

INFLUENCES ON THE WHEAT FRONTIER IN NEW SOUTH WALES  
1851 - 1911

Until 1860 wheat-growing in New South Wales was confined largely to a coastal location. Suddenly, in less than a decade, this locational pattern changed fundamentally: the coastal flats and the alluvia of the coastal rivers were abandoned for wheat farming, and new centres of dominance arose on the high tablelands and the southwestern slopes.

The fact of such a shift suggests three things: first, that the coastal environment was not suited to the production of the crop; second, that some controls operated over the first seventy years of Colonial history to prevent the exploiting of the wheat-growing lands in the interior; third, that at the time of the abandonment of the coast these controls were rendered inoperative. These are the assumptions that have been made in previous assessments of the shift.

A fourth possibility presents itself, however: that the expansion of the industry in the interior and the decline of the industry on the coast were, in fact, separate phenomena; their occurrence was merely coincidental in time. This is the view that will be offered here.

This initial spatial shift in the distribution of wheat-growing was not accompanied by a marked increase in the area under the crop; it was a replacement and not a growth. Not until 1880 did the acreage of wheat in the colony begin to expand rapidly. The period from 1880 to 1911,

## II.

therefore, can be regarded as a separate stage in the history of the wheat frontier in which the emphasis is on quantitative expansion around scattered nuclei rather than a broad spatial expansion. It will be shown that the events of the second stage were in part the outcome of political and governmental processes at work over the preceding two decades, and in part the outcome of the economic situation peculiar to the period.



SOME INFLUENCES ON THE WHEAT FRONTIER IN

NEW SOUTH WALES 1851-1911

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DECLARATION

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Finally, and inevitably, my deepest thanks go to my wife.



ABBREVIATIONS

The following abbreviations are used in the text :

<u>CAPP</u>	Commonwealth of Australia, Parliamentary Papers
<u>JLCNSW</u>	<u>Journal of the Legislative Council of New South Wales</u>
<u>NSWLA, VP</u>	<u>New South Wales Legislative Assembly, Votes and Proceedings</u>
<u>NSWLC, VP</u>	<u>New South Wales Legislative Council, Votes and Proceedings</u>
<u>NSWPD</u>	<u>New South Wales Parliamentary Debates</u>
<u>VicLA</u>	<u>Victorian Legislative Assembly, Votes and Proceedings</u>

It should be noted with reference to these official publications that, in many instances, the copies used were not consistently paginated, and it has not been possible, therefore, to supply all page references in the text.

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PREFACE

Between 1860 and 1880 the distribution of wheat-growing in New South Wales changed fundamentally. From a coastal location the industry shifted in dominance to formerly unimportant and highly localised centres of production on the high tablelands and the Southwestern slopes. By the turn of the century these areas had expanded and had been joined by other areas still further west, in eastern Riverina and on the margins of the plains country. This shift in distribution forms the general context of the inquiry. Within this general context an attempt has been made to identify and solve fundamental problems without answer to which an appreciation of the changing distribution of the industry is not possible.

The selectivity that is evident in this approach, however, is not entirely random. It is a direct function of the normal processes of research, whereby questions lead to questions until, at some stage, a halt must be called. It is inevitable that, although some problems are answered, others are ignored or summarily treated. Yet it is considered that the themes with which this work deals are, given the time and the place, the most crucial. In time, too, some limit must be drawn. Thus the terminal date of the study, 1911, is taken to be suggestive of the close of an era rather than definitive. In places, as in the consideration of the rise of share-farming, much of the evidence is drawn from the period 1916-17, though on the whole it appears that the disruption caused by the War years created problems entirely new and beyond the scope of this study.

The themes upon which this study is based fall into three broad categories. The first concerns the influences of governmental processes in the fields of land legislation, of public investment, and to a lesser extent of more direct aid to the agricultural industries consequent upon government-sponsored research, tariff policy, and so on. The second concerns the relationships in time and space of alternative demands on limited land resources, and in particular of the changing comparative advantages of wheat-growing and sheep-rearing. The third category includes those processes which were accidental or adventitious in occurrence, yet which can be shown to have directly influenced the location of wheat-growing.

With reference to each of these themes certain problems occupy the particular investigations of this study. Some of these problems are quite new, even in formulation: their statement and their answers seem to encourage interpretations of the shift in the location of wheat-growing which differ markedly from any of those previously offered. Other problems, considered specifically with reference to the wheat industry here, have received more or less attention in more general contexts from other authors. Again, however, their specific treatment helps throw light, not merely on the immediate problem, but also on the more general assessments of other workers, and in so doing is sometimes suggestive of alternative general hypotheses. Insofar as time and limited data resources would allow the formulation of these problems, as well as the search for answers, has rested upon quantitative as well as documentary evidence.



In form the thesis is in three parts. Part One indicates the initial processes of establishment and location within the industry, and demonstrates the essentially stable character of this locational pattern before 1860. In doing this the major controls governing the distribution of wheat farming are considered, and a detailed study of the industry during the hectic period of the gold-rushes is used to give emphasis to the rigidity of these controls. Part Two deals with the rapid decline of wheat-growing on the coast after 1860. It demonstrates that these developments were largely insular and totally separated from the coincidental growth of the industry in the inland over the same period. In turn, the developments in the interior are shown to fall into two phases: the first, expansion dependent upon the changing capacity of essentially local markets and occurring in the context of a drastic revision in the laws governing land alienation; the second, a reaction to the improving market opportunities consequent upon rail connection with the major colonial market in Sydney. Part Three considers some aspects of the vast quantitative increase in wheat acreage which occurred in the inland after 1890. It follows through the major themes of land legislation and railway extension developed earlier, and places these in the context of a changing appreciation of wheat as an alternative or additional crop on properties formerly wholly devoted to sheep, and in the context of technical improvements in the industry.

It is hoped that the value of this study may be found to lie, not merely in the substantive work which it contains, but also in some of the questions to which it gives rise. For there is no doubt that to the historical geographer Australia is a fruitful field indeed, and one as yet

little explored. Its great beauty is that there are few questions which, given time and resources, cannot be investigated with profit. Its great lack is the absence of such studies.

PART ONE

CHAPTER 1THE FIRST SIXTY YEARS: A FRAMEWORK

This, then, is the problem of Australia. How has a people of British nationality fared when it emigrated across the world to an empty land of nearly three million square miles?

Australia, 3, Griffith Taylor  
(London, 1958)

The decision of the Imperial Parliament to establish a convict colony at Botany Bay was a momentous one, for it authorised the first European settlement of the Australian continent and added an area the size of continental U.S.A. to the British Empire. Yet the decision was taken on the basis of an extremely slender knowledge of the country and of its resources.<sup>1</sup> Moreover, this knowledge expanded only slowly at first: partly as a result of the necessarily restrictive nature of penal settlement, and partly because of environmental difficulties which hindered the progress of settlement expansion and exploration.

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<sup>1</sup> For an account of the developments leading up to the choice of Botany Bay see Clark, M., A History of Australia, I, 59-72, (Melbourne, 1962). Hereafter cited as Clark, Australia. For eighteenth century impressions of the climate of the southern continent see Perry, T.M., "Climate and Settlement in Australia 1700-1930", in Andrews, J., (Ed.), Frontiers and Men: A Volume in Memory of Griffith Taylor, 138-143, (Melbourne, 1966). Hereafter cited as Andrews, Frontiers. For the first impressions of Joseph Banks and Captain Cook, whose views were most influential in the choice of Botany Bay, see Beaglehole, J.C., (Ed.), Journal of the Endeavour Voyages, II, 57-60, (Sydney, 1962), and Wharton, W.J.L., (Ed.), Captain Cook's Journal, (London, 1893).

The primitive communism and the subsistence character of the convict colony, however, began to break down over the first and second decades of the nineteenth century in face of profit-motivated enterprise, particularly on the part of the military and civilian officers in the settlement. This was augmented and stimulated by the dilution of the colony's penal form with the emancipation of convicts and the arrival, in growing numbers, of free settlers.<sup>2</sup> As the population grew, and as the search for profitable enterprises began to show success, so the need and the desire to explore the resources of the continent increased. Slowly at first, but with increasing effect, the frontiers of settlement were pushed beyond the narrow confines of the initial site on the Cumberland Plain and eventually beyond the settlement limits hopefully imposed by the government.<sup>3</sup> Yet this expansion of settlement was by no means uniform either in direction

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<sup>2</sup> See, for example, Shaw, A.G.L., Convicts and the Colonies, (London, 1966). For the changing character of early agriculture see especially King, C.J., The First Fifty Years of Agriculture in New South Wales", Review of Marketing and Agricultural Economics, XVI and XVII, (1948-49). This is a collection of sixteen separate articles and is referred to hereafter as King, The First Fifty Years. See also Dunsdorfs, E., The Australian Wheat-Growing Industry 1788-1945. Hereafter cited as Dunsdorfs, Wheat-Growing.

<sup>3</sup> See King, The First Fifty Years, passim. See also Perry, T.M., Australia's First Frontier, (Melbourne, 1963). Hereafter cited as Perry, Frontier. See also the following articles by Perry: "Climate, Caterpillars and Terrain", Australian Geographer, VII, i, (1957); "The Lower Shoalhaven District 1797-1822", Australian Geographer, VI, iii, (1954); "The Spread of Rural Settlement in New South Wales 1788-1826", Historical Studies of Australia and New Zealand, VI, xxiv, (1955).

or in economic character. It was made up of two quite distinct elements, pastoralism and agriculture, which were in the process of becoming even more distinct in terms of geographic distribution, social and legal standing, and political affiliation and influence. The historical geography of settlement in New South Wales over the nineteenth century reflects in large part the growing antagonism of these two pursuits, their relative fortunes, and their eventual reconciliation as complementary rural activities.

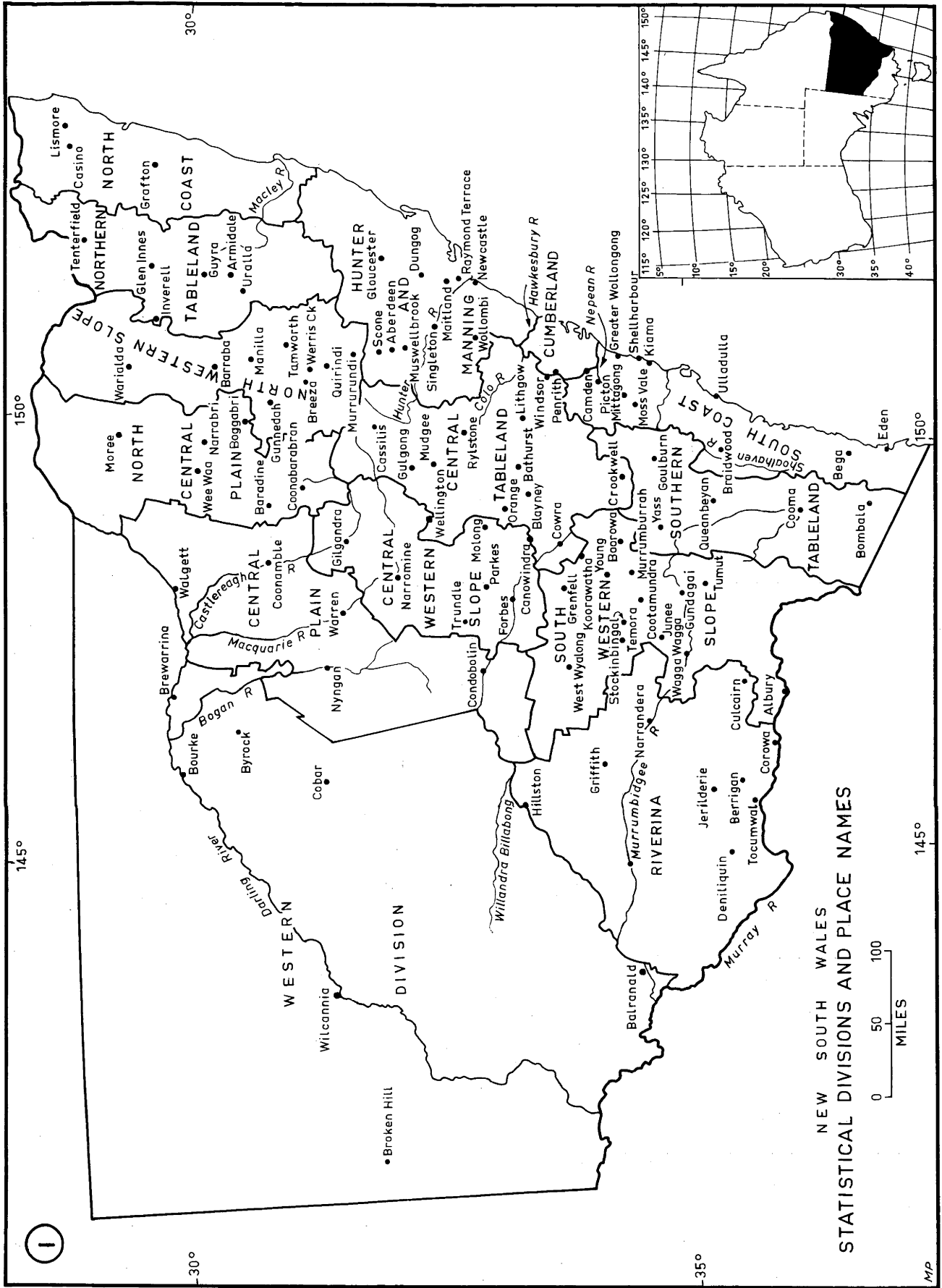
The rise of the pastoral industry, and in particular the production of fine-wool sheep, has attained almost legendary standing in the history of Australian land settlement. By a combination of fortuitous world market conditions, an amenable natural environment, and considerable individual initiative, the industry expanded rapidly, laying claim to vast areas of the colony and coming to an unwilling halt only where the dictates of climate made further expansion seem unwise. Moreover, until 1860, this great spread of pastoral domination, from the east coast to the semi-arid plains of the west, was without competition from other forms of land-use. The pastoralist came into undisputed occupancy of the colony's lands and exercised - by virtue of growing wealth and influence - growing control over the future of land settlement.<sup>4</sup>

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<sup>4</sup> See particularly Roberts, S.H., A History of Australian Land Settlement, (Melbourne, 1923). Hereafter cited as Roberts, Land Settlement. See also Wadham, S., Wilson, R.K., and Wood, J., Land Utilisation in Australia, (Melbourne, 1964). Hereafter cited as Wadham, Land Utilisation.

The direction and scale of agricultural settlement, on the other hand, was subject to more rigid controls. New South Wales offered little good farming land in the vicinity of Sydney, and the vast and constricting belt of the sterile Dividing Ranges effectively blocked access to the richer lands of the interior by imposing seemingly insuperable problems of transport. As a result, expansion was channelled north and south along the coast, to the alluvial flats of the Hunter and the Hawkesbury/Nepean Rivers, where cheap water communication gave connection with the populous metropolitan market (Figure 1). Even so, land was scarce and expensive and the industry seldom produced sufficient - particularly of wheat - to feed the growing population. In the interior, though a vast pastoral industry had developed, the population it supported was small and agriculture was geared to supplying the needs of local service centres and the surrounding pastoral properties.

The limitations on agricultural settlement expansion, therefore, stemmed basically from three sources: the restrictions imposed by the natural environment; the technological problems involved in overcoming these restrictions; and the legacy of pastoral domination shown in the regulations governing the alienation of land for agricultural purposes. In the light of these three major inhibitory factors it is possible to examine the character of agricultural settlement before 1860, and to anticipate the problems which faced the expansion of the wheat frontier and the creation of a viable, export-based, wheat industry as the century progressed. For only after 1860



NEW SOUTH WALES  
 STATISTICAL DIVISIONS AND PLACE NAMES





did the situation begin to change. The dominance of the coast as an agricultural centre was ended with startling finality by 1866, and the wheat frontier began to push further and further to the west, growing in size and in significance.

#### THE NATURAL ENVIRONMENT

Establishing a foothold on the Australian continent involved peculiar difficulties arising from the sheer distance of the colony from the mother country. To do this successfully - to organise and develop resources rapidly - was a sufficient problem in itself without the added complication created by the inexperienced and unwilling nature of convict labour. Because of the distance from Great Britain and the difficulties and expense of ensuring adequate and timely shipment of supplies, the most important of the immediate problems facing the early Governors was to develop an adequate food basis and, as population grew, to provide for the expansion of this basis. Yet the immediate situation offered little encouragement and it soon became apparent, as Governor Darling wrote, that "from many local Causes, a very Small proportion of this Colony can be Cultivated with any advantage and that the great Mass of our Lands must be employed in Grazing".<sup>5</sup> The "local Causes" to which Darling referred were largely environmental.

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<sup>5</sup> Darling to Goderich, 1/9/1831, Historical Records of Australia, I, xvi, 342. Hereafter cited as HRA

### Physiography

The site of the first settlement at Port Jackson reflected the obvious advantages of "the finest harbour in the world", and more precisely the location of the best spring of water in that harbour.<sup>6</sup> It was situated in the north coastal segment of the Cumberland Plain, a roughly circular area of lowland some thirty miles in diameter. Here the most recent of the triassic deposits, the Wianamatta shales, have been preserved from the Pleistocene upwarping that characterises the surrounding highlands. Yet despite the immediate attractions of fresh water and a sheltered anchorage, the Plain offered only limited possibilities for agriculture. The dominant clays and loams, derived from the Wianamatta shales, were poorly drained and sterile, and the occasional patches of better quality basaltic soils were too limited in extent to be of more than transient importance.<sup>7</sup> As population expanded the first significant move away from the locality of the Sydney site carried agriculture to the western extremity of the Plain and the valley of the Hawkesbury/Nepean River. Along the course of the river are relatively extensive deposits of alluvial loams and silts,

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<sup>6</sup> Bird, J., "The Foundation of Australian Seaport Capitals", Economic Geography, XL, iv, 283-284, (1965).

<sup>7</sup> See, for example, the comments of Watkin Tench in his Complete Account of the Settlement at Port Jackson, 2-3, (Fitzhardinge Edition, Sydney, 1961). Hereafter cited as Tench, Complete Account. This edition also contains Tench's A Narrative of the Expedition to Botany Bay. See also, Collins, D., Account of the English Colony in New South Wales, I, (London, 1798). Hereafter cited as Collins, Account.

and it was here - particularly in the county of Camden - that one of the earliest and most important wheat-growing centres arose (Figure 2).<sup>8</sup>

The advantages of proximity to the Sydney market was a significant factor in the success of the Hawkesbury farmers. Similarly, the advantages of water communication were of great importance in the development of the more extensive and productive lowlands of the Hunter Valley. Separated from the Cumberland Plain by the intervening upland of the Hawkesbury Plateau, this was the second major area of agricultural settlement before 1860. Again, settlement tended to cling to the alluvial soils, most extensively developed in the east at the junction of the Hunter with the Williams and Paterson Rivers, and in the central portion of the valley in the vicinity of Singleton. Fingers of agricultural settlement also extended south on the alluviums of Wollombi Brook and Wallis' Creek.<sup>9</sup>

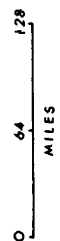
In 1826, at a time when the agricultural settlement of the Hunter Valley was proceeding rapidly, and when already the major areas of alluvial soils were occupied, Thomas Atkinson wrote that "cultivation and colonisation will extend mostly upon the sea coast, and in the

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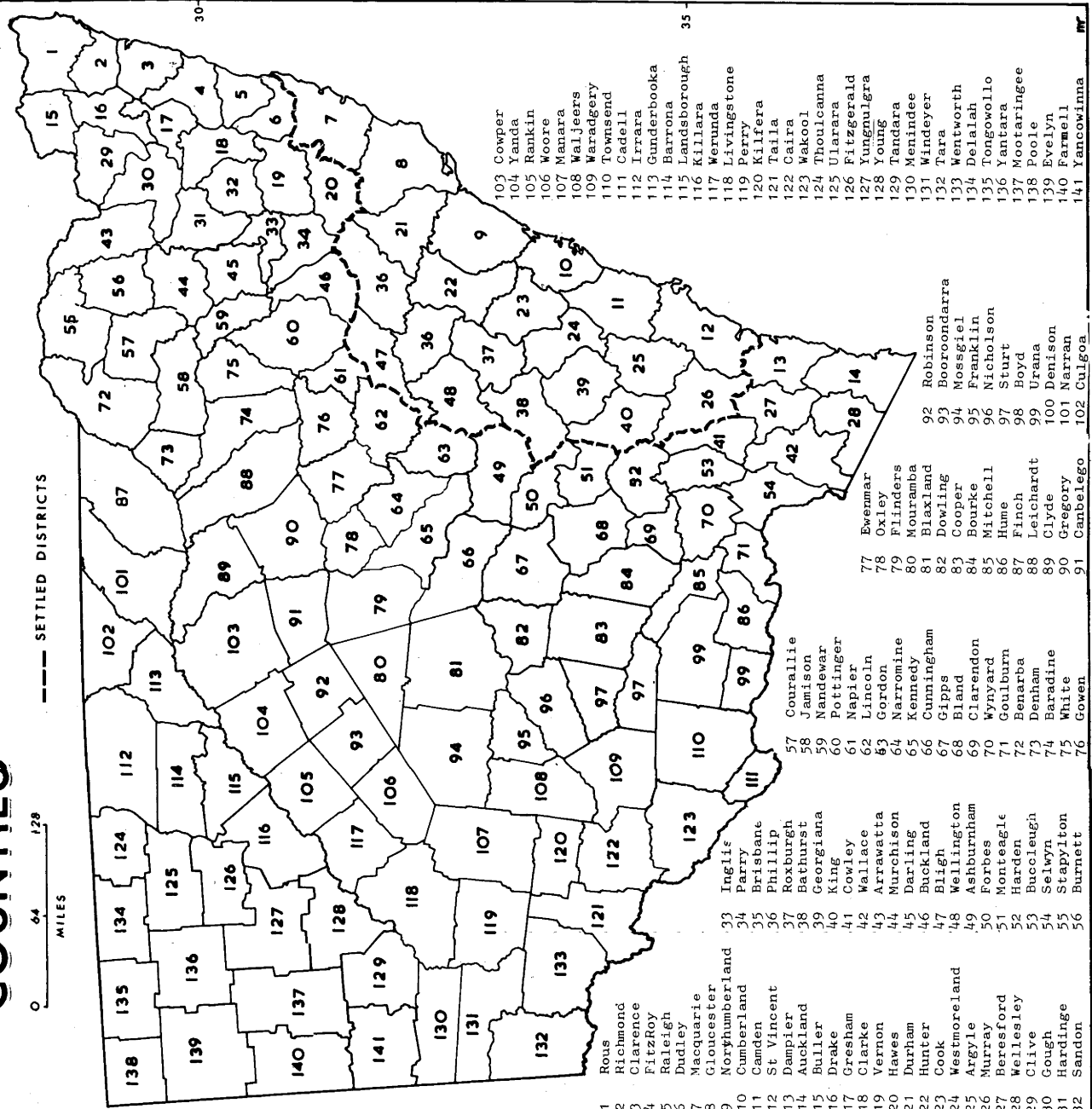
<sup>8</sup> Collins, Account, II, 6, (London, 1802).

<sup>9</sup> For an account of the early settlement of the Hunter Valley see Perry, Frontier, 52-78.

# COUNTIES



--- SETTLED DISTRICTS



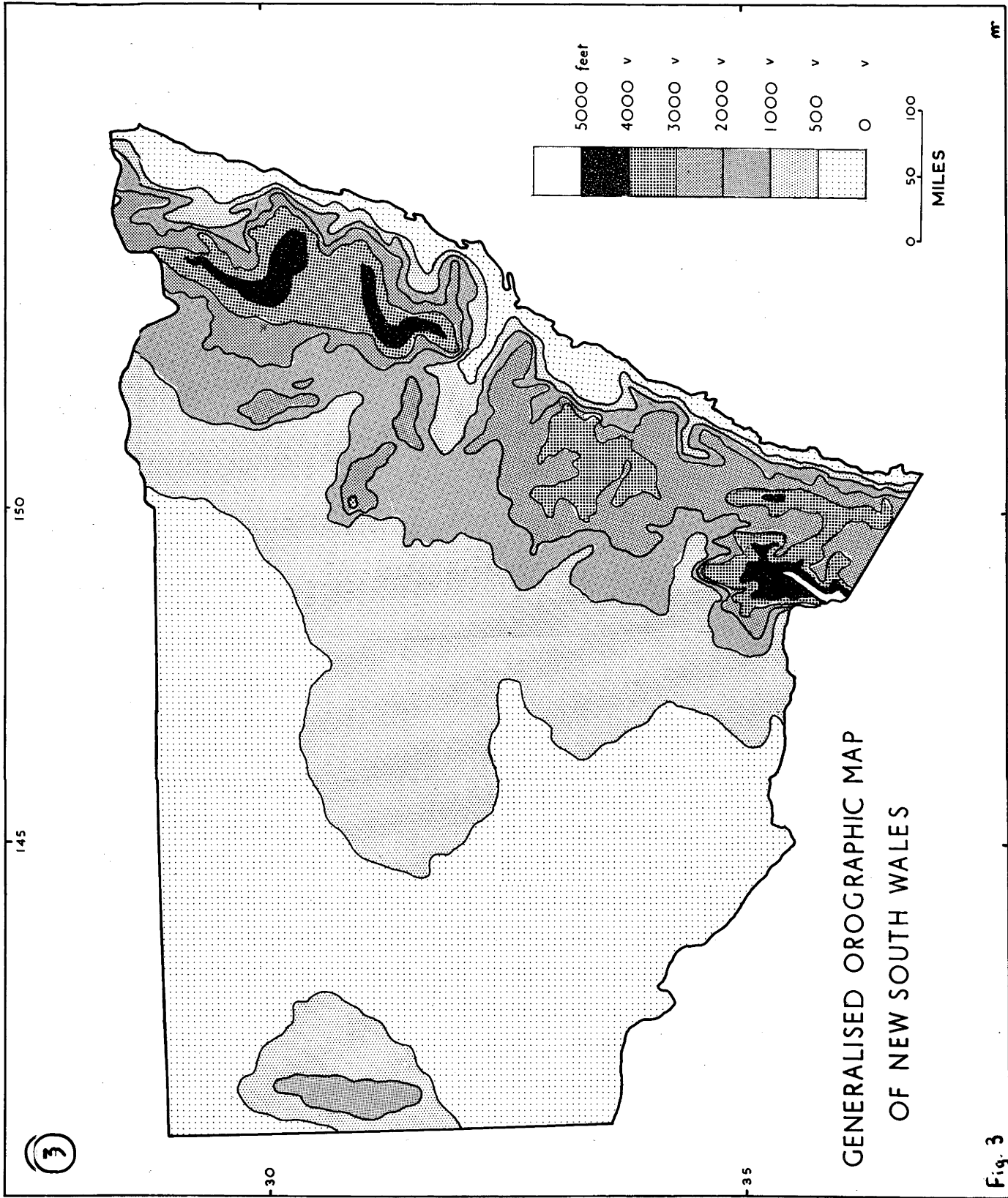
- |                  |                  |                |                 |
|------------------|------------------|----------------|-----------------|
| 1 Rous           | 103 Cowper       | 191 Courallie  | 288 Robinson    |
| 2 Richmond       | 104 Yanda        | 192 Jamison    | 289 Booroodarra |
| 3 Clarence       | 105 Rankin       | 193 Nandewar   | 290 Mossgiel    |
| 4 FitzRoy        | 106 Moore        | 194 Pottinger  | 291 Bourke      |
| 5 Raleigh        | 107 Manara       | 195 Napier     | 292 Mitchell    |
| 6 Dudley         | 108 Waljeers     | 196 Lincoln    | 293 Wynyard     |
| 7 Macquarie      | 109 Waradgeri    | 197 Gordon     | 294 Goulburn    |
| 8 Gloucester     | 110 Townsend     | 198 Narramine  | 295 Hume        |
| 9 Northumberland | 111 Cadell       | 199 Kennedy    | 296 Finch       |
| 10 Cumberland    | 112 Irrara       | 200 Cunningham | 297 Benarba     |
| 11 Camden        | 113 Gunderbooka  | 201 Bligh      | 298 Denham      |
| 12 St Vincent    | 114 Barrona      | 202 Gips       | 299 Buccleugh   |
| 13 Dampier       | 115 Landsborough | 203 Bland      | 300 Denham      |
| 14 Auckland      | 116 Killara      | 204 Clarendon  | 301 Forbes      |
| 15 Buller        | 117 Werunda      | 205 Ashburnham | 302 Monteagle   |
| 16 Drake         | 118 Livingstone  | 206 Forbes     | 303 Harden      |
| 17 Gresham       | 119 Perry        | 207 Goulburn   | 304 Newcastle   |
| 18 Clarke        | 120 Kilferra     | 208 Goulburn   | 305 Clive       |
| 19 Vernon        | 121 Tsila        | 209 Goulburn   | 306 Gough       |
| 20 Hawes         | 122 Cairn        | 210 Goulburn   | 307 Selwyn      |
| 21 Durham        | 123 Wakool       | 211 Goulburn   | 308 Stuytton    |
| 22 Hunter        | 124 Thoulcanna   | 212 Goulburn   | 309 White       |
| 23 Cook          | 125 Ularara      | 213 Goulburn   | 310 Burnett     |
| 24 Westmoreland  | 126 Fitzgerald   | 214 Goulburn   | 311 Sandon      |
| 25 Argyle        | 127 Yungnulgra   | 215 Goulburn   |                 |
| 26 Murrumbidgee  | 128 Young        | 216 Goulburn   |                 |
| 27 Beresford     | 129 Tandara      | 217 Goulburn   |                 |
| 28 Wellesley     | 130 Menindee     | 218 Goulburn   |                 |
| 29 Clive         | 131 Windyeyer    | 219 Goulburn   |                 |
| 30 Gough         | 132 Tara         | 220 Goulburn   |                 |
| 31 Hardinge      | 133 Wentworth    | 221 Goulburn   |                 |
| 32 Sandon        | 134 Delalah      | 222 Goulburn   |                 |
|                  | 135 Tongowollo   | 223 Goulburn   |                 |
|                  | 136 Yantara      | 224 Goulburn   |                 |
|                  | 137 Mootaringee  | 225 Goulburn   |                 |
|                  | 138 Poole        | 226 Goulburn   |                 |
|                  | 139 Evelyn       | 227 Goulburn   |                 |
|                  | 140 Farnell      | 228 Goulburn   |                 |
|                  | 141 Yancowinna   | 229 Goulburn   |                 |
|                  | 142 Culgoja      | 230 Goulburn   |                 |

neighbourhood of the few rivers that are navigable."<sup>10</sup> His prediction was proving substantially correct, though only occasionally along the entire eastern coastline could substantial areas of low-lying and fertile land be found. Elsewhere the steep scarp face of the barren Dividing Ranges rises sharply from the inland margins of a discontinuous and cramping coastal plain. Moreover, as Atkinson realised, not only was this belt of highland itself barren and useless for agricultural settlement, but its steep scarp face and difficult terrain effectively blocked market contact between the richer lands of the interior and the densely populated coast (Figure 3).

On the western margins of the highland massifs, however, differential elevation of peneplains of Cretaceous and Tertiary age has resulted in the formation of plateaux. These "tablelands" provided the first bases for the expansion of a farming frontier in the interior. Here, in the vicinity of Bathurst in the west, Goulburn in the south, and Armidale in the north, the cooler and drier upland climate, combined with alluvial and basaltic soils, offered oases of excellent wheat farming country at the headwaters of westward-draining rivers. The expansion of farming settlement in these districts, however, was slow when compared to the lowlands of the coastal rivers,

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<sup>10</sup> Atkinson, J., An Account of the State of Agriculture and Grazing in New South Wales, 10, (London, 1826). Hereafter cited as Atkinson, Account. As King has pointed out this amounts simply to the recognition that commercial agriculture must have a market, and the only substantial market in this case was Sydney. See King, The First Fifty Years, XVII, 277.



GENERALISED OROGRAPHIC MAP  
OF NEW SOUTH WALES

Fig. 3

as a result of the limited inland market and the inaccessibility of the metropolis.<sup>11</sup> Yet even more inaccessible, in the early nineteenth century, was the gently undulating and fertile country of the interior slopes of the Dividing Ranges, and eastern Riverina. Today, these are the most important of the wheat-growing areas in New South Wales, but in 1850 the interior was the province of the squatter, with only isolated and highly localised farming activity catering solely for local consumption. To the west again, these fertile slopes give way to the vast semi-arid and arid plains of the Murray Basin. This enormous area, useless for arable purposes except on the eastern fringes, consists of flat alluviums and marine tertiaries broken only by the uplifted Paleozoics of the Cobar peneplain, and by the ancient sediments of the Barrier Ranges in the extreme west. Elsewhere the inland plains slope imperceptibly towards the intermittent waters of the Murray/Darling drainage system.

#### Climate, Vegetation, and Soils

In very general terms the climate of New South Wales is a reflection of the longitudinal influences of the great highland wall. Rainfall is the crucial element, growing progressively less as the precipitous eastern scarp gives way to the more level tablelands, and dropping to conditions of increasing aridity beyond the slopes. The

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<sup>11</sup> Perry, Frontier, 79-108. See also King, The First Fifty Years, XVII, 276-281.

average annual isohyets, therefore, run in parallel north-south belts with the exception of the dry loop around Cooma in the rain shadow of the Kosciusko massif. On the coastal margins of the eastern scarp rainfall totals are seldom below forty inches, and in the extreme north reach sixty inches. The thirty inch and twenty inch isohyets mark very roughly the western limits of the tablelands and the slopes respectively, and effectively contain the bulk of the modern wheat belt. Out onto the plains totals fall rapidly until, to the west of the Barrier Ranges, the average annual fall is less than eight inches. Seasonal influences are alligned latitudinally, with slight summer maxima in the north, varying through an autumn maximum in the coastal belt between Newcastle and Jervis Bay, to a winter dominance in the south.<sup>12</sup>

As might be expected, the existence of the largest of the Australian upland regions - though nowhere truly "mountainous" - exerts a marked influence on the distribution of isotherms. The remarkable uniformity of isotherm alignment over the bulk of the featureless interior is broken down by a cold loop extending from Victoria to the Queensland border, and most pronounced in winter when average temperatures for the tableland districts fall below fifty degrees Fahrenheit. In summer the isotherms swing north at the mountain barrier and temperatures grow progressively cooler towards

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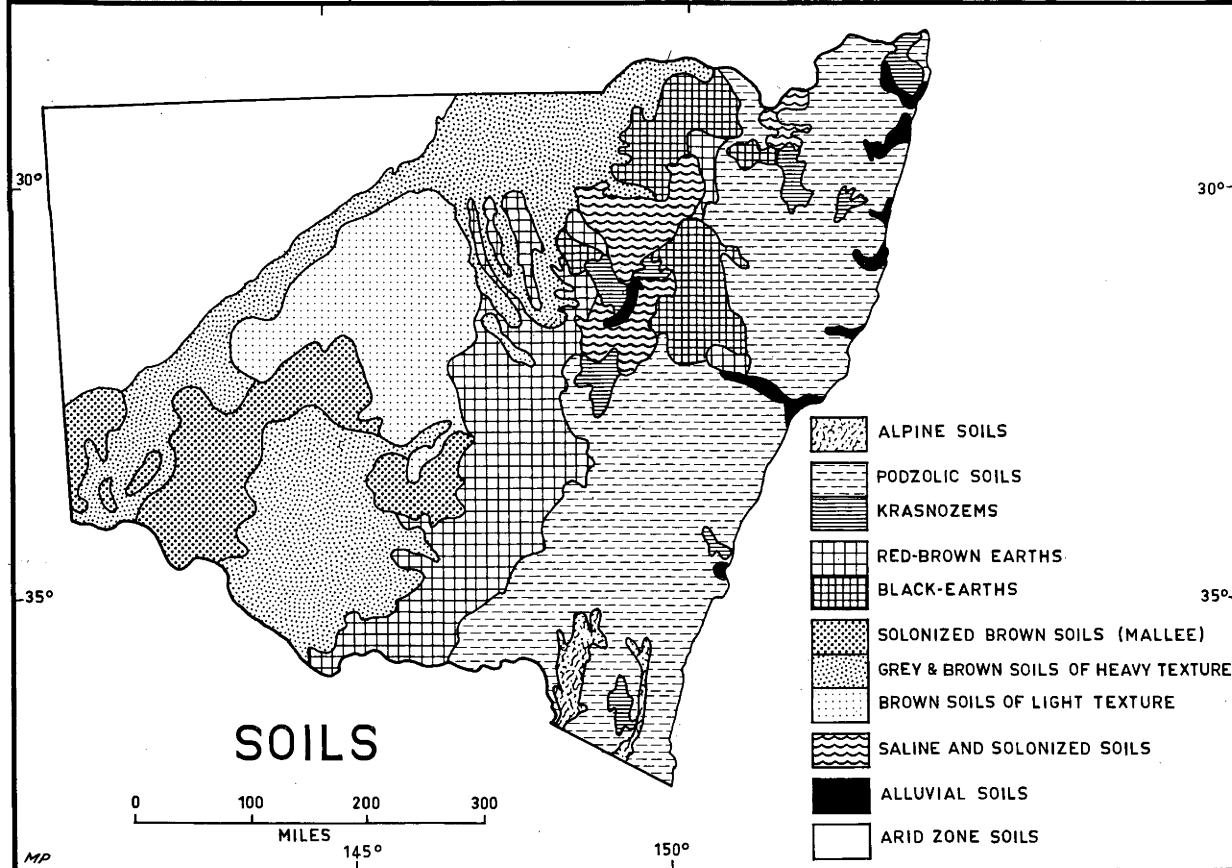
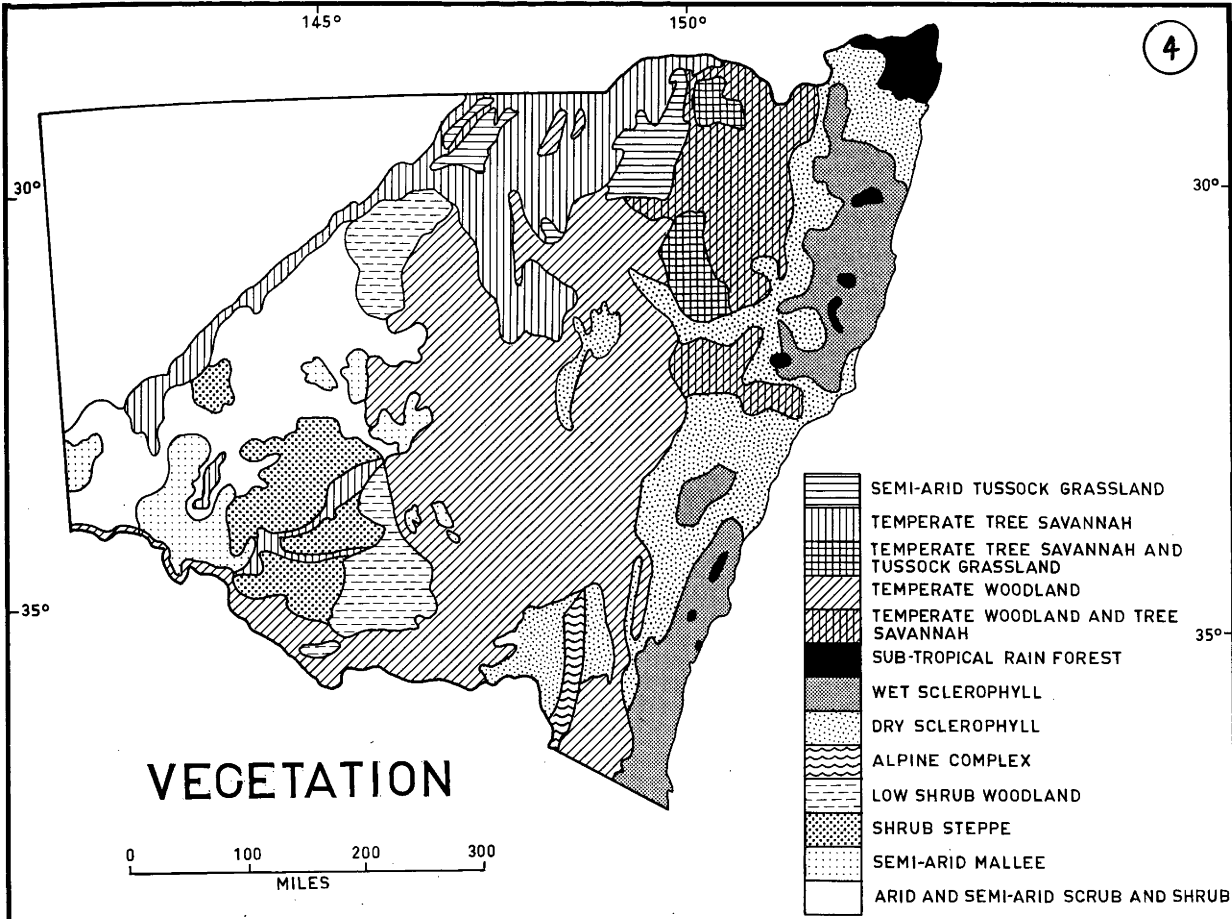
<sup>12</sup> Taylor, G., Australia, 141, (London, 1959).



the coast. The average summer temperature for most of the coast is between seventy and seventy five degrees Fahrenheit.

More important than these casual averages, however, particularly to the bewildered Englishmen thrust headlong into a topsy-turvy calendar, were the exceptional years, the periods of torrential rain and flood, and the perverse waves of stifling, humid, heat. It was the variability of the climate that impressed itself most upon the unsuspecting stranger. Short period weather fluctuations are most pronounced in this south eastern portion of the continent. The causes lie in the interplay of air masses of maritime, continental, polar, and tropical origin which - as well as tending to afford a more or less evenly distributed rainfall with only slight seasonal maxima - sometimes brings sharp temperature changes, sudden frosts, and violent storms, damaging to both crops and young livestock. On the other hand, passing cyclones sucking in heated air from the interior occasionally bring hot, dessicating, winds to wither the standing crops and growing fodder, and to bring the grave threat of fire. The consequent inability to predict weather conditions at any single time of the year with any degree of certainty led, in the early nineteenth century, to a farming calendar more approximate than specific; the successful farmer was often an opportunist, or cautious enough to sow, at intervals of a month, up to three crops in the hope that one would be spared.

Of crucial importance to the farmer were the subtle variations of soil types, often reflected in the vegetation they supported (Figure 4). In general the prospects presented by the coastal margins



and the highlands seemed thin: the dominant soils are highly leached acid podsols of only low fertility, and little suited to the production of exhausting grain crops. But, again, it was the variation from the norm that was to prove significant. The heavy rainfall of the coastal region supported a varied flora ranging from rich rain and brush forest to the stunted bushes on the thin soils of the sandstone uplands. Yet in the valleys of the eastern rivers relatively rich alluviums supported a woodland vegetation of box (Eucalyptus hemiphloia), gum (E. tereticornis), and ironbark (E. siderophloia), and it was here that the colony's farmers sought to make the best of Nature's limited blessings.<sup>13</sup> On the tablelands, too, though acid, sandy soils predominate, farming settlement gravitated to the richer alluviums and the fertile basalts of the Bathurst, Orange, and Argyle districts, and to the blue granite soils of the New England batholith.

To the west of the tableland, between the twenty-five inch and sixteen inch isohyets, lie the red-brown earths, the most important of the modern wheat-growing soils. They occur in a belt some one hundred miles wide, extending south from the Liverpool Plains, along the western slopes of the uplands and into eastern Riverina, supporting a vegetation of mixed temperate woodland species. Outliers of red-brown earths also occur amid the black earths of the Scone district of the

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<sup>13</sup> The best account of the distribution of tree species is in Anderson, R.H., Trees of New South Wales, (Sydney, 1947). The most accessible general summary of the physical geography of the continent is The Australian Environment, (CSIRO, Melbourne, 1960).

Upper Hunter Valley. Development of the red-brown earths, and of the rich black earths lying in the Scone-Coolah-Gunnedah triangle and on the north-western slopes centred on Moree, was delayed until the 1890's when improved transport facilities gave access to the east coast, and increased capitalisation led to the adoption of large-scale mechanised farming techniques.

Even longer delayed, in New South Wales, was the farming settlement of the mallee lands, extending in a narrowing arc from the South Australian border around the western and northern fringes of the black soil plains of Riverina. These marginal lands support a variety of the unique mallee eucalypts, ranging from Giant Mallee (E. Oleosa) in the south, to the stunted Curly Mallee (E. Gillii) found only in the extreme west. Though early developed in South Australia and in Victoria the mallee lands of New South Wales were protected from the advance of the plough until improved communications facilities at the turn of the century made their economic exploitation feasible.

The remainder of New South Wales is overlain by soils of little or no value for the raising of wheat. These are the semi-arid and arid soils of the west: the lighter textured red soils and the heavy black soil plains. In general the black soil plains follow the courses of the drainage system, extending in a narrow belt along the Darling and the Lower Murray, and widening to extensive plains between the Culgoa and the Castlereagh Rivers in the north, and in the south reaching their maximum extent between the Murray and Willandra Creek. Both these major soil groups, with the partial exception of the red

mallee soils, remain almost exclusively grazing country.

### Assessment

The expansion of farming settlement in this unusual new environment was slow and unimpressive over the first fifty years. The farming frontier clung tenaciously to its coastal location with only occasional and isolated outliers serving the scattered market of the inland. The initial interest of men of substance had declined rapidly after 1804 when, following the lead of men like MacArthur and Blaxland, they began to turn more exclusively to the raising of stock and the production of fine-woolled sheep. The public farms, directed by government and worked by convict labour, had also tended to decline after the mid-1790's. These developments left agriculture increasingly in the hands of a class of emancipated convicts and small settlers, characterised for the most part by inefficiency, undercapitalisation, and a high level of indebtedness. The failure to provide a sufficient degree of protection to the small settler had resulted, by the end of Macquarie's regime, in the "mass dispossession and impoverishment of the small farmer", and the rise of a miserable class of tenant farmers landless in an almost empty continent.<sup>14</sup> Moreover, as population grew, the restrictions imposed by the Dividing Ranges, and by the absence of any really areas of good farming land to the east of the highlands became even more pronounced, and from the mid-1820's wheat

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<sup>14</sup> The best account of the difficulties of these early years is in King, The First Fifty Years, XVII, 125-143. See also Dunsdorfs, Wheat Growing, 3-113.

production failed to keep pace with local demand and the colony became a net importer of wheat.<sup>15</sup>

In addition to the more narrowly physical limitations imposed by the terrain, however, the coastal farmer also faced a number of natural hazards that have received close attention from students of the period. These include the liability of the coast to periodic and disastrous flooding, to which Perry attributes "the precarious state of the Colony's food supply, its wildly fluctuating market, and its unstable economy."<sup>16</sup> They also include occasional droughts of extreme severity, and Foley has noted eleven major drought periods between 1798 and 1850 which affected the coast.<sup>17</sup> To the vagaries of climate have been added the intermittent plagues of insect pests: the ubiquitous weevil and the destructive Army Worm, (Pseudaletia convecta).<sup>18</sup> Finally, in this sorry catalogue of "natural calamities" affecting the major wheat-growing areas on the coast it is necessary to mention the

<sup>15</sup> In 1826 New South Wales had a net import of 4,000 bushels. Ten years later this had grown to 336,000. Thereafter, until 1850, imports varied considerably, but only exceeded the 1836 figure in one year. See Dunsdorfs, Wheat-Growing, 474-475.

<sup>16</sup> Perry, Frontier, 23.

<sup>17</sup> Foley, D., "Drought in Australia", 54-55, Bureau of Meteorology Bulletin, No. 43, 1957.

<sup>18</sup> See, for example, King, The First Fifty Years, XVI; Perry, Frontier, 127-128; Atkinson, Account, 43.

incidence of fungoid crop diseases, particularly stem rust (Puccinia graminis), to which the coast - by virtue of its humidity - is thought to have been markedly liable.

Yet to what degree did these occasional visitations pose a real threat to dependable agriculture on the coast before 1850, and to what degree were they responsible for encouraging the abandonment of wheat-growing there after 1860? With regard to the liability of the coast to flooding it is clear, as Perry has pointed out, that this was of great significance in the early days. "In the early days of settlement", wrote Atkinson in 1826, "the Colony was almost wholly dependent upon the flooded lands of the Hawkesbury and Nepean for its grain; the inundations were then followed with a scarcity that almost amounted to famine."<sup>19</sup> But, as King has suggested, the impact of this hazard was minimised as settlement expanded, particularly to the less flood-prone lowlands of the Hunter Valley.<sup>20</sup> Moreover, it should not be overlooked that, although more frequent on the coast, floods also occurred in the interior: in 1852, for example, a sudden deluge led to the destruction of most of the town of Gundagai, drowned seventy people, and swept away every grain of wheat.<sup>21</sup> Conversely, although

<sup>19</sup> Atkinson, Account, 32-33.

<sup>20</sup> King, The First Fifty Years, XVI, 627-630. This is the most detailed account of the early hazards facing farmers in New South Wales. But see also Dunsdorfs, Wheat-Growing, 49; and Perry, Frontier, 23.

<sup>21</sup> See Sydney Morning Herald, 5/7/1852, 8/7/52, 10/7/52, 21/7/52. Hereafter cited as SMH.

drought was occasionally a problem even on the humid coast it was a much more serious one in the interior. Insect pests and crop diseases were ubiquitous, and their association with the coastal location of the industry was, at least in part, no more than a reflection of their greater commercial impact in these regions. Certainly, Atkinson was prepared to dismiss stem rust as "not very common", and an anonymous essayist, writing in the mid-1830's, confesses to little fear either of crop disease or of insect pests.<sup>22</sup>

Furthermore, if the coastal location of the industry was, as has been suggested, basically unsuited to the production of wheat then it should be possible to test this empirically by an examination of yield returns. First, the coastal yields should be low compared to yields elsewhere in the colony. Second, the yields should not only be low on average but should exhibit considerable fluctuation as a result of the periodic visitation of the natural hazards already discussed. When the yield returns are examined, however, it is clear that they are neither relatively low, nor wildly fluctuating, when compared to yields elsewhere in the colony. On the contrary, for the nineteen year period from 1832 to 1850, the coastal yields were both higher on average and less liable to wide annual variation than were the yields in the interior (Table 1).

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<sup>22</sup> Atkinson, Account, 43. Anon., "An Essay on the Culture of Wheat", New South Wales Calendar and Post Office Directory, 93, (Sydney, 1835).



TABLE 1New South Wales: Annual Average Wheat Yields 1832-1850

	Coast	Tableland	Slopes
Year	Yield	Yield	Yield
1832	14.0	17.8	-
1833	16.3	9.9	-
1834	13.7	20.9	-
1835	11.2	16.9	-
1836	18.5	15.2	-
1837	14.1	13.9	-
1838	12.8	8.2	-
1839	17.7	15.2	-
1840	15.2	16.2	-
1841	14.3	13.9	-
1842	14.3	14.6	12.2
1843	13.0	12.4	13.6
1844	15.4	15.3	16.3
1845	13.8	11.3	11.8
1846	12.7	13.2	18.2
1847	12.5	16.4	15.8
1848	15.6	18.0	18.7
1849	21.5	19.0	18.3
1850	15.6	11.0	6.2

Source: Dunsdorfs, E. and L., Historical Statistics of the Australian Wheat-Growing Industry, 1792-1950, (Melbourne, 1956). Hereafter cited as Dunsdorfs, Historical Statistics.

Note: No reliable figures are available before 1832. All references to yields are given in bushels per acre.

A more important criticism than the "natural hazard" view, bearing in mind the shift away from the coast that was to occur after 1860, is that compared to the interior the coastal soils, "being washed out by abundant rain, was poorest", and that the eventual movement away from the coast reflected a search for better land.<sup>23</sup> In

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<sup>23</sup> This is the view offered in Dunsdorfs, Wheat-Growing, 67.

general, of course, this criticism of the coastal soils is correct, and it has already been shown that the dominant soils of the east are heavily leached podsols. It is also true that in the summer maximum areas of the north coast rainfall totals of over fifty inches annually are too high for the successful cultivation of wheat. Yet it will be shown that the bulk of the wheat grown in New South Wales over this early period was grown on relatively fertile alluvial regosols. These soils were commonly regarded as the finest in the colony, and the extension of settlement in the interior after 1860 was initially directed to similar areas of easily worked, moderately rich, alluvial material. Nor can it even be conceded that the principal area of agricultural settlement - the Hunter Valley - received "abundant rain". Existing as a gap through the uplands, and lacking a continuous belt of highland on its inland margins, the Hunter Valley is not subject to the same degree of orographic precipitation as the rest of the coast. Climatically, vegetatively, and to some degree pedologically, the Valley represents a direct link with the drier western slopes. Rainfall decreases rapidly from forty inches at Newcastle, to thirty inches at Maitland, and only twenty-six inches at Singleton: the alluvial flats of the river continue fertile, and continue intensively cropped - though not with wheat - at the present time.<sup>24</sup>

There can, of course, be no denying the existence of environmental

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<sup>24</sup> For a detailed climatic, vegetative, and pedological investigation of the Hunter Valley see "Report on the Lands of the Hunter Valley", Land Research Series, No. 8, (CSIRO, Melbourne, 1963).

hazards to coastal wheat-growing. Yet to suggest that these were of an order sufficient to encourage the eventual abandonment of the industry there cannot be accepted. The available evidence would suggest that the coastal environment was adequately suited to wheat production, at least before 1860, and that the inadequacy of the industry in terms of output reflected rather the limited availability of alluvial soils and the presence of the highland barrier, effectively cutting off access to eastern markets from the fertile lands of the interior.

But the inadequacy of the agricultural industry, the increasing reliance on the importation of wheat, and the apparent limitations on the extension of the farming frontier, also stemmed in part from other causes: from the traditional undercapitalisation of the industry arising from the greater attraction of pastoralism; from an increasingly stifling policy governing the alienation of farming land; and from the multiple problems created by distance and transport costs. These problems, too, must be examined.

#### LAND: THE SQUATTER AND THE FARMER

In the mid-1850's rising prices and rising levels of import of breadstuffs provoked the Legislative Council of the colony to appoint a Select Committee "to inquire into and report upon the State of Agriculture in the Colony with special reference to the raising of wheaten grain" (Table 2).<sup>25</sup> The Committee were instructed to determine

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<sup>25</sup> "Report of the Select Committee on the State of Agriculture", New South Wales Legislative Council, Votes and Proceedings, 1855, II, 313 et seq. Hereafter cited as NSWLC VP.

TABLE 2New South Wales: Consumption of Breadstuffs 1832-1850

<u>Year</u>	<u>Population</u>	<u>Acreage</u>	<u>Production</u> <u>(Bushels)</u>	<u>Net Import</u> <u>and Export</u> <u>(-) and (+)</u>	<u>Home Produce</u> <u>as % Total</u> <u>Apparent</u> <u>Consumption</u>
1832	53,524	36,776	515,000	24,000 (-)	95.5
1833	60,794	36,679	587,000	7,000 (+)	98.8
1834	66,212	48,667	681,000	19,000 (-)	97.2
1835	71,592	47,111	518,000	138,000 (-)	77.7
1836	77,096	51,666	929,000	336,000 (-)	73.4
1837	85,267	59,576	833,000	91,000 (-)	90.1
1838	97,912	48,061	625,000	103,000 (-)	85.8
1839	114,386	48,401	823,000	231,000 (-)	78.0
1840	129,463	74,933	1,249,000	391,000 (-)	76.1
1841	149,669	60,605	831,000	602,000 (-)	57.9
1842	159,889	65,188	852,000	267,000 (-)	76.1
1843	165,541	78,083	1,006,000	370,000 (-)	73.1
1844	173,377	81,903	1,311,000	318,000 (-)	80.4
1845	181,556	77,584	1,213,000	119,000 (-)	91.0
1846	196,704	88,910	1,420,000	273,000 (-)	83.8
1847	205,009	81,044	1,028,000	295,000 (-)	77.7
1848	220,474	87,219	1,527,000	198,000 (-)	88.5
1849	246,299	90,706	1,926,000	221,000 (-)	89.7
1850	265,503	99,230	1,452,000	23,000 (-)	98.4

Sources: Population estimates are from the Official History of New South Wales, (Sydney, 1883). The remaining figures have been taken directly, or recalculated, from Dunsdorfs, Wheat-Growing and Historical Statistics.

Note: No correction is made in these figures for the Port Phillip or Stanley districts.

the causes of "hindrance and failure in that great industrial pursuit ...."<sup>26</sup> The concern was well founded. The acreage of land under wheat in the colony had been remarkably stable for at least fifteen years, while population had grown rapidly. In 1840 over 72,000 acres had been sown to the crop; in 1849 only 60,000 had been sown, and in between times the acreage had fluctuated about these limits without exhibiting any tendency to expansion.<sup>27</sup> For this there had to be a reason. The Committee were instructed to consider three elements which, it was evidently considered, could have been responsible for the stagnant state of wheat-growing. These were the social condition of the people, the policy of the government, and the physical character of the colony itself.

The results were a disappointment: possibly more so to the historian than to the contemporary politician. The "report" occupied one page. In it, and virtually without evidence, the physical character of the colony was exonerated as it had to be: everyone, at least within the colony, knew that it contained some of the finest wheat-growing lands in the world, but remarkably nobody thought it necessary to say where these lands were or to suggest that they lay hopelessly beyond the reach of existing markets. The social condition of the people was ignored, despite

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<sup>26</sup> Ibid, loc. cit.

<sup>27</sup> It should be noted that there is a discrepancy between the figures given here and those quoted in Table 2. This is because the figures quoted here are corrected to exclude the Port Phillip district (Melbourne) and the Stanley district (Brisbane). Similar corrections could not be made for the other series in Table 2.

the fact that much of the evidence pointed to the depressed and under-capitalised state of the bulk of the tenant farmers in the coastal regions. What was needed, decided the Committee, in order to cover "the banks of our navigable rivers and our fertile plains with the happy homes of a race of peasant freeholders" was land reform.<sup>28</sup> It was, under the circumstances, a predictable conclusion.

### The Rise of the Squatter

New South Wales was granted self-government in 1856. The most bitter issue in the political arena of the arrogant young Assembly soon became evident: it was the problem of land reform. The core of the discontent with the existing system of land alienation and leasehold occupation was the supposed antithesis of interests between leaseholding pastoralism and freehold farming. Land which was urgently needed for farming settlement was, it was claimed, tied up in pastoral leases, the security of which had been guaranteed by a series of legislative measures, culminating in the Imperial Waste Lands Act of 1846, which had given increasingly favourable leaseholding conditions to the squatter, while steadily raising the selling price of land to the farmer.

Until 1836 pastoralists in de facto possession of "runs" beyond the "limits of location" were engaged in an industry outside the technical

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<sup>28</sup> "Report ... on the State of Agriculture", NSWLC, VP, 1855, II, 313 et seq. For an account of the depressed and under-capitalised state of agriculture at that time see particularly the evidence of John Nicholas Beit.

limits of the law.<sup>29</sup> Beyond these "limits" - embodying the central coastal and tableland portions of the colony - land could be neither leased nor sold. So profitable was the industry, however, and so difficult was the law to enforce, that in 1836 an Act was passed in London imposing an annual rental on such "squatters", and thereby conferring legal recognition upon their runs.<sup>30</sup> Respectability before the law was not enough, however, and as their economic and political influence grew the squatters began to press for greater security. Runs were leased annually and the uncertainty of this system, it was claimed, militated against the improvement of the lease. The basic concession sought was an extended tenure, but in addition it was held that a pre-emptive purchase right was also necessary in order to protect the improvements which would be consequent upon the granting of a longer lease. In 1844 an effort by the Governor to introduce a compromise solution was met by howls of protest and organised opposition, both within the colony and by squatters' representatives in London. The

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<sup>29</sup> The "limits of location" - later known as the settled districts - were defined in 1826. They originally comprised nineteen counties, but in 1830 a twentieth (Macquarie) was added. See King, C.J., "An Outline of Closer Settlement in New South Wales", Review of Marketing and Agricultural Economics, 1957. Reprinted in book form. Undated. Hereafter cited as King, Closer Settlement. Briefly, the "limits" were imposed to prevent the dispersal of population beyond the powers of the government to control and police.

<sup>30</sup> The best account of these early measures is still Professor Stephen Roberts' classic Land Settlement, 178-186. But see also King, Closer Settlement, 45-50.

outcome of this protest was the passing of the Imperial Waste Lands Act in 1846.<sup>31</sup>

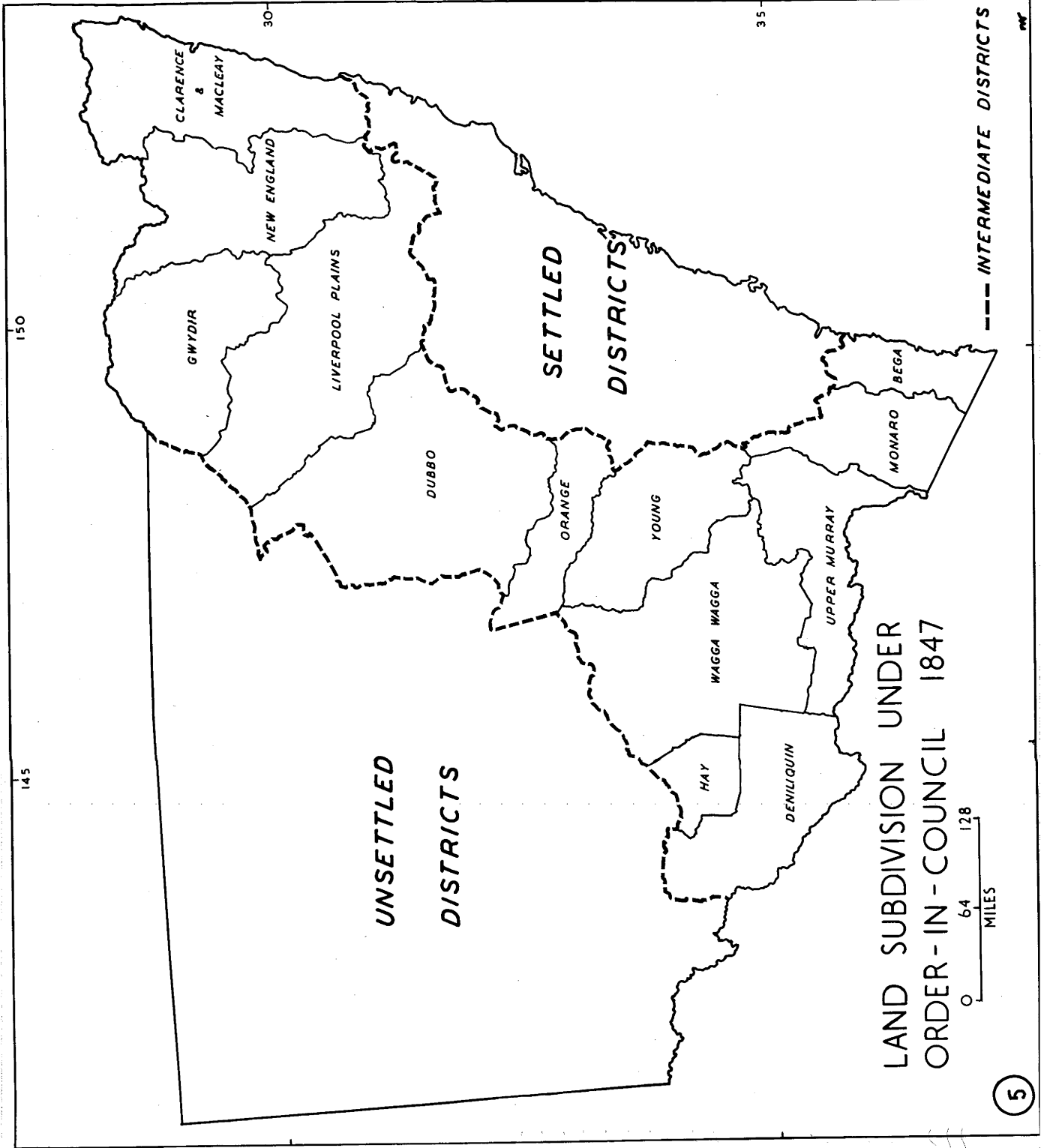
Under this Act the concept of the "limits of location" was replaced by a new sub-division of the colony into three districts: settled; intermediate; and unsettled (Figure 5).<sup>32</sup> The new legislation governing the occupation of these districts was aimed primarily at leaseholding in the unsettled and intermediate districts. The squatters' desire for security of tenure was completely satisfied: land could be leased without competition for fourteen years in the unsettled districts and eight years in the intermediate districts. At the same time, however, it was stipulated that it was to be illegal to engage in agriculture for the purposes of trade or barter on leaseheld land.<sup>33</sup>

<sup>31</sup> Roberts, Land Settlement, 179-181. See also King, Closer Settlement, 53-54.

<sup>32</sup> The Act was effected by an Order-in-Council of the following year. For this Order, and the comments of the Secretary of State see Grey to Fitzroy, 30/4/47, HRA, I, xxv, 428-434. In addition to the twenty counties within the old "limits of location" the newly defined settled districts also included the county of Stanley (around what is now the city of Brisbane in Queensland), all land within twenty-five miles of Melbourne, fifteen miles of Geelong, ten miles of Portland, Alberton, Eden, Bathurst, and Wellington; the towns of Macquarie, Ipswich, and Grafton; all land within three miles of the sea; and all land within specified reaches of the Rivers Glenelg, Clarence, and Richmond. For counties in the Intermediate Districts see Appendix One.

<sup>33</sup> Though this was no hardship to the pastoralist it is evident that some agriculture had been carried on on Crown lands by persons of small capital. See Papers Relative to Crown Lands in the Australian Colonies, 17-19, (London, 1851).





Generous though the leasing conditions were, the pastoral run was not completely inviolate and was open to forfeit where it interfered with the "defence, safety, improvement, utility or enjoyment" of the colony.<sup>34</sup> In effect this was intended as no more than an affirmation of the ultimate rights of the Crown to the disposal of unalienated land, but it was later to be used as ammunition by the squatters when accused of monopolising public lands.

Although the lessees normally had no desire to purchase the freehold to their runs - beyond the immediate homestead section and in the area of any improvements - they had demanded the pre-emptive right to purchase any or all of the lease should competition for the land title arise. Again they were completely satisfied: during the period of the lease the squatter was to have the sole right of purchase, and upon its expiration he was to have the pre-emptive right. But the generous conditions did not end there: rents were fixed at the low level of £10 per annum on every 4,000 sheep or 500 cattle carried on the run, and special terms were devised to give the pastoralist up to sixty days grace before forfeit was demanded in the event of non-payment of the rental.

The Act of 1846 was effected by an Order-in-Council of the following year. The bias in favour of leaseholding pastoralism seemed so obvious,

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<sup>34</sup> Under the Act of 1846 the Crown also retained the right to modify the boundaries of the districts. It was legally possible at any time, therefore, to extend the settled districts to incorporate the whole of the colony, and by doing so to negate the favourable conditions of pastoral occupation in the interior.

and placed the squatter in a position of such relative strength over the potentially valuable farming lands of the intermediate districts, that reaction was immediate and voluble. Yet this was not a simple struggle for land between pastoralist and farmer for, although dealing almost exclusively with the occupation of land for pastoral purposes, the Act served to crystallise the growing class antagonism within the colony. From this point, land reform ceased to be principally a social and economic problem, becoming instead a political platform. The rising tide of liberalism in the succeeding decade demanded reform of the whole structure of regulations governing land settlement, and the outcome of these demands were to play a significant role in the developing wheat industry.

#### The Case for the Farmer

The opposition to the Waste Lands Act stemmed, not from any very apparent direct conflict over land, but initially from the great disparity in conditions to which the pastoralist and the small farmer were subjected. From the early 1830's the Colonial Office in London had partially adopted an accumulating body of theory relating to colonisation, derived from a group calling themselves the "systematic colonisers". The group, led by Edward Gibbon Wakefield, evolved a system which, they believed, would maximise the production of the colonies by ensuring the correct proportions between the three classic "factors of production" - land, labour, and capital - and thereby automatically bring the greatest benefit to the colony and the mother country alike.

In essence their theory was simple.<sup>35</sup> The colonies wanted labour; the mother country had a surplus. It was of no use to the colonies if imported labour could progress with ease to the status of would-be employer; nor was it of use if the available labour was permitted to disperse to form a subsistence peasantry. It was essential to import and maintain a labour force, to ensure the existence of a landless "working class". On the other hand, however, it was also necessary that - if the colony was indeed to progress - the labourer should, by patience and industry and in the course of time, be able to achieve the status of employer. Since the wealth of the colonies was felt to lie in the land, it was held that both these objectives could be attained by ensuring that land was scarce, either by charging a "sufficient" price for freehold title, or by restricting the amount of land open to sale. Either way, only a limited number of people could become landowners and employers. Of the two methods Wakefield preferred the former: the colonies could then absorb all the available capital, and the monies obtained would contribute to a more substantial "land fund" to be utilised in assisting immigration. The result would be a system to some degree automatic and self-regulating: the availability of capital in the colony would be reflected in the amount of land sold; the revenue from land sales would be indicative of the amount of labour required, and could be used, in part, to furnish this demand.

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<sup>35</sup> This summary is based upon Wakefield's evidence before the Select Committee on the Disposal of Lands in the British Colonies, 44-122, (London, 1836). The standard work on Wakefield and his colonising theories, together with a complete bibliography of his writings, is Mills, R.C., The Colonisation of Australia, (London, 1915).

In essence the theory found favour in the Colonial Office. The notion of a "sufficient" price, equated not surprisingly with a "high" price, emerged in the 1830's as the cornerstone of Imperial land policy in the Australian colonies, and it was against the continued application of this principle - rather than over actual land disputes - that farmers and political radicals began to fight in the late 1840's. The first explicit move in the partial adoption of Wakefield's theory had occurred in 1831 when the sale of land at the "high" price of 5/- per acre was substituted for the earlier, and suspect, practice of direct land grants. In 1838, in order "to give full effect" to the theory the price was raised to 12/- per acre, and in 1842 - in the depths of a commercial depression - the price was raised, yet again, to £1 per acre.<sup>36</sup>

But although opposition to the price of land was central to the farmers' case, there were other grievances. The 1831 regulations, which had substituted sales for grants, had also specified that these sales should, in all cases, be made at auction, and that the whole of

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<sup>36</sup> Land grants were abandoned in view of repeated complaints of favouritism shown to particular individuals. For this, and the institution of sales at 5/- per acre see Goderich to Darling, 14/2/31, HRA, I, xvi, 82. For the rise to 12/- see Glenelg to Gipps, 9/8/38, HRA, I, xiv, 537. For suggestions that this was in response to pressure from the newly created "Wakefield colony" of South Australia see the debate on the Waste Lands (Australia) Bill, Hansards Parliamentary Debates, LXXXVIII, 962-970. For the increase in the price of land in 1842 to £1 per acre see Stanley to Gipps, HRA, I, xxi, 557-560.

the purchase money should be paid "previous to possession being granted."<sup>37</sup> Thus, by denying credit facilities, and by exposing the small settler to competition at auction, the purchase of land by men of modest means was made increasingly difficult. Moreover, although the pastoralist was permitted under the Mortgage on Cattle and Lien on Wool Acts to finance his operations on stock credit, similar facilities with growing crops for security were denied to the farmer. Not only had the farmer to buy his land outright and at auction, and to purchase his implements, but he was also forced to reserve much-needed capital to cover the costs of maintenance and farming operations until the value of his first crop could be realised by sale. More serious even than the problem of credit, in the eyes of some, were the mechanics of land alienation and the gross inefficiency of the Survey Department, both leading to excessive delays of "three or four months" between the application for land and its survey.<sup>38</sup>

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<sup>37</sup> See Goderich to Darling, 9/1/31, HRA, I, xvi, 19. The question of auction sales was a major point of divergence between Wakefield and the Colonial Office. Wakefield considered auction to be conducive to land jobbing, and preferred instead non-competitive selection. Had this plank of Wakefield policy also been adopted it is possible that opposition to the Colonial Office would have been considerably reduced. For Wakefield's views see his evidence before the Select Committee on the Disposal of Lands in the British Colonies, 91, (London, 1836).

<sup>38</sup> Although these criticisms were widespread by 1850 they are most concisely stated in the evidence of John Robertson (shortly to become Premier) before the "Select Committee on the State of Agriculture ...", NSWLC, VP, 1855, II, 313 et seq. See also the reports on land settlement in NSWLC, VP, 1847, II, 513 et seq., and NSWLC, VP, 1849, II, 543 et seq. See also Lancelot, F., Australia As It Is, II, 254, (London, 1852). For criticism of the Survey Department see particularly "Report of the Commissioners Appointed to Inquire into the Surveyor-General's Department", NSWLC, VP, 1855, II, 12, et seq.

Finally, to this long catalogue of grievances, was added what seemed to be the most gloomy prospect of all: the pastoral pre-emptive right. The extent to which this right was used in reality to defeat the small settler hoping to purchase farming land is not known. Mitchell, the Surveyor-General, claimed that on the northern rivers of the Clarence and the MacCleay there had been many applications for selections from the tenants of the holders of pre-emptive rights, and that the exercise of these rights had caused "some outcry". On the Shoalhaven, too, it was claimed that applications for selections had been refused outright because they would interfere with the pre-emptive rights of leaseholders.<sup>39</sup> The only thing that is certain is that relatively little land was ultimately purchased after 1847, whether by pre-emption or direct auction.<sup>40</sup> The existence of the pre-emptive right as a deterrent to selection was possibly less significant in fact than in theory since, given the other difficulties in the purchase of freehold title, the demand for farms was not great.

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<sup>39</sup> See "Report of the Select Committee on Crown Lands, Progress Report", NSWLC, VP, 1854, II. For conditions on the northern rivers see evidence of Surveyor-General, 21-29. For conditions on the Shoalhaven see evidence of G.U. Alley, 69.

<sup>40</sup> See below Chapter IV. Only 1,219,375 acres were sold at auction and in respect of pre-emptive rights between 1847 and 1861. Over a similar thirteen year period beginning in 1862 over 6,500,000 acres were alienated on one of the new forms of tenure alone.

Moves to Reform

Opposition to the Imperial Waste Lands Act of 1846 was led initially by Robert Lowe, a gifted anti-Wakefieldian and later to become Viscount Sherbrooke. But for as long as land policy remained in the hands of Westminster it remained in the hands of Wakefieldians of a deep-dyed hue, and Lowe's efforts - particularly to secure a reduction in the price of land - were inevitably defeated. Only with the granting of responsible government in 1856 did the way become clear to effect far-reaching reform.<sup>41</sup> By this time the radical elements in the colony were rallying under the leadership of John Robertson who, with his cry to "unlock the public lands" provided a cause with which the growing political awareness of the colony could find identification.

Basing his platform partly upon American experiences Robertson introduced the concept of "free selection" on all Crown Land, including those held under lease. The maximum area of the selection was to be 320 acres, and the selector was to be permitted to take up residence on payment of a deposit. Moreover, in addition to this introduction of credit sale and the withdrawal of compulsory auction, the settler was to be permitted to take up his land before survey, thus circumventing the inadequacies of the Survey Department. At the same time, however,

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<sup>41</sup> For Lowe's struggles against the squatting hegemony see Martin, A.P., The Life and Letters of the Rt.Hon.Robert Lowe, Viscount Sherbrooke, (London, 1893), and also Knight, R., Illiberal Liberal, (Melbourne, 1966). For the rejection of Lowe's views - pressed home in the reports on land settlement in the late 1840's - see Grey to FitzRoy, 11/8/48, HRA, I, xxvi, 541-544, and Papers Relative to Crown Lands in the Australian Colonies, I, 94-100, (London, 1850).



Robertson recognised the need to guard against indiscriminate speculation in land and accordingly introduced into his proposals purchase conditions of residence and improvement, non-fulfilment of which would automatically lead to the cancellation of the selection.<sup>42</sup>

Responsible government, however, was not without its drawbacks in New South Wales. Not least of these was the apparent inability of any Ministry to remain in power long enough to permit the machinery of reform to function. The lack of clear party alignment, the fact that the new Assembly was a battlefield for almost as many policies as there were Members in it, made agreement on so complex an issue as land reform seem almost impossible. The major aim of each Parliamentary session became the overthrow of the existing Ministry - at any cost. Political compromise was too easily misconstrued as hypocrisy and the resulting intransigence severely hindered the prosecution of government business.

Between 1856 and 1860, therefore, no less than six attempts were made to pass Bills dealing with the occupation and sale of Crown land: none were successful.<sup>43</sup> Yet, by this time, Robertson's views were well known

<sup>42</sup> Robertson's platform is discussed more fully in Chapter IV, below.

<sup>43</sup> The different Bills were essentially of three kinds: three sought only slight modification of the existing system; the fourth and fifth, introduced by Robertson himself, were radical "free selection" Bills; the sixth represented something of a compromise with the acceptance of free selection within proclaimed areas. For the first see SMH, 8/8/56. For the second see SMH, 16/1/57 and 12/3/57. For the third see SMH, 19/11/57 and 20/11/57. For Robertson's Bills see SMH, 17/9/58 and 29/9/59. For the final Bill, introduced by Black, see SMH, 17/2/60. The failure of this final attempt to find a compromise solution King regards as having been "unfortunate for the State's future". See King, Closer Settlement, 77, (f.n.).

and in many particulars had found widespread support in the Assembly, at public meetings, and in torchlight processions through the streets of Sydney.<sup>44</sup> At the opening of the new decade, although reform still seemed elusive, the path which it would eventually take had become clear. Even this, however, was less important than the prospect of moral victory over the vested interests of the squatters. For by 1860 the matter had lost any hint of practical necessity - this had always been open to doubt anyway - and had assumed the mantle of a popular crusade in the struggle Clark has called the "victory of the bourgeoisie".<sup>45</sup> The developments of the late 1850's, however, in pointing the way for future reform, were to have fundamental significance for the agricultural industry and for wheat-growing in particular. The progress of agriculture and of land settlement generally, for the next twenty years, was to be profoundly affected by the rise of radical sentiment typified in Robertson's plans.

#### THE "SILVER TOY"<sup>46</sup>

If land reform was the philosophical question of the day in the New South Wales of the 1850's, however, then the practical question concerned

<sup>44</sup> See, for example, SMH, 24/11/57; 8/12/57.

<sup>45</sup> Clark, M., A Short History of Australia, 141, (New York, 1963).

<sup>46</sup> A phrase of opprobrium used in the leading column of the Herald to describe the railways constructed in the colony. It was part of a personal attack upon the then Premier Charles Cowper, and continued, "Our chief debt has been contracted for what has been described by many members as a toy - the "toy-maker" is now Premier". See SMH, 21/11/57.

the creation of a rail network. Land legislation could provide the machinery of land access, but the modification of the uses to which the bulk of the land was put depended upon issues more solidly bound to earth. Despite the rising agitation for land reform over the 1850's the vision of the agricultural future of the colony encompassed no more than the valleys of the coastal rivers and the more accessible plains of the tablelands. In this respect the unique position of the coastal lowlands is reflected in the proposal, made in 1857, to have them classified and sold separately from the remainder of the lands in the colony.<sup>47</sup> The western slopes - the red-brown earths and the black earths of the north - were disregarded: they were too distant, and to work them required techniques and capital that were not, at that time, available in New South Wales. Farming was still exclusively a labour-intensive industry; sowing and reaping were still the province of hand operations. Costs were high and transport to market was a critical item. With such narrow horizons, therefore, the growing concern for the condition of transport facilities in the colony was very largely a concern for the settled districts. These were the areas that suffered most from the abominable state of the colony's roads since these were the areas over which the bulk of the colony's produce was moved. For the rest the provision of better communications facilities was a matter of social welfare, or more often - and more accurately - of political expediency.

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<sup>47</sup> See speech of Macleay on Cowper's Land Bill, SMH, 2/12/57.

### The Roads

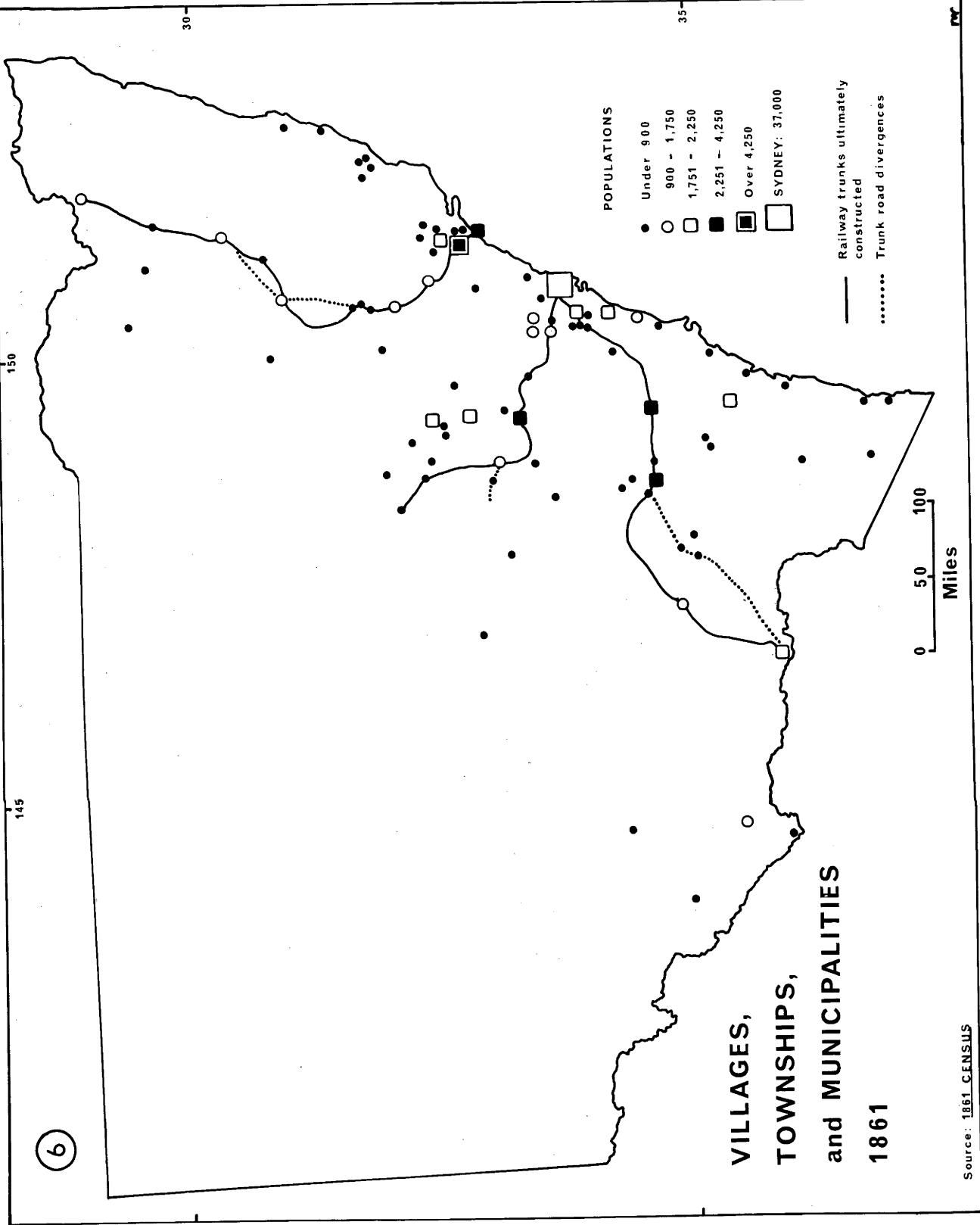
As a British colony New South Wales was greatly influenced by developments in the mother country. At the same time, however, it was recognised that there were differences: Social, economic, geographic; differences of scale; differences of emphasis. Thus, while looking to "home" as perhaps the ideal society, New South Welshmen were not always willing, and were frequently unable, to follow slavishly the innovations of Great Britain.

In the century between 1750 and 1850 Britain had undergone a revolution in the form and efficiency of her transport media. The roads, formerly the province of the parish, had come under the general control of the turnpike system, making more money available for their maintenance and improvement. In addition, the "elongated reservoirs" which were the highways were being replaced by the "scientific" roads constructed by Telford and MacAdam.<sup>48</sup> Yet, by contrast, after fifty years of settlement New South Wales possessed only the crudest and most elementary of transport "systems". It was based upon three major trunk roads radiating north, west and south from Sydney and metalled in patches only as far as Murrurundi in the north, Bathurst in the west, and Goulburn in the south (Figure 6). These "Great Trunk Lines of Thoroughfare" into the interior were, in fact, little better than tracks, imperfectly made and poorly maintained. The inadequate drainage provisions, combined with the bludgeoning of bullock

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<sup>48</sup> The quotation is taken from Pratt, E.A., A History of Inland Transport and Communication in England, 99, (London, 1912). But see also Jackman, W.T., The Development of Transportation in Modern England, (London, 1916).

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Source: 1861 CENSUS

waggon, rapidly turned the surfaces into clinging, sucking, mires at the first sign of wet weather. "It is a matter of greatest surprise", wrote the Herald's Paramatta correspondent, "that men can be found to take their teams on the roads ... Dead horses, broken axles and shafts, and travellers in a state of despair, cries shame on the authorities to allow such a state of things to exist ..."<sup>49</sup> The journey of 145 miles to Bathurst took  $23\frac{1}{2}$  days and the rate of carriage per ton of goods cost some £12. 10. 0. To Albury some 375 miles from Sydney the journey lasted anything up to 90 days and the cost on a ton of goods reached £30.<sup>50</sup> If the weight of a bushel of wheat was, say, 60 lbs. then it is clear that the transport charges on one bushel from Bathurst to Sydney might amount to over 4/-. At an average selling price in Sydney of under 5/- in 1850, it is equally clear that the interior had little hope of successfully competing on the metropolitan market until conditions had been radically altered. Herein lay the great advantage of the coast and even of producers outside the colony, for it was cheaper to import from Tasmania, and later South Australia, than to purchase wheat even from the more accessible inland farming districts.<sup>51</sup>

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<sup>49</sup> SMH, 6/9/56. For an account of road building in New South Wales see Newell, H.H., "Road Engineering and its Development in Australia 1788-1938", Journal of the Institute of Engineers, Australia, X, ii and iii, 1938.

<sup>50</sup> Newell, H.H., op. cit., 57.

<sup>51</sup> See Darling to Huskisson, 10/4/28, HRA, I, xiv, 132. For a discussion of the wheat trade between New South Wales and Tasmania see Dunsdorfs, Wheat-Growing, 66-67.

But while these facts give much of the rationale to the establishment and expansion of coastal wheat-growing, and to the strictly local nature of inland production, they do not account for the apparent unwillingness within the colony to attack with more vigour the problem of inadequate roads. The deciding factors, probably, were cost and timing. Discontent with the condition of the roads, and with the trust system of administering road expenditure, came to a head at about the same time that railways were being discussed. In the enthusiasm for the new medium the roads received scant attention, and were to remain inadequately built and poorly maintained for many years. Moreover, as the newly appointed Engineer-in-Chief of Government Railways pointed out in 1857, the cost of macadamed roads might be as high as £10,000 per mile, or roughly equivalent to that of a first class railway.<sup>52</sup>

### The Railway

The origins of railway building in New South Wales can be traced directly to reports of furious speculation in this field in the mid 1840's in Britain. Fired by the apparent possibilities of the new transport medium a private company was created to construct a line from Sydney to

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<sup>52</sup> For neglect of the roads see "Report of the Select Committee on Roads and Railways", NSWLC, VP, 1854, 1187 et seq. The "Progress Report" of this committee admitted having paid little attention to the "making of common roads" out of a belief that every effort should instead be directed to the provision of railways. For cost estimates of macadamed roads and railways see "Report of the Select Committee on the Great Trunk Lines of Railway", Journal of the Legislative Council of New South Wales, 1857, II, 399 et seq. Hereafter cited as JLCNSW.

Goulbourn. After a brief and miserable record of misfortune and sheer mishandling, however, the assets of this company - together with those of a second company formed to construct a line from Newcastle to Maitland - were taken over by the government.<sup>53</sup> From the very beginning, in fact, railway development in the colony had been assisted by public investment.<sup>54</sup> Over the early years of the 1850's the level of this investment was steadily raised, so much so that the private railway companies were largely government-controlled before the official take-over was complete. After 1855, however, railway construction in New South Wales passed irrevocably into the hands of the public.

In some ways the events of the early 1850's, when railways were in private hands, were insignificant: no lines were opened to traffic, and in pragmatic terms the colony was little affected by the failure of private enterprise. In another sense, however, these years were important, for they determined why the responsibility for railway construction must rest with government, and they also raised practical questions concerning the character of the lines and the possibilities of alternative methods of satisfying the transport requirements of the colony: questions that were, in some ways, to be central in railway history throughout the

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<sup>53</sup> For information of the Sydney Railway Company see SMH, 30/1/46, and "Report of the Select Committee on the Sydney Railway Bill", NSWLC, VP, 1849, II, 23 et seq. For the creation of the Hunter River Railway Company see NSWLC, VP, 1854, 1121 et seq., and SMH, 2/8/54.

<sup>54</sup> Initially, this took the form of a grant to cover exploratory survey costs. See NSWLC, VP, 1848, 455, et seq.



nineteenth century. In terms of their effect upon the direction and timing of railway construction these issues were to be important to the extension of the wheat frontier.

The private companies failed, essentially, because of the lack of private capital available for investment in such ambitious and uncertain projects. As early as 1848 a Select Committee had expressed serious concern at the wisdom of extending locomotive railways into the sparsely settled interior.<sup>55</sup> To some extent the uncertainty created by this report was met when government agreed to guarantee the interest on capital invested in railway development.<sup>56</sup> Yet, by 1852 it was becoming clear that private funds were seeking more attractive projects. The gold discoveries, coming in 1851, had opened up a new and exciting field for the employment of private capital: the buying and selling of gold. Again, they had attracted large numbers of the metropolitan labour force - both skilled and unskilled.- eager to test their luck with the pick and shovel among the tents and gullies of Ophir in preference to the railway cuttings outside of Sydney Town. Moreover, and again as a result of the discovery of gold, costs had soared and by the close of the year the Sydney Railway Company was almost bankrupt.<sup>57</sup> Sustained by deferred

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<sup>55</sup> "Report of the Select Committee on Railways", NSWLC, VP, 1848, 455 et seq.

<sup>56</sup> For correspondence on the subject of guaranteed interest schemes see NSWLC, VP, 1848, 1315 et seq.; 1850, I, 501 et seq.; 1852, I, 989 et seq. For the attitude of the Imperial government to these schemes see Grey to FitzRoy, 8/2/49, printed with railway correspondence in NSWLC, VP, 1849, I, 315 et seq.

<sup>57</sup> For a detailed account of these difficulties see railway correspondence in NSWLC, VP, 1853, II, 125 et seq.

interest loans from the government, and joined in 1853 by the Hunter River Railway Company which was soon in similar difficulties, private enterprise willingly yielded its responsibilities to government in 1856.<sup>58</sup>

Yet, once in government hands, the railways were faced with other problems. They were to lose the single-minded purposefulness which, under private enterprise, reduces decisions to a profit or loss calculation. They were to be influenced by demands more parochial than logical, more emotional than economic; demands that were to affect the direction and timing of construction and, indirectly, the developments on the wheat frontier that depended so much upon them. Moreover, the railways still had to be paid for, and as the century progressed the government was to seek a solution to the high costs of railway building at the expense of the advance of settlement which, it was hoped, their construction would induce. In addition, government railway construction was forced to battle against repeated proposals for alternative systems of communication: proposals for plank roads on the North American model; for railways constructed entirely of wood; for tramways using horse

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<sup>58</sup> For government loans to the private companies and for the recommended take-over see "Report of the Select Committee on Roads and Railways", NSWLC, VP, 1854, 1187 et seq. For the government's offer and the transfer of the companies see NSWLC, VP, 1855, II, 1136 et seq.

power or lighter steam traction.<sup>59</sup> All of these problems had to be solved, and insofar as they affected the lines that were built and the land that was then made available, they affected the progress and direction of agricultural settlement.

### CONCLUSIONS

There were, therefore, three major elements which largely determined the distribution of wheat-growing over the first-half of the nineteenth century. The first of these was the character of the natural environment which, at a general level and arising out of the existence of the eastern highland barrier, denied access to the fertile soils of the interior and, more specifically, caused agricultural settlement to be channelled to those few accessible areas of good soils which were found in the valleys of the east coast rivers. Second, and arising in part out of the inaccessibility of extensive areas of good farming land, was the increasing dominance of the pastoral industry in the interior. Though this represented no immediate threat to the advance of farming settlement, it posed a potential barrier of considerable dimensions which could be removed

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<sup>59</sup> For the use of plank roads in North America see Meyer, B.H., A History of Transportation in the United States Before 1860, 299-305, (Washington, 1948). For recommendations concerning their use in New South Wales see "Report of the Select Committee on Internal Communications", NSWLC, VP, 1852, II, 941 et seq., and "Report of the Select Committee on the Great Trunk Lines of Railway", JLCNSW, 1857, II, 399 et seq. For wooden railways see Grey to FitzRoy, 31/7/47, NSWLC, VP, 1848, 191 et seq., and "Report of the Select Committee on Railways", NSWLC, VP, 1848, 455. For horse-tramways see "Memorandum From Governor Denison", JLCNSW, 1856, 725 et seq. See also SMH, 3/9/56; 27/10/56.

only by radical reform of the laws governing the alienation and occupation of land. Third, and possibly most important, was the problem of inland transport: ease of communication with the major market in the colony was the great advantage of the coast and the necessary arbiter of further settlement advance. For, without the provision of railways, the interior must have remained little more than a vast sheep run, and even the most liberal land laws would have been unable to change the basic structure of rural occupations there.

Yet this does not exhaust the variables which must be assessed in investigating the spatial shift of wheat-growing that was to occur after 1860, in accounting for the nature and timing of this shift, and in assessing the scale and location of the new developments. For underlying all these problems in New South Wales is the question of the character of this new frontier and the relationships in space between the frontier and the market it served. Central to this whole issue must be the breakdown of the dual market structure with two discrete industries, one serving the coast and one serving the interior, and the relationships in time and space between the advance of farming settlement and the replacement of this dual structure by an integrated system serving, not only the whole of the colony, but a substantial export market in Europe. And in weighing these developments it is necessary to be aware of, and to take into account, a variety of other factors: changes in the character of farming itself, in farming techniques and the use of capital equipment, and in the basic problem of rural under-capitalisation; changes, too, in the

wheat-growing environment as settlement advanced, and in the socio-economic concepts governing the development of the new lands. Finally, it is necessary also to assess the influence of those variables the occurrence of which seems to have been adventitious and wholly unpredictable, and in the history of the wheat frontier in New South Wales these have not always been without their significance. The first of these adventitious phenomena was the discovery of gold near Bathurst in 1851, a discovery which at the time seemed likely to bring closer a solution to the difficulties of the agricultural industries, and which some recent commentators believe to have been the first important step in the creation of a new farming frontier.

CHAPTER 2.GOLD: THE NATURE OF THE WHEAT "FRONTIER"

I do not believe that gold-seeking in Australia has been remunerative to any class of men as a class.

Anthony Trollope,  
Australia and New Zealand, I, 90 (London, 1873)

It has been generally held that the discovery of gold in Australia in the 1850's affected the agricultural industries in two ways; first causing severe disruption, and later stimulating expansion. The major works in the field of agricultural history all, to a greater or lesser extent, subscribe to this view.<sup>1</sup> In the most important of these Dunsdorfs suggests that the gold-rushes resulted in a "decline of wheat-growing in all states", and that only after a lapse of several years did high prices induce renewed expansion. The reasons for the initial decline, more specifically, he attributes to labour shortages and to "the gain to be derived from carting food and stores to the goldfields." The eventual increase in the area of land under wheat, he suggests, was caused by miners leaving the diggings to find more permanent employment

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1. The most important of these are Dunsdorfs, Wheat-Growing; King, The First Fifty Years and Closer Settlement; Callaghan, A.R. and Millington, A.J., The Wheat Industry in Australia, (Sydney, 1956). (Melbourne, 1964). See also Carrington, D.L., The Gold Rushes of New South Wales, 1851-1874, (Unpublished thesis submitted for the degree of Master of Arts, Australian National University, 1961).

as farmers or farm labourers.<sup>2</sup> Viewing the business of wheat-growing in Australia as a whole this argument may well be substantially correct. Certainly with respect to Victoria, from which colony the bulk of the evidence is taken, it is largely convincing. Yet, with respect to New South Wales, the sequence of events described here is open to question.

The confusion which attends this unique period in the history of the colony is not difficult to understand. The excitement which infected contemporary observers was matched only by the exaggeration of retrospective accounts. In summarising the development of the agricultural industry over the nineteenth century, for example, King uses this quotation from a normally reliable source:

The great influx of population ... which the gold discoveries brought about, eventually had a beneficial effect upon the agricultural industry, and the area under wheat, which had only increased from 163,979 acres in 1845 to 171,100 in 1855, and had fallen as low as 89,195 in 1857, after this last mentioned year once more commenced to grow larger almost every season.<sup>3</sup>

In fact, however, wheat-growing in New South Wales suffered no such violent fluctuations. Examination of the official statistics shows that 1857 was, with the single exception of the preceding year, marked by a higher acreage of land under wheat than at any time previously in the

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<sup>2</sup>. Dunsdorfs, Wheat-Growing, 107-113.

<sup>3</sup>. King, Closer Settlement, 126. The quotation is taken from the Australian Town and Country Journal, 2/1/1907. Hereafter cited as ATCJ.

history of the colony. The quoted figure refers, in fact, to the acreage under wheat in 1855. The quoted figures for 1845 and 1855 refer, not to wheat acreage, but to the total area of land in cultivation under crops of all kinds. Moreover, between these two dates Victoria was separated from New South Wales, and since no correction is made in the figures to allow for this, even the comparison offered is quite meaningless.<sup>4</sup> The picture presented is therefore entirely erroneous, incorrect in detail, and more importantly in inference.

Yet the implications of these views at a general level, if correct, are important. For clearly the question must arise not merely of why the initial decline set in, but also of where this decline was most evident. In view of the known abandonment of the coastal wheat-growing districts in the following decade it would seem of some significance to know whether or not this abandonment was, at least in part, anticipated by the exposure of weaknesses in the structure of the industry there in the 1850's. More important still is the suggestion of an expanding industry in the late-1850's, and again the crucial issue is where this expansion occurred and whether or not this reflected a significant advance in the farming frontier. There is, it would seem, an evident need to re-assess the influence of the gold discoveries on the wheat-growing industry in New South Wales, to divorce the situation in the older colony from the generalities encouraged by the more profound experiences of Victoria,

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4. See Colonial Secretary's Returns of the Colony, 1845-1856.



and to attempt to place the developments of this unique decade in their proper context with regard to the wheat frontier.

#### THE WHEAT FRONTIER 1840 - 1850

The principal factors governing the location of the agricultural industries in New South Wales in the first-half of the nineteenth century were threefold: the nature of the environment; the problems created by pastoral domination both of the land and in the Legislature; and the problem of transport. As a result of these limitations wheat-growing was closely tied to the locality of the markets it served. Again, because of the limitations imposed by these factors, there existed no clearly recognisable agricultural region, no "belt" of grain farming such as was to develop at the turn of the century. Instead there were agricultural "districts", clustered upon isolated stretches of good soil, and widely separated from each other by intervening areas of barren uplands or extensive plains of sheep country.

The most important of these districts were on the coast, close to the major colonial markets in Sydney and Newcastle, but even here existing as separate ribbons of development in the lowlands of the coastal valleys. Lesser districts were situated around the rural service centres of the inland, strategically located to serve the existing market and the pastoral market of the surrounding country, but probably closely tied by transport difficulties to the distribution of milling centres.<sup>5</sup> There

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<sup>5</sup>. For a discussion of milling centres, see below, page 229.

existed, therefore, no unified agricultural "frontier", but rather a series of agricultural nodes surrounded by pastoral land. Moreover, these pockets of farming activity were, on the whole, remarkably stable. Most districts had shown a steady, though unremarkable, expansion of farming activity over the 1840's, in response to a similarly steady, though unremarkable, growth in population. This expansion, however, had occurred principally in districts already well-established as agricultural areas, largely on the coast, and none had shown much of the element of movement that is intrinsic in the frontier concept. On the whole, therefore, expansion had occurred in situ and there had been little suggestion, in the decade before 1851, of an expanding frontier, of the opening up of new lands, or indeed of any fundamental change in the spatial relationships of the wheat-growing industry. The wheat frontier remained largely static, growing slowly in size without shifting appreciably in space.

#### The Location of Wheat-Growing

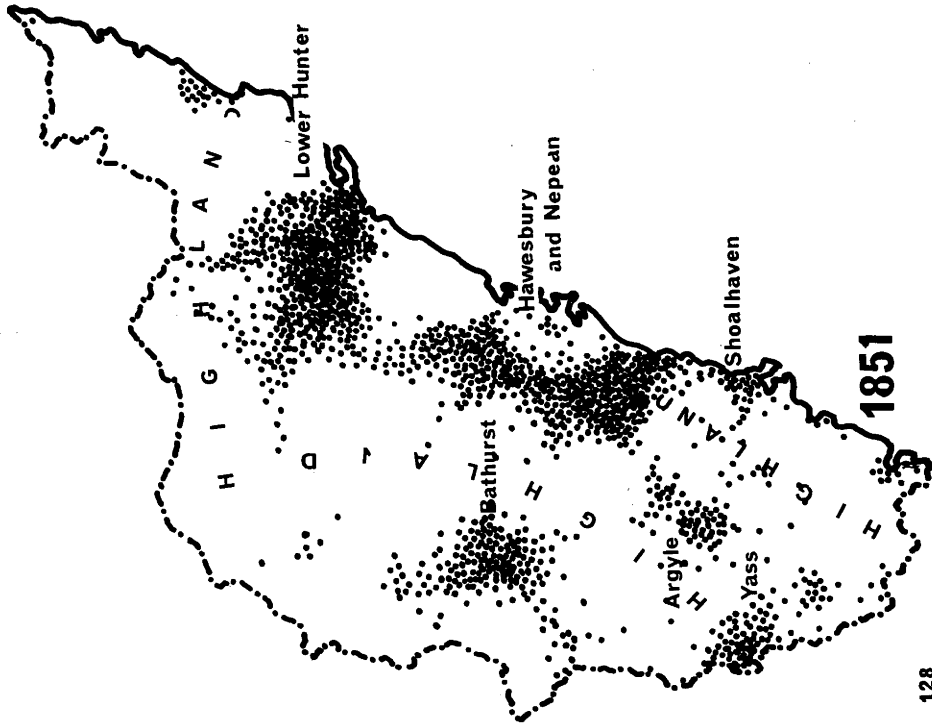
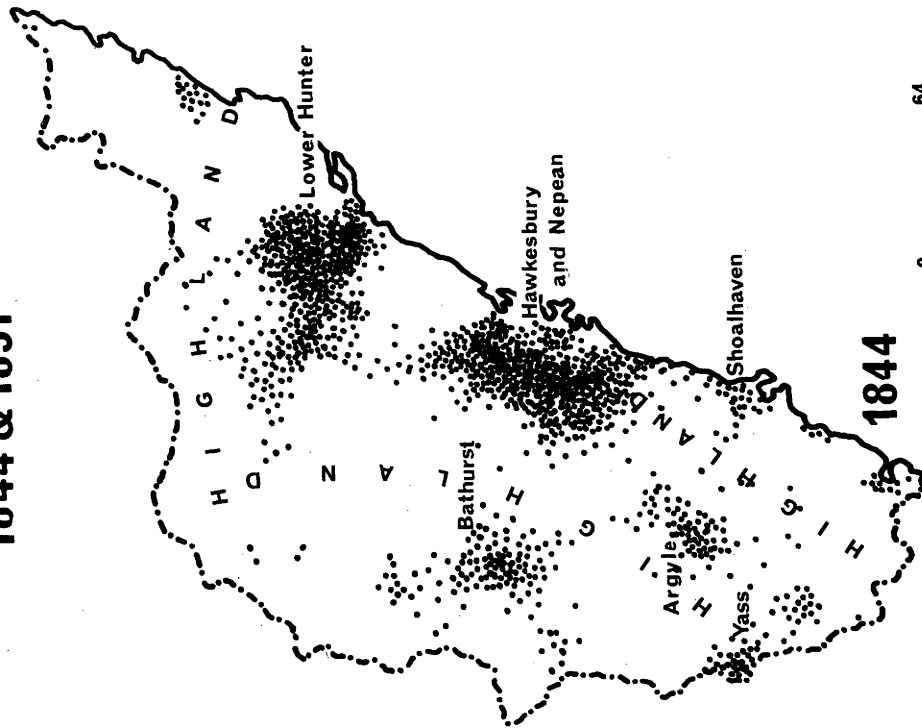
The major elements in this situation were the valleys of the coast, well-established, closely settled, and intensively cultivated. Lying close to the major Sydney market was the most important of these areas, the Hawkesbury/Nepean lowlands (Figure 7). Extending in a belt up to four miles wide at the confluence with South Creek, the alluvial terraces of the main valley above Windsor - together with those of South Creek and George's River - had been settled at an early date and by 1844 supported some 13,928 acres of wheat in the county of Cumberland alone. On the west bank of the Nepean, in the vicinity of Emu Plains and the Lower Colo

7

settled districts

# WHEAT ACREAGE

## 1844 & 1851



ONE DOT EQUALS 50 ACRES

Source: Returns of the Colony

River, the county of Cook contained a further 4,203 acres. To the southwest another 6,237 acres were under wheat in the county of Camden, while on the MacDonald River, a northern tributary of the Hawkesbury, a further 1,735 acres were sown to wheat. Altogether, in 1844, the Hawkesbury district accounted for over 26,000 acres of wheat cultivated for grain.

To the north, but separated from the Hawkesbury by the sterile sandstones of the Hawkesbury Plateau, lay the second of the major agricultural districts in the colony in the valley of the Lower Hunter River. On the north bank of the river, where the confluences with the Williams' and the Paterson and Allyn Rivers give rise to extensive deposits of alluvial regosols, the county of Durham had 11,175 acres of wheat in 1844. Still lower down the river were a further 1,410 acres of wheat, which later and more detailed returns would suggest were in the Raymond Terrace district.<sup>6</sup> On the south bank the county of Northumberland had 9,693 acres of wheat, most of which was probably located in the vicinity of Maitland, with lesser tongues of activity along the south bank tributaries of Wollombi Brook and Wallis' Creek. Higher up the valley, in the Page's River district about Scone and Murrurundi, a further 1,735 acres were under wheat. In all, therefore, the Hunter River

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6. The figures quoted in this section are from the Colonial Secretary's Returns of the Colony. The returns were collected in county units and where suggestions have been made concerning the precise location of wheat-growing within these units this has been done on the basis of distributions revealed in the Police District Returns published in the Statistical Register of New South Wales after 1857. Hereafter cited as Statistical Register. See Appendix Two.

district accounted for some 23,913 acres of wheat and, together with the Hawkesbury, for more than 66 per cent of all the wheat grown for grain in New South Wales.

Both these major agricultural districts, of course, lay well within the settled districts and close to the metropolitan market by land or, in the case of the Hunter, by sea. Also within the settled districts, and to the south of the Hawkesbury, lay the much less important Lower Shoalhaven district in the county of St. Vincent. The district had been settled principally by pastoralists in the early-1820's and agriculture had made little headway by 1844 when only 2,000 acres of land were under wheat.<sup>7</sup> Beyond the settled districts, however, and particularly to the north the extent of land under cultivation on the coast fell away even more sharply. There were probably three reasons for this. In the first place the northern districts become increasingly unfavourable for the cultivation of wheat as a result of their higher rainfall totals and a more pronounced summer maximum which induces rankness in the crop and encourages the conditions favourable for the generation and spread of fungoid diseases. Second, although the north coast had access to the Sydney market by sea, there are good grounds to suppose that transport facilities were poor as a result of the shortage of vessels.<sup>8</sup> Third, because these districts were beyond the settled districts, they were almost completely dominated by pastoralists and it is likely, though it

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7. See Perry, Frontier, 109-120.

8. See SMH, 5/12/54.

cannot be proved, that this was an inhibitory element to the progress of settlement there: certainly by the 1850's it was known that pastoralists were exercising the powers given to them under the Imperial Waste Lands Act of 1846 to prevent the alienation of land to farmers.<sup>9</sup>

The dominance of the Hawkesbury/Nepean and the Hunter River districts as the principal farming areas in the colony was reflected not only in the high percentage of the total wheat acreage contained within them, but also in the acreage devoted to other crops. The most important of these was maize, and together the two districts accounted for nearly 82 per cent of the 20,633 acres of maize planted in 1844. With regard to the lesser grain crops and to potatoes the situation was much the same. The relative importance of wheat as the leading crop, however, fell away north of the Hunter Valley, and in the north coast pastoral districts of the MacCleay and Clarence Rivers was replaced by maize.<sup>10</sup>

On the inland margins of the central coast districts the wheat frontier had struck the barrier of the Dividing Ranges. Here the broad upland belt of the Roxburgh and Georgiana Highlands offered few opportunities for settlement and, although occupying some 50 per cent of the total area of the settled districts, these highland counties together - Bligh, Brisbane, Wellington, Roxburgh, Phillip, Georgiana, Hunter, Westmoreland, King - accounted for a mere 6,000 acres of wheat in 1844. Only on the western flanks of the Ranges, in the relatively flat tableland districts,

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9. See above, 31.

10. See below, Chapter Three, Figure 18.

had agriculture made much progress, and in comparison with the coastal valleys even this was slight. The most important of these inland districts was in the county of Argyle on the Goulburn Plains. Here some 3,611 acres of land were under wheat and the product was praised for its quality on the rare appearance it made on the Sydney market.<sup>11</sup> To the west of Goulburn a second centre was growing slowly around the service town of Yass, on the alluviums of the Yass River: nearly 2,500 acres of land were under wheat in the district in 1844. The third of these inland wheat-growing centres was located on the Bathurst Plains, separated from Yass and Goulburn by the Silurian and Ordovician rocks of the Georgiana Highlands. Around the town of Bathurst in 1844 some 2,848 acres of land were under wheat for grain.

In isolated localities still further west, well beyond the settled districts, agriculture had also established a foothold, if only a meagre one. It is likely, indeed, that many pastoralists were even then growing wheat for their own consumption, and certainly it was reported in 1852 that "few stations of any magnitude are without their cultivation paddocks".<sup>12</sup> The precise locality of the 8,000 acres of wheatland beyond the settled districts in 1844 is, however, impossible to ascertain. The concentration of farming activity around the border town of Albury in the south, around Queanbeyan, and around the northern tableland settlements

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11. Anon., "An Essay on the Culture of Wheat", New South Wales Calendar and Post Office Directory, 59-60, (Sydney, 1835); Hereafter cited as "Essay on Wheat", CPOD.

12. SMH, 24/4/52.

of Tamworth and Armidale, assumed here, has been inferred from later and more detailed returns and from the qualitative evidence of written reports.

The fragmented and highly localised nature of the wheat frontier in New South Wales in 1844 is evident. Moreover, its relative stability, in terms of spatial expansion, can be clarified by examining the situation some six years later, in 1850, on the eve of the gold rushes. In 1850 the situation had not changed significantly in any respect: the total area under wheat was, in fact, lower by over 4,000 acres than in 1844, and the basic distribution pattern was the same. Rather than showing an expanding frontier in the west, indeed, the bulk of the total decline in acreage was made up by contraction in the regions beyond the settled districts of the order of some 3,000 acres, fairly evenly distributed. In the more important wheat-growing districts of the tablelands - Argyle, Murray, and Bathurst - the general situation had remained unchanged with only marginal expansion or contraction of an order which might be attributed to normal seasonal variation. The most significant apparent change was in the county of Cumberland where the acreage under wheat for grain fell from 13,928 in 1844, to 9,611 in 1850. Yet it is unlikely that this decline represented, in any way, a retreat of agriculture from the metropolitan county. On the contrary, the area under cultivation increased and the most important sector of this increase was the production of wheat, barley and oats for hay, rather than grain. If wheat for grain and cereal crops for hay are taken together then the area under these two categories



actually increased by over 4,000 acres. Elsewhere, the situation showed no signs of change.

It might be suggested with good reason, therefore, that by the middle of the nineteenth century the wheat-growing industry had achieved a degree of stability or even stagnation. Fundamentally, this was a reflection on the still primitive conditions of a pioneer society, whose legislation was crude and exploitative, whose social conscience was as yet unawakened, whose social capital was deficient, and which was still ruled, to a large extent, by the elemental facts of the natural environment. The problem for this early period, therefore, is to show the extent to which the "primary windfall" of the gold discoveries had any tangible effect upon the wheat industry; it is to show how far the gold rushes led to changes in the distribution of wheat-growing, and to demonstrate the degree to which these changes represented changes not merely of scale, but also of kind, in the spatial relationships of the wheat frontier.

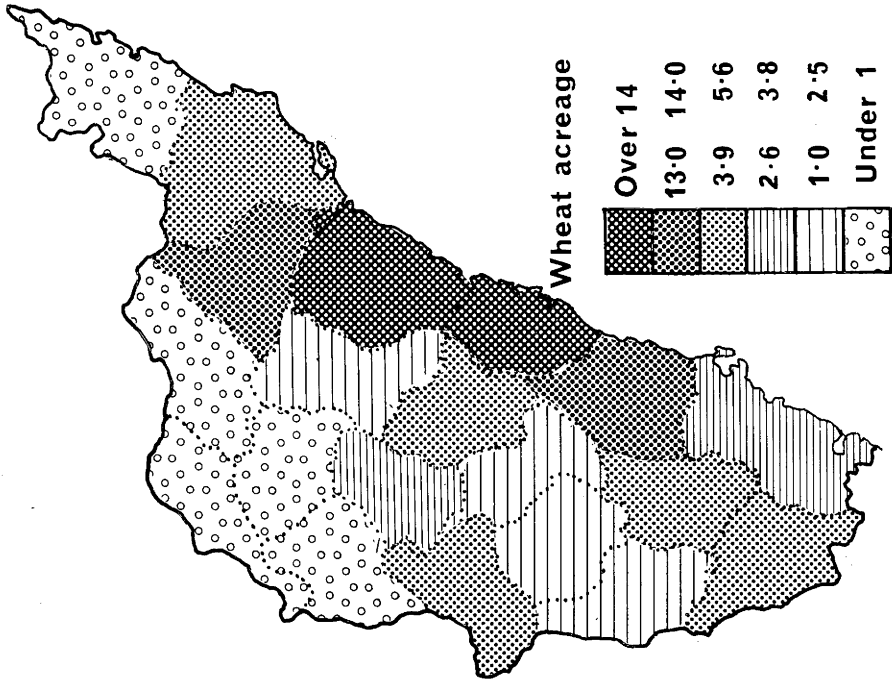
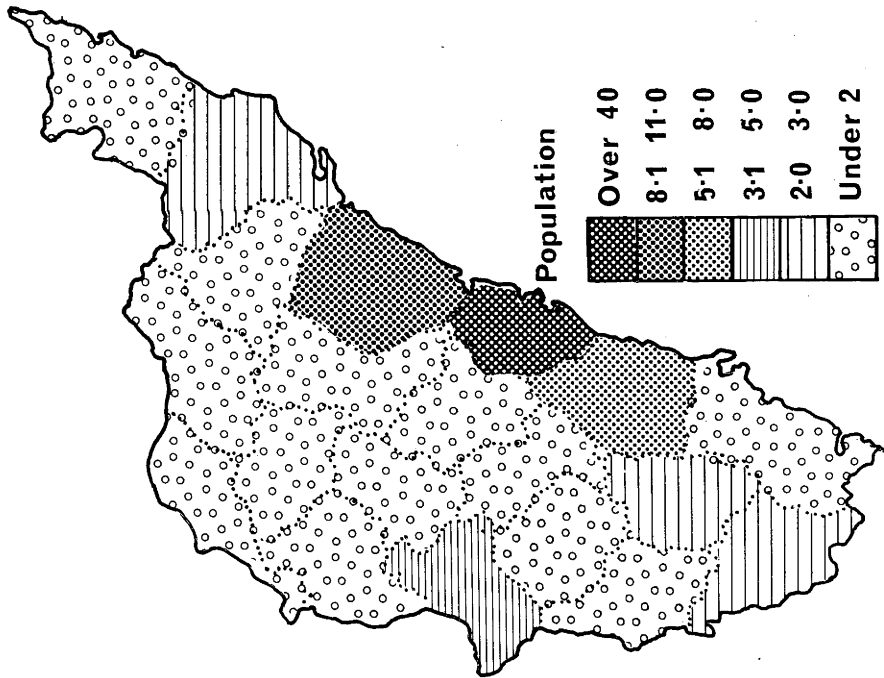
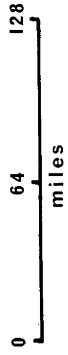
#### The Market for Wheat

It is clearly necessary, however, before examining the situation after the gold rushes, to look more closely at the nature of these spatial relationships on the eve of the gold discoveries, against which changes in the nature of the frontier must be measured. For although the facts of the physical environment, the problems of land-holding, and the problems of transport, were crucial in the New South Wales context, they were so only by reason of the location and scale of the markets to be served. It has already been suggested, in general terms, that there had emerged two

distinct markets for colonial grain. The first, and the largest, of these was the market of the Sydney metropolis, and relatively densely settled districts of Cumberland and the Lower Hunter Valley. The second was the widely dispersed market of the interior. The metropolitan market, it has been suggested, was served partly by grain carried overland from the adjacent districts of the Hawkesbury/Nepean Valley, partly by wheat and flour transported by sea chiefly from the Hunter Valley, and partly by breadstuffs imported mainly from other Australian colonies. The inland market, however, was very different: it was relatively small, greatly scattered over an extensive area, and served by the fragmented "nodes" of farming activity that constituted the "frontier".

At a very general level the essentially close ties between the intensity of farming activity and the intensity of population distribution is outlined in Figure 8. From this the overwhelming importance of the coast, in both cases, is evident. Moreover, the inland nodes of farming activity seem to correlate closely to the major centres of population in the region, with the districts of Goulburn, Yass, and Bathurst standing out from the less densely settled highland area. Yet the relationships depicted here are very coarse; they tend to mask the size of the Cumberland market in comparison with the remaining areas in the colony, and clearly they can give little indication of the relationships between production and consumption. In order to add weight to the dual market supposition, therefore, some attempt must be made to establish regions of surplus and regions of deficit, and to infer from these the probable direction of wheat trade.

SETTLED DISTRICTS  
 Percentage Distribution  
 of  
**POPULATION & WHEAT**  
 1851



Source: Statistical Register & Census

Measurement of the demand emanating from the different districts, however, is extremely difficult. Because of the possibility of holding wheat for extended periods the apparent consumption for any given year might differ markedly from the actual consumption. Moreover, there is no reason to suppose that the volume per capita of wheat consumption in the different districts, and particularly between such widely varying regions as metropolitan Cumberland and the pastoral districts, would necessarily follow a regular and common habit. It is possible, therefore, to offer only an approximate measure of wheat surplus and wheat deficiency, and of the direction of wheat trade. Figure 9 is therefore based upon the average per capita consumption of 7.6 bushels over the period 1840 to 1850.

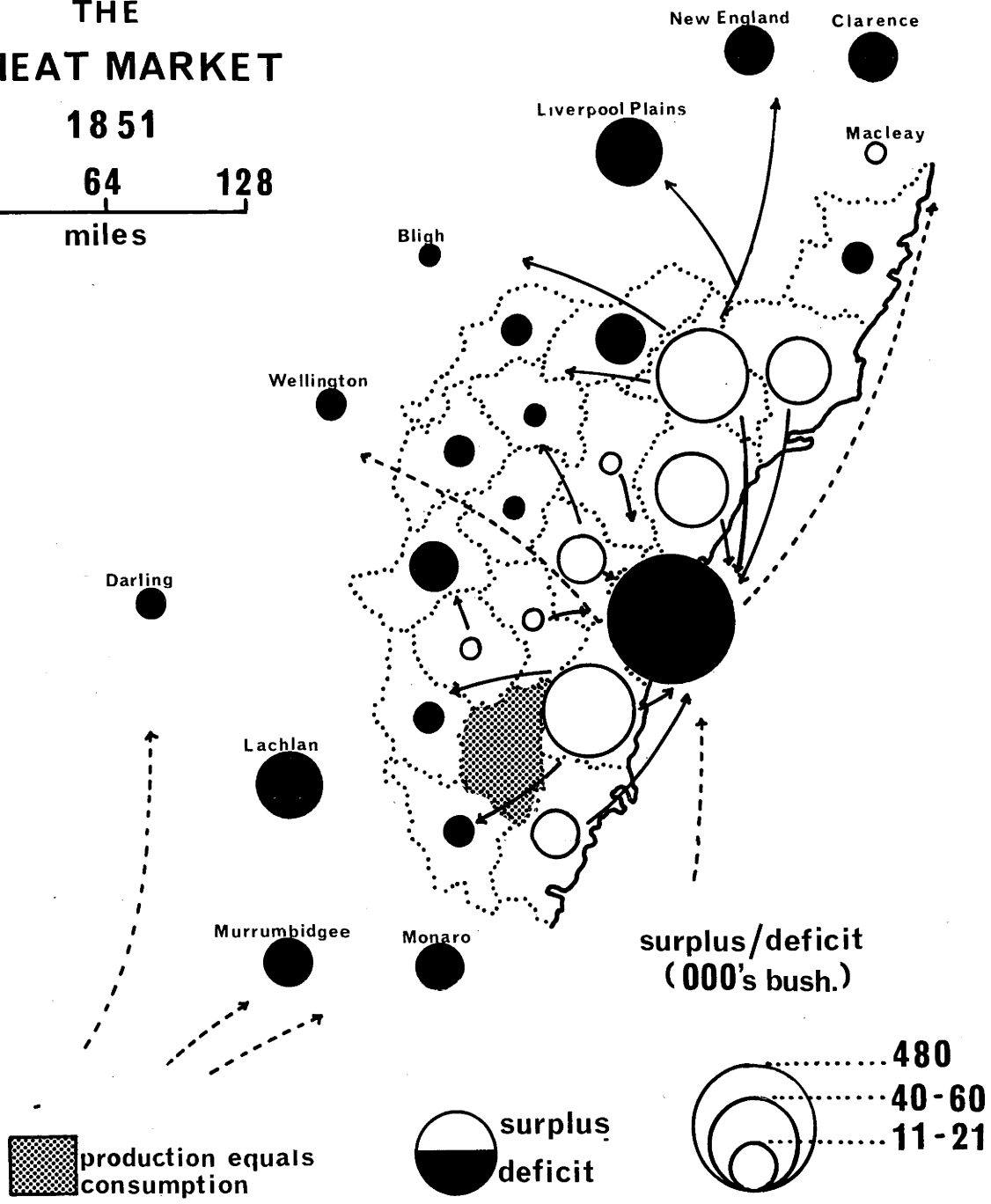
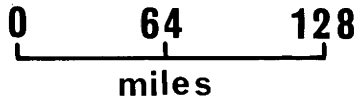
From this it is clear that, at the time of the gold rushes, both the coastal industry and the industry in the interior were unable to satisfy the demands of their respective markets. Moreover, it is quite evident that the likelihood of the interior sending any appreciable quantities of wheat to Sydney was remote in the extreme, as was the likelihood of any really extensive wheat trade in the interior itself. On the contrary, the most probable direction of trade between the coast and the inland would be from the coast rather than to the metropolis, since the coast at least enjoyed the advantage of overseas trade. Yet the inland movement of wheat, before 1850, was probably only intermittent and of little significance, occurring in response to local crop failure in the interior or as a back-loading item in the wool trade with Sydney.<sup>13</sup> The

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<sup>13</sup>. See SMH, 23/1/56. For a fuller account of this back-loading practice see SMH, 1/11/71.

# THE WHEAT MARKET

1851



Arrows indicate inferred direction of wheat movement.

----- Import & redistribution

Sources: Census; Statistical Register; SMH.

deficiencies of the interior, furthermore, were not great. To some extent they may also have been made up by occasional overland importations from Victoria, although it is important to note that the South Australian river trade, along the Murray/Darling, had not yet been developed.<sup>14</sup> It is likely, in fact, that the interior may be best regarded, not as an area of deficiency receiving regular importations of wheat, so much as a region of variable consumption: such indications as are available point to the exceedingly high price of wheat, particularly in the pastoral districts, and the unlikelihood, under such prices, of a uniformly high rate of breadstuffs consumