quarter of the stowage which the private trade took up.²

A continuing shortage of clothing was to become one of the greatest hardships for the convicts.

Having sold £4000 worth of private goods, Manning planned a further trading venture, as selling imported goods was very profitable and most officers wished to take part in it. As shown in Chapter 1, civil and military officers were paid in sterling, which was required to buy imported goods. Those who owned farms also obtained sterling by selling supplies to the Commissariat. The nearest source of supply was India, with Calcutta (in Bengal) as its principal port.

On board the *Pitt*, which reached Sydney in February 1792, was Major Francis Grose, who carried a commission as Lieutenant-Governor of New South Wales, and a detachment of the New South Wales Corps. After wining and dining for seven months with Grose, Manning was well aware of his easy-going disposition, which was fully revealed during his time in the colony. He would also have been aware that Phillip was soon to return to England and that Grose would then assume control of the settlement. This knowledge may well have been a major consideration, for the plan as it developed would have met with difficulties if it had been attempted under the inflexible control of Phillip.

In fact, Grose attempted to involve Phillip in a private trading venture. He wrote to Phillip:

Amongst us [officers] we have raised a sufficient sum to take up the *Britannia*, and as all money matters are already settled with the master, ... I have now to request ... that you will ... protect this ship from interruption as much as you can.

Phillip's rebuke was effective on this occasion, but had no permanent effect on the behaviour of Grose:

any interruption which that ship might meet with, if the master acted contrary to the tenor of his license from the East India Company, did not by any means depend on me ... I am sorry that I cannot, with propriety, take any official step in this business.³

In November 1791 Phillip had sent the *Atlantic* to Calcutta for supplies rendered necessary by the failure of crops as the result of a long drought and 'the

great want of a proper person to be charged with the cultivation of the ground', as well as a shortage of supplies from England; the survival of the settlement could well have depended upon the safe return of the storeship. Manning used this situation to secure Phillip's approval of his plan, as indicated in a letter written by Phillip to Lord Cornwallis, Governor-General of India, in which he stated:

Since the departure of that ship [*Atlantic*] the Pitt has arrived at this port, and after landing her cargo was to have gone to Madrass and Bombay on the owners' account; but her commander having offered to proceed first to Calcutta, at the risk and expence of the owners of the ship, in order to take his chance ... to bring provisions to this settlement if, unfortunately, any accident should have happened to the *Atlantic* in her passage from hence, I have availed myself of that offer.⁴

Although Manning was merely the captain of the *Pitt*, under direction of the owners, it would seem that he hoped to obtain his masters' permission to make a return voyage to Port Jackson.

D.R. Hainsworth has drawn attention to the fact that Captain Manning in April 1792, a few days before his departure for Bengal, had received paymaster's bills valued at £1440 and drawn on behalf of eight officers. Hainsworth thought that the bills were in payment for purchases of part of Manning's private cargo, which he had carried from England: Charles Bateson noted that on her first voyage the *Pitt* was 'on both sides ... full of casks and cases' and was 'as full as she could be stowed'.⁵ Clearly, some of those bills may have been drawn to meet the cost of purchase of that cargo as is suggested by the odd amounts involved. However, it is equally possible that most of the money had been subscribed by the officers for Manning to employ in a trading venture to India.

The colony was in a state of near starvation. Phillip's reports for the British government, prepared in March 1792, were a melancholy survey of a desperate state of affairs. Sickness, especially among the convicts, many of whom had arrived in a 'debilitated state', was rife; clothing for the convicts was 'so very slight that most of the people are naked a few weeks after they have been cloathed'. The poor quality of provisions remaining in store, coupled with insufficient supplies of locally produced grain, meant that reduced rations were issued. As a result, the development of the colony suffered, since the hours of labour had to be reduced when the prisoners could not be adequately fed. One hopeful portent was that the maize crop being harvested 'turns out much better than could have been expected from the dry weather and the late season in which it was put into the ground'.⁶

The salt pork was old and sometimes uneatable; fresh meat was in short supply as there were fewer than 100 sheep in the colony, many of low fertility, and about 16 cows. In such circumstances, the first consideration of officers proposing to charter a cargo from India would be to procure female sheep, cattle and goats not only to ensure a continuing source of fresh meat for their own enjoyment, but also as a profitable investment.⁷ The days of officers importing a wide variety of goods for private trade had not yet arrived.

The principal subscribers to Manning's venture were Captain Nicholas Nepean, £337 16s, Captain Hill, £308, and Adjutant Rowley, £295 7s; Thomas Laycock subscribed £60 and four other officers subscribed smaller amounts. The

officers mentioned were, in the event, to become the importers of the sheep which were to form the basis of the flocks of Australia. It will be noted that neither Captain Joseph Foveaux nor Lieutenant John Macarther was involved; their opportunity would come later.

When he arrived at Calcutta, Manning found, as he must have expected, that the *Atlantic* had already made up her cargo and sailed for Sydney. Manning's offer to go to Calcutta on the remote chance that the *Atlantic* had, for some reason, failed to arrive can only be explained, remembering his previous successful trading venture to Sydney, if it is accepted that he hoped to make the return voyage to Sydney himself with a cargo for private trade. That hope was not fulfilled. The *Pitt* was an East Indiaman, with rights to trade between England and East India Company ports but not between India and Sydney. Manning was only the master of the *Pitt*, not the owner, and it would seem that the owners were not prepared to risk the penalties, which might involve the forfeiture of the ship, for such an illicit voyage.

Manning, then, held paymaster's bills from the officers of the New South Wales Corps for investment but was unable to return to Sydney in the *Pitt*. He had to find a 'country' captain to do the job, and found a willing accomplice in Captain William Wright Bampton of the *Shah Hormuzear*, who was available to undertake the role. Bampton had been engaged in the trade from Bombay carrying cotton to China and bringing back tea as a return cargo. Two years previously traders from India had left cotton of such poor quality at Peking that the Chinese authorities had suspended trade with India for a season. Though that trade had been resumed it is possible that Bampton was *persona non grata* at Peking and without a charter at this time. Thus it was not Manning but Bampton who brought from India the officers' investment of sheep, whose descendants in their millions were destined to help stock the Australian colonies.

Captain Manning had 'mentioned to him [Bampton] such articles as he thought were most wanted' at Sydney and Bampton had made up a full cargo. According to Bampton, the *Shah Hormuzear* left Calcutta about 1 January 1793. Although it was correct procedure for such a ship to declare its cargo and destination and to apply to the Customs House for a pass, a search of the records at the National Archives of India has failed to reveal the issue of a pass or, indeed, any other reference to the departure of Bampton's ship. Those were still the days when officials at Fort William looked the other way 'whenever an obviously disreputable craft dropped down the river on its way to some doubtful destination'.⁸

When he sailed from Calcutta, Bampton had on board one bull, 24 cows, 220 sheep, 130 goats, 5 horses and 6 asses, together with a quantity of salted beef, wheat, rice and other grains and sugar totalling in all 250 tons, one cask of cognac brandy, 3 pipes of Madeira wine and 25 reams of Portuguese paper.

The *Shah Hormuzear* arrived at Port Jackson on 24 February 1793. This was the first private commercial contact between India and New South Wales and, as such, was to test the reactions of both the Home government and the East India Company to the carrying on of what was known to be contraband trade. However, Bampton had come prepared: he claimed to have authority from Lord Cornwallis

for the cargo but the validity of that authority is another question.⁹ As Manning had expected, Governor Phillip had left the colony and Grose was now in charge. Grose

considered it expedient to purchase that part of the cargo which the master professed to have brought for the use of the colony, the Commissary asserting that the salt provisions were ... cheaper than they could be sent from England, and that the other articles (all of which were of a quality superior to any hitherto received in this country) were ... offered on reasonable terms.

This was the 250 tons of stores already noted and for which Bampton was paid £9603 5s 6d.

So far all was fair and above board: Grose had bought an allegedly authorised cargo for the use of the colony and had reported this transaction to the Home government. But Grose had referred to 'that part of the cargo which the master professed to have brought for the use of the colony' — what of the other part? Of the livestock for the officers there was not a word from anyone in the colony. Yet only a few days before the *Shah* had arrived, Grose had on 16 February written to the Secretary of State for the Colonies:

Your directions for purchasing stock will be as immediately attended to as the arrival of the *Daedalus* will admit, and horned cattle, sheep and goats will be procured as soon as possible.¹⁰

While the procuring of livestock for the colony was a matter of the greatest importance, it would seem that private trade with India was something better left unrecorded. It remained unrecorded until five years later when in his *Account of the English Colony in New South Wales* David Collins, who had been Grose's secretary in 1793, wrote:

In the article of stock, however, Mr. Bampton had been very unfortunate. His cattle died; of the sheep more than half perished; one horse and three asses died; and very few of the goats survived the voyage.¹¹

The surviving livestock can be calculated as consisting of about 100 sheep, 4 horses, 3 asses and a few goats: Collins noted that this livestock 'was purchased by the different officers of the colony'. Another reference to the importation of these sheep, this time ten years later, was from John Macarthur, who wrote 'that half his Flock ha[d] been raised from Thirty Ewes purchased in 1793 out of a Ship from India'.¹²

From whom did Macarthur purchase those sheep? He had not subscribed to Manning's venture, yet, on his own admission, his first sheep would have come from the *Shah Hormuzear*. Some years later, in giving evidence before the Bigge Inquiry, Macarthur stated that he had 'purchased from an officer Sixty Bengal Ewes and Lambs, which had been imported from Calcutta'.¹³ Captain Nepean was the largest subscriber to that venture and with an investment of £337 held about a quarter share. Assuming that the sheep were divided in proportion to the amount subscribed, he would have been entitled to nearly 30 sheep. Macarthur

and Nepean had quarrelled bitterly while travelling to Sydney in 1790 on board the *Neptune* but a reconciliation seems to have taken place since Mrs Macarthur was to write in 1791: 'We shall be well pleased to remove anywhere with Captain Nepean; he is truly a good hearted man and has, I believe, a great friendship for Mr. Macarthur.'¹⁴ Nepean left the colony in September 1793 and it is reasonable to assume that he was the officer from whom Macarthur bought his sheep. (The apparent discrepancy in Macarthur's accounts of the date and number of sheep in this purchase is considered in Chapter 9.) By 1801, Macarthur's sheep had increased to 970 head.

Captain Joseph Foveaux was one of the earliest owners of sheep, but sold his flock of about 1350 sheep to Macarthur by a contract dated 5 December 1801.¹⁵ Macarthur stated that Foveaux's sheep had been bred from about the same number of ewes and established about the same time as his own flock. Foveaux, like Macarthur, had not subscribed to the livestock on the *Shah Hormuzear*, but it is likely that he obtained the flock of Captain Hill, who had subscribed £308, and so would have been entitled to about the same number of sheep as Nepean. In April 1793, on the eve of Hill's departure from the colony, his regimental account was credited with £251 8s 6d as an amount paid to him by Foveaux. Ewes were valued at about £8 each and the amount is appropriate to the purchase of such sheep as Hill might have obtained from Bampton. Foveaux had already acquired a few Cape sheep from settlers and would have been a likely buyer.

Captain Hill sailed from Port Jackson in the *Shah Hormuzear*, which, after delivering supplies to Norfolk Island, proceeded through Torres Strait. At Tate Island a party went ashore to look for fresh water and when the boat reached the island, a large body of natives first received them very kindly but then killed Hill and four sailors.¹⁶

Adjutant Rowley, the third largest subscriber and therefore the probable recipient of several sheep, remained in the colony and at the 1801 muster owned 201 head; Thomas Laycock, who had subscribed £60, possessed 340 sheep. Of the other subscribers only Ensigns McKellar and Piper remained in the colony in 1801; they, with modest investments of £22 and £20, had respectively 8 sheep and none.

The correlation, where it can be traced between the subscribers to Manning's venture in 1792 and early ownership of sheep, is close enough to support a belief that the paymaster's bills given to Manning were subscribed for the purchase of livestock: this venture resulted in the establishment of many of the private flocks in New South Wales.

The Bengal sheep, though small, were exceedingly prolific, breeding twice in thirteen months and frequently producing up to 4 lambs. From the time of their arrival, sheep numbers increased more rapidly than would have been possible with Merino or English sheep. In the early days of the colony, a rapid increase of stock numbers was of the greatest importance and this was now assured by the arrival of the Bengal breed of sheep, 12 in the *Atlantic* and about 100 in the *Shah Hormuzear*. From 526 sheep in July 1794, including those from the *Shah Hormuzear*, the number in the colony had risen to 6000 by 1800, although a total of only 300 had been imported to that time. The first million was passed before 1830. As Governor King wrote in 1805: 'there can be no doubt of our Sheep

encreasing at least in an equal degree with that Species in any part of the World'.¹⁷ His estimate, on the basis of a decade of experience with Bengal sheep on Norfolk Island and in New South Wales, was that they trebled their numbers in two years.

Bampton and the *Shah Hormuzear* made yet another important contribution to the establishment of the colony's flocks. On leaving Sydney the *Shah*, sailing in company with the *Chesterfield*, took supplies to Norfolk Island, where she left 8 Bengal sheep with Lieutenant-Governor King. Again there seems to have been some secrecy in this arrangement. Official records make no mention of the sheep nor does Collins, although he reported that supplies at Sydney Cove were then so plentiful that Grose had decided to send to Norfolk Island 220 tons of provisions, or nearly as much as the *Shah Hormuzear* had brought from India. The sole reference is found in King's private journal, in which he wrote:

By the Hormuzear [May 1793], I also received Six Bengal Ewes and two Rams which is the first publick Stock of that kind, ever sent to this Island, Excepting those I brought with Me when I first landed in 1788, all of which died of the Scab.¹⁸

It is unlikely that the private subscribers would send any of their own sheep to King for the 'publick' stock. The only other Bengal sheep in the colony were the 12 that had arrived in the *Atlantic* in June 1792, which were government stock and which, by then, would have produced some lambs; it is from these that one may assume that the sheep for Norfolk Island were provided. The Cape sheep at Port Jackson were poor breeders. It would be reasonable, though unexpectedly generous in the circumstances, for Grose to send a few Bengal sheep to King as an experiment.¹⁹ However, from whatever source, those few sheep were to play a most important part in the establishment of sheep in Australia.

A few sheep continued to reach the colony, some as the result of official planning and some almost by accident. A combination of planning and chance resulted in a few sheep from America reaching New South Wales. A British expedition under the command of Captain George Vancouver was charting the Pacific coast of England's new possession, Canada. New South Wales was the nearest link with British officials for the expedition, and Vancouver had been instructed to send his storeship *Daedalus* to Sydney by way of Otaheite, where she was to pick up a supply of hogs to supplement the livestock of the prison colony, and return to Canada with supplies. Before the *Daedalus* left the American coast, Vancouver obtained some sheep and cattle from the Spanish representative at the settlement at Monterey, south of present-day San Francisco; these were probably loaded as a private speculation. Of 4 rams and 8 ewes embarked, 4 sheep survived the passage to Port Jackson and landed in April 1793. These sheep were of a breed 'inur'd to countries but slightly cultivated' and had 'succeeded to a very high degree with scarce the smallest care and attention'.²⁰

There are no indigenous breeds of domestic sheep on the American continent; the sheep of the Spanish settlement were derived from two Spanish breeds, the Churro (or Chunah), a coarse-fleeced mutton breed, and the fine-woolled breed now known as Merino. These Spanish cross-bred sheep produced wool which was of sufficient quality for it to be in demand for cloth-making by the

American Indians. The 4 sheep from the *Daedalus* might have been the first with Merino blood to reach Australia. However, their identity was lost and, with one possible exception, they were not heard of again.

The *Daedalus* was given another assignment to complete during her journey to Sydney. King had asked that two Maoris be brought to Norfolk Island to instruct his people in the working of New Zealand flax, and two Maoris were enticed on board at Dusky Bay, New Zealand and taken to Sydney. The *Daedalus* arrived at Port Jackson just as the *Shah Hormuzear* was about to sail for India via Norfolk Island, and Captain Bampton received the Maoris on board his ship and carried them to their destination.

A few Irish sheep came to the colony: the earliest reference to them was in 1804. Sixteen years later John Macarthur recalled that he 'procured ... from the Captain of a Transport from Ireland, two Irish Ewes and a young Ram'. Possibly they came in 1796 on the *Marquis Cornwallis*, the only ship to reach Sydney direct from Ireland in that period.²¹ The sheep were coarse-woolled but the exact strain cannot be identified, since Irish sheep comprised several breeds.

Several important English mutton sheep came to the colony about the turn of the century. Major George Johnston wrote in 1806:



9 Swampy land typical of early coastal settlement, in which foot rot, liver fluke and stomach worms flourished. Graziers went inland to avoid these diseases.

There was also one Southdown ram imported from England in 1800, which has very much improved the breed. The breed from this ram has been preferred by many of the sheep-farmers to the Spanish, being found more strong and hardy, and ready for the butcher.²²

Reverend Samuel Marsden wrote to Sir Joseph Banks in 1805, 'We have got the Spanish, Southdown, and Teeswater breed'.²³ It is also known that Marsden bought sheep from the captains of incoming ships which had made fast passage and had some livestock uneaten at the end of the voyage. Their breeds were not recorded, but it is probable most of them were Cape or Indian sheep, similar to those already in the country, because of the shipping patterns of the time. Another small flock, which had a long-term effect on the sheep industry, arrived on 4 March 1804 from England. The *Sydney Gazette* reported that Major (later Colonel) Johnston had 3 Teeswater ewes and a ram as a present from the Duke of Northumberland.²⁴ In response to Commissioner J.T. Bigge in 1820, a settler in Van Diemen's Land said:

The best sheep are of the Leicester Breed or improved Teeswater. These last were brought down to Port Dalrymple by Col. Patterson, and were the Produce of some sheep that were sent out by the Duke of Northumberland to Col. Johnstone.²⁵

This description of the Teeswater and Leicester sheep is not quite accurate. These were different breeds, but both were large, prolific sheep, with long, lustrous but coarse wool, and each was interbred with similar sheep to produce improved versions of the old strains.²⁶

By 1800 there were many breeds of sheep in Australia, all of which were interbred. The most important were hairy sheep, which provided mutton. There were a small number of Merinos, but no one thought they were pure bred, and this was generally considered to be an advantage, as indeed it turned out to be.

Eight small sheep at Norfolk Island

On 14 February 1788, barely three weeks after the First Fleet had arrived at Port Jackson, Philip Gidley King, with twenty-three companions, was sent to establish a settlement at Norfolk Island. This small party included two men who were supposed to understand the cultivation of flax. King, well known to Governor Phillip as he had previously served under him in two ships, was recommended by the Governor as an 'officer of merit ... whose perseverance ... may be depended upon'. Phillip had appointed him 'to superintend and command the settlement to be formed on Norfolk Island' and instructed him to cultivate the flax plant growing on the island.¹ The results of his attempts to cultivate and manufacture flax and the way in which this led him to take an interest in wool are discussed in Chapter 7, but first let us consider his influence on the sheep industry.²

Shortly after landing on Norfolk Island, King recorded his impressions of the tiny island:

After ascending a very steep hill, we got to the top of the island, which we found to be a plain, but every foot of ground was covered with trees, or the large roots of trees which rose above the surface of the earth ... No grass, or herb of any kind, grew between the roots of these trees, although the soil every where was extremely rich and good; but this may be attributed to the total exclusion of the sun, and the want of air, which doubtless prevent this sort of vegetation.³

King encouraged the convicts to make gardens for themselves and the forest was gradually cleared to make way for vegetables and crops.⁴ With the fertile soil and temperate climate vegetables, maize and wheat grew well although caterpillars and rats took their toll of the produce.⁵ By comparison with conditions at Port Jackson, where the population was near starvation, within two years the Norfolk Island settlement was enjoying a period of relative plenty. Thus it was possible to send more military personnel and convicts to the island and by March 1790 the population had reached 498.⁶ With this increased work-force clearing went on more rapidly and the total area under cultivation was soon extended. King took with him to the island 6 of the government-owned sheep that had been brought from the Cape with the First Fleet. Within a few months all had died from the scab, a disease which was to plague the sheep of the colony until the middle of the nineteenth century.

By November 1791 King, who had been sent to England to report on the state of the island colony, returned to Norfolk Island bringing with him 12 ewes and a ram of the fat-tailed breed (now known as Africander) purchased at the Cape of Good Hope. Captain William Paterson also brought 3 ewes, so that there were now 16 sheep on the island.

A few months later King noted that the only ram on the island had died suddenly 'but luckily a Ewe dropped a very fine Ram Lamb, the following day, which with patience, is a distant Substitute for the One that is lost'. He was to be disappointed: two years later he observed that the Cape sheep rarely bred. Although he had earlier recorded the birth of the 'very fine Ram Lamb', the last lamb born to those ewes, at the end of 1792 the number of sheep on the island was only 16 head, which included the young ram.⁷ This had been Phillip's experience at Port Jackson, where he had also noted that the ewes 'grow too fat to breed'.

The fat tail of the Cape or Africander sheep is analogous to the camel's hump. During times when food is plentiful, fat is deposited in the tail and serves as a reserve to be drawn on during times of scarcity. In southern Africa the seasons generally alternate between spring rain and autumn drought, so that the sheep's tail tends to be fattest in the summer and leanest during the autumn. When the tail is very fat it is physically difficult for a ram to serve the ewe although the fat tail does not affect the ram's fertility. The gestation period of ewes is nearly five months so the fat tail serves as a natural mechanism to ensure that lambs will be born in the spring, when the seasonal plentiful supply of green feed ensures a high rate of survival. At Norfolk Island, where there was no seasonal drought, the Cape ewes were too fat to breed.

These fat-tailed sheep were first described by Herodotus, who lived in the fifth century BC.

There are also in Arabia two kinds of sheep worthy of admiration, the like of which is nowhere else to be seen; the one kind has long tails, not less than three cubits in length, which, if they were allowed to trail on the ground, would be bruised and fall into sores. As it is, all the shepherds know enough of carpentering to make little trucks for their sheep's tails. The trucks are placed under the tails, each sheep having one to himself, and the tails are then tied down upon them. The other kind has a broad tail, which is a cubit across sometimes.

Herodotus is known as the Father of History, and he is thus the first, but by no means the last, to pass on a plausible but untrue story. As a cubit is an ancient measure of about 500 millimetres, a sheep's tail 1.5 metres long and half a metre wide would indeed be remarkable. Dr Helen Newton Turner of CSIRO, who has seen fat-tailed sheep all around the world, says she has often heard the story of the trucks for sheep's tails, but always from someone who has heard of it but has never actually seen it.⁸

Early in May 1793 the *Shah Hormuzear* arrived at Norfolk Island on her return voyage from Port Jackson to India, carrying supplies for the settlement. Equally importantly, the ship carried a number of sheep: King recalled that these included 6 Bengal ewes and 2 rams, which he described as being 'very small altho' much improved by a very fine Cape ram'. Six-week-old lambs were as big as their mothers. From their arrival an extraordinary increase in the number of the flocks

of Norfolk Island was to be observed. There were no predatory animals such as the dingo on the island, while in the virgin soil there would have been no infection that might cause disease among the sheep, which, apparently, were free of scab.

The fat-tailed Cape sheep were of good size, with adult ewes weighing up to 70 pounds and, as they carried a frizzy coat which was shed in summer, they were not shorn. The Bengals, which were found to be prolific breeders, weighed less than 50 pounds and had a thin tail stretching down to the hocks and a thin, hairy fleece. The two breeds were interfertile and by the end of 1793 there were 34 sheep (10 rams and 24 ewes) and, on the assumption that the Cape sheep were alive, the 6 Bengal ewes had produced 10 lambs during the months following their arrival on the island.⁹

The only problem was a lack of adequate pastures. The cleared areas of land were in use for growing vegetables and crops and there were already goats tethered in any unused corners. In May 1794, King had landed 29 goats, which he owned, and 6 ewes and a ram belonging to the government, on Nepean Island, a low outcrop about 20 acres in extent. There was no water on it but as it was covered with thistles and grass King correctly assumed that the stock would thrive and they were left to graze there for eight months before being returned to Norfolk Island. The thistles were probably milk thistles rather than being the spiny Scotch variety, which as yet had not appeared on the mainland. Sheep turned out to graze on succulent feed do not need water and King's decision would suggest that the pastures in Nepean Island were both lush and nutritious. In January 1795

As most of the Grass on Nepean Island, [was] dried up, The Sheep belonging to Government, were brought over here [Norfolk Island], they have now increased to 33, out of 6 Ewes, brought by the Shah Hormuzear in May 1793.

By October 1796 the total number of sheep had increased to 170 even though surplus males were being killed for mutton. In addition there were 283 goats and nearly 5000 pigs on the island.

King explained the remarkable rapid increase in stock:

... sheep breed there [at Norfolk Island] as well as in any part of the world, and have not as yet been subject to the distempers common to that kind of stock. The Bengal ewes year twice in the thirteen months, and have commonly two, often three, and sometimes four lambs at a yearling; and these have increased so much, by being crossed with the Cape ram, that a lamb six weeks old is now as large as one of the old ewes.

The Cape ram was no doubt his own 'very fine Ram Lamb'.

When King found that the new sheep were doing so well, he exchanged 20 of his own young sows for 5 government Bengal ewes. Thereafter his private flock increased at a remarkable rate. When he left the colony at the end of 1796, out of the 170 sheep on the island he owned 81: these were purchased for the public flock, which by now comprised most of the island sheep.

Under King's control, agriculture on the island made huge strides. By 1796 more than 1500 acres of land had been cleared and cultivated and in one year 34,000 bushels of maize and wheat had been harvested. This was more than

sufficient to meet local demands, but the lack of a harbour made it impracticable to ship the surplus to Sydney and the only outlet for that surplus was to feed grain to the pigs. Without a market, grain production declined. After the glut of 1794 less ground was cultivated and, thus neglected, the cleared ground soon became overrun with rank and strong weeds, which made further cultivation difficult. The weeds, however, provided good stock fodder, as King reported:

Any number of sheep and goats, and a large quantity of cattle might be bred here, as the cleared ground affords the best of pasture for those species of stock.

The population, of whom one-third were women and children, rose to 1115 at the end of 1792. Of these, 123 were settlers, being either marines, seamen or ex-convicts.¹⁰ Under King's administration, which lasted until 1796, the settlement showed promise of becoming a stable community, but soon after his departure a general deterioration set in. The island was doomed to become a receptacle for the most troublesome convicts from Sydney and the succeeding lieutenant-governors were scarcely competent. A few of the settlers showed enterprise but most were shiftless, with the more exacting pursuits of agriculture being abandoned in favour of rearing livestock, a task which was less demanding of an owner's attention. In the early days pigs were fed on a 'tall palm, or fern ... [which] had a soft core tasting like a bad turnip, on which the hogs thrive splendidly'. When this fodder became exhausted, a substitute became necessary and so the islanders used grain or sugarcane, each of which required cultivation.¹¹ By way of contrast, sheep would fatten on grass alone with little attention. Mutton was readily saleable, retailing at 9d to 15d a pound. As sheep increased in number, pigs and goats declined.

In 1803 the Home government decided that Norfolk Island was too expensive to operate as a penal settlement. Furthermore, the difficulties of communication, exacerbated by the lack of a port or safe anchorage, made it advisable that the island be abandoned. The plan was to remove the settlers and convicts to Port Dalrymple, located at the mouth of the Tamar River in Van Diemen's Land, a site considered suitable for a settlement. Every 'facility and accommodation' was to be offered to the settlers so that they might be encouraged to embark at the public expense all their stock. In addition, by way of encouragement, settlers were to be made grants of 4 acres of land for each acre they had brought under cultivation at Norfolk Island and 2 acres for each 1 acre of waste land. They were also to be assigned convict labourers.¹² Whereas there was no suggestion of direct compulsion to force the settlers to move, the inducements offered were evidently thought to be sufficiently attractive to result in a major evacuation.

The directions from the Home government to evacuate Norfolk Island were prompted by motives of economy, but for King, now Governor of New South Wales, the move provided an opportunity to supply breeding stock to the new Van Diemen's Land settlements so that they might become self-supporting with meat. He had chartered ships to take cows from India to the new settlements and now there was an opportunity to send ewes. No sheep could be spared from New South Wales and thus Norfolk Island sheep were the obvious source of supply.

Ships suitable to transfer the settlers and their stock were not immediately

available and time soon passed. Meanwhile, a small military outpost had been placed at Port Dalrymple.

The offer of transfer to Port Dalrymple was made to the Norfolk Island settlers in May 1804 and forty-one, some of whom owned sheep (not exceeding 263 in number 'after the Wethers [were] disposed of'), accepted it. King hoped to procure transport for the carriage of their ewes but was not prepared to provide shipping for wethers. He agreed that these should be slaughtered for mutton, for which settlers would be paid 9d per pound. However, before shipping became available most of the settlers had changed their minds and of those who had originally sent in their names all but ten withdrew.¹³ One settler who was prepared to make the move, and elected to settle at the Derwent, was George Guest,¹⁴ who was at that time the largest proprietor of sheep on the island, being the owner of 600 ewes and 340 wethers.

Guest had arrived at Norfolk Island in 1790 as a convict and when his sentence was completed during the following year he became a settler and received rations from the government store until 1794. Two years later he received a grant of 14 acres and was able to supply pork and maize to the government. In 1805, in addition to sheep, he owned a large quantity of grain, maize and wheat. That much is known, but how he came to possess so large a flock is a matter for conjecture. The government had 'alienated' 127 ewes at Norfolk Island between 1800 and 1807 and Guest may have received some of them in payment for the pork and maize supplied by him; in addition, he probably bought stock from other settlers who, for their part, had received them from the government in payment for grain. The rearing of such a flock from small beginnings is an indication of Guest's enterprise and ability and was further evidence of the high fertility of the Norfolk Island sheep.

The disproportionately small number of wethers in his flock would suggest that Guest had been selling them, probably to the masters of sailing ships who, from time to time, called at the island for water and supplies. It was customary for ships to carry as deck cargo a pen of sheep or pigs as a source of fresh meat, and the opportunity to sell stock was one which Guest would have found difficult to resist. In 1805 the retail price of mutton on the island was quoted as 15d a pound, but it was a restricted market so that sales at that price were probably infrequent. In addition, Guest's sheep must have been taxing the available grazing land and he had slight prospect of extending his enterprise on the island. Furthermore, he had a large family and was anxious to give his children a sound education. Thus, it was not surprising that he had applied to transfer to the Van Diemen's Land settlement.

In the absence of another suitable ship, King had, in 1804, employed HMS *Buffalo* (300 tons) to transport the first contingent from Sydney to Port Dalrymple, and in March 1805 the *Buffalo* made a second voyage with stores and sheep to increase the size of the establishment. In August, King sent the *Buffalo* to Norfolk Island so that it might pick up such settlers as might wish to move to Port Dalrymple. At the same time he sent instructions to the commandant, Captain John Piper, regarding the settlers and sheep to be taken on board.¹⁵

King had hoped that the arrival at Norfolk Island of this ship, chartered to take such settlers as might wish to remove, would encourage more settlers to do so:

he was to be disappointed. The *Buffalo* had been at Port Dalrymple at the end of April and had carried to Sydney news of the serious losses among sheep and cattle which had recently arrived at that port.¹⁶

King had also hoped that the *Buffalo* would be able to carry 100 government sheep in addition to an unspecified number belonging to 'a person named Jones', a settler from Sydney who was aboard the vessel. Some stock were on board, but nothing is known of them.

A whaler from the Derwent which touched at Norfolk Island brought such an exaggerated account of the want of provisions at Hobart Town that Captain Piper and the commander of the *Buffalo* agreed that she should take some supplies there before going on to Port Dalrymple. On the passage from Hobart 'that Ship met with a very furious Hurricane which disabled her so much in her Sails, Masts, and Rigging, that the Commander was obliged to bear up' for Port Jackson without going on to Port Dalrymple.

In spite of King's efforts the stock was not sent, since the number of sheep recorded in August 1806 was no more than could have been accounted for from other known introductions. King evidently thought that it was important to supply the Van Diemen's Land settlements with breeding ewes from Norfolk Island: the attempt to supply Port Dalrymple, however, was a failure.

In March 1805 the *Sydney* (900 tons), already equipped for carrying stock, had arrived in Port Dalrymple from Calcutta carrying a large shipment of cattle and had landed 612 cows and 10 calves. King engaged her for £600 to touch at Norfolk Island and embark people, provisions and stock and to land them at Hobart Town.¹⁷

King instructed Piper to buy for the government 100 of Guest's ewes at 30s each and these, together with the 100 ewes from the government flock, were to be sent by way of the *Sydney* to the government at Hobart Town. Guest, at his own risk, was permitted to embark the remainder of his ewes: for each fully grown ewe over six months old which was landed, he was to be paid two guineas (42s). The *Sydney* was also to take on board for the Derwent settlement all surplus salt pork, maize and flour — 30 tons in all.

Guest loaded 390 sheep, leaving 210 of his 600 'ewes' unaccounted for.¹⁸ These 'lost' sheep were probably ewe lambs less than six months of age, which would not have met King's specifications, and it would seem that Guest had sold these together with his wethers at Norfolk Island for as favourable a price as was possible.

When the *Sydney* arrived at Hobart Town in September 1805 the surviving sheep numbered 413, of which 148 belonged to government and 265 to Guest, who was able to sell them privately at £3 each rather than accept the amount offered by the government.¹⁹

An examination of the official returns of livestock shows that, before the arrival of the *Sydney*, there were fewer than 100 adult ewes at the Derwent settlement. Of these, about one-third, described by an observer as being 'in a most unhealthy condition, requiring much care and doctoring',²⁰ belonged to the government. The addition of more than 400 healthy ewes from Norfolk Island now made up the bulk of the flocks, both private and public, grazing at the principal Van Diemen's Land settlement.

Meanwhile, besides developing wool in New South Wales, where he was Governor, King had tried to encourage wool production in the subsidiary settlements of Norfolk Island and Van Diemen's Land. In July 1804 he wrote to Lieutenant-Colonel Joseph Foveaux, commandant at Norfolk Island, pointing out that he planned to send 2 rams 'of the half Spanish breed', which, if care was taken in their management, would produce wool instead of the hairy covering carried by the Norfolk Island sheep. During the following year, while engaged on a buccaneering exploit on the coast of Peru, Captain William Campbell of the *Harrington* captured two Spanish ships, on board one of which was found a young Spanish ram. Campbell took that ram to Norfolk Island and exchanged it with Captain Piper, now commandant, for 2 wethers: thus 3 rams of Spanish blood reached the island.²¹ There is no record of these rams' having any marked effect upon the fleeces of the Norfolk Island sheep, which by then numbered about 2000, half of which were government sheep. Neither Foveaux nor Piper had shown either an interest in wool production or an understanding of how to use the Spanish rams to develop a wool-growing breed of sheep. Without particular care the identity of the progeny of the 3 rams would have soon been lost in the large flocks, and one must assume that this did happen. The arrival of the Peru ram at Norfolk Island was too late for any of its progeny to have been included in those sheep exported to Van Diemen's Land.

There are a few additional records of the sheep on Norfolk Island. Livestock returns show that in 1806 there were 1228 sheep in the government flock²² and two years later the total, both public and private, was 3005. During 1807-08, when the second stage of the evacuation to Van Diemen's Land took place, two-thirds of the island's population were transferred to the Derwent. These were mostly people possessing little property and they took with them few, if any, sheep. After their departure fewer sheep were slaughtered for mutton and by 1810 sheep numbers had increased to 5568, the highest figure recorded, of which more than 3000 were privately owned.²³ By the following year the privately owned stock had fallen to 1228: it seems that Sydney traders had seized the opportunity to purchase cheap meat for salting for the Sydney market.²⁴

The final evacuation of the settlers from Norfolk Island, this time to Port Dalrymple, took place in 1813. Governor Lachlan Macquarie had decided that the high cost of hiring ships to transport livestock from the island could no longer be justified and, in his opinion, it was more economical to compensate the settlers for their stock. Accordingly, he directed that all sheep, cattle and pigs were to be slaughtered and salted down on account of government.²⁵

Such was the inglorious end of the sheep remaining on Norfolk Island, but those that had been exported had a higher destiny, since their prolific descendants were to flood Van Diemen's Land, where they were the most important ingredient in the pioneer flock. Five hundred ewes were sent from Norfolk Island to Van Diemen's Land, where in twenty years there were 500,000 sheep. Most of the foundation flocks of Victoria and nearly all those of South and Western Australia were shipped from Van Diemen's Land; thus the original flocks of these states, the foundation stock from which a large part of the Australian Merinos were to evolve, were mainly the descendants of sheep from Norfolk Island.



(Similar sheep, descended from the Bengal ewes landed in Sydney from the *Shah Hormuzear*, spread over New South Wales and Queensland.)

The chance shipment of the 8 sheep to Norfolk Island in 1793 could be rated a significant event in the history of the Australian industry. They were a part of what must be regarded as the founding flocks of the sheep industry — as distinct from the wool industry, to which they also made a great contribution. These flocks consisted essentially of about 200 sheep which had been imported since the end of 1791 (as all the sheep of the First Fleet had died). They included the highly prolific Indian sheep, fat-tailed Cape sheep, both of which had a hairy covering, and some English and Irish mutton sheep. They had increased to about 2500 by the time the first Merinos arrived in 1797.

Top

10 Low-stocking rates of this scanty vegetation typical of pastoral regions have led to characteristically large Australian sheep stations

Bottom

11 Modern improved pastures permit heavy stocking of sheep

The first Merinos

According to popular belief, the first sheep to come to Australia were Merinos, which, it was supposed, then spread rapidly throughout Australia. However, generations of graziers have observed that a flock of Merinos increases in numbers very slowly and, indeed, sometimes has difficulty in maintaining its size. In fact, there were 2500 very prolific sheep in Australia before any Merinos were landed in 1797 and only about 30 Merinos were brought in during the first thirty years of settlement. It was only in the decade after 1820 that large numbers of Merinos were imported.

As it is not known whether the 4 sheep landed in 1793 from the *Daedalus*, sailing from what is now California, had any Merino blood, it is best to accept as the first Merinos some Spanish sheep, probably about 13, landed from the Cape of Good Hope by Captain Henry Waterhouse and Captain William Kent in June 1797. John Macarthur and others spoke with disdain of these as cross-bred sheep. This was almost certainly true, but it was also true of most of the other early importations, whose offspring were, or soon became, cross-bred. Scientific animal breeding in Europe began in the eighteenth century with cross-breeding, so that experts looked on it as a means of improving a breed. The practice has continued, as the Corriedale in New Zealand and the Polwarth in Australia were produced for use in high-rainfall areas with improved pastures by crossing Merinos with Lincolns. The claim to ownership of pure-bred Merinos in the early colony was highly successful as a marketing strategy but had little basis in fact.

Before following the progress of the Spanish sheep in New South Wales, we must see how they happened to come from the Cape of Good Hope. The commander of the garrison at Cape Town towards the close of the eighteenth century was Colonel Robert Jacob Gordon, a Dutchman of Scottish extraction. He was 'a favoured son of science', a distinguished explorer and naturalist, who in 1777 and 1779 had explored the greatest river in southern Africa, which, with some ceremony, he had named the 'Orange', in honour of the ruling house of the Netherlands. In 1780 he had sent the skin and skeleton of a giraffe to the Prince of Orange, an acknowledged patron of the arts and natural history. This was the first such specimen to reach Europe.¹

For centuries Spain had imposed a strict embargo on the export of fine-woolled sheep but, during the reign of Carlos III (1759-88), the embargo had

been relaxed, with the King himself making gifts of sheep to friendly monarchs. It was only by such royal favour (or by theft) that these sheep might be obtained; they were not available for purchase through commercial channels. In 1765 King Carlos had presented some hundreds of sheep to his cousin, the Elector of Saxony, whose country had been impoverished by the Seven Years War.

In about 1787 Carlos presented to the House of Orange some sheep of the famous Escorial *cabana* (as the great flocks of that period were called). This *cabana*, formerly the property of the Spanish Crown, was now held by the Royal Escorial Monastery and was said to produce the finest wool of all the Spanish sheep. In 1789 the Prince of Orange, remembering the attentions he had received from Colonel Gordon, sent him 2 rams and 4 ewes from the Spanish flock. These sheep were kept at the Dutch East India Company's stock farm at Groenkloof (Green Valley), 35 miles from Cape Town and so named on account of the excellence of its pastures. The sheep were carefully tended and they thrived. It is not known whether those 6 sheep were the whole or a part of the Spanish gift to Holland. Possibly the Prince considered the climate of Cape Town to be more suitable than that of Holland for the Spanish sheep.

Two years later, Gordon received an official request to return the sheep to Holland, a political move to annoy the House of Orange. In the meantime, the sheep had increased in number, and Gordon, a staunch Orangeman, returned a number equal to what he had received; this would have left him in 1791 with a flock that contained only about as many ewes as he obtained in 1789. As the numbers increased he crossed surplus rams with the fat-tailed Cape or Africander ewes, distributing their progeny among the farming community. Two South African farmers each received from him 150 'baster Spanish ewes' and 2 Spanish rams, from which they would be able to breed three-quarter bred Spanish sheep. To other farmers he distributed surplus Spanish rams, keeping all the Spanish ewes for himself. The progeny from Gordon's cross-bred sheep produced good quality wool.

In accordance with the widely held theory of male dominance, Gordon may have taken some of the better of the cross-bred ewes into his main flock, considering them to be pure-bred. As noted, he could not have had more than 4 or 5 ewes in 1791 but by 1797 he had 32 sheep, most of which were ewes, as he had disposed of surplus rams. It is very unlikely that Merino sheep, with their slow rate of reproduction, would have increased to that extent in this time.

As noted above, Gordon had crossed surplus Spanish rams with Cape ewes on a considerable scale, for he had sold 300 'baster Spanish ewes'. The underwool of the indigenous Cape sheep is of superfine measurement, considerably finer than the underwool of the sheep of the 'hairy Bengal breed', and the resultant progeny of Gordon's crossings must have had very fine wool, a result which he would have observed. Gordon probably would have followed up the successes of the first Spanish-Cape crosses by selecting some of the baster ewes for further improvement. In England, Robert Bakewell, by evolving the new breeds of Leicester sheep and Shorthorn cattle, had stimulated interest in the development of new breeds of farm animals. The formation of new breeds was popular among stock men in England and on the continent, and a large number were produced. Gordon had two breeds of sheep which had never been cross-bred before; he had

pasture available, unlimited labour and probably time to spare. It would have been natural for him to undertake a project to create a new breed of fine-woolled sheep.

We have evidence that the cross-breeding of Merino and Cape sheep also took place on a wide scale in Australia after sheep from Gordon's flock had been received in 1797. Several different contemporary accounts testify to this. In 1800 8 fleeces of John Macarthur's sheep were sent to England by Governor King to Sir Joseph Banks, who in turn sent them to Henry Lacocke, a 'wool stapler', for expert opinion. (See Appendix A.) Lacocke described the sample no.1 fleece, from a Spanish sheep, as 'a little hairy in the flank, and a small matter in the forehead', indicating some cross-bred blood.² The fault would have increased with age, and may not have been noticeable four years earlier when the sheep would have been last seen by Colonel Gordon and selected for the stud. The description of sample no.2, a young ram bred from no.1, as being 'quite free from hair, and of an excellent quality' shows that it was closer to the true Escorial. Major George Johnston's statement to the Duke of Northumberland³ that the new sheep were 'very much larger' and 'may have been half-bred from the merino sheep' would also be explained if applied to those Gordon sheep which were cross-breds. Lacocke also noted that some of the samples were coarse wool, others hair.

Then there is John Macarthur's statement as recounted by his son William⁴ that his long, beautifully soft, silky fleeces came from the sheep originally imported from the Cape of Good Hope. The prototype of the Macarthur (later Camden) sheep was set with the Gordon importations (3 of which he received in 1797, 'a few' when Waterhouse left New South Wales in 1800, and possibly some later from William Cox).

It was widely accepted in the early colony that some at least of the Gordon sheep were cross-bred, and this is in accordance with the evidence.

In 1795 a British fleet arrived at Cape Town and the Dutch colony surrendered. Colonel Gordon was criticised by the Republican faction for surrendering and, as a result, shot himself in 1796. In 1797, Gordon's Swiss-born widow was preparing to leave the Cape, taking all his possessions. His common flocks had been sold after his death, but there remained the flock of Spanish sheep. By a stroke of good fortune three ships from Port Jackson had recently sailed into Table Bay seeking livestock for the colony of New South Wales. Late in 1796 Governor John Hunter had sent ships from Sydney to the Cape 'to procure such quantity of live cattle ... as they [could] conveniently accommodate'.⁵ Captain Waterhouse, master of one of the ships, described what happened:

In 1797 I arriv'd in the *Reliance* at the Cape of Good Hope, together with the *Supply* (Capt. Kent) and *Britannia* transport. On board the *Reliance* was the Commissary [John Palmer], for the purpose of purchasing cattle for the settlement; on board the *Britannia*, Gov'r King [then Lieutenant-Governor of Norfolk Island] and Colonel Paterson, on their way to England, both which gentlemen had been acquainted with Colonel Gordon, who lost his life there. Col. Gordon had imported a few Spanish sheep to the Cape which had increased to thirty-two. Mrs. Gordon was then going to England, and, for some reason, did not choose to leave anything that had belonged to her late husband at the Cape. She gave three Spanish sheep to Gov'r King and three to Col. Paterson. The remainder I understood were offered to the Commissary, but

he declin'd to purchase them on the part of Government. They were then offer'd to me. As I could not afford to purchase the whole, Capt. Kent (that they might not be lost to the colony) offered to take half. We each receiv'd thirteen, and I took Gov'r King's on board the *Reliance*. Col. Paterson took his to England to present to Sir J. Sinclair. We paid Mrs. Gordon four pounds apiece for them. The expences on delivery was about one pound a head more. The expence for food, &c., for the voyage was very considerable.⁶

The reference to Sir John Sinclair is significant. At the time, Sir John was the first President of the Board of Agriculture. In 1791 he had established the Society for the Improvement of British Wool and had imported from France 15 Spanish sheep, which were depastured in a park belonging to the Society near Edinburgh. They had been obtained from a mixed-breed experimental flock in France, to which some Spanish sheep had been introduced when a high standard had been reached. Sir Joseph Banks had written to him, 'I am sorry you call your Rams Spanish being of opinion that every deviation from accuracy is liable to throw discredit upon the Society'.⁷ These sheep, together with King George's small flock and a few which had belonged to Banks, both lots of which had been obtained in an irregular way, were at the time probably the only Spanish sheep in Britain. William Paterson had previously sent botanical, geological and insect specimens to Sir Joseph Banks and other English botanists and, being aware of Sir John's interest in the Spanish sheep, he probably would have sent them to him. It may be inferred therefore that Paterson and his fellow passenger King at this time knew of the growing British interest in the breeding of Spanish sheep.

King and Paterson continued their voyage from Cape Town to England. Paterson had taken his 3 sheep to present to Sir John Sinclair; King sent his back to the colony with Waterhouse.

As well as the Spanish sheep, the two ships took on board, on account of the government and the officers, a number of Cape sheep, horses and cattle. Waterhouse recalled:

I believe no ship ever went to sea so much lumber'd. The passage to Port Jackson is generally made in 35 or 40 days — we were 78 — one of the longest and most disagreeable passages I ever made. We met with one gale of wind, the most terrible I ever saw or heard of, expecting to go to the bottom every moment.⁸

It might be expected that the Cape sheep, which could survive on the fat in their tails, would fare better than the less hardy Merinos in these conditions. In fact all King's Merinos died.

Waterhouse also wrote to his father:

I take with me two mares, two cows and upwards of twenty sheep on my own account, under the idea of its being an advantage to the colony. I have consulted some officers on the subject, who think, from the circumstances of the colony, I may do it without being censured.⁹

He was not censured. Governor Hunter supported him, forestalling possible criticism from the British authorities by reporting that HM ships *Reliance* and

Supply in July 1797 delivered (among other livestock) 37 sheep on account of government and 84 on account of the officers, a total of 121, adding:

Each officer ha[d], on his own account, given up during the passage the comforts of his accommodation on board, and filled them with such animals as their respective cabbins were capable of taking in. This, altho' a private consideration, is nevertheless a public benefit to the colony, and is much to be commended.¹⁰

As these were the first Merinos to come to the colony, it is important to try to determine exactly how many there were. One witness who can be eliminated as being unreliable is John Macarthur. His account of the number of these sheep he received not only differed from that of other witnesses, but he and his family gave three different versions of the number.

Governor King, the only one who has left evidence of the number of rams brought by Waterhouse, was in England when they were landed in Sydney. Four years after the event he wrote, 'every endeavour is making [*sic*] by individuals who own so great a proportion of the sheep in the colony to improve the hair into wool by means of three Spanish rams brought here in 1797'.¹¹ He was a reliable and disinterested witness, and this account may be accepted as referring to those brought by Waterhouse.

Waterhouse was a fairly good witness, but capable of stretching the truth to oblige a friend, as when he supported the story of Macarthur about the great extent of grazing land in the colony by claiming that the tops of the hills in the Blue Mountains had extensive and excellent pastures. This claim was derided by Banks and even an English sub-committee did not take it seriously.¹² As noted, he claimed to have bought a total of more than 20 sheep for himself at the Cape, including Merinos. When he arrived on the *Reliance* with a number of his sheep still living, many of his friends wanted a share in them. Nine years later Banks wrote to him and asked for information about them.

I much wish to procure accurate information respecting the introduction of the Spanish breed of sheep at Port Jackson, from which so much is expected, and some good will, I have no doubt, be in time realised.

From Captain Kent I have heard that there were twenty-six in all at the Cape, the produce of four ewes and two rams imported from Spain by Gordon; that you and he joined in the purchase of them, giving £4 a piece, and each took thirteen on board your respective vessels; that you were successful and brought the most of yours to Sydney, but that the most of his died on the passage; that he sold one ram to Captain Macarthur for £16, and that the captain bought two more of Lieutenant Brathwaite.

Will you be so good to me as to recollect, as well as you can, whether Captain Kent's memory is correct, and also inform me in what manner you disposed of the sheep you brought with you, which were, I understand, more numerous than those of Captain Kent?

I shall be thankful to you for any particulars or anecdotes respecting Spanish or half-bred sheep in the colony.¹³

Waterhouse replied to Banks:

I do not recollect the number I had alive when I arriv'd at Port Jackson, but think more than half. Capt. Kent [in the *Supply*], who I understood shared his with Lieut. Braithwait, I believe lost all, from the circumstance of his applying to me for one immediately on my arrival. I do not recollect if Lieut. Braithwait had one or two alive.

I offer'd all mine to the Governor, but I suppose he was satisfy'd as they were in the colony, as he declin'd purchasing them.

Captain McArthur then offer'd me fifteen guineas a head, provided I would let him have the whole. This I declin'd, wishing to distribute them.

I suppli'd Capt. Kent, Capt. McArthur, Capt. [Thomas] Rowley, and Mr. Marsden. As the Spanish ewes had lambs — none but Spanish rams running with them — I supplied Mr. Williamson, Mr. Moore, Government, and, in fact, any person who wish'd to have them. I never had any other but Spanish rams with my flock, and on my quitting the colony sold the flock to Mr. Cox, the Paymaster, with the exception of a few to Captain McArthur. Most who had Spanish sheep were particular about them, and I took pains to disperse them.¹⁴

Banks had information from two sources which showed that Waterhouse was wrongly informed about the number of Merinos that Kent brought. The first informant was Samuel Marsden, who had written to Banks in 1803 telling him

12 Raby, a farm belonging to Alexander Riley in the 1820s. Photograph NSW Government Printing Office, Australia.



'Major Johnston brought out one ram, Captain Kent another'.¹⁵ The Spanish ram brought by Johnston, probably from the flock of King George III, was a present to him from his patron, the Duke of Northumberland, and was landed in Sydney on 16 October 1802.¹⁶ Marsden's letter probably prompted Banks, who was in charge of the King's Merino flock, to attempt to find out how many Merinos had landed and what had happened to them.

Kent replied to Banks, in a letter which has been lost, but of which Banks made notes. These show that only 4 of Kent's Merinos survived the voyage, 2 rams and 2 ewes. He kept one ram and one ewe for himself and sold the remaining ram and ewe to his lieutenant, Mr Braithwaite, who sold them to Macarthur. William Cox, the paymaster, and Marsden bought all of Kent's sheep when he left the colony in October 1800. Banks said they were all mixed and he doubted whether the in-breed remained in the colony. All the originals were dead.¹⁷

As Banks is the best trained and most systematic of the witnesses, it may be accepted that Kent landed 4 Merinos and Waterhouse 8 or 9. The exact number cannot be determined, but it would be stretching the meaning of 'more than half' to mean more than 9 out of 13. Waterhouse kept one ram and 2 or 3 ewes for himself, sold a ram to Macarthur and a ram and a ewe to Marsden (who obtained these in 1797 but did not get any from Kent). This accounts for the 3 rams King said Waterhouse landed. It may be accepted that Kent received only a ewe, as he had a ram and a ewe of his own, and Rowley may also have received a ewe, as the original flock at the Cape had many more ewes than rams.

There seems little doubt that Waterhouse had bought the livestock for resale. When he returned to Sydney, however, he found that he had been granted 25 acres of land on the Liberty Plains, and this may have induced him to change his plans. He bought a farm of 150 acres near his grant, found a shepherd, and began grazing sheep on his own account. He had a small flock, 'short of a hundred', which included both Spanish and Cape sheep. Although he 'never had any other but Spanish rams' with his flock, it is very probable that these ran with both the Spanish and Cape ewes.

In March 1800 Waterhouse left the colony for England and sold his flock to William Cox, except for a few sheep sold to Macarthur. Cox had arrived in January and was buying farms and stock wherever he could find them. However, his estate was assigned and sold by auction three years later. His Spanish sheep were dispersed and it is probable that Macarthur obtained some of them.

Thus the first Merino flock to come to the colony consisted of 5 rams and 7 or 8 ewes. Most of these were cross-bred when they came and further cross-breeding soon took place. Of these Macarthur bought one ram from Waterhouse and a ram and a ewe from Braithwaite in 1797, a small number when Waterhouse left the colony in 1800, and possibly some on the departure of Cox in 1803. (Cox had bought sheep from both Waterhouse and Kent.) This seems a fragile base on which to build the reputation Macarthur gave himself as the owner of the only pure Merinos in the colony. It has been strong enough, however, to uphold the numerous myths circulated by and about him.

A few more Merinos were imported in the early part of the nineteenth century. As noted in Chapter 3, Captain William Campbell landed a Spanish ram

at Norfolk Island in 1805, but no record of it remains. Macarthur and Marsden each brought sheep from the flock of King George; these were 4 rams and an aged ewe brought by Macarthur in 1805 and 4 ewes and 2 ram lambs by Marsden in 1809. In all, about 30 Merinos landed in the colony up to 1820, many of these disappearing from sight very quickly. They had little influence on the present Australian Merinos, but they enabled Governor King to establish the woollen industry and Marsden to pioneer the export of wool.

The lucky combination of breeds

One of the most recent accounts of the origin of domestic animals is by Simon Davis. He considers that sheep arose towards the end of the last ice age in Europe, about 12,000 years ago. At this time there was a change from woodland to grassland and cereals. The climate became warmer and drier, with smaller animals, which were suitable for domestication. There was a proliferation of varieties, but few of the early ones survived. About 6000 years ago sheep and goats were kept for meat, wool and milk.¹ Wild sheep are still found in Turkey, the Middle East, Iran, India, Russia and China. At first glance these do not appear to have any wool, as they are covered with a coat of stiff hair, but they have an undercoat of wool which is finer than the hair. Sheep of this kind look more like goats than sheep.

Sheep somewhat similar in appearance to these were born on a farm at Boort, Victoria in 1969, possibly a throwback in colour to the original sheep imported into Australia. As there was a Toggenberg goat running in the paddock with the Merino sheep, the farmer, Mr R. Lanyon, his wife and many others who saw them were convinced that they were the offspring of the goat and a ewe and called them 'geeps'. They were small animals, ranging in colour from pale grey, brown, fawn, dark grey to black, while several were piebald. The small flock was kept separate and continued to breed coloured fleeces, indicating the colour was produced by a recessive gene and thus could be hidden for a long time. Tests by CSIRO showed that they were sheep, as they had a chromosome count of 54, whereas a goat has 60.²

The coat of the primitive sheep moulted regularly each year in matted masses, which could have suggested the making of felt. Shedding takes place first in the neck and chest, then in the flank and last in the back. In nature it may take a few weeks to complete. At the moulting season the whole fleece can be stripped clean by plucking or combing, which was the method used by the ancients to collect the wool. One of the peculiarities of moulting in such sheep is that all the underwool is shed in the spring, but most of the hair in the autumn. As wool and hair were shed at different times, the wool plucked by the ancients would have been finer than that which would have been gathered by shearing. This possibly explains how fine cloth was produced at a period when the sheep were hairy, or,

put another way, the evolution of fine-woolled sheep could have been later than the first production of fine cloth. M.L. Ryder says, 'the underwool of wild sheep is indistinguishable from the fine wool comprising the entire fleece of the Merino breed and the underwool of a fleece such as that of Scottish Blackface sheep'.³

Shears could not have been made before the iron age, and there would be no purpose in shearing sheep which could be plucked or combed — a simpler process, which in fine short-woolled sheep had the advantage of yielding a longer fibre, which would be easier to spin. Shears appear to have been invented about 1000 BC in the Middle East, and about the same time sheep with a continuously growing fleece began to appear and to be selected. The events recorded in Homer encompass this period, during which there was a change from combing to shearing wool in Greece.⁴

Under domestication, sheep changed faster than by natural evolution, and they changed differently in different environments. Sheep grew larger; horns grew smaller, and in some cases were eliminated; and in some breeds tails grew longer and fatter. The dark colour of the fleece gave way to lighter tones, although brown wool was common even in the late Middle Ages; there were changes in the ratio of hairs to wool fibres, and in the rate of fibre growth. In some breeds the hairs grew to much greater lengths. From such variants were derived the carpet-wool sheep of India and Persia, which are shorn twice in the year, and, much later, the long-woolled breeds of England.

In some cases the proportion of hairs in the fleece decreased; they became finer, and even were replaced by wool fibres, and such sheep could have been preferred in communities where spinning and weaving had arisen. It would seem that the early civilisations of Assyria, Babylon, Phoenicia, Greece, Rome and Carthage all had well-developed woollen manufactures and therefore the sheep to provide the raw material. In Babylon, wool was graded into three broad categories: coarse mountain wool, second quality and good quality, so mountain and lowland breeds of sheep were differentiated.⁵

Incontrovertible evidence of the existence of fine-woolled sheep in the Near East about the time of Christ has been found as the result of the archaeological discovery in 1947 of parchments known as the Dead Sea Scrolls, which date from about the time of Christ. The parchments are made from skins of sheep and goats. In making parchment the skin is dried in a stretched condition, and is not tanned; and wool fibres remain embedded in these ancient specimens. Ryder of the ARC Animal Breeding Research Organisation in Scotland microscopically examined fragments from the scrolls, as well as some samples of leather found at a nearby site, and identified the type of fibres which composed the fleeces grown by these skins. He found that the predominant pattern was of medium wool with some hairs. Some were from a hairy sheep or goat, with fine wool interspersed with the hairs, and a few were composed entirely of fine fibres similar to the pattern in the modern Merino.⁶

Ryder also examined a sample of wool cloth, found with the leather, dated about 130 AD, which to the naked eye was apparently of fine wool, but under the microscope 15–20 per cent of the fibres were seen to be of medium diameter, and corresponded to the predominant type of the scrolls. All the samples examined showed fibres finer than the fleece of a wild sheep, and Ryder considered the

predominant type to be in an intermediate position along the evolutionary line between the more primitive hairy type and modern fleece types.

The apparent random occurrence of different types of fleece suggests that at the time the Dead Sea Scrolls were written there was considerable variation in the types of fleece within flocks, though it is possible that the fine-wool skins came from a source different from that of the more generalised types.

Two distinct types of sheep emerged: those with short, fine wool and those with longer, coarser wool. Fine-woolled sheep appeared in Spain at the time of the Moorish conquest in the eighth century. Whether the fine-woolled sheep were already in Spain or were introduced by the Moors has not been determined, but they must have come from the Middle East by way of either Italy or Africa.

Under Moorish domination from the eighth to the thirteenth centuries, Spain advanced to the front rank of European nations in agricultural and industrial pursuits. The Moors were skilful breeders of stock, and in their hands the fine-woolled sheep of Spain were brought to a high standard. It is certain that sheep in Spain were shorn with shears, and not plucked, and it would have been desirable to breed out any hairy sheep.⁷

On the expulsion of the Moors from Spain, a great change came over the country. The population was enormously reduced by death and exile; the manufactures that had attained such a well-deserved renown in the markets of the world were so much neglected, that in a short space of time they almost entirely disappeared. When Ferdinand took Seville from the Moors, in 1248, there were in that city no less than 17,000 looms for the weaving of woollen fabrics. When the city was captured, fully 300,000 of the inhabitants exiled themselves ... more than a million of men, the greater proportion of whom were workers in wool ... were forced to leave Spain, and with them disappeared the skill and industry of the country ...

Under the Moors, the fine-wool sheep of the country numbered seven millions, but, by the neglect and bad management of the Christians, they became so reduced, that, in the reign of Philip IV [1605–65] there were only two and a half millions of fine-wool sheep in Spain.

These sheep, the Spanish Merinos, became the property of the nobles and clergy, and the different flocks or *cabanos* developed their own characteristics, being bred within themselves without the introduction of outside blood. Among the best-known *cabanos* were the Negretti, which were the largest and strongest, and from which the flock of King George III of England was largely descended; the Escorial, which had the finest wool, and were the progenitors of the Saxon sheep; and the Paulars, thousands of which were brought to England in 1808–09. The Paulars were fine-woolled with some folds in the skin at the throat, and their lambs had a coarse, hairy coat, which was succeeded by excellent wool. Both these last characteristics are to be found among modern Australian Merinos.

G.A. Brown stated that he had not been able to find any record of the Spaniards' attempting to improve the breed during the seventeenth and eighteenth centuries. Probably the general standard of sheep had declined since the days of the Moors, but to what extent cannot be determined. It is certain that many Spanish sheep had hairy polls and kempy fronts and breeches, faults which

would not be tolerated today; and there was a considerable variation within the individual fleeces, only a small part of each fleece being considered of the best quality. However in the grease the fleeces weighed 8 pounds for wethers and 5 pounds for ewes, which was higher than average weights recorded in Australia before the 1850s.⁸

Whatever its quality, at the end of the eighteenth century Spanish Merino wool was the finest on the European market, and was eagerly sought after by manufacturers in England and on the continent. Although selected Spanish wool was superfine, much of it was medium wool of about 23 microns.⁹ (One million microns equal 1 metre.)¹⁰ This was only marginally finer than Southdown wool, as measured by Ryder, who also measured wool from a textile made in Yorkshire as early as about 370 and found the most common of the fibres was 18 microns, with some as low as 8 microns.¹¹

Though Spain exported wool, for centuries it forbade the export of Merino sheep. During the eighteenth century royal gifts of them were made to friendly states: Sweden, Saxony, Prussia, Austria and Holland. England did not qualify as a friendly state and at first had to be content with some inferior sheep, smuggled in under the direction of Sir Joseph Banks. One of the smugglers hired by him wrote in 1788:

I Have got for you 2 yews & one Ram of the Best Spanesh Breed & if you Like them you May Have More of the same sorte the next season as the Spanish Contrabandays Can get Me any quantity I Want.¹²

During the Peninsular campaign of the Napoleonic wars, 1806–09, the armies of the Duke of Wellington overran Spain, and thousands of Merinos, spoils of war, were shipped to England. In due course some of their descendants also arrived in Sydney and Tasmania. Napoleon took 20,000 Merinos to France, and some thousands went to the United States. The great days of the Merino in Spain were over, but the sheep were dispersed throughout the world. By 1822 British imports of German wool were greater than they had ever been from Spain, whose exports subsequently began a permanent decline. In turn, Australian wool superseded German in the 1840s. British imports of Spanish wool had reached 8 million pounds in 1800 but the local clip was 100 million pounds.¹³ It was not until about 1870 that British-retained imports of wool equalled its own production, showing that it was a major producer for a long period.

The Merino is the best of the fine-wool sheep that have evolved from centuries of breeding, its main characteristic being the density and fineness of its wool. Evolution has not been in a straight line, as Carter observed:

The genes for fine soft wool ... have been mixed ... with those from other kinds of sheep, rescued ... with fresh assortments of other characters in the animal — at times on a large, at others on a small sheep; on a white or a black animal, reddish or brown ... in a fleece copiously glued with a heavy waxy skin secretion, yellow or not ... or simply fairly white, loose and dry.¹⁴

The main question in the evolution of the Australian Merino is the extent of the contribution made by the hairy sheep, which were well established before any Merinos arrived. The first sheep in the colony were fairly large, fat-tailed sheep from the Cape. Their fleece was of hair, with an undercoat of fine wool, both of which they shed each year, in the manner of wild sheep. Arthur Phillip in Sydney and Philip Gidley King on Norfolk Island both said that the tails of these sheep grew so fat under Australian conditions that they had difficulty in breeding. As a result they made only a small contribution to the growth of Australian flocks until they were crossed with Bengal or Merino sheep. All these, as well as some English mutton sheep, were interfertile.

There were some important differences in their fleeces. Merinos and English sheep have a single coat, with fibres that grow continuously. The fibres are mainly wool, but there may also be some of hair (or kemp, which is hair that is shed after a few months' growth). In the Cape sheep, the gene for hair is recessive, so that when they were mated with Merinos, the offspring were woolled sheep, some of which retained a gene for hair, which reappeared according to Mendelian law, but this could be gradually eliminated by selection. In addition, the fine wool of their undercoat improved the wool of the offspring of the Merinos with which they were mated.

The Bengal sheep present a more difficult problem, as we do not know for certain what they were like. Their name merely shows that this was the area from which they were shipped, although they may have come from a different part of India or from Tibet. Dr Helen Newton Turner considers they may have come from what is now Bangladesh, where there are still local sheep which weigh less than 20 kilograms, have a light, coarse fleece and are prolific. Such sheep when mated with Merinos have offspring with a fleece intermediate between fine and coarse wool, unlike the Cape sheep, whose offspring crossed with Merinos have fine wool.¹⁵

This is informed speculation, but other candidates may be put forward. Ryder says:

... the hot plains of India has animals with certainly the most primitive kind of coat. These are the so-called hair sheep which, in fact, have a short kempy coat with an undercoat of fine wool. Such a type of coat seems merely to be closest to that of the wild sheep, and not a secondary adaptation to a hot environment.¹⁶

Such sheep would be similar to the Cape sheep in that, when mated with Merinos, their offspring would have fine wool. This would help to explain why Macarthur was able to claim that the offspring of Merinos and his hairy sheep were pure Merinos. In fact they looked like Merinos, but some of them had the recessive genes for hairiness. It would also explain the remarkable increase in wool production after 1800, keeping in mind the very small number of Merinos in the colony.

It is also possible that the so-called Bengal sheep came from Tibet, as sheep from there were shipped through Bengal. Banks was aware of this through a letter to him:

I hope you have not forgot to apply as President of the [Royal] Society to the chairman of the [Honourable] East India company about the Thibet sheep — by the way of Bengal.¹⁷

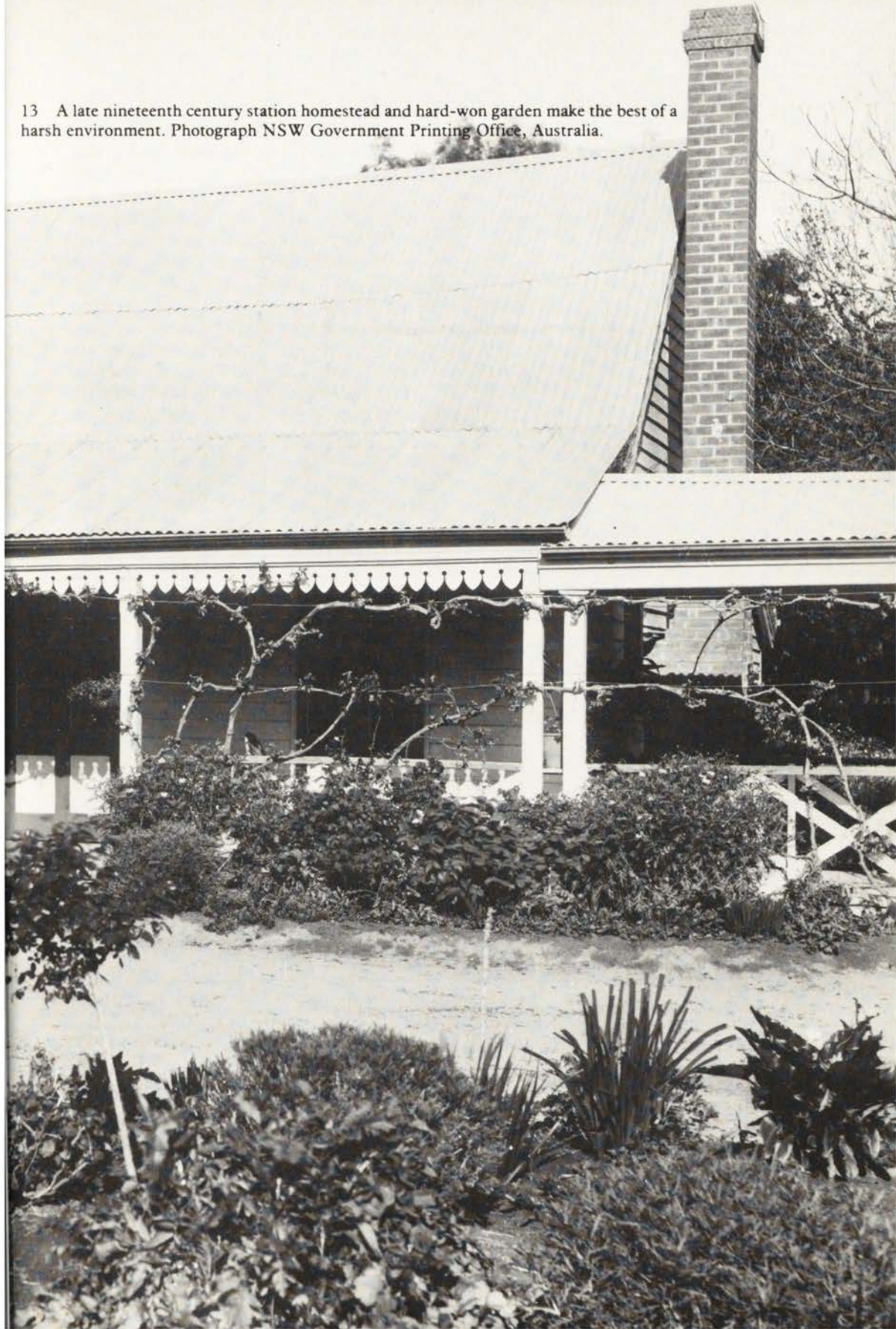
One thing that may be said with confidence about the Bengal sheep is that they were very prolific, both because of direct evidence to this effect and because the other sheep in the colony were not capable of the very high rates of increase that were registered. It would be unwise to place absolute reliance on the number of sheep listed at the annual musters, as an accurate census depends on zeal in counting the animals and care in recording them accurately. These virtues were in short supply in a largely illiterate population.¹⁸ Some animals were counted at one time and recorded later, as when Joseph Foveaux was credited with being the owner of 1250 sheep at the muster of December 1801, although he had sold the 1350 he owned the previous October. Large stockholders, such as John Macarthur, were given special consideration at musters, with the result that there were unnatural swings in the number of his recorded sheep. He seldom gave the same answer twice to questions about the number of sheep he had had at a particular time. Sheep were stolen, especially in Van Diemen's Land, and suddenly appeared in the musters, when they or their offspring had become respectable by the passing of time. In later years, when a tax was payable on the number of sheep kept, landholders were always moderate in their estimates. In spite of these factors, there is sufficient uniformity in the different accounts of sheep numbers to make it possible to accept the official census figures as a reliable guide, but with minor errors.

At the first muster in May 1788 only 17 sheep were recorded, increasing to 51 in 1791. Thereafter the number of sheep in New South Wales exploded, so that there were 2500 before the first Merinos were imported in 1797. By 1800 only about 300 sheep had been imported (many of which had died), but the total was already 6000. This grew to 32,000 in 1810 and 120,000 in 1821. As about 30 Merinos had been imported by this time, many of which quickly disappeared, it is obvious that their contribution to flock numbers was small, apart from their low fertility. About 5000 Merinos were imported in the 1820s, but they were still decisively in the minority by the time Macarthur died in 1834.¹⁹

These extraordinary rates of increase were sometimes affected by severe drought and insect damage to pastures, as happened in the 1813–15 drought, when numbers fell from 60,000 to 56,000. When a way was found over the Blue Mountains in 1813 and sheep gradually moved to wider pastures, the relentless increase continued, and numbers grew to almost 5 million by 1844. Similar rates of increase were recorded at Norfolk Island and in Van Diemen's Land. They may be compared with the lower rates that have prevailed since flocks became mainly Merino in the 1860s. In 1861 there were 20 million sheep in Australia, and their numbers doubled over the next decade. Even this rate of increase, modest by the standard of the early years, has not again been approached. During the next seventy years, until 1940, when sheep numbers reached 120 million (which was the limit of carrying capacity until myxomatosis, pasture improvement and water



13 A late nineteenth century station homestead and hard-won garden make the best of a harsh environment. Photograph NSW Government Printing Office, Australia.



conservation permitted higher stocking rates), the average annual increase was only 3 per cent. In two drought periods, the 1890s and 1910s, numbers fell by more than 20 per cent in each decade.

The early sheep were prolific to an extent that was beyond the comprehension of early writers, but which does not surprise geneticists, who are aware of several breeds of sheep throughout the world which may regularly have 4 or more lambs at a time. In Australia in 1980, a special flock of Booroola Merino ewes had 234 lambs per 100 ewes, and in the USSR after World War II flock numbers were rapidly built up by birth rates of 350 lambs to 100 selected ewes. Similar highly fertile breeds are kept in France, Scotland and Finland, where a Landrace ewe occasionally has 8 lambs at a time. The only sheep capable of such a high rate of reproduction in the early colony were the Bengal sheep, as noted by King, Samuel Marsden and Macarthur. As a result, what came to be known as Merino sheep were predominantly Bengal in origin, but with a Merino fleece. The Cape and the English sheep also made a contribution, mainly in increasing size.

All those who spoke about the early sheep described both the Cape and Bengal sheep as being hairy. Marsden referred to 'Hair from a Ewe such as has been commonly Imported from India and the Cape' (see Appendix B). This description has misled many historians into thinking they were the same breed of sheep. Both were covered with hair and one or both had an undercoat of wool. Otherwise 2 sheep could scarcely be more dissimilar. They came from different continents, differed in size, colour and the type of tail — fat in one case, thin in the other.²⁰ Marsden knew the difference between hair and coarse wool, as another fleece in the same group was described as being from a 'Coarse-Wool'd Ewe'. Governor King also spoke of 'hairy-covered rams of the Cape and Bengal breed'.²¹

The first description of the fleece of the early Cape and Indian sheep was given by Henry Lacocke, an English wool-classer for Banks: 'I have ... Examined the Bottney Bay wool ... the hairey wool is but little worth.'²² In a report probably written by Johnston, it is stated: 'All the sheep from the Cape and India were covered with hairs, excepting a few brought ... in the year 1797, which were said to be of the Spanish breed.' He did not differentiate between the offspring of Cape and Indian sheep crossed with Merinos, implying they were both the offspring of double-fleeced sheep.²³ Macarthur also said, 'The sheep I first began to breed from were of the Bengal race ... The sheep of the country is the hairy sort.'²⁴ Two of the 8 fleeces he sent through King to Banks in 1800 were described in Lacocke's report, which reached Sydney in 1803, as, respectively, 'very coarse wool' and 'hair of a ewe of the Bengal breed ... only fit for the bricklayers to mix amongst mortar'²⁵ (see Appendix A).

Governor King, who was the first person in the colony to have a vision of a wool industry, noted in 1801 that none of the government sheep had any wool but that one-tenth of the sheep in the colony were fine-woolled in 1804. Most of the rest had wool, but of different degrees of fineness.²⁶

During the period of King's governorship, from 1800 to 1806, his correspondence, official and otherwise, made continual reference to Spanish sheep and their wool, the improvement of the local flocks and forecasts for the future. The matter which caused the greatest interest was the remarkable improvement in the fleeces when Spanish rams were crossed with the colonial

sheep — the fat-tailed Cape sheep and those of the 'hairy Bengal breed'. The colonists no doubt expected improvement to be somewhere intermediate between the woolly and the hairy sheep, but inexplicably the first-cross fleeces were woolly with very little hair, so much so that the production of fine wool seemed to present no difficulties. Only in recent years have the study of wool growth and the application of genetic principles shown that the early colonists were witnessing an example of inheritance of a dominant genetic characteristic, in this case of wool over hair; this was certainly the case with the cross between Merino and Cape sheep, more arguably in regard to the Bengal sheep.

The early farmers did not know that the fat-tailed Cape sheep and probably the hairy Bengals each had a double coat comprising a short, soft underwool, masked by the more obvious outer hair. Hairs have a smooth surface and a central hollow or medulla; wool fibres are covered with an arrangement of outer scales so that fibres tend to interlock, thereby giving wool its felting properties; and wool fibres are usually much finer than hairs. The double coat is a characteristic of primitive breeds of sheep, and is analogous to the fur of certain animals, in which short, warm, inner fibres are protected by longer and stronger outer hairs. The fleece of sheep may be considered as a specialised fur.

A brief description of wool growth and of the inheritance of characteristics is necessary to show what may have happened in the early colonial flocks. Each fibre of a sheep's fleece grows from a follicle, and the follicles are grouped in the skin in a regular pattern, with three primary follicles and a larger number of secondary follicles in each group. In double-coated breeds of sheep the primary follicles produce hairs, long in some breeds and short in others, whereas the secondary follicles produce either wool or medullated fibres. On the other hand, in Merino sheep both the primary and secondary follicles produce wool fibres in a pattern which is different from that of other sheep.

The inheritance of characteristics is a regular phenomenon which takes place in accordance with the Mendelian laws. Briefly, the many hereditary characteristics of an animal are controlled by genes, which occur in pairs. When animals are mated there is an interchange of genes, one gene from each parent pairing together in the resultant progeny. In a pure breed, all the characteristics are alike, and the genes exchange with similar genes; the progeny are like the parents. When dissimilar animals are mated and the genes exchange, the resultant progeny have dissimilar genes paired together. Sometimes the progeny exhibits one or the other characteristic on a random basis; sometimes the progeny exhibits the mean between the two characteristics; and sometimes one gene is 'dominant' and all progeny exhibit the dominant characteristic, though the unseen (recessive) gene is present and can be inherited when two recessive genes come together.

When sheep that have primary follicles for wool are crossed with those that have primary follicles for hair, the wool gene is dominant and the progeny of such a cross generally exhibit woolliness. Thus the majority, if not all, of the first-cross Spanish-Colonial progeny appear to have been woolly. If these were mated back to a pure Spanish ram, with the random interchange of genes half this second cross would have two genes for wool, and the other half would have one gene for wool. The progeny would again all be woolly.

In the case where wool-hair cross-bred males are mated to cross-bred females, each parent has one gene for wool and one for hair. The random exchange of genes takes place, and the result may be compared to a game of 'two-up'. When two coins are tossed, they can fall two heads, two tails, or one head and one tail, in the proportion of 1:1:2.

In our cross-bred sheep, one out of 4 of the progeny would have two genes for wool, and of course would be woolly; 2 would have one gene for wool and one for hair, and would exhibit the dominant characteristic of the woolly gene; and one would have two genes for hair, and so would be hairy. This is the simplest case of what takes place in those characteristics governed by a single pair of genes; results are more complicated when several pairs of genes are involved.

In the early days of the colony, pure Spanish rams were rare or possibly non-existent and colonists had to resort to the use of half-bred Spanish rams. There are several records of such rams' effecting a remarkable improvement in the fineness of the fleeces of the resultant progeny, a fineness little different from that which resulted from the use of pure Spanish rams. This was the factor that made Macarthur and all the other breeders consider for some time that producing 'pure' Merinos from cross-bred stock was easy. The genetic expectation would be that half the progeny would be woolly, for the Spanish-cross ram would have one gene for wool and one for hair; with random transfer of genes, only half of the quarter-bred progeny would have one gene for wool. However any quarter-bred woolly rams would have one wool gene, and when mated to hairy ewes half their progeny would also be woolly. In these circumstances, whenever the colonists used woolly rams the proportion of woolly sheep rose rapidly.

So much for theory; but there is conclusive evidence that the theoretical results occurred in practice. Samuel Marsden 'Obtained One Male and One Female Spanish Sheep' from an importation to New South Wales by Captain Henry Waterhouse in 1797. 'The Male was put to ... Hairy Ewes. In their first Produce there was a Wonderful Improvement in the Fleece'.²⁷ (No doubt the male was also put to the Spanish ewe.) Marsden used cross-bred rams and was so interested in the results that he made a collection of samples of wool from 8 different sheep of different crosses and in 1804 sent them to Governor King. These specimens have survived, and are in the possession of the Museum of Applied Arts and Sciences, Sydney. (For measurements initiated by Garran, see Appendix B.)

The specimens were plucked from sheep whose ancestry was known; there is wool from a colonial ewe, from a Spanish ram bred in the colony, and from 6 sheep of varying crosses. The sample from the colonial sheep has the appearance of hair, 7-8 inches long. The 6 cross-bred samples show no sign of hair; they are remarkably similar to the eye, and are little different from the sample of the Spanish ram but are coarser. (Dr Newton Turner does not agree that the sample from the colonial wool is all hair, but believes it contains some coarse wool. She agrees that the Cape sheep were a hairy, double-fleeced variety.)

When Waterhouse brought the Spanish sheep from Cape Town in 1797, he also brought some Cape ewes, probably of the Ronderib variety, which he did not sell but kept for himself. He 'never had any other but Spanish rams' with his

flock.²⁸ His cross-breeding with the Cape ewes may be compared with more recent South African experiments, and would have given similar results.

There are two breeds of African sheep, the Namaqua and the Ronderib, and both have true double fleeces; that is, the two components of the coat — the wool and the hair — are well differentiated with a few fibres of intermediate character. From the limited number of examples Garran observed, it appears that true double-fleeced breeds give the most spectacular improvement when they are crossed with Merino-type sheep. It was just one more fortunate accident that the particular breeds of sheep first brought to the colony were of a type that was capable of the most rapid improvement of fleece when crossed with Merinos.

Similar results have been obtained from basic research into the inheritance of wool characteristics carried out at the field laboratory of the Animal Breeding Research Organisation at Roslin, Scotland, by Dr M.L. Ryder, and he has provided information about several crosses made at that station. The well-known Scottish Blackface sheep, with its obvious long, shaggy coat of very coarse hair, also has a short undercoat of wool; the breed is believed to be of Asiatic origin. Ryder has crossed this breed with Tasmanian Merinos; and in a sample of wool from this cross there is no sign of hair. He also crossed Merinos with the primitive Mouflon, from which many of our domestic sheep are believed to have derived; in this case there was a considerable improvement in the wool of the first cross, but it was not till the second cross that a complete Merino character developed.²⁹

The coats of double-fleeced sheep consist of both hair and fine wool, and are quite different from the fleeces of coarse-woolled sheep, which are composed of coarse wool, sometimes with hair as well. When Merinos are crossed with coarse-woolled breeds, the fleeces of the resultant progeny have, in general, characteristics intermediate between those of the 2 parents, and the wool becomes finer as the number of crosses with the Merino increases. The improvement in the first cross with coarse-woolled sheep is not so dramatic as is the case with double-fleeced sheep.

The immediate improvement in the quality of the colonial wool which has been described did not persist beyond a few generations. While the original Spanish rams lived to be crossed with their cross-bred progeny, and while half-bred rams were mated to colonial hairy ewes, all was well. Until the 1820s there was no further introduction of Spanish stock to continue the process. Most of the colonists who had Spanish sheep had crossed them with the colonial breeds, and pure Spanish stock for replacement was not available. Inevitably, cross-bred Spanish rams, woolly in appearance but of mixed genetic composition, were mated to cross-bred ewes.

Attention will be drawn later to an important infusion of Leicester blood into Australian Merino flocks from 1804 to the 1860s, which was a big factor in increasing their size. So far as the original mixture that made the early Australian Merino is concerned, it is beyond dispute that the double-coated Cape sheep were involved and that they made the wool of their offspring finer than that of the original Spanish sires but of the same type. In addition, a quantity of fine wool was produced that was very large in relation to the few Merinos that were imported before 1820. Marsden took a large sample to England in 1807 and exported 4000–5000 pounds in 1811, for which he received a price of 45d per pound. Total exports then increased to 73,000 pounds in 1815 and 175,000 pounds in 1821.

This would not have been possible if the descendants of Merino and Bengal sheep (with some admixture from Cape and English sheep) had not produced fine wool by the turn of the eighteenth century.

A meeting of the Agricultural Society of Western Australia was called in 1837 to consider whether it would be possible to increase sheep numbers and wool production in the same way as had been done in New South Wales. The meeting had good information about the number of sheep imported, the rapid increase in numbers and the manner in which the offspring of Bengal sheep and Merinos became woolled sheep. No one at this time had any scientific evidence of how the change was made, but they were so convinced of the value of this cross-breeding that they proposed to apply it in Western Australia.³⁰

So far we have confined consideration to the inheritance of woolliness. The Spanish and colonial breeds differed in many characteristics: size, shape, colour, breeding potential and so on, all of which are inherited independently. As cross-breeding progressed, a wide range of combinations appeared. Without recourse to a fresh supply of pure blood, throwbacks to the original breeds appeared, and, for more complicated genetic reasons, a deterioration set in.

It is human nature to boast of successes and to ignore failures. While wool improvement continued, there were frequent references to it in the colonial correspondence. When the reaction occurred, which roughly coincided with the end of Governor King's administration in 1806, there was silence. Only a few references to the deterioration that took place have been found.

In a report of 1806, probably written by Major George Johnston to his patron the Duke of Northumberland, nine years after the Merinos were introduced, we find the following:

Experience shows, in New So. Wales, that an ewe with a fine fleece, removed three or four generations from the Cape or Indian breed, tho' she may be put to a Spanish ram, will sometimes bring forth a lamb covered with hair or spotted like a goat, and similar to the original breed from which she sprung.³¹

The same degeneration occurred in John Macarthur's flocks and was described by his son William half a century later:

Although in the third and fourth crosses in most instances very fine wool and an apparently perfect Merino character were obtained, it afterwards proved that no reliance could be placed upon this improvement — that the progeny of these apparently well bred sheep went back very frequently towards the original Bengal type, occasional instances of it which were unmistakable, occurred amongst the cross-bred sheep as late as in 1825 when there must have been at the very least 8 crosses of the Merino race in the animal ...³²

At the end of the eighteenth century, knowledge of stock breeding was primitive and remained so until the early years of this century. When regressive results dampened the first enthusiasm, most turned their attention to breeding sheep for mutton, which was more profitable than wool. It was on the backs of hairy sheep that graziers first rode; they were eventually able to continue the ride when these and other sheep blended with and improved the original Spanish sheep.

In the development of Australian sheep, progress at any period depended on how the sheep farmers could match their skills and the knowledge of the time against the problems of environment and administration. Many of the first attempts ended in failure. The stocking of the new settlement involved a considerable element of chance, and there was some bad luck; but many of the early failures were due to human error. There was also some good luck, as the apparently unpromising breeds of sheep — the Cape, Bengal and others — possessed unknown qualities which were destined to play a part in the evolution of the Australian Merino. This mixture of breeds has made the Australian Merino better than the first Spanish sheep that were imported. Macarthur's Merinos gave 1 kilogram of wool and a flock descended from them gave a slightly greater amount. There is no way in which such sheep, by selection alone, could have given rise to the modern Merino, many flocks of which give 6 kilograms of wool, with some champion rams yielding more than 20 kilograms. Australian Merinos are great because they were originally cross-bred and have been improved by selection since the type was fixed.

14 Yamburgan homestead, south-west Queensland, 1950s, in typical pastoral country



The early sheep of Van Diemen's Land

The evolution of sheep in Van Diemen's Land was even more dramatic than in New South Wales. The first sheep were landed in 1803; all the foundation introductions took place before the close of 1805 and totalled fewer than 800. A few Merinos arrived during this period but soon disappeared, and there was no attempt to produce fine wool until the 1820s. Most sheep came from Norfolk Island, a few from Cape Town and England and some from Sydney, including a few Teeswater sheep. The Teeswater sheep landed in Sydney in 1804 and they or their offspring were sent to the island the same year and were of great importance, particularly in the north and later after returning to the mainland. Most of these early sheep were Bengal-Cape cross-breds. After 1805 no further significant importations were made for fifteen years. At first the expansion of sheep numbers was slow, as there was near famine until 1810 and all surplus male sheep and, no doubt, some females were used for mutton. This was followed by an extraordinary increase in numbers and by 1819 there were 172,000 sheep on the island, which was more than double the number in New South Wales, where sheep had been established for thirty years.¹ These were virtually all hairy or English mutton-type sheep, and up to this time no wool had been exported.

During the next decade Merino sheep were introduced, the first big draft being supplied by John Macarthur,² and others from England and Saxony. The first wool was exported in 1820, but was not separately recorded from that of New South Wales. In 1822 18,000 pounds were exported and in 1827 192,000 pounds.³ This was comparable with exports from New South Wales, although the quality was not yet as good. Four years later there were nearly 700,000 sheep in Van Diemen's Land and the foundations of some of its studs had been laid.

The rapid increase of sheep was partly the result of natural advantages. There were large areas of good pasture, the rainfall was adequate and well distributed and the seasons were reliable. Whereas Sydney suffered severe droughts there was always plentiful grass in Van Diemen's Land; there were no dingoes or other natural predators, except for the rare and slow-moving Tasmanian Devil, which occasionally caused havoc among the flocks, particularly when they were penned at night. The Aborigines were few and regrettably became fewer. Constant shepherding, essential on the mainland, was not necessary, and flocks were left

out in the open at night, sometimes not being attended at all, so they did not have to suffer the ordeal of being closely penned in yards that were either dusty or muddy and a potent source of disease among sheep. Sheep brought to a new area, after a period of settling down have little inclination to stray, provided they have ample pasture. In these conditions the simple duty of the shepherd was to see that his flock did not stray beyond the prescribed boundary. He was thus able to attend to a large flock, which reduced the cost of management. However, because there were no fences, separation of ewes, rams, wethers and lambs was not possible; rams were continually with the ewes, which then lambed twice yearly, and it was not unusual for the progeny to lamb at an early age. Under such a system maximum increase of numbers would be achieved, but there could be little progress resulting from any attempt at controlled breeding for improvement. Scab was widespread and could have led to disastrous results by producing a weakly, under-developed race of sheep, were it not for the ample nutritious pasturage, which mitigated the effect of the promiscuous matings.

Unattended sheep were also an invitation to thieves, but although some settlers lost heavily from theft, sheep were not stolen for indiscriminate slaughter and the overall numbers of sheep in Van Diemen's Land were not greatly reduced. Sheep stolen for meat would generally have been wethers, which produced better mutton; thus the breeding flocks were not greatly reduced.

Two settlements were made in Van Diemen's Land, in 1803 and 1804, for the specific purpose of forestalling possible French occupation. A French expedition commanded by Captain Nicholas Baudin had visited the island in 1802, ostensibly for scientific purposes, but it was believed that the French intended to establish sovereignty over the island or part of southern Australia. The settlements, in the south at Risdon on the Derwent (near Hobart) and in the north at Port Dalrymple at the mouth of the Tamar (near Launceston), were military outposts and were established by detachments from Sydney. A further settlement was to be established at Port Phillip and for this an expedition set out from England under Lieutenant-Governor David Collins, who landed inside the heads near Sorrento in October 1803. He found conditions most inhospitable, with no adequate supply of water (he had not discovered the river Yarra), and he decided to transfer his settlement to Hobart, where he absorbed the Risdon settlement.

When first established, the Derwent and Port Dalrymple settlements were independent, each with a Lieutenant-Governor responsible to the Governor-in-Chief in Sydney. In 1813 the northern settlement became a subsidiary of Hobart and Thomas Davey was commissioned Lieutenant-Governor of the settlements on Van Diemen's Land.⁴

During the early years the two isolated settlements had little communication with Sydney or the outside world. As military posts they offered no prospects of promotion to those serving there. They were poorly supplied with rations and farming was undertaken as a necessity for survival. Under these conditions sheep were regarded solely as a source of food. The government flocks made little progress but soon a great increase took place in privately owned flocks.

The restrictive trade policies of the East India Company had prevented British ships from calling at Hobart until the Company's trade monopoly was withdrawn by Act of Parliament in 1813. From that time Hobart, with its safe

anchorage, was a frequent port of call for ships from England bound for Sydney and it began to prosper from the commercial contacts. When drought struck on the mainland in 1815, Hobart was able to relieve the shortages by shipments of wheat and salt meat, and the mutton industry became a profitable enterprise. Port Dalrymple was not so fortunately placed, and there the commerce for years was limited to Bass Strait sealers.

The first settlement at the Derwent, made in September 1803, was led by Lieutenant John Bowen, who set up his camp at Risdon Cove. He had sailed from Sydney with 25 ewes and 2 rams belonging to the government and about the same number on his own account. The passage from Sydney was a stormy one during which 7 government sheep and a much greater number belonging to Bowen and settlers were lost. Four more sheep died soon after arrival at the Derwent, and the first stock return at the end of September showed 25 government and 7 private sheep.⁵ As far as can be traced these were cross-bred Cape-Bengal breed.

Lieutenant-Governor Collins arrived at the Derwent from Port Phillip early in 1804, bringing some more sheep. He had bought a few sheep at Cape Town, which had been landed at Port Phillip, and while there he apparently received 6 sheep from Sydney. When he transferred the settlement to the Derwent, the ship carrying the sheep met very bad weather and 18 sheep were lost. Collins took over the Risdon livestock, including 45 sheep and lambs, in May, and the stock return of 4 August 1804 shows a total of 25 government sheep and 15 privately owned, with a total of 21 lambs. It would seem that there were not more than 10 surviving sheep from the Port Phillip settlement. In February 1805 there were in the government flock 28 ewes and 39 lambs, which provided an early indication of the rate at which the Tasmanian sheep were later to increase.⁶

In September 1805 Governor King wrote to Collins:

As Mr. [Edward] Lord takes a Number of Ewes, I have made him a present of a ram as near the Spanish Breed as Government is in possession of, and have also sent two for the use of Your Government Flock, as the Amelioration of the Wool throughout these Colonies is an Object much recommended by His Majesty's Government.⁷

There is no evidence to suggest that wool production was stimulated as the result of these rams, and it would seem that Governor King's interest in wool growing was not shared by his contemporaries in Van Diemen's Land.

The largest of the early importations of sheep to the Derwent arrived from Norfolk Island in the *Sydney* at the end of 1805 as the result of the first attempt at evacuation of that settlement; they included 148 government sheep and 265 belonging to George Guest, who sold them to other settlers at the Derwent.

The 1806 return of sheep, which included lambs from the new arrivals, showed that 282 government and 436 private sheep were held. The Norfolk Island sheep, Bengal-Cape cross with no Merino blood, now formed the greater part of the public and private flocks of sheep at the Derwent.

On board the *Sydney* was Joseph Holt, who had managed Brush Farm at Dundas for Paymaster William Cox for three years and who may be considered an authority on colonial sheep. At the request of Lieutenant-Governor Collins he inspected the government flock already at the Derwent. He stated, 'I went

through the sheep, and found them in a most unhealthy condition, requiring much care and doctoring.' They were probably scabby. Holt recorded that Collins tried to persuade him to take on the superintendence of the sheep, 'to arrange and conduct business that is of vital importance to the well-being of the settlement'.⁸ There was no suggestion that the Norfolk Island sheep brought to Hobart were in anything but a healthy condition, and their subsequent rapid increase would tend to confirm this assertion.

The settlement received insufficient supplies and the meat ration, in particular, was low for some years, being as little as 2 pounds of pork per week, which was sometimes augmented by kangaroo meat. In these circumstances mutton must have been at a premium, and it is remarkable that sheep numbers rose at all and that the prohibition on slaughter of breeding stock was observed. Returns show that the total number of sheep, government and private, at the Derwent in 1803 was only 30, but increased to 718 in 1806 and 2000 in 1811, a moderate but steady increase. Thereafter, the extraordinary increase began. The next figures for 1813 show 13,000 sheep; for 1817 the total had jumped to 78,000 and by 1819 to 127,000.⁹

As at the Derwent, the basic stock at Port Dalrymple were imported during the first two years of settlement, but here the development was on different lines as the result of the introduction of some Teeswater sheep (sometimes called Leicesters), similar to the new fast-maturing mutton breed developed in England by Robert Bakewell.¹⁰

There is no contemporary reference to the arrival of these sheep in Van Diemen's Land but they were recorded in New South Wales in 1804 as 'Teeswater' sheep. (The adoption of standard names for new breeds of sheep was erratic in England and even more confused in New South Wales.) Their influence is well established from statements made in 1820-22. Surveyor-General G.W. Evans wrote that, whereas wethers at Port Jackson averaged not more than 40 pounds, at Port Dalrymple it was a common occurrence for yearlings to weigh from 70 to 80 pounds and for 3-year-old wethers to weigh 150 pounds and upwards:

but this great disproportion of weight arises in some measure from the greater part of the sheep at this settlement having become, from constant crossing, nearly of the pure Teeswater breed.¹¹

In giving oral evidence before Commissioner J. T. Bigge a farmer, J. Gordon, when asked 'What is the present breed of the Sheep in this settlement?', had replied:

The best sheep are of the Leicester Breed or improved Teeswater. These last were brought down to Port Dalrymple by Col. Patterson, and were the Produce of some sheep that were sent out by the Duke of Northumberland to Col. Johnstone. Those of the coarsest kind are a cross of the Teeswater and the Bengal, but there is not much of the latter.¹²

Major George Johnston had left the colony for England in 1800, returning in 1802 with a Spanish ram presented to him by his patron the Duke of Northumberland, a fact which is known only from an accidental reference. This

ram was originally from the flock of King George III.¹³ The Teeswater sheep were recorded as arriving in Sydney in 1804 as a gift to Johnston from the Duke. Paterson wrote in 1806:

The Excellent Walks we have for their Grazing render our Sheep also so superior that I have rarely seen as fine Lambs as We have now falling in any part of Europe.¹⁴

Such a statement would apply more appropriately to an improved English breed than to the colonial Cape-Indian cross-bred sheep.

Lieutenant-Governor William Paterson had taken with him 3 sheep, probably the Teeswaters, when in November 1804 he formed the first settlement at Port Dalrymple. In August 1806 an account of the livestock at the settlement shows Paterson as being the owner of 42 sheep, of which half were probably lambs; it can be assumed that these sheep were his Teeswaters. In March 1805 the *Sydney* arrived from Calcutta bringing 34 ewes, many in lamb, which Paterson purchased for his public stock. Five of the ewes turned out to be wethers and some died. The next month, the *Buffalo* arrived from Sydney with 120 ewes and 2 rams, all for the government flock, as well as other livestock and fifty prisoners.¹⁵

Only one more sheep is recorded as entering the Port Dalrymple flocks. In giving oral evidence before Commissioner Bigge, D. Rose, superintendent of government stock, stated that a Merino ram was brought to Port Dalrymple in Captain John Brabyn's time (1808-10) but 'he was made away with on account of his Diminutive size'.¹⁶ It has already been suggested that the Merino rams sent to the Derwent by Governor King met the same fate.

The increase in sheep numbers at Port Dalrymple followed the same pattern as at the Derwent. After a steady rise in numbers to 1600 in 1811, there was an explosion to 26,000 in 1817 and 45,000 in 1819. However, figures from the stock returns cannot be accepted as being correct; for instance the increase in privately owned sheep at the Derwent from 1935 in March 1811 to 19,635 in November 1813 is not credible.¹⁷ However the overall picture of an extraordinary increase is irrefutable and is possible when sheep numbers double every year. This had already happened at Norfolk Island with the ancestors of the Van Diemen's Land sheep.

It is interesting to note that the greatest increases took place during a period when bushrangers overran the rural districts. Well-to-do proprietors were afraid to live on their stations and the sheep were left unattended or nearly so. It seems that convict servants had little to fear, though flocks were reduced by theft to an extent reckoned at 25 per cent a year.¹⁸

There is, of course, no account of the fate of these stolen sheep or reference to new flocks established from such illegal origins. The inexplicable increase in private sheep between 1811 and 1813 suggests that at the 1811 muster there were flocks of sheep somewhere in the mountains which had not been counted.

The spread of sheep from what is now Tasmania to Victoria and then to South Australia will be told in later chapters, as it did not take place until nearly fifty years after New South Wales had been settled. These sheep, however, were still basically the descendants of the 8 Bengal sheep from India which had originally landed on Norfolk Island from the *Shah Hormuzear* in 1793, crossed

with a few Cape and Teeswater sheep, the Teeswaters making early Port Dalrymple sheep large in size.

Philip Gidley King: from flax to wool

Inland Australia is so well adapted to the production of Merino sheep and wool that, given Britain's needs for supplies of wool for her mills, it seems wool growing was bound to become important in the Australian colonies at some time. However, through accident, Merino sheep came into the country while settlement was still centred on the coastal plain, nowadays considered to be unsuitable for sheep. There had been no mention of growing wool in any of the plans advanced for the settlement at Botany Bay although there were definite plans to use the settlement for the production of flax. In attempting to produce flax, the colonists acquired skills and equipment which helped in the rapid development of wool when woolly sheep came on the colonial scene.

When the British government selected Botany Bay as the site for a penal settlement, it believed that the colony could be made self-supporting and even become a profitable venture. Captain James Cook, who had visited these lands, had reported that New Zealand flax was superior to that obtained from Europe and that the plant grew luxuriantly at Norfolk Island, where it was of a quality superior to that of New Zealand. He did not know that this plant is completely different from the European flax. Geoffrey Blainey has pointed out that in the days of sailing ships a supply of flax, used for making canvas and rope, was strategically as important as the supply of oil is to modern navies.¹

In his Instructions for establishing the settlement at Botany Bay, Governor Phillip was directed:

... as it has been humbly represented to us that advantages may be derived from the flax-plant which is found in the islands not far distant from the intended settlement [Norfolk Island], not only as a means of acquiring clothing for the convicts and other persons who may become settlers, but from its superior excellence for a variety of maritime purposes, and as it may ultimately become an article of export, it is, therefore, our will and pleasure that you do particularly attend to its cultivation, and that you do send home by every opportunity which may offer samples of this article, in order that a judgment may be formed whether it may not be necessary to instruct you further upon this subject.²

When Philip Gidley King was sent by Governor Phillip in February 1788 to establish a settlement at Norfolk Island, his party included two men supposedly knowledgeable about the cultivation of the flax. Phillip instructed King:

after having taken the necessary measures for securing yourself and people, and for the preservation of the stores and provisions, you are immediately to proceed to the cultivation of the flax-plant, which you will find growing spontaneously on the island ...³

In spite of persistent efforts, King made little progress with flax, and it soon became apparent that the high hopes of the Home government for a means of supplying canvas and linen were not to be realised. King wrote in 1792:

I am sorry to say that no amendment is made in manufacturing the flax of this island. I am confident that a native of New Zealand would in a short time enable us to make a great progress in cloathing; but 'till then I fear we shall not be able to improve on the pattern now sent. Your Excellency may depend on my doing my utmost to promote that, as well as every other improvement.⁴

Though official interest waned, King accepted as a personal challenge the development of flax, not for official maritime purposes but as a source of material which would provide clothing for the settlement. In spite of all his efforts he managed to produce only two pieces of coarse canvas, but the experience gave King an interest in producing textiles in the colony.

15 Philip Gidley King who founded the Australian woollen industry to clothe convicts and neglected children, whose welfare also concerned his wife, Anna Josepha



In 1796 King was granted leave to visit England; with his family he left Norfolk Island at the end of that year, sailing by way of Cape Town and reaching England in the middle of the following year. He knew, by 11 January 1798, that he was to return to New South Wales with a dormant commission as Governor of that colony.⁵

A problem which troubled King's mind was the continuing shortage of clothing for settlers in the colony. Captain Edward Manning (the *Pitt*) in 1791 had failed to load clothing intended for the convicts so that his ship might better accommodate his own stocks of merchandise. The shortage was further exacerbated through official bungling, clothing having been omitted from the cargoes of two storeships which reached Sydney in 1798 and the following year. In November 1798 Governor John Hunter was able to report that, in general, his charges were in 'perfect health' but were forced to be 'intirely naked for want of a supply of slop cloathing and of bedding'. During the following year he again drew attention to the urgent need for clothing to be sent to Sydney, where 'the labouring men have been working in the field and other places literally naked as the natives of the country'. He further observed that because of the cold weather and the 'want of the necessary cloathing and blankets' many had become ill and thus placed heavy demands upon the limited hospital accommodation.⁶ There were also nine hundred children and waifs fed and clothed by the government and Mrs King had shown a deep interest in their well-being. In 1799 Hunter had sent home for inspection a piece of cloth that had been woven on a hand loom from thread made from wild flax, bark of a tree and a thread of wool. This was not to be the basis for an industry.⁷

It was evident that the colony could not rely upon England to supply even the essentials of clothing. For the British government, comfortably ensconced at Whitehall, this was a matter of economy; for the Kings, well aware of realities, it was a matter of common humanity. Clearly, there was an urgent need for the colony to supply at least some of its own clothing.

A series of frustrating delays kept King in England for two years. He occupied part of that time in gathering together equipment which would assist flax production in the colony; having exhausted the possibilities of New Zealand flax, he turned his attention to European flax and purchased seed to take back with him and, by way of an experiment, also obtained some cotton seed. He collected the equipment necessary to set up a factory for making linen. The quantity of the looms and spinning wheels was of such a large scale that they occupied the whole space between decks of the *Porpoise*, the vessel in which he hoped to travel to the colony. This equipment was eventually installed in the gaol and 'Female Factory' at Parramatta and in an orphanage in Sydney, establishing what King referred to as his 'manufactories'.

Among those who accompanied the Kings, when they eventually sailed on the whaler *Speedy* on 26 November 1799, was a master weaver, Edward Wise, whom King had engaged to superintend the new weaving industry. One day during that voyage, in an attempt to relieve the monotony, Wise had been out in the mizzen chains. While returning to the deck he had managed to get both of his legs over its side when the mizzen sheet struck him and he was thrown into the sea, where in spite of rescue attempts he drowned.

Although Wise was allegedly a competent weaver, a fellow passenger had been shocked to learn that he was not acquainted with the fly, 'but for which invention Manchester could never have boasted of such manufactories'.⁸ The fly, or flying shuttle, was a device invented in 1733 which threw the shuttle mechanically across the loom so that it might be tended by only one operator. Previously, it had been necessary to place an operator on each side of the loom in order to catch the shuttle and throw it back. The looms intended for Sydney were obsolete models readily available in England at a cost acceptable to the parsimonious Home government.

The *Speedy* arrived in Sydney in April 1800, but King was unable to take over the government until September, when Hunter left the colony. In the meantime he made a survey of the affairs of the settlement including its agricultural and pastoral development. He assumed the governorship on 28 September, which date he put to a series of letters he had already prepared. In his General Despatch of that date to the Duke of Portland at the Colonial Office he wrote of flax production:

No further progress has been made here in manufacturing cloth or linnen than the samples which I understand Governor Hunter takes home with him. Until now it appears that this necessary work has been prevented by the want of flax seed and manufacturers. These wants will now be removed, as a quantity of seed has been saved from some sowed last year, and a small quantity I brought with me, which is now growing on two acres of ground. Some good workmen are among the Irish convicts lately brought here, which will in some measure make up for the loss of the weaver who was drowned on the passage. Four men, i.e., two flax-dressers and two weavers, convicts for life, have been selected to conduct that manufacture; ... I shall omit no opportunity of promoting and forwarding this necessary manufacture (which will require several men and all the female convicts that can be procured) when the flax now growing is fit to be worked ...⁹

In order to encourage agricultural production King offered rewards in the form of 'premiums' to the most industrious settlers, which he hoped would 'stimulate industry more than all the seas of spirits that have inundated this colony'. The premiums were to be awarded to settlers, except those who held appointments under the Crown, who produced the most wheat, maize, pork or flax. It is worth noting that the premiums for flax were the largest, being one cow and one steer to be awarded to the first candidate, one cow to the second, 3 ewes to the third and 2 ewes to the fourth.¹⁰ Thus encouraged, the land sown to flax and hemp had increased to 60 acres by 1804. From the 1801 harvest, 472 yards of material were made on the looms brought from England. The quantity increased yearly and in 1805 the production of 'Druggit, Canvas, Sacking, Girthing and Linen' from the government 'manufactories' amounted to 3732 yards.¹¹ Australia's first textile industry had been established.

King made his first contact with woolly sheep, as distinct from hairy sheep, at Cape Town on his way to England at the close of 1796. He was involved with Captains Henry Waterhouse and William Kent in the purchase of Colonel R.J. Gordon's Spanish flock; Mrs Gordon's gift to King of 3 sheep suggests that he was very interested in them.

During his two and a half years in England, King met Sir Joseph Banks on several occasions and a firm friendship developed between them. Banks was the leading English authority on Spanish sheep and had owned a small experimental flock in which he crossed the Spanish sheep with various English breeds. During the previous decade Banks had explored all possible sources of Spanish sheep in order to establish the royal flock of George III, with the ultimate object of 'Extending the breed of Spanish Sheep to such parts of the Island as may be most suitable to the Production of Fine Wool'.¹² Banks was an adviser to King George on the management of this flock; indeed, Spanish sheep were his 'favourite hobby'. King and Banks exchanged frequent letters about sheep in Australia and were in general agreement about the possibilities of the industry. They were both contemptuous of the claims made by John Macarthur about what he would do for the wool industry and were indignant at the concessions given to him.

After his return to New South Wales, while waiting to assume office, King was able to observe the changes that had occurred as the result of the introduction of the Spanish sheep. In his first despatch to Portland in September 1800, after discussing the progress — or lack of it — that had been made with the production of flax, King continued:

And as the introduction of a breed of Spanish sheep into the flocks of individuals has so much improved the fleeces that there is a promising appearance of a great quantity of wool being produced in a few years, a great benefit will arise to the colony hereafter in the article of cloathing. But I am sorry to say, from the wretched state in which the sheep belonging to Government are ..., that it will be some time before any advantage of that kind can be obtained from them, as they are mostly of the Cape breed, whose covering is hair. But I beg to assure your Grace that no efforts of mine will be wanting to encourage and promote the Spanish breed.¹³

Although the Spanish sheep had been in the colony for three years, this is the earliest extant reference from the colony about producing wool from Spanish sheep. He repeated and extended his message the next year, when he reported, 'every endeavour is making ... to improve the hair into wool by means of three Spanish rams brought here in 1797'.¹⁴

In other letters King asked that he be provided with some wool cards, which could not be acquired locally. Wool cards were required for the first process of preparing wool for spinning, being used to comb the fleece so that the fibres might be separated. It is unlikely that King would have omitted such essential implements had he foreseen that wool would be produced in the colony. He had brought spinning wheels to spin flax and these were equally suitable for working wool which had been carded. It was evidently a surprise to find a supply of wool in the colony, and when he found it King immediately set about making use of it. At the same time he set about producing wool by improving the 'wretched' government flocks.

There were by then 6000 sheep in the colony and of these 600 formed the government flock, for which King acquired 4 half-bred Spanish rams, 2 each from John Macarthur and Samuel Marsden, who had received Spanish sheep from those imported from the Cape in 1797. In the government flock about 200 were

adult ewes, which would have required 4 rams, so that after a time all lambs bred in that flock could have had up to one-quarter Spanish blood. By 1805 the result was 'a total change in Government Flock from Hair to Wool of a tolerable degree of fineness'. This flock was continually depleted through distribution to new settlers, each of whom was entitled to receive 2 ewes. Most settlers would have chosen big sheep, irrespective of fleece, as they were mostly interested in producing mutton. As King reported, 'all have and are aiming to get half or whole bred Spanish Rams, South Down, or other English or Irish Rams into their Flocks'. He observed that many a small settler sold surplus male stock to the butcher, giving him an income and the butcher a profit,

not regarding the distant advantage to be derived from having the finest Wool by changing his present breed to the Spanish ... Fortunately this is an evil that only attaches to the Males, as killing Ewes has ever been expressly forbid.¹⁵

We have seen in Chapter 5 Henry Lacocke's scorn for the 'hairey wool' he examined in 1800.¹⁶ In 1801 he also examined a sample of fleeces from Macarthur's flocks sent by King, only a few of which were of value (see Appendix A). One from a ram bred in the colony was judged to be worth 5s per pound, scoured (the equivalent for greasy wool was much less than half this amount). At this time Macarthur had only 3 Gordon Merino sheep and their progeny, so that he was not in a position to produce many similar fleeces.

Progress in improving the quality of colonial wool could only be slow. The Spanish sheep were few in number and widely dispersed, and there was no theory or practice which would have enabled the best use to be made of them. It was only in 1807 that the first spinnable quantity of wool was sent to England by Marsden for testing, although a considerable quantity of woollen goods had been made in the colony by this time.

Six months after taking command of the colony, King wrote:

The manufactory of linen and woollen is begun with some success; ... for the woollen manufactory, we must depend on the increase of our sheep, and growth of wool, of which there is now a small but increasing quantity that has been obtained by the introduction of some Spanish and half-bred rams.

It appears that only when King had seen the improved wool resulting from cross-breeding of Spanish with hairy sheep did he become interested in woollen production. By August 1801 306 yards of blanketing had been made from 'the whole of the wool obtained last year from Government's flock and that of individuals'.¹⁷ Blanketing would have required about 3 pounds of wool per yard. The fleece from each sheep weighed about 2 pounds, so that about 400 of the 5000 sheep in the colony would have been needed to produce the required wool. This roughly agrees with the possible number of cross-bred descendants of the Spanish rams imported in 1797.

King, unable to provide sufficient wool from the government flock to keep his 'manufactories' in production, had tried to purchase wool from the colonists: he offered 2d a pound for the wool but without success because, he thought,

sellers were holding out for an increased price. (The price was increased to 4½d per pound in 1818.) However, he did obtain some wool on a share basis, by which a settler would receive 1 yard of coarse blanketing in each 4 (later 5) produced from his wool.¹⁸ King reported that during the year ended 31 December 1805, 2201 yards of 'Blanketting, Flannel, Coarse Cloth, and Collar Cloth', including that amount returned to individuals under the sharing arrangement, had been manufactured.¹⁹ Calculated as above, this suggests that about 3000 sheep were shorn at the 1804 shearing, at which time there were 16,000 sheep in the colony. This compares favourably with King's statement that one-eighth of the sheep carried wool of differing gradations, averaging 3 pounds per fleece, whereas the remainder carried little or no wool.²⁰ It was a remarkable achievement for the few Spanish sheep imported in 1797 to have spread their wool genes through so many sheep in so short a period, although the contribution of the original hairy sheep of the colony was also important in the rapid build-up in the number of sheep.

King continued to use all available wool for local consumption. His aim at this time was to produce wool for use in the colony. He advised Lord Hobart in 1802: 'The introduction of some half-bred Spanish rams... will in the course of a few years produce sufficient wool to cloath the inhabitants.' The next year he wrote similarly to Banks:

the quantity of wool will not be very great until the cupidity of the individual possessors can be stifled ... I mean their selling all the widders before they have attained a proper age, which consequently reduces the produce of the wool.²¹

Macarthur had advocated the export of colonial wool to England, but King testily pointed out that this proposal 'might have had a greater air of local patriotism and public spirit' had Macarthur in the first instance given some thought to using that wool to manufacture clothes for the inhabitants.²²

Banks, who had seen the samples of hairy and of Spanish wool sent to England and who had observed the progress of the colony, was sceptical of the possibility of producing large quantities of fine wool. In 1804 he praised the sample of linen King had sent him but advised him not to be too concerned about obtaining fine-woolled sheep for the government flock.

If the project for breeding ... succeeds, they must soon become so abundant that the genius of your people, who will not let a potato stay under ground till it is ripe, will soon spread them over the country.²³

Banks, as a good scientist, was always careful to base his opinion of the possibility of a wool industry in the colony on the evidence he assiduously collected and analysed. In response to the propaganda issued by Macarthur and his supporters, he had made the following note in June 1806:

Government here seem inclin'd to believe that a very few years will produce a very large increase of the small number of merino sheep which Capt. Waterhouse purchas'd of Mrs. Gordon, at the Cape, ... in fact the herbage of the colony is by no means so well adapted to the sheep farming as that of Europe. The progress of the flock will, therefore, be slow; but ... the true merino breed will certainly retain the

superiority of their fleeces, and produce wool worth six shillings a pound at the least when wash'd and scour'd, ... and become in due time a profitable article of investment for a cargo from Port Jackson to London.²⁴

This was a sound analysis on the evidence available to Banks. Neither he nor anyone else knew that there were good grazing lands beyond the boundaries of the early settlement. In addition, he had no experience of the prolific Indian sheep, on which the expansion of the industry depended.

Banks was also aware that, even in 1804, Macarthur was not firmly committed to producing wool.

A proposal has been made to institute a company here with a capital of £10,000 for the purpose of increasing the breed of sheep, which are to become the property of the subscribers — the wool, I mean — and the mutton to remain that of Mr. McArthur.²⁵

King replied to Banks that he had done everything possible to encourage individual settlers to take up the challenge. The government flocks were

more particularly appropriated to the purpose of furnishing settlers than any systematic plan of improving either the breed or the wool (altho' these objects in the selection and rearing of rams and ewes are not disregarded).²⁶

King was anxious that the work of enterprising settlers should be encouraged. He was aware that most farmers were interested both in mutton and in wool, for he advised Hobart in 1804:

the fleeces are constantly improving by the distribution of rams from the Spanish, South Down, Tees Water, and Irish rams to those flocks which at present have no other than the hairy-covered rams of the Cape and Bengal breed.

He also knew that Marsden, the best practical farmer in the colony, favoured mutton sheep. Marsden claimed, in reply to a survey ordered by the Governor, 'One true bred Spanish Ram and Ewe, with four half bred Southdown Rams, have been the Sheep that have Improved my Flock'. Marsden later stated that he would like to obtain Lincoln and Leicester sheep, the largest of the mutton breeds.²⁷

King had been instructed by the Home government to grant Macarthur 5000 acres of land at the Cowpastures. Objecting to this, he offered land on another site until such time as the Secretary of State for the Colonies had reconsidered his earlier decision. At the same time, 'In order to expedite Mr. McArthur's Object of exporting fine Wool to England', King directed that he be supplied with 'One Hundred of the finest wooled Ewes from Government Stock', for which Macarthur was to 'pay Grain into the Stores at the rate of Two pounds Sterling for each Ewe'. Macarthur willingly accepted the sheep, which were of better quality than those he had tried to sell to King a few years previously for £2 10s. As Macarthur had found on his return to the colony from England that he had only 60 Spanish sheep in his flock of more than 5000, these government ewes were a valuable addition to his flock.²⁸

In August 1806 King was succeeded by Governor William Bligh, but illness delayed his departure from the colony for some time. Bligh showed less interest in fine wool and in wool manufacturing and, in contrast to King's reports, made his only reference to wool in a despatch written three days before King sailed. In his general despatch dated 7 February 1807, he wrote:

The Sheep in time will increase in number and quality, both in Carcass and in the Fleece; but the latter is not an object which every one can yet entirely attend to ...

In general, Animal Food is a greater object for the proprietors of Sheep than the Fleece, as there is an immediate demand for it.

On the subject of industries, Bligh thought little had been achieved: 'A small quantity of coarse Linen and Sail-Cloth, with coarse Blanketting, a poor Pottery, and the tanning of Leather are all we have at present'.²⁹

Manufacturing was, however, improving, as a notice to wool-growers from the Commissary's office in 1810 showed. It advised thirty-eight growers, including Macarthur, Marsden, Alexander Riley, William Cox, Mary Ward and Dr Luttrell, that cloth was available for the wool they had supplied.³⁰ Simeon Lord and Francis Williams entered into a partnership with John Hutchison in 1812 to manufacture coarse wools which would not pay the cost of exportation. Hutchison claimed in 1814 (after the partnership had been dissolved) that they gave 3d-6d in colonial currency a pound for wool. This was worth 20-30 per cent less than sterling.³¹

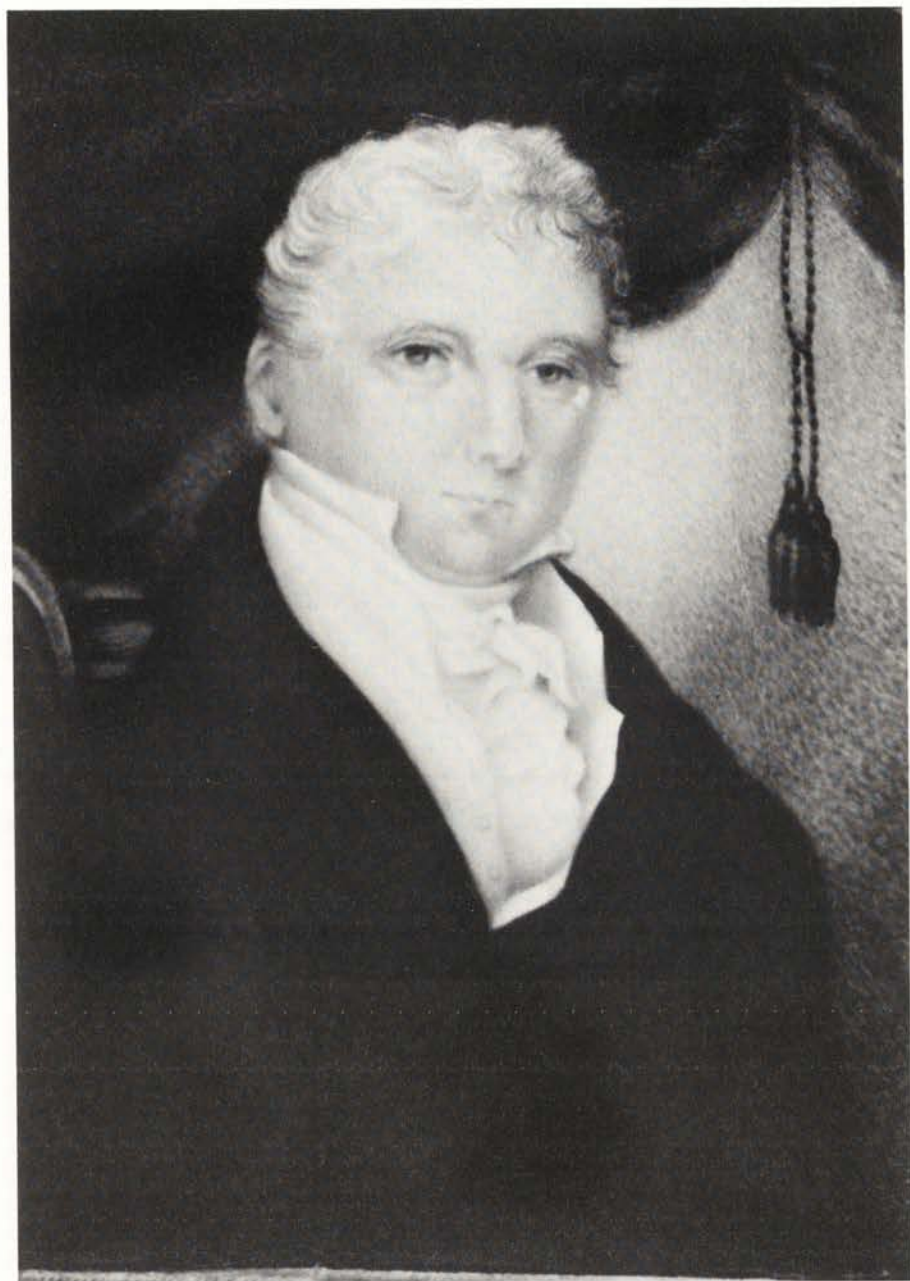
Until this time the government had been the only local buyer of wool and, as it paid a flat rate, there had been no incentive for the settlers to adopt any costly preparation of wool (such as washing the sheep prior to shearing and separating wool into different qualities) or to undertake long-term breeding programs to improve wool quality. The return from wool of about 6d per sheep, which was less than was obtained for a pound of mutton, made wool-growing the hobby of a few large landowners or a by-product of the mutton and livestock industries.

There was a considerable improvement after Lord opened his factory at Botany, producing textiles and also shoes, hats and harness. He was soon employing sixty convicts and manufacturing cloth for the government. In 1820 Bigge was alarmed at the quality of his textiles, as he regarded them as a threat to British manufacturers.³²

As a result of the Luddite riots in 1811-12, numbers of weavers were transported to the colony and their skills were in demand by the manufacturers. Their arrival influenced the rapid expansion of the woollen industry. It used the greater part of wool produced until 1820; for a decade after 1813 this amounted to between 40,000 and 60,000 pounds of wool annually.³³

The Parramatta factory, which had been started by King, continued in operation and was still supplying government orders in 1828, when £1,100 was provided in the estimates for wool to be used in manufacturing clothing for convicts. Private owners had been the main producers of textiles since the time of Governor Macquarie, but they built on the foundation laid by King.

King did not produce a new, pure breed of sheep and sold no wool on the London market which might have measured the success of his breeding.



16 Simeon Lord, a convict who became a pioneer in commerce and industry, establishing the first private woollen mill

Nevertheless, he showed a good knowledge for the time of breeding principles and, from unpromising material, he developed one of the first flocks of wool-producing sheep in New South Wales. Macarthur bought 100 of the best woolled ewes from this flock at a time when few of his own sheep produced fine wool. King was the first in the colony to conceive the idea of producing wool, at first for local consumption. The textile industry he established gave an outlet for the coarse wool produced, so that there was a considerable production of woollen goods in Australia before any wool was exported. Macarthur claimed to have had a vision of a great wool industry about 1800, but he did not export any wool commercially until 1813. In the meantime the wool industry had been established to provide clothes and blankets for convicts. This was a more solid beginning for the industry than could have been provided by Macarthur, who turned to wool when his other enterprises had failed.

How Marsden almost succeeded

The Reverend Samuel Marsden arrived in Sydney in 1794, and although not experienced in agriculture, he was an enterprising and experimentally minded farmer who set himself the task of producing both mutton and wool.¹ The needs of the early colony dictated that mutton be given primary importance, but later he gave greater attention to wool, of which he produced large quantities of varying quality. Near the end of his career the quality of his wool was recognised both in New South Wales and England. He was the first to send wool to England for testing and also for commercial sale, a fact which some admirers of John Macarthur have attempted to conceal.²

By 1802 Marsden held by grant and lease a minimum of 440 acres and he grazed 480 sheep.³ His estates, flocks and herds rapidly increased, as in 1804 he held 1720 acres and ran 1210 sheep, the second largest flock in the colony.⁴ He explained how he had built up his flock:

About Eight Years ago I began to Purchase, when Opportunity Offered, a few Sheep from the Different Ships which Visited this Port. These came either from the Cape or India. Their Fleeces were in General Hair. About Six Years ago I Obtained One Male and One Female Spanish Sheep. The Male was put to the above Hairy Ewes. In their first Produce there was a Wonderful Improvement in the Fleece, but the Sheep were not so Large and Healthy as I Expected, many of them Dying when about One Year old. I Endeavoured to find out the Cause of this Mortality, being equally anxious to Promote an hardy Breed of Sheep as well as to Improve the Fleece. At this time I fed the whole of my Sheep in the Woodlands, the Grass was often very long and Coarse, and also wet, either with the Dews or Rain, as the Sun could not dry the Ground from the thickness of the Timber. It Occurred to me that the Sheep feeding through this Long wet Grass in which they were almost Covered was partly the cause of the Mortality amongst them. At this time nearly the whole Flock Appeared Sickly, but the produce of the Spanish was much worse than the other Common Sheep. From this Circumstance I Inferred that they were more tender and delicate. I had now about 100 Acres of Land Cleared from Timber and under Different Crops, and was determined when the Crops came off to let this Ground lie Fallow for the Sheep to feed upon, Especially in wet Weather and heavy Dews, hoping that this would restore the Flock to health and Strength. My Expectation was verified, as the Flock immediately recovered.⁵

The Spanish sheep referred to above were bought by Marsden from Henry Waterhouse in 1797; he bought an additional number from William Kent in 1800 and landed 6 Paular Merinos, a gift from King George III in 1809. In the 1820s he bought some newly imported Saxon Merinos. His observation on the unhealthiness of his first flock was similar to that made by Governor Phillip when the stock from the First Fleet had died, apparently from feeding on the rank grass under the trees. The early settlers did not know that the climate around Sydney was too wet for sheep and the land was poor and became infested with parasites.

Marsden set out to Sir Joseph Banks and Governor King his objectives as a sheep-breeder. In 1803 he asked for Banks's help in 'obtaining two good English [i.e. non-Merino] rams'.⁶ In 1805 he wrote to King:

The main Object I have constantly kept in view ... has been to Improve the Constitution of the Sheep, the weight of the Carcass, and the Quality of the Wool ... I have not always chosen a Ram with the finest Fleece to Breed from ... One true bred Spanish Ram and Ewe, with four half bred Southdown Rams, have been the Sheep that have Improved my Flock very far beyond expectation, both in Beauty, Constitution, Weight, and Fleece ... I have always considered the pure Spanish Breed much more delicate in their Constitution and lighter in Carcass than the produce of Ewes crossed with the Spanish or half-Bred Southdown Rams.⁷

It may be noted that Southdowns formed the bigger part of Marsden's stud flock. Their wool is scanty but almost as fine as that of Merinos, but they also produce good quality mutton. The quality of the fleece was only the third of the objectives he sought. It is true that, like most farmers of his time, he thought it possible to produce both good mutton and good wool on the one sheep, but long experience has shown that the quickest and surest progress is made by selecting for one quality at a time. There is the further factor that wool, like the body of a sheep, is protein, so that the food that produces wool is not available to build up body weight. Conversely, a ewe that bears a lamb will not produce as much wool as a barren ewe of the same type. In a letter to Banks, Marsden made clear his preference for mutton over wool.

We have got the Spanish, Southdown, and Teeswater breed [of sheep] already, tho' not general. I think that the Leicestershire and Lincolnshire breed would very much improve our flocks could we obtain them.⁸

The Leicester and Lincoln sheep were two of the largest in England and had been bred specifically for mutton. Their wool, however, was long, coarse and lustrous and was acceptable for many purposes. In recent times the Lincoln has been crossed with Merinos to produce Corriedale and Polwarth breeds, although Australian breeders in the nineteenth century, such as John Ryrie Graham, derided such crosses.

Marsden was confirmed in his belief in cross-bred sheep by the performance of a 'very fine' ram which he had bred in 1800, sired by a Spanish ram from a coarse-woolled ewe. At its first shearing the ram yielded 3 pounds of wool, increasing to 6 pounds at the third shearing, when he weighed 164 pounds. 'The

Produce of this Male are very fine Sheep, with good wool.⁹ (A sample of wool from this ram survives and is described in Appendix B.)

Marsden was so impressed by the inheritance of wool quality among the cross-bred descendants of Spanish sheep that he made a sample collection of their fleeces. He sent 8 of these fleeces to King on 11 August 1804 to be forwarded to Banks. These specimens are now owned by the Museum of Applied Arts and Sciences, Sydney. In Appendix B is set out Marsden's description of the sheep that produced the wool, and measurements of some fleeces from South African sheep similar to the Cape sheep owned by him.

It may be noted that Marsden distinguished between hairy and coarse-woolled sheep, but not between sheep from India and the Cape, both of which he merely called 'hairy'. Cape and Indian sheep came from different continents, differed in size, colour and shape of tail, but he was dealing only with the fleece in this instance.¹⁰ It may be noted that the offspring of a Merino and an Africander (African hairy sheep) has fine wool with no admixture of hair. The coat cover of the Africander (modern name for a Ronderib) appears short and harsh, but microscopic measurements show it is composed of fine wool fibres, average diameter 20 microns (this is fine wool) and hairs of 80 microns (this is far coarser than wool produced in Australia).¹¹ Similar results have been found from crossing Merino and Scottish Blackface hairy sheep.

In the sheep sampled by Marsden, wool of similar fineness was produced by the offspring of both hairy and coarse-woolled sheep crossed with Merinos. The no. 1 sample, hair of the kind found on Cape and Indian sheep, was not measured. The remaining samples are finer than might be expected, as nos 3 and 5 would be classified as Merino wool in fineness; the others are just outside this range.

Governor King referred to 'The Rev. Samuel Marsden, who is the best practical farmer in this colony' and in 1804 he included in his despatch to Lord Hobart a report on sheep farming which Marsden had prepared.¹² The next year, when King received by the *Argo* a request from Earl Camden, who had succeeded Lord Hobart as Secretary of State for the Colonies, for the fullest information 'Respecting the Increase and Improvement of the breeds of Sheep, with the Growth and Improvement of Wool raised in this Territory',¹³ King again enlisted Marsden's services.

As Camden's request was inspired by statements Macarthur had made in England about fine wool, King asked Macarthur to collaborate with Marsden, both being 'Gentlemen experienced in that kind of Stock and Wool'. The fact that he was seeking the collaboration of two inveterate enemies probably caused King some amusement.¹⁴ It may be noted that the purpose of the inquiry was to find how to produce fine wool, not what were the best and most profitable sheep for the colony at the time.

Marsden and Macarthur met and sent the following questionnaire to King for authorisation.

1. Have you any true-bred Spanish Sheep in Your Flocks?
2. Do you endeavour to preserve the Spanish Breed of Sheep pure and unmixed with other breeds?
3. What other Breeds of Sheep have You that produce fine Wool?

4. What Rams have You had in Your Flocks, And from Whom and from what Country did You obtain them?
5. Do you think breeding of the pure Spanish Sheep will be as profitable to You as if You bred other kinds?
6. Do you think the Wool of all kinds of Sheep improves in this Colony?
7. How many Sheep do You possess at this time?
8. How long do you suppose it will be before Your whole Flock will be increased to twice their present Number?
9. What Means have you adopted to improve the Carcase and Fleece of Your Sheep?

These questions were included in the General Orders of 27 July 1805 and appeared in the *Sydney Gazette* on the day following. The inquiry was conducted by Edward Wood, a servant of Macarthur.

Only six colonists responded to the order: Marsden's fellow magistrates, Thomas Arndell and Thomas Rowley; his friend and fellow missionary, Rowland Hassall; and three settlers, Edward Robinson, James Shepherd (who had obtained a ram from Marsden), and George Hall. All six were from the Parramatta and Hawkesbury districts and it would appear that they were all persons who Marsden knew had some interest in Spanish sheep. Marsden, at King's request, and 'at the same time to gratify [his] own Inclination,... accompanied Mr. Wood thro' the Different Districts of the Settlement, and examined the respective Flocks of Sheep'.

The questionnaire, besides fulfilling its intended purpose of obtaining information about the Spanish sheep, revealed some interesting sidelights on sheep management under colonial conditions.

Of the six who answered the questionnaire only the ex-surgeon Thomas Arndell claimed to have any 'real' Spanish sheep, which were 'from a real bred Spanish ram' he had obtained from Waterhouse. He had no pure Spanish ewes so the progeny of the ram must all have been cross-bred and he had 'taken Care to improve on the Spanish and fine Wool by good rams'.

Edward Robinson was aware of the difficulty of keeping sheep pure under colonial conditions:

I shall endeavour to obtain a few of the pure Spanish Breed and am determined to keep them unmix'd, which I think is not possible without having two folds and Two Shepherds, and I have got but one run for Sheep at present.

On the subject of breeds there was a variety of opinions. Rowland Hassall found 'the Cross-Breed between the Spanish Ram and the Bengal Ewe produce tolerable good Wool'. Arndell had a flock which 'in general [was] fine Wool of the Irish and Lansdown kind', and Hall confused the nomenclature of breeds still further by saying he owned 'Irish, or rather the Ancient Northumberland breed, as of late Years Tees Water Sheep is chiefly bred in that County'.

The rams in use were a mixed lot. Hassall had 'one good Ram of [his] Own of the Cross-Breed, and a Spanish Ram that the Reverend Mr. Marsden was so kind as to lend [him]'. Shepherd had a ram 'between Spanish and Cape' from Marsden.

Arndell and Rowley both had Spanish rams from Captain Waterhouse, and Rowley stated that his first ram was from California. This possibly was one of the 4 survivors from the *Daedalus* in 1793, and if so it gives Thomas Rowley some small claim as the first colonist who may have used Merino blood in his flock. He also obtained 2 Spanish rams from Waterhouse, who left the colony in 1800. However he took no steps to improve the quality of his sheep. Robinson's ram had a 'large Carcase but coarse Wool' and George Hall had a ram from his Irish-Ancient Northumberland-Tees Water ewes which had 'the Appearance of being got by a Spanish Ram'.

None of the six thought the breeding of pure Spanish sheep would be as profitable as breeding other kinds which were larger and hardier, the Spanish sheep 'being of a small and tender kind'. Indeed it is probable that some of the settlers sought Merinos from the Cape, not for their fine wool but because of their size. The question whether the wool of all sheep improved in the colony was no doubt inserted by Marsden, who believed that the climate improved the quality of the fleeces. Two agreed, one did not, and three gave no definite opinion. The idea that climate alone (apart from selection) improves the quality of sheep became part of Australian folklore. Before orators discovered our sportsmen, we had the finest climate in the world — or climates, as we have a wide variety.

The number of sheep varied from Rowley with 519 to James Shepherd with 33. Hassall had under his care 216 male and female sheep. Settlers with only a few sheep found it convenient to share a shepherd.

In reply to the question 'How long do you suppose it will be before Your whole Flock will be increased to twice their present Number?' the three settlers (Shepherd, Robinson and Hall) expected the fastest increase, answering ten months, twelve months and fifteen months. With the smallest flocks and more personal attention they had better opportunity for caring for their sheep than the larger proprietors. Arndell thought it would take about two years.

The last question concerned the means adopted to improve the carcase and fleece. Hassall answered at length:

I just observe that to improve the Fleece and Size I have borrowed Rams from the Revd. Mr. Marsden's Flocks, which have had the desired Effect. To improve their health and strength I removed the Sheep from the Low Grounds about the Brickfields, Parramatta, to Baulkham Hills, but having no Shed the weak Sheep, with the Lambs that was yeaned in the wet, most of them died; And If I had not removed the Flock when I did from Parramatta I verily believe I should have lost them all, As those low parts of Land seem to abound with some kind of Minerals that cause the Water to be so brakish that it is neither good for Man or beast, and has a great tendency to infect the Sheep with the rot.

Robinson was using 3 young rams bred from his ram with a large carcase and coarse wool which was mated with 'Ewes of very fine Wool'. Shepherd thought the necessary means was careful attention to pasture, but remarked:

An Ewe of the Bengal Breed will bring Lamb twice a Year by Experience, and often two at each time; and altho' the Carcase and Fleece coarse, Yet if crossed by a Spanish Ram will improve both and prove beneficial to the Settler.

Apart from Governor King, Macarthur and Marsden, these six were probably the only colonists who had any interest in growing fine wool at that time. Their joint testimony indicates the general lack of interest in Spanish sheep in 1805 and the complete ignorance of the first principles of stock breeding.

Marsden submitted the six replies to Governor King and he and 'Mr. Wood, the professional Gentleman who came out in the *Argo*', each submitted a report. Samuel Marsden's report on his management of his own flock has been noted; he also gave an optimistic report on the improvement of the other flocks examined:

With regard to the General Flocks ... the Improvement has been very great as well as Universal through the Settlement, and in many Instances without the Care and Attention of the Proprietor. Where any particular attention has been paid the Improvement in the Wool is Incredible. All the Flocks, Originally, with the exception of a few Sheep, have been bred from Sheep Imported either from the Cape or Bengal, which produced nothing but Hair. Most of the Flocks now are covered with Wool of Various Qualities, and very little hair Comparatively to be seen in any. I cannot but Attribute the great Improvement already made both in the Fleece and make of the Sheep, to the Mildness of the Climate, and the Richness of the Pasturage. Should fine wool be thought an Object of National Importance, it is my Opinion it may be produced in the highest Perfection. The Sheep Farmer has everything that a mild, Salubrious Climate and a fertile soil can do to Stimulate his exertions and excite his Attention to his Flocks.

Edward Wood's report seems to have been influenced by Macarthur, who was his employer:

The Opinion I have formed from the Investigation is that a very great improvement has been already made in the wool of every Flock that I have seen, and the specimens of Wool grown in Mr. McArthur's Flock, and from One Ewe belonging to the Reverend Samuel Marsden, satisfies me that with due care and attention to propagate from the pure Race of Spanish Sheep, until sufficient numbers of them can be raised, or from the nearest kind to them that can be procured, the whole of the Wool would, in a few Years, become equal in quality to the very best that is obtained from Spain. It is with concern, however, that I observed this great national object may be many years retarded by an unaccountable prejudice which appears to prevail in favor of weight of Carcase instead of fineness of Fleece, and on this account a decided preference in favor of a Cross that I understand has been obtained from a South Down Ram. Whether the Breed will prove heavier than the Spanish I am incapable of judging; but certain it is, Wool of the description produced by these Sheep will not pay for sending to England, nor if it would is it wanted. Whereas, on the contrary, so great is the scarcity of Spanish Wool that it sells for almost any price.

The reference to South Down sheep obviously applies, not to any of the six flocks inspected, but to that of Samuel Marsden. The innuendo that only one of Marsden's sheep had good wool is particularly vindictive. He was ignorant of the fact that wool from a Southdown sheep is almost as fine as Merino, although inferior in quantity.

It must be conceded that although Marsden was interested in the production of fine wool, and from Macarthur's well-publicised activities must have been

aware of the possibility of export of wool, he saw no necessity for breeding pure Spanish sheep. Among his part-Spanish sheep he was still observing the 'almost ... incredible improvement in every generation'.¹⁵ The inevitable retrogression among progeny of mixed races had not yet appeared in his flocks.

In 1807 Marsden returned to England on leave and took with him 170 pounds of wool packed in a barrel. Like his fellow colonists he could have no idea of the quality of his wool or its value, as no colonial wool had been sold on the London market, nor had its quality been proved by manufacture. Marsden took with him the first usable quantity of wool to reach England from New South Wales.

It was natural for him to visit the Yorkshire village of Horsforth, where, as a boy, he had worked as a blacksmith in an area where textile machinery had been introduced at that time. What happened there is told by an extract from a letter by William Thompson, a proprietor of a woollen mill in nearby Leeds:

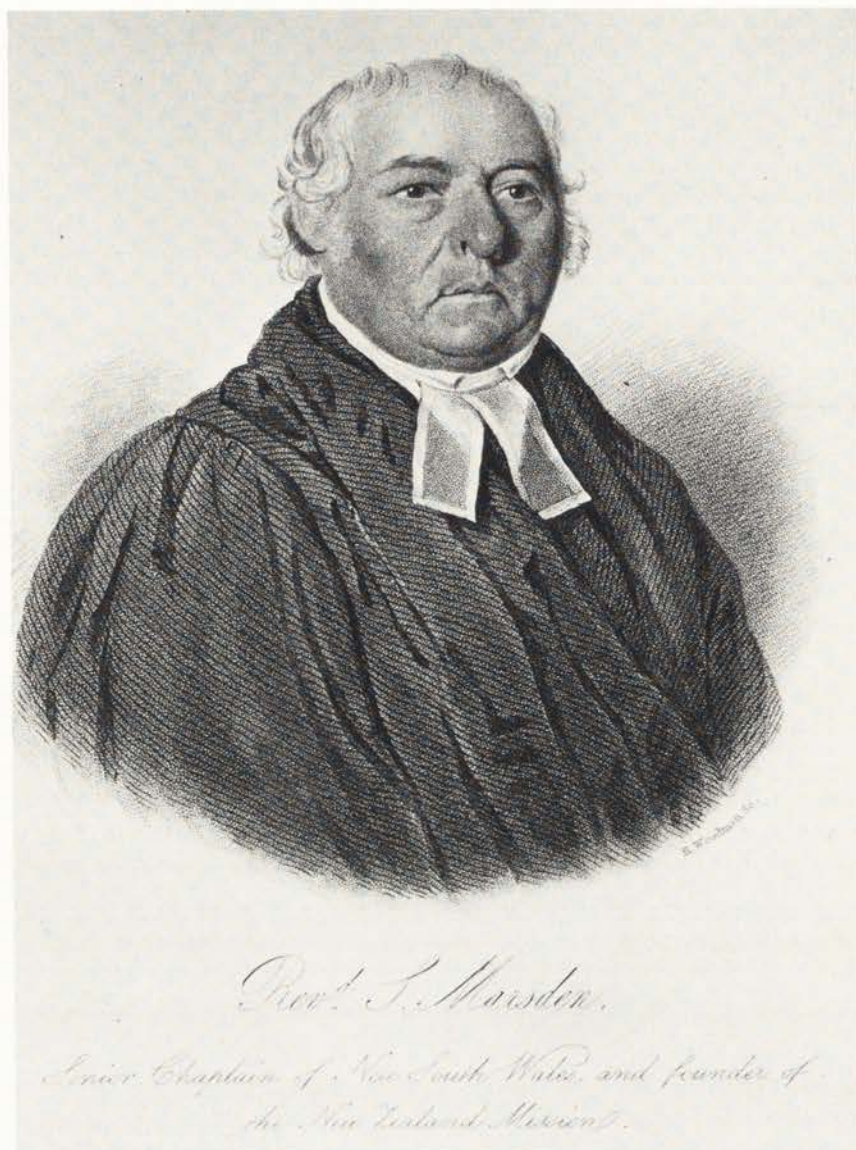
... in the spring of 1808 ... the Rev. Samuel Marsden returned to this country, and ... brought with him the first wool that ever came from the colony ... we went down to Park Mill, then employed by my brother Jeremiah and myself, under the firm of J. and W. Thompson ... he saw some Cheviot fleeces, and inquired their value, at the same time stating that he had brought over a small quantity of wool from the colony, but did not know its value. He offered the wool to me on condition I would pay the carriage down from London, make a piece of black cloth from the finest (no admixture), and let him have a suit, which I agreed to. The wool was sent down, about 10 or 12 stones [1 stone = 14 pounds], which was sorted, and about five stones of the finest sort made into a white cloth, then dyed black and finished, one-half of which, say about 20 yards, was sent to him in London.

The wool proved well, and made a cloth superior to his or my expectation; he had a suit made from it, and was so much pleased therewith as to visit King George III in it, who admired it very much, and expressed a wish to have a coat of the same cloth, which was at once readily granted.

His Majesty was so impressed with the importance of the wool of the colony that he gave orders for Mr. Marsden to have selected some of the best sheep from his flock of merinos at Windsor. They had a good deal of conversation about the colony, and His Majesty expressed a fear that they would not be able to make returns, when Mr. Marsden informed him that he thought wool would ultimately be a large return.¹⁶

A sample of cloth, presumed to be the cloth referred to above, is in the possession of Marsden's great-great-grandson, the Reverend R.E. Marsden of Cornwall. As the sample is undyed and unfinished it would have been sent to Marsden as it came from the loom. In spite of Marsden's condition of 'no admixture' the cloth is made from blended yarn with a strand of cotton through it. This may have been added to give extra strength to the wool so that it would stand the weaving process, or perhaps to make the small quantity go further. We can assume that there was no admixture of wool from any other source.

This sample of cloth, as well as two small samples of wool said to be from Marsden's fleeces of 1807, were located in England by Dr M.L. Ryder of the ARC Animal Breeding Research Organisation. One of the wool samples is fine and the



17 Samuel Marsden, the pioneer wool exporter

other is coarse. Ryder examined the specimens and made microscopic measurements of the fibres of the cloth and of the wool samples.

Marsden no doubt had chosen the finest and best of his fleeces to bring to England. Of this wool the millers selected half to make into cloth, and this half was again divided before spinning, the finest being spun for the weft and the remainder for the warp. The wool of course came from several sheep; thus its quality reflects the standard of the pick of Marsden's flocks, and not just the quality of a single animal. Ryder's examination confirms the mixed origin of Marsden's sheep.

The warp included some dark fibres, probably from a spotted fleece. As the cloth was to be dyed black this would have been quite acceptable. The average diameter of the weft fibres was 17.6 microns and of the warp fibres 19.7, equivalent to modern fine Merino wool. This provides yet another illustration of the remarkable improvement effected by crossing colonial double-fleeced sheep with the Spanish breed. Of the two wool samples referred to, the coarse sample was estimated by eye to measure 46 microns (coarse). A few similar fibres occurred in the weft of the cloth and in the 1807 fine-wool sample. Ryder considers that, on the basis of research he has done on the crossing of Merinos and the kempy, primitive Mouflon sheep, such fibres would be possible in crosses of Merino and Indian sheep owned by Marsden.¹⁷

The 1807 fine-wool sample, apart from the few coarse fibres, had an average diameter of 15.6 microns — superfine quality corresponding closely with the measurements of fibres from Macarthur wool of 1816 but slightly finer than 1980 samples from descendants of Camden Merinos. The recurrence of such similar measurements over such a long period indicates the strong heritability of the fine-wool character.

As we have seen, King George III had ordered that Marsden was to receive a gift of some Spanish sheep. During 1808 and 1809 some thousands of Spanish sheep of the Paular *cabana*, spoils of war from the Peninsular campaign, arrived in England. Sir Joseph Banks, on the King's behalf, arranged that Marsden should receive 5 ewes direct from one of the ships arrived at Portsmouth. So Marsden's 5 sheep were of the Paular strain and not Negrettis from the royal flock at Windsor. Marsden sailed for New South Wales with the sheep in the *Ann* in October 1809. The ewes were in lamb and 4 ewes and 2 ram lambs survived the passage to Sydney.¹⁸

Marsden was congratulated on the receipt of the Spanish sheep by his friend John Mason Good:

... I rejoice heartily in the success of your Merinos: the gift was worthy of the royal donor, and cannot fail to be of nearly as much value to the colony as to your self ... By cross breeds from these there can be no doubt that your wool, already so fine, will rival if not surpass the best wools in the world; and the soil and climate are so propitious.¹⁹

This faith in the efficacy of cross-breeds was a feature of contemporary beliefs concerning sheep breeding, as a big proportion of the most successful breeders used this method to improve their flocks. For example, Sir Joseph Banks told Sir

John Sinclair in January 1791 that a Cathness ewe gave 2 pounds of wool valued at 6d a pound; crossed with a Spanish ram the offspring gave 4 pounds worth 18d a pound.

On his return to New South Wales, Marsden was pleased to find that his affairs had been well looked after while he was away. He was now convinced that he could produce fine wool for sale in England.

On 2 December 1811 Marsden shipped by the *Admiral Gambier* (arriving in 1812) 4000 – 5000 pounds of wool, which must have been the whole of the wool clip from the 1810 shearing. This was the first commercial shipment of wool from Australia. In 1811 he wrote to John Stokes, a family friend in England:

By the Admiral Gambier I have sent to England 4,000 to 5,000 lbs of wool. This will be the beginning of the commerce of this new World. Many think nothing of these things now. They cannot see any advantage to be derived to them, their children, or this settlement by improving the fleeces of our Sheep. But I anticipate immense National wealth to spring from this source of Commerce in time ...

I have produced fleeces of very fine wool this year weighing $3\frac{1}{2}$ & 4 lb each. What can be done in one instance in this respect may in 10,000. The wars on the Continent of Europe must eventually open New Channels of Commerce. Spain may never recover her former greatness with respect to her wool ... What may be the state of their flocks at the close of the present contest we cannot tell.²⁰

On 25 June 1813 Marsden again wrote to the Stokes family by the *Minstrel*, which left on 6 July 1813 and on which Macarthur and Alexander Riley sent their commercial wool for the first time:

This will become a great country in time and the Wool will soon make a remittance to the mother country. I send home by this vessel more than 8,000 lb. The last I sent to England averaged 3/9d per lb. ... Our wool will be fine in time. I always foresaw that wool would be of vast importance to this settlement and have now convinced the farmers here so that they will now attend to their flocks.

He wrote again on 8 October the following year:

I have made great progress since my return in the improvement of my flocks. I have for years been convinced that the Wool would be the Gold mines of this Country and of vast natural importance and I trust a spirit of improvement will be excited through the farmers of this Colony to grow fine wool. We must have an export or the Settlement will never prosper.²¹

This was Marsden's last reference to wool in that series of letters. From 1814 missionary work in New Zealand claimed more of his attention and became the chief topic of his correspondence.

There are no details available of Marsden's management of his new royal sheep, which from about this period were called Merinos. Apparently some improvement in the wool derived from the new blood, but the improvement was perhaps disappointing. His sheep were now so numerous that the small infusion of new blood was soon diluted. His flocks were now predominantly Southdown,

and the cross of these with Merinos, we now know, is unsatisfactory for wool production.

The non-Merino strain in Marsden's flocks was referred to by Commissioner J.T. Bigge in 1820, who wrote of the flocks of the leading colonists:

The stock belonging to these gentlemen has been more or less derived from the best English breeds, with a slight and partial admixture of the Cape and Bengal; and in that of Mr. Marsden, the Suffolk breed has altogether predominated.²²

Bigge, ignorant of and gullible about agriculture, had evidently confused Marsden's Southdowns with the kindred Suffolk breed. His assertion that there was only a slight mixture of Cape and Bengal sheep in Marsden's flocks was wrong. Bigge wrote that 'Mr. Marsden has not been so successful as might have been expected'.²³ There was some truth in this but, in general, Bigge's opinion of the wool industry was of little value, as it was obtained mainly from John Macarthur, who used him in a plan to obtain further grants of land.

It has been noted that Marsden told the Stokes family that he had received an average price of 45d per pound for his first shipment of wool, after deducting the cost of scouring. The *Sydney Gazette* of 17 April 1813 said that he received 60d per pound. There is a conflict between these two statements, which has confused historians. First, the cost of scouring was high, considering that stale urine was the solvent used until the late nineteenth century, when soda was substituted.²⁴ Second, no manufacturer would pay a higher price for greasy wool than for scoured wool, as seems to be implied by these statements.

Wool is now generally sold as it comes from the sheep's back, as greasy wool, but the buyer fixes the price according to its fineness (which is not the issue here) and the amount of dirt and grease in it. At present greasy wool loses about 44 per cent of its weight in scouring, so that a manufacturer who offered, say, \$100 for 100 kilograms of greasy wool (\$1 a kilogram) would also give \$100 for the same wool when scoured (\$1.78 a kilogram, but for only 56 kilograms). The rational conclusion is that Marsden received a net price of 45d per pound on the weight of scoured wool, equal to about 20d a pound for the wool in the grease. This is the method by which Sir Joseph Banks sold the wool from King George's flocks.

The early colonists quoted a price for wool without specifying whether the price was for greasy, washed on the sheep, washed after shearing, or scoured. As their sheep were penned at night, the wool could easily contain 70 per cent dirt and grease if it were not washed or scoured. As a result, attempts to compare prices received by different growers are generally badly done. Macarthur complained about the price of 20d a pound he received for his first consignment in 1813 but, as he was selling about 70 per cent dirt and 30 per cent wool, it was not as bad as he thought it was. Alexander Riley received 30d a pound for badly washed wool and, as noted, Marsden was given 45d for scoured wool. Probably these prices were fairly similar in terms of scoured wool — the only thing the manufacturer can use.

Saxon sheep at first were washed before shearing, and Spanish wool after shearing. Both practices were gradually adopted in Australia, at first in washing sheep with cold water, which removed some dirt but no grease; next in warm

water, which removed dirt and some grease; and, finally, washing shorn wool in warmer water than could be borne by sheep. The last was the best, but care was needed to treat the wool gently, to stop it from felting. Further scouring was still required. Washing sheep in cold water is only marginally more intelligent than milking a cow by having one person hold the teats, while four more lift the animal up and down. Graziers generally now sell greasy wool, but it is far less dirty than the early wool.

Banks has given us the best information on the loss of weight in washing wool (before shearing and after) and the further loss in scouring. With his sheep the total loss was 56 per cent of the original weight of the wool: 20 per cent in washing and a further loss in scouring. This is comparatively high by modern standards.²⁵ As may be seen, European greasy wool at that time lost more than half its weight in scouring. Banks sold his wool scoured, so that the price he received is clear and intelligible — but this is true of few others.

On 6 July 1813, nineteen months after Marsden made his first consignment, he shipped more than 8000 pounds of wool from the next two clips. He has left no records of the prices he got for this or later shipments, and it seems that the wool was not sold in the usual manner. He returned to the arrangement he had made with Thompsons for his first barrel of wool. Commissioner Bigge wrote:

Mr. Marsden ... has been in the habit of transmitting his fine wool to England on his own account, & receiving Cloth in return for the use of his Family and Friends.²⁶

This arrangement was probably continued by Marsden and some other graziers because of its convenience. They could send the wool to England as it was shorn, leaving the Thompsons to organise the washing; they would not have to depend on London agents, and could receive quantities of good quality cloth, which was needed in the colony. It enabled them to avoid the trading monopolies of the 'exclusives'. However, in the early 1820s, Marsden began to send his wool for sale to the London wool brokers Donaldson, Wilkinson and Co. It was and still is the custom of wool brokers to write to their clients concerning the state of the market, the quality of their clip and ways in which improvements may be made. This relationship is such that the broker dispenses as much praise and as little criticism as possible. In December 1825 the brokers wrote to Marsden about his 1824 clip and suggested that he should buy some Saxon rams which were being imported by Richard Jones and Alexander Riley. They also suggested that some tenderness in the wool showed that the sheep should be better fed. Marsden took this advice and bought one or more of the Saxon rams imported by Alexander Riley in December 1825. Rams were usually mated in February and Marsden must have got rams before February 1826; he exhibited young Saxon sheep late in 1827. (Although the Saxons were Merinos, this latter term was used only for Spanish sheep which came to the colony by way of England.)

As the result of Marsden's new interest in wool, assisted no doubt by the more developed state of his farms, he was able to make better arrangements for the use of the Saxons than had been the case with his previous introductions of Spanish sheep. He was now a good judge of wool and he made a selection from his

flocks of the finest and most suitable ewes to be mated to the Saxons, and the results were very successful.

At the half-yearly meeting (show) of the Agricultural and Horticultural Society in October 1827, Marsden was awarded 'The Large Silver Medal' for the 5 second-best ewes, second to Riley's pure Saxons. Moreover, the judges drew particular attention to Marsden's wool, which combined 'extraordinary length of staple, with extreme smallness of fibre'.²⁷

On 4 December 1830 the *Sydney Gazette* published a letter from Marsden:

About two years ago I visited Raby, the estate of Alex. Riley, Esq. Some months previous to my visit, Mr. Riley had sent out a number of Saxon sheep. In passing through the sheep yard with Mr. Edward Riley [nephew of Alex. and manager of Raby], I observed a little weak male lamb which took my attention. The little wool which was upon it appeared of a superior quality and different character from any I had seen in the colony. I asked Mr. Riley if he would sell the lamb? He replied, its mother was dead, and it was so weak he thought it would die also. I replied, I would run the risk of its death, if he would sell it. Mr. Riley accepted my offer, and I purchased it, immediately put it into my chaise, and took it to my estate. With great attention, in a few months the lamb became strong and healthy; at an early age I put it into a small flock of select ewes, as I was afraid some accident would happen to it before I had any of its breed. The young ram continued to do well, and I have now upwards of 300 of his produce. He has only been shorn once; when the fleece came off, I had the same opinion of the superior quality of the wool that I formed when I purchased the lamb. In order to be satisfied upon this point I sent it to my agents, Messrs. Donaldson and Wilkinson, and requested that they would have it examined by proper judges in London: their report I now enclose; should you deem it of sufficient public interest to merit insertion in your paper, you have my sanction to do so.

I am, your most obedient Servant,
Samuel Marsden.

Parramatta, Dec. 1, 1830.

To the Rev. Samuel Marsden, New South Wales.

London, 53, Old Broad-street,
July 12th, 1830.

Dear Sir,

We have a most sincere pleasure in forwarding to you the enclosed document, as to the quality of the fleece of wool sent by you to us, under the kind care of our friend, Dr. Fairfowl; it has been very minutely inspected, and the result of the examination, by men of experience and judgment in wools, cannot fail to afford you and the colony the highest gratification. The softness and fineness of it are ascribed to your climate and pasturage, and shew what a favourable change is effected by them on even the finest of the Saxons. The improvement in your general numbers, will, with your usual attention and care, be rewarded by enhanced prices here. With the most sincere wishes for your health and prosperity, we are, dear Sir,

yours, most truly,
Donaldson, Wilkinson, & Co.

Certificate.

We, the principal wool-dealers and brokers in London, have, at the request of Messrs. Donaldson, Wilkinson, and Co. examined a fleece of New South Wales wool, recently received by those gentlemen from Sydney, by the ship *Sovereign*, Captain McKellar, and stated to be of the flock of Mr. Marsden, of that colony, of the clip 1829; and we declare it to be the softest and finest fleece of wool we have ever seen.

Then follow twenty signatures.

The following comments should be made on this correspondence. There is some confusion of dates; Marsden's visit to Raby must have taken place more than 'about two years ago'. The young ram would have performed valiantly to have sired 300 lambs at the age of 4 or 5 years, let alone 2. The date of the letter, December 1830, was five years after Riley's Saxon sheep arrived in the colony. It is probable that Marsden obtained the ram lamb from Riley in 1825 not 1828, as is implied by Marsden's letter to the *Gazette*.

The softness and fineness of the fleece were mentioned in that order in both Donaldson, Wilkinson and Co.'s letter and in the Certificate. More than any other quality the softness of the wools of New South Wales had attracted the attention of the English trade. As softness accompanies fineness, this is an indication that Marsden had fine-woolled sheep. This fleece apparently was soft to a remarkable degree. It seems that the Saxon sheep had been in the colony some time before Marsden got the lamb — which may not have been pure Saxon. Unusual variants are more likely to occur in mixed bred sheep than in those of pure descent. We have submitted that the softness of Australian wools is partly derived from the descent from double-fleeced sheep with fine underwool. The softness of this particular fleece would *not* have been the result of climate and pasturage, which would not be able to effect the change.

It would appear that by the late 1820s Marsden was a more than ordinarily good judge of wool. It would have been either a fluke or a most unusual achievement to assess the potential quality of a sheep's fleece from its appearance as a young lamb. On a lesser plane, Marsden was evidently competent to select from his sheep a small flock with superior fleeces.

In 1805 Marsden had described his methods of sheep breeding to Governor King:

The main Object I have constantly kept in view ... has been to Improve the Constitution of the Sheep, the weight of the Carcass, and the Quality of the Wool ... I have not always chosen a Ram with the finest Fleece to Breed from; any one that has appeared Deficient either in weight or Constitution has generally been rejected, though his Fleece might be of a Superior Quality.²⁸

After twenty-five years his policy had turned full circle, and to good purpose; he chose a weakling lamb with no claim to attention other than an unusual fleece. This sheep became a principal sire of his flocks, with 300 offspring to carry on its qualities — such qualities as impressed the wool trade of London. It may be said that, although Marsden's influence faded out, in the early years he did at least as

much for the wool industry as any other of the early wool growers. He was an observant farmer with, for his times, a sound knowledge of breeding; he sent the first commercial shipment of wool to England and foresaw that wool would become a valuable export. His influence on the wool industry was profound; he had over 9000 sheep when he died, although his interest in them had declined in his later years.

Although Marsden was justly praised for the fine Merino wool he produced, perhaps his most lasting claim to fame may come from the Cape and Bengal hairy sheep with which he started his flocks, and of which he said, 'a good flock of ewes with common care will yeal 3 times in 2 years ... and their produce will yeal at 18 months'. The CSIRO has collected a multiple-birth group of Merino sheep, established by the Seeers Brothers of Booroola, Cooma, within their Egelabra flock. It has suggested that, as the Egelabra stud can be traced back to the flocks of Samuel Marsden, they may carry genes for multiple birth derived from his Bengal sheep.²⁹

The unimportance of John Macarthur

The question usually asked about John Macarthur has been 'What did he do for his country?' As the answer is 'Very little, except to add to its store of myths', a more important question is 'What did his country do for him?' The answer is that it gave him a huge estate and convict labour to work it; provided a protected market at high prices for his products; made it easy for him and his fellow officers to obtain for a time a monopoly of the profitable import trade, because of their control of foreign exchange; and forgave conduct for which other people had been executed. It did not even require him (or anyone else) to pay income tax. His wife Elizabeth did a large part of the work for which he was rewarded. He was out of Australia for twelve years between 1801 and 1817 and was unfit for prolonged work when he returned. Several times he threatened to sell up and retire to England, and would have done so at least once if Elizabeth had not firmly rejected the idea. He almost managed to go bankrupt, as he was an amateur in both business and animal breeding. His great ability was in selling a series of glittering promises, none of which he fulfilled. He had a gift for telling his listeners what they wanted to hear — the modern name for this is 'confidence man'. The governors who had dealings with him detested him; the experts, such as Sir Joseph Banks, derided his claims. He was, indeed, the original lucky Australian, who rode on the back of sheep other people had imported — the ones he imported himself were of little value. A few hundred sheep, more or less descended from his flocks, are still in existence, but mainly add to the evidence that present Australian Merinos are not descended from them, except possibly indirectly and to a minor extent. His ideas on animal breeding were absurd or unoriginal.

Accolades are still being bestowed on Macarthur. His portrait is on our \$2 note, although history would be better served by replacing it with one of Governor King, who founded the woollen industry, or George and Frederick Peppin, as the descendants of their sheep are in the majority of Australian flocks. Few historians have spoken harshly about him or even questioned his veracity. Sibella Macarthur Onslow, in a work of family piety from which all effective criticism was excluded, described him as 'John Macarthur of Camden, New South Wales, who introduced the merino sheep into Australia and founded the Australian wool trade'.¹ Neither of these claims is true. Macarthur has even been

considered a champion of citizens' rights: E.O.G. Shann interpreted the contest between Governor Bligh and Macarthur as involving freedom of contract and enterprise.² This was a strange claim about one who owned little that had not been given to him by the government, was a notorious monopolist, and almost went bankrupt when he had to trade in open competition. Jill Conway was more cautious, saying 'During these eight years [1809-17] ... the wool of the Macarthur merino flocks managed to enter competitively into the British market and to establish the reputation of the colony ... as a centre for wool-growing' and Elizabeth 'lived to see ... the fulfilment of every one of her husband's predictions concerning the economic development of the colony'.³ Macarthur's wool did not enter the British market until 1813 and it was treated with contempt; total exports of wool from 1811 (when exporting began with a shipment by Marsden) to 1817 were about 120,000 pounds, insignificant in relation to both British production and imports. The most important prediction made by Macarthur was that the colony as he knew it (up to the Blue Mountains) would have 5 million Merino sheep in twenty years (1 million of them his own). This area was and is unsuitable for sheep and has never held more than about 2 per cent of that number.⁴ Macarthur had no knowledge, at that time, of the good sheep country over the mountains; he habitually exaggerated the number of his Merino sheep and did not realise their slow rate of reproduction.

The official biographer of Macarthur, M.H. Ellis, modestly claimed that Macarthur 'probably did the country greater material service than any other man in its annals'.⁵ But Macarthur did not import the first sheep, the first Merino, the first pure Merino (whatever meaning is given to that term); he was not the first to conceive of a wool industry or to establish it; he did not send to England either the first wool for testing or the first commercial shipment. His claim that he was the first to see the possibility of upgrading inferior sheep by crossing them with Merinos was absurd, as it was being practised in France in 1766, using sheep from France, England, Morocco and Tibet;⁶ King likewise observed this cross-breeding in the flocks of Colonel Gordon in 1796 and was a keen exponent of it. Other writers have emphasised the value of one of the sample fleeces Macarthur sent to England in their attempt to justify the high price he was seeking from the government for his flocks. Some also point to the high price he was paid for a bale of wool in 1821 and the gold medals he received the next year. The charges made by Banks against him have been dismissed on the ground that he disliked Macarthur — he did, but on substantial, not personal grounds. A more effective method has been used to deal with the charges of criminal conduct made by Dr H.V. Evatt: historians have not felt competent to rebut the accusations; they have simply ignored them. These claims and counter-claims will be considered more fully when it is established how and why Macarthur entered the wool industry.

The main factors which affected the career of John Macarthur in New South Wales had begun to operate before he reached the colony. The first was the use of influence to advance his career, used to obtain an ensign's commission for him when he was 15 years old. At the age of 21 he became a lieutenant in the New South Wales Corps, which had been enlisted for duty in Botany Bay. This body was formidable to those it was supposed to protect, but not to its country's

enemies; its officers devoted their main energies to enriching themselves by any available methods, and dealing ruthlessly with anyone, including governors, who opposed them.

On the way to the colony in the Second Fleet, Macarthur quarrelled with the master of his ship and went to shore to fight a duel with him, leaving a pregnant wife and child on board while he did so. His main complaint was that convicts were taking up space he required for his family. It is true that conditions were harsh for Elizabeth, but they were worse for the convicts. Of about 1000 embarked 30 per cent died and 52 per cent were landed seriously ill. There is no record that either of the Macarthurs expressed any sympathy for the sufferings of the convicts. As Evatt commented, 'He was without scruple and without pity. Except in the case of his own family, I see not a trace of compassion for others evidenced in any of his letters or acts.'⁷ During the voyage Macarthur became ill with what was called rheumatic fever and 'every sense was lost and every faculty but life destroyed'.⁸ Whether this sickness was a symptom of the insanity for which he was eventually confined is of interest to this work only to the extent that it affected his ability to conduct his business. Certainly, after he returned in 1817 from his second exile, the main burden of the enterprise fell on Elizabeth and the children.

When John and Elizabeth and son Edward arrived in Sydney in 1790 the only domestic livestock in the colony consisted of pigs, poultry and goats. Sheep brought in the First Fleet had died and the cattle had strayed. The experience of the officers of the First Fleet, who had lost heavily from their investments in livestock bought at the Cape of Good Hope, most of which had died, would not have encouraged Macarthur to get involved in sheep breeding. It is from Elizabeth that we have the earliest surviving Macarthur comments on agricultural matters: nine months after their arrival in Sydney she wrote to her mother, 'We have not attempted anything in the farming way. Our neighbours succeed so badly, that we are not encouraged to follow their example.'⁹ Evidently the Macarthurs had contemplated some form of agriculture but only if it were a sound business proposition.

A cargo of sheep from India which was destined to be one of the most important flocks in the development of Australian sheep arrived in Australia on the *Shah Hormuzear* in 1793. Several officers had invested in it but not Macarthur, possibly because he was in debt at the time;¹⁰ later, he bought sheep from this flock. During this time he concentrated on his army career, as his pay gave him the funds he needed to engage in trade, which was his main interest for many years. Elizabeth Macarthur wrote that at the end of 1792 he 'had a handsome addition to his income by having the payment of a Company, and transacting the business of Paymaster to the Regiment'.¹¹ This was of great importance, as it gave him access to British funds, which he was able to invest in goods for sale in Australia, thus gaining an advantage over his fellow officers. About the same time, Major Francis Grose, who since Captain Phillip's departure in December 1792 had taken over the government of the colony, had appointed Macarthur Inspector of Public Works. As the duties of this office included the assignment of convicts, Macarthur had the opportunity of selecting his own assignees.



18 Elizabeth Macarthur

Mrs Macarthur's letter continued:

The Major has also given us a grant of 100 acres of land on the banks of the river close to the town of Parramatta. It is some of the best ground that has been discovered, and 10 men are allowed us for the purpose of clearing and cultivating it.

The grant, located on the south side of the creek leading to Parramatta and on the west side of Tipperary farm, was dated 12 February 1793 and on it Macarthur built his house, 'Elizabeth Farm'.¹² A year later he was granted a further 100 acres adjoining his first grant and he bought some smaller farms from settlers.

In August 1794 Macarthur wrote a letter to his brother James, part of which Mrs Macarthur transcribed:

The changes that we have undergone since the departure of Governor Phillip are so great and extraordinary that to recite them all might create some suspicion of their truth. From a state of desponding poverty and threatened famine that this settlement should be raised to its present aspect in so short a time is scarcely credible ... I have a farm containing nearly 250 acres, of which upwards of 100 are under cultivation, and the greater part of the remainder is cleared of the timber which grows upon it. Of this year's produce I have sold £400 worth, and I have now remaining in my Granaries upwards of 1,800 bushels of corn. I have at this moment 20 acres of fine wheat growing, and 80 acres prepared for Indian corn and potatoes, with which it will be planted in less than a month.

My stock consists of a horse, 2 mares, 2 cows, 130 goats, upwards of 100 hogs. Poultry of all kinds I have in the greatest abundance ...

This farm being near the Barracks, I can without difficulty attend to the duties of my profession.¹³

This letter, written in 1794, makes no mention of sheep, yet we have argued (in Chapter 2) that Macarthur got his first sheep from Captain Nicholas Nepean in 1793. There are other references to the subject which are contradictory. Nine years later, in 1803, Macarthur stated that half his sheep had been raised from 30 ewes he had bought in 1793 out of a ship from India.¹⁴ In 1804 he told a Committee of the Privy Council, 'in 1801, his flocks consisted of more than two thousand sheep, the whole of which had been bred from about fifty ewes in little more than seven years'. This may mean the ewes he had bought from Nepean in 1793 and Joseph Foveaux in 1801, or more likely is another example of his careless use of figures when he was seeking a concession.¹⁵ Nineteen years later, in writing to his son John, then in England, he said, 'I had purchased 30 Bengal Ewes in the year 1793'.¹⁶ However, in 1820 in evidence before Commissioner J.T. Bigge he stated: 'In the year 1794, I purchased from an officer Sixty Bengal Ewes and Lambs, which had been imported from Calcutta.'¹⁷ Macarthur was notably unreliable in his evidence to Bigge, who unwisely considered him 'a touchstone of truth'.

The omission of sheep from Macarthur's letter in 1794 may have been accidental either in the original letter or in Mrs Macarthur's transcription. On the other hand it may have been intentional. The silence surrounding Captain William Bampton's importation of Bengal sheep had not yet been broken and Macarthur may well have thought it would be unwise to mention Indian sheep in a letter to England which might come under the notice of someone in authority.

This minor discrepancy is being dealt with at some length to show that considerable caution must be used in accepting many of Macarthur's statements, particularly when they refer to events which took place many years previously. In this case there is further evidence (the rapid increase of his flocks) which supports 1793 as the date when he bought the Indian sheep. Apart from 3 Irish sheep, Macarthur bought no others before 1797, so when he wrote to Governor John Hunter on 15 August 1796 that his livestock included 298 sheep, the rise in numbers must have been from natural increase alone. This increase appears extraordinary, but it was comparable with other increases recorded in the colony at that time.

Rowland Hassall gave an example of rapid increase:

The Revd. Mr. Marsden, about 26 Months ago, was good enough to let my Daughter Mary have a small Bengal Ewe in Exchange for a Wether Sheep, And at this date the said Ewe ha[d] increased to Eight in Number, and they are some of the best and healthiest Sheep in the Flock.

George Hall said that his flock of 77 sheep

in three Years ha[d] increased [from] eight Ewes heavy in Lamb.¹⁸

Governor King wrote:

The General Idea at that time was that if the Flocks were taken care of, they would contrive to treble their numbers in Two Years.¹⁹

Such rates of increase show that Macarthur with his good management could have had 298 sheep in 1796, the descendants of 30 ewes and their lambs purchased in 1793, but it is most unlikely that such a number could have been achieved by then from such a purchase in 1794. This all supports the contention that Macarthur got his Bengal sheep direct from Captain Nepean in about September 1793.

While sheep numbers were small, individual farmers would run all their sheep — ewes, rams and wethers — in a single flock, for one shepherd could conveniently care for 150 to 200 sheep. With rams continually running with the ewes, lambs would be born at any time of the year, and the Bengal ewes, with ample pasture at their disposal, would lamb twice in the year. However, as sheep numbers increased, it became desirable to control the lambing to a more orderly routine. The sheep would be divided into two flocks, one made up of rams and wethers and the other of ewes. (A third flock for lambs after they were weaned would be a further step.) The rams would be put with the ewe flock at such a time that the lambs would be born in the early spring, when they and their mothers would have the advantage of the best of pasture.

On 15 August 1796 Macarthur had written to Hunter stating that, as proof that he was not 'merely a speculative farmer', he had 60 acres of land already sown with wheat and 10 acres in gardens and vineyards, with 71 acres prepared for the sowing of Indian corn and potatoes. He went on to mention that his stock consisted of 'fourteen cows, five oxen, eight mares, two hundred and ninety-eight sheep, one hundred and sixty-two goats, fifty breeding sows, and upwards of one hundred growing pigs'.

Just four days after his previous letter Macarthur again wrote to Hunter:

Since I stated to your Excellency the number of my live stock I have had a very astonishing increase, and as I have still reason to expect the same success, it is absolutely necessary for me to erect a variety of additional buildings.²⁰

The date, then the middle of August, is significant. It is about the time that Macarthur would have chosen for a spring lambing and his obvious surprise at the 'astonishing increase' suggests a higher proportion of twins than usual. (Even the Bengal ewes would not often have had twins if they were mated while still suckling a lamb.) Macarthur's obvious surprise also suggests that he had not had such a lambing before — that this was the first year he had had a regulated lambing. He had almost 300 sheep and such a number would have justified the division of his sheep into more than one flock.

The reference to buildings is worth noting. Sheep nowadays are not often provided with shelter sheds, although losses from bad weather, particularly during lambing, are sometimes heavy. However sheep are now seldom run on the coastal fringe, where prolonged periods of rainfall sometimes occur. Governor Hunter stated:

I have known it rain violently for a week. We always housed our Sheep. Captain Macarthur made an experiment of keeping his Sheep out, but he lost a good many by it.²¹

It was only by providing sheds that Macarthur was able to carry on a successful sheep enterprise under the conditions of the coastal climate. That very success fully justified his policy of providing 'large and roomy sheds and buildings for sheltering the stock'.²² This expedient was necessary and possible only while he had a small number of sheep and they were kept in the high rainfall area.

In his 1820 evidence before Commissioner Bigge, Macarthur stated that soon after his purchase of the Bengal lambs and ewes

I procured ... from the Captain of a Transport from Ireland, two Irish Ewes and a young Ram. The Indian Sheep produced coarse hair, and the Wool of the Irish Sheep was then valued at only 9d. a lb. By crossing the two breeds, I had the satisfaction to see the Lambs of the Indian Ewes, bear a mingled fleece of hair and wool — This event originated the idea of producing fine wool in New South Wales.²³

A coarse-woolled sheep with little hair, such as the Irish sheep, could be expected to reduce the hair in the offspring of a single-coated sheep. However it was not until more than twenty years later that Macarthur made this claim. There is no evidence that he had any interest in wool at the time of purchase. In 1796 he sent to the Duke of Portland a paper which suggests 'grazing animals' had no purpose other than to produce meat.²⁴ Similarly there is no indication of an interest in wool in the following extract from a letter written in 1798 by Elizabeth to her friend Miss Kingdon in England:

Our stock of cattle is large; we have now fifty head, a dozen horses, and about a thousand sheep.

You may conclude from this that we kill mutton, but hitherto we have not been so extravagant. Next year, Mr Macarthur tells me, we may begin.²⁵

By this time (1798) Macarthur may have been taking some interest in Spanish wool, not Irish, but it would appear Elizabeth knew nothing of this. Perhaps Macarthur refrained from enlivening the family with details of his farm management, although the family were soon to be left to work the farms. Whatever the success of this crossing of Irish and Bengal sheep, Macarthur did not persist with it — possibly because it did not take place in the way he claimed.

An alternative suggestion is that Macarthur had little interest in wool before he was sent to England by Governor King in 1801 to face a court martial on a charge of wounding his commanding officer, William Paterson, in a duel. The previous year he had written to King:

I have determined to dispose of my live stock of horses, horned cattle and sheep ... and if ... the preservation of this stock for the purpose of breeding will be of advantage to the colony, I shall be very happy to dispose of the whole, with my farms, for the sum of four thousand pounds ...²⁶

King had favoured purchase but in November 1801 he referred the latest offer to his superiors, as he considered the price asked for the sheep, £2 10s each, and the terms unreasonable, particularly as half the flock consisted of sheep which Macarthur had recently bought from Foveaux at £2 each, with a farm thrown in.²⁷ The day after Macarthur first offered the sheep, he sent a further letter to King, which was found among the Sutro Library Banks papers.

You may be assured, Sir, that I shall pay particular attention to keep the entire Spanish breed of sheep pure and unmixed, and if the wool should prove, on examination, in England, of equal fineness as the wool purchased from Spain, I shall feel the highest gratification in having been so fortunate (although in a small degree) as to contribute to the foundation of a trade which may promote the prosperity of the colony, and [be] of some benefit to the wool manufacturers of Great Britain.²⁸

This must be considered in the context in which it was written. It was a letter that supplemented the earlier one, the purpose of which was to get a good price for the sheep he proposed to sell to the government. It is probable that the fleeces he sent to England through King to Banks served the same purpose. Firstly Macarthur reiterates his intention to keep the entire Spanish breed pure. This suggests large numbers of Spanish sheep among his flocks and reflects his belief in the 'male dominance' theory. Next it shows that Macarthur was not yet a sure judge of fine wool: he wanted confirmation from England.

This letter is consistent with Macarthur's letter of the previous day. In no way does it suggest a change of intention in offering his sheep for sale to the government; rather it is a further development of the offer.

It would seem that, stimulated by the wish to enhance the prospects of the sale of his sheep, late on 30 September 1800 there came to John Macarthur the vision of a future Australian wool trade. Though he expressed this vision in his letter to Governor King, beyond that it appears that he kept his thought to himself, for, as was seen, even his wife Elizabeth was unaware of his dreams. Thus there is a further contradiction in that Macarthur was claiming to undertake a long-range plan to improve the breed of his sheep with Spanish blood and, at the same time, was proposing to sell out and leave the colony.

Macarthur got his first Spanish sheep in 1797. We have seen in Chapter 4 how Captains Waterhouse and Kent landed about 13 Spanish sheep from the Cape, described by everyone who spoke of them as cross-bred. The exact number Macarthur bought is uncertain; his own accounts vary from 2 rams and 4 ewes to 3 rams and 5 ewes, and these accounts imply that he got them all soon after Waterhouse landed.²⁹ This is certainly untrue, as Waterhouse stated that he 'took pains to disperse them'.³⁰ Considering the number of persons to whom they were dispersed, there were not enough for Macarthur to have bought more than 3 from both captains. He got more when Waterhouse left the colony in 1800 and 'sold the flock to Mr. Cox, the Paymaster, with the exception of a few to Captain McArthur'. E. W. Cox has stated that 'the few' comprised one ram and 5 ewes.³¹ Macarthur has left no record of this later acquisition, and it would seem that whatever number of Spanish sheep he got from the Cape included those he received in both 1797 and 1800. It should be noted that these sheep were cross-bred. In addition, almost all the sheep he owned in 1800 were hairy Indian or Cape sheep, and his main farming business then and for many years was the sale of mutton and livestock.

While most of the colonists had no systematic breeding plan and crossed their various breeds of sheep indiscriminately, Macarthur kept some of his early Spanish sheep separate. The stud (as we would now call it) remained at Elizabeth Farm, Parramatta for twenty years.³² However the ewe lambs born there ran with the general ewe-lamb flock, making it possible for confusion between the select ewes and the cross-bred ewes to arise. However, his policy of a separate stud was followed by his sons William and James when they took over the management of the flocks. Macarthur did breed some cross-bred sheep, partly because at that time he subscribed to a widely held but fallacious theory of breeding, called male dominance, in which it was believed that the offspring of a Merino ram and a hairy sheep were pure Merinos. He called these cross-bred sheep 'pure'.

The early progress of colonial flocks may be traced from sample fleeces which were sent to England. Two different collections were sent to England, and Macarthur claimed that he took a third lot when he went to England in 1801. The first, from an unknown source, was taken by Hunter, reaching Deptford on 8 October 1800. Henry Lacocke, the wool classer, reported to Banks on 10 December 1800, 'the hairey wool is but little worth'. This is not surprising, as there were only a few grown offspring of the Spanish sheep in the colony at the time the fleeces were collected.³³

The second collection, 8 fleeces from Macarthur's flock, was sent home by King to Banks, to help the government decide whether to buy Macarthur's sheep. Lacocke delivered a report to Banks in September 1802, which was printed in the

Sydney Gazette on 26 March 1803 (see Appendix A). Of the 8 fleeces, Lacocke estimated 3 were worth valuing, the best being worth 5s scoured (equivalent in terms of greasy wool to about the 20d a pound Macarthur received ten years later for his first commercial shipment). Lacocke marked the difference between a fleece from a ewe imported from Ireland, with coarse wool, and one from a hairy Bengal ewe. Banks made a cool appraisal of these fleeces in a report for a Committee of the Privy Council:

... I have some time ago been acquainted with the fact of Spanish Stock of the Merino breed having been introduced into that Country [New South Wales]: they were originally procured from Spain by Col. Gordon, who imported them into the Cape of good Hope, & purchased of his widow, I think, by Capt. Waterhouse of H.M. Navy, who carried them from thence to Port Jackson.

I have seen fleeces of this kind of Sheep imported from New South Wales, the quality of which was equal to Spanish wools of the Second or 3rd. rate Piles. But I have not seen any equal to the best piles of old Spain.³⁴

To this time Macarthur had little to boast about. He had bought a few Merinos, imported from the Cape, and he had crossed these with the hairy sheep of the colony, the offspring of which, for reasons he did not understand, gave good wool.

Macarthur claimed that he took further samples of fleeces with him when he left for England in 1801, but this is unlikely. Before he left the colony he tried to sell all his animals and he could not have been certain that he would be permitted to return. The report on the samples he sent had not been received before he left, but it was available before he claimed to have had an additional set examined in England. He did not submit these alleged fleeces to an expert, but merely claimed that he had shown them to manufacturers, who said they were equal to the very best England had ever received from Spain. These men were not cross-examined and they submitted no expert evidence. A report was circulated in a newspaper that one fleece was worth 6s a pound.³⁵ If these fleeces existed, they would not have been more valuable than those submitted to Banks, which had been chosen to help Macarthur get the best price for his sheep. Banks speculated in 1806 that scoured wool from New South Wales might one day be worth 6s a pound.³⁶

The manufacturers had their own reasons for supporting Macarthur's claims and would have been reluctant to challenge any statement he made. A wise precaution in dealing with assertions made by Macarthur is not to accept them unless they are supported by disinterested witnesses. He claimed that unlimited quantities of wool for export could be produced, but did not export any for another ten years, continuing to rely on the sale of mutton and live sheep. His object in making these claims was to obtain grants of lands. He was successful, as the Macarthur family ended with 60,000 acres of the best land in the colony and later a further million acres in a company controlled by them. After he had obtained the land, it became apparent that animal husbandry was the most profitable industry for large landowners with convict labour. Naturally his flocks became the biggest in the colony.

Macarthur was in England at an opportune time. The introduction of machinery was displacing skilled workers, who had rioted in 1792 because their

places were taken by those who had not served a seven years' apprenticeship. This was a breach of an Act passed in the reign of Queen Elizabeth.³⁷ The unrest was increased by the return of soldiers from the army and a depression in 1801–02.

Manufacturers petitioned Parliament for the repeal of restrictive practices, arguing that employment in the cotton industry, for which there was unlimited raw material, had increased because of a growth in exports. A Bill in 1803 to do this was defeated in the House of Lords. The evidence required was that an ample supply of wool was available, so that the wool industry might expand in the same way as the cotton industry had done. This evidence was hard to obtain, as farmers in Britain were finding it more profitable to produce mutton to feed the growing population than to breed for fine wool.³⁸

It was thus desirable to present evidence of an abundant supply of wool within the Empire, and this Macarthur and the manufacturers collaborated to produce. The prize for the manufacturers would be the passing of the Bill which would free them from the necessity of employing only those who had passed an apprenticeship; for Macarthur, it would be the thing for which he was willing to concoct any necessary story, the grant of a large tract of land.

This is Macarthur's story when he was giving evidence at the court martial of Colonel George Johnston in 1811:

... some of the most eminent manufacturers of woollen cloth in England saw by accident some specimens of the wool I had raised in New South Wales, its quality was so fine that it induced them to find me out, and to make particular enquiries how and in what manner this wool had been raised.

On my communicating to them all I knew upon the subject they expressed a decided opinion that the colony of New Holland might with proper encouragement be enabled in time to supply the woollen manufacturers of this country with the whole quantity of fine wool which was then with great difficulty obtained from Spain.³⁹

If these specimens were the ones which had been sent to Banks, the story Macarthur told the manufacturers was not based on the expert opinion Banks had given. Macarthur's statement does not indicate that he already believed in the commercial export of colonial wool but rather that he was prepared to accept such a possibility. The manufacturers induced him to deliver to Lord Hobart's office a *Statement of the Improvement and Progress of the Breed of Fine Woolled Sheep in New South Wales*, which he did within a week.⁴⁰ His story lost nothing in the telling:

The Samples of Wool brought from New South Wales, having excited the particular attention of the Merchants and principal English Manufacturers, Captain McArthur considers it his Duty respectfully to represent to His Majesty's Ministers, that he has found from an experience of many years, the Climate of New South Wales is peculiarly adapted to the increase of fine woolled Sheep; and that from the unlimited extent of luxuriant Pastures with which that Country abounds, Millions of those valuable Animals may be raised in a few years, with but little expence than the Hire of a few Shepherds.

The Specimens of Wool that Captain McArthur has with him, have been inspected by the best Judges of Wool in this Kingdom, and they are of opinion that it possesses a softness superior to any of the Wools of Spain and that it certainly is equal in every valuable property to the very best that is to be obtained from thence.

The Sheep producing this fine wool are of the Spanish kind, sent originally from Holland to the Cape of Good Hope, and taken from thence to Port Jackson.

Captain McArthur being persuaded that the propagation of those Animals would be of the utmost Consequence to this Country procured in 1797 three Rams and Five Ewes; and he has since had the Satisfaction to see them rapidly increase, their Fleeces augment in Weight, and the Wool very visibly improve in Quality. When Captain McArthur left Port Jackson in 1801, the heaviest that had then been shorn, weighed only Three pounds and a half: but he has received Reports of 1802, from which he learns that the Fleeces of his Sheep were increased to Five pounds each; and that the Wool is finer and softer than the Wool of the preceding year. The Fleece of one of the Sheep originally imported from the Cape of Good Hope, has been valued here at Four shillings and sixpence per pound, and a Fleece of the same kind bred in New South Wales is estimated at six shillings a pound.

Being once in possession of this valuable Breed, and having ascertained that they improved in that Climate he became anxious to extend them as much as possible! he therefore crossed all the mixed bred Ewes of which his Flocks were composed, with Spanish Rams. The Lambs produced from this Cross were much improved but when they were again crossed, the change far exceeded his most sanguine Expectations. In four Crosses he is of opinion no Distinction will be perceptible between the pure and the mixed Breed. As a proof of the extraordinary and rapid Improvement of his Flocks, Captain McArthur has exhibited the Fleece of a Coarse Woolled Ewe that has been valued at Ninepence a pound, and the Fleece of her Lamb begotten by a Spanish Ram, which is allowed to be worth Three shillings a pound.

Captain McArthur has now about Four Thousand Sheep amongst which there are no Rams but of the Spanish Breed. He calculates that they will with proper care double themselves every Two Years and a half, and that in Twenty Years they will be so increased as to produce as much fine Wool as is now imported from Spain and other Countries at an Annual Expence of One Million eight hundred Thousand pounds Sterling. To make the principle perfectly plain upon which Captain McArthur founds this Expectation he begs to state that half his Flock has been raised from Thirty Ewes purchased in 1793 out of a Ship from India and from about eight or ten Spanish and Irish Sheep purchased since. The other half of his Flock were obtained in 1801 by purchases from an Officer [Foveaux] who had raised them in the same time, and from about the same Number of Ewes that Captain McArthur commenced with. This Statement proves that the Sheep have hitherto multiplied more rapidly than it is calculated they will do in future: but this is attributed to the first Ewes being of a more prolific kind than the Spanish Sheep are found to be: for since Captain McArthur has directed his attention to that Breed he has observed the Ewes do not so often produce double Lambs ...

Captain McArthur is so convinced of the practicability of supplying this Country with any quantity of fine Wool it may require, that he is earnestly solicitous to prosecute this as it appears to him important Object, and on his Return to New South Wales to devote his whole Attention to accelerate its complete Attainment. All the risk attendant on the Undertaking he will cheerfully bear. He will require no pecuniary Aid — and all the Encouragement he humbly solicits for, is the protection of Government, permission to occupy a sufficient Track of unoccupied Lands to feed his Flocks, and the Indulgence of selecting from amongst the Convicts such Men for Shepherds as may from their previous occupations know something of the Business.

Macarthur gave some additional points on breeding policy in his evidence before a Committee of the Privy Council in 1804.

The Sheep I first began to Breed from were of the Bengal Race, weighing about 6 lbs. per Quarter. I improved these by Rams, obtained from a Cross between the Cape Ewe and some Rams of the Spanish Breed. I cannot ascertain the particular Breed of the Rams, I afterwards obtained a number of Ewes of the Cape Breed [from Colonel Foveaux]; and these I continued to cross with Rams bearing Wool, by this means I obtained, which I conceived to be a fine Breed of Spanish Sheep — and bred as many of this pure Breed, as possible, and Crossed all the Ewes bearing coarse Wool, or being of the hairy sort, with Rams of this Spanish Breed.⁴¹

(It is worth noting that 6 pounds per quarter is the dressed weight of a carcase, i.e. the carcase of Macarthur's Bengal sheep weighed 24 pounds, which indicates a live weight of about 50 pounds or much less than half the weight of most modern Merinos.) It is also unlikely that the ewes he bought from Foveaux were of the Cape breed; they were almost certainly a cross of Cape and Bengal sheep.

Here then is Macarthur's own statement of the beliefs regarding cross-breeding which he held at that time, the current belief in the 'male dominance' theory. He had crossed Cape ewes with Spanish rams and the resulting progeny were in appearance much more like Spanish than Cape sheep and so, according to his belief, were Spanish. But he went a stage further; when rams and ewes of this cross were mated together he obtained what he described as a *pure* breed of Spanish sheep.

This may seem fanciful to us nowadays with our better understanding of genetic principles (which were first discovered by Gregor Mendel in 1865 but had no effect until they were rediscovered in 1900), but in Macarthur's day such beliefs were widely held. This approach to cross-breeding shows the contradiction in Macarthur's claim to pure descent for the sheep in his Spanish stud. Certainly many of the rams he sold as pure were cross-bred. Years later as the result of experience he was to revise his beliefs on cross-breeding, and he wrote of other graziers:

The practice is to breed from their own cross bred Rams by which means after their sheep are arrived at a certain point of improvement they degenerate again.⁴²

It is clear from this evidence that Macarthur had little knowledge of the qualities of either Spanish or hairy sheep and his ideas about animal breeding were primitive, even for that period. More serious were his reckless claims of his capacity to supply wool to England if only he were given land and convicts. The big increase of his flocks resulted from the high proportion of hairy sheep in them, and he doubled his numbers by buying the flock of Foveaux, also hairy sheep. His assumption that two crosses of a Merino with hairy sheep would make all the offspring pure Merinos was absurd, as was the claim that his sheep were yielding 5 pounds of wool. In his lifetime they did not yield more than half that amount. The claims that he procured 8 Spanish sheep in 1797 and that the fleece of one of his sheep was worth 6s a pound (even for scoured wool) were both untrue. Perhaps he was unaware that the climate and pastures of New South Wales (as he knew it) were not 'peculiarly adapted to the increase of fine woolled Sheep', but he had been in the colony long enough to be cautious of such extreme statements. His most reckless claim was that in twenty years the colony's flocks would produce as

much wool as was then imported by Britain. This amounted to 8 million pounds, and the Camden Plain has never produced a fraction of this amount. Granted that the British government was glad to hear this, the extent of their ignorance of the colony is shown by the fact that they treated this claim seriously, in defiance of the expert evidence of Banks. A further claim was that Macarthur was the only one in the colony to pay any attention to wool, whereas his knowledge of sheep breeding was inferior to that of Marsden, who produced better wool in the early years.

Macarthur had claimed that all he wanted was government permission to occupy a sufficient tract of unoccupied land and to be given some convict labour. Banks said:

... I am not inclined to advise their Lordships to recommend any special encouragement to be given at present, either by grants of land or the sending out of Shepherds, to a prospect which as yet is a mere theoretical Speculation, unsupported by any decisive evidence in its favor.⁴³

The Committee of the Privy Council made recommendations to the Earl of Camden which took account of the views of both Banks and Macarthur.

The Lords of the Committee think it right to observe that a conditional grant of lands of a reasonable extent may be perhaps with safety granted to Mr. McArthur for the pasturage of sheep only, or to other persons, provided a power be reserved in such grant to resume the same at any future period on giving other land further distant from the cultivated land of the colony ... and that such conditional grant would not cramp the cultivation of the colony.⁴⁴

The Committee further recommended that an unconditional grant could not be endorsed, as Governor King had not been consulted. Camden exceeded this recommendation and, without reference to King, instructed him to grant to Macarthur in perpetuity 5000 acres situated near Mount Taurus and to indulge him with thirty convicts.⁴⁵ Macarthur had told the Committee that 'he should most cheerfully proceed in the business upon receiving a Conditional Grant ... such Grant to be resumable' and that he 'would choose the Land Ten miles from any of the Settlements where there is Cultivation'.⁴⁶ The land he received from Camden was occupied by government cattle, was wanted by a succession of governors for closer settlement, and was not resumable. Twenty years later Macarthur claimed Camden had promised him a further 5000 acres but, as will be seen, the evidence is against this.

This enormous gift was obtained by reason of a carefully cultivated friendship with Camden and his secretary. On his way home to England in 1801 Macarthur met Sir Robert Farquhar, who was in charge of an expedition attacking Amboyna (East Indies), which was going badly. Macarthur's advice for Farquhar to attack with all his strength was accepted and led to success. Farquhar's father was physician to the Prince of Wales (later George IV) and a relative was private secretary to Camden, who early in 1804 succeeded Lord Hobart as Secretary of State for War and Colonies. The friendship was fostered by gifts of birds and animals, as John jnr reported from London, 'The two emues arrived safe, and were presented to Lady Castlereagh, and one swan and a goose

lived, which were given to Lady Camden'.⁴⁷ Woollen cloth and valuable maps were given to politicians and public servants. Gifts were not lavished on those without influence, as Macarthur later wrote to John, 'I see no necessity for more presents, unless it be two or three Coats at the Colonial Office.' In any case Camden gave the land to Macarthur, who reciprocated by bringing Walter Davidson, a nephew of Farquhar, back to Australia, where he received a grant of 2000 acres at the Cowpastures.

King was angry when Macarthur gave him a letter from Camden instructing him to grant the land chosen by Macarthur. He deferred carrying out the instruction and asked that a different site be selected. He was peremptorily ordered to carry out his instructions and did so without further struggle, as he was looking forward to retirement. He had previously recorded his opinion of Macarthur:

[Macarthur's] employment during the eleven years he has been here has been that of making a large fortune, helping his brother officers to make small ones (mostly at the publick expence), and sewing discord and strife.⁴⁸

The next Governor, Bligh, also complained about this grant to Viscount Castlereagh, who had succeeded Camden. Castlereagh replied:

It is impossible for me at this distance to judge of the inexpediency of the grant to Mr. McArthur of lands on the western side of the Nepean, and what detriment may arise from limiting the extent of range in which the wild cattle feed. He will, I should hope, readily acquiesce in accepting lands in another direction equally profitable for the feeding of his flocks.⁴⁹

Far from agreeing to Castlereagh's suggestion, Macarthur sought revenge for the attempt to thwart his plan. At the court martial of George Johnston, Johnston supported a story by Macarthur that in 1808 Bligh had said to him:

What have I [to] do with your sheep, Sir? What have I to do with your cattle? Are you to have such flocks of sheep and such herds of cattle as no man ever heard of before? — No, sir! ... I have heard of your concerns, sir; you have got 5,000 acres of land, Sir, in the finest situation in the country, but, by G—d, you shan't keep it! ... D—n the Privy Council, and d—n the Secretary of State, too; he commands at home, I command here.⁵⁰

It is such a good story that most historians have given it an uncritical welcome, but it is unlikely that it is true. Nothing was heard of it until three years after the alleged event; Macarthur said nothing about it immediately after the rebellion, when the most reckless charges were being made against Bligh. It was put forward by Johnston (found guilty of mutiny) and supported by Major Edward Abbott (implicated in the mutiny). The purpose was to prejudice Bligh in the eyes of the soldiers who comprised the Court. It was denied in Court by Bligh, who said:

... I disavow the charge in the strongest manner ... I may not have been so smooth at all times in my life, that when a person has come suddenly upon me with some

importunate request ... I had no power to grant, I may not have said, 'Damn it, get out of the way' ... but as to uttering anything disrespectful or in contempt of the Secretary of State or the Privy Council, when I at the same time held a commission under His Majesty's Government, and entertained at all times so high a respect for them, I cannot persuade myself I ever did.⁵¹

It is not true that Bligh was opposed to the development of the wool industry, as Macarthur asserted. In a despatch in 1807 he said, 'Our utmost exertions must likewise be to Agriculture to supply the shipping, and the collateral advantages of a Wool Trade will then be supported by competent means'.⁵² It was merely that he was aware that the mutton industry was more important than the tiny wool industry at that time and that Macarthur had received a gift of 5000 acres because of his words, not deeds. Governors King, Bligh and later Macquarie and Brisbane all complained in the strongest terms about the gifts of land at the Cowpastures to Macarthur, because it was procured through influence in England, in a way that interfered with the orderly development of the colony, for which they were responsible.

On 15 August 1804, only a few days after Macarthur heard of Camden's decision to make him a grant of land in New South Wales, an auction sale of Merino sheep from the flock of King George III was held at Kew. The King, with Sir Joseph Banks as his personal and technical adviser, had undertaken 'A Project for Extending the Breed of Fine Woolled Spanish Sheep, now in the possession of his Majesty, into all parts of Great Britain, where the Growth of Fine Cloathing Wools is found to be profitable',⁵³ and this was the first public sale of surplus sheep from the royal flock in furtherance of the project. Macarthur attended the sale, at which a total of 30 rams and 14 ewes were offered. The proportion of rams to ewes showed that the main intention was to upgrade existing flocks by the use of Merino rams, with some scope for a few small pure-bred flocks. Macarthur bought 7 rams and 3 aged ewes 'warranted to have good bags' at a total cost of £150 1s;⁵⁴ one died before loading, and others died before they were able to enter his flock, which received 4 rams and one aged ewe.

These 5 sheep are the ones on which Macarthur based his claim to have a pure-bred flock, as he and most of his contemporaries agreed that the Cape Merinos were cross-bred, as does his biographer, Ellis. It would have taken many years to build up a pure-bred flock from 4 rams and one aged ewe; in fact, Macarthur did not use these sheep in his stud, as their wool was too coarse. The King's flock had been assembled under the direction of Banks, who did not let scruples stand in the way of carrying out government policy. He hired agents to smuggle sheep (presumably stolen) from Spain, both capital offences at the time and giving no guarantee of the purity or quality of the sheep. Banks might well have said, 'We are all sheep stealers now.' He also received a present of some sheep from Louis-Jean-Marie Daubenton, a Frenchman who was put in charge of the French royal stud in 1766 and who has good claims to be regarded as the first scientific animal breeder in Europe, as he built a flock by cross-breeding and selection. This was the method used by William Farrer in breeding wheats in Australia, but he was surprised to find in later life that he was acting in accordance with the science of genetics, which was not known during his early career. Banks

also received sheep from the Spanish ambassador. These sheep were run with other breeds, so that the King's flock contained cross-breds, as Banks recognised. After the defeat of Spain in 1808 thousands of Merinos were scattered throughout the world, in an operation which may well be described as 'looting'. Many of these went to England but they soon fell out of favour as the climate was not suitable for

C A P. III.

An act against carrying over sea, rams, lambs or sheep alive.

FOR sundry good causes and considerations moved in this high court of parliament, be it enacted by the authority of the same, That no manner of person or persons, of what estate, degree or condition soever he or they be, shall after the last day of February next ensuing, bring, deliver, send, receive or take, or procure to be brought, delivered, sent or received, into any ship or bottom, any rams, sheep or lambs or any manner of other kind of sheep, being alive, to be carried and conveyed out of this realm of England, Wales or Ireland, or out of any the Queen's highness dominions; (2) upon the pain that every such person or persons, their aiders, abettors, procurers and comforters, shall for his or their first offence or offences, so done contrary to the true meaning of this statute, forfeit and lose all his goods for ever; whereof the one moiety shall be to the Queen's majesty, her heirs and successors, the other moiety to him or them that will sue for the same in any court of record, wherein no esoin, protection nor wager of law for the defendant shall be admitted or allowed.

Penalty for conveying of any sheep alive out of this realm.
3 Inst. 104.

II. And further, every such offender or offenders shall suffer

3 Inst. 46.

imprisonment by the space of one whole year, without bail and mainprize, and at the year's end shall in some open market-town, in the fulness of the market on the market-day, have his left-hand cut off, and that to be nailed up in the openest place of such market: (2) and that every person or persons estfoons offending against this statute shall be adjudged a felon, and shall suffer death as in cases of felony.

The second offence felony.

III. Provided always, That this act shall not extend to any corruption of blood, or be prejudicial or hurtful to any woman claiming dower by or from any such offender or offenders; any thing in this act to the contrary notwithstanding.

No corruption of blood or forfeiture of dower.

IV. And be it further enacted by the authority aforesaid, That the justices of *oyer and terminer*, justices of gaol-delivery, and justices of peace in every county and shire within this realm of England and Wales, and other the Queen's majesty's dominions, shall have full power and authority by virtue of this act, to enquire of every offender and offenders contrary to the form and effect of this act, and to hear and determine every offence and offences committed, perpetrated and done contrary to the form and effect of the same, according to the course of the laws of this realm. 3 H. 6. c. 2.

What justices may hear and determine the offences aforesaid.

19 The Statute Anno Octavo Elizabethae (1565), from a collection of the Acts passed in the reign of Queen Elizabeth I. Acts providing similar drastic punishment were passed in 1425 and 1530. An amended Act of 1788 removed only the threat of capital punishment, so that John Macarthur risked heavy penalties for exporting live sheep from England.

them and the demand was for big, mutton sheep. Some of the descendants of the post-1808 influx to England were later exported to Australia, generally as cross-breds. In any case, Macarthur was not concerned about purity of breed; he started with cross-bred sheep and then inbred them for generations, managing to get the worst of both worlds, and ending with a flock that was laughed at by other breeders in his children's lifetime.

Macarthur had a further difficulty in transporting to Australia the sheep he had bought from the King. As Banks reminded him, this was contrary to an Act passed in 1788 (against the strong lobbying of Banks), the latest in a long series of Acts which made it a capital offence to transport live sheep from England. The Wool Act (28 Geo. III, c.38) reads:

Any person or persons whatsoever who shall from after the passing of this Act bring deliver send receive or take or cause or procure to be brought delivered sent received or taken in any vessel any rams sheep or lambs of any sort or description whatsoever of the breed of the Kingdom of the United Kingdom or the Isles being alive to be carried out of the said Kingdom shall be guilty of an offence.

This seems to be watertight, especially as it does not have a provision, as many modern Acts do (and a few at that time also) to allow the Minister to grant exemptions in certain circumstances, and Camden advised Macarthur so. According to the story, Macarthur, a non-lawyer, was able to instruct Camden in the interpretation of an important Act for which Camden was responsible.

'But how is it to be got over?' said Lord Camden. 'Very simply, my Lord, by a Treasury Warrant,' replied my father. 'To be sure,' said his Lordship, 'I ought to have thought of that without being told.'⁵⁵

If this story is true, it suggests that not only did the British acquire an empire in a fit of absentmindedness but they also governed it in the same way. The supreme law was to help a friend, not to protect the safety of the State, as the Romans had thought.

Whether this was good or bad law, Camden wrote to Treasury:

Mr. McArthur has procured in this country, and proposes to take out with him, seven rams and two ewes of the Spanish race, and has applied to me for a dispensation for that purpose. I am therefore to desire that your Lordships will receive His Majesty's pleasure for issuing such directions as may be necessary thereupon.⁵⁶

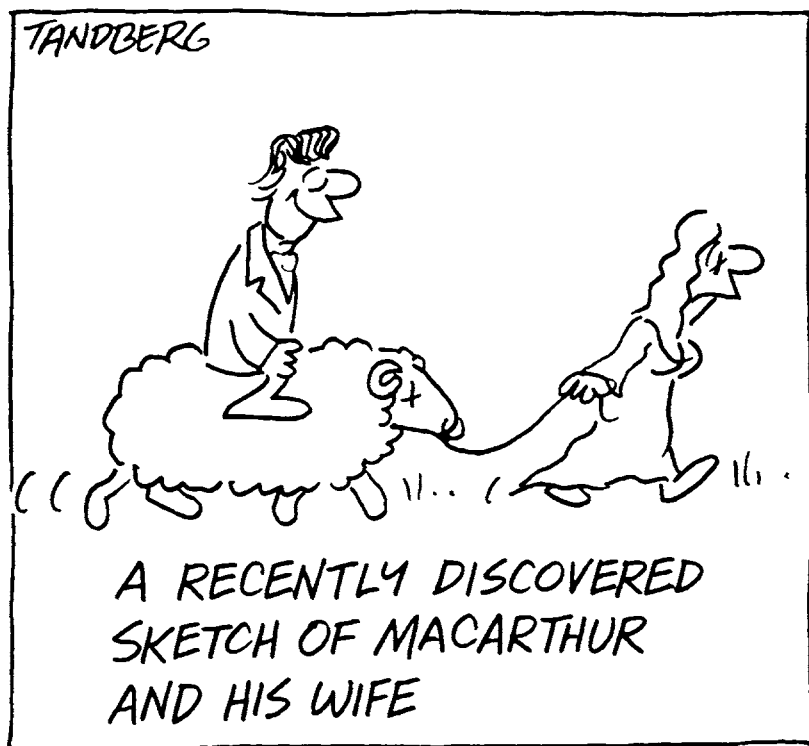
Governor King recalled a time when Macarthur had insisted on a stricter interpretation of Acts.

In a conversation between Mr Macarthur and myself ... [h]e introduced the subject of some counsel's opinion of the illegality of all local Regulations, and that no Order or Regulation given by a Governor could be binding or legal unless sanctioned by an Act of Parliament.⁵⁷

Macarthur sailed for Sydney at the end of November 1804 in a ship of which he was part owner and which he had renamed the *Argo* and adorned with the semblance of a golden fleece as a figurehead. The scene seemed set for a big expansion of the wool industry, as he had obtained the land, convicts and sheep he said he needed to bring this about. Then a great silence descended and little was heard about wool until after his second exile, although he had the satisfaction on his first return of making a quick killing in mutton, after floods in the Hawkesbury had drowned 4000 pigs and washed away the unthreshed grain.

Macarthur went into exile again in 1809, as a result of his part in deposing Governor Bligh, and remained in England until 1817. Several times he expressed a wish to stay there and would have done so but for the firm opposition of Elizabeth. But his keenness to remain had another aspect. Castlereagh had instructed Governor Macquarie that, if on his arrival in the colony sworn information were available, he was to try Macarthur before the Criminal Court.⁵⁸ A series of fortunate accidents saved Macarthur. He was out of the colony by the time Macquarie arrived there, and when he reached England Castlereagh had been succeeded as Secretary of State for War and Colonies by the milder Earl of Liverpool. Consideration was given to whether Macarthur should be tried in England

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for treason, the levying of war against the King in his realm. Legal opinion was against this, as the colony was not the King's realm but part of his dominion.⁵⁹

He could, however, be tried within the colony. Evatt's judgment is:

he was safe only while he remained in England, and it is almost certain that he received legal advice that, if he returned to New South Wales, he would do so with a noose around his neck; whereas, if he was arrested in England merely for the purpose of being sent to New South Wales for trial, he could obtain his release by habeas corpus, there being no Statute in the nature of the modern Fugitive Offenders Acts providing for the rendition to the colony of offenders against its laws.⁶⁰

Eventually the British government became willing to refrain from pressing charges against him and to allow him to return to the colony, providing he did not take part in public affairs. The patience of the Secretary of the Colonies was severely tried by Macarthur's insistence that he would not accept a pardon that implied he had ever been guilty of an offence. With the aid of friends a form of words was found that made it possible for him to return. His irrational behaviour and continued ill health in England made it probable that he would not be able to undertake sustained work in sheep breeding when he returned, and so it proved.

The hollow triumph of the Macarthurs

When John Macarthur returned to the colony in September 1817, with his sons James and William, his losses from speculation during his period of exile had forced him to the conclusion that wool offered the best hope of making a fortune. He came back unwillingly, as he had hoped to gain the financial independence that would enable him to cut his ties with the colony. Elizabeth had no such illusions and refused to leave the property which she had managed on her own for so long.

When he returned, his health was shattered and there was little place for him in day-to-day management, which Elizabeth continued to control with the growing help of her two sons, until they took over full responsibility. The wool for which Macarthur received medals in 1821 came from sheep which Elizabeth had bred, with the substantial help of the convict shepherds. William became the stock manager, teaching himself wool classing, with the help of paid experts, and James became the accountant.¹ John jnr sent from London descriptions of Spanish and German methods of preparing wool. Macarthur snr occupied himself in planning the work at which he had few peers, that of acquiring land from the government and selling what he called his pure-bred sheep at a high price. He had received from the government 5850 acres by the time of his return; his constant aim was to enlarge this.²

From 1812 to 1816 the trading speculations of Macarthur were uniformly disastrous, so that he wrote to his friend Walter Davidson in 1818: 'not even your kind offer of support and assistance could tempt me to engage in any adventure. Would to God I had always entertained the same sentiments'.³

In New South Wales it was a period of depression, there had been drought, prices of stock had fallen and professional traders had entered the market, making conditions different from the time Macarthur and his military friends had a near monopoly of trade. By this time he had decided that wool offered the best prospects. This was true enough for one with cheap land and labour, but was based on wartime prices, soon to be followed by depression. Like many salesmen he sometimes believed his own stories, as when he wrote to Elizabeth in 1812: 'we may calculate as upon a certain thing that Wool of the quality of our most improved kind will sell for a Guinea a Fleece'.⁴ As a warning to all who bet upon a

'certain thing', none of his wool ever reached this price (the highest price he received was for a selected part of the fleece).

By 1818 he was gloomy about his prospects in writing to Davidson:

My feeble attempt to introduce Merino Sheep still creeps on almost unheeded ... altho' mine is the only flock from which they can be had pure, I do not sell half a score a year.⁵

Nevertheless Macarthur planned to use sheep to obtain land. Before he left England in 1817 he asked his son John to make his wool known to government officials (who moved in the same circles as politicians), as part of a long-term strategy. On 5 March 1818 John wrote from London to his mother at Parramatta:

When the wool by the *Lord Melville* arrives I will do all I can to engage him [Henry Goulburn] to interest himself and Lord Bathurst in our behalf by forwarding to him samples, specimens of the cloth manufactured from it.⁶

In February 1820 Macarthur wrote from Parramatta to John:

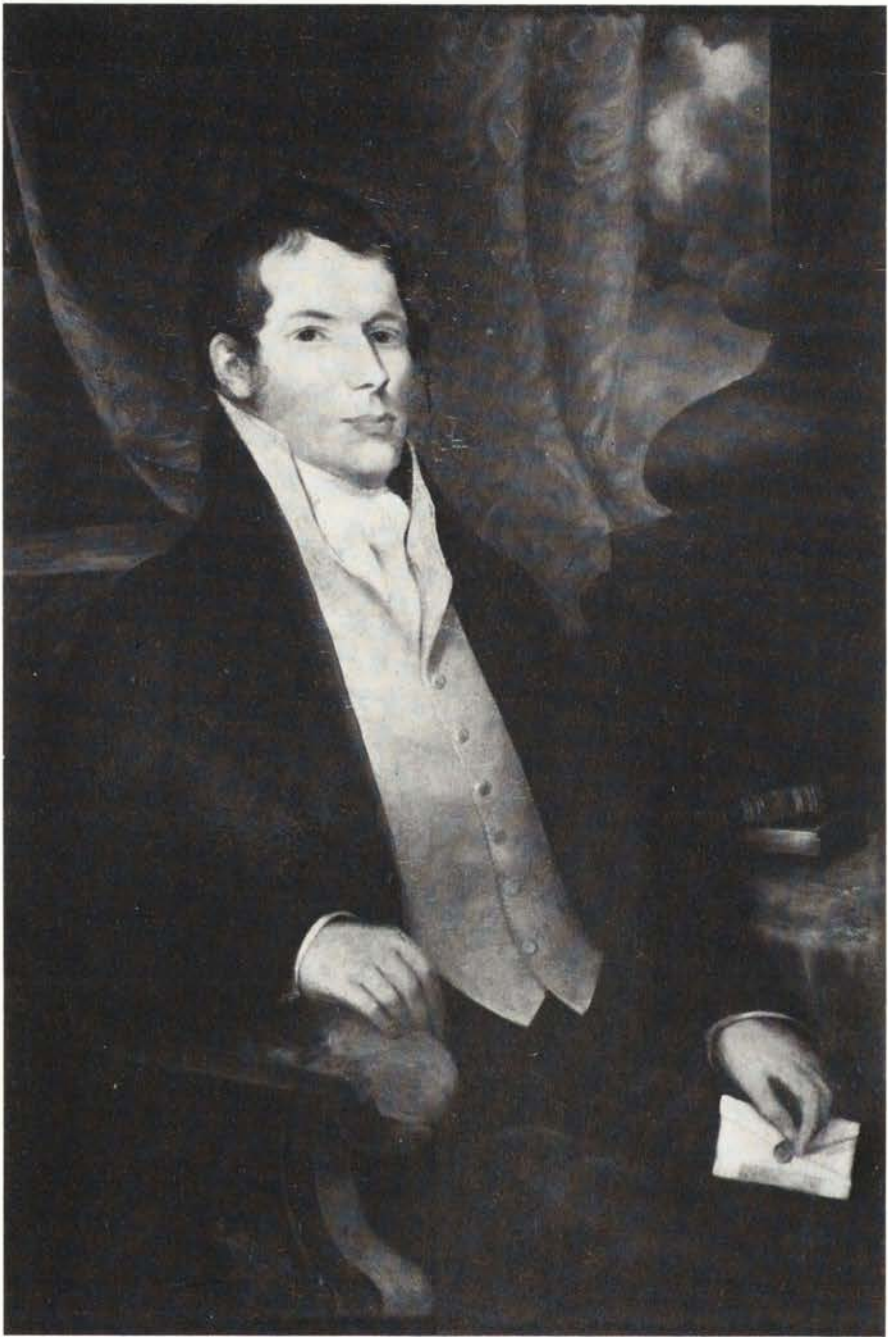
We are all much pleased with our Coats — the quality of the cloth, I think cannot be exceeded, and I am well satisfied with what you have done in distributing Coats — but let it stop there I see no necessity for more presents, unless it be two or three Coats at the Colonial Office — where, notwithstanding Mr. Watson Taylor's opinion to the contrary, I think it would have been prudent to have sent some at first.⁷

The historical record has been enriched by these cloaks made to the order of John, as they give us evidence of the fineness of the wool produced by Macarthur's sheep. Some were distributed in England, others were sent to Sydney for the family. One of them is now in the possession of the Narrandera and Sturt Historical Society. This is part of the H.O. Lethbridge collection, which was donated in 1940, labelled

Remains of Hunting Jacket
Believed to have been made from the first bale
of wool produced by John Macarthur.

The cloak was not made from Macarthur's first bale of wool, which was sent to England in 1813, but from wool of the 1816 shearing. It is in tatters but the quality of the fabric is still evident. A sample of this was sent to the Textile Research and Testing Department, Gordon Institute of Technology, Geelong, which measured the fibres. The average fibre diameter of the warp is 16.5 microns, of the weft 16 microns; this is wool of superfine quality.

The bale of wool from which the fleeces were taken cannot be identified, but from a study of the history of the Parramatta flock, we believe the wool could have come only from the stud ewes which were descendants of the original Cape Merinos. A flock of sheep, which are descendants of the Camden Merinos, in 1979 produced wool of 19 microns, fine wool but coarser than the Narrandera cloak. The average yield was more than 1.5 kilograms, compared with 1 kilogram



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produced by Macarthur's flocks, probably because of some cross-breeding and selection over the years.

The fine quality of this wool prompts the question of what happened to King George's sheep. From the time Macarthur brought them to the colony in 1805, he made few references to them, except to claim he had pure Merinos, and it is on these sheep that his claim must be based. This may have been because he found their wool was not as fine as that of the Cape Merinos. He could not easily claim that his original Merinos, whose cross-breeding he acknowledged, were superior to the famous sheep of King George. He must have used the sheep from King George's flock only in his general flocks, as they would have coarsened the wool of the stud flock if they had been used in it. Samples of wool from King George's flock have been preserved at Windsor Castle and have been measured both by H.B. Carter⁸ and M.L. Ryder. The average fibre diameter for the sires used in the flock was 23 microns, and 2 of the probable sires of the rams bought by Macarthur, Old Snags and Young Snags, conformed to this. The wool taken from them as tegs (eighteen months old), which give the finest wool, and before the flush of spring feed (which may coarsen wool a little) was just under 23 microns. This is medium to medium strong Merino wool.

Macarthur's only reference to the two strains of Merinos in his flocks is contained in the report he submitted to Governor King.

The fine-Woolled Sheep imported here from the Cape of Good Hope in the Year 1797 were said to be of the Spanish Breed. The Excellence of the Fleece of these Sheep, combined with the Consideration of their peculiar form, bears strong Evidence in favour of the Correctness of this Report, tho' it is impossible to say whether they originally Sprung from the best kind of Sheep that is bred in Spain. Be this as it may, nothing is better established than that the Wool of this breed of Sheep has considerably improved in this Climate; and as Mr McArthur has had the good Fortune to bring out from England four Rams and one Ewe, purchased from His Majesty's Flock of Spanish Sheep, It is to be hoped that these valuable Animals will be the cause of a still further Melioration in the Quality of our Wool.⁹

The difference between the two strains of sheep was described sixty-one years later (1866) by Sir William Macarthur.

The original, and (as we believe) the finest-woolled merinos, were imported from the Cape in 1797 ... In 1804 my father purchased, at the annual sale of George III's merinos at Kew, several ewes and rams. These he successfully introduced. I have always understood them to have been of a somewhat different type from the originals, with more dewlap and darker fleeces on the outside, very close woolled, and less fine.¹⁰

The records of individual sheep of the Camden stud about 1830 contain no descriptions which readily correspond to this, although some close-woolled sheep appear.¹¹

There is no possibility that the direct descendants of the Negretti sheep which Macarthur bought from King George would ever produce wool as fine as that in the Narrandera cloak. It is probable that William Macarthur noted the

absence of the Negretti sheep from the stud and their presence in the general flock and suspected the reason. The myth of the royal descent of the Macarthur sheep served John Macarthur well, as his claim for land grants was based on his assertion that he needed large areas to keep his pure sheep free from contamination. This is not to say that the future of the wool industry lay with sheep that produced superfine wool. Such wool is now only about 2 per cent of the clip, the bulk of which comes, ironically enough, from sheep with coarser wool of 23 microns — like those Macarthur discarded. One of the most pernicious of the myths he propagated is that the best sheep are those with the finest wool, irrespective of its quantity. This myth has survived only amongst those writers who do not have to pay their grocers from the proceeds of wool from the sheep they praise.

By 1818 the outlook for Macarthur was gloomy, with commercial failure behind him and little profit from his sheep, which had yielded only a small quantity of wool fit for export, insignificant in quantity and quality on the British market. As noted, in writing to Davidson, he said he could not sell many of his sheep, although he claimed they were pure, which was untrue.

From this unpromising state of affairs Macarthur was to become the largest landowner in the colony in the 1820s and to receive two gold medals for his services to the wool industry. This temporary triumph was soon followed by a long and terminal decline. There was left behind only the ownership of the land and a wide collection of myths, but with no Macarthur family involvement in the wool industry.

His plan for recovering his fortune is outlined with cynical clarity in a letter he wrote to John jnr in 1820.¹² It depended primarily on going over the heads of the colonial governors, and trading on his influence with British officials, who would have been ignorant of colonial conditions and indifferent to his record. The first part of the plan was to revive a request he first made to Governor Hunter, to whom he applied for 100 convicts, promising 'to supply them with bread', not mentioning until later that he expected the government to supply meat, clothes, tools and equipment for them. When Hunter refused, Macarthur wrote a colourful account to the Duke of Portland, claiming his offer would have saved the government a large sum of money.¹³ He boasted to friends he would destroy the Governor's career, as he also did later in conflicts with King, Bligh, Macquarie and Brisbane. When the matter was referred to Hunter, he pointed out that he did not have 100 convicts to spare and Macarthur could supply a convict with 2 pounds of bread a day for 5d, but would save 55d on the going rate for labourers.¹⁴

In 1820 Macarthur widened his claim by offering full keep for the convicts, who would produce wool that would pay for the colony's imports and also eliminate the need for England to import wool from Spain. The plan was to get both land and convicts. He first asked for 50,000 acres and then revived a claim for a second 5000 acres at the Cowpastures that the Earl of Camden was alleged to have promised him in 1804.¹⁵ Sixteen years is a long time in the life of a politician and Camden was then safely dead. Macarthur had not told anyone of the alleged gift at the time or written down such an important matter. In particular, he did not mention it to King when he returned in triumph in 1805, although this would have added to the humiliation of King, in which he exulted.¹⁶ Evatt's opinion is that it is unlikely that such a promise was made and, in any case,

the failure of a party to assert the existence of a promise at a time when it was to his interest and necessary for his protection to do so, is usually regarded by legal tribunals as being practically decisive against him.¹⁷

The plan also depended on Macarthur's ability to manipulate John Thomas Bigge, who had been given a royal commission on 5 January 1819 to investigate the colony of New South Wales, with a view to increasing the terror of transportation and making the colony less expensive for the British government.¹⁸ He arrived in Sydney on 26 September 1819, visited country areas of New South Wales (and later Van Diemen's Land) and sent a questionnaire to selected farmers to elicit their opinions about the best means of using convict labour. The questions were designed to suggest the replies he wanted. For example, the first question was:

Have you observed and are you of opinion that Agricultural Occupations in their most extended sense afford better means of employing Convicts and have a greater tendency to reform them than any other species of Labour?¹⁹

Bigge left the colony in 1821: his first report was printed on 19 June 1822; the second on 2 February 1823; the third, on agriculture and trade, was printed on 4 July 1823.²⁰

While in the colony Bigge sent his secretary, T.H. Scott, to interview Macarthur, who was still under instructions not to take part in public affairs. He also saw Macarthur informally several times and accepted the use of two of his most valuable horses. Each knew something of the other, as John jnr had called on Bigge in England and also spoke to a parliamentary committee as a means of making known his father's plans for the colony.

Macarthur wrote to John about his meeting with Bigge:

The Commissioner ... is not inattentive to externals ... and bestrides his prancing Arab with no little satisfaction ... In the course of conversation with the Commissioner he has three or four times touched generally upon the affairs of the Colony and I could easily discover that the opinions I expressed upon these occasions were in conformity to his own altho' he affected to think differently, evidently with the design of drawing me out, in which ... neither he nor the Secretary have ever succeeded beyond the point I had previously prescribed to myself.²¹

The point of agreement was that Bigge had to find a way of reducing the expense to the British government of running the colony. As he explained formally to Macarthur:

I want evidence to show that the Government may be relieved from the heavy expense which this Colony creates, and, at present I have received none. If I do not I shall be under the necessity of reporting unfavourably and recommending that no more convicts may be sent here.²²

Macarthur had already prepared another way of impressing Bigge.

About a year ago I took a favorable moment when I thought His Excellency [Macquarie] disposed to be a little friendly to recommend that he would adopt some

measures to patronise the increase of Fine Woolled Sheep ... I however could no further succeed than to prevail upon him to write to Lt. Governor Sorell to enquire if such an attempt would be acceptable to the Settlers in Van Diemen's Land. The Lt. Governor ... wrote me a very handsome letter of thanks ... I replied in polite terms ... This produced another letter from Governor Sorell ... and a notification from His Excellency that ... the settlers at Van Diemen's Land were desirous to be supplied with my Rams.²³

Governor Macquarie bought 300 ram lambs, which he said were from the only pure Merino stock in the colony, and advised Sorell on 8 March 1820 that they were being embarked that day. They were bought from Macarthur for £5 5s each and were to be paid for in land at 7s 6d an acre. Only 181 survived, 135 of them going to the Derwent and 46 to Port Dalrymple. The deal was to be concluded under instructions from Earl Bathurst, Secretary of State for War and Colonies, by the grant of 4368 acres of land in the Cowpastures.²⁴ This was some of the best land in the colony and adjoined land that Davidson had sold at £4 an acre to Macarthur.

As this large grant of land and most similar ones depended critically on Macarthur's claim that he needed a large area to ensure that his pure sheep were not contaminated by inferior ones, it is necessary to examine the alleged purity of his Merinos (and whether it would have been a good thing if they had been pure).

When Macarthur returned to New South Wales in 1805, he claimed (on doubtful evidence) to have 60 pure Merino sheep. In 1813 the stud flock had 92 ewes, 4 rams and 34 ram lambs. In 1819 the stud book listed 124 ewes. In evidence to Bigge he said he had 6800 sheep in 1821 (only 2500 more than in 1805), of which 300 were pure Merinos, which he said seldom had more than one lamb a year.²⁵ There were thus not 300 rams available from the stud flock to sell to Tasmania and, in fact, these were obtained from 327 ram lambs from the cross-bred flock, left uncassrated. These were to upgrade the local hairy sheep, but he did not warn the buyers, in the light of his experience, of the problem of trying to do this with cross-bred rams. He told Bigge, who had seen these sheep in Tasmania, that he would have 3000 ewes in 1821, all fine enough to breed from — an exaggerated claim.

Incontrovertible evidence of the extent of cross-bred sheep in Macarthur's flocks is provided by two invoices sent from London wool merchants, covering his shipments of wool received there in 1827 and 1829. These are the only ones that have been found and give details that do not appear in any colonial records or in the sale catalogues or account sales. They correspond, so that it is necessary to consider only that of 1827. Besides showing the usual first, second and third classes (and sometimes fourth) and the sex of the sheep, the wool is also described for colour, shown as white, grey, greyish or dark. Of 60 bales of fleece wool, 27 were white, 20 were grey, 4 greyish and 5 dark. No colour was given for 4 bales. In the absence of statements of the colour of New South Wales wool it has been believed that it was generally white, which now appears not to have been the case. The original Indian and Cape sheep from which the colony's flocks derived were of various colours, and as there had been no culling of ewes the flocks could not have been otherwise. Macarthur's stud was all of white sheep and the only progress towards eliminating coloured sheep in his cross-bred flocks was in the

use of white rams. As the sheep were normally of mixed colours the matter was not mentioned. It may be noted that there are references to 'dark Parramatta cloth', which must have been made from dark coloured wool.

In these two invoices from London which describe the colour of the wool there is no reference to black wool. No reference to black sheep occurs in the stock returns until the end of 1817, again synchronising with Macarthur's return to the colony. At that time 40 black lambs are shown to have been taken out of the main lamb flocks and put with the sale sheep. In the shearing returns for 1818 one bale of mixed wool contained black fleeces, and in the sheep return for December 1819 there were 38 black wethers in one flock. After that time there is no mention of black sheep or wool and it must be assumed that black sheep from then on would have been slaughtered without being shorn (a practice that is often adopted nowadays when occasional black sheep occur) so that there would be no contamination of white fleeces by black fleeces.²⁶

The number of black sheep in Macarthur's flocks is informative. The 40 lambs in 1817 from a total of 1350 is 3 per cent, and the 38 wethers in 1819 suggests at least the same proportion. This is far higher than the proverbial one black sheep in every flock. There were so many grey and dark sheep that they could not be culled without seriously reducing the number of breeding ewes. Macarthur accepted this, as he drew the line only at black sheep.

As noted, Bigge was not the only one who was deceived by the claim that Macarthur's sheep were pure bred (or the even more serious claim that such sheep are the best), as similar illusions were held by Macquarie and Bathurst. Bigge's ignorance of this subject may be forgiven, as he did not claim to know anything about agriculture, but his poor standard of procedure is less easily forgiven. He asked questions designed to give the answers he wanted, heard unsworn evidence and gossip, failed to test the evidence of one witness against that of another, and made no attempt to examine the record of Macarthur in carrying out promises he made in 1804, for which he had been given 5000 acres of land. More importantly he was not interested in any evidence that did not support the only kind of recommendation he knew would be acceptable to the British government — namely, one that promised to save money.

The report on agriculture by Bigge is riddled with mistakes and neglect of evidence other than that given by Macarthur. It is not surprising that his policy, which was accepted, was a major cause of the crash in the 1840s. The following brief excerpt from his report exemplifies what happens when someone who is ignorant of a subject and has drawn his conclusions before reviewing the evidence writes a report, in this case on sheep.

The breed that is general in the colony may be considered to be an admixture of that of the Cape of Good Hope and the improved English; and hitherto there have been few individuals who have turned their attention to the improvement of their flocks by the introduction of the Merino race. The perseverance and success of Mr. John MacArthur in the improvement of his flocks has been adverted to in my former Report. It appears that his attention to this subject was first attracted in the year 1794, by observing the improvement that had taken place in the fleeces of some of the lambs produced from a cross of sheep of the Bengal breed with some that he

accidentally obtained from Ireland... In the year 1796, Mr McArthur was enabled to obtain by purchase from the Cape of Good Hope, four ewes and two rams of the pure Merino breed... and in the year 1801... Mr McArthur purchased nine rams and one ewe from the royal flock at Kew, from which sources his present flock of sheep amounting to 6,800, of which 300 are pure Merinos, has been derived... Mr McArthur has been enabled to dispose of several rams... at prices varying from 14*l.* to 28*l.* ... other individuals of the colony ... were insensible to the importance of separating their breeding flocks and preserving their purity... It does not appear that sheep that are fed in the colony of New South Wales are subject to any other or more obstinate diseases than those that affect them in England ... the flocks have not been found to suffer material injury from the heavy droughts.²⁷

Every date quoted is wrong, and Bigge thus confuses the important question of when the wool industry developed. The sheep in the colony were mainly Indian, with some Cape and a few English sheep. Macarthur did not initiate the purchase of Merinos from the Cape and, whether he bought 6, as here asserted, or 8 as he claimed on another occasion, he certainly did not buy more than 3 before 1800. He bought 7 rams and 3 ewes from King George (of which 4 rams and one ewe entered his flock) and it would have been a physical impossibility for them to produce 300 pure Merinos by 1821. He claimed he had sold rams at prices from £14 to £28, but he had sold 300 for Tasmania at £5 5*s* each. The claim of the lack of serious disease was made at the beginning of the decade in which Macarthur's sheep suffered such devastating losses from internal parasites that he saved his flocks only by moving them to a drier climate. The assertion that the flocks had not suffered material injury from the heavy droughts was made a few years after the drought of 1813-15, followed by flood, had almost wiped out the colony. Bigge came to the colony ignorant but confident; he left ignorant and misinformed.

Macarthur had two further, linked plans to influence Bigge after he returned to England to write his report, both master-minded by his son John, in England. The first was to arrange for the sale of a bale of wool at a record price; the second was to persuade the Society Instituted at London for the Encouragement of Arts, Manufactures and Commerce (now the Royal Society of Arts) to give him two impressive-looking gold medals.

The then record price of 124*d* per pound was received by Macarthur at Garraway's Coffee House auction on 17 August 1821. It was for one bale out of 60, the overall average price being 37*d* per pound. In conformity with Macarthur's practice at this time the wool would have been washed in some way, either on the sheep or after shearing, but there is no record of the exact method. Commissioner Bigge, who had not yet submitted his reports, was invited to the auction, together with his secretary, Scott.

Record prices are now generally received only for specially selected bales of wool, in which only a small portion is taken from each fleece, so that it is unrepresentative of the whole clip. This is legitimate, as there is a small, specialist demand for such wool, but graziers complain that such prices give lay persons a wrong impression of the prices they are receiving. The Macarthurs selected from all their wool sufficient to fill one bale, as is shown by the wide distribution of prices for the other 59 bales, down to 29*d* a pound, and averaging 37*d* a pound.

There is good reason for supposing that the price did not result from a genuine commercial bid, but was the result of collusion between buyer and seller. Such deals were made, as James wrote to his brother William in 1828 about another sale:

in the opinion of the best judges [it was] an artificial price arising from competition between two Manufacturers one of whom is a large holder of A.A.C. [Australian Agricultural Company] Shares. These things are well understood in London.²⁸

As will be seen when discussing the medals received by Macarthur the next year, all the experts were agreed that his wool (of the Saxon type) was not as good as wool from Saxony. As Saxon growers in preparing wool for sale had far more experience than Australians (who later copied Saxon methods), it would not be expected that a record price would be set by Australian wool. It was also strange that a record price should be set in 1821, a time of postwar depression, in which wool prices had already declined by almost 50 per cent since the high level of 1818 and were on a downward slide that lasted for some years.²⁹ William Cox had told Bigge that he received 37d a pound in 1817, but prices then declined. The prices Macarthur received in 1825 did not exceed 72d per pound and during the depressed years of the 1840s averaged less than 24d per pound. In 1825, during the decade in which thousands of Saxon sheep were imported to Australia, he sold only 20 rams to fourteen buyers, indicating that local graziers were no longer impressed by his sheep. In fact, the Macarthur family, who had control of the Australian Agricultural Company, bought hundreds of Saxon sheep for it and on their own account. In 1828, the London wool broking firm Donaldson, Wilkinson and Co. wrote to Marsden:

But altho' it will not readily obtain credence in Sydney it is generally thought here that Mr. J. McA's wools have rather retrograded than advanced in quality for some years past.³⁰

After John jnr had arranged the sale of wool at which a record price was paid for one bale, he sought to advertise to another audience the services of his father to the wool industry. He was a member of the Society Instituted at London for the Encouragement of Arts, Manufactures and Commerce, which offered prizes to encourage colonial industries useful to Britain. For 1821 two gold medals were offered, one for the person who had exported to Great Britain the greatest quantity of fine wool, the produce of New South Wales. The other was for the finest sample of wool, the produce of New South Wales. John was a member of the Society's Committee of Colonies and Trade, but he retired when the awards were being considered. There is no mention of entries from other New South Wales graziers. Those such as Samuel Marsden or Alexander Riley who would have been competitive were busy and may not have been aware of the competition. Thus, the medals did not prove that Macarthur was producing the best wool in the world — in fact the judges specifically stated the wool was not equal to Saxon. This inferiority is wrongly denied in the account published by the *Sydney Gazette* on 29 November 1822:

... two large Gold Medals, voted by the Society of Arts to Mr M'Arthur for importing into Great Britain, wool, the produce of his flocks, equal to the finest Saxon. The Secretary announced the vote of two large medals to Mr M'Arthur, he commented upon the rising importance of New South Wales, its situation and advantage of climate, the great value of the wool, the high character given of it by eminent brokers and manufacturers, and its conveyance to Great Britain as an article of import from a dependent colony.

It may be noted that there were no Saxon sheep in the colony at this time, although the Cape Merinos were of similar origin.

The medals helped Macarthur to get additional grants of land, but they have misled historians into thinking the wool industry developed sooner than it did. Sibella Macarthur Onslow printed a plate of the medals in the first edition of her book (omitted from later editions), which shows plainly that one was for exporting 13,000 pounds of fine wool a year. In the text she wrote that it was for exporting 150,000 pounds, and this has been accepted by almost everyone to the present time.³¹ It is proof of the proposition that many people are able to detect fallacies in arguments but few will reject inherently absurd statistics, so long as they are given in a confident manner by 'experts'. The worst offender was M.H. Ellis, who accepted the figure of 150,000, but had already given details of exports, showing they were only 15,000 pounds in both 1820 and 1821 (some would not qualify as fine wool). In fact, up to the end of 1821, Macarthur had exported a total of about 55,000 pounds since his first export in 1813.³²

Macarthur's sons John and Edward continued to cultivate Bigge in London, visiting his home and sending him presents. John mentioned to him that his father had told him that Camden had promised him an additional 5000 acres at the Cowpastures. John took Bigge's advice to make an application to Earl Bathurst, mentioning that his father's sheep were already occupying the land. Bathurst deferred making a decision while awaiting the Bigge report; John kept communications open by presenting Bigge with cloth made from Camden wool.³³ In July 1822, just before the first Bigge report was made public, John was advised the 5000 acres would be granted. This was only the opening gambit for additional land claims.

The story of the complete success of Macarthur is shown in correspondence between Bathurst and Governor Brisbane.³⁴ The first despatch from Bathurst was on 10 July 1822, in which he said about Macarthur:

I have been enabled to ascertain from the report of Mr. Bigge ... the Extent of his Flocks, the Purity of his Breed of Sheep, and the value and fine Quality of the Wool... I have therefore to desire that you will grant to him ... an Additional Five Thousand Acres, adjoining ... to his present property.

Brisbane tried to avoid giving land at the Cowpastures to Macarthur, as Macquarie, Bligh and King had been similarly unwilling, but he received a peremptory order from Bathurst:

I have been informed by Mr. McArthur, Jr., ... that no Grant of Land had been made to his father...

I have directed that the proposal made by Mr. McArthur Junior be complied with... The effect of this arrangement will be to give ... to Mr McArthur Senior the Grant of 5,000 Acres ... and to secure to him the possession of an additional contiguous district, amounting to 5,700 Acres.

Finally, in 1825, Brisbane, who had been browbeaten by Bathurst, advised that he had given to Macarthur all the government reserves at the Cowpastures. In a return of lands held by Macarthur in 1827, he was shown as having received as grants between December 1805 and October 1825 23,398 acres at Camden and 925 at Parramatta.

In 1829 E.S. Hall in a despatch to Sir George Murray noted grants of 3650 acres each to James and William Macarthur, plus a purchase of 4000 acres. The total held by the Macarthurs was 60,000 acres.³⁵

In spite of these triumphs, flaws in the Macarthur sheep enterprise had already begun to appear. They had the wrong sheep, in the wrong place, with the wrong workers and managers. They prided themselves on the fineness of the wool of their sheep and their pure breeding (more exactly, in-breeding), but these were fatal flaws. There was no future for sheep that yielded only 2½ pounds of wool, however fine it might be, especially when their prices averaged less than 24d a pound, as they did in the 1840s. Their insistence on keeping inbred sheep cut them off from the infusion of blood from large sheep, and thus their sheep were eventually discarded in favour of Peppins'. These latter breeders produced sheep cross-bred in origin but in which a champion ram may now yield 50 pounds of wool and humble flock sheep average 13 pounds or more. These sheep owe nothing to the Macarthur Merinos. There is a place for extra fine woolled sheep in some regions of Australia, but only if they give, as they do, many times as much wool as Macarthur's sheep.

The just verdict on the Camden sheep was made by John Hughes, a South Australian grazier:

I visited Camden, where Mr. William Macarthur showed me the fleeces of their best pure-bred wool, which they were then about to send to the Exhibition at Paris. He frankly gave me every information as to weight of fleece and price last realised per pound. I asked why he bred such sheep when mine in similar climate and country yielded me, as I showed him, nearly double the money per fleece. He told me with an air of pride that they bred the pure blood. I replied that in South Australia we bred for the pure money, which he characterised as a Yankee way of looking at it.³⁶

Macarthur came back to Australia a few years after the Blue Mountains had been crossed and the first-class sheep country at Bathurst and other districts was being opened up. He fought savagely to get land at Camden. It was a good choice for someone making a deal in real estate, but it was a fatal one for a sheep farmer. Camden was not and is not good sheep country, and he was compelled to move most of his sheep from it, as it favoured the spread of diseases for which there were no cures at the time.

William Macarthur, in describing the Camden flock, wrote in 1855:

Its defects are greatly aggravated by the unfavourable nature of the pastures on which this flock of necessity has for some years been fed. A portion of it removed to

the open, shortly grassed downs which abound in the Colony of Victoria [Port Phillip] rapidly changed in the character of the fleeces as well as in the stature of the animals. With some loss of fineness the former soon vastly improved in weight, closeness and solidity whilst the weight of the animals increased 50 per cent. ³⁷

The three Macarthur brothers, William, James and Edward, took up grants near Taralga and ran 20,000 sheep at Richlands. Part of the Camden stud was sent there about 1835, because of the deterioration of the pastures, but when they reached Richlands (considered choice country, as the name implies) the same sort of thing happened. William wrote:

Between 1837-1844 our sheep there would not fatten whereas for the previous 11-12 years Richlands had been a good healthy run. We lost about 12,000 sheep... Now believe (an opinion only) that the tramping of the soil by the flocks was the cause... The water holes were marshy.

The reason for the sheep losses was heavy infestation of worms, microscopic parasites which take some years to build up. The mention of marshy waterholes shows the conditions were ideal for the spread of worms, for which there was no treatment at the time — or indeed any way in which a farmer could diagnose them. The flock was sent to drier country at Nangus, which was better for their health, but the economic crash of 1842 made sheep almost worthless. The boom that was followed by a collapse was partly caused by the reckless advertising of the fortunes to be made in wool in Australia, for which a large part of the blame must be put on Macarthur.

At some time in the early 1850s the Macarthurs sold the remaining stud sheep from Richlands and Camden to a buyer or buyers who cannot be traced. A reporter from the *Town and Country Journal* in 1866 wrote to Sir William Macarthur about the whereabouts of the Camden flock, and recorded 'they are scattered and lost'. Some years later a few Camden sheep, inevitably with some mixing with other sheep, were returned to Camden, where about 200 of them were still kept at the time of writing. In 1866 the wool industry was beginning to expand on a sound basis, but the Camden Merinos had passed from the control of the Macarthur family, who did not leave any word of comment or regret. They did not restore the land they had been given because of their twice-repeated promise to develop the wool industry. The future belonged to different sheep and a different kind of grazier.

William Cox: a new direction

Although William Cox did not arrive in New South Wales until January 1800, he made a more lasting contribution than earlier settlers, becoming a bridge between the old and the new wool industry. He was one of the few settlers who had agricultural experience before coming to the colony; on the voyage he became friendly with Joseph Holt, a political exile from Ireland, who was a practical farmer and later managed Cox's agricultural affairs.¹ Most importantly, he was the first to receive a land grant over the Blue Mountains, near Bathurst, at first only for cattle. When sheep were permitted, it proved better sheep country than was available to the early settlers and gave opportunities to his family for expansion. He took up the challenge of the new country, which John Macarthur had refused. In addition, the sheep imported in the 1820s were more numerous and of better quality than those available to most of the early settlers.

Cox came out as a paymaster in the New South Wales Corps, succeeding Macarthur in the office, and bought from Macarthur Brush Farm in the parish of Hunter's Hill a few weeks after his arrival, and soon afterwards an adjoining one. His first sheep were a flock of 'old rotten ewes of the Bengal breed' which he bought for £3 each from Macarthur, who thus showed he was willing to fleece his friends as well as his enemies. According to the muster at the end of 1801, he had bought 1380 acres from other settlers and had 1000 sheep. This appeared to put him behind Joseph Foveaux and just ahead of Macarthur, but the muster was wrong, as Foveaux had already sold his sheep to Macarthur, who thus became the owner of the largest number of sheep in the colony, a position he held for many years.²

In March 1800 Cox bought the flock of Captain Henry Waterhouse when he was leaving the colony. This flock of about 100 sheep contained some of the Spanish sheep Waterhouse had imported from the Cape in 1797; only Spanish rams were used in this flock, although most of the ewes must have been cross-bred, as indeed would most of the rams have been after a few years.³ This must not necessarily be taken to imply that Cox or Holt were interested in Merino wool at this time. Holt made no mention of wool, and the earliest colonial reference to wool was to be made by Governor King six months later. According to one account the 'Spanish' sheep imported by Waterhouse were 'a very much larger breed', and were therefore suitable for mutton.⁴

Cox had a temporary setback, when he was relieved of his position as a magistrate by order of his commanding officer, William Paterson. This followed an instruction from H.R.H. the Commander in Chief that officers were 'not being permitted on any account whatever to engage into the cultivation of farms or any other occupation that are to detach them from their military duty'.⁵

Cox bought other livestock (with farms thrown in with the purchase), including 'a flock of ewes in which the ewes breed twice a year'. By April 1803, although he had been selling wethers for mutton, his flock had increased to 1700.⁶ It is fortunate that other uses have been found for Hunter's Hill, Sydney, as it had limited possibilities for grazing, and this was, no doubt, one of the reasons Cox became bankrupt in 1803. Another reason probably was that he no longer had access to the funds of the paymaster, a source on which several New South Wales fortunes were founded. A meeting of his creditors decided to sell all his property, including farms and livestock. When the sale was held, some Spanish sheep attracted special attention. Sheep described as 'ewes' sold at £2 4s per head but 'Spanish ewes' sold for £3 11s. A Spanish ram sold for £13; on the other hand, £14 10s was paid for an 'Irish' ram. Cox's most valuable sheep therefore was of a mutton breed with no pretensions to fine-wool production. At a later sale Irish rams realised £9, and young Spanish rams averaged £2 3s. Irish sheep were referred to on several occasions; their identity is obscure, but their early entry to the colony made them one of the several sources of non-Merino blood in the early flocks.

At the auction sale of Cox's assets, the sheep were put in lots of 20 or less but Spanish rams were sold singly.⁷ It thus appears that the remnants of the sheep imported by Waterhouse were dispersed, and for a time only Macarthur and Samuel Marsden had sufficient Spanish sheep to form a Spanish flock.

Cox sailed for England in 1807 to answer charges of malversation connected with his work as a paymaster, meaning that there was a deficiency of £7900 in his regimental accounts. These were not pressed as he paid his debts in full and was allowed to return to the colony in 1810, when he re-established his flocks, this time to produce fine wool. He brought back a copy of Hogg's *Shepherd's Guide*, published in 1807. He was listed in 1810 among the thirty-eight entitled to cloth in return for the wool they had supplied to the government factory, as was Joseph Holt.⁸ In 1810 also the Hawkesbury settlers in a memorial to Governor Macquarie thanked him for appointing Cox a magistrate.⁹

When Cox returned to the colony, he was held in high regard not only by the Hawkesbury settlers but also by Macquarie, who commissioned him in 1814 to make a road over the Blue Mountains to the Bathurst Plains, following the route surveyed by G.W. Evans. He built over 100 miles of road, with the aid of thirty convicts (who were emancipated for their exertions), in six months, earning the approval of Macquarie: 'great praise is due to Mr. Cox for his perseverance and arduous Exertions in getting it so soon Completed'. He was also granted 2000 acres across the river from Bathurst, which he called Hereford. Macquarie called him 'a Sensible, intelligent Man... and the best Agriculturist in this Colony'.¹⁰

Cox now turned to wool, if only because he had to spread out beyond the mountains to get grass for his increasing flocks and herds, and this put his sheep beyond the economic reach of the Sydney market for mutton. As his future lay with wool, he determined to get the best sheep available. In evidence to



22 William Cox, one of the first of the new graziers beyond the Blue Mountains

Commissioner J.T. Bigge in 1819 he stated: 'The best woolled sheep that I now have originally came from the stocks of Captain Waterhouse, Mr. Macarthur and Mr. Marsden.'

The sheep Cox bought from Captain Waterhouse in 1800 were supposed to have been dispersed at the sale in 1803; however it is possible some were bought by a friend and taken to Cox's station, Fernhill, at Mulgoa, where apparently Mrs Cox was running sheep before 1810. It is more probable that, when he began to build up his flocks, he bought some progeny of his own sheep which had been sold previously.

The sheep from Macarthur were not the 'old rotten ewes of the Bengal breed' which Cox had bought in 1800, but 100 ewes and 2 rams shown on the Camden returns of stock to have been sold to Cox by Elizabeth Macarthur between 1 and 15 December 1815. These were the only breeding ewes known to have been sold from the Camden flock during the period 1813 to 1818, and as far as can be traced they were young ewes. They were from the cross-bred Camden flocks.

These sheep were bought six months after Cox received his Hereford grant of 2000 acres. However, the pioneer stock there were cattle, and the sheep were taken to the established Cox station, Fernhill, at Mulgoa. The pass on the new road down the mountain was too steep for a loaded dray to climb and Cox thought that sheep 'will be able to bring their fleeces up, and be shorn on the mountains' or driven to the second depot for this purpose.¹¹

We do not know what sheep Cox got from Marsden, but the most likely ones were a few rams, part-Merino, bred from the 4 ewes and 2 rams from the flock of King George III, which Marsden had imported some months before Cox returned to the colony.

In 1817 Cox received an average price of 37d a pound for wool sent to London, but thereafter the prices he received were lower, as there was a continued decline in wool prices after 1818.¹² In 1820 his flocks were described by Bigge as being among the best in the colony and Cox sheep in the Bathurst district numbered over 11,000.¹³

No doubt Cox still got greater returns from mutton and livestock than from wool, but he had gone beyond easy reach of the Sydney market. As flocks expanded, prices of mutton began to fall. The production of high-priced wool in the distant settlement was widely canvassed, though few succeeded in such projects. Cox not only grew good wool but prepared it for market with great care, washing the wool after shearing. In the 1830 report of the Agricultural and Horticultural Society, the President, Sir John Jamison, stated:

... the Messrs. Cox, during the last two or three years, clipped several of their flocks without washing, and after carting it across the mountains, had the fleeces regularly broken up and sorted, with great advantage for the English market... An iron boiler is fixed on the bank of a running stream, with a large soaking tub placed alongside it, containing about forty pounds of wool in its dirty state; about two ounces of soap is dissolved in the first bucket of warm water, and poured over the wool in the tub; a necessary quantity of properly heated water is then added, until the wool is covered, and after soaking about five minutes it is taken out, and placed on a frame prepared for the purpose, with a flood-gate at one end and an iron grate at the other, which allows the water to pass freely. It is then placed in a running stream, when one or two men keep moving the wool with a fork, until the water runs off perfectly clean, when it is taken out, and placed on a hurdle alongside to drain, particular care being taken that the wool, when wet, is neither to be squeezed nor twisted; and, lastly it is to be dried by the heat of the sun. This method is after the Spanish fashion, and is denominated as such in the London market. When the wool so washed became dry, it looked beautiful, and felt so delicately soft, that it did not appear to have lost any of its natural elasticity. However, many doubts were entertained that the effects of the warm water with soap would cause the wool so cleansed to become in the course of the voyage harsh, and in consequence less valuable. But the test of the British market

proved the contrary, for Messrs. Cox's wool so prepared was exposed for sale, and brought more than double the price for which wool of the same quality sold ... which had been washed on the sheep before shearing in the usual way.¹⁴

The term 'Messrs. Cox' shows that William Cox, born in 1764, was now passing on the management to his sons. The operation of washing wool, as distinct from washing the sheep, probably was initiated by Edward Cox, as the result of his observations while studying the wool trade in Yorkshire. This was an operation that required skill and attention. The fact that Cox was receiving 'double the price' for his wool was not unexpected (given that he had good sheep), as properly washed wool at that time would weigh only half as much as wool in the grease. By simple arithmetic, the manufacturer would pay twice as much per pound for washed wool, as there would be as much wool in it as in 2 pounds of greasy wool — and textile manufacturers do not pay for dirt. The total price for the whole fleece would be similar in each case.

William Cox's flock at Mulgoa passed to his sons. The eldest, George, took his share to Mudgee, probably about 1825, to the new run he had taken up there, which he called Burrundulla. A younger son, Edward, then used Mulgoa as a base to build up a flock. Edward had been able to study wool in England, as his own story in the Cox family papers tells:

Being of the family of an extensive sheep-breeder, my father thought it would be of advantage to me to learn the mysteries of wool sorting and any department I afterwards deemed advisable in cloth manufacture to perfect my judgment of the value of every variety and phase of wool for cloth making and combing at which during a three year's residence at Rawdon near Bradford in Yorkshire I left it with such knowledge of practical working that I could perform every distinct operation in the manufacture of fine cloths. Thus I became competent to enter at once into sheep breeding on my return to New South Wales in 1825 and when established made my first purchase of the best pure bred ewes I could meet with which were in the hands of ... Dr. Grattan Douglass M.D.

These sheep consisted of 20 from Thomas Icely and about the same number from Major Frederick Goulburn, the Colonial Secretary, which had probably been imported in 1823 and were said to have been from the Hampton Court flock of Sir John Sinclair, and of course were claimed to have descended from the flock of King George III — an origin attributed to most importations of Merinos from England. His rams, however, were Saxons.

From the commencement I made use of no other tups [rams] than from the Electoral flock of Mr. [William] Riley & being on intimate terms [a brother-in-law] always by being on the spot the evening before his sale selection was advertised I had the first choice on the opening day to get what character of sheep I considered ... the most valuable ...

(The descendants of the Spanish Escorial sheep were known in Saxony as Electoral.) Edward Cox kept the sheep under his personal care.

Each ewe and progeny was numbered on the ear as practiced on the Continent of Europe and a stud book carefully kept preserving the pedigree of each for about 8 years casting any inferior animal... On the death of Mr. Wm. Riley of Raby [1836], a selection of one hundred ewes was made from the choice Raby Saxon flock of 300

combing class 2 year ewes (which I thoroughly knew — occasionally working amongst his sheep).

After the purchase of [these] 100 extra ewes the pasturage at Fernhill, Mulgoa, became too limited and the entire flock was removed to Dabu Dabu [later called Rawdon] ... before shearing and on the shearing board the entire flock were yearly classed and received a distinctive mark of their qualities which practice has continued to the present day.

The Cox family made the transition from the old industry to the new in two ways. William Cox was a practical farmer, able and willing to undertake any necessary task, as he showed by building the road across the Blue Mountains. Graziers had to be capable of undertaking similar tasks, if they were to survive in the outback. One of Cox's sons made a thorough study of the wool industry in England, and thus knew the type of wool the market demanded. This did not necessarily come from sheep which won prizes at agricultural shows. Agricultural Societies have a mixed record in Australia in promoting progress, that is, putting more money in the pocket of the grazier. They began by giving prizes for fine-woolled sheep, irrespective of the quantity; at the turn of the nineteenth century they devastated the industry by giving prizes to wrinkled sheep, which were subject to blowfly strike.

The most important factor in the success of the Cox family was that they discarded inferior animals from the breeding flocks, which Macarthur did to a very limited extent. Crossing and selection were to become the tools of the then unknown science of genetics, so that Edward Cox was on the right lines when he wrote, 'preserving the pedigree of each for about 8 years casting any inferior animal'. The property at Rawdon, near Rylstone, where the Saxon sheep were kept, became one of the great Australian Merino studs.

Saxon sheep

Saxon sheep have barely been noticed by historians absorbed in spreading the myths invented by Macarthur about the purity and value of his sheep. Only about 30 Merinos were imported until 1820; most (and possibly all) of them were cross-bred, about half of them disappeared without leaving a trace and the rest had only a minor influence. By the mid-1820s the situation had changed. Sheep numbers in New South Wales and Van Diemen's Land had reached one million, many of which were too far away from the centres of population to be available for meat supply. It was known by this time that crossing the non-Merino sheep with Merinos gave fine-wool sheep; the problem of the reappearance of hairy sheep could be dealt with by culling them. The big influx of Merino sheep from Europe, mostly from Saxony, had already started and 5000 of them were imported during the decade. The Saxon sheep, as even the Society Instituted at London for the Encouragement of Arts, Manufactures and Commerce recognised in 1822, gave the best wool in the world. Australian breeders, including the Macarthurs, confirmed this by buying large numbers. It seemed that nothing could stop the flow of imported sheep and, as the price of wool had been high for most of the first two decades of the century, many thought the boom would last indefinitely.¹ Alexander Riley, one of those with money for speculation and a belief in the value of Saxon sheep, wrote: 'I know not at this time of [any form] of employment of Capital and Attention ... that holds out such prospects or that presents so stimulating a point for proper Ambition'.

Although the Merinos imported during the 1820s were not all Saxons, they all derived ultimately from the main Spanish flocks. At the time the differences between newly imported Merinos — Saxons, Anglo-Merinos or French Merinos — were understood, but there has been in recent times a tendency to describe all the new arrivals of the 1820s as pure Saxons. What has not been emphasised is that most were cross-bred.

As the Saxon sheep amongst this influx were of such importance to the development of the fine-wool Australian Merino, it is necessary to examine their origin. The Electorate of Saxony was an independent state, whose ruler had a vote in the election of the German king. It is a fertile area, situated where the slopes from the Alps merge into the German plain to the west of the River Elbe, which provided communication to the port of Hamburg, 300 miles away.

By the end of the Seven Years War, 1756–63, in which Saxony in a coalition of states had resisted the expansion of Prussia, Saxony had lost 90,000 men, its coinage was debased and its trade ruined. The new young ruler, Frederick, set about reconstruction and in 1765 his cousin, Carlos III, King of Spain, broke the traditional embargo on the export of Merino sheep by giving him 300 from the royal Escorial *cabana*, which had the finest wool of all the Spanish flocks. It is said that the King ordered, on pain of a penalty of fifteen years' imprisonment, that the very best of sheep were to be selected. In the late 1770s a further 300 Merinos were procured from Spain. In Saxony, as the royal flocks increased, surplus ewes were transferred to members of the nobility, who established Merino flocks; surplus rams were disposed of to farmers, who were ordered to use Spanish rams to improve the native breed of sheep. Legend has it that a royal command was issued to ministers of religion to read from the pulpit every Sunday instructions about the management of sheep, and the best methods of scouring and sorting wool.

Spanish sheep had also entered other German states, notably Silesia and Prussia, so the breeding of fine-wool sheep in Europe was not confined to Saxony. In 1802, of the 16 million sheep on the German side of the Rhine, 4 million were described as 'noble', a term usually used to describe the lineage or purity of a breed. It is evident that so many sheep could not have descended from the few imported Spanish sheep without cross-breeding with native sheep, and this is another example of the different meaning of 'pure' at that time. The 'noble' sheep would have been fine woollen and sired by one or more generations of Spanish rams.²

As in other highly developed parts of Europe, the land in Saxony was used primarily for cultivation; sheep and cattle were kept for part of the year in large sheds, being fed on by-products of the farm, in this case mostly straw with a minimum of grain. The sheep manure which accumulated in the sheds had an important part in the agricultural program.

Before the Napoleonic wars only small amounts of wool were exported to England, and most of the Saxon production was used for local consumption. The wars swept through Saxony, which after attempting a policy of non-alignment was reluctantly forced to enter on the side of France, and in the Battle of Leipzig, in the heart of Saxony, the Saxon contingent of 20,000 men deserted Napoleon and saved their skins. The sheep of Saxony also seem to have come through the war without serious loss, though they must perforce have contributed to the commissariats of two armies totalling half a million men.

After the war, the whole of Germany entered a 'period of reform' and economic reconstruction. In particular, many Saxon farmers turned from wheat (no longer profitable as an export to Britain because of the Corn Laws) to wool, and there was an extraordinary increase in the amount of German wool imported by Britain. This increase was particularly notable in the 1820s, the period when large numbers of Saxon sheep for Australia were purchased by the Australian Agricultural Company, Alexander Riley, Richard Jones, J.B. Bettington and others. Available figures do not show what proportion of German wool came from Saxony, but the point is not significant for the boundaries of that state were not constant; the northern half of Saxony was ceded to Prussia in 1815. Though there may have been some uncertainty about the exact geographical origin of the

'Saxon' wool that reached the British market, the Saxon sheep which came to Australia in the 1820s were all bought in the truncated southern part of Saxony.

One of the first to import Saxon sheep was the Australian Agricultural Company, which imported 747 Saxon sheep between 1825 and 1827, as well as French and English Merinos. Other early importers were Richard Jones in partnership with Walter Davidson, and Alexander Riley, all of whom had previously been in the colony and held grants of land. Jones was a leading merchant in New South Wales (from 1815 in partnership with Alexander Riley and from 1817 to 1825 with Edward Riley). He took little interest in sheep until after he returned to England in 1819, when he became aware of the possibilities of profitable production of fine wool for the English market and developed plans for a large-scale grazing enterprise. Jones (with Davidson) brought out to New South Wales 488 Saxon and English Merinos, and bought in the colony 184 more, which someone else had imported as a speculation. Jones claimed 'the merit of being the First Individual, who imported Sheep from Saxony for the improvement of the breed in New South Wales', and that he had expended £11,542. He already held 6000 acres, but in 1829 requested an additional grant of land:

The Land I possess is too circumscribed to allow me to extend my Sheep Farming to the extent I could wish; and it will be of vast importance to the general interests of the Colony that I shall be able so to divide and select from these flocks Sheep not only possessing Wool alike, but Sheep that may produce Wool of a quality hitherto unknown in the English Market...³

Alas for such hopes! For a year or two there are records that Jones had sold a few rams for prices as high as £70 each, and the first clip from the new sheep was admired in London.⁴ Then his sheep disappeared from history for twenty years, to reappear under other ownership at Collaroy, near Merriwa, where they formed the basis of an important stud.

Alexander Riley purchased two drafts of Saxon sheep, 300 all told, which will be considered separately. They made an important contribution to the Australian Merino, providing the colonists with a supply of Saxon rams for several years. The blood of these sheep also contributed to the foundation of some of the well-known Mudgee studs.

In 1829, J.B. Bettington imported 200 ewes from Ochatz in Saxony and these also have made a permanent contribution to the Australian Merino. They formed the foundation stock of the Brindley Park stud at Merriwa, now dispersed, but which was described in 1880 as being the oldest and best bred stud of Merino sheep in its region. Most of the stud flocks in northern New South Wales and southern Queensland have been greatly indebted to it for much of their excellence.

Another large importation was of '230 Merino and Saxon sheep'⁵ shipped from England by one John Hooke, who had paid £3 each for them — a price which does not suggest high quality — in 1827. Nothing is known of these sheep after they reached the colony.

When Saxon sheep arrived in New South Wales they drew very favourable attention from most of the sheep men, but the comments fall into two categories, one extravagantly enthusiastic about the quality of the wool, and the other critical

of the apparent impurity of breed, as shown by lack of uniformity. These are not necessarily contradictory. In view of the importance of this phase in the development of the Australian Merino, the comments will be looked at in some detail, with the enthusiastic ones being considered first.

Alexander Riley, the purchaser of the largest privately owned flock, described them to his brother Edward as having the most exquisite fleeces in the whole of Saxony. Sir John Jamison, in his 1827 presidential address to the Agricultural and Horticultural Society,⁶ stated:

...many gentlemen considered the quality of their fleece so superior to our pure Merinos, that they readily gave to Mr. Jones at the rate of from £70 to £80 per head, for about a dozen of rams he obligingly sold to them, such high prices were given under the expectation, that every cross of such superior fleeced Saxon rams would gain years in the improving quality of our wool.

Jamison attached to his address letters from two young colonists, W.H. Dutton and Edward Riley jnr, whom he considered 'the highest qualified authority'. Dutton had been

selected by the Directors of the Australian Agricultural Company (from the highest testimonials of his knowledge of Saxon sheep and sorting of wool,) to purchase the Company's *electoral flock*, and come out in superintendence of them to this Colony [in 1826].

Edward Riley, in company with an experienced wool sorter, had bought Alexander Riley's Saxon sheep, and came to the colony in charge of them in December 1825. Riley was then 20 years old and Dutton 21. At the time the letters were written Dutton was employed by Riley, and from the text of the letters it seems that the two had compared notes. Both laid stress on the descent of the Saxon sheep from the Spanish royal Escorial flock, of which they claimed, inaccurately, that the Saxon sheep were the sole survivors, as they were widely if thinly spread throughout the world.⁷ Dutton forecast that the Saxon sheep in Australia

will give rise to a new character of wool, infinitely superior to the present Electoral wool ...

It is thus to me evident, that nothing but the very finest sheep, imported direct from Saxony (such as these of Mr. Riley's, who certainly has shewn great judgment in his selection) can so rapidly improve the quality of wools in this Colony; and I am as perfectly convinced, that if proper attention be exercised in breeding the fine Saxons, we shall be able to transmit, from this country, a wool hitherto unknown to the manufacturers, but at which the Saxon sheep breeders aim as their beau ideal.

Riley concurred:

The Saxons have now attained an unequalled pre-eminence in the intrinsic value of their wools... The Saxon wool can never be produced anywhere, excepting by the use of the present breed of electoral rams... Although the flocks of pure descent in Saxony still bear the palm in the sale of their breeding animals, yet, from the constant use of their male blood during a succession of generations, the generality of the cross

bred flocks in no wise differ either in fineness or other qualities, from their ancestors — in fact, many of them even surpass them.

He casually noted, 'as it is my intention to dispose of some of the rams, the public will have an opportunity of estimating the correctness of my present statement'. He submitted for inspection 3 ewe fleeces 'by no means picked'. His letter concluded with:

I can only augur from the emulation and spirit which we possess as Englishmen, and from the capital which has been already vested by gentlemen in this stock, that we shall not only soon rival the Saxon wool in the emporium of the world (London), but I hope to live to see the day when Australian Electoral wool will shine at the head of the Price Current, and form a standard for the sale of the wools of other countries.

More impressive than these not disinterested testimonials are the first reports of the colonial-grown wool from the Saxon sheep on its arrival in London. Alexander Riley saw the wool of his rival Richard Jones; he had been very critical of the sheep, referring to them as 'Jones' unhappy collections' and as being of all ages and conditions. He was delighted with the wool, and hoped that the wool from his own Saxons would come to London in equally good order. John Macarthur jnr wrote to his father on 19 March 1827:

The Australian [Agricultural] Co. sold the fleeces of their French and Saxon Sheep by auction last week. Two packs of the latter assorted brought very high prices — one 8s. 6d. — but the fleeces in the grease sold badly — The Brokers say they never saw finer Saxon wool.⁸

The next year, while the best of Macarthur's wool sold for 60d, one bale of the Company's wool was sold at 90d. James Macarthur claimed this was not a genuine bid.⁹

A less enthusiastic description of Saxon sheep farming was written by James Atkinson, who in 1826 in company with Charles Macarthur travelled through Germany with the intention of buying Saxon sheep. Atkinson, who had farming experience in Kent, had come to New South Wales in 1820. He obtained two grants of land totalling 1500 acres in the Bong Bong district, where he lived from 1822, personally managing his farm and livestock. In 1825 he returned to England, where he wrote an account of farming in New South Wales, which, though critical of colonial agriculture ('not ten individuals in the whole colony can properly be called farmers'), is a valuable document and shows that Atkinson is a reliable authority.¹⁰

His route in Europe took him from Hamburg through Hanover, Brunswick, Prussia, Saxony and several other states to Cologne on the Rhine, a distance of 800 miles. The following extracts have been taken from his report, published in 1828.

The breed of Sheep prevailing in all the North of Germany, very much resembles the sheep of the Highlands of Scotland; they are small, with black faces and legs, and extremely coarse wool; in Saxony and the more central States the original breed are larger, longer legged, whiter faces and better wool, but still very coarse... The King's flocks have been kept on the Royal farms of Lohmen and Stolpen, near Dresden, but

principally at the former place. The flock now there consists of 1,100 sheep of all ages and descriptions, including 500 ewes. — The whole of the male lambs are kept entire, and such of them as are not required for the use of the establishment, together with the spare ewes, are sold..., the tenants on the Royal estates being allowed to have the first choice. It is acknowledged by the persons, who have the care of this flock, that for a long course of years they have been very much neglected; and that it is only within the last few years ... that a better system has been adopted, and they are now said to be in a state of improvement. A careful inspection of his flock, however, fully impressed us with an opinion that they were by no means of the pure race; many of them had long and bare legs, and bare bellies, and were wanting in most of the distinctive characteristics of the pure merino race; several of the ewes had horns, and among the last years' lambs were four pair of twins; there were also three black lambs and three black yearlings. A personal inspection of the most celebrated flocks in Saxony led us to believe that the pure merino race, perfectly unmixed with the original breed of the Country, can scarcely be said to exist at the present time in that Country, or perhaps any where in Germany. — The flocks are more or less of a mixed or varied description, evidently proving them to have been derived from various sources; the flock of Prince Reis, at Kliphausen, appeared to us to be the most even and unmixed, but the sheep were extremely small, and the wool, short and not particularly fine. In the flock of General Leyser at Gerstthoff, were some animals derived from the flock of Prince Libounouski [Lychnowsky], of Troppau, which is said to be the finest in Germany, — these animals were large, with long and extremely fine wool, and possessed more of the character of the Negrett Merinos, than any sheep we saw, with the exception of a few in the flock of the Grand Duke of Saxe Weimar, and a few in a flock near Leipzig, both of which had been lately obtained from the National Farm at Rambouillet, in France;¹¹ these were evidently of the pure breed, and, in fact, were the only sheep, that we met with, which we were decidedly of opinion were so. The Proprietors...themselves universally represented their stock as the unmixed descendants of those introduced into Saxony in 1765, but we had frequent opportunities of learning...that their assertions were by no means correct; and in some cases...we ascertained, that they had never purchased any pure bred ewes, but had improved their stock by repeated crosses with rams, procured from the Royal flocks at Lohmen and Stolpen. In all the flocks we visited, we observed a very material difference in the quality of the fleeces of the rams and ewes, the former being in most cases far superior to the latter ... we had frequent occasion to remark, that fineness of wool is no criterion of purity of breed, the finest fleeces, we saw, being found in animals, which bore the more decisive marks of being cross bred...

... His Royal Highness the Grand Duke of Saxe Weimar's Flock, which consists of 4,300 sheep of all ages and descriptions, is under the care of one principal, and eight assistant Shepherds... On another estate... [t]he assistant Shepherds, in lieu of pay, had each 25 or 30 sheep kept for them with the Flock; they bring their sheep with them, when first hired, and sell the wool and lambs; some proprietors object to this plan, but mark a number of sheep out of their own Flock for the Shepherds, the produce of which forms his remuneration, while he remains in their service. It has been found, that, where the Shepherds bring their own sheep, they are generally of an inferior quality, and that frauds have been practi[s]ed in changing the lambs, and substituting the master's, when any of those, belonging to the Shepherds happened to die. It has also been found, that sheep out of the improved Flocks have been exchanged by the Shepherds for others out of inferior Flocks in the neighbourhood; and it is extremely probable... that many of the best Flocks have been tainted by the

cross bred sheep by this means... The sheep are washed by immersion in ponds or rivers, and the dirt is rubbed and pressed out by the hand by men, standing in the water, exactly in the manner practised in England, and New South Wales. The shearing takes place about two days afterwards, or, as soon as the sheep are dry... After the shearing, the wool is put up indiscriminately into large bags, without any selection or classification. In this state it is sometimes sold at home to the Merchants, but the most general practice is, to send it to the wool fairs in waggons. In no case is the wool sorted by the growers...

It seems now to be the policy of the Saxon flock masters to increase the length of the staple of their fleeces, although the wool will not be so fine, having found by experience that the second rate fleeces pay them best, the superior price of the Electoral wool not compensating for its small produce. The Electoral wool being invariably extremely short, and the fleece not weighing more than 1½ lbs.

Very little profit is made in Saxony from the carcasses of the sheep... Wool is the principal object in keeping sheep in Saxony; considerable quantities of breeding sheep are however sold every year... a great many have lately been sent to the United States of America, and still greater numbers into Russia, particularly into Bessarabia, and the other Southern Provinces of that Empire...

... it will be seen that the system of keeping sheep, practi[s]ed in Saxony ... is entirely the result of necessity, and opposed to nature in every point, and altogether inapplicable to such a Country as New South Wales. The appearance of the flocks is invariably dirty, and wretchedly poor, and the consequence of such an unnatural system as might naturally be expected is, that the sheep are infected with fatal and incurable maladies...¹²

To the visitor from Australia in Saxony housing sheep during the winter seemed unhygienic; however sheep thrive under such treatment. Although they get little opportunity for grazing and have limited fresh air, the system has compensating advantages; they remain free from intestinal worms and liver fluke. In the life cycle of these parasites, when the embryo emerges from the egg it has to climb a blade of grass to be ingested by the sheep; with artificial feeding in sheds the life cycle of the parasite is broken. The transfer of such sheep to the coastal areas of New South Wales brought heavy losses as they had little resistance to internal parasites. They were also not well adapted to the hot, dry interior of Australia.

Atkinson probably undertook the visit to Saxony with the intention of buying sheep, but it seems certain that he did not buy any. He was not a very rich man, and it is possible that the cost of transport of the small number of sheep that would have been within his means rendered such a course too expensive. His travelling companion, Charles Macarthur, had also intended to buy some. Charles, who was a nephew of John Macarthur and brother of Hannibal Macarthur, had decided to emigrate to New South Wales and to take some sheep with him. Mrs P.P. King, about to return to New South Wales at the same time, wrote, 'Charles [Macarthur] has purchased the real Merino sheep in Yorkshire, he did not like those he saw in Saxony at all.'¹³ An uncertain number of sheep belonging to Charles Macarthur, apparently about 10, duly arrived in the colony, where Charles died soon after his arrival.

From the accounts of Atkinson, Dutton and Edward Riley taken together, the following points about Saxon sheep must be accepted.

The sheep of Saxony carried fleeces of fine wool and many individual sheep were of pleasing appearance. A few flocks belonging to the nobility may have been of pure descent from the Spanish royal Escorial *cabana*, but most of the Saxon flocks were cross-bred, and according to Atkinson were obviously so, indicating that they were still in a state of improvement, the rams 'being in most cases far superior' to the ewes.

There was a brisk trade in Saxon sheep and the German tenants had first choice. In attempting to buy a selection from sheep of such varying quality, foreigners would have been at a disadvantage. Dutton, who spoke fluent German, would have been in a more favourable situation, particularly at the important sheep centre of Möglin, at which agricultural institute he had been a student and was well known.

Of the sheep which came to New South Wales, only those which Dutton bought for the Australian Agricultural Company from Prince Lychnowsky are known to have come from named flocks. If others had imported sheep from a famous flock they would surely have mentioned it. Those bought by Jones were, according to Alexander Riley, a mixed lot. Bettington's 200 sheep came from near Ochatz in Saxony, but from what flocks they were obtained is not known.

It must be accepted that the Saxon sheep for the colony were of various strains. They would have been capable of further improvement in the colony wherever the skills of sheep classing and stud breeding were available, but in the 1820s that was not always the case. The Saxons formed the basis of some flocks which were later to become important, but apart from some initial sales of rams by Jones, so far as surviving records show only the Saxon sheep from the importations by the Rileys and by the Australian Agricultural Company provided continuing supplies of rams to the colonists; and by 1840 the Australian Agricultural Company was no longer in this field.

It seems therefore that, in general, the Saxons imported in the 1820s had fine fleeces of a better quality than those of the sheep already in the colony but showed considerable variation in type. They had a reputation for delicate constitutions, which was attributed to their having been reared indoors, and they suffered higher losses than the general flocks of the colony. The fleeces of the Saxons had a high proportion of grease, which was a disadvantage in the dusty shepherding conditions in which they had to run in the colony.

With the revived colonial interest in fine wool, the Saxon rams were eagerly sought after and were at first widely used. It seems that the proprietors of Saxon flocks tried to keep to themselves the profits to be had from selling Saxons, and thus they sold only rams; the ewes could not be purchased for any price. Such rams were crossed with the colonial flocks with the usual result of improved fleeces from the progeny of the first generation, and thereafter, according to the colonial custom, the graziers in many cases used their own bred first-cross Saxon rams for further crossing, with the inevitable result of mixed sheep. Just as it was mainly the first crosses from the Merino rams imported in 1797 which had made an improvement in the fleeces, so again later crosses with Saxon rams were disappointing. The benefit to the generality of flocks which derived from the initial introduction of Saxon blood was not maintained, and when wool prices fell the Saxon sheep for a time lost favour.



23 George Peppin jnr bred the Peppin Merinos whose descendants are in the majority of Australian flocks

Of the Saxon importations referred to, those of Bettington, Jones and the Australian Agricultural Company were kept as separate flocks and maintained their identity.

In spite of the difficulties with the Saxon sheep imported in the 1820s, such a large infusion of new blood from the 5000 (mainly Saxon) Merinos that came to New South Wales and Van Diemen's Land at that time must have had a big effect, and it is significant that Australia's export of wool began to overtake that of its competitors in the next decade. There is a gap in the records (except for the Australian Agricultural Company) for several years, but Saxon sheep reappeared in the 1850s to contribute to the great development of the Australian Merino which was to take place after that period.

Atkinson was typical of those who criticised Saxon farmers because their sheep were cross-bred and thus uneven in quality and because they became willing to sacrifice some fineness in the wool to increasing its quantity. These methods must be judged to have been a tremendous success, as they enabled Saxony within a few years both to increase the average quantity and quality of the wool produced by its sheep, as well as to maintain some high quality flocks. The policy of retaining native animals but improving them by introducing others which are outstanding in particular qualities is still the best one for developing countries. By chance it was the method followed in Australia, where the first hardy and prolific sheep were improved by later introductions of Merino sheep. Those who consider that purity and aristocratic descent are the supreme virtues should compare the Camden Merinos with modern Peppins or other high quality sheep. Until recent times, Australian practice has been better than accepted theories.

Saxon breeders at Mudgee

Alexander Riley was about 25 years old when he arrived in Sydney with his wife in June 1804, carrying letters of recommendation from Lord Hobart. He was appointed a storekeeper and magistrate at the new settlement at Port Dalrymple, at the mouth of the Tamar River, of which his brother-in-law was to be second in command.¹ He was given command of the government stock and by 1806 was also the biggest stock-owner in the settlement, apart from the Crown and the Lieutenant-Governor.² When he returned to the mainland in 1809, he had practical grazing experience, which he was to put to good account.

In New South Wales Riley was given an unusually large grant of 3000 acres, which he named Raby. He bought sheep and began to breed for wool as well as for mutton.³ From the 1809 shearing he sent some cross-bred wool to the nearby Parramatta factory, receiving in exchange an allowance of cloth. The factory paid only 2d per pound for wool: the private mills of Simeon Lord and others, which were to pay a slightly higher price, had not yet started to operate. In 1811 Samuel Marsden began commercial exports of wool to England; in 1813 Riley and Macarthur joined him in a shipment on the *Minstrel*, the three supplying about half of the total consignment of 142 bales.

The *Sydney Gazette* of 4 February 1815 reported:

WOOL. — We are happy to state that the result of the shipment of this article on the *Minstrel*, will stimulate the sheep-holder to improve the quality of his wool by every means in his power. A few bales consigned to London, by Mr. Riley, being part of his shearing of 1811 and 1812, which had been very badly washed, and indifferently sorted, netted an average of 2s. 6d. sterling per lb.; the best samples selling as high as 5s. 9d. notwithstanding, at the periods above-mentioned, there was only a trifling dip of Spanish blood in his flocks. The advantages open to the Colony in the certainty of so valuable an export, will prove equally of moment to the interests of the Merchant, as to the finances of the Settler.

The criticisms of the preparation of Riley's wool must be qualified. This was the first washed wool sent from the colony, and possibly the first to have been sorted. Though the washing was described as bad and the sorting as indifferent, Riley was the colonial innovator; the skills had yet to be learned. The fact that the

best samples made 69d indicates reasonably competent sorting. Riley's prices compare well with other clips from the same shipment; for example John Macarthur's, which was very dirty and unwashed, made 20d per pound. For an earlier shipment Marsden had received a net 45d per pound for scoured wool. As no information is available on the amount of dirt in the wool and as Macarthur's wool was sold as greasy, Riley's washed, and Marsden's scoured, it is not possible to compare the prices. Probably, on a scoured basis, the prices were fairly similar.

Riley, like other colonists, was taking notice of wool: 'The fine wool of this country is rapidly becoming a conspicuous object.' He bought 6 Merino rams from Mrs Macarthur for 108 guineas.⁴

After this period of activity there is a gap in the Riley records. Droughts in 1814 and 1815 must have checked enthusiasm and reduced financial prospects. The Cumberland Plain generally was now overstocked, and Riley was not among those who sought new grazing lands. In January 1817 he sold his stock, 700 ewes and 400 lambs, to William Howe, a newly arrived Scottish settler of experience, on five years' terms for £2000 (well above the current average price), leased his 3000 acre Raby station for five years at £100 per annum, and sailed for England with his family.⁵

24 Bare earth and dust show the effect of drought on a north-west New South Wales sheep station



In England he joined the firm of Donaldson, Wilkinson and Co., colonial agents who handled considerable quantities of wool from New South Wales, and thereby increased his connections with the wool trade. By 1824 it was clear that Saxon wool had supplanted Spanish as the most valuable raw material. The five-year lease of Raby had expired and Riley's brother Edward was now in New South Wales in charge of his pastoral affairs. Richard Jones, at once Alexander's pastoral rival as well as business partner, had already made an extensive purchase of Saxon sheep for New South Wales.⁶ The Rileys decided that they would produce Saxon wool at Raby. In 1825 Alexander wrote to his brother Edward:

My previous letters to you this year... will have acquainted you that at length the expectations of many long and anxious considerings, devisings and arrangements have so far been successfully accomplished by the return of Edward [son of Alexander's brother, Edward] from Germany with two hundred (having determined we shall proceed on a full scale) of the most exquisitely fleeced sheep procurable in the whole Electorate of Saxony — which I am sanguine enough to hope will lay the foundation of important results to both our families and be equally the means of largely contributing to the future best interests of the Territory in enabling it to as effectually vie with the German as it has hitherto successfully eclipsed the Spanish wools.

The first outlay in the accomplishing of such an object is necessarily serious, but I know not at this time of [any form] of employment of Capital and Attention (looking to the peculiar conjoined advantages we have in following it up) that holds out such prospects or that presents so stimulating a point for proper Ambition for if the Animals safely arrive we must leave all competition at a distance in the superiority of our wools, not even bending to the Australian Company with all their combined wealth — in fact the sheep may be truly said to bear Golden fleeces...

They have been seen here by the first judges who pronounce unanimously that nothing of the kind has yet been witnessed in this country and they are the subject of universal admiration and *with many of the most profound envy*.⁷

The sheep cost £18 per head on landing in Sydney but this was '£10 per head less than Mr. Jones' unhappy collections'. There were 180 yearling ewes, 'not like Mr. Jones' of all ages, sizes, shapes and makes', and 20 rams.

Jones's first wool clip from his imported sheep reached London in 1826 and Riley had to modify his criticisms.

I have seen Mr. Jones's Wool from his Saxons by the *Mangles* and I am absolutely astonished at its beauty and fineness and considering all things it has been sent home in better order than I expected, although not quite in such perfection as I should look in the fleeces from Raby — I assure you it has created much sensation here and particularly among the German Wool Brokers, who are evidently becoming alarmed at the prospect they see of the Saxon wool from N.S. Wales ultimately eclipsing their own Trade! — I most anxiously await the arrival of your first Shearing, and you will probably be surprised when I say I shall be quite content if they equal in fineness the fleeces I have seen of Mr. Jones.⁸

Alexander sent detailed instructions to his less experienced brother. The surplus rams not needed for the imported ewes were to be used for the 'Immediate tangible outturn of ennobling the produce of 1000 of the best ewes procurable in the colony'.

The most unremitting attention will be necessary in the care of the Saxons for the first year, from the peculiar manner in which they are bred in Germany... you should *instantly*... take measures to have a shed for the sheep put up at Raby ... to provide against bad Weather and Cold Nights and for their first lambing, as their premature exposure during their initiation into the colony might destroy all our hopes.⁹

The sheep under the care of Edward Riley jnr arrived in Sydney in December 1825, only 3 ewes having died on the passage. In the meantime Edward Riley snr had died (in a fit of depression he had shot himself), so that the management of the Saxons devolved upon his inexperienced son, Edward jnr.

In the colony the Saxon sheep attracted considerable attention, in which young Edward shared. The sheep acclimatised quickly and special protection was found to be unnecessary. They were exhibited at the 1827 meeting (show) of the Agricultural and Horticultural Society and were awarded gold medals for the best fine-woolled rams and best fine-woolled ewes. (The Macarthurs did not support the Society and so their sheep were not exhibited.) The President of the Society, Sir John Jamison, wrote to young Riley asking him to furnish such information on Spanish sheep as he considered publicly useful, and Edward's essay was appended to the Society's annual report.

Meanwhile, in England, Alexander Riley's fortunes had suffered a reversal. At the same time as he bought the sheep in Saxony he also bought, as speculation, some Saxon wool. The price fell and he had to sell the wool at a loss of £5500. 'It almost makes me say it was an ill-fated hour when I first thought of the Saxon sheep.' There was a 'dreadful depression'; 'the times with the manufacturers are very bad indeed'; wool prices were down and inferior wools had not been saleable at any price.¹⁰ His love of speculation could not be curbed for long, as the following month, in 1826, he wrote to his nephew:

I have just returned from a visit to Mr. Western at Felix Hall and have made arrangements with him for the option of taking the choice of from 100 to as far as 200 of his Ewes.¹¹

There is no record that this sale was completed. Mr Western was a relative of Lord Western, well known for his attempts to 'breed a Merino fleece on a Leicester carcase', and who advertised his sheep as cross-bred. It appears that Riley was not satisfied with the wool of the Anglo-Merinos, as they were called, yet thought they were good enough to send to New South Wales to be improved by Saxon rams. This indicates that Riley, who knew the sheep of the colony up till 1817, considered the Western sheep superior for cross-breeding to any in the colony.

On the other hand, leading graziers in Sydney were already advising the London office of the Australian Agricultural Company:

We cannot recommend the further purchase of English Merinos, as better woolled animals, than any we have yet seen imported, may be obtained in the colony, at the same, or probably a lower price.¹²

Riley was a business man primarily interested in making profits. He considered Saxon Merinos would provide for his son William, his nephew

Edward and William Dutton, who was under his protection and had the skills he needed. Dutton had studied agricultural science in Germany and knew Saxon sheep. Riley's ventures with Saxon sheep depended on these three, and disappointment with them sometimes caused him to change his plans.

Edward Riley brought out 200 Saxons with the loss of only 3 sheep. He reared 158 lambs from 162 ewes at the first lambing and won gold medals for his Saxon sheep at the Agricultural and Horticultural Society's show. However, his uncle lost some faith in him because of poor preparation of some export wool and some debts he incurred.¹³ The unwillingness of his son William to take an interest in his business caused him to write to Edward:

Under the impression that he would soon be with you I had made arrangements to purchase 200 more Saxons, which with 100 for Mr. [William] Walker are now in this country — but so am I dispirited in consequence of his change that if I can possibly withdraw myself I shall disdain sending them out... I could have made eligible terms as to Credit and have shipped them on board at about £5 per head.¹⁴

This shows a cooling in Alexander Riley's enthusiasm for Saxons, which he bought because they were available and cheap. These sheep, called Silesians as they were shipped from Stettin, the port for stock from Silesia, were shipped from London on the *Numa* in December 1827.¹⁵ Riley determined to sell his share of them when they arrived at Port Jackson.

There were rumours of poor management at Raby. Mrs P.P. King wrote to her husband, Captain King, in October 1827 that 'Mr Feely ... has bought 3000 sheep of Mr. Riley.'¹⁶ It seems that Edward, in need of ready money, sold his uncle's sheep and that the Saxon ewes had been crossed with local rams. To repair the damage Alexander sent his son William to Europe with William Dutton to buy a draft of the highest quality Saxon sheep. They planned to visit the best studs in Europe.

They visited the Möglin estate (40 miles east of Berlin), where Dutton had been trained. The sheep there were a combined flock of Spanish Escorial (fine wool) sheep imported in 1765 and Negretti (stronger wool) sheep bought in 1814. It is not known whether the 100 sheep Riley and Dutton bought were from this estate, but Alexander Riley made great claims for them in a letter to the Secretary of State for the Colonies, in seeking a land grant in New South Wales:

In 1825 I was induced to go to the expenditure of £4000 in transmitting to New South Wales 200 Saxon sheep; selected regardless of cost, from the finest flocks in Germany — and in 1828 I sent 100 more at a similar proportion of expense.¹⁷

The most likely ship to have brought these sheep for Raby was the *Diadem*, which left Hamburg on 13 August 1828 and arrived on 17 January 1829, with 299 Saxon sheep on board.¹⁸ Possibly the owner of the other 200 sheep was John Bettington, Sons, and Co., who applied for a grant of land, saying that they

propose ordering their correspondents in Germany to purchase a considerable number of sheep of the most esteemed flocks, and Ship them forthwith for Sydney,

accompanied by proper Shepherds and a person conversant with the present method of sorting German Wools, which the growers so much stand in need of.¹⁹

These Riley Saxon sheep were highly regarded in the colony because of their obvious merits, but curiosity about their origin remained for many years, as a letter in the *Australasian* in 1870 shows.

If the following is of any service to sheep-breeders ... as to ... where the sheep of the late Mr. Riley of Raby came from, I can inform them that they were selected by the late Mr. W. Dutton, one of the best judges of wool and sheep, then living, in Saxony, for Mr. Riley; and as to figure and density of wool, as well as length, the Camden sheep could not compete with them, nor could they for the beautiful wavy, bright, lustrous, and silky appearance of the wool.

The merino [Camden] was a sharp, narrow-backed animal, wrinkled about the neck, and yielding mostly short or clothing wools.

The Saxon was a good framed sheep, broad-backed, deep-bodied, bearing closely piled combing wool. I classed these sheep both at Raby and at Cavan, the two stations of Mr. Riley.²⁰

25 Sheep must be moved away fast from rapidly rising flood waters



William Dutton returned to Sydney in 1830 to manage Raby, particularly to sell the Saxon and Silesian sheep.²¹ The Silesian sheep brought by the *Numa* were probably sold to William Walker, the owner of the rest of the shipment, who founded the L.U.E. stud at Mudgee with imported Saxon sheep. Raby had been badly managed and a large amount of scrub needed to be cleared, while the main income was from the sale of Saxon rams. Some of these were superior to any which, until recently, had been available in the colony but others were of poorer quality. Most importers of Saxon sheep had taken their sheep inland, many to Mudgee, and Raby was the only source of supply near Sydney. There was a strong demand and, inevitably, all were sold as good quality Saxon rams, as few colonists were experienced judges of sheep or wool.

Many were very satisfied with the Raby sheep; and the improvement of wool quality which dates from this period derived to a considerable extent from them. Others took delivery of rams which they later found to be unsatisfactory. One such was Charles (later Sir Charles) Cowper, five times Premier of New South Wales. He wrote in 1833 to William Riley, who took over from Dutton, that of the Raby rams used by a Mr Lithgow one was 'red-legged', a sure indication of a

26 Sheep left dead as flood waters recede



cross-bred sheep. He complained that some of those he had bought were inferior and demanded that he be permitted to change these.²² Perhaps other graziers did not mind if Raby sheep had red or yellow legs, so long as they gave good wool.

In spite of these complaints, Raby wool was highly regarded in London. The clip of 1832, which had been shorn, washed and sorted under the direction of Dutton, arrived in London in June 1833 and Alexander Riley was delighted with its quality.

The fame of the Australian Saxon wools is now fairly established and it only remains with yourself and Mr. Jones to continue and if possible improve the universal estimation in which it is held.

The R [Raby] bales were allowed by the whole trade to be most superior and I tremble in the possibility of any circumstance arising to prevent your sending this years clip *in the same state of perfection*.²³

The Raby flock appears to have regained its prestige as a source of Saxon rams, graziers in the Mudgee district being regular and satisfied customers. But on the death of William in 1836, after four years as manager of Raby, the Riley properties were sold and the flocks dispersed. Of the young ewes, the first selection of 100 was bought by Edward Cox, son of William Cox. As noted in Chapter 11, these were taken to Rawdon and it was there and at other nearby Mudgee studs that the Rileys' Saxons made their contribution to the wool industry.

The restless search of Alexander Riley for new and profitable enterprises caused him to import Cashmere goats, under the mistaken impression at first that they were sheep — in fact their coat of hair with an undercoat of soft fibre is very similar to that of Bengal sheep. He became interested in the Cashmere goats as early as 1813, when he wrote to his brother Edward:

There is reason to believe that notwithstanding the great estimation in which the Spanish Wool is held, that the Fleeces of the sheep of *Cachimere* and in the *Thibet* and *Boutan* Country are much superior. Do pray learn if the reports on this subject are correct, and how it would be possible to obtain some *Females and Males* of the breed.²⁴

Riley did not import any goats until 1832, when he was probably depressed because Saxon sheep were not as profitable as he had hoped they would be. In France M. Polonceau had been crossing Cashmere goats with Angoras, the resulting cross producing more down than either of the original breeds. Riley bought 11 of the cross-breds and 2 pure Angoras, sending them to Sydney, where his son William crossed them with local goats, in the hope of producing a new colonial product.²⁵ A pamphlet by William, 'the capability of rendering the common goat importantly valuable through the crosses of the Cachmere and Angora goats' was commended by Sir John Jamison, President of the Agricultural and Horticultural Society of New South Wales.

William Riley bought colonial goats for crossing with the imported ones, and his flock increased to 300. Other colonists experimented with them also, but the goats soon disappeared from public record. Now, 150 years later, the probable descendants of these goats have been rediscovered and are being used for crossing with Cashmere and Angora goats to give high yields. The feral goats have the



27 Angora doe with twins. Alexander Riley imported similar animals in 1832.

advantage of being well adapted to surviving in the environment in which their offspring will live. Alexander Riley is remembered for his enterprise in importing Saxon sheep; if the Cashmere industry lives up to its present promise, he should also be honoured for his attempt to start a new industry in the colony, even if the recognition has been so long delayed.

The Mudgee district was a somewhat isolated area on the western side of the Great Dividing Range, restricted to the stretch of the Cudgegong River from Rylstone to Mudgee, a distance of only 40 miles. It was discovered by some of the original Bathurst settlers trying to find a short route to the Liverpool Plains. Mudgee was a cul-de-sac and, while the rest of the rural community were answering the call of 'better country further out', it was not on the road to any of the newly discovered districts, and thus did not lose its settlers. This permanent occupation gave impetus to long-term programs of improvement of stock by breeding and selection.

It is not clear when the first sheep came to Mudgee, but whether by accident, or in accordance with some plan of which no trace can be found, the sheep that came to the district included many of the important drafts of Saxons and Anglo-Merinos which had come to New South Wales between 1825 and 1830. Perhaps one reason was that the district was too far from the Sydney meat market, and the sheep kept there were those most likely to produce the valuable wool which would pay for the cost of transport to the seaport.

Among the early settlers were William Lawson, who had been a member of the first expedition over the Blue Mountains, and George Cox, a son of William Cox who had built the first road to Bathurst. The first grant, 2000 acres, was made in 1823 to Captain Henry Steel; this was bought by the Cox family in 1836.²⁶ The district was taken up by very few settlers: James and William Walker at L.U.E.; William Lawson, represented by his manager, N.P. Bayly, who later became owner of Havilah; George and Henry Cox at Burrundulla; and Edward Cox at Rawdon near Rylstone. These four neighbouring properties all had studs which became famous for a long period. They were mostly resident owners with a personal interest in improvements.

Each of the four principal grazier families bred their own rams from their own selected flock and, though they had some difference in background, all used blood of the newly imported Saxon sheep and interchanged rams. All were interested in breeding fine wool, which was suited to the district, and had a good knowledge of wool quality. Edward Cox had been trained in wool classing, as he studied it for three years in England. N.P. Bayly was born in the colony in 1814 but went to England at the age of 15 to complete his education; his later skill as a judge of sheep indicates that this included some study of the technicalities of the wool trade.²⁷

Particularly important for Mudgee were Saxon sheep derived from those imported by the Rileys for their Raby stud in 1825. The Cox family bought 100 ewes at the Riley dispersal sale and used rams derived only from them for some years. They sold some of this stock to their neighbour N.P. Bayly, and James and William Walker also used rams from Raby. Of other Saxon imports, 200 imported by J.B. Bettington went to Brindley Park and 300 for Richard Jones and Walter Davidson went to Collaroy, both directly across the Great Dividing Range east

from Mudgee. The ill-fated Saxon sheep for the Australian Agricultural Company were at the coast near Port Stephens, east from Merriwa, an area that proved less suitable. Thus most of the newly imported sheep for New South Wales were in a confined area in or near Mudgee. One result was that for many years Mudgee wool remained a distinct type: very fine, dense and with a high proportion of yolk which gave the wool a black tip.

The progressive spirit of the Mudgee graziers is shown by the fact that it was the first country district of New South Wales to organise annual agricultural shows, the first being held in 1846.²⁸ The Agricultural and Horticultural Society of New South Wales became inactive in the 1830s and it was left to local centres to foster competition. At this first show 'the fine woolled sheep were pronounced excellent, perhaps unequalled in the colony'. At the Paris exhibition of 1855 wool from Edward Cox's Rawdon flock won the silver medal, and bronze medals were awarded to wool from the same flock in London and Philadelphia. Rawdon then passed to Edward Cox's son, Edward King Cox, and at the Paris international exhibition in 1878 wool from Rawdon was given a silver medal and, by the unanimous decision of the jurors, an additional prize, the Grand Prix.

William Hampden Dutton, agricultural scientist

Two of the best drafts of Saxon sheep for the colony were selected by William Hampden Dutton, who by training and experience was singularly fitted for the task.

Agricultural science was in its infancy. There was no institution for such study in England and only one in Europe, at Möglin near Berlin. This institute was directed by Dr Albrecht Thaer who, after studying medicine and botany, in 1784 turned his attention to agricultural research on an estate near Celle, Germany. In 1802 he converted this estate into an agricultural institute, where he lectured on farming. Two years later, Thaer was called by King Friedrich Wilhelm III of Prussia to head a new state agricultural institute at Möglin, which catered for a class of about twenty students for a course of two years.¹

William Hampden Dutton was the first son of the British vice-consul and agent for packets at Cuxhaven, a good and secure harbour in the North Sea at the mouth of the Elbe, 110 kilometres below Hamburg. The Cuxhaven post held by Dutton snr was an important one. Although Dutton snr spoke little German, his sons, educated at Hofwyl near Berne, Switzerland, were fluent in the language.

William Dutton, born in 1805, entered the agricultural institute at Möglin in 1822 after his formal schooling was completed. His letters to his family show something of the training he received.²

Lectures were to start in October, but Dutton went to Möglin in August to help with the harvest of 120 acres of potatoes, grown principally for food for the sheep and cows during the winter, as the sandy soil was considered unfit for cereal crops. The students were initiated into practical agriculture before considering the theory.

There was one other Englishman at Möglin, George Ackerman, whose father had written to Sir Thomas Brisbane for information about wool-growing in New South Wales. Dutton's married half-sister was already in the colony, and it is evident that by 1823 Dutton and young Ackerman were seriously considering the prospects of settling in New South Wales. Dutton wrote to his father on 1 March 1824:

It was with the greatest anxiety that I awaited the arrival of Sir Thos. Brisbane's letter to Mr. Ackerman... I must confess ... that its contents are but very superficial,

and not at all what one would expect from a man of his learning and erudition... All that he says may be reduced to the following three points:—

- 1st That wool will pay the settler better than any other produce.
- 2nd That the climate of N.S.W. is better adapted to the growth of the article than Van Diemen's Land and
- 3rd That the fleece of the sheep imported from Spain improved 50% in a year after their arrival.

The first I believe, the second I rather doubt, but the third is a most egregious falsehood, and if Sir Thos. allows himself to be duped in this way, he must be more of a philosopher than a wool-grower... It is pleasing however to see that Sir Thos. interests himself for the agriculture of his colony and, if a regular course were pursued, I am convinced that Great Britain would soon be independent of the continent for her fine wools... This would consist in erecting a national sheep farm in N.S. Wales, and procuring a flock of the finest Electorals from Saxony. From this flock the breeders might be supplied by means of an annual auction with rams of the first quality... This is the plan adopted by the Government(s) of Saxony, Austria and Prussia, and the results fully prove the attention it deserves.

No sheep had yet been sent from Saxony to New South Wales, though the matter was being discussed, and the Australian Agricultural Company was not yet in existence; yet here was an English youth, not yet 20 years old, advocating a national policy for wool production in the colony and criticising the Governor in the process.

From Dutton's letters we may see the scope of study at Möglin. 'We work from 5 o'clock in the morning until 10 at night'.

The study of natural philosophy and botany requires us to be much in the open air, indeed we are out regularly three hours every day in search of plants. At first I was much fatigued with walking, but I soon got accustomed to it, and a short time ago I walked with George [Ackerman] and two companions 25 miles in one afternoon and 30 back the next morning without any inconvenience.

There was practical work with sheep, involving the application of scientific principles: 'A short time ago I inoculated eighty of our sheep with the sheep pox, and I am happy to say that only one died.' Sheep pox, common amongst sheep in Europe, was an infectious disease which caused blisters on the skin of the sheep. There were two strains, mild and acute. By analogy with the work of Edward Jenner on smallpox in humans, it was found that inoculating sheep with the mild strain gave them immunity to the acute form.³

In May 1823 Dr Thaer convened a meeting of wool-growers and students at Leipzig to define the terms used by them and by wool merchants. This indicates that Dr Thaer was involved with wool and that many of his students were wool-growers. Möglin was thus a college for agriculture and wool instruction—perhaps the world's first school of wool classing. Thaer's present and former scholars assembled in May 1824 to honour him, and he received various orders from European royalty, including the Order of Merit from the King of Saxony and a gold medal from the Society for Promoting Arts, Sciences and Manufactures, while the neighbouring peasants thanked him for helping them to raise the value of their land threefold.

Dutton finished his course in June 1824 and was immediately employed by Mr Nathusius, the proprietor of three large estates which had some Negretti sheep. Negrettis from these estates were sold in Melbourne in 1863, where some were bought by the Messrs Peppin in the early days of the establishment of their famous Wanganella stud flock. In 1825 Dutton was employed by the Australian Agricultural Company. This had been formed in London in 1824 with the principal aim of growing fine wool for the English market. They proposed to buy Saxon sheep to send to the colony, establishing a flock which would provide rams for improving the local sheep.

Most of the English directors of the Company were speculating business men, though there were a few with some knowledge of wool. John Macarthur jnr was instrumental in forming the Company. They proposed to invest in Saxon sheep, of which they had little knowledge, and, in any case, were too busy to wander around Germany looking for sheep. They needed the services of someone, preferably an Englishman, who was familiar with Saxon sheep and could negotiate with farmers without the commercial hazard of using a hired interpreter. Dutton obviously had the qualifications for the position. By arrangement he met at Leipzig Mr Nilsen, a representative of the firm of one of the directors, who happened to have business in Germany. Though Nilsen knew nothing of sheep, he was to co-operate with Dutton in selecting the Saxons.

Dutton wrote on 29 April 1825 to his father:

Immediately on my arrival [at Leipzig] I waited upon Mr. Nilsen... We are to buy 260 ewes and 40 rams... The rams I intend to purchase at Möglin...

The sheep will be forwarded to Hamburg where they will be embarked for England... My first purchases will be in the neighbourhood of Wursen and Dresden, from whence I proceed to Anhalt and thence to Möglin... The prices I am allowed to pay for the sheep are unlimited... I am determined to buy 40 of the best rams at Möglin though they even cost 50 louis d'ors apiece...

In the urgency of getting to Leipzig, Dutton was not able to get the necessary papers, but he borrowed a passport and travelled under the assumed name shown on it. The secrecy, from whatever motives, had the result that, with one exception, the estates from which the sheep were bought cannot be identified.

In another series of correspondence, Dutton said he had bought some sheep from Prince Lychnowsky at Troppau, now Opava, some 300 miles further east than the area in which he had proposed to operate. Prince Lychnowsky's flock was the most famous in Europe, and in later years other sheep from this flock were imported by sheep-breeders in New South Wales. The conclusive evidence that some of the sheep for the Australian Agricultural Company were from this source is Dutton's brief reference in a report a year later from Sydney to the Secretary of the Company in London.

I found that the sheep which I purchased of Prince Lychnowsky in Austria were both better able to endure fatigue and upon the same Allowance of food kept themselves in much higher condition than the others and in case of a future purchase I would most strongly recommend its being made wholly out of his flocks.⁴

The number of sheep bought from the Lychnowsky flock is not known, but they were referred to as 'sheep' and probably included rams and ewes. It is known that Dutton hired four shepherds in Germany to accompany the sheep to England and on to Sydney. Two were engaged to take to Hamburg the sheep he had bought near Leipzig-Dresden, and two more to take the Lychnowsky sheep. It appears he did not buy any sheep from Möglin on this occasion.

Dutton was appointed superintendent of the Company's flocks for a term of seven years from 26 August 1825. He arrived in Sydney on 22 March 1826 with 242 sheep, all described as Saxons though strictly speaking the Lychnowsky sheep were from Silesia. Forty-two were lost on the voyage and some were so weak on arrival that they died after landing.

Dutton's first reception in the colony was most satisfactory. Robert Dawson, the manager of the Company's estates, found Dutton's opinions on the management of sheep on an extensive scale to be entirely in accordance with his own; and Dutton also found himself in agreement with John Macarthur on the principles of sheep breeding. He was surprised at Macarthur's success in keeping his Spanish flocks uniform by breeding 'in and in'. This is the only known contemporary reference to Macarthur's use of the system, for Dutton was the first man in the colony who, by training, was capable of discussing the subject intelligently.

Within a few months further sickness developed among the imported sheep. The Company's estates were not yet ready to receive them, and in the meantime the sheep were crowded on a small area at Retreat Farm near Windsor. Some sheep died just at the time Dutton was away visiting his married half-sister at Newcastle. Dutton had recommended that the sheep should be moved to another area, but this had not been immediately convenient. The local committee of the Company considered that Dutton had neglected his duty and dismissed him from the Company's service.

For a few months Dutton worked with Edward Riley jnr, thus becoming familiar with the newly imported Saxon sheep at Raby. He returned to England early in 1827 and there met Alexander Riley, who took him under his protection. As we have seen, in 1828 Dutton accompanied Alexander's son William on an extended tour of Europe, in the course of which Dutton selected for the Rileys 100 sheep which were sent to the colony, to which Dutton soon returned in company with his brother Frederick, arriving at Sydney in March 1830.

The recorded histories of Australian pioneers are mostly concerned with those whose careers either by good management or good luck resulted in success. There were many who did not succeed, and William Dutton, who had more than his share of bad luck, was one of these. He was the first settler in Australia who had been trained in what would now be known as veterinary science. It is ironic that he was to be the victim of a series of losses resulting from diseases of sheep.

As already mentioned, some of the Saxon sheep imported by the Australian Agricultural Company died. Dutton carried out post-mortem examinations and wrote a report which he sent to the Company in England asking for a diagnosis — which apparently was never given. He described the presence of fluid in a sac around the heart and in the heart and abdominal cavities, symptoms now known to indicate a heavy infestation of the internal parasite barber's pole worm, though

he did not discover the actual worms, thread-like organisms which occur in large numbers in only one part of the stomach. In Europe the incidence of the parasite was slight and it was practically unknown. Yet failure to cure this unknown disease in the sheep of New South Wales led to Dutton's dismissal from the Company.

In 1831 Dutton set out to find a suitable area to take up as the grant to which he was entitled because he had £2000 capital, a loan from Alexander Riley. Finding good land was no longer an easy matter, as the best areas were already settled. He explored beyond Yass, the same district which William Riley had travelled in the search for a grant which his father had been promised as reward for his importations of Saxon sheep. A fragment of a letter to his mother (20 April) shows how he discovered the Goodradigbee valley, part of which is now under the waters of Burrinjuck Dam:

The valley is about sixteen miles long and about two broad, and will enable me to keep 10,000 sheep perfectly easy...My overseer and myself had been travelling upwards of 700 miles in search of land, but could find nothing to suit us, when falling in with a tribe of blacks they told us of this place, and one of them offering to accompany us, we set out in quest of it next evening.

28 Sheep burnt in bushfire. Many of the injured must be killed to avoid prolonged suffering.



Dutton applied for and received the grant, and he stocked Goodradigbee with sheep. At the first lambing another blight appeared. Owing to some soil deficiency, the ewes devoured each other's lambs, and the run had to be abandoned for sheep. Dutton tried to exchange the grant for another, but without success, and he had to sell it as a cattle run. He then purchased a section near Yass known as Comur, which he renamed Hardwicke.

In 1832 he married and set up house at Hardwicke. He ran considerable flocks of sheep until 1835, when the next disaster struck:

It was about this time that the catarrh broke out. It was first seen on Wm. Broughton's station at Bruewa [Boorowa] about 25 or 30 miles from Yass. It spread through many of the flocks in these parts and many of the squatters fled with their sheep to Monaro, F. Dutton and H.G. Bennett among the rest.⁵

According to the Dutton family papers, it was William, not his brother Frederick, whose sheep suffered in the epidemic; he lost 4511 sheep. Frederick took up land at Rosebrook, not far from Cooma.

Catarrh in sheep is now unknown in Australia. It was a highly infectious disease, akin to pneumonia, which had occasionally appeared in England. In Australia the predisposing cause was the muddy yards in which shepherded sheep were confined at night. The English practice was to fold sheep in a pen made from portable hurdles which could be moved to a fresh position each day. In Australia with much larger flocks, and therefore larger folds, the daily movement of hurdles was irksome, and it had become customary to pen the sheep in a more strongly built fixed yard, the sheep being enclosed on the same area night after night. In a wet winter the yard became a quagmire, but as sheep had survived the ordeal for years without ill effects, fixed yards became part of the shepherding routine.⁶ When catarrh broke out, it was not immediately apparent that the muddy yards were connected with the outbreak, and the ravages of the disease continued for years. One result of the spread of fencing from the 1850s was that sheep could select their own camps, and the disease disappeared.

On the Monaro the surviving sheep thrived, but the reports of the newly discovered lands to the south, the *Australia Felix* of Major Thomas Mitchell, induced the brothers to move towards Port Phillip. Frederick took up a cattle station, Mullengandra, on the Murray near Albury, and William took up country on the Loddon; this was a huge area, as was customary, and he stocked it with sheep, probably bought on terms. Here in 1841 he lost 7000 sheep. The cause of loss is not certain, but William now had many mercantile interests and did not live at the Loddon in personal charge of his sheep. From the general pattern of conditions of the period it is probable that they died from a combination of drought and scab. With the general financial depression the loss of sheep led to William's bankruptcy.

Meanwhile the new settlement of South Australia attracted the attention of the two brothers as a field for exploitation. In 1837 they engaged with the South Australian Company to deliver cattle to Portland to be shipped to Adelaide. The cattle came from Frederick's Mullengandra station, and two shipments of 160 head were made during 1838. The price to be paid at Portland was £8 per head, a

price which provided more profit for the South Australian Company than for the Duttons. William went to Adelaide early in 1839, possibly to make some more satisfactory arrangement.

[He and] some other gentlemen from Sydney, [had been] so struck with the surpassing fertility of the Mount Barker district when compared to the richest tracts of New South Wales, that although they had arrived in the province without the slightest intention of buying land or becoming settlers, [they] had at once demanded a special survey of 15,000 acres, and intimated their resolution to send numerous herds and flocks and to become themselves denizens of South Australia.⁷

William, in partnership with two others, took up land in the first 'special survey' near Mount Barker.

William thus was in Adelaide, already thinking of importing sheep to South Australia, when Edward John Eyre in March 1839 brought 1000 wethers he had driven overland from the Limestone Plains in New South Wales, not far from the Yass country Dutton knew so well. Dutton planned a much larger expedition to follow in Eyre's tracks, to bring in several thousand sheep. As a financial venture it was a failure: Eyre had sold his wethers at the satisfactory price of £2 a head, returning a good profit for the expedition, but by the time Dutton's sheep arrived in Adelaide, nearly a year later, the market had collapsed.

29 Rabbits in eaten out pasture



William, ruined financially and in poor health, spent the last years of his life as a wool sorter with a Melbourne wool-broking firm. He died in 1849 at the age of 44. He had been given the best training available in veterinary science, but it was of limited value in diagnosing sheep diseases in Australia or in curing them. A few

30 The dingo, which killed early flocks and made shepherding necessary. With closer settlement the place of the dingo in the ecological balance is being reassessed.



traditional remedies were sometimes useful, often made memorable by proverbs, such as 'Don't let the sheep from the fold until the dew be off the grass'. This stopped sheep from eating wet grass, on which newly hatched stomach worms congregated. Nevertheless, it was the pre-scientific age, as Louis Pasteur did not prove until 1862 that putrefaction depended on living organisms and Gregor Mendel did not establish the genetic basis of inheritance until 1865.

His brother Frederick prospered, making use of knowledge about agriculture and sheep management he obtained from William. He acquired a 120 acre selection 60 miles from Adelaide, which included a good freshwater spring at the foot of a hill, called Mount Dispersion, later changed to Anlaby, the Yorkshire home of Dutton's married sister. As the spring was the only water for a great distance, other graziers could not settle nearby. By the 1860s Anlaby was a freehold property of 70,000 acres running 60,000 sheep. Frederick imported Rambouillet and Saxon sheep from Europe and developed the first Merino stud in South Australia. He had other successful ventures, and retired to England with a fortune. He remained a bachelor and left Anlaby to his nephew Henry, the only surviving son of William. The property was worked by descendants of Henry until recent years.

The Australian Agricultural Company

As early as 1804 John Macarthur proposed forming an English company to breed fine-wool sheep, and he sought a large grant of land for this. Objections were raised to giving so much land to one person, which he tried to overcome by offering to sell all his sheep at £5 per head to a company of respectable persons living in England. As he had offered the same sheep to Governor King in 1800 for half that price, it appears that the respectable people were also intelligent and the deal fell through. Although Macarthur got his own grant of land, the idea that a company might be given a large land grant lodged in his mind.

John Macarthur jnr, who was practising at the bar in London, had good contacts among business men, particularly those in the wool trade. Having developed his father's plans of twenty years before, he called in April 1824 a meeting of investors at his chambers at Lincoln's Inn and proposed the establishment of a company, to be incorporated by Act of Parliament, with a capital of £1 million in shares of £100 each. This was to be called The Australian Company and was to obtain a grant of one million acres in New South Wales, for the purpose of growing fine wool but also cultivating the vine, olive, flax and other products then imported. It would support convicts in proportion to the land it received, thus reducing government expenditure.¹ The way had been made clear for such an enterprise by the recommendations of the Bigge reports.

A committee from the meeting waited on the Secretary of State for the Colonies, Earl Bathurst, who was impressed by the argument that, as the cost to government of each convict was £22 per annum, the Company, by employing large numbers, would effect great savings to the government. This was always such a decisive argument with a British government that Bathurst did not examine whether a sufficient number of convicts could be so employed as to make much difference to costs, whether there might not be other costs and inconveniences, and whether this was the most efficient means of developing the wool industry at that time. It has been generally assumed that this was an inevitable and desirable method of development, and that John Macarthur, not intending to promote the public interest and intending only his own gain, was led by an invisible hand to promote an end which was no part of his intention. As this undertaking and similar ones in the same decade were resounding failures, the assumption needs to be re-examined.

Bathurst 'suggested that attention should be paid to the importance of water carriage for the produce of the land'. This was to become a crucial matter in the selection of the land. It seemed a sound generalisation but, as he was ignorant of the wool industry and local conditions, it was a disastrous piece of advice, the only excuse for which was that it seemed a good idea at the time. This decision meant that the area of the Company's operation depended on a seaport; it resulted in a site being selected that was unhealthy for sheep.

Within two months of the meeting at Lincoln's Inn, the Company was incorporated by Act of Parliament in 1824 and was entitled 'The Australian Agricultural Company'.² Shares were readily taken up, in both England and New South Wales. Among the English shareholders were twenty-eight members of Parliament, which gave the Company considerable influence with the government. It appointed a schoolfriend of John Macarthur jnr, Robert Dawson,³ to the post of Chief Agent in New South Wales, where he was to administer the pastoral affairs of the Company, subject to the control of a committee to be formed from colonial shareholders. He was described as 'a gentleman whose respectability, talents, and extensive agricultural as well as general experience, eminently qualify him for the duties he has undertaken'. The active members of this committee, which had absolute authority to direct Dawson, were John Macarthur's son James, his nephew Hannibal and his son-in-law James Bowman. John Macarthur himself, who held ten £100 shares, declined appointment on account of his health (probably also on account of the ban on his taking part in public affairs). His health was indeed bad, but he actively interfered in the affairs of the Company.

In July 1824 Bathurst advised Governor Thomas Brisbane of the agreement reached:

a Company has been formed with a view to purposes of Agriculture generally in ... New South Wales, but more particularly to the rearing of flocks of Sheep of the purest and finest Breed...[with] the immediate Introduction of a large Capital and of Agricultural Skill...the proposals of the Company ... correspond with the recommendation [of] Commissioner Bigge... you will pay attention to ... applications for Convicts ... from ... the Company; at the same time you will not consider yourself as called upon to part with those Convicts,... necessary for the exigent purposes of Government, or to deny to private Settlers ... Convict labour ...⁴

The next year he advised that the Company was to receive one million acres, selected by the agent of the Company, Robert Dawson, provided it was taken in one distinct and continuous location. The agent was to be permitted to select, subject to public convenience and private rights, from one of three areas: those between the Blue Mountains and the River Hastings, Lake George to Bathurst, or westward from the Blue Mountains. The selected area was to be surveyed by Dawson and the Surveyor-General. As the primary objective of the Company was the production of fine Merino wool for export to Great Britain, they intended to buy any good quality sheep in the colony and to improve them by importing Spanish and Saxon sheep. It was expected that eventually they would employ 1400 convicts and thus save the government £30,800 annually. They would send from Europe persons skilled in managing Merino sheep and preparing wool for the market.⁵

Bathurst sent a precis of the agreement between the British government and the Company to Governor Ralph Darling, underlining the fact that the deal had been made without reference to him, by officials who had no first-hand knowledge of the colony. It was administered in the same way, undermining the authority of the Governor and increasing the difficulty of conducting a consistent land policy. The summary was as follows:

PRECIS OF THE CHARTER OF THE AUSTRALIAN
AGRICULTURAL COMPANY

- 1st. Grant not to be passed until His Majesty's Warrant has been obtained.
- 2d. Land to be valued at 1/6 per Acre, paying a Quit Rent of 30s. per £100.
- 3d. Exemption of Quit Rent for five Years from date of Grant.
- 4th. Quit Rent redeemable at 20 Years Purchase.
- 5th. If Quit Rent be redeemed in part, Payment of the Remainder to be continued.
- 6th. One free Superintendant to every 50 Convicts.
- 7th. Lands not to be alienated for 5 Years.
- 8th. 50,000 Acres may be alienated, when the Surveyor General shall have reported to the Governor and Council that £10,000 has been expended in improvements, and so on upon every Expenditure of £10,000 so reported.
Said Report to be enrolled in the Supreme Court.
Lands may be alienated upon the special License of Secretary of State.
- Every Grant or Conveyance of land to be null and void, except the same refer to the Surveyor General's Report or Secretary of State's License, as the case may be.
- 9th. Quit rent not to be collected, until the expiration of 10 Years from the date of Grant; and the Arrears then due to be remitted, should it appear that the Company have maintained 600 Convicts for the greater part of the latter 5 Years.
- 10th. Quit Rent, accruing for the 3rd period of 5 Years, to be remitted, if 1,000 Convicts have been maintained.
- 11th. Quit rent for the following 4 Years to be remitted, if 1,400 Convicts have been maintained.
- 12th. If after 20 Years the Treasury shall have been exonerated from a Charge equal to £100,000, all Payment of Quit Rent shall cease.⁶

The agreement was favourable to the Company, as it would not be called upon to pay anything for the large grant, provided it spent sufficient money in maintaining its convict labour and in making improvements to the land. If any rent had to be paid, it would be only at the rate of about 0.2d per acre. No mention was made of coal mines, but these became a large and profitable part of the business of the Company, employing 100 convicts. The lease of the coal mines at Newcastle, which had been developed by the government, was granted to the Company by the British government. The Company had applied for land on the river to build quays for servicing its sheep enterprise. The nearby coal mines became attached to this in a series of instructions from the British government, which bewildered and angered Governor Darling. The original grant for a wharf was for 500 acres, but the final grant was 2500 acres, including the coal mines. The Company then sought to have other coal mines closed down, as they provided unwelcome competition.⁷

The grant of one million acres had been selected at Port Stephens, north of Newcastle. The Surveyor-General, John Oxley, advised that the location was

inferior to the Liverpool Plains or the Hastings River country, both of which were offered as alternative sites. Dawson gave way to pressure from the local committee to choose Port Stephens and, in any case, he was ignorant of Australian conditions, although the Macarthur family should have known better by this time.

At the end of 1825 two ships with Dawson, a party of settlers and 702 sheep, in charge of four German experts, arrived in Sydney and were soon at Port Stephens. By the end of 1827 a total of 2122 sheep had been imported by the Company — all Merinos: 747 Saxons, 1196 French and 179 Anglo-Merinos. The French Merinos were no doubt the descendants of the thousands of Spanish Merinos driven into France during the Peninsular war; the Anglo-Merinos are of unknown origin; of the Saxons, one shipment, as told in Chapter 14, was selected by W.H. Dutton, including a draft from the famous flock of Prince Lychnowsky in Silesia. In the first year the Company also bought 7416 sheep from colonial flocks. This included 10 rams at £16 each, 132 ewes at £3 3s and 760 at £5 5s and 15 wethers at £1 10s from Macarthur.⁸ Dawson later commented that entire power over the agent was vested with the Macarthurs, 'with the privilege of selling stock to themselves, and... substituting... the names of other Proprietors'.⁹ John Macarthur jnr wrote to his brother James, 'You have thus a demand for all you can raise for ten years to come. This increased demand must necessarily raise the price...'¹⁰ The Chief Justice of the Supreme Court, Francis Forbes, in commenting in a letter on the management of the Company by the Macarthur family said that in the first year they managed 'to divide between eleven and twelve thousand pounds of the company's money' and 'they furnish examples of fraud committed with impunity'.¹¹

The first two years were generally favourable. In May 1827 James Macarthur, the most active member of the local committee, accompanied by Colonel Henry Dumaresq, visited Port Stephens and said that the sheep were doing well and that he was pleased with what he saw: 'I do not know when I have passed a more delightful day.' Dumaresq, Governor Darling's secretary, declared that he had never before seen such country and that he was much pleased with Dawson's arrangements. Six months later it was a different story. The presence of the Company was resented by settlers, many of whom believed that it had received favoured treatment; the Company's purchases had raised the price of stock, making it hard for new settlers; the Company had an enormous area of land (partly obtained by shifting some squatters); and it competed for assigned servants. Stories started to circulate about the purchase of old sheep at extravagant prices. There was a severe drought, which combined with the coarse coastal pastures to affect the condition of stock, particularly the imported sheep. Dawson began to explore inland areas and to move some sheep, but was given no time to make extensive changes. When James Macarthur visited the settlement in May 1827 he praised Dawson's management; the next month Dawson became one of the many to learn that it was dangerous to quarrel with the Macarthurs, even when in the right, when he wrote, 'I was no longer disposed to make the Company Grant a burial ground for all the old sheep in the colony'. He was suspended on 12 April 1828. The result was confusion and disorder at Port Stephens. The local committee panicked at the prospect of financial loss, broke up the Sydney office, cancelled the indentures of some of the servants and returned

many convicts to Sydney. They appointed a young man from the Sydney office, James E. Ebsworth, to take charge, but apart from a brief period when John Macarthur visited Port Stephens, they exercised no supervision.

When the London directors appointed a successor to Dawson (who had been dismissed in January 1829 after an inquiry into his neglect of the Company's affairs), a paper prepared for his information concluded: 'Mr. Dawson's culpability may be excused, but the culpability of a body of shareholders entrusted with full powers as a committee of management [was] such as to be without palliation'. This committee was, effectively, the Macarthur family, who continued to blame Dawson, accusing him of corruption.¹²

Some of the sheep, imported as well as colonial, were old and some were diseased; the imported ones were very susceptible to diseases that flourished in a damp climate. They had been protected in their homeland by being housed on straw during the winter months, which broke the life cycle of the worms. In any case, only the descendants of such sheep, selected by and in the Australian environment, were useful under Australian conditions. Both Dawson and Dutton, possibly the only two people in the colony with any useful veterinary

31 Blowfly maggots on dead sheep



experience, recorded the visible symptoms and the results of post-mortem examinations in such detail that we can now say that the sheep were heavily infested with worms in the lungs and intestines. As these minute parasites were then unknown, they could not be diagnosed. The larger and known parasite, liver fluke, was not observed: 'I saw no internal symptoms of what is *commonly called rot*, inasmuch as I discovered no plaice or weevils in the livers'.¹³ Some ewes were useless, having teats clipped at the point or cut off by careless shearing. There were some losses of ewes, and more among newly born lambs. Both Dawson and Dutton were discharged by the Macarthur family at different times, because they could not cure diseases of sheep for which the only cure at the time was to move them from coastal regions — which had been chosen by both Bathurst and the Macarthurs.

James Macarthur, referring to complaints of the age of some sheep bought by the Company, said that ewes and lambs died more frequently in flocks 2 and 3 years old than in those 4 to 10 years old. This agrees with the condition of wormy sheep, as young sheep are the most susceptible. He also stated that Merino sheep would breed until they were 11 or 12 years old, and were retained as breeders until they died, for old ewes reared the best lambs.¹⁴ There are some other references to the longevity of the early Merino sheep, but the ability of very old ewes to produce enough milk to rear good lambs depends very much on a favourable environment. They are now usually kept half this time.

It is evident that the area was unfit for sheep. Road signs seen near Stroud, 'Sheep-wash Creek' and 'Ram Station Creek', are reminders of the old days, but the only stock grazing now are cattle — the sheep have all gone.

With the departure of Dawson the Company lost an experienced stockman, who was not replaced by anyone of comparable experience for twenty years. His immediate successor, Sir Edward Parry, was experienced in an environment as far removed from that of Australia as possible — he was an Arctic explorer. He arrived, with the title of Commissioner, at the end of 1830. He had no knowledge of sheep but was aggressive and successful in demanding concessions from the government.

Macarthur was reaching the time when he was no longer able to conduct rational discussions, but his powerful patrons in England still made it possible for him to harry the local governor. In July 1828 he wrote to Darling refusing to accept the land which had been chosen by Dawson, the Company's authorised agent, and which Dawson had occupied for three years. He claimed that the site had been badly selected and surveyed by Dawson, who had reserved the best land for himself and chosen land for the Company of which two-thirds was barren or inaccessible. There was some truth in the assertion about the mixed quality of the land, but any area of a million acres was bound to contain some poor land.¹⁵

Upon receiving this complaint, Sir George Murray, Secretary of State for War and the Colonies, replied that the Company had advised him that 'extensive districts ... are mountainous and sterile; that other large Tracts near the sea coast are swampy, and ... unsuited for ... Merino Sheep'. He had 'consented to allow them ... to take other land ... of from 4 to 600,000 Acres, in substitution'.¹⁶

It is strange that Macarthur, who had been in the colony for forty years, had not been able to see for three years that the land was unsuitable. One of the

conditions of the exchange was that the Company would pay £300 a year to support a clergyman. It already employed a magistrate, six constables, a watch-house keeper, a scourger and a police clerk. The government paid for two of the constables, as well as keeping a detachment of soldiers at Port Stephens. The Company wanted the government to pay for the police, medical treatment for the convicts and a clergyman.¹⁷ The original claim that the arrangement would save the government a substantial amount of money was already looking hollow.

The new Commissioner of the Company, Parry, selected only good land so zealously, in exchange for the old, that Governor Richard Bourke refused to grant it.

... on the left bank of Peel's River... to have granted a location, in the form proposed by Sir Edward Parry, would have rendered useless for other Settlers and thus left in the Dominion of the Company the whole Space included between the Arbitrary boundary... and the natural boundary of the dividing Range...

In like manner... the parallelogram, Selected by Sir Edward Parry on Liverpool Plains, cuts off nearly all the Water from an immense extent of Surface, which would thus have become useless to other Settlers...

... I have not objected to these locations for the Company being taken beyond the limits, within which other Settlers are allowed to Select Land.¹⁸

The decision of Viscount Goderich, Secretary for War and Colonies, was simple and final:

You will,...with as little delay as possible..., place Sir Edward Parry in possession of the two locations in question... the delays which have taken place in the final settlement of the Company's Grant, have occasioned serious injury to their interests...¹⁹

Parry marked out two areas of 250,000 acres each in the new lands granted: Warrah, 'a most splendid country, not a single acre on which sheep may not feed', and an area (since known as Goonoo Goonoo) further north on the Peel River.²⁰ There were already a few squatters grazing cattle there, but as the region was beyond the bounds of location, they had no legal title and were moved off. There was strong but unavailing local opposition to the exchange. Six thousand sheep were moved to Warrah, but 36,000 remained at Port Stephens, indicating that Parry had no idea of the disease problem for sheep in that area.

The Company was always pressing for additional convicts, but the numbers they required for their farms and mines were not available. In 1826 Darling advised Bathurst that the full number of convicts applied for had not been granted, as there was a big demand for them by new settlers.²¹ The next year he advised Goderich that 398 convicts had been assigned to the Company, although the number employed fluctuated.²² After several years of bickering about the matter, the Executive Council produced a report showing how inefficiently the Company had used both its land and labour in comparison with other settlers. It produced a return showing the results for 1834, in accordance with information supplied under a regulation that had been passed in 1831:²³

Comparison of Company with five large settlers

	Total acres	Acres tilled	Sheep	Servants	Convicts
Company	1,000,000	550	46,000	128	312
Settlers	187,000	2250	90,000	204	330

The Company continued to complain, claiming in 1840 that a mine should not have been opened at Bulli, as it took labour the Company needed.²⁴

The sheep business was an unprofitable, bureaucratic enterprise. In 1832, when there were 25,000 sheep, these were shepherded in flocks of from 300 to 500. Two shepherds were allotted to each flock during the day and the flocks returned to the yard for the night, where they were guarded by a watchman against dingoes and Aborigines. The cost for wages and rations was £3160 a year, exclusive of shearing expenses. Further expenses were freight and insurance to London, brokerage and overhead expenses of the establishment. These amounted to roughly a quarter of the gross sale price. The average clip was 2 pounds 6 ounces per head, and the wool sold in London at from 16d to 23½d per pound, or less than 48d per sheep. Even on the most favourable of these prices, the operation was carried on at a loss. Sales of surplus sheep were negligible.

Up until 1837 the annual reports showed the sheep as belonging to the various categories of Saxon, French, Anglo-Merino and Improved Colonial, but in that year the London directors sent out some Leicester rams for crossing with the Company's sheep.

Much benefit was anticipated from the mixture of Leicester blood with that of the Company's merinos 'by increasing the weight of the fleeces and producing a larger quantity of combing wool so much sought after by the manufacturers'...

From that year the annual reports no longer show the different breeds; all were under the single heading 'sheep'. This indicates that all attempts at segregating the strains had been abandoned. Two years later, on the advice of a London wool broker, the use of Leicester sheep was restricted, and the Company reverted to the policy of breeding for fine wool. Thus it had the worst of both worlds, as cross-breeding of this kind cannot be reversed for several years and two years was insufficient to test whether it was valuable — as indeed it proved to be eventually in the Peppin flocks.

In the depression of the 1840s the Company, like the settlers, was unable to sell surplus sheep and resorted to boiling them down for tallow, 5000 sheep being so disposed of in 1846. The reports continued to show satisfactory results, which were not supported by the figures. The only improvement was in stock numbers, for the flocks had been increasing steadily until 1845, when they reached 124,000. Then two years of drought brought the sheep numbers down to 95,000. In 1846, 'casualties from age, disease, accident, etc.' amounted to 20,853. However the average clip per sheep had fallen drastically. In no year from 1841 to 1852 was the average cut more than 1½ pounds nor was the return more than 36d per head.

Although some sheep had been at Warrah since 1833, the Company's accounts fail to distinguish between the sheep depastured at the three estates and the wool clipped from them. The method of accounting prevented the evaluation of

the performance of sheep at the various stations — while performance in some areas was improving, that at others was declining. The usual cause of decline, wherever it occurred, can now be identified as infestation with internal parasites, but because the study of these has been made only in this century, earlier histories could not take this major influence into account. We can draw on one such history which is most valuable (apart from its lack of knowledge of the effect of parasites on sheep), that of 1907 by Jesse Gregson, a veteran superintendent of the Company, but some of his conclusions need qualifying.

The Company's affairs had become diversified. Almost from its inception the Company had been mining coal at Newcastle, and the profitability of this enterprise had distracted the directors' attention from the sheep department. There was a slight recovery in the price of wool in the late 1840s, and a disproportionate increase of interest in wool. In response to this the directors became more concerned with the welfare of the sheep and sought the opinion of experts. There had been a series of managers, now termed General Superintendents, who had little rural experience. In 1854 J.C. White, superintendent of the stock department, was asked for a report on the stock. His report opened by describing the Port Stephens estate as consisting in the larger part of land of inferior quality which he regarded as being totally unfit for sheep.

With reference to the wool there is no doubt but that the Company have succeeded in producing the finest wool in the colony. It has, however, been effected at the expense of the carcase. The Company's sheep are small, and the fleeces very light, and an entire change of blood is required not only to increase the weight of the fleece and size of the animals, but to improve the constitution of the sheep generally. The young sheep on the estate are principally unsound,²⁵ and with every change of weather the casualties are great; independent of which double the number are killed for rations, as the wethers never average more than 40 lbs. each and seldom exceed 32 lbs.

Two years later the Company appointed as General Superintendent Arthur Hodgson, who had been one of the pioneers of the Darling Downs country, and who knew his sheep. On 4 November 1856 he reported to the directors:

You will readily understand how my eyes were opened as to the real state of your sheep stock when ... I was told that no ewes had been put to the ram last season because they were unable to rear a lamb;... when out of 9,000 ewes which went to the lambing ground in August, 1855, 1,688 male and female hoggets form the total increase now alive; when out of 300 ram lambs, saved for rams, the produce of your best ewes by fresh rams from Mr. Cox, of Mudgee, only 97 were living at the time I visited the stations; and when the sheep killed for rations averaged only 30 lbs. I give it as my opinion that a sound judgment was exercised in not putting the ewes to the ram this season; they are not fit to rear a lamb, and would in all probability have been sacrificed. The whole of your sheep, as far as your Port Stephens estate is concerned, are past redemption; they have been bred so close ('in-and-in' is our common expression) that their constitution is ruined, they have no inside. It cannot be said that the sheep are diseased, but they are in a consumption, a rapid decline. The poverty, diminutive size, unhealthy appearance of the 1,688 hoggets tell too plain a tale. I never saw such animals. The inspection of these sheep was a painful and melancholy sight to me. I felt that the best-bred, the finest-woolled sheep in the

colony, had been sacrificed; and this is no event of yesterday — it has been going on for years — the growth of the finest wool, regardless alike of carcass and constitution, has been the main consideration, and the result is now too apparent.

The historian of the Company came to the support of the General Superintendents, and particularly of Hodgson's immediate predecessor, Captain Marcus Brownrigg:

From the first year of their occupation of the estate it had been obvious that the stock were not thriving as they should. On the coast country neither horses, cattle, nor sheep had done well; as they were gradually moved further inland, improvement was always perceptible, until at Gloucester horses and cattle were both doing well, and sheep were better off than they had previously been. Eventually some of the flocks were removed to Warrah, and ultimately reached the Peel, where they thrived exceedingly well... In-and-in breeding, indeed, was not, as Mr. Hodgson supposed, responsible for it, if the instructions given as far back as 1842 to use Peel River rams for the Port Stephens flocks were complied with...

This was partly right and partly wrong, as the rams from the Peel River were healthier than those from the other locations, but their use with the Port Stephens ewes would not have prevented their offspring from being afflicted with intestinal parasites. The build-up of pasture contamination was a slow and irregular process. Eventually the colonists found the only solution was to take the sheep to new country, further west, leaving the 'sour' country for cattle.

32 The emaciated appearance and 'bottle jaws' are typical of sheep suffering from large-stomach worms



Elsewhere in the colony the same problem was occurring. On virgin country the sheep always thrived, but after a period which sometimes lasted several years, losses often occurred. Apart from worms there were other causes, which are discussed elsewhere, but in the higher rainfall areas the cause was generally worms. The first sheep in the colony thrived on the Cumberland Plain; their extraordinary rate of increase could only have taken place among healthy sheep, but by 1814 problems began. We have seen how the Macarthur sheep were moved from Camden. Disease struck everywhere, and because it occurred irregularly, the cause was hard to understand. The answer for the colonists was 'better country further out'.

In the case of the Company, this solution posed special problems. They had acquired the inland estates of Warrah and the Peel River, but these, though less than 100 miles from Port Stephens by the map, were situated on the other side of the very rough country of the Liverpool Ranges. As yet there were no roads; to supply the establishments and to bring out the wool was a major undertaking. These areas were therefore used mainly for cattle, which required fewer staff and could be walked out for sale. When sheep were taken inland, the Company resorted to the expedient of importing mules and asses from South America, and mule trains with Peruvian muleteers carried the wool over the rough mountain passes. Warrah and the Peel had their own particular disadvantages for wool production.

In the course of time the Company's difficulties were overcome, but in the period which this book considers its sheep enterprise was a disastrous financial failure. However, the Company left its mark on the flocks of Australia, as the 2000 Merino sheep of various strains it imported, as well as those brought in by other graziers in the 1820s, gave a massive and much needed infusion of new blood to the colony. Although a large number of the sheep died, the remainder greatly exceeded the few sheep imported before the 1820s, to which historians have devoted excessive attention. The Company was not a pioneer in bringing in Saxon sheep, but followed the lead of other enterprising investors.

The failures of the Australian Agricultural Company and the Van Diemen's Land Company in this period show how ill-founded was J.T. Bigge's theory that the prosperity of the colony depended primarily on such enterprises. Both companies received exceptional concessions in land and labour, and for them the conditions could not have been more favourable. Governor George Gipps realised part of the problem in 1842: 'this Colony has never derived, nor is it ever likely to derive, any advantage from Companies formed in England, neither from the Australian Agricultural Company...nor any other'.²⁶

The best use of the land in the early colony was to produce food, in which are included mutton and beef. There was some scope for large-scale production, but not by companies formed and directed from England by people who had little knowledge of local conditions. Even in recent years, after World War II, a large company controlled by the British government, set up to produce food in Africa and Australia, was a resounding failure, mainly because managers had to await permission to plough from London, where the directors found it hard to accept that droughts in these countries often last longer than a fortnight.

There was a need in the early colony to produce a staple export, but wool answered it poorly in the first half of the nineteenth century. Wool did it

increasingly well in the second half, but became an economic industry only when several conditions were fulfilled. The first was the breeding of sheep selected in the environment in which they would live, and thus able to cope with the harsh conditions and give a yield of wool much greater than was obtained by any of the early graziers. The second was the development of graziers prepared to live on their own properties and learn by personal experience how to care for sheep and to select or buy animals that improved in each generation. The third condition was that labour costs be reduced by the use of fences, drafting yards, storage of water and control of pests and diseases — which implied access to substantial capital. One of the important lessons that may be learned from the experience of the Australian Agricultural Company is that, when animals are moved to a new environment, problems are likely to be encountered that are outside the experience of those trained in the old environment.

Wool in Tasmania

By 1817, only fourteen years after the first sheep had been taken to Van Diemen's Land, their numbers exceeded those in mainland New South Wales. New South Wales, with poor seasons and a larger population, was not self-supporting in meat, whereas Van Diemen's Land had a surplus. The profits to sheep owners had come from sales of sheep, either for meat or as breeding stock for new settlers. A considerable quantity of mutton and beef was bought by the Commissariat at Hobart from some favoured settlers at 5d per pound, to be salted and shipped to Sydney, but by 1820 many sheep owners were unable to dispose of their sheep.

...all descriptions of stock were, from their rapid increase, and the inadequate demand, together with their extreme liability to be plundered, become of little value. A flock of sheep at that time might be readily purchased at from six to eight shillings per head.¹

Sheep became unprofitable as producers of mutton, and only then were they considered as producers of wool. In the 1830s, however, the original, prolific mutton sheep were to play a substantial part in stocking the Port Phillip area, which was only then beginning to attract the attention of graziers.

Prior to 1820 not a bale of wool had been exported from Van Diemen's Land. The sheep men were not interested in wool. They had to shear their sheep when the fleeces got too long and to help control scab, but the wool was left to rot in heaps outside the stock yards. There was no wool manufactory, and though wool was said to be suitable for making coarse cloth it had never been used or sent to Sydney to the factories there.² One woman, Mrs Burn of Ellangowan, indignantly rescued some of this discarded wool and sent it in bags to Scotland, where it was made up as blankets and returned to the colony in a new form.³

The earliest record of use of Van Diemen's Land wool was in 1820, wool being purchased at 3d per pound for making mattresses, and in the same year 2300 pounds of wool from government sheep was sent to Sydney.⁴ This activity was stimulated by the reports of sales on the London market of wool from New South Wales (Botany wool), which had been bringing good prices. An offer in 1820 by Simeon Lord to export 200 Merinos to Van Diemen's Land came to nothing. John Macarthur made an offer to Governor Lachlan Macquarie to sell to the

government about 300 Merino ram lambs for disposal at a reasonable price to the proprietors of sheep in Van Diemen's Land with a view to the improvement of their wool. It was agreed that the government should buy the rams at £5 5s per head, to be paid for in land at the rate of 7s 6d per acre. Macarthur delivered 312, for which he duly received 4368 acres at Camden. The rams were embarked on the *Eliza*, which sailed from Sydney on 21 March 1820 and arrived at Hobart in six days.⁵ Losses were heavy on account of the confinement below decks and from 312 rams shipped only 181 lived to be distributed to settlers. These were from Macarthur's cross-bred flock, although at this time he was not very clear about the period of upgrading required to make sheep relatively pure.

Lieutenant-Governor William Sorell received plenty of applications for the rams, which were to be sold at £7 7s, and in allotting them to the owners of sheep he was governed by their applications, the extent of their flocks, and the expectations that he formed of their industry and efforts in improving their wool. Three-quarters of the rams went to settlers at the Derwent and one-quarter to Port Dalrymple, 43 purchasers sharing the 181 rams.⁶ The sheep owners had suddenly become interested in wool. Wool was first exported to England in 1820, when 99,000 pounds were shipped from New South Wales and Van Diemen's Land. Separate figures for the island are not available until 1827, when 192,000 pounds were exported.⁷

About 1820 some Merinos had been imported to Van Diemen's Land from England by someone whose identity cannot now be determined. Governor Macquarie made a tour of the island in 1821 and was

happy to observe that, by the introduction of the *Merino Breed of Sheep*, Some of which have been lately Imported direct from England, and Still many more sent by this Government from the extensive Flocks of the pure Merino Breed belonging to John McArthur, Esqre., that the Wool is much improved...⁸

Another authority wrote:

Rams possessing a strong cross of the Merino are frequently imported from Sydney, and sold at five or seven pounds per head; but the best that can be purchased at Port Jackson, and which are so far crossed as to be little short of pure, are sold at about fifteen pounds per head. The best rams imported from England are worth twenty-five pounds per head, and are preferred to those from Port Jackson, which are not found to suit the climate of Van Diemen's Land so well as those reared in the colder latitude of England.⁹

Merino sheep from England and Europe were to be brought to Van Diemen's Land in considerable numbers during the 1820s. Merinos were now plentiful in England, thousands, the spoils of war, having been introduced from Spain after Wellington's victorious Peninsular campaign. And after Waterloo, with peace again in Europe, Merinos could be bought from Saxony.

After the war agricultural conditions in England were depressed and some restless farmers, many of them men of substance, migrated to Van Diemen's Land and New South Wales, bringing an understanding of wool qualities and a knowledge of sheep breeding. Some of them brought Merino sheep from Saxony

and England, and these new sheep, in the hands of capable managers, were in sufficient numbers to be kept in separate flocks, producing a continuity of rams for upgrading the colonial flocks.

It is known that about 1500 Merinos were imported from Europe and England and some hundreds from Sydney during the 1820s, but many of them died or disappeared leaving no trace other than perhaps a slight improvement in the fleeces of the basically Bengal flocks.

With no dingoes and few Aborigines, shepherding of flocks was not general; but at some periods bushrangers were so daring that landowners did not live on their properties, and losses from stolen sheep were very high. Under these conditions it was not possible to carry out a system of controlled breeding.

On the other hand, military detachments were posted at Campbell Town, with the result that order was established in the midlands, and with no predators such as the dingoes of the mainland, sheep could be run. There was plenty of timber, and cross-bar chock-and-log fences soon provided paddocks where controlled breeding of selected sheep could be undertaken. Although most of the sheep of Van Diemen's Land were of nondescript character, skilled breeders in the Campbell Town-Ross district began to establish flocks of high quality; from these flocks studs were developed which became famous throughout Australia.

The first sheep stud in Van Diemen's Land was founded by George Parramore in 1825. It is usual for studs to prepare a history of their development (intended to attract potential buyers of rams rather than to provide authentic detail for historical researchers), and the history of the stud as it appears in Clarence McIvor's book illustrates this point. He claimed:

The flock was commenced in 1825 with three pure Saxon Merino ewes and a ram, selected from the stock imported in 1823 by Messrs. Gilles & Horne, and obtained by them from the pure Merino flock of the Elector of Saxony, descended from the pure merinos procured from the best flocks in Spain in 1765... In 1829 a pure Saxon ram imported by Captain Stephens in the *Vibilia*, and two pure Merino ewes, imported by Mr. Forlonge were added, and in 1833 and 1837 pure Saxon rams from the V.D.L. Co., and in 1838 rams from Mr. Forlonge were used.¹⁰

From the above it will be noted that a flock commenced with 4 sheep could not have justified the attention of a shepherd, and it may be inferred that they were kept in a paddock; that the purchase of sheep, pure or otherwise, from the Elector of Saxony in 1822-23 was an anachronism, as the office of Elector terminated in 1805; and that the little word 'pure' was rather over-worked. The stud became successful by an intelligent policy of trying to produce 'a sheep bearing the heaviest attainable fleece of the highest priced wool possible'. It was a necessary attack on the myth that the best sheep is necessarily the one whose wool returns the highest price per pound even though the fleece weight is low.

The largest importer of Merinos was the Van Diemen's Land Company, which in the late 1820s brought in more than 1000 sheep; most were from Saxony, but they included 170 from England. The Company was late in the field for taking up a run, and had to be content with a location in the northwest corner. This had no communication by land with the rest of the island, and from its isolation, the

Company had a limited influence on the development of the Merino. There was a heavy mortality among the imported sheep.¹¹

Another large importer was the Forlonge family. The redoubtable Mrs Eliza Forlonge travelled over Saxony on foot, selecting Saxon sheep from the leading studs, and she and her sons William and Andrew drove the sheep 300 miles across Germany to Hamburg — a remarkable achievement for a woman of that time in a foreign country. She took them by ship to Hull, and then drove them across England another 100 miles to Liverpool whence they were embarked for Australia under the care of young William. William and 76 sheep reached Hobart in November 1829, and he was granted land near Campbell Town. In January 1831 Eliza and Andrew arrived with a further 40 Saxon sheep (another flock was sent direct to Sydney).

According to the records, by 1835 the Forlonges' sheep had increased to 8000, and William Forlonge took half of them to Port Phillip in 1838. Such a total could not have come from the imported Saxons alone. It is evident that many colonial ewes were added to the flock, and though it may be assumed that only Saxon rams were used, with increase in numbers the chief aim, there could have

33 Kelpie dog working sheep in shearing yard. Station work would be difficult without these intelligent, well-trained dogs.



been little if any culling to maintain quality. Nevertheless there must have been many good sheep among the Forlonge flocks, some of which would be direct descendants of the Saxons, and others showing Saxon characteristics. These would be good genetic material under capable management. They enjoyed a good reputation at the time, and there are several references to small numbers of Forlonge sheep going to other owners in Victoria and Tasmania.

The 4000 Forlonge sheep which stayed in Tasmania became the property of David Taylor, regarded as one of the best judges and breeders of Merino sheep in his day. Forlonge sheep formed the foundation of the famous studs of Winton, St Johnstone and Valleyfield.¹²

Another early stud was Somercotes, founded in 1833 by Captain Horton with a small draft of sheep from the Van Diemen's Land Company. This stud used the ram Mufti, an unusually robust sheep first used in the flock of Thomas Parramore, son of the founder of the stud. The Somercotes sheep were among the earliest prize-takers in Tasmania, as shown by some surviving pieces of plate won by them bearing the date 1841.¹³

As Van Diemen's Land was free from predators, sheep could be run in large flocks and there was no need to return them to a fold each night. As a result they were healthier and more prolific in the early years than sheep on the mainland, and thousands of them were available to be shipped to Port Phillip from 1834 onwards. For convenience of shipping, most of these were sent from Port Dalrymple. The sheep in northern Van Diemen's Land were large, by the standard of the time, because of the introduction to the early settlement of Teeswater sheep, which had a big influence in this area. As the descendants of these sheep were sent to both Port Phillip and South Australia, they played a part in the evolution of large-sized Merinos, for which South Australia in particular became famous.

Only a decade after breeding for wool started about 1820, production and export exceeded that of New South Wales, although the quality was not yet as good. This deficiency was soon overcome and some regions of Tasmania became notable for the production of fine wool.

Late arrival of sheep in Victoria

New South Wales had been settled for nearly fifty years before sheep were established in what is now the state of Victoria, but, once the movement began, the whole state was virtually occupied by sheep in the space of five years. Thomas Henty landed 100 sheep in 1834; by 1840 there were 780,000 and by 1851 over 6 million.

The invasion came in two almost simultaneous streams, across Bass Strait from Van Diemen's Land, and overland from New South Wales. Legend has given credit to the overlanders for stocking the new district with sheep, but for the first two years far more sheep crossed Bass Strait in a fleet of little ships than were to cross the Murray in punts. From whichever source they came, there was a very strong infusion of the blood of the fertile Bengal and Cape sheep in the first Victorian flocks and this, as well as the large number of imported sheep, accounted for the quick rate of increase.

In 1824-25 Hamilton Hume and W.H. Hovell made an overland expedition at their own expense, with the objective of reaching Westernport. They had reported finding 'one of the finest tracts of country yet known in Australia', not knowing that they had failed to reach their intended destination but were instead describing Corio Bay in Port Phillip. On the strength of their report, an expedition was sent by sea to Westernport to establish a settlement. The party failed to find the good conditions they had been led to expect and that settlement was abandoned. The error in identifying the locality was not explained, and no further attempt was made to check on the 'finest tracts of country yet known in Australia'. The official opinion was that the country was unsuitable for colonisation.¹

In Van Diemen's Land the first sheep had been introduced in 1803, with the most important pioneer stock coming from Norfolk Island in 1805. After a slow beginning the sheep multiplied at an extraordinary rate, and by 1820 there were nearly 200,000 in Van Diemen's Land, more than in the whole of New South Wales. By 1830 there were in excess of 500,000, but New South Wales was catching up.² Merino and other breeds of sheep had long since been introduced to both settlements, decisively affecting the type of wool produced, but the foundation stock was the Bengali, which bred so much faster than other breeds.

No attempt at an accurate census was made in either colony. All the limited areas of good grazing in Van Diemen's Land were fully stocked, or overstocked,

and by this time further increase in numbers had ceased, for old sheep and young lambs were unable to compete for the eaten-out pastures. One prominent grazier with 25,000 sheep is reported to have been unable to find a single fat sheep fit for mutton.³ Exploration of 'the more distant parts of the Country' in 1827 found for the Van Diemen's Land Company only a small area of second-rate grazing.⁴

During the late 1820s migration from Britain to the colonies had greatly increased. It was a period of economic expansion and of speculation in colonial ventures. Since the end of the Napoleonic wars British agriculture had been in difficulties, and there were a number of young farmers who were prepared to try their fortunes in the Australian colonies, of which Van Diemen's Land was regarded as being particularly favourable for agriculture. As a result, many young farmers had migrated to this colony, only to find on arrival that opportunities for taking up land no longer existed. They added to the existing pressures for expansion.

Whereas the inhabitants of Van Diemen's Land, in their limited settlement, were restricted not only by the nature of the country but also by official regulation, their counterparts in New South Wales were beginning to spread undeterred beyond the authorised 'bounds of location', finding better pastures for their ever increasing flocks. The graziers in Van Diemen's Land with their starving flocks turned envious eyes on the empty unknown land across Bass Strait.

34 The motor bike has replaced horses for mustering in suitable country, but the dog is indispensable



In 1827 the influential lawyer J.T. Gellibrand, recently dismissed from the office of Attorney-General, together with John Batman, an enterprising colonial-born youth, applied to Governor Ralph Darling for a grant of land on the mainland on which to run stock. The application was refused, but Gellibrand and Batman did not forget the idea, though it was to lie dormant for eight years.⁵

The graziers got some relief for their stock by running them on Crown land, which provided some forage though not considered good enough to justify purchase. In 1830 Lieutenant-Governor George Arthur enacted a new Impounding Act:⁶ every portion of Crown land was interdicted unless it was bought. The purpose of the Act was to control unattended stock, particularly cattle, which were damaging unfenced crops. In the application of the Act even sheep under the control of a shepherd could not be run on Crown land; on the mainland, by comparison, there was a large amount of unoccupied land.

In 1834, Thomas Henty petitioned the British government for permission to take up land across Bass Strait, first for an unspecified area and later for 20,000 acres at Portland Bay, where he already had whaling interests. Then a group of eight settlers forwarded on 31 August 1834 a memorial from Launceston to the Secretary of State for the Colonies:

We, the undersigned settlers in the island of Van Diemen's Land, have the honour to state that in consequence of the great difficulty of now obtaining any extent of tolerably good land in this colony, we are desirous of forming a settlement on the southern coast of New Holland, between the longitude of 135° and 150°...

They offered to buy 85,000 acres (in lots varying from 5000 acres to 20,000) at 5s an acre, paying 5 per cent deposit with a credit of ten years for the remainder.

We are aware that other individuals of respectability have made similar proposals to our own, with whom we are prepared to co-operate in forming a free colony.⁷

As they received no satisfaction from the government, the settlers of Van Diemen's Land took matters into their own hands. At the end of 1834 the Hentys took sheep (including Merinos) in their own ship to Portland, and in the following May, another group, including Gellibrand and Batman, openly formed the Port Phillip Association. It sent Batman to inspect and report on the country across Bass Strait.

Batman seemed to know just where to go. He sailed through the narrow entrance into Port Phillip Bay and, avoiding the sandy eastern coast (where the water was deeper), negotiated the shallower mud banks on the opposite side of the bay and inspected the fine country around Corio Bay described by Hume and Hovell. He then sailed to the mouth of the Yarra and rowed up it in a boat, finding fresh water above the falls, at the present site of Melbourne, which he declared 'will be the place for a village'.

Batman returned to Launceston and reported to a sympathetic public.

His tale of the luxuriance of Port Phillip aroused an enormous enthusiasm among sheep and cattle owners. Never before was there known such a desire among a people

to rush off *en masse* to an *El Dorado*. Young men especially were smitten with the pastoral fever, eager to start a life with a few sheep in that wilderness.⁸

In November 1835 the sheep started to arrive. Soon fifteen little vessels were engaged ferrying sheep from George Town at the mouth of the Tamar to the new settlement, landing at half a dozen places in Port Phillip Bay, and at Westernport, Port Fairy or Portland. At the first census made by the police constable at Melbourne in November 1836, sheep and lambs numbered 41,332.⁹

Early in 1837 a fleet of small vessels,... each carrying from 300 to 1,000 sheep, was employed in conveying stock from the Tamar on the opposite coast of Van Diemen's Land... The vessels were much crowded, and the sheep were generally on board for seven or eight days, so that from want of a proper supply of food and water, or from stormy weather, whole shipments were sometimes almost entirely lost on the passage or shortly after landing. The average loss, however, on these importations was probably about 15 per cent...

The original stock being composed entirely of breeding sheep, the first settlers lived exclusively on salted provisions during the first year of their occupation, the purchase of which and the large expenses necessarily incurred in forming their stations, added to the small increase [lambing] and the loss of wool from the fever engendered by the crowded vessels, entirely absorbed the profits of several seasons, and in some cases ruined the adventurers.¹⁰

At a census taken at Port Phillip in September 1838, after only three years of settlement, the livestock return showed 310,946 sheep. These were nearly all ewes from Van Diemen's Land and their progeny. From 1835 to 1839, probably 200,000 ewes were shipped across Bass Strait, drawn from a total of one million sheep, male and female and of all ages. Such a massive exodus is an indication of the overstocking in Van Diemen's Land. This was also shown by the re-export of well-fed wethers from Port Phillip to Van Diemen's Land.¹¹

The squatters had no legal title to the land they occupied. They spread north and west over the best grazing country in Australia. Lieutenant-Governor Arthur suggested without effect that the Port Phillip District might be added to Van Diemen's Land, from whence its pioneers came, but the land was indisputably part of New South Wales and within the jurisdiction of Governor Richard Bourke. Bourke accepted the inevitable: he explained to the Colonial Office that many settlers had found it necessary to take their flocks beyond the present boundary of location to accommodate increasing numbers of stock, and

it is not to be disguised that the Government is unable to prevent it ... it will be more desirable to impose reasonable conditions on Mr. Batman and his associates than to insist on their abandoning their undertaking.¹²

The Governor's acquiescence in squatting removed the last obstacle to unbridled expansion.

At first New South Wales took very little interest in the migration of sheep across Bass Strait. The western district of Port Phillip was too far away for northern graziers to think of sending sheep there. The prevailing westerly winds made the passage too hazardous for sheep to be sent by sea, and overlanding had



not yet caught the imagination. However sheep numbers were increasing and there was a general search for 'better country further out'. When at the end of 1836 Major Thomas Mitchell returned from his expedition, his reports of good country just across the Murray sparked off an overland exodus. Settlers in the Monaro (or Maneroo as it was then called) and on the Murrumbidgee were particularly ready to join the movement. Their pastures were becoming crowded, and they were restless to flee from the new disease, catarrh. They were geographically well placed to follow in Major Mitchell's tracks.

Mitchell had penetrated as far as Portland, where he was surprised to find the Hentys already well established. With a happy turn of phrase, he named the new district *Australia Felix*, conjuring up an image of the old-world divisions of *Arabia Felix* and *Arabia Deserta*; it was a title to catch the imagination.

On Mitchell's outward journey he had taken a circuitous route by way of the Lachlan and Murray Rivers, but he returned in a nearly direct line to Sydney,

Left

35 Hand blades, now replaced by machine shearing. Photograph NSW Government Printing Office, Australia.

Below

36 Machine shearing in a shed on the southern tablelands of New South Wales



crossing the several rivers which flow north from the Australian Alps. His heavy bullock wagon left deep tracks which were visible for years to be followed by overlanding stockmen, and which became known as 'The Major's Line'. This route followed closely on that of Hume and Hovell, but their tracks had not survived.

The inrush of sheep and capital from two sources, from across Bass Strait and overland from across the Murray, reinforced in Port Phillip District the boom conditions that had been operating in the older settled districts, with speculation in stock and land. The overlanders took cattle as well as sheep, using the cattle to show whether the route was practicable.

While the settlers from Van Diemen's Land had already taken over the western half of the district, the overlanders occupied the north and southeast to a line roughly from Swan Hill to Mount Macedon. There was an essential difference between the two groups; the former, predominantly experienced Scottish farmers, were mostly relative newcomers to the colonies, and many of them have left some records.¹³

The collapse of the boom in the 1840s stopped the shipping of sheep, which was largely a financial speculation, but it had little effect on the overlanders, who in general were seeking grass for their own increasing flocks. The financial crisis made no difference to the natural increase of the sheep, which were 'increasing beyond all calculation'. If one owner became insolvent, his creditors took over the flocks. There was no market for surplus stock until the middle of the decade, when boiling down provided some salvage value and an opportunity to dispose of inferior and cull sheep. By 1842 there were 1,400,000 sheep, and by 1850 6 million.¹⁴

Old maps of early squatting runs indicate that few runs were smaller than 10,000 acres; the further away from Melbourne, the bigger the runs. A run was expected to carry 4000 sheep, so in the drier, lighter carrying country, squatters laid claim to principalities. Owners of several flocks frequently took up more than one run.

In the occupation of the country there was a tacit understanding that no one was to take up a station nearer than three miles to another person, the intervening ground being equally divided; and this regulation, in general, was sufficient to secure harmony among the adventurers as they arrived. There being no Crown Commissioner, however, at that time, nor any recognised authority but that of the strongest ... in general more good-feeling and consideration for the rights of others were observed in the then lawless state of the infant colony than might have been expected.¹⁵

Among all the contemporary references to the period there is hardly a mention of wool quality. For example, among the fifty *Letters from Victorian Pioneers*, although the editor made some observations, the pioneers themselves do not once use the word Merino, or refer to any superiority of fleece. The letters are the responses to a circular letter written in 1853 by Lieutenant-Governor C.J. La Trobe asking for information about the first settlement of Victoria. Each pioneer tells his own story, and nearly half include some reference to sheep and the number imported, whether from Van Diemen's Land or overlanded from old New South Wales. Some established graziers had brought in flocks which they themselves had bred; newcomers had bought sheep and recorded the price, as high as £3 in

1837 and 27s to 40s in 1840. After the boom bubble burst, as it had already done north of the Murray, the price fell to 2s a head in 1843 and 4s in 1844.

The various writers agree that the sheep from whatever source were scabby, and that many of those from across the Murray suffered disastrous losses from catarrh, but as to the quality of wool which the sheep produced, whether it was fine or coarse, whether the sheep were pure or cross-bred, and of what breed, the omissions are eloquent.

The price of wool is mentioned occasionally, 12d a pound being the usual figure, though one squatter expected to realise 18d a pound, and another expected £20 a bale, which is about the same. These prices were probably, but not certainly, the Melbourne prices for washed wool (washed on the sheep before shearing). After deducting the costs of shearing, washing, wool packs, cartage to Melbourne and agents' commission, the return per sheep for wool would always have been less than 2s per sheep. It may be seen that graziers who had paid £3 per head for sheep could not possibly make a profit on wool production from those sheep. After the price collapsed, some graziers boiled down surplus stock for tallow, a practice which saved some from utter ruin. One large-scale squatter who ran 80,000 sheep boiled down 12,000 each year.

It is evident that, at the period to which the *Letters from Victorian Pioneers* refer, the squatters of the Port Phillip District were interested in sheep only for the profits to be made from the sales of surplus stock; the returns to be had from wool were insignificant. As a rough measure of accounting, it was considered that the expenses of shepherding and caring for sheep through the year would be met by the return from wool, and the sales of surplus sheep would provide the profit. While sheep could be sold for £2 a head this was, barring disasters such as drought and disease, an attractive prospect. The return from wool was of little importance. Moreover, the value of a sheep depended on its size and condition. Fine-woolled sheep tended to be smaller and to fatten less readily. The difference in value between fine-woolled and coarse-woolled sheep was not compensated for by the additional value of a fine-woolled fleece. During this period, market forces were working strongly against increasing the proportion of Merino blood in the general flocks.

The high price of sheep had been inherited from the boom in New South Wales, but had been stimulated in the Port Phillip District by the euphoria surrounding Australia Felix, and the seemingly unlimited fine pastures there. When the boom collapsed as in the older district, the flood of sheep had already taken possession of the best of the new pastures. The price had been supported by the easy credit available for buying stock. With the collapse of sheep prices, many squatters became insolvent, particularly those who had bought sheep at the highest prices on credit, paying the ruling interest rate of 10 per cent. Those who survived the crash looked for some increase in return from wool, the only remaining source of income. It was well known that fine wool was worth twice as much per pound as coarse wool, and that it could be produced as the result of breeding from fine-woolled rams. Pure Merino rams were just not available, but one squatter from Van Diemen's Land, John Aitken, had sheep with good quality wool. He sold rams to many of the squatters, and from 1845 he held regular annual ram sales.¹⁶ Thomas Chirnside is said to have overlanded Merinos from Goulburn in New South Wales, but though his wool realised prices well above average, we

have not found any reference to his rams being sought after. The *Letters from Victorian Pioneers* show no evidence of contemporary interest in the production of fine wool.

That the pioneers of the Western District had little knowledge of wool classing and the essential qualities of fine wool, and no interest in wool improvement, is evident in the papers of the Clyde Company, formed by some gentlemen of Glasgow, including Philip Russell as resident partner in Van Diemen's Land, to establish a sheep station at Port Phillip. Philip's half-brother George, appointed company manager, brought 3000 sheep from Van Diemen's Land to Port Phillip in 1836. The sheep were first taken to Batesford near Geelong and in 1839 to the Leigh River, where the Golfhill homestead was bought from the Crown in 1842.¹⁷

Several comparable joint-stock companies were formed, but the Clyde Company alone was successful. Of the various factors contributing to its isolated triumph, the chief was undoubtedly the sound control exercised by Russell, who nevertheless at the outset was completely uninformed in wool matters. His part in the development of the practice of forming large flocks of sheep and leaving them unattended by night, as well as extending the use of fencing and drafting gates is shown in Chapter 19. The records of this Company illustrate the difficulties of the early settlers in the Port Phillip District and the eventual success of many of them.

There is no mention in any of the early Company papers of the quality of wool on the sheep, as the original expectation was to derive profits not from wool but from sales of surplus stock. Sheep for the Company's purpose would have been selected for good size, and there is no doubt that they were particularly big sheep. In 1841, 500 were sold with an average of 68 pounds carcase weight. This is considerably more than any pure Merinos of that period would have weighed. It is probable that there was some Leicester cross in the sheep, a common characteristic of many of the sheep of north Van Diemen's Land. In spite of their size, the first shearings of the Company's sheep yielded an average weight of fleece of only 2¼ pounds of washed wool.

Most of the sheep in the new settlement were said to be scabby, but the Clyde Company seems to have suffered little, perhaps because Russell's management included regular treatment with 'sheep-wash'. As with most pioneering flocks the sheep thrived, for the virgin country was as yet uncontaminated with parasites. The only serious cause of losses was attacks from dingoes, at night and occasionally in broad daylight within sight of the shepherd. The number of sheep steadily grew by natural increase from the original 3000. In 1838, 6000 were shorn, rising in 1850 to 70,000.

In 1842, at a time when the economic depression was at its worst and many squatters were going bankrupt, the Clyde Company paid its shareholders a first dividend of £1600. Throughout the period, surplus sheep were disposed of on whatever markets were available. In the early years, wethers were sometimes sold to butchers, but when the market collapsed and sales became unprofitable, large numbers of sheep were sent to the 'melting establishment' at Geelong to be boiled down for tallow. Between 1844 and 1850 some 30,000 were disposed of in this way, with an average return of 5s to 6s a sheep.

The Company's whole interest seems to have been in the number of sheep,

not their quality. It would seem that Russell had no idea how to set about breeding good quality wool: he bought rams without previous inspection wherever they were available. From one of his transactions we have a letter which provides an example of current ideas on breeding. Russell was offering to sell some rams to a Captain James Webster, who wrote to Russell:

I got your note, and also the sample of the rams' wool. If there is any of the Leicester in them it must surely be a remote cross, for the staple is not nearly so long, although much finer, than *my* Leicester wool; in fact, it looks more like Merino... If, however, the rams are large framed — for it is this point I am looking to more than the quality of the wool — they will suit me... I want a good large frame. If fine wool, so much the better; but my object is to breed larger sheep.

Though Russell was able to make only limited progress in improving the quality of wool, he achieved a steady increase in the quantity grown by the sheep

Following page

38 Nineteenth century wool sorting and classing. Photograph NSW Government Printing Office, Australia.

Below

37 Tossing newly shorn fleece on to rolling table at Benangaroo station, where broken, burry or stained wool is removed in classing







of Golfhill, from about 2 pounds 2 ounces per sheep in 1840 to 2 pounds 14¾ ounces in 1850.

In 1846 Russell bought for the Company an additional property, Terinallum, near Mount Elephant, of 57,000 acres with 16,000 sheep. He appointed Alexander Cameron as manager, and from that point a steady improvement in the Terinallum wool took place. Cameron, stationed at Terinallum, 50 miles from the Company's head station of Golfhill, had only occasional personal contacts with Russell; but unless they had met recently, Cameron reported every week in letters which are a joy to read. Russell paid him £70 a year. Never in the annals of Australian agriculture was able and devoted service acquired with such economy.

The sheep bought with Terinallum were no better than the general run of colonial sheep. Cameron reported that there were 'a good many coloured lambs', and thought some of the wool 'might sell well for making friz[z]ed Wigs'.

Soon after taking over the management, Cameron classed the rams that were on the run. Unlike Russell, Cameron did this before shearing, to assess their fleeces.

At mating time in 1848, Cameron wrote:

I have put the Rams in Galbraith's [the name of the shepherd] flock; intending putting the young Rams, but on examining them I found that they are nearly all yellow about the Eyes, and some with yellow spots on the face, so I put 25 of the old Rams, and have reserved the V.D.L. [Van Diemen's Land] Rams for the young dry flock.

The objectionable yellowness was probably the result of a Southdown bar sinister on the escutcheon. It is likely that these young rams had been bred at Terinallum under a program initiated by the former manager. With such unsatisfactory rams available, Cameron had to make provision for a future supply of rams. He casually mentioned, almost as an afterthought, 'I have selected 200 superior Ewes from Galbraith's flock for the three fine woolled rams.' There were about 1500 ewes in Galbraith's flock, which presumably was the best flock on the run, so the 200 superior ewes would have been of good standard. Unfortunately the origin of the 3 fine-woolled rams is not known. As first fruits of the new venture, 10 ram lambs were sold from Terinallum the following year to George Russell's brother, Alexander. Thereafter, apart from a few top rams bought from J.L. Currie, Terinallum bred its own rams.

Cameron's wool began to attract attention. In 1853, he was a member of the committee of the ram fair at Darlington (the new name for Elephant Bridge, on Mount Emu Creek, north of Terinallum). At their show in September 1853 he exhibited six pens of sheep, 4 sheep in each pen.

My sheep were much admired for their length of staple & weight of fleece, but were not considered so fine in the fibre as Currie's. However they awarded me the second prize for young Ewes.

The young ewes were of his own breeding, while the pen of rams he exhibited was selected from 24 rams bought from Currie. Cameron had paid 60s for each ram, but considered 4 of them to be 'worth any money'.

In valuations of the Clyde Company sheep, those at Terinallum were consistently higher than those at Golfhill; in 1850 the figures given were respectively 12s and 9s; in 1852 they were 23s and 18s; and in 1853 25s and 20s. Terinallum was bought from the Clyde Company in 1857 by John Cumming, in whose hands the stud became famous. The Clyde Company itself was dissolved in 1857, realising £258,000 for the shareholders, having played its part in establishing the wool industry on a sound basis in the Western District.

South Australia

From the time of the first settlement in 1836 South Australia was predisposed towards large-scale sheep enterprises. The theory of E.G. Wakefield which influenced the plan for settlement of South Australia aimed at concentration of settlement, with the emphasis on small farms. However, the South Australian Company, which was formed to settle the colony, found that speculative capital was available only for large-scale grazing, and this meant dispersion. All land was to be sold at £1 per acre, but to attract big investors special surveys were allowed whereby the settler could choose an area of 15,000 acres, of which he had to pay for only 4000 acres. Moreover, the 4000 acres could be situated in different parts of the larger area, giving him effective control of it. With this arrangement sufficient capital was subscribed and the South Australian Company was formed. One of its objects was to engage in the production of fine wool, mainly by upgrading sheep already in Australia. The Company became instrumental in much of the land settlement and in the introduction of sheep.

Ships with the first settlers for South Australia left England early in 1836, and the Company made its first purchase of sheep.

[The Directors] commenced their stock by purchasing a very superior lot of pure Merino rams and ewes, selected in Saxony for a sheep-holder in Van Diemen's Land, but afterwards handed over to them at little more than prime cost.¹

The sheep were shipped on the third of the Company's ships to sail, the *Lady Mary Pelham*, together with some Leicesters and Southdown sheep. The Company also sent some Anglo-Merinos at an early stage. How many European sheep were sent has not been determined, but it would not be a great number; the finances of the Company would not have permitted that, and the *Lady Mary Pelham* was otherwise loaded with settlers and their gear. A total of 50 European sheep seems a likely maximum. Although the Company's report made a feature of the importation of Saxon sheep, they received little attention at the settlement.

These animals were only intended to be the means of improving, as much as might be practicable, the strains which already existed in the lands of the South.²

... for the general supply of stock, the board look to the neighbouring colonies of Van Diemen's Land and New South Wales, and occasionally to the Cape of Good Hope, where sheep for mutton can be bought for about 5s. each, which may also answer to cross with their purer breeds.³

Another early ship, the *Africaine*, brought sheep from the Cape of Good Hope, as is known from the diary of one of the settlers who was on board: 'The captain purchased a great many sheep and a cow and a calf. Live stock of every kind was much cheaper than in England'.⁴ Purchase of stock by ships' captains was probably common, but being unofficial was not recorded at the port of destination. Thus the cross-breeding of different types of sheep that had taken place in the eastern colonies was also carried out from the beginning in South Australia.

It was a period of intense speculation in colonial livestock, which caused a strong demand and a high price for sheep, particularly near Sydney. The sheep in inland New South Wales were fast increasing but surplus stock were at first too remote for the immigrant buyers. In Tasmania, the accessible land was overstocked. The new settlement at Adelaide offered the prospect of an outlet for surplus stock from these two older colonies. As far as New South Wales was concerned, the overland route for stock had not yet been explored by any land party, though Captain Charles Sturt had rowed a boat down the Murray to its mouth in 1830. He had seen thick gum forests along the river banks, and areas of scrub, reeds and tall grass which would be nearly impenetrable for sheep. Not enough was yet known of the overland route to justify an attempt to drive sheep from New South Wales to Adelaide. So it fell to Tasmania to supply the first sheep to South Australia.

First records are sketchy, but fifteen ships from Hobart and Launceston reached Adelaide up to 1 June 1837. Some of these were South Australian Company ships, which, after landing their settlers and cargo at Adelaide, proceeded to Hobart to get stock. They may have been under charter from the South Australian Company for at least the first load of stock; subsequently the ships' captains may have made their own arrangements. Although the shipping of sheep to the mainland had been transferred to George Town at the mouth of the Tamar River, the first few ships obtained their cargo from Hobart. Heavy losses in these caused the trade to be transferred to Launceston.⁵

For three years from January to June (1837-39) small ships arrived at Adelaide from colonial ports, each packed with 300 to 1000 sheep. A hundred arrivals are recorded, mostly from Launceston but also from Port Phillip, Portland, Twofold Bay, Sydney and Hobart; the list is not complete, as it does not include arrivals at Port Elliot and Port Lincoln. As sheep will survive a week or so without food, no fodder was carried on the ships, and many died or arrived in poor condition.

Wherever there were surplus sheep the prospect of selling to the high-priced Adelaide market caught the imagination of graziers. A group led by Dr Imlay contracted to ship 30,000 Monaro sheep from Twofold Bay for Adelaide. In the event, only four shipments were made. By 1839 there were already surplus sheep at Port Phillip, and of course graziers in need of ready money. Four ships took a total of 2500 sheep from Port Phillip to Adelaide.

In June 1839 the trade suddenly came to a stop. The winter gales were coming on; the market was glutted; money was scarce and prices were falling. By the end of 1839 there were 108,000 sheep, including lambs, in South Australia. With the exception of those which were brought overland by Edward John Eyre and Alexander Buchanan, these were all derived from sheep brought in by sea. Perhaps 1000 sheep had come from the Cape of Good Hope, but the greatest proportion came in shipments from colonial ports. The introduction of sheep by the little ships has been disregarded by historians, who have concentrated on the overlanders. These were late in the field.

The prospect of selling stock in Adelaide appealed to Joseph Hawdon, who had already overlanded cattle from New South Wales to Melbourne. In 1838 he set out from a station near Howlong, on the Murray below Albury, with about 350 cattle; the few sheep taken to kill for mutton were dispersed in the bush by dingoes. He reached Adelaide in April with the cattle, which he sold at a profit.⁶

Meanwhile the South Australian Company had contracted with William Dutton and his brother Frederick to supply cattle to Portland for shipment to Adelaide, avoiding the worst hazards of the overland route. The first shipment arrived a few days after Hawdon's overlanded stock and missed the top of the market. William was already planning to overland sheep, as the smaller carcasses of sheep made them a more suitable source of fresh meat for the summer, no refrigeration being available.

Edward John Eyre was the next overlander, first taking cattle in 1838, and the next year cattle and 1000 wethers from the Limestone Plains, near present-day Canberra. As Hawdon had done, he used bullock drays to open a track through the high grass, scrub or reeds, along which the cattle were first driven, so that the sheep could follow. In March 1839 he sold his cattle and sheep in Adelaide; the wethers, which he had bought for 10s each, he sold to a butcher for £2. Altogether the expedition cleared a profit of £4000 on cattle and sheep, but the sheep gave the better return on capital invested.⁷

The word about these profits soon spread and further expeditions were planned. The first to set out with sheep alone was led by Alexander Buchanan, who planned the expedition in co-operation with W.H. Dutton. As we have seen, Dutton had shipped cattle from Portland, and he was in Adelaide, probably on that account, when Buchanan was pooling resources with other young men for the droving expedition. The plan was for Buchanan to buy sheep near Yass and to drive other sheep on account of Dutton and his relation-in-law, Captain John Finnis.⁸ Dutton had probably made the arrangements for the purchase of the sheep for the expedition. It may be significant that the Yass-Boorowa district had been the site of an outbreak of catarrh in the winter of 1835, when Dutton had lost more than 4000 sheep and had sent the survivors to a clean area on the Monaro, where they had done well. Catarrh was an infectious disease which struck in wet winters; although there was no sign of the complaint in the drought conditions of 1839, sheep from that district would have been avoided by local buyers.

On 17 August 1839 Buchanan and his companions set out with 4000 sheep from Howe's station on the Murrumbidgee, about 40 miles from Yass, adding 900 near Gundagai. They planned to receive two more flocks of sheep, about 13,000, belonging to Dutton and Finnis; when these did not arrive, Buchanan went on

with the sheep they had. On 9 December, when they neared Mount Barker, he again rode on ahead, to buy provisions from Adelaide and to engage shearers to return the 60 miles with him to Mount Barker.

When Buchanan finally arrived with his sheep, there were already over 100,000 sheep in South Australia. These were now producing young wethers, which were of better quality than the sheep which had been on the road for nearly four months. Moreover the colony was now in the early stages of a financial depression, and there was little ready money. Since March 1839, when Eyre had sold wethers for £2 each, the market had collapsed. There was still a sale for good ewes, but the newspapers gave no report of the sale of any wethers. However there were thousands of acres of fine pastures unappropriated, and such owners as were not prepared to sell their sheep at a loss 'formed a station' and kept their stock in the hopes of better prices later on. One disillusioned overlander wrote in the *South Australian Register* of 30 May 1840:

I put up 5,000 to auction the other day, in hopes that a number of persons meeting together might produce competition and thus enable me to effect sales, but 1,000 prime young ewes are all I got rid of at 38s. and 42s. per head, and with these I was obliged to give credit; I could not get a single *bona fide* bid for any more, although the Adelaide papers will make it appear that they all went off at excellent prices...

... They have got hold of me with a vengeance, and, I am, in spite of myself, compelled to become one of their principal settlers.

J.W. Bull, who was agent for some of the overlanders, wrote: 'Sheep which cost 38s. a head were sold first for 5s. and resold a few months afterwards for 2s.6d.'⁹

News of the collapse of the South Australian market soon spread to the other colonies, and overlanding came to an end in 1840. Between 40,000 and 50,000 sheep were overlanded between March 1839 and August 1840, the largest group being those brought by the Buchanan syndicate, of which the second draft, about 12,000 for Dutton and Finnis, arrived in January 1840. Some of these were half-bred Leicesters¹⁰ and, as the South Australian Company in 1836 had also imported Leicesters, that breed contributed to the notably large size of the South Australian Merinos. These in turn later made a contribution to the Peppin flocks.

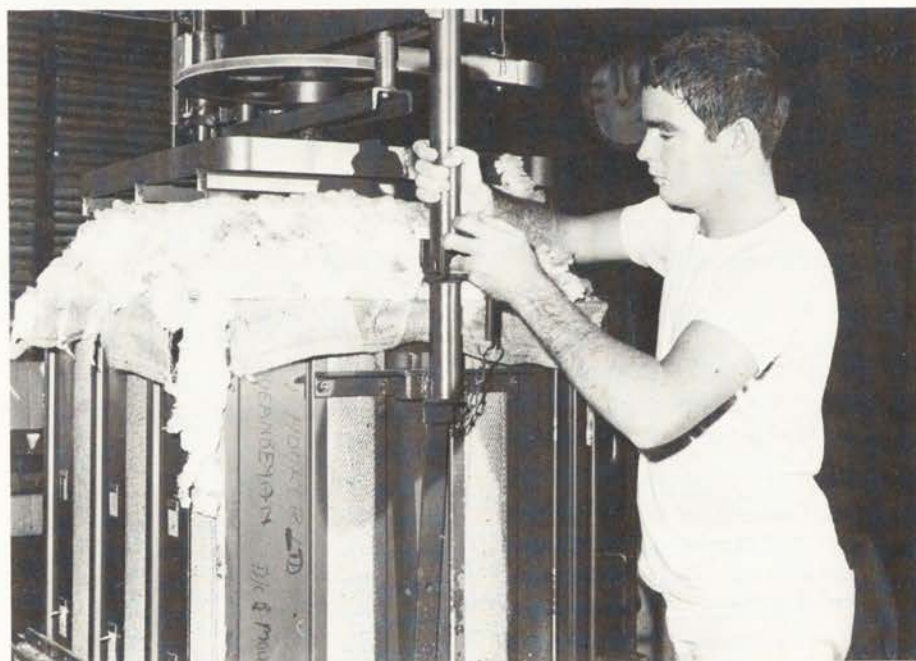
Another large expedition was on account of Thomas Icely, who sent 10,000 wethers. Dutton's and Icely's sheep were advertised for sale for months but found no buyers. To accommodate the Dutton sheep Frederick Dutton bought a 120 acre selection at Mount Dispersion, so called because the overlanded sheep had been distributed from there; it was later called Anlaby. Buchanan managed Frederick Dutton's sheep enterprise and built up the estate, which in 1865 consisted of 70,000 acres of freehold, running 60,000 sheep. Buchanan was held in high regard as a sheep-breeder, and Anlaby later became a leading Merino stud.

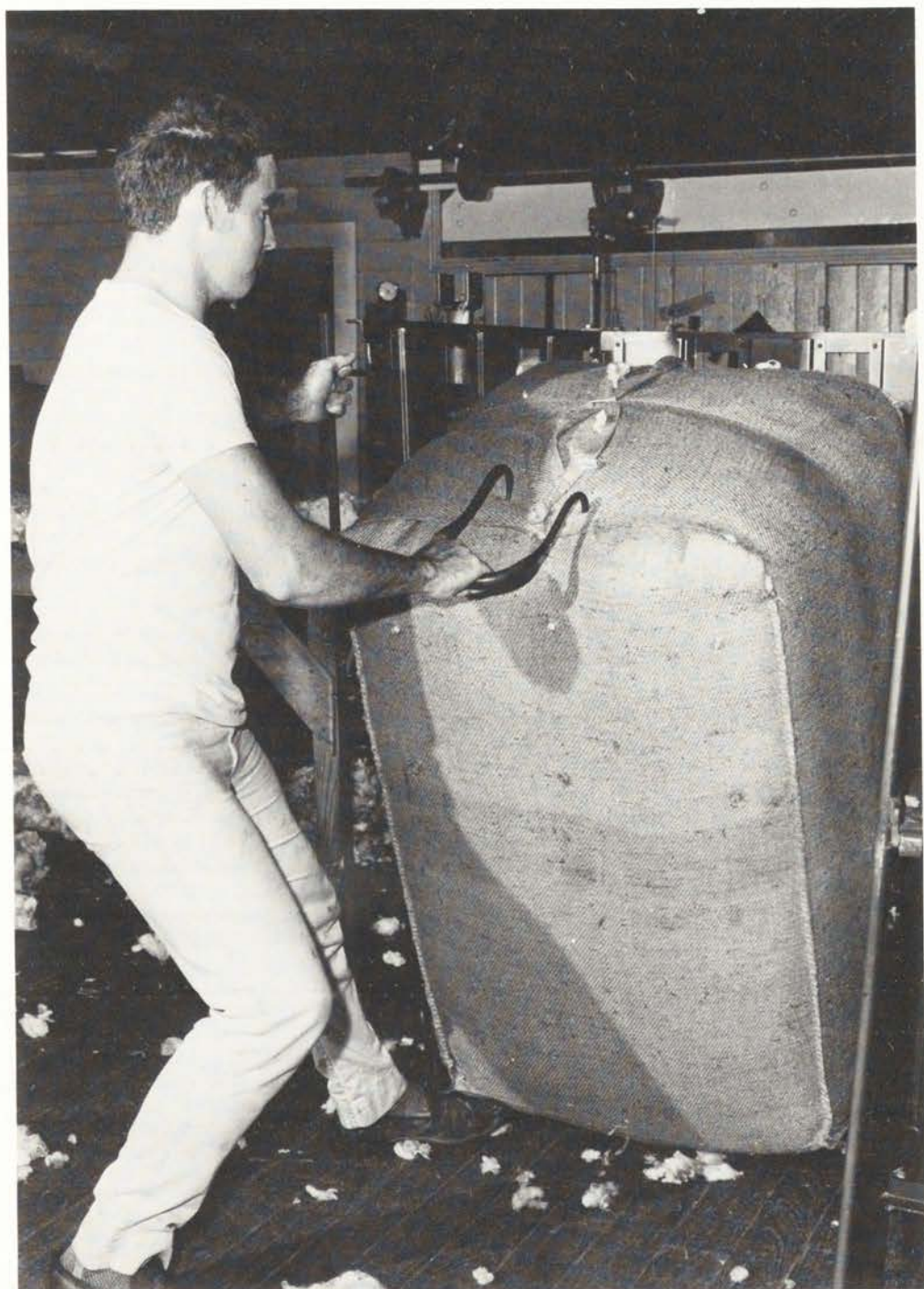
The expansion of sheep numbers in South Australia was so fast that the provision of rural labour was a major problem. The colony, formed on Wakefieldian principles, had set itself against the importation of convicts. Nevertheless, the overlanders brought in several convict shepherds and stockmen, some of whom congregated near Mount Barker. Sheep from Van Diemen's Land were advertised for sale 'with good and steady shepherds'. It seems that shepherds



39 Manually operated wool press superseded the lever type, which required a strong operator

40 Pressing wool into 150 kilogram hessian bales with a modern press





41 The finished bale ready to be marked and sent for sale. Increasingly the quality of the wool is measured by a core sample from the bale.

were articles of commerce. Convicts would be likely to agree willingly to complicity in such an arrangement in order to get to a free colony.

There was a shortage of shearers, and one settler enlisted the aid of Silesian shepherdesses. A German community had settled near Mount Barker in a village they named Hahndorf. In 1839 this community contracted to shear the sheep of their landlord Duncan Macfarlane. Their mode of performing their work was related by an eye-witness:

The shearers were principally young women, who were waited on by men of the village, who, when called on, caught and carried the sheep to the shearer who was ready. The sheep was carefully laid down on its side; the young woman, without shoes and stockings, had a piece of thick soft string tied to one of her great toes, the other end was then tied to the hind foot of the sheep; the girl's leg was then stretched out to extend the legs of the sheep; her knee or left hand was pressed on the neck or shoulder of the animal, which was then left to her charge, and she commenced her clipping work, most carefully avoiding any snips of the skin. The number shorn by one never exceeded thirty a day. At first I was inclined to laugh, but I was soon pleased to see how tenderly the sheep were handled. The wool was not taken off very close. The whole party worked with a will, and the amount they earned went towards the payment for their land, as Mr. D. Macfarlane, the owner of the sheep, was one of the original proprietors who sold the land to them.¹¹

A system similar to the present-day pattern of itinerant shearers soon became established; an account of 1843 tells of men from the neighbouring colonies going about the country contracting for shearing.¹² From the same source we have a description of the state of sheep farming in South Australia only seven years after the foundation of the colony.

There are two classes of sheep and cattle farmers — those who form establishments on their own property, or on rented land; and 'squatters' who settle on unappropriated lands wherever a favourable locality presents itself...

The squatter purchases no land at all. He selects the best spot he can find in the unsold districts, and there settles himself until the land on which he is located is disposed of, and he must then shift his camp, and find another situation farther inland. Thus the squatter is always liable to be warned off; but for this he cares not. He gets grass and water for his stock for nothing, and as he erects no permanent dwelling, his place of residence is soon shifted, and at a trifling expense. The only erections at a squatting station are a turf or slab hut, or probably a tent. The hurdles for the sheep yards are moveable, and carried from place to place...

The only disease of any consequence to which sheep are subject in South Australia is scab. This disease was very prevalent among the flocks in the early stages of the Colony, but it is now gradually disappearing before the active measures adopted by the flockmasters to cleanse their flocks, and the precautions adopted by Government to prevent the introduction of diseased animals, and the spread of infection among those already in the Colony...

Foot rot is seldom seen in the Colony, the pastures being mostly dry.

Large-scale sheep farming was common by the end of 1841, when half the sheep of the colony were in flocks of 3000 or more. The total number of sheep increased from 28,000 in 1838 to 450,000 in 1844. The market was glutted and

sheep were boiled down by the thousand, and, as in other colonies, graziers were compelled to turn to wool production:

... the wool shorn from the flocks which, in 1838 was conveyed to England in a single small vessel, in 1839 filled two ships of considerable burden ... and, in 1841, no less than six vessels were loaded, chiefly with wool...

Most of the sheep from both Van Diemen's Land and New South Wales had been brought in as a speculation, with little regard to the quality of the wool. The Vandiemonians were generally a rough and scabby lot. All the sheep were described in advertisements in eulogistic terms such as 'the finest bred sheep of New South Wales and Van Diemen's Land', but that is the way of advertisements. Saxon rams 'from the well-known imported flock of J Templeton Esq.' probably came from the flock of Mrs Janet Templeton, née Forlonge, a family notable at that time for the enterprise of the female members. The rams were derived from that part of the Forlonge import taken to New South Wales.

Some idea of the quality of the fleece can be inferred from prices at which the wool was sold. J.F. Bennett gave the local price of wool as from 6d to 12d per pound, but did not state whether the wool was greasy or washed. The sheep of Dutton and Finnis were washed before shearing, and 208 bales averaged 14d per pound when sold in Adelaide. The Dutton clip realised £3062, or 5s per sheep, which exemplifies the economics of wool growing. While sheep could be sold for £2 each, the policy was to produce sheep for sale, with wool as a sideline. The most profitable sheep were those which bred fast and grew quickly. When the price of sheep fell to little more than the value of the fleece, wool became important, but graziers first had to learn how to breed good sheep.

John Bristow Hughes learned how to do this the hard way. With his two brothers he was one of the very few successful pioneers of the north of South Australia. Two letters from him appeared in the *Australasian*, 19 and 26 March 1881, telling how he formed the Bundaleer flock and stud, one of the prototype studs of the South Australian Merino.

I arrived in Adelaide at the end of 1840, or beginning of 1841, without any personal practical knowledge of sheep or wool, but I ... had practical knowledge of the comparative values of different sorts of cotton [fine] wool. I began sheep farming by purchasing 2,200 young ewes... I thought their wool too short and fine; there was little choice of rams free from scab in South Australia. I saw that Mr. Dutton's were larger, both in fleece and carcase, than the flock from which I had purchased. I therefore paid him a high price for forty rams of which I had, and exercised the right to select one third, and I was subjected to much ridicule because I selected, firstly, some half-bred Leicesters and then the largest sheep with largest fleeces.

At this time Thomas Southey, the head of a London firm of wool merchants, was an authority on Australian wools. He thought Hughes's fleeces too light, and advised Hughes's brother to send out some of the sheep of Lord Western, who specialised in selling cross-bred Merinos, and this was done. Half of these rams were Anglo-Merinos and half Cotswolds. He put the large Anglo-Merinos and the Anlaby Leicesters to some of his largest ewes:



42 Trudi Anesbury, a skilled shearer from South Australia, carrying on the tradition established by Silesian shepherdesses at Hahndorf in 1839

and thereafter bred from them and from their progeny exclusively, until many of my sheep bore a strong resemblance to young camels, and their fleeces to scrubbing-brushes, and my wool sold at lower prices than my neighbours.

Hughes again wrote to Messrs Southey, who selected and sent him the most valuable of his own fleeces plus samples of wool from Port Phillip flocks, which were selling in London at a much higher price:

I ceased breeding from the English rams ... and selected 300 ewes, with fleeces as nearly as I had them of the quality of the fleece sent to me by Messrs. Southey. These I crossed with Mrs. Dorien's Windsor-park merino rams ... and from their progeny and a subsequent selection of my ewes crossed by rams from Hill River the Bundaleer sheep were all bred...

As a result of this experience Hughes was convinced that 'local experience... can alone decide which is the most profitable kind of sheep to breed'. He had great pleasure in pointing out to William Macarthur that his sheep were superior to those bred by the Macarthurs, selling at twice as much per fleece, although running on similar country (as shown in Chapter 10). It was sheep such as these that made an important contribution to the Peppin Merinos.

Pioneering problems

Domestic sheep are liable to infestation by parasites, both internal and external, which can seriously affect the health of the sheep. The external parasites — ticks, lice and mites — live in the fleece, feeding on the host, with resultant irritation which makes the sheep bite itself and rub against any available object; some of the fleece is lost, and the animal loses condition. As ticks and lice are of a size easily visible to the naked eye, their existence has long been known. Mites, being microscopic, are a comparatively recent discovery. One type, the itch mite, was responsible for the disease known as scab, which was very troublesome amongst fine-woolled flocks in low-lying grounds in Britain and which became a scourge in New South Wales.

No doubt the evolution of woolly fleeces in domestic sheep in place of the more primitive hairy covering provided a congenial habitat for the parasites, which adapted themselves to the new environment. In the colony, the sheep brought from the Cape in the First Fleet were scabby. Philip Gidley King stated that the 6 he took to Norfolk Island all died of the scab. In 1806, one of the rhyming 'pipes' circulating from the barracks referred to John Macarthur's sheep at Toongabbie, which were scabby. Government sheep at Hobart were scabby at that time, and the sheep of Van Diemen's Land were generally scabby in the 1830s, but the incidence of the parasite was not on a critical scale on the mainland until the 1850s, when losses, particularly in the Port Phillip district, became very heavy. It is likely that as the sheep became woollier, as the result of continued use of Merino rams, they became more susceptible to scab. In England, scab had been controlled by the use of ointments containing mercurial compounds or turpentine, and this treatment was sometimes used in the colony until sheep numbers became too large for such individual treatment to be practicable. However a system of immersing or 'dipping' sheep in a large bath containing a solution of tobacco or of lime-sulphur was evolved; this was suitable for treating large flocks, and after the Scab Acts made dipping compulsory the disease was completely eradicated. It has not been known in New South Wales for more than a century.

Internal parasites also caused heavy losses among the colonial flocks. Only one such parasite was then known to exist, the liver fluke, 'sometimes the size of a

silver twopence'.¹ These organisms occur in the ducts of the liver, and as the liver is used for human food, the presence of such parasites was well known to sheep farmers. The association of fluke with 'the rot' — now called black disease — was correctly assumed by eighteenth century farmers, though the complicated life cycle of the parasite was not then known. The rot was responsible for heavy losses among colonial flocks wherever they had access to swampy pastures. It was referred to in the colony as early as 1800, though losses at that time seem to have been few. In the Bathurst district during the cold winter of 1826 more than 2000 sheep died, all of which had been kept on low, wet pastures; where sheep had been kept on dry pastures no unusual losses were sustained.²

More insidious in their effect than the external parasites or the liver fluke was a series of worms which infest the stomach and intestines of sheep. There are several species of such worms, each specialised in the particular part of the anatomy which it adopts as a habitat. For instance the worm *Haemonchus contortus*, the barber's pole worm, inhabits the omasum, part of the stomach of the sheep, while the thin-necked bowel worm is found only in the caecum or blind gut. These worms are hair-like, generally less than 1 inch in length, and being transparent are not easily seen; yet they can occur in large numbers, causing anaemia, serious loss of health and death, particularly in very young and in old sheep.

All the internal parasites have complicated life cycles. The worms in the sheep produce large numbers of eggs, which are passed out of the sheep in the faeces. The egg hatches and the embryo develops in the ground, sometimes undergoing further metamorphosis. When the full development of the free-living, earth stage has been attained, the larvae climb the stems of grass or plants, living in droplets of moisture. Here they may be eaten by sheep to recommence the life cycle. If the larvae are not eaten by the time the dew evaporates, they fall to the ground to climb again on another dewy night. All this has been discovered comparatively recently. Much of the life cycle of sheep parasites was traced by Dr (later Sir) Ian Clunies Ross during the 1920s.

The practice of keeping sheep from the dewy grass was apparently a traditional way of avoiding heavy infestation of sheep by worms, although the reason it was effective was not known. Captain Henry Waterhouse, describing the control exercised over his sheep in 1800, wrote, 'The shepherd never let the sheep graze until the dew was off the grass.' The virgin colonial pastures were not yet defiled with worms, and the precaution at that time was not necessary. Presumably Waterhouse's sheep were no more healthy than any others in the colony, and the practice died out. There is no doubt that worms soon became a problem in the colony, but as their presence was not detected no connection between ill thrift and shepherding practices was recognised; it became the Australian custom for shepherds to let their sheep out at daylight, while the dew and the worms were still on the grass.

The internal parasites of sheep are specific to sheep, and cannot go through their life cycle by means of any other animal. There can have been no such parasites in Australia before the advent of the first sheep in 1788. In 1800 John Macarthur referred to sheep affected with the rot, indicating the presence of liver fluke. By the 1820s there are several references which establish infestation with

one kind of worm or another, although, as already stated, the presence of such worms could not then have been known.

Robert Dawson, the first manager of the Australian Agricultural Company, one of the first experienced sheep men to come to the colony, described sheep which had been bought in the colony on account of the Company as having pokes — pouches under the jaw which are symptomatic of worm infestation. He gave a graphic account of the condition of the lungs of some sheep which had died. His post-mortem examination indicates that besides other troubles the sheep were heavily infested with lung worm.

In 1826 W.H. Dutton requested a supply of turpentine as a medicament for the Australian Agricultural Company sheep.³ This old English remedy for a variety of sheep ills is now known to be efficacious only as a moderately effective anthelmintic, more efficient against barber's pole worms than other worms. This and later colonial references to turpentine indicate that it was widely used, and it can be assumed that it had some beneficial effect. It appears that the incidence of worms was already general.

Early settlement near the coast found moist conditions suitable for the development of worms. Further inland towards the drier interior, worm survival becomes more uncertain and the sheep are healthier. On the other hand, there is less moisture for the growth of pasture. Sheep numbers are lower, the spread of worms is thinner and the risk of infestation is less.

As the sheep spread outwards from Sydney they carried the parasites with them and the original virgin soil became contaminated. This was a gradual and irregular process, depending on several factors: the type of country, the variation in the seasons and the breed of sheep. Granite country and dry seasons meant healthy sheep, and the Merino breed seems to have been less resistant to worms than the first African and Indian sheep. As the proportion of Merino blood increased, so the health of the sheep tended to decline.

There was a time lag between the introduction of sheep to a new district and the inevitable later decline in health of the flocks. Sheep did better on new country, adding credence to the cry of 'better country further out'.

Provided they are healthy, sheep are extraordinarily adaptable animals, capable of surviving on a wide range of low quality fodders. We have seen that the Saxon sheep spent most of their lives indoors on a diet composed largely of straw. In the intensely cultivated agriculture of Europe, the sheep had a multiple role: they provided wool, milk and meat, and, more importantly, they converted the otherwise useless straw to manure. This unnatural treatment can be tolerated by sheep partly because it breaks the natural life cycle of the internal parasites. The housed sheep never eats grass with the dew on it, and so is free of worms.

However, constant housing of sheep tends to make them unfit for a more natural regime. Resistance to worms is an inherited characteristic. Under natural grazing conditions, by natural selection, there is a greater survival of resistant sheep. When sheep are housed over a period of several generations, worm-susceptible sheep survive and the proportion of such sheep in the flock tends to increase. Thus, when the Saxon sheep were brought to New South Wales and exposed to contaminated pastures, losses at first were heavy until the sheep became acclimatised, a stage which was reached when the more highly susceptible

sheep had succumbed to the parasites. Later generations would inherit the characteristics of the survivors, which would be the more resistant sheep.

In the early colony acute problems in sheep management arose from the general absence of fencing. John Macarthur was one of the few pastoralists who used fencing, as he fenced Elizabeth Farm at Parramatta in 1802 to keep stock off his cultivation, and subsequently he used fencing to control his Merino stud, which gave him an advantage as a stud breeder. By 1820 fences in horse and cow paddocks are depicted in many illustrations. When stud flocks were established in the Western District of Victoria, it is probable that small fenced sheep paddocks were provided.

In the 1840s two events occurred which made fencing on a wide scale economically possible. The first was legislation giving squatters leases with the right to compensation for improvements, which encouraged the fencing of runs. The second was the use of strychnine to control dingoes, which had attacked sheep from the time of the early settlements. These measures made it possible to replace most shepherds by fencing, allowing the sheep to camp out over the whole run with a minimum of supervision without fear of loss from dingoes.

43 Counting wethers after shearing



One of the first accounts of attacks by dingoes is from near Bathurst in 1824:

The only enemy that attends it [the sheep] is the Native Dog, which commits great havock. Betimes I have known 100 sheep to have been killed or bitten so as to occasion their death in one night. The bites of these animals are almost sure death to sheep.⁴

The second example is from southeast Queensland in 1860:

The native dogs on 'Cadarga' were very numerous, as owing to its scrubby and broken character, it was a natural harbour for them, but in addition, large packs of dingoes followed the trail of the travelling stock and often remained on the run. Poisoning was therefore an imperative duty. Everyone carried strychnine, and poisoned baits had to be made and laid every day. Everything available from the bones of the cattle slaughtered for food to animals shot or found dead on the run had to be poisoned. I must have killed many thousands this way. On one bright moonlight night I was followed by no fewer than nine large dingoes. They played and gambolled around my horse, but having a good supply of poisoned baits in my saddle pouch I succeeded in administering a dose to all of them in turn.⁵

Because of the wide open spaces of the Western District of Victoria, dingoes were vulnerable to traditional hunting methods. The earliest reference we have found is from Thomas Alexander Browne (Rolf Boldrewood), who took up a cattle station near Portland in 1844.

He [the dingo] used to eat calves, with perhaps an occasional foal, so we waged war against him. We were not up to strychnine in those days... With the help of our kangaroo dogs, and an occasional murder of puppies, we pretty well cleared them out. As cattle men, and taking a selfish view of the case, we need not have been so enthusiastic. Though he killed an occasional calf, the wild hound did good service in keeping down the kangaroo, which, after his extinction, proved a much more expensive and formidable antagonist.⁶

Browne was a cattle man, so his losses were insignificant compared with those of the sheep men further inland, who also waged war on dingoes. Many of them were familiar with the traditions of the English countryside and turned the battles into social occasions. 'Several gentlemen of the district used to meet at Davidson's Inn at Elephant Bridge on Sundays to hunt dingoes.'⁷ One hunt club met near the Clyde Company's station, Golfhill.⁸ George Russell, the manager, told of dingo hunts, but added:

... the wild dogs were so destructive to the sheep that I got some of my neighbours to join me in keeping a man and horse for the purpose of laying poisoned meat for them; and we were successful in getting rid of them.⁹

Russell also bought strychnine from local sources as early as 1847, and in 1848 wrote to his principals in Glasgow:

I also wish you to send me about £20 worth of the poison called Strychnia: we have for some time past found it of great use in destroying the native dog; but from the great demand it is difficult to obtain it, & only at an exorbitant rate.

There is one invoice for a box of strychnine, £20 5s 9d and another for £8. It may be calculated that he had bought enough for more than 2000 baits.

The poison was used with good effect not only at Golfhill but also at the Clyde Company's other property, Terinallum, as Alexander Cameron, the manager, reported in 1850: 'There has not been a wild dog seen nor heard on the station for a long time.'¹⁰ However the war was not yet won; a few months later he had to report:

I had three sheep hit in a flock last night by a wild dog... I ... will not be able to leave home now till I either kill the wild dog or frighten him well... I have been poisoning a good deal about the rises lately, and have had several Baits taken, but it appears there is still a remnant.

The nature of this attack on a flock indicates that the sheep were not in a yard under the supervision of a night-watchman but were camped out unattended. This was a significant step in the evolution of Australian sheep management.

The greatest cost in running sheep stations was that of wages and keep for shepherds and night-watchmen. Returns from sales of wool, tallow and surplus stock were so low that rigid economy was essential, and the obvious first line of economy was to reduce the number of these employees. When the Clyde Company commenced operations in 1836 there was an average of 600 sheep to the flock, and dingoes caused losses on several occasions. Two years later the average was 750. By 1848 flocks had doubled in size to 1500, with a further reduction in costs, and attacks from dingoes were no longer mentioned.

It was at this stage that the old style of shepherding was discontinued in the Western District, a major point of historical interest in the development of Australian sheep management, but one of which almost nothing has been recorded. The only references to the change-over we have found are indirect comments in the Clyde Company Papers.

Russell and Cameron, the two relevant figures in the Company, met from time to time and it would be on such occasions that major changes in practice would be decided. There is no reference in the correspondence between the two concerning the adoption of a new system. The casual comment that a remnant of dingoes was attacking sheep in a flock indicates that a change had already been made. Thus, in January 1850 Cameron wrote: 'All the sheep are camping, and looking very well.' 'Camping' or 'camping out' was the current term for the new system of leaving sheep unattended in the open at night.

Again, in the wet winter of 1851, when conditions in sheep-folds would have been favourable to the development of foot rot, he wrote:

My flocks have all kept sound as yet, with the exception of the folded flock in the Stoney Rises; a fourth part of it is lame. I am now camping them also.

Sheep, when unattended, 'camp' in the evening. They lie down and usually remain in the same spot till daylight. So we see that under the new arrangement, the sheep were no longer yarded at night, thus dispensing with the services of the night-watchman, and the shepherd became a boundary rider. He patrolled the

area allotted to his flock for grazing, and turned back stragglers likely to wander. When the sheep camped for the night he left them till the following morning. And we see from the dates of the above quotations that the new system was being practised at Terinallum in 1850. One immediate result was that flocks were again increased, to an average of 2500, with one flock more than 3000, resulting in a further saving on shepherds' wages. On the other hand, casualties were heavier. Cameron attributed this 'to the very dry summer & carrying "Camping Out" a little too far'.

One great disadvantage of the system of running sheep in large flocks, without boundary fences, was that neighbouring flocks sometimes became mixed and had to be divided again, a laborious and unpleasant task. Sheep, particularly when newly shorn, will run before a strong wind, especially if the wind is accompanied by cold sleety rain, and this often led to mixing. Nowadays when a flock of sheep has to be sorted out, for instance if ewes are to be separated from wethers, or culls taken out, it is simply done by means of a drafting gate at the end of a narrow race through which the sheep pass in single file. This system makes use of the inherent characteristic of sheep to follow one another, and the necessary facilities for drafting are found on every sheep farm. Yet such a device was not known to the colonial pioneers, nor was it known in England. It seems that during the thousands of years in which sheep had been herded by man this system had never been used. To the squatters, with ever larger and larger flocks of sheep, separating mixed flocks was a major operation, a graphic account of which is given by Alfred Joyce in *A Homestead History*.

The extension of fencing and the use of the drafting race developed together. From a chance remark in the Clyde Company correspondence it is clear that some of its sheep paddocks were already enclosed at the beginning of 1850 — eighteen months before the first gold-rushes. Russell had then left the colony to visit his native Scotland. Part of the Golfhill country and more than 3000 sheep were burned in a bushfire in February 1851. When he received word of the calamity he wrote:

I expect the bush-fires must have destroyed more of the brush-fences around the sheep-paddocks at the Out-Stations than what you mention. I shall be glad to hear how the system goes on, that of keeping the sheep in paddocks at night, & whether you are extending it.

His letter continued:

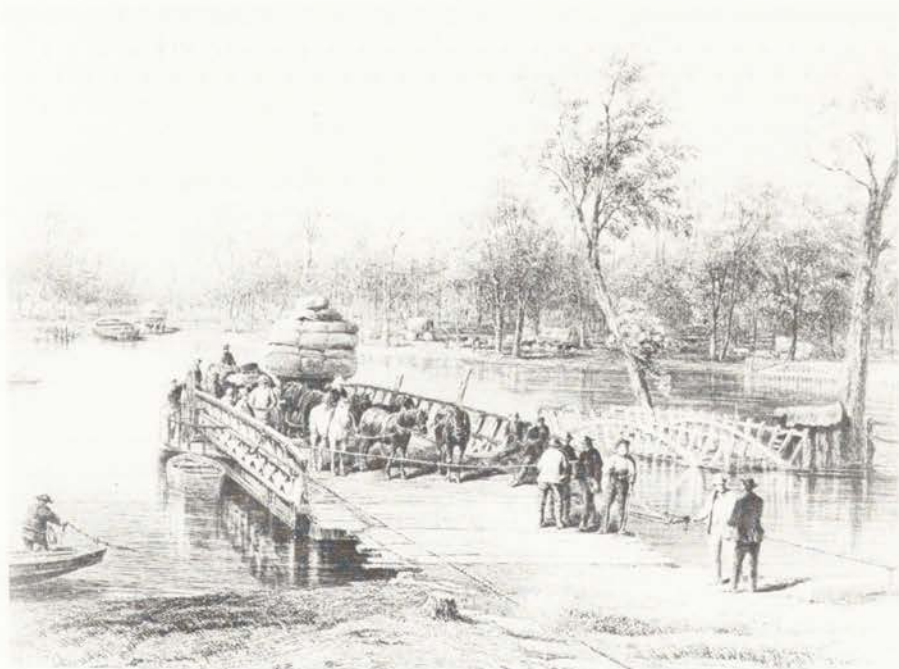
When in the Highlands the other day I saw some fencing for sheep wh. I think wd suit well for P[ort] P[hillip]. It consists of a turf wall or bank about 2 feet high or upwards, wooden stakes drove into the bank at distances of about 10 feet apart, & 2 wires, the lower about 9 in. above the bank, the upper about a foot above the lower wire; These wires were attached to the stakes by staples: let me know how you think such a fence would answer, & I could send out a lot of wire; it I believe can be got cheap.

He sent the wire, two dray loads (probably about 3 tons) and Cameron, ever ready to try something new, acted on the suggestion: 'I am now getting on with the Turf wall; Reddi[e] & Graham are making the model fence of the colony of it.'

This was possibly the first fencing incorporating wire to be erected in Australia. The production of cheap wire was a new industrial achievement and, in time, wire fences were to become an indispensable feature of Australian sheep management. But until the 1850s, when most fencing was only for horse paddocks or bullock paddocks, fences in timbered country were of log or brush construction, of a type dictated by the type of timber in the vicinity and the ingenuity of the squatter. In open country, where material had to be carted to the line of fence, a common type was post-and-rail, which cost about £100 per mile to construct. The combination of a wire fence with a turf base gave promise of providing a cheap sheep fence suitable for the open plains. Fencing took time, however: Frank Gardiner, the bushranger, and his wild colonial boys rode for hundreds of miles on their expeditions and rarely encountered a fence.

The new system of camping sheep with boundary riders continued on those stations on which fences had not been erected and it seems to have worked well under Cameron's management at Terinallum. He was probably the innovator for the district, and for more than a year all went well. Dingoes were no longer a menace, so the neighbours inevitably tried to follow Cameron's example, but with less efficient supervision. Not only did he extend fences, but he also adopted the use of the drafting gate and may, in fact, have been the inventor of the double drafting gate, which made it possible to separate three flocks at a time.

44 Taking the wool by horse team on a punt crossing the river at Echuca, Victoria during the late nineteenth century



The squatters seldom recorded such mundane details as the erection of fences. From the few details available, however, there is little doubt that the Western District of what in 1851 became Victoria led the way. This was the first mainland area where shepherding could be dispensed with, once rid of dingoes.

Brush and log fences were constructed in the 1860s in other districts, but to what extent we cannot tell, for these fences have disappeared without trace. They formed ideal harbour for rabbits, and in 1881, by law, an officer of the Pasture Protection Board could

burn or destroy any brushwood or log fence ... which shall be found to harbour rabbits or under which such burrows shall be found to run.¹¹

It is an Australian legend that 'when the old hands deserted the runs *en masse* for the "diggin's", pastoralists had to begin fencing their stations.'¹² Like many legends, this does not tell the whole story. Large-scale fencing of runs in New South Wales certainly took place not long after the discovery of gold in 1851, but fencing of sheep paddocks was already well on the way in the Western District, and had been general for decades in Van Diemen's Land, where there were no dingoes. The eradication of dingoes was the result of the introduction of the new poison strychnine. The successful use of strychnine made sheep fences practicable, and the desirability of fencing began to be recognised. However, the effect of the gold-rushes should not be underestimated in depleting sources of labour and changing forever the social and economic patterns of life in country and town.

The first experimental shipment of wool, taken to England by Samuel Marsden in 1807, was packed in a cask. The next year John Macarthur sent 245 pounds, also packed in a cask. His son, Edward, who took it to England, wrote:

The wool, I am sorry to say, that came in the *Dart*, was almost spoiled, although I had taken the precaution to have it put in a tight cask.¹³

Thereafter all the wool shipped to England was packed in bales, in which it can be packed more tightly, so that the natural grease can prevent water penetrating the bale.

The first commercial shipment of wool, sent by Marsden in 1811, was greasy wool but was scoured before the sale was completed. The next shipment was in 1813 and contained wool from Macarthur, as well as from Marsden, Alexander Riley and others. Riley's wool, 'badly washed, and indifferently sorted', brought an average of 30d per pound. John Macarthur wrote to Elizabeth of the sale of his wool:

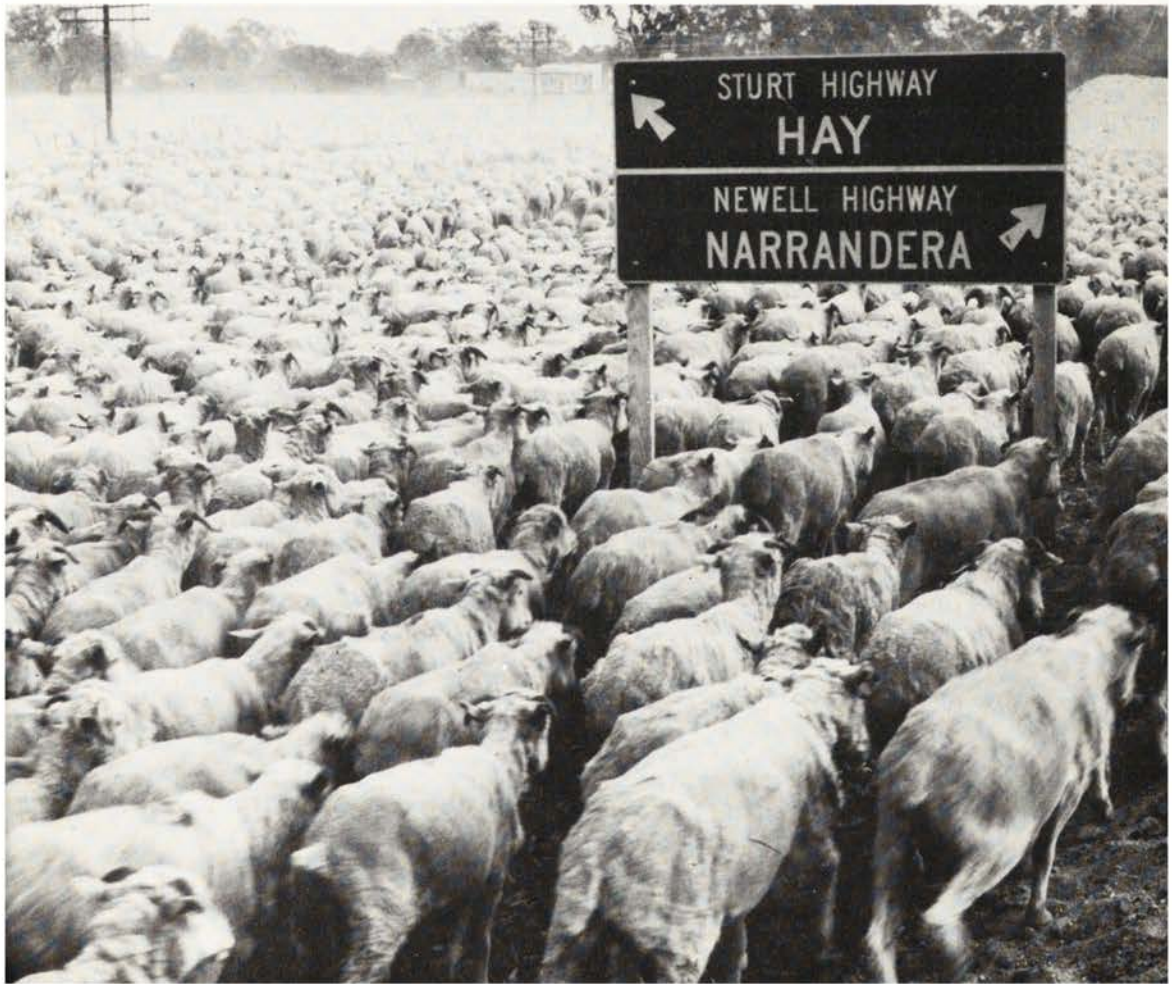
The Wool came safe and is sold but to great disadvantage owing to the very dirty state it is in, I sent it into Yorkshire to Mr. [William] Thompson; the person who had Marsdens, and he has made an ill use of my confidence. He only gave me Twenty pence a pound... I hope you will have had it in your power to put up last years wool in better condition.¹⁴

The price was low because the wool was very dirty, possibly up to 70 per cent dirt, as the sheep were penned every night in fixed yards. There is no record of any Macarthur sheep being washed prior to the 1817 shearing, although there are

some references to 'washed wool', the term for wool washed after shearing. If the Camden sheep were washed at that time, the treatment probably amounted to little more than a swim in the river.

From 1817 onwards the Macarthurs kept an account of wool produced and sold. Four bales of wool washed after shearing were sold in London in 1818. From the 1818 shearing 44 bales of wool washed on the sheep were produced, as well as 13 bales of lambs' wool, washed after shearing (5 were from the 1817 shearing). In addition, from 1819 onward inferior wool was separated from the main fleece. Wool from ewes and wethers was separated, as was that from sheep of different ages, wool from young sheep being more valuable. The best wool was branded 'ultra, ultra fine', indicating a high degree of selection. As most graziers did not keep a record of whether wool was washed (whether on the sheep or off) or the degree of sorting of the wool, comparing prices received by different graziers in the early years is difficult and too much reliance should not be placed on the results.

45 During drought, sheep are often forced to graze in the 'long paddock' (grass on roadside)



Saxon sheep were peculiarly liable to have dirty wool, as was pointed out in 1839:

fleecees ... so full of filth as to be cleaned with difficulty in the common way. The finer the wool, the more abundant is the yolk or viscid secretion on the skin, and the greater, consequently, is the quantity of filth which sticks to it. The dirtiness of the wool becomes, in this way, no mean test of the value of the sheep. Some of the fleecees lose fully three-fifths of their weight by washing. The average weight of the fleecees from the improved breeds, is from two to two-and-a-half pounds. The ewe fleece seldom exceeds one pound and a half.¹⁵

Blowflies were present in 1788, when they spoiled some mutton, but in 1837 a grower commented that he knew of no blowfly strike in the colony, although they had been reported in England. There appears to be little written evidence of damage until the 1880s, but it is not known whether a new breed of blowfly came in at that time or sheep became more susceptible because of the increasing weight of their fleece and the spread of wrinkled Vermont sheep.

From the beginning of settlement there was a widespread opinion that the Australian climate suited sheep and in particular that it actually was the cause of the softness of wool (which is now known to be associated with fineness). The view was put strongly by Thomas Shaw, who came to Australia in 1843 and became accepted by graziers in the Western District of Victoria as an expert sheep classer. In a letter to the *Sydney Morning Herald* of 15 August 1862, reprinted in the Melbourne *Economist*, he said:

Spain had for a considerable time the pre-eminence for the production of fine wool, until the introduction of Spanish wool into Germany. Under the influence of the German climate, these sheep so far improved in the qualities of fine wool as to supersede the Spanish and stand pre-eminent; thus Spain was beaten not by her own sheep, but by her sheep being introduced into a superior climate — it did the work.

In response, in the *Economist* of 24 October 1862, a German immigrant, Henry Bingman, pointed out

that the climate of Germany, as far as it concerns sheep breeding in general, and the production of fine wool in particular, is in every respect, inferior to that of Spain... Those parts in which sheep breeding is flourishing are exposed to the cold blasts of the Baltic and Russia, or to the dense and chilly fogs of the German Ocean and are not essentially different from the British Isles.

Nevertheless, Shaw's practice of selecting sheep in a climate similar to that in which they would live was sound and is now widely practised.

Expanding frontiers and new sheep

The early settlers quickly learned that the land close to Sydney Cove was unsuitable for farming and grazing and they concentrated on the more fertile areas on the banks of the Hawkesbury and Nepean Rivers and on the Cumberland Plain. The total area was small, there were regular droughts and floods and attacks by grass-eating insects, and the best grasses were soon depleted. Food still had to be imported regularly, as indeed it was until well into the nineteenth century. The severe drought of 1813–15 finally showed that the colony was not viable within its boundaries and brought a desperate search for a way over the Blue Mountains. After this was found and a road built to Bathurst by William Cox in 1814, the way was opened for expansion to better agricultural and grazing land.

The stages of the expansion of the early settlement have been set out by T.M. Perry.¹ Some government cattle were sent to the Bathurst area and a few graziers were also permitted to pasture their cattle there temporarily. Governor Macquarie did not permit any general occupation of the area, as he wished to determine whether it was suitable for small-scale agriculture. The first new area opened for grazing in 1820 was south and west of the Cowpastures to Lake George. No grants were given and only temporary occupation was permitted, but it marked the beginning of the spread of grazing throughout Australia.

The expansion was made in a series of overlapping movements, often with small settlements in widely scattered areas. Whether development was to be for agriculture or grazing depended on both government policy and the suitability of soil and climate. The successive expansions into new areas were caused by agricultural disasters, not primarily by lack of land. The occupation of the Cumberland Plain was completed in 1823, then a small number of scattered settlers moved to Illawarra (Moss Vale), Argyle (Goulburn), Westmorland (Bathurst) and Hunter (Newcastle). By 1829 there were three major frontiers in existence: the big man's sheep frontier in Westmorland (west); the small man's cattle frontier in Argyle (southwest); and the immigrant's mixed-farming frontier in the Hunter Valley — each occupying a separate district and possessing a distinctive social structure and a clearly defined and different economic interest. The form that settlement would take continued to depend on policies laid down by the British government, and these changed from time to time, according to its needs.

The first result of this expansionary movement was a permanent shift of sheep from the Cumberland Plain, where the 71 per cent of the colony's flocks held in 1821 fell to 11 per cent in 1828, making it the smallest of the sheep districts. The percentage of sheep in the Bathurst district in these years increased from 23 to 33; the pastoral areas centred on Argyle and the Hunter also became important.

When the outward movement started, the government tried to control it, but its administration was not equal to the task. Macquarie made widespread land grants but had insufficient surveyors to locate them, and this led to boundary disputes. Sir Thomas Brisbane took up office in December 1821 and appointed additional surveyors. As a holding operation he issued tickets of occupation in 1822, without survey. In 1826, in an attempt to keep settlement within an area which could be controlled and serviced by the government, Governor Darling fixed the outer limits of settlement, within which it was permissible to purchase or to receive grants on paying an annual quit rent. The western boundary was to be the River Macquarie.² As Perry has noted, this is clear enough on a map in a city office, but meaningless to a grazier with his sheep in the wilderness. The boundary was revised in 1829, enlarging the area for occupation, but making the boundaries less comprehensible to graziers.³



46 A big mob on the move, 1898, characteristic of the Australian industry

In 1824 Brisbane had begun to sell land at 5s an acre and the next year the British government instructed him to divide the colony into counties, hundreds and parishes and to value the land preparatory to sale, as it had decided the previous system was not working. It said that too much land had been granted to people who did not have the resources to improve it; it was difficult to collect quit rents; and claims could be made of partiality to individuals. It recommended that no land be disposed of in the future except by sale at a minimum price of 5s an acre.

In response Governor Darling issued regulations in 1831 (the Ripon regulations), under which all land sought would be sold by public auction, at which a minimum price of 5s an acre would be fixed. Anyone who wished to buy less than 640 acres was required to state his reasons for doing so, and would be granted the land only under special circumstances. This cleared the way for grazing, and was intended to make it necessary for those with limited capital to work for wages, rather than as peasant farmers.⁴

Until 1839 all grazing was supposed to be carried on within the bounds of settlement and on defined allotments, but it was then recognised that the expanding flocks and herds could not be confined. It was decided to give graziers security and to control them to some extent by a regulation that made it necessary to obtain a licence, at a cost of £10 a year, to use vacant Crown lands beyond the limits of location.⁵ As Governor Gipps said:

As well might it be attempted to confine the Arabs of the Desert within a circle, traced upon their sands, as to confine the Graziers or Woolgrowers of New South Wales within any bounds that can possibly be assigned to them.⁶

By an Order in Council in 1847, squatters were given security of tenure for up to fourteen years, subject to payment at the rate of £10 per annum for each 4000 sheep.⁷

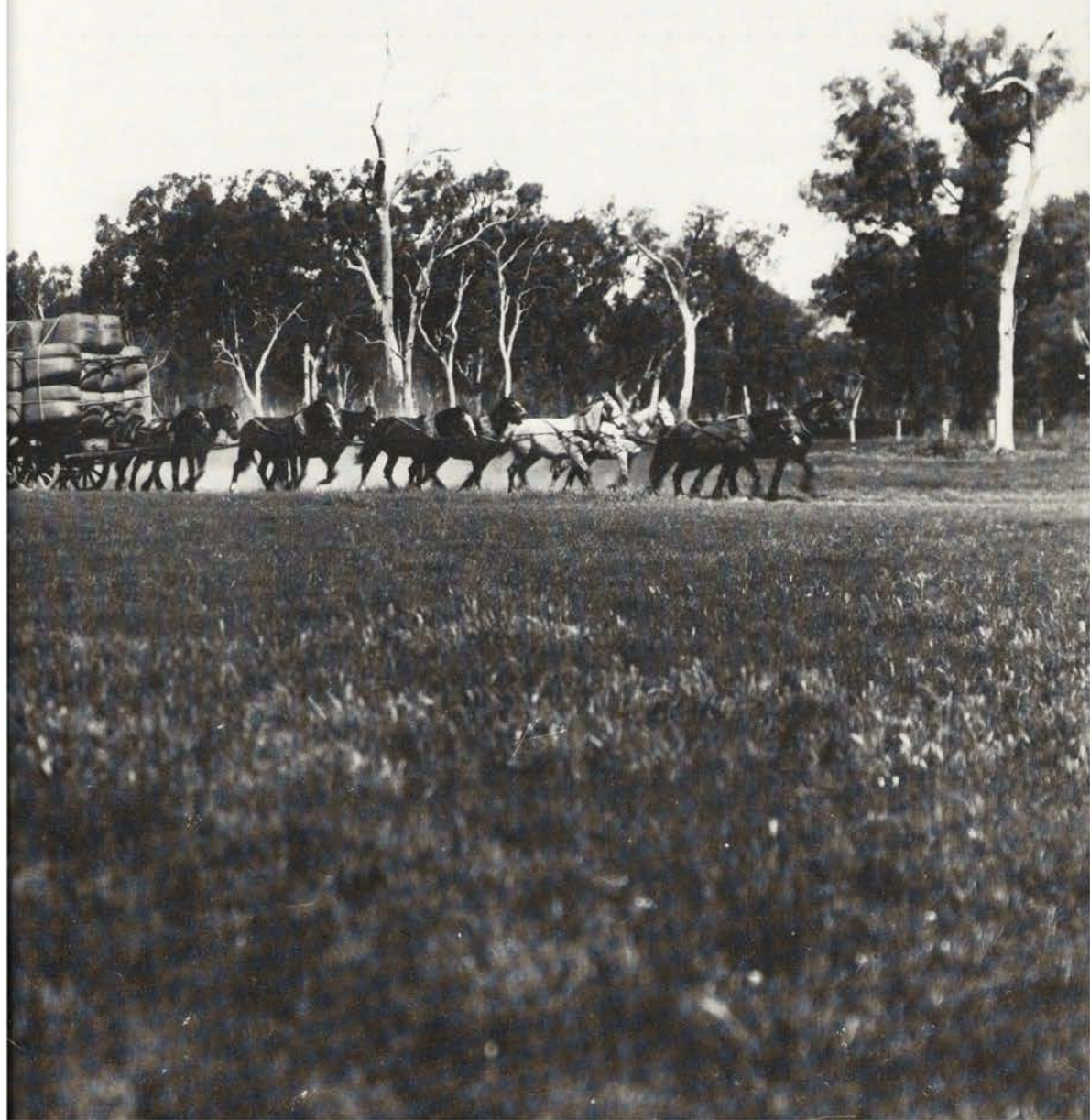
The Squatting Age, during which sheep were dispersed throughout Australia, lasted until the Robertson Land Acts, 1861, in New South Wales (similar Acts in Victoria 1862 and later in other states). However, the old system of continuing expansion, with free or cheap land and labour, fell into crisis in the 1840s and the pastoral industry that emerged in the 1860s was based on a different kind of grazier, different sheep (although there was continuity in some areas) and different management practices.

There were many theories about sheep breeding in Australia at different times but, in practice, sheep were sought that answered the needs of the graziers in contemporary conditions. It was possible to fool some of the graziers some of the time, as when John Macarthur persuaded many that fineness of wool was all that counted. Heavily wrinkled Vermont sheep were successfully promoted in Australia near the end of the nineteenth century; this strain, descended from Spanish Merinos dispersed to America after the Napoleonic wars, proved singularly unsuitable here as it was susceptible to the increasingly troublesome blowflies.

Following page

47 Taking wool to market at the end of the nineteenth century. Photograph NSW Government Printing Office, Australia.





Sheep were first brought to Australia at a time when there was an intense interest in Europe in breeding new varieties. The main method used was cross-breeding and some good results were obtained by those who did not know why they were successful or who combined good practice with poor (or no) theory. Animal and plant breeding did not become a science until the theory of Mendel on genetic inheritance was rediscovered in 1900 (and the science of Genetics was named in 1906). Even then it had little effect in Australia: a successful method of selling racehorses was to claim descent from an early champion, whose influence over the many generations involved could have been only miniscule.

John Macarthur had two theories of breeding. The first was that the offspring of a pure Merino ram is pure, even if the ewe to which the ram had been mated was hairy. This theory of male dominance is incorrect, even though it flourished from the time of classical antiquity until Mendel's discoveries disproved it. The second was that the offspring of a hairy ewe could become a pure-woolled sheep in four generations, which the observant George Johnston disproved. Essentially Macarthur believed that any sheep he could sell by flourishing the word 'pure' was pure enough for his purposes.

Samuel Marsden was at first a representative sheep farmer in breeding for mutton, which was what the early colony wanted. He went through a transitional stage in which he thought it was possible to breed for both wool and mutton. This is a useful guideline, but it must accommodate the fact that the food which the sheep makes into wool is not available for body-building. He became a wool-grower but his many other interests diverted his attention from sheep.

The Saxon sheep which arrived in the 1820s were themselves the result of an experiment in upgrading local sheep with inferior wool by crossing them with imported fine-wool sheep. This remains the best method of upgrading inferior sheep on a wide scale. The early Saxon sheep in Australia were most successful in cool regions with medium to high rainfall, mainly in Tasmania and the tablelands of New South Wales and Victoria. They were not adapted to hot, dry regions or to coping with parasites, which in their native Saxony were killed in the wintertime because the sheep were housed in sheds on deep litter.

Imports of sheep largely ceased during the 1830s, when the emphasis was on increasing the number of sheep for sale to speculators, although some breeders still produced fine wool. Wool exports, nevertheless, began a long-term rise in the 1830s, as the price of wool increased; they went from 2 million pounds in 1830 to 39 million in 1850.⁸ During this period (which saw a crash in the market for mutton sheep) the foundation was laid for the development of the Australian Merino, the main requirement for which was weight of wool (which came partly from an increase in the size of the sheep). On a station of the Clyde Company in the Western District of Victoria, the average fleece weight was 1 kilogram in 1840, the same as that obtained previously by Macarthur; the Company increased this by 40 per cent in a decade. In New South Wales the average fleece was 2.3 kilograms in 1885 for sheep and lambs; it is now about 5 kilograms, with a large number of good flocks giving considerably more than this. It was this increase in average fleece weights that kept wool production rising. Between 1860 and 1890 the number of sheep in Australia increased four-fold, and wool production eight-fold. This was the period in which the industry was established on a firm

commercial basis. There was a turning away from the original policy of breeding exclusively for fine wool. The stage was set for the arrival of medium fine Peppin sheep, the type on which the industry is now based. Extra fine wool sheep are still important in some regions, but they now give only about 2 per cent of the clip.

The end of the beginning

The shift in the location of the sheep industry in the 1820s and the big increase in the number of sheep prepared the way for the disasters of the 1840s, when there was a fall in the price of both mutton and wool. Part of the blame belongs to John Macarthur, whose extravagant stories about the wool industry were a factor in inducing English investors and immigrants to try to share in his good fortune. At first they were not deterred by decreasing prices,¹ as profits could be made by selling surplus sheep to new settlers. In New South Wales sheep numbers increased from 50,000 in 1813 to 600,000 in 1829, 2.75 million in 1838 and 7 million in 1851.² The influx of Saxon sheep in the 1820s increased both the quality of wool and the number of woolled sheep, but most colony sheep still produced a light, poor quality fleece. The progress made cannot be determined by noting the average wool production, as good flocks were outnumbered by indifferent ones; for example, in 1828, Van Diemen's Land wool was worth only half as much as that from New South Wales.

The problem was explained by Sir John Jamison in his 1830 presidential address to the Agricultural and Horticultural Society:

Mutton has now fallen under two-pence per pound, in fact, as low as a shilling per quarter [of a sheep]: and as fat wethers, of from fifty to seventy pounds weight, are only worth from four shillings to six shillings per head, it no longer becomes a consideration to breed for the sale of the carcase. It will therefore be our sole interest to kill off and use our large coarse sheep, whether male or female, until we reduce our flocks to the improved Saxon crosses, and by a future judicious selection, the finest woolled wethers' fleece will pay for their keep in a more profitable degree than the sale of the carcase to butchers.³

The success of this policy was shown by the increase in wool exports to Britain from 100,000 pounds in 1820 to 2 million in 1830 and 10 million in 1840. At the same time the total population of Australia increased from 29,000 in 1820 to 405,000 in 1851 and 1.1 million in 1861. The peak year for the receipt of convicts was 1833 and 27,000 were received between 1831 and 1841, as well as 90,000 immigrants.

Speculation had begun in the 1820s with the granting of large areas of land for grazing, the importation of Saxon Merinos and the opening of new banks to

finance the speculation. The two banks of 1834, with a paid-up capital of £84,000, had increased to seven by 1843, with capital of more than £2 million. The Forbes Act of 1834 (5 William, c.4) removed restrictions under the old Usury Acts on the rate of interest that might be charged.

The speculative mania was commented on in 1834 by Dr J.D. Lang.

If a difference of opinion arose, it was either whether Saxon or Merino, fine or coarse-woolled sheep were the most profitable, or whether it was advantageous to attend exclusively to the wool, or to combine with all due attention to that matter of universally-acknowledged interest a proper regard to the carcase.⁴

A grazier of a later period, J.R. Graham, put it more bluntly:

From about 1835 to 1840, a perfect mania for sheep-farming had taken possession of military officers, gentlemen of the mercantile navy, lawyers, clergymen, merchants, and others who had capital to invest, or credit to float a set of bills. Sheep and their wool were the all-absorbing topic of the period, and immense numbers of sheep and stations became the property of gentlemen who had not the slightest idea of stations, sheep, or their management.⁵

Sheep prices had reached their highest point in 1837, when ewes were sold for £3 a head on five years' credit, paying 10 per cent interest; in other words, the buyers were paying 6s yearly for the rent of the sheep, more than the yearly wool clip was worth, without taking into account other costs of production.⁶ When prices began to fall speculative buying stopped and the fall gathered momentum. By 1842 sheep were virtually unsaleable, except with the run 'given in', and good sheep were sold for less than the amount paid yearly as interest. Sheep continued to breed, and with no disposal of surplus sheep, runs were becoming overstocked throughout the colony. In the *Australian* of 24 March 1835 the Australian Agricultural Company advertised 300 Saxon and French Merino rams for sale at prices from £2 10s to £5, but two years later at their annual sale at Maitland only 10 rams were sold at a price of 27s, while 4000 ewes were sold at 31s.⁷ After 1836 wool prices in England fell until 1843; they fluctuated at a low level for a few years, but then again declined, to reach their lowest level in 1848.⁸

Some outlet for old and unwanted stock was necessary, and the solution was found in boiling down sheep to extract the tallow. Sheep carcasses contain a high proportion of fat or tallow (the raw material used for making candles and soap), which was worth about 3d a pound in the colony. Tallow had been exported as early as 1813, when 41 casks had been shipped on the *Minstrel*. This was surplus fat from sheep slaughtered for mutton, when mutton was retailing at 6d a pound, sheep being worth about £1 each. Now the price of sheep had fallen below the value of tallow alone. Sheep which were sold by the Macarthur family for up to 50s in 1839 fell as low as 12d to 30d a few years later.⁹

The boiling-down value set a minimum price for sheep, estimated at 6s to 7s for average sheep, which was much more than they had been worth as mutton. Estimates of the number of sheep boiled down vary widely but, based on the amount of tallow exported, about 4 million were treated in New South Wales between 1844 and 1850, including one million in 1848 alone. The boiling down continued in times of depressed prices of sheep for the rest of the century.¹⁰ One of

the results of the experience gained from this process was the establishment of meat preservation works in the 1840s.¹¹

Sheep with inferior wool could be disposed of as profitably as sheep with good fleeces. There is no doubt that the flocks of the colony comprised a mixture of types. They were descended from several breeds and selection or culling of ewes was unusual. For the first years of the colony the slaughter of ewes was actually forbidden, and retaining all ewes till very old was the accepted practice. Under the conditions of the time, when the only attempts to improve the breed were through the use of superior rams, there could not have been uniformity in the flocks. There are few references to inferior sheep, and it is suggested that this was because they were common in all flocks.

Thomas Southey, an English wool broker whose firm imported large quantities of Australian wool, in his several publications addressed wool growers on improvements to breeds and wools. He commented on the large number of sheep boiled down in the years 1844 to 1849.¹² This would have had the effect of removing 'old, infirm and grizzled' sheep, which produced the coarsest wool or had other disabilities.

The selection of sheep for boiling down was facilitated by the invention about 1845 of a method of using a drafting race to sort out the sheep. Previously it was the general practice for sheep to be sold or boiled down by the flock. The practical difficulties of separation were such that selection was neglected. Now it became a simple matter to draft off the obviously inferior sheep for disposal. Boiling down in conjunction with the invention of the drafting race was able to effect a great improvement in the standard of sheep.

Boiling-down establishments continued to operate for many years. Although the price of sheep rose, the returns from boiling down were often not much below the value of sheep for sale for wool-growing. With increasing interest in wool, flocks of sheep which did not contain 'grizzled' and other undesirable types would, when sold as wool-growers, tend to bring higher prices. For the first time in the colony it was economically practicable to cull sheep, resulting in an immediate improvement in the evenness of the wool clip and, in the long term, in the production of better wool.

The malodorous industry of boiling down, 'peculiarly offensive in the sight of Heaven', not only saved some sheep owners from disaster during the crisis, but also had an important influence in the improvement and development of the Australian Merino. As sheep numbers continued to increase, graziers who had opened up new lands often too remote for the sheep to be marketed as mutton had to depend on wool for their returns.

While the sheep were increasing with almost uncontrolled breeding in the expanding districts, a trend for improvement gradually appeared in certain areas. These areas formed a bridge between the old industry, which was destroyed in the 1840s, and one part of the new industry which gradually emerged from it. This is a period of unsatisfactory records from the point of view of the history of wool, and it is possible to place undue emphasis on what little evidence is available. On the mainland, from the middle 1840s there is an increasing record of improvement in western Victoria. This was not the only area, nor the first, where development took place, but it is the best documented. Progress was also being made in the

Mudgee district. Although nothing has been found of the methods used or of the rate of progress, in the 1860s there were Mudgee flocks with wool equal to the best from Victoria. Devotees of the culture of wool were also to be found in long-settled districts such as Bathurst. Developments in Tasmania have been discussed in Chapter 16.

Mudgee and a few other regions have continued to produce fine wools, for which there is a lucrative but limited market, but the industry in Australia has mainly developed to produce heavy fleeces of long-fibred wools. Woollen fabrics may be broadly divided into woollens and worsteds. In the former, short wools are used, but worsteds require long wools, which are known as combing wools because they are combed to lay the fibres parallel before they are spun into yarn. Combing wools are more valuable, but few of the Australian wools of the 1840s were long enough for combing. Therefore, it was a logical step for the manufacturers to try to encourage the production of combing wools in Australia. Wools at this time were hand combed and thus needed to be long; combing by machinery could use wool only 2½ inches long, but was not generally practised. Indeed, few Australian wools were even as long as that.

To provide combing wool, the obvious step was to cross the short-woolled Merinos with one of the long-woolled English breeds, of which the most popular was the Leicester. This was done by many breeders both in England and Australia. As has been noted, Teeswater, Leicester and other large English sheep were among the early sheep imports, and their offspring had been favoured when mutton was the main product. Now the increased weight of their fleece was also important.

John Ryrie Graham, an eminent sheep classer of the 1860s, was to write scornfully of the results of cross-breeding, without realising that a new type of sheep, the Australian Merino, was evolving which had a fleece of sufficient size to sustain a commercial wool industry.

... Messrs. [Thomas] Icely and Rodd, of Goombing [Coombing], near Bathurst, imported ... in 1840, ... Leicester sheep ... [and] commenced breeding from them by crossing with some of their best Australian Merino ewes. The first cross did certainly gain something in size, and looked well until they became two years old, but the increase of bulk was palpably at the expense of the wool, which had become harsh and loose, and on the back had a 'mushey' feel and appearance ... after lambing, these mongrel ewes commenced to throw off their wool from their bellies and points, retaining in fact no wool except a little thin stuff on the ribs and back... Every year, as the sheep grew older they became worse, until at the expiration of about seven years it was discovered that these cross-breds inherited neither the fattening properties of the Leicester nor the wool-bearing qualities of the Merino; in a word, they were pure in one respect only, — they were pure mongrels. Meanwhile, before this sad truth was discovered, three-fourths of the sheep in the [Bathurst] district were completely ruined.¹³

A similar project was undertaken in New England, where William and R. Denne claimed to have established a new breed of sheep which combined all the desirable qualities of those producing wool, tallow and mutton. On 13 July 1844 they advertised in the *Sydney Morning Herald*: 'The undersigned beg to call

public attention to a new description of Rams which, after five years' breeding in the colony, they have established.' This advertisement was followed on 1 August by a letter from William Denne to the paper in which he stated:

I brought eight of the improved long-woolled Kent sheep with me in 1839 for the purpose of carrying into effect, in this colony, what Lord Western has been engaged in, in England, that of planting the merino fleece on the carcass of the long-woolled sheep... the first cross from merino ewes has produced an animal of a large growth, a disposition to fatten, with a heavy fleece — the wool from which realized in the London market 1s. 9d. per lb., the fleece averaging above three pounds. The result of the second cross has produced an animal possessing a strong constitution, at the same time yielding a superior description of combing wool, and well adapted for feeding in large flocks...

... the acquisition of tallow as an export ... renders a breed which shall produce a large quantity of tallow at an early age of great importance.

In 1837 the Australian Agricultural Company imported Leicester rams, which were crossed with Merino ewes, and the wool of the progeny was sold in London in 1840 at better prices than the Company's Merino wool. However the cross was considered to be unsuitable because of differences in the breeds and after 1840 the crossing was restricted to one-third of the ewes at one of the Company's stations. The use of Leicester rams was discontinued soon after.

In South Australia Leicesters were introduced by the South Australian Company in 1836 and by the Duttons in 1840, helping to produce the South Australian Merino, which is noted for its size.

In the Port Phillip district W.J.T. Clarke, considered for a time to be the wealthiest man in the country, told J.D. Lang in the 1840s that he had made a great profit from Leicester sheep, at first in Van Diemen's Land. His example was widely followed. It can be seen that during the 1840s at the major sheep-producing areas of the colony English rams were widely used to cross with the colonial ewes, which up to that time had been developing towards a high proportion of Merino blood.

After the discovery of gold in 1851 conditions on the sheep stations remained difficult, but not insuperable. As the news of the gold spread overseas, immigrants started to pour in and labour could be had at a price. For the 1852 shearing Alfred Joyce, whose run was close to the early Bendigo goldfield, recorded:

We did manage to get just sufficient shearers and others to get through shearing, but it was only by paying them a most extravagant rate of wages, some of them equal to what they would earn at gold digging, shearers 30s. per hundred and rations, equal to £8 or £9 per week, pressers and washers £2 2s. per week and rations; the work has besides been done in a very inefficient manner...

... Fortunately for us, things have taken a turn in our favour; the gold-fields are far less productive, having fallen off about one half, so that we have some chance of getting some labour and a little reasonable ... and, what is better than all, sheep have risen in value. Shorn ones, mixed, are now worth 12s. per head...¹⁴

From the wages quoted one may infer that in a six-day week each man would shear nearly 100 sheep per day.

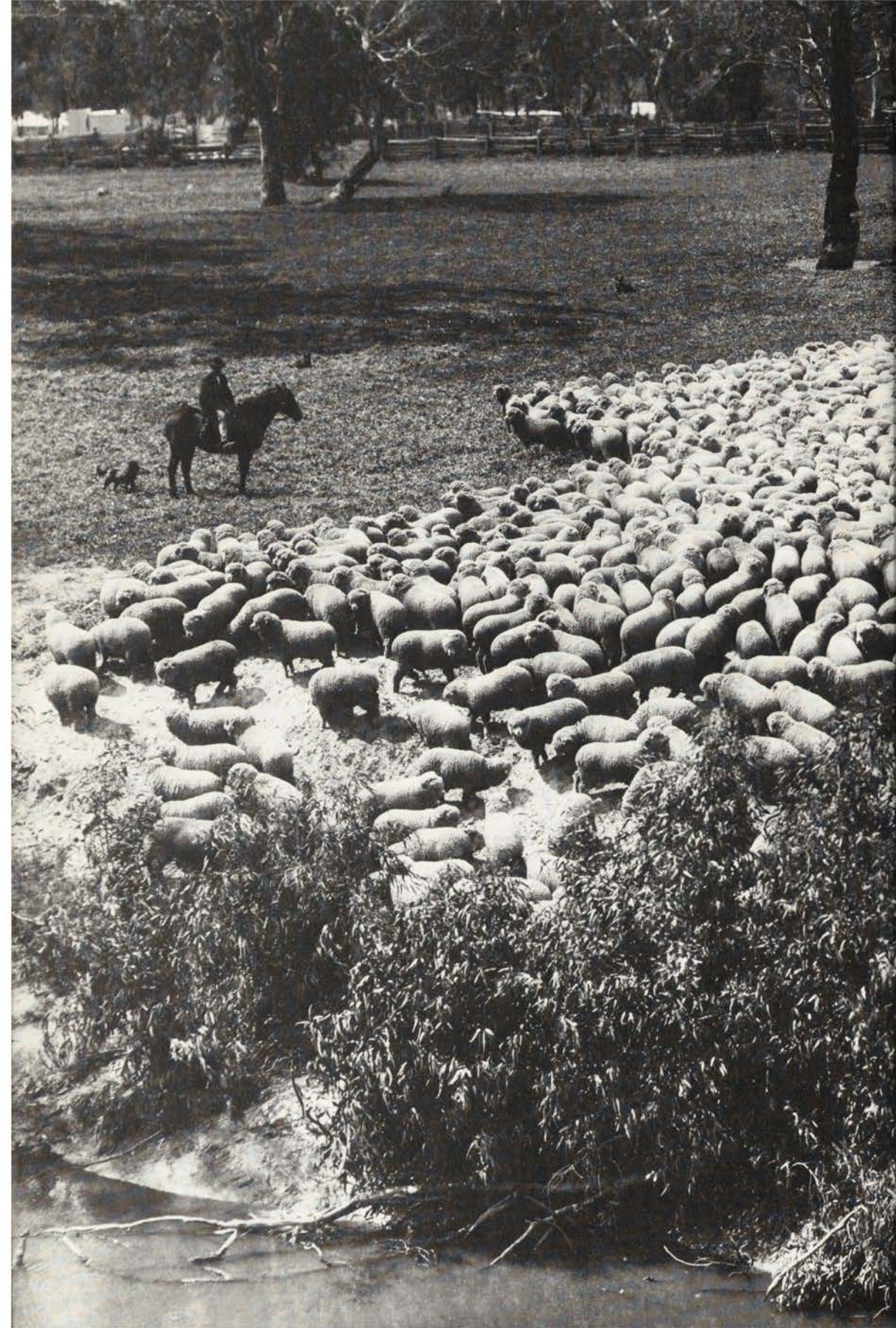
Though most squatters were able to get through the difficult times, some did not; some flocks were abandoned and among these were some infected with scab. The abandoned flocks, harassed by dingoes, scattered throughout the countryside; odd scabby sheep joined up with other flocks, and the contagion spread through most of Victoria. There were heavy losses and the survivors lost much of their wool; Joyce, besides losses of sheep, had only 28 bales of wool whereas he should have had 50. There were so many troubles with rearing sheep that graziers' thoughts turned to cattle, but there were not enough cows for sale for a change-over. However, the big increase in population which the gold discoveries brought rescued the mutton market.

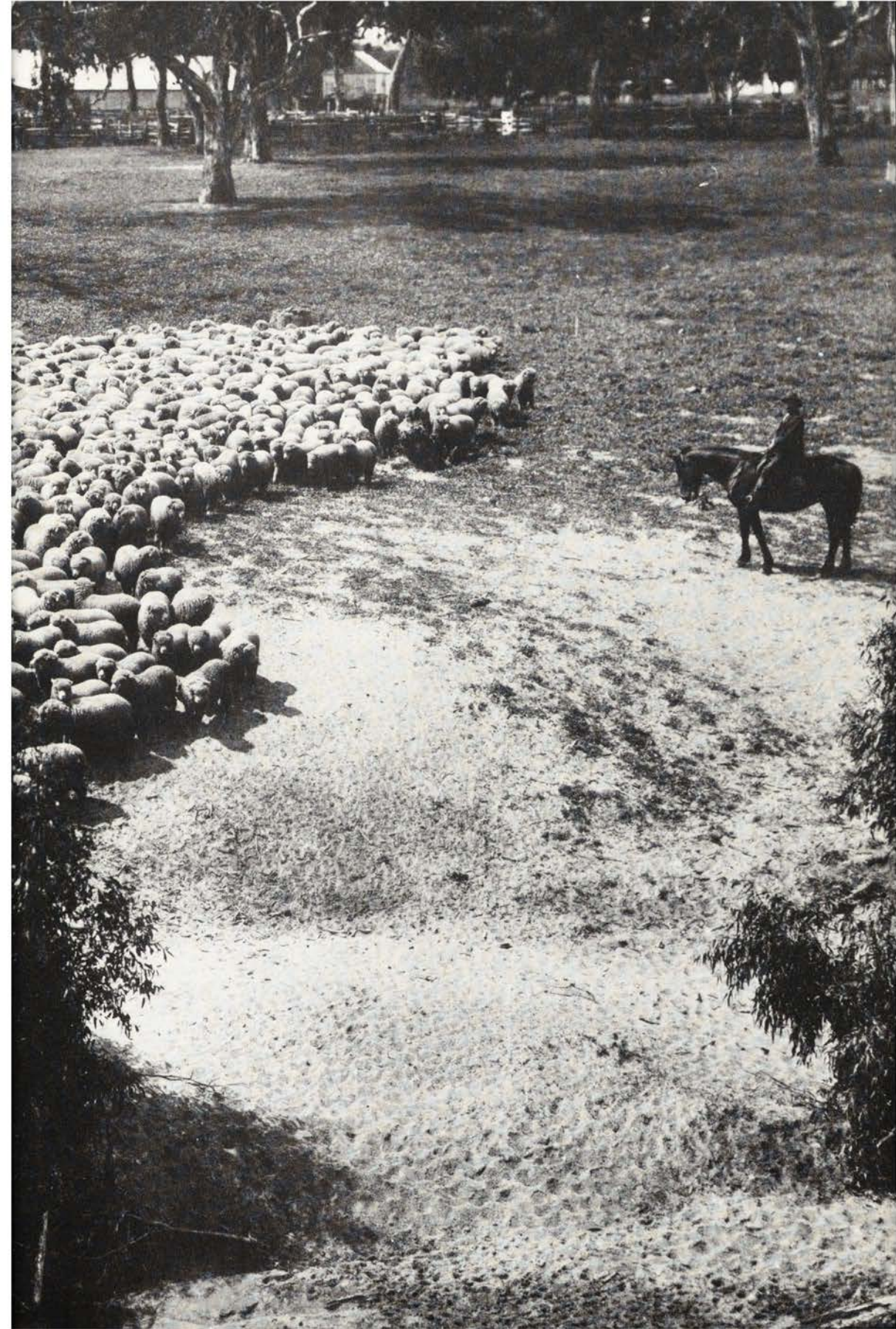
The emphasis during this period generally was on quantity, as is shown in cases where detailed records of sheep management are available. James Tyson, besides extensive trade in cattle, bought and sold thousands of sheep in the second half of the nineteenth century. In his case the information consists of note-books and evidence given in a protracted law case. His trading centred on supplying meat to the Victorian goldfields, and his sheep activities were based on his Tupra station in the western Riverina. He was essentially a dealer, buying stock, fattening them if necessary, and droving them to the market, and in the process sheep were often shorn at Tupra. Yet nowhere in the records is there any reference to the classing of wool in the shearing shed or to the quality of the fleeces of the sheep he bought and sold. It appears that to Tyson wool had a standard value — it was all the same. As he was concerned with sheep for meat, and as fine-woolled sheep tended to be smaller, his purchases would have been of the larger-framed sheep, which were being favoured by many of the breeders. The wool from these must have been of a nondescript type, which had a definite though limited value to the wool trade. In the dry Riverina, wool would have been dusty, and, with a limited water supply, washing the sheep before shearing would have been unlikely. Tyson does not mention sheep-washing. These conditions would limit the opportunity of preparation of the clip for increased returns. Moreover, knowledge of the different wool types can be acquired only by long experience, and few of the settlers at that time, particularly the outback squatters, had any skill in assessing or classing wool.¹⁵ Tyson may be considered as representative of the successful operators, and it seems to be a justifiable conclusion that, to a large number of sheep owners, the quality of wool was of little interest.

Although there was a decline in interest in fine wool during this period, the way was being prepared for a new advance. The sheep which produced superfine wool had played an important part in the development of the industry — and still do, although to a lesser extent — but they had two disadvantages: their fleece was too light to be profitable under the new conditions, and the wool was too short to be ideal for combing. The future was to lie with sheep that gave heavy fleeces of longer, fine or medium wool. The use of Leicester and other breeds, and the activities of graziers like Tyson who traded large numbers of sheep, prepared the way for the Peppin sheep to emerge in the 1860s as the most important of the Australian Merinos. These sheep gave the wool which the market has continued

Following page

48 The pastoral scene in western New South Wales has remained unchanged through years of settlement. Photograph NSW Government Printing Office, Australia.





to demand since that time, and their high yield made it possible for graziers to remain in business at a time when costs were increasing. John Ryrie Graham was one of those unable to see that a market is not a beauty competition and that the best fleece for the grazier is the one for which the market pays the most money.

The Peppin Merinos

The most important stud in the evolution of the Australian Merino was Wanganella, on the saltbush plains north of the Murray near Deniliquin, whose proprietors were the Peppin family.

Most of the great studs in Australia to-day are founded upon and bred to the Peppin strain. For many years this blood has dominated the Merino world in Australia.¹

Little is known of the background of the Peppins, but the few records available all indicate that their early interests were in meat production and dealing in sheep.

George Peppin snr and his two sons, George and Frederick, were English sheep-breeders who came to Melbourne about 1850. At some past time the father is said to have acquired some Merino sheep from the flock of King George III. This circumstance is said to have given the Peppins an interest in fine wool, but this motivation is open to question. The English fashion for Merino sheep set by King George and stimulated by the threat to the supply of fine wools during the Napoleonic wars was of short duration; it did not survive the fall in price of wool which took place in the 1820s, especially as it was found that the Merino did not thrive in English conditions. For instance, the Merino Society in England, of which Sir Joseph Banks was the illustrious president, did not last long after his death in 1820. The effective manager of the Peppins' Australian enterprises was George jnr, born in 1827. King George's Merinos could have meant little to him. The Peppin brothers were originally dealers in sheep and selective breeding was of little importance to them.

The Peppins first took up a run near Mansfield, at the foot of the Victorian Alps, possibly with Saxon-blood sheep from William Forlonge's flock, a well-improved one from Tasmania. They suffered heavy stock losses from the scab epidemic of 1853 and from fluke, parasites to which this type of sheep seems to have been particularly susceptible. They decided to sell out, and then late in 1858 bought South Wanganella, an extensive run 200 miles north of Melbourne, which in soil and climate was entirely different from any part of the country where the Merino had so far been established. The saltbush plains of the Riverina had been found to be excellent fattening country, and the former owner, William Brodribb, had been using Wanganella for that purpose, supplying fat sheep to the markets of

Melbourne and to the goldfields. Brodribb sold 8000 sheep with the station for a total price of £10,000, of which the Peppins paid £3000 in cash. According to the terms of the sale, more than £2000 had to be paid off each year.²

It is evident that the Peppins had planned to continue using Wanganella as a fattening station. Pastoral conditions throughout Victoria in 1859 were good; sheep were thriving and steadily increasing in number, with about 10 million in the colony, each yielding perhaps 3s worth of wool per year. All graziers were looking to sales of fat sheep for an income, though on an overstocked market prices were low.

To keep up the supply of sheep for fattening, George Peppin set out for the Yass district with the former owner of Wanganella, William Brodribb, on a buying expedition. They bought at least 7000 sheep in several lots, wethers and old ewes, at prices from 10s to 13s. These do not sound like the sort of sheep for stocking a wool-growing enterprise. They were a mixed lot, and no doubt included some good ewes which may have been kept for breeding. For the fattening business the margin for profit was small.

The only reference to wool from the first shearing in 1858 is contained in George Peppin's diary for 1859: 'Average weight of washed wool off 7,500 sheep is 3 lb. 2¼ oz.'. In the diary there are also references to the second shearing, 1859, but again no mention of wool quality.³

Peppin bought cheap rams from two neighbours in the Deniliquin district, McKenzie of Conargo and James Tyson.⁴ Tyson was a successful dealer, buying sheep and cattle which he fattened and sold at the goldfields. His extensive diaries likewise never mention wool quality. Nowhere is there any indication that the Peppins in 1859 contemplated stud breeding or were interested in the production of quality wool.

After two years of operation it was evident that the overdraft on the business was too great, and it could not pay; the Peppins decided to sell out. The Melbourne *Argus* of 13 July 1861 advertised the sale of South Wanganella station as the Peppins were returning to England, but there were no bids, and the Peppins, perforce, had to carry on. There were now 20,000 sheep on the run, whereas they had bought the station three years before with 8000 sheep. Besides dealing they had been breeding, and it would appear that Wanganella then as now was a good breeding property. It is clear that the sheep they had acquired were prolific, indicating that the genes to produce this, introduced by the Bengal sheep, were widespread among flocks.

Having failed in running Wanganella as a fattening and meat-producing business, the Peppins had to attempt some other means to recoup their losses. With so many sheep in the colonies, a recovery in the meat market was unlikely. On the other hand, the market for wool was improving, especially for better quality clips. The Wanganella sheep were cutting over 3 pounds a head, well above the colonial average. The sheep had been bought all over the country and they probably included animals with good, bad and indifferent wool.

We have indicated that there is no evidence that George Peppin, though a good judge of carcase, was at that time a competent judge of wool or that he possessed skills in sheep breeding. He would have needed the advice of an expert, and such a person was to be found in Thomas Shaw. Shaw had been engaged by

Western District graziers in classing sheep and selecting rams to improve their flocks, and had attracted considerable attention with his theories of breeding in a pamphlet published in 1849, *The Australian Merino, Being a Treatise upon Wool Growing in Australia*. Now Shaw was again in the public eye, having in 1860 published a second pamphlet, *A Practical Treatise on Sheep Farming*, on a similar theme to his earlier one. Shaw proclaimed that with little expense other than careful selection of breeding stock, sheep could be bred which would produce more valuable fleeces.

He was critical of the graziers and, with less justification, he condemned the importation of any foreign sheep. But the best of the European sheep could still contribute some desirable characteristics of fleece in both quality and quantity. On the other hand, Shaw's exhortation to 'breed only from the Australian Merino', although based on his erroneous theory that climate affects the genotype of sheep, shows that the best colonial-bred sheep had by now reached a good standard.

It was already known that the fleeces of fine-woolled sheep such as those recently developed in the Western District lost their character in the harsh conditions of the dry saltbush plains. In the new pamphlet Shaw stressed the necessity 'to suit the breed to the character of climate and pasture'. Perhaps a breed could be found which would grow fine wool on the inland plains.

The following reference seems to show that the Peppins called on the services of Thomas Shaw to advise in the selection of their stud sheep.

Mr Thomas J. Cumming, a noted stud-master and sheep judge, stated in 1918 that he first met George Peppin at Wanganella Station. George told him that in 1861 his family formed a stud flock with two hundred ewes, two years old, specially selected from their own flock by Mr Shaw, Senior... 'The same year,' said Mr Cumming, 'they also bought 100 two year old ewes, also selected by the late Mr Shaw, from Mr [N.] Chadwick of "Canally" Station, near Balranald...'

... 'To these 300 ewes they put Wanganella bred rams, also selected by Mr Shaw.'⁵

It seems that Shaw may have followed the practice he had previously advocated. Suitable rams for improvement could not be bought in the colonies: they would have to be bred. Stud ewes were not, as might have been expected, selected from one of the fine-woolled flocks that had been established in a more kindly climate; the choice of 200 was made from about 6000 ewes at Wanganella, already acclimatised, which were showing the capacity to grow good wool in that environment. Apparently 300 stud ewes were required, and the remainder came from Canally, 100 miles away, near Balranald. The Canally sheep probably had an infusion of Rambouillet blood and were noted for their size.

Shaw seems to have been overruled by the Peppins, who soon bought imported rams. Speculators were selecting high quality rams in Europe and offering them for sale in Sydney and Melbourne. In 1861 the Peppins bought 2 Negretti rams from Germany and a Rambouillet ram from France. Rambouillet sheep are large-framed, plain-bodied, with some frontal neck folds, with a dense fleece of fine wool. A sample from a present-day ram measures 21 microns (medium fine wool), though by the crimps it would be expected to be even finer. The type of wool produced over two centuries has not varied, for a display of a complete series of samples indicates a constant type with a gradual increase in

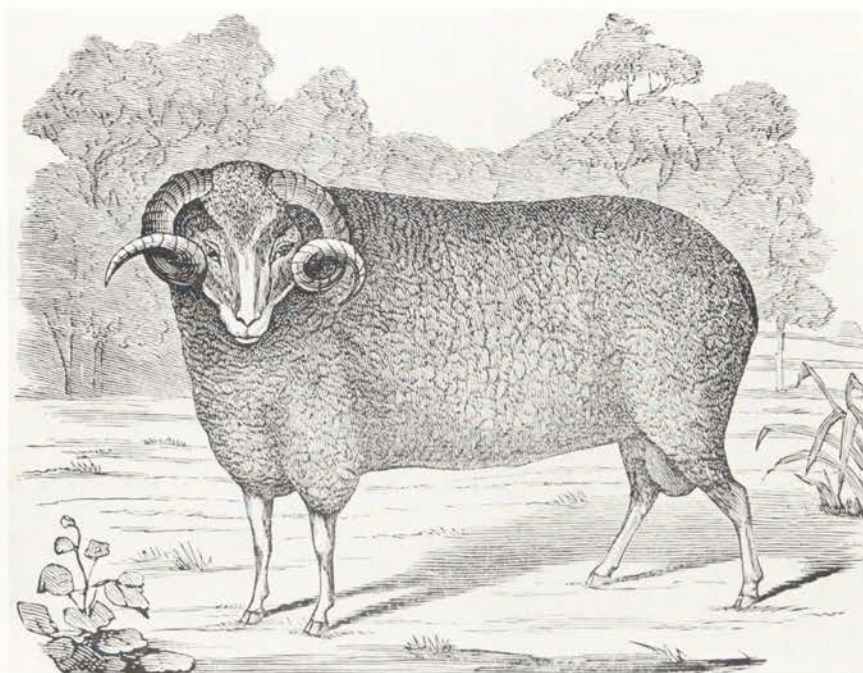
length from about 2 inches to 2¾ inches, with some apparent increase in density. There was, however, a constant increase in their size from 110 pounds in 1820 to 200 pounds in 1850, pointing to the probability of cross-breeding. The Peppins' Rambouillet ram was so imposing that he was named Emperor. He was famous for his well-shaped frame and heavy fleece; for several years in succession he is reputed to have cut a fleece of 25 pounds, which yielded 12 pounds of clean wool. 'He was used ... on his daughters and granddaughters as long as he lived.'⁶

The history of the Peppin Wanganella breed has been written by H.B. Austin. The contribution of the pioneer sheep classers, Thomas Shaw and his son Jonathan, who did this work for George Peppin, is difficult to assess. Austin makes the irrefutable point that there were other strong influences later in the development of the Peppin stud.⁷ Such earlier sheep as the Camden Merinos had no discernible place at Wanganella. Earlier writers, in accordance with the custom of their time, have given insufficient importance to the contribution of ewes to the breeding programs. While it is true that a ram may have fifty times as many descendants as a ewe, every sheep obtains an equal number of genes from each parent. At Wanganella it was the ewes which gave continuity with the sheep that had become acclimatised to the Australian environment since the first sheep were landed in 1788.

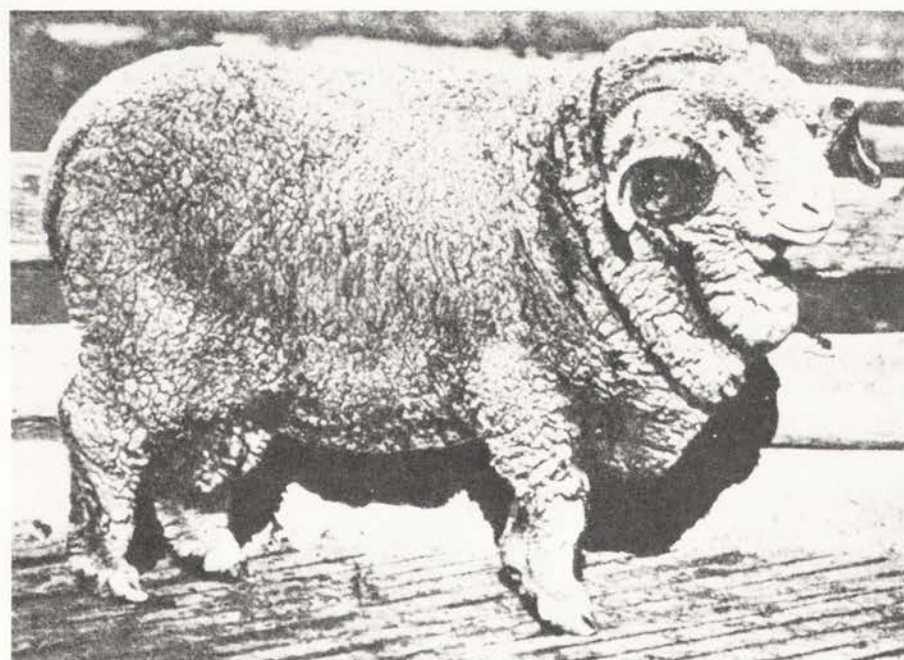
The precise breed of the original Wanganella sheep can never be known; the 200 ewes 'selected from their own flock' were selections from dealers' mobs, but they must have had the characteristics and qualities which suited the climate and the conditions. Their size and the importance of Leicester sheep in at least some of the flocks from which they were drawn point to a substantial contribution from this breed, as well as from the large Rambouillet, Negretti and Vermont rams, all of which show signs of cross-breeding in their development. John Dowling, the present studmaster of Wanganella/Boonoke station, considers 'it was the length of the staple — derived, no doubt, from the rams in the Lincoln Bend paddock on Wanganella Station — which was the key factor in transforming the Australian Merino'.⁸ The Lincoln is a large sheep with a heavy fleece of long staple, lustrous coarse wool. The Peppins certainly did not fit the Australian slogan of 'pure as the Merino'. Austin vindicates the means used by the result obtained:

How it happened will never be known now. It is a great pity that such importance has always been given to 'purity of blood', for the term is rapidly falling into discard. The utility of a breed is the one thing that matters and pedigrees are only valuable insofar as they help us to build the breed.⁹

The blood of the Peppin Merinos is now in the majority of Australian flocks, as they were big, high-yielding sheep, bred for the country in which they ran, and they gave wool of the quality the market came to demand. This is medium fine wool, less fine than the wool of the first Merinos imported, although such fine wool has a small but necessary place in the industry. They were not well known until the 1880s and from then until 1906 they were almost pushed aside by the Vermont Merinos from the United States, which took the prizes at agricultural shows at the turn of the century. These were big, wrinkled sheep, which produced a heavy fleece in the grease, scouring to a medium quantity of mediocre wool.



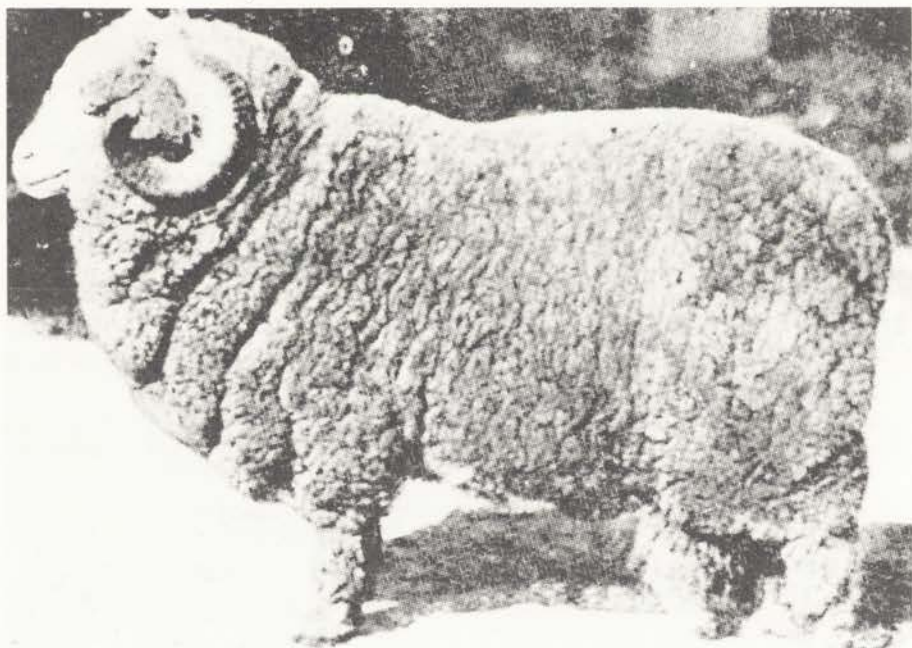
49 Ram imported from Saxony 1824



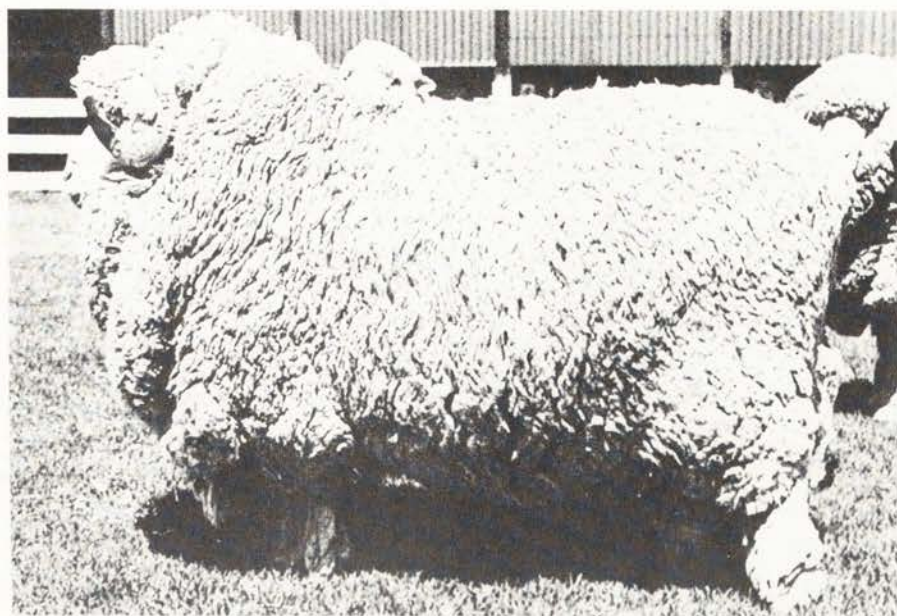
50 Peppin Wanganella stud ram 1874



51 Prize-winning wrinkled Vermont ram 1899. Such sheep were susceptible to blowfly strike and have been rejected from Australian flocks.



52 The established modern Merino, a Collinsville stud 1919 prize-winning ram, with a heavy fleece of 23 micron wool



53 Wanganella 1983 Woolmaker ram with extra long fleece



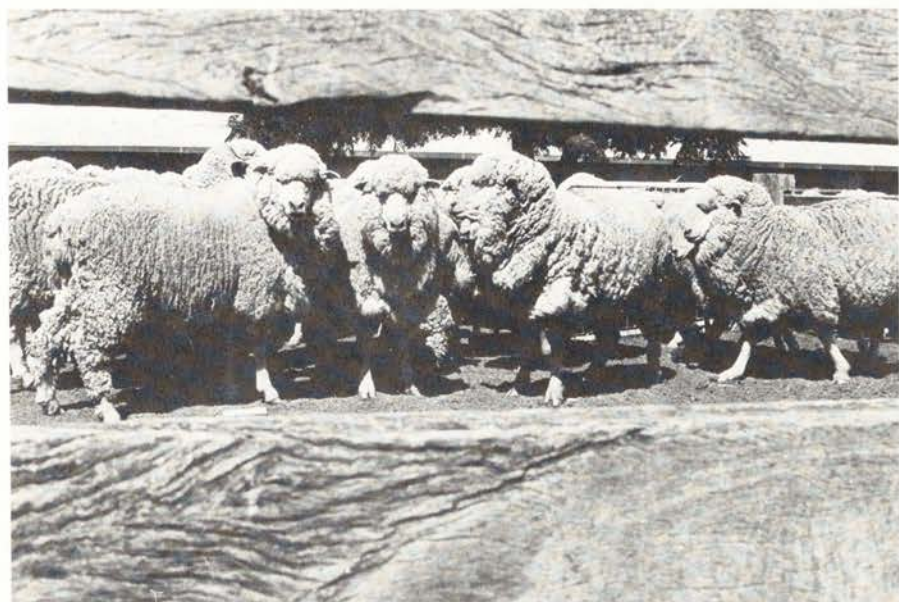
54 Sheep breeders of today, Mr and Mrs Jim Toll of Jaloran stud, with a Collinsville ram bought by them in 1980 for a reported world record price



55 Booroola Merino ewe with quintuplets. The genes for multiple births in selected Merino flocks may have been derived from the Bengal sheep imported before 1800.



56 The outstanding qualities of the modern Merino fleece: density, fineness and length of staple



57 Wanganella/Boonoke stud ewes, which on pasture cut up to 14 kilograms of wool



58 One of the finest examples of the breeder's art. Similar Wanganella/Boonoke young rams on pasture produce up to 18 kilograms of wool, old rams up to 22.

Eventually these wrinkled sheep were actively rejected from flocks because of their susceptibility to blowfly strike. However, it proved difficult to eliminate wrinkles in the flocks, even though breeders have deliberately favoured plain-bodied sheep. For the present, Peppins are the chosen sheep. Their mixed genetic inheritance has enabled skilled breeders to make further improvements. The attempt to prove that the early Merinos were pure bred arose from misplaced pride, as the mixture of breeds was the main factor in making the present Australian Merino superior to its predecessors.

It has often been assumed that because wool became Australia's most important industry, it had a foremost place in the plans of the first settlers. Historians have imposed their own pattern on events, choosing to regard progress as steady and continuous after John Macarthur landed in the colony in 1790. In fact, pastoralists responded to conditions as these developed, and changed with them. The early sheep farmers were lucky, as the cheapest and most available sheep proved to be the ones the colony needed, giving mutton and livestock in abundance in an environment that does not suit many sheep. It was also a lucky chance that Spanish sheep had been sent to South Africa and that New South Wales was able to obtain them. In the establishment of these sheep in the colony Sir Joseph Banks and Governor King played a decisive part. The early Merinos were ultimately superseded but not until after King had established the woollen industry, which was the base from which wool exports developed. The growth of sheep farming in Australia depended on cheap land and convict labour, but by the 1840s these were no longer freely available. In addition, it became obvious that the outback stations would have to depend more on wool and less on mutton for their income. Profitable production therefore required sheep that gave more wool than those bred previously, and such sheep began to appear in the 1860s, when the wool industry was finally established on a firm basis. The way was now clear for the sustained improvement there has been (with a few aberrations) since that time in the quality of the sheep, the skill in husbandry, the treatment of diseases and efficiency in marketing. The widespread improvements in wool production and marketing since World War II and the response to the challenge of synthetic fabrics are themes awaiting development.

Appendix A

Specimens of wool grown in New South Wales

CAPTAIN McArthur having requested Governor King to send eight fleeces shorn from his sheep to England by His Majesty's ship *Buffalo* [sailed 16 October 1800], for the inspection and opinion of Sir Joseph Banks, President of the Royal Society, the official answer, which was received by the Glatton on the 13th March, 1803, was published in the *Sydney Gazette* of 26th March, 1803.

The samples sent and the remarks of an English expert on each were as follows:—

No. 1. — Fleece of a ewe imported from the Cape of Good Hope, said to be of the Spanish breed.

Remarks:— It appears by the fleece to be a real Spanish breed, though a little hairy in the flank, and a small matter in the forehead. The fleece very good; worth, when scoured, 4s. per pound, if not more.

No. 2. — Fleece of a ram one year old, bred from No. 1.

Remarks:— Nearly as good as the King's Spanish wool at Oatlands; quite free from hair, and of an excellent quality; worth 5s. per pound; and, could the colony produce such kinds of wools, it would be a great acquisition to our manufactory in England.

No. 3. — Fleece of a ewe bred in the colony, from No. 1.

Remarks:— Quite different from its mother, No. 1. About the quality of Wiltshire fleece or bred; runs coarse towards the rump and breech; little or nothing of Spanish breed.

No. 4. — Fleece of a ram of 1 year old from No. 3.

Remarks:— Rather a better quality than No. 3; not so coarse on the rump or breech; nothing scarce to be seen of the Spanish breed in the wool from this fleece.

No. 5. — Fleece of a ewe imported from Ireland.

Remarks:— Very coarse wool; about the quality or value of Dorsetshire coarse wools; at this time, value 1s. per pound in England.

No. 6. — Fleece of a ram of 1 year old, bred from No. 5 by a Spanish ram.

Remarks:— A deal more of the Spanish ram than Nos. 3 or 4; much improved by the Spanish ram.

No. 7. — Hair of a ewe of the Bengal breed.

Remarks:— Bengal ewe; the hair only fit for the bricklayers to mix amongst mortar to build their houses with in the colony.

No. 8. — Fleece of a wether of 18 months old, bred from No. 7 by a Spanish ram.

Remarks:— This wether sheep's wool is much mended by the Spanish ram, though it is a pity Spanish rams should be so thrown away as to put them to any such kind of sheep. It has made the hair hang together to what the ewes' wools were.

Note (apparently) by Macarthur. — The whole of the fleeces would have been considerably longer if they had been shorn from the sheep a month hence, particularly Nos. 2 and 4, for they are only of eight months' growth, the two young rams having been shorn last January at the time they were weaned.

Expert's General Report.

The above numbers and fleeces which I have examined of the different qualities, if they could preserve Nos. 1 and 2 for their breed in the colony, I think they may make a good progress in their breed and wool.

H. LAYCOCK¹

Appendix B

Wool samples selected by Rev. Samuel Marsden, 1804 (plucked), from exhibit at Museum of Applied Arts and Sciences

Measurements made by School of Wool and Pastoral Sciences, University of New South Wales

Sample no.	Marsden's description	Mean diameter (microns)
1	Hair from a Ewe such as has been commonly Imported from India and the Cape	Not sampled
2	Wool from the Daughter of No. 1; the Father half-Breed of a Spanish Ram and Coarse-Wool'd Ewe	30
3	Wool Two removes from No. 1, from an half-Bred Spanish Ram	21
4	Wool from a Ram, the Produce of a Spanish Ram and Coarse-Wool'd Ewe	27
5	Wool from a Ewe, the Produce of another Spanish Ram bred in the Colony and Coarse-Wool'd Ewe	20
6	Wool from a Male, the Produce of a Spanish Ram and a Ewe One remove from No. 1	29
7	Wool from a Male, the Produce of another Spanish Ram and a Ewe similar to No. 3 [1?]	28
8	Wool from a Spanish Ram Bred in the Colony	29

(150 measurements
from each sample)

Sample no. 2 showed approximately 0.2 per cent of medullation (hairiness), sample no. 6 approximately 10 per cent. Where medullation occurred it was intermittent along the length of the fibres. No other fibres displayed any abnormality.

Modern South African and Indian wools

More than 300 fibres were included in each sample

	Mean diameter (microns)
Namaqua Africander	33
Ronderib Africander	21
Merino $\times$ Ronderib	19
Bikaneri	31
Rambouillet $\times$ Bikaneri	32

Appendix C

Political administrations in the United Kingdom and New South Wales 1788-1856¹

Secretaries of State (for Home Affairs)

Sydney, Lord
Grenville, Lord, 1789
Dundas, Henry, 1791
Portland, Duke of, 1794

(for War and Colonies)

Hobart, Lord, 1801
Camden, Earl of, 1804
Castlereagh, Visc., 1805
Windham, William, 1806
Castlereagh, Visc., 1807

Liverpool, Earl of, 1809

Bathurst, Earl, 1812

Goderich, Visc., May 1827
Huskisson, William, Sept. 1827
Murray, Sir George, 1828
Goderich, Visc., 1830

Governors in colony 1788-1856

Phillip, Captain Arthur, Jan. 1788

Grose, Major Francis, Dec. 1792

Paterson, Captain William,
Dec. 1794

Hunter, Captain John, Sept. 1795

King, Captain Philip Gidley,
Sept. 1800

Bligh, Captain William, Aug. 1806

Johnston, Major George, Jan. 1808

Foveaux, Lt.Col. Joseph, July 1808

Paterson, Lt.Col. William,
Sept. 1809

Macquarie, Col. Lachlan, Dec. 1809

Brisbane, Maj.Gen. Sir Thomas,
Dec. 1821

Darling, Lt.Gen. Sir Ralph,
Nov. 1825

Lindesay, Col. Patrick, Oct. 1831

Bourke, Maj.Gen. Sir Richard,
Dec. 1831

Stanley, Lord, 1833
Spring-Rice, Thomas, July 1834
Aberdeen, Lord, Nov. 1834
Glenelg, Lord, 1835



Colonial self-government, 1856

Snodgrass, Lt.Col. Kenneth,
Dec. 1837
Gipps, Sir George, Feb. 1838

Abbreviations

<i>ADB</i>	<i>Australian Dictionary of Biography</i>
ANU Archives	Australian National University Archives of Business and Labour
<i>HRA</i>	<i>Historical Records of Australia</i>
<i>HRNSW</i>	<i>Historical Records of New South Wales</i>
<i>HSANZ</i>	<i>Historical Studies Australia and New Zealand</i>
<i>JRAHS</i>	<i>Journal, Royal Australian Historical Society</i>
ML	Mitchell Library
NLA	National Library of Australia

Notes

Chapter 1 The early settlement

- 1 G. Martin (ed.), *The Founding of Australia*. See also M. Steven, *Trade, Tactics and Territory*.
- 2 See proposals by J.M. Matra, 23 August 1783, and Sir George Young, 13 January 1785, *HRNSW*, i, pt 2, pp. 1–13.
- 3 J.M. Powell, *Environmental Management in Australia, 1788–1914*, p. 11.
- 4 J.C. Beaglehole (ed.), *The Journals of Captain James Cook*, vol. 1, p. 309.
- 5 A Letter from Sydney, 24 March 1791, *HRNSW*, ii, p. 777.
- 6 Sir Joseph Banks (attributed), A Journal of a Voyage round the World, *HRNSW*, i, pt 1, p. 496.
- 7 Matra, p. 3.
- 8 *Journals of the House of Commons, 1778–1780*, vol. 37, p. 311.
- 9 Banks to Hunter, 30 March 1797, *HRNSW*, iii, p. 202.
- 10 Phillip to Nepean, 5 July 1788, *HRNSW*, i, pt 2, p. 143.
- 11 Banks to Mr. Fawkener, September 1803, *HRNSW*, v, p. 225.
- 12 T.M. Perry, *Australia's First Frontier*, pp. 6–16.
- 13 Phillip's Instructions, 25 April 1787, *HRA*, I, i, pp. 12–14.
- 14 Portland to Hunter, 5 November 1799, *HRNSW*, iii, p. 734.
- 15 Portland to King, June 1801, *HRNSW*, iv, p. 425.
- 16 F.M. Bladen, December 1893, *HRNSW*, ii, p. xxiii.
- 17 J.M. Bennett, 'Richard Atkins (Bowyer)', *ADB*, vol. 1, pp. 38–40.
- 18 H.V. Evatt, *Rum Rebellion*, p. 33.
- 19 K.M. Dallas, 'Transportation and Colonial Income', p. 301.
- 20 See M. Sturmer, 'Eye of the Beholder', and J. Williams, 'Irish Female Convicts and Tasmania'.
- 21 K. Macnab and R. Ward, 'The Nature and Nurture of the First Generation of Native-born Australians', p. 289.
- 22 A.J. Gray, 'Henry Edward Dodd', *ADB*, vol. 1, p. 311.
- 23 J. Hunter, *An Historical Journal of Events at Sydney and at Sea 1787–1792*, p. 21.
- 24 J.J. Auchmuty (ed.), *The Voyage of Governor Phillip to Botany Bay...*, p. 20.
- 25 J. Easty, *Memorandum of the Transactions of a Voyage from England to Botany Bay, 1787–1793*, pp. 56–7.
- 26 J.J. Herholdt, Chairman, Ronderib Afrikaner Breeders' Association, to J.C. Garran (pers. comm.).
- 27 J. Barrow, *An Account of Travels into the Interior of Southern Africa, in the Years 1797 and 1798*, vol. 1, pp. 116–17.
- 28 J. Hawkesworth, *An Account of the Voyages Undertaken... for Making Discoveries in the Southern Hemisphere*, vol. 3, p. 787.

- 29 Quoted J. Copley, *Sydney Cove 1788*, pp. 59, 63.
- 30 Phillip to Lord Sydney, 15 May 1788, *HRA*, I, i, p. 32.
- 31 D. Collins, *An Account of the English Colony in New South Wales*, vol. 1, p. 26.
- 32 Phillip to Sydney, 28 September 1788, *HRA*, I, i, pp. 77–8.
- 33 W. Tench, *A Complete Account of the Settlement at Port Jackson*, p. 194.
- 34 See Accounts of Livestock, *HRA*, I, i, pp. 52, 480.
- 35 Collins, p. 148; King to Banks, 25 October 1791, quoted J. Copley, *Sydney Cove, 1791–1792*, p. 135.
- 36 Phillip to Henry Dundas, 19 March 1792, *HRA*, I, i, p. 338.
- 37 Phillip to Dundas, 2 October 1792, *HRA*, I, i, p. 373.
- 38 D.R. Hainsworth, *The Sydney Traders*, p. 84.
- 39 Lord Hobart to King, 29 August 1802, *HRNSW*, iv, p. 825.
- 40 J.T. Bigge, *Report of the Commissioner of Inquiry, on the State of Agriculture and Trade in the Colony of New South Wales*, p. 53.
- 41 E. Lipson, *The History of the Woollen and Worsted Industries*, p. 87.
- 42 A bill to repeal early restrictive legislation was passed by the Commons in 1803 but defeated in the Lords. A similar bill, removing the restrictions on the trade, was passed in 1809.
- 43 E. Lipson, *A Short History of Wool and Its Manufacture*, p. 26.
- 44 H.B. Carter, *His Majesty's Spanish Flock*, p. 27.
- 45 28 Geo. III, c.38.

Chapter 2 The founding flock

- 1 See C.N. Parkinson, *Trade in the Eastern Seas, 1793–1813*.
- 2 Henry Dundas to Phillip, 5 July 1791 and Phillip to Dundas, 2 October 1792, *HRA*, I, i, pp. 266, 377 (Phillip did not intend this as a criticism of Manning but rather to show that it would be advantageous to transport goods 'by a ship loaded wholly on the account of Government').
- 3 Grose to Phillip and Phillip to Grose, 4 October 1792, *HRA*, I, i, pp. 381–2.
- 4 Phillip to Lord Grenville, 5 November 1791 and Phillip to Cornwallis, 20 March 1792, *HRA*, I, i, pp. 268–9, 348.
- 5 D.R. Hainsworth, *The Sydney Traders*, p. 22; C. Bateson, *The Convict Ships, 1787–1868*, p. 140.
- 6 See Phillip to Dundas, 19 March 1792, and Phillip to Under-Secretary Nepean, 29 March 1792, *HRA*, I, i, pp. 336 ff., 345 ff.
- 7 In the next trading venture by the officers, the charter of the *Britannia* in October 1792 to visit the Cape of Good Hope and return 'with a freight of cattle, and such articles as would tend to the comfort of [the officers] and the soldiers of the corps', emphasis was upon the purchase of livestock: see D. Collins, *An Account of the English Colony in New South Wales*, vol. 1, p. 198.
- 8 Collins, vol. 1, p. 228; Parkinson, p. 347. The old Fort William at Calcutta was used as a Custom House by the East India Company.
- 9 J.C. Garran, 'Sheep and Other Live-stock of New South Wales 1788–1805', p. 4.
- 10 Grose to Dundas, 19 April and 16 February 1793, *HRA*, I, i, pp. 419, 416.
- 11 Collins, vol. 1, p. 228.
- 12 *Statement of the Improvement and Progress of the Breed of Fine Woolled Sheep in New South Wales*, S. Macarthur Onslow (ed.), *Some Early Records of the Macarthurs of Camden*, p. 70.
- 13 J.D. Ritchie (ed.), *The Evidence to the Bigge Reports*, vol. 2, *The Written Evidence*, p. 84.

- 14 Elizabeth Macarthur to Miss Kingdon, 7 March 1791, Macarthur Onslow, p. 32.
- 15 See contract in Macarthur Onslow, 2nd edn, between pp. 160 and 161. The sale was made in October 1801; Macarthur left for England in November; the final contract was signed by Foveaux on 5 December 1801.
- 16 Collins, vol. 1, pp. 317–18, 384–6.
- 17 King to Earl of Camden, 2 October 1805, *HRA*, I, v, p. 556.
- 18 P.G. King, Journal of, while Lieutenant-Governor of Norfolk Island 1791–6, p. 69.
- 19 Grose to Dundas, 5 July 1794, *HRA*, I, i, p. 479; see also J.C. Garran, 'William Wright Bampton and the Australian Merino'.
- 20 N. Phillips, 'George Vancouver', *ADB*, vol. 2, p. 551; Grose to Dundas, 21 April 1793 and Encl. 1: Vancouver to Phillip, 15 October 1792, *HRA*, I, i, pp. 428–9.
- 21 King to Lord Hobart, 14 August 1804, *HRA*, I, v, p. 13; Ritchie, vol. 2, p. 84; Bateson, pp. 148 ff.
- 22 Observations on Sheep in New South Wales, August 1806, *HRNSW*, vi, p. 179. This was taken from manuscripts in the Alnwick Castle Library and was 'probably' written by Johnston — see *HRNSW*, vi, p. 177n.
- 23 Marsden to Banks, 13 January 1805, *HRNSW*, v, p. 543.
- 24 *Sydney Gazette*, 4 March 1804, 9 September 1804.
- 25 Examinations taken before J.T. Bigge, J. Gordon 4 March 1820, *HRA*, III, iii, p. 251.
- 26 M.L. Ryder and S.K. Stephenson, *Wool Growth*, p. 52.

Chapter 3 Eight small sheep at Norfolk Island

- 1 Phillip to Lord Sydney, 15 May 1788, *HRA*, I, i, pp. 20, 33.
- 2 An earlier version of this story may be found in J.C. Garran, 'The Sheep of Norfolk Island'.
- 3 J. Hunter, *An Historical Journal of Events at Sydney and at Sea 1787–1792*, p. 204.
- 4 P.G. King, Journal of, while Lieutenant-Governor of Norfolk Island 1791–6, p. 62.
- 5 J.B. Walker, 'The deportation of the Norfolk Islanders to the Derwent in 1808', p. 149.
- 6 Hunter, p. 266.
- 7 King, Journal, pp. 35, 300.
- 8 E. Rhys (ed.), *The History of Herodotus*, vol. 1, p. 264.
- 9 Descriptions of agriculture and stock numbers quoted in this section may be found in King, Journal, pp. 144, 191, 198, 300, 310, and D. Collins, *An Account of the English Colony in New South Wales*, vol. 1, pp. 419, 422.
- 10 Phillip to Henry Dundas, 4 October 1792, Encl.: King to Phillip, 19 September 1792, *HRA*, I, i, p. 388.
- 11 Walker, p. 149; J.H. Maiden, 'The Flora of Norfolk Island', p. 758.
- 12 Lord Hobart to King, 24 June 1803, *HRA*, I, iv, pp. 304–5.
- 13 King to Hobart, 14 August 1804, Encl. 6: King to Foveaux, 20 July 1804, *HRA*, I, v, pp. 25–31; Walker, p. 163.
- 14 King to Piper, 13 and 18 August 1805, Bligh, King, etc. — Letters 1803–10; Walker, pp. 163, 165; E.R. Pretymann, 'George Guest', *ADB*, vol. 1, p. 491; King to Viscount Castlereagh, 11 December 1807, Encl. 4: Account of Live Stock in His Majesty's Territory of New South Wales and Its Dependencies... from the 28th Sept. 1800 to ... [12 August 1806], *HRA*, I, v, p. 795.
- 15 King to Piper, 18 August 1805, Bligh, King, etc. — Letters 1803–10.
- 16 Paterson to King, 21 April 1805, *HRA*, III, i, p. 636.
- 17 King to Earl of Camden, 15 March 1806, *HRA*, I, v, pp. 643–5. See also Walker, p. 165.

- 18 King to Piper, 18 August 1805, Bligh, King, etc. — Letters 1803-10; King to Camden, 15 March 1806, *HRA*, I, v, pp. 643-4. Walker, p. 165 stated that Guest embarked 300 ewes of which 265 survived the three-week passage.
- 19 T.C. Croker (ed.), *Memoirs of Joseph Holt*, vol. 2, p. 237; Lieutenant-Governor Collins to King, 27 January 1806, *HRA*, III, i, p. 354.
- 20 Collins to Hobart, 10 November 1804, Encl. 3: Weekly State of Government Stock, *HRA*, III, i, p. 289; Collins to Hobart, 20 February 1805, Encl. 1: Weekly State of Government Stock, *HRA*, III, i, p. 311; Croker, p. 251.
- 21 King to Hobart, 14 August 1804, Encl. 6: King to Foveaux, 20 July 1804, *HRA*, I, v, p. 31; King to Camden, 30 April 1805, Encl. 2: Piper to King, 10 February 1805, *HRA*, I, v, p. 329.
- 22 King to Castlereagh, 11 December 1807, Encl. 4: Account of Live Stock in His Majesty's Territory of New South Wales and Its Dependencies ... from the 28th Sept. 1800 to ... [12 August 1806], *HRA*, I, v, p. 795.
- 23 Macquarie to Castlereagh, 30 April 1810, Encl. 8: General Statement of Land in Cultivation etc., *HRA*, I, vii, p. 287.
- 24 Macquarie to Earl of Liverpool, 18 October 1811, Encl. 13: Statement of Land in Cultivation etc., *HRA*, I, vii, p. 424. See also D.R. Hainsworth, *The Sydney Traders*, p. 187, who refers to the salting of pork at Norfolk Island.
- 25 Macquarie to Earl Bathurst, 28 June 1813, *HRA*, I, vii, p. 714.

Chapter 4 The first Merinos

- 1 See C. Lighton, *Sisters of the South*, pp. 53-89 for details of the Gordon sheep.
- 2 Specimens of Wool Grown in New South Wales [March 1803], *HRNSW*, v, pp. 80-1 (minor differences in capitalisation etc. in *Sydney Gazette*, 26 March 1803).
- 3 Observations on Sheep in New South Wales, *HRNSW*, vi, p. 179. See ch. 2, n. 22.
- 4 *Australasian*, 25 August 1877. See also W. Campbell to Sir William Macarthur, 3 September 1877, Macarthur Family Papers, vol. 68 — Wool: Correspondence and Misc., 1803-66, pp. 270-4.
- 5 Hunter to Duke of Portland, 17 September 1796, *HRA*, I, i, p. 663.
- 6 Waterhouse to Banks, 16 July 1806, *HRNSW*, vi, pp. 110-11.
- 7 H.B. Carter, *His Majesty's Spanish Flock*, pp. 64-5.
- 8 Waterhouse to his father, 20 August 1797, *HRNSW*, iii, p. 287.
- 9 Quoted Lighton, p. 78.
- 10 Hunter to Portland, 6 July 1797, and Encl. 2, *HRA*, I, ii, pp. 34, 68.
- 11 King to Portland, 21 August 1801, *HRA*, I, iii, p. 125.
- 12 Waterhouse to Macarthur, 12 March 1804, *HRNSW*, v, p. 359.
- 13 Banks to Waterhouse, 8 July 1806, *HRNSW*, vi, p. 109.
- 14 Waterhouse to Banks, 16 July 1806, *HRNSW*, vi, pp. 110-11.
- 15 Marsden to Banks, 27 April 1803, *HRNSW*, v, p. 99.
- 16 Carter, p. 278.
- 17 Note by Banks found among his papers, 20 July 1808, *HRNSW*, vi, p. 700.

Chapter 5 The lucky combination of breeds

- 1 S. Davis, 'The Taming of the Few'.
- 2 Letter to L. White from Mrs Beryl Lanyon, 25 September 1982.
- 3 M.L. Ryder and S.K. Stephenson, *Wool Growth*, pp. 13, 282, 608.
- 4 The Greek word 'pekō' means both to comb and to shear: pers. comm. from K.L. McKay, Department of Classics, Australian National University.

- 5 Ryder and Stephenson, pp. 20, 16; G.A. Brown, *Sheep Breeding in Australia*, pp. 25, 37 ff.
- 6 Ryder and Stephenson, pp. 18–20.
- 7 For information on early Spanish sheep see Brown, pp. 48, 53–4, 55, 61–2.
- 8 H.B. Carter, *His Majesty's Spanish Flock*, pp. 420–4.
- 9 K.G. Ponting, *The Wool Trade, Past and Present*, pp. 33–4.
- 10 Until recently the fineness of wool was measured by counts, i.e. the number of hanks of thread that could be spun from a pound of wool tops. In Australia, Merino wool ranges from superfine, with an average diameter of 16–17 microns (count 80), to fine, 18–20 microns (count 70), to medium, 21–23 microns (count 60), to strong, 24 microns or more (count 58). It will be noted that the lower the diameter of the wool, the greater the number of hanks that can be spun from it.
- 11 M.L. Ryder, 'The Wools of Britain', in J.G. Jenkins (ed.), *The Wool Textile Industry in Great Britain*, pp. 51–64.
- 12 Captain Michael Firth to Banks, 4 March 1788, in H.B. Carter (ed.), *The Sheep and Wool Correspondence of Sir Joseph Banks*, p. 145.
- 13 B.R. Mitchell and P. Deane, *Abstract of British Historical Statistics*, pp. 190–2.
- 14 H.B. Carter, 'The Historical Geography of the Fine-woolled Sheep', p. 45.
- 15 H.N. Turner, 'The Booroola Merino', in L.R. Piper, B.M. Bindon, and R.D. Nethery (eds), *Proceedings of a Workshop Held at Armidale, N.S.W., 24–25 August 1980*.
- 16 Ryder and Stephenson, *Wool Growth*, p. 25.
- 17 Sir John Dalrymple to Banks, 7 January 1782, in Carter, *Sheep and Wool Correspondence*, p. 50.
- 18 A distinguished statistician is reported to have said that 'statistics are always wrong', meaning that people expect more accuracy from them than is possible in the real world and conclusions are often drawn that are not justified by the evidence. White's researches indicate that this comment is still apposite.
- 19 See *HRA*, I, i–x *passim*, and *HRNSW*, ii–v, *passim*.
- 20 Marsden to King, 11 August 1804, *HRA*, I, v, p. 63.
- 21 King to Lord Hobart, 14 August 1804, *HRA*, I, v, p. 13.
- 22 Lacocke to Banks, 10 December 1800, in Carter, *Sheep and Wool Correspondence*, p. 341.
- 23 Observations on Sheep in New South Wales, *HRNSW*, vi, p. 179. This was probably taken to England by King in August 1806. See ch. 2, n. 22.
- 24 Captain Macarthur and Sheep-breeding, 11 July 1804, *HRNSW*, v, p. 394.
- 25 *Sydney Gazette*, 26 March 1803; *HRNSW*, v, p. 80.
- 26 King to Banks, 14 August 1804, *HRNSW*, v, p. 450.
- 27 King to Hobart, 14 August 1804, Encl. 14: Mr. Marsden's Report on Sheep Farming, 11 August 1804, *HRA*, I, v, p. 64.
- 28 Waterhouse to Banks, 16 July 1806, *HRNSW*, vi, pp. 110–11.
- 29 Pers. comm. and samples from Dr M.L. Ryder.
- 30 Agricultural Society of Western Australia, 5 May 1837, *Report of the Committee ... into the Origins and Progress of the Flocks of New South Wales...*, pp. 1–11.
- 31 Observations on Sheep in New South Wales, August 1806, *HRNSW*, vi, p. 180. See ch. 2, n. 22.
- 32 W. Macarthur, Notes upon the Wools of New South Wales, Macarthur Family Papers, vol. 68 — Wool: Correspondence and Misc., 1803–66.

Chapter 6 The early sheep of Van Diemen's Land

- 1 Annual Muster, 12 November 1819, *HRA*, I, x, p. 287.
- 2 Governor Macquarie to Lieutenant-Governor Sorell, 8 March 1820, *HRNSW*, iii, p. 8; *HRA*, I, x, p. 288.
- 3 John Raine to Earl Bathurst, 19 October 1822, *HRA*, III, iv, p. 434.
- 4 Instructions for Major Andrew Geils, Commandant of the Settlement of Port Dalrymple, 30 January 1813, *HRA*, III, ii, p. 437.
- 5 Bowen to King, 20 and 27 September 1803, and Encl. 3: Return of Government Stock for September, 1803, *HRA*, III, i, pp. 197, 201.
- 6 Collins to King, 16 December 1803 and 29 February 1804, *HRA*, III, i, pp. 49, 221; J.B. Walker, 'The Risdon Settlement', p. 53; Collins to King, 31 July 1804, Encl. 4: Return of Live Stock, 4 August 1804, *HRA*, III, i, p. 255; Collins to Lord Hobart, 20 February 1805, Encl. 1: Weekly State of Government Stock, *HRA*, III, i, p. 311.
- 7 King to Collins, 26 September 1805, *HRA*, III, i, p. 326. In the 1806 muster Lieutenant Edward Lord had 100 sheep including lambs, so it is probable that he brought about 50 ewes. They may have been shipped in the *King George* (185 tons) on her maiden voyage; she was the largest vessel so far built in Sydney.
- 8 T.C. Croker (ed.), *Memoirs of Joseph Holt*, vol. 2, pp. 251, 262.
- 9 See n. 1.
- 10 H.C. Pawson, *Robert Bakewell*, pp. 66–7. Leicester: this new breed had transformed the sheep of England to such an extent that the weight of sheep carcasses at Smithfield market had risen from an average of 28 pounds in 1710 to 80 pounds in 1795. See also *Sydney Gazette*, 4 March 1804, 9 September 1804.
- 11 G.W. Evans, *A Geographical, Historical, and Topographical Description of Van Diemen's Land*, pp. 31–2.
- 12 Examinations taken before J.T. Bigge, J. Gordon 4 March 1820, *HRA*, III, iii, p. 251.
- 13 Henry Waterhouse to Sir Joseph Banks, 16 July 1806, *HRNSW*, vi, p. 112; H.B. Carter, *His Majesty's Spanish Flock*, p. 278.
- 14 Paterson to Viscount Castlereagh, 12 August 1806, *HRA*, III, i, p. 665.
- 15 Paterson to King, 26 November 1804, Encl. 1: Return of Government Stock 26 November 1804, *HRA*, III, i, p. 608; Paterson to Castlereagh, 12 August 1806, Encl. 1: Account of Stock 16 August 1806, *HRA*, III, i, p. 666; Paterson to King, 5 April and 14 November 1805, *HRA*, III, i, pp. 635, 644; Paterson to Earl of Camden, 14 November 1805, *HRA*, III, i, p. 639.
- 16 Examinations taken before J.T. Bigge, D. Rose 27 April 1820, *HRA*, III, iii, p. 372.
- 17 *HRA*, I, vii, p. 424; I, viii, p. 189; I, ix, p. 724; I, x, p. 287.
- 18 E. Curr, *An Account of the Colony of Van Diemen's Land*, pp. 35–9.

Chapter 7 Philip Gidley King: from flax to wool

- 1 G. Blainey, *The Tyranny of Distance*, p. 28.
- 2 Governor Phillip's Instructions, *HRA*, I, i, p. 13.
- 3 Phillip to Lord Sydney, 15 May 1788, Encl.: Instructions for Philip Gidley King, *HRA*, I, i, p. 33.
- 4 King to Phillip, 19 September 1792, *HRA*, I, i, p. 389.
- 5 King's Commission, 1 May 1798, *HRA*, I, ii, p. 605. The commission was to become effective only in the absence from the colony or death of Governor Hunter.
- 6 Hunter to Portland, 1 November 1798 and 10 July 1799, *HRA*, I, ii, pp. 237, 371.
- 7 Hunter to Portland, 10 July 1799, *HRA*, I, ii, p. 374.

- 8 M. Bassett, *The Governor's Lady*, p. 43; Caley to Banks, 12 March 1799, quoted G. Caley, *Reflections on the Colony of New South Wales*, p. 27.
- 9 King to Portland, 28 September 1800, *HRA*, I, ii, p. 612.
- 10 King to Hobart, 30 October 1802, and Encl. 6: Agricultural Premiums to Settlers, *HRA*, I, iii, pp. 589, 596–7.
- 11 King to Earl of Camden, 15 March 1806, Encl. 5, *HRA*, I, v, p. 665. For a study of manufacturing in New South Wales see G.P. Walsh, 'Manufacturing', in G.J. Abbott and N.B. Nairn (eds), *Economic Growth of Australia 1788–1821*, pp. 255–9.
- 12 H.B. Carter, *His Majesty's Spanish Flock*, p. 181.
- 13 King to Portland, 28 September 1800, and Encl. 8: Return of Stock... 1800, *HRA*, I, ii, pp. 612, 632.
- 14 King to Portland, 21 August 1801, *HRA*, I, iii, p. 125.
- 15 King to Camden, 2 October 1805, *HRA*, I, v, pp. 556–7; 10 October 1805, *HRNSW*, v, p. 699.
- 16 Carter, p. 184.
- 17 King to Portland, 10 March and 21 August 1801, *HRA*, I, iii, pp. 13, 125.
- 18 King to Portland, 1 March 1802, *HRA*, I, iii, pp. 405, 433; *HRNSW*, iv, p. 666.
- 19 King to Camden, 15 March 1806, Encl. 5, *HRA*, I, v, p. 665.
- 20 King to Hobart, 14 August 1804, *HRA*, I, v, p. 13.
- 21 King to Hobart, 9 November 1802, *HRA*, I, iii, p. 636; King to Banks, 9 May 1803, *HRNSW*, v, p. 136.
- 22 King to Hobart, 14 August 1804, *HRA*, I, v, p. 14; *HRNSW*, v, p. 427.
- 23 Banks to King, 29 August 1804, *HRNSW*, v, p. 459; King to Banks, 5 June 1802, *HRNSW*, iv, p. 783, and 9 May 1803, *HRNSW*, v, p. 135.
- 24 Memo by Sir Joseph Banks, 4 June 1806, *HRNSW*, vi, p. 89.
- 25 Banks to King, 29 August 1804, *HRNSW*, v, p. 459.
- 26 King to Banks, 21 July 1805, *HRNSW*, v, p. 672.
- 27 King to Hobart, 14 August 1804, *HRA*, I, v, pp. 13, 564; Marsden to Banks, 13 January 1805, *HRNSW*, v, p. 543.
- 28 King to Camden, 20 July 1805, *HRA*, I, v, pp. 511, 512.
- 29 Bligh to William Windham, 7 February and 31 October 1807, *HRA*, I, vi, pp. 122, 152.
- 30 14 July 1810, *HRNSW*, vii, p. 395.
- 31 Hutchison to Macquarie, 31 March 1814, *HRA*, I, viii, p. 228.
- 32 D.R. Hainsworth, 'Simeon Lord', *ADB*, vol. 2, p. 130.
- 33 G.J. Abbott, 'The Pastoral Industry', in Abbott and Nairn (eds), *Economic Growth of Australia*, p. 232.

Chapter 8 How Marsden almost succeeded

- 1 Details of Marsden's life may be found in A.T. Yarwood's definitive biography, *Samuel Marsden*, and R. Bell, 'Samuel Marsden'.
- 2 See M.H. Ellis, *John Macarthur*, p. 425; comment by Yarwood, pp. 133–4; and *Sydney Gazette*, 26 September 1812, 28 November 1812 and 17 April 1813.
- 3 Governor Hunter to Duke of Portland, 6 February 1800, Encl. 1: An Account of Lands Granted, *HRA*, I, ii, pp. 459–60; King to Hobart, 9 November 1802, Encl. B: List of Every Civil and Military Officer ... Holding Land by Grant or Lease, etc., *HRA*, I, iii, p. 613. See also Yarwood, pp. 88–9.
- 4 King to Hobart, 14 August 1804, Encl. 7: Return of Land etc., *HRA*, I, v, pp. 34–5.
- 5 Marsden to King, 11 August 1804, *HRA*, I, v, p. 64.
- 6 Marsden to Banks, 27 April 1803, *HRNSW*, v, p. 99.
- 7 Marsden to King, 5 September 1805, *HRA*, I, v, pp. 563–4.

- 8 Marsden to Banks, 13 January 1805, *HRNSW*, v, p. 543.
- 9 Marsden to King, 11 August 1804, *HRA*, I, v, pp. 64-5.
- 10 Marsden to King, 11 August 1804, *HRA*, I, v, p. 63.
- 11 Pers. comm. from Dr J.E. Nel.
- 12 King to Hobart, 14 August 1804, *HRA*, I, v, pp. 13 (marginal note), 63.
- 13 *Sydney Gazette*, 28 July 1805.
- 14 The details of the questionnaire, answers, and accompanying reports may be found in King to Camden, 2 October 1805, Encl. 1-11, *HRA*, I, v, pp. 558-68.
- 15 Marsden to King, 16 December 1804, *HRNSW*, v, p. 511.
- 16 J.S. Hassall, *In Old Australia*, pp. 200-1.
- 17 M.L. Ryder, 'Wool from Samuel Marsden's Sheep and Other Contemporary Merinos' and 'Samuel Marsden's Wool', p. 25.
- 18 H.B. Carter, *His Majesty's Spanish Flock*, p. 439. See also Marsden to Stokes, 4 May 1810, in G. Mackaness (ed.), 'Some Private Correspondence of the Rev. Samuel Marsden and Family 1794-1824', p. 42.
- 19 Quoted Carter, *His Majesty's Spanish Flock*, p. 439.
- 20 Marsden to Stokes, 26 November 1811, in Mackaness, p. 44.
- 21 Mackaness, pp. 51, 52.
- 22 J.T. Bigge, *Report of the Commissioner of Inquiry, on the State of Agriculture and Trade in the Colony of New South Wales*, p. 16.
- 23 Bigge to Earl Bathurst, 7 February 1823, quoted J.D. Ritchie (ed.), *The Evidence to the Bigge Reports*, vol. 2, *The Written Evidence*, p. 175.
- 24 J. de L. Mann, *The Cloth Industry in the West of England from 1640 to 1880*, p. 281.
- 25 H.B. Carter (ed.), *The Sheep and Wool Correspondence of Sir Joseph Banks, 1781-1820*, p. 248.
- 26 See n. 23.
- 27 *Sydney Gazette*, 8 October 1827.
- 28 See n. 7.
- 29 H.N. Turner, 'The Booroola Merino', in L.R. Piper, B.M. Bindon and R.D. Nethery (eds), *Proceedings of a Workshop Held at Armidale, N.S.W., 24-25 August 1980*.

Chapter 9 The unimportance of John Macarthur

- 1 S. Macarthur Onslow (ed.), *Some Early Records of the Macarthurs of Camden*, p. 1.
- 2 H.V. Evatt, *Rum Rebellion*, pp. 11, 131.
- 3 J. Conway, 'Elizabeth Macarthur', *ADB*, vol. 2, p. 146.
- 4 Report on his flocks by John Macarthur, 2 October 1805, *HRNSW*, v, p. 707.
- 5 M.H. Ellis, *John Macarthur*, p. xiii.
- 6 H.B. Carter, *His Majesty's Spanish Flock*, p. 50.
- 7 Evatt, p. 197.
- 8 Elizabeth Macarthur to her mother, 18 March 1791, quoted H. King, *Elizabeth Macarthur and Her World*, p. 14.
- 9 Elizabeth Macarthur to Mrs Veale, 18 March 1791, in Macarthur Onslow, p. 40.
- 10 In May 1793 he had drawn a paymaster's bill in favour of his brother, James — see D.R. Hainsworth, *The Sydney Traders*, Appendix A, p. 225.
- 11 Elizabeth Macarthur to Mrs Veale, 21 December 1793, in Macarthur Onslow, pp. 43-4.
- 12 Macarthur Onslow, p. 21. See also Grose to Henry Dundas, 30 May 1793, Encl. : Return of Lands Granted in New South Wales from 31st December, 1792 to 1st April, 1793, *HRA*, I, i, p. 438.
- 13 Quoted Elizabeth Macarthur to Mrs Veale, 23 August 1794, in Macarthur Onslow, pp. 45-6.

- 14 *Statement of the Improvement and Progress of the Breed of Fine Woolled Sheep in New South Wales*, in Macarthur Onslow, p. 70.
- 15 Macarthur to Committee of Privy Council, 4 May 1804, *HRNSW*, v, p. 370.
- 16 Macarthur Onslow, p. 72.
- 17 J.D. Ritchie, *The Evidence to the Bigge Reports*, vol. 2, *The Written Evidence*, p. 84.
- 18 King to Camden, 2 October 1805, *HRA*, I, v: Encl. 3, Hassall to King, 10 August 1805, p. 560; Encl. 8, Hall to King, 10 August 1805, p. 563.
- 19 Memorandum (unsigned) of Governor King, in Macarthur Onslow, p. 129.
- 20 Portland to Hunter, 30 August 1797, *HRA*, I, ii: Sub-encl. 6, Macarthur to Hunter, 15 August 1796, p. 98; Sub-encl. 8, Macarthur to Hunter, 19 August 1796, p. 100.
- 21 Privy Council Committee on Trade and Foreign Plantations — evidence of J. Hunter, 11 July 1804, in Macarthur Onslow, p. 94.
- 22 King to Portland, 9 September 1800, Encl. 3: Macarthur to King, 30 September 1800, *HRA*, I, ii, p. 539.
- 23 Ritchie, vol. 2, p. 84.
- 24 Portland to Hunter, 30 August 1797, Sub-encl. 1: Macarthur's Observations on Stock-breeding, *HRA*, I, ii, p. 94.
- 25 1 September 1795, Macarthur Onslow, p. 48. Ellis, p. 548, n. 23 states: 'The year on the copy in Edward Macarthur's handwriting is 1795; but the internal evidence makes it clear that the year in which the letter was written was 1798'. Miss Kingdon's reply is dated 15 September 1799 — see Macarthur Onslow, p. 54.
- 26 Macarthur to King, 30 September 1800, *HRNSW*, iv, p. 114.
- 27 King to Under-Secretary King, 14 November 1801, *HRNSW*, iv, pp. 617–19.
- 28 Macarthur to King, 1 October 1800, quoted M. Roe, *New South Wales under Governor King*, MA thesis, University of Melbourne, 1955.
- 29 Ritchie, vol. 2, p. 84. See also *Statement of the Improvement and Progress of the Breed of Fine Woolled Sheep in New South Wales*, 26 July 1803, in Macarthur Onslow, p. 69.
- 30 Waterhouse to Banks, 16 July 1806, *HRNSW*, vi, p. iii.
- 31 E.W. Cox, *The Evolution of the Australian Merino*, p. 2.
- 32 Ritchie, vol. 2, p. 85.
- 33 Carter, *His Majesty's Spanish Flock*, p. 184.
- 34 Banks to W.A. Fawkener [Clerk to Privy Council], 22 September 1803, in H.B. Carter (ed.), *The Sheep and Wool Correspondence of Sir Joseph Banks, 1781–1820*, p. 405.
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This book will appeal to the general reader as well as those with specialist interest. It will be indispensable for teachers who have unwittingly perpetuated the myths. Garran and White rediscover facts overlooked by historians but fundamental to a knowledge of how the wool industry developed. They clearly describe the characteristics of sheep and their management, and the swings in fortune of the farmers as they strove to come to terms with an unknown land and variable climate. The book charts the growth in knowledge of the country, and of farming methods, and the gradual adoption of the methods of the innovators as well as things learned by chance. Comprehensive illustrations show aspects of the industry then and now.

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John Garran was a sheep farmer all his working life, except for war service in World War II. The second son of Sir Robert Garran, the distinguished constitutional lawyer and Commonwealth public servant, he spent a year at Melbourne University before working as a jackeroo and subsequently farming on his own account near Canberra. He died in 1976, leaving a manuscript which was the fruit of years of intensive research and investigations of sheep in several countries. Substantial editing, revisions and additions to the text and updating of the useful bibliography were undertaken by Leslie White, as a visiting fellow in the School of History at The Australian National University and since. White is the author of *Wool in Wartime: A Study in Colonialism* (Sydney, Apcol, 1981).

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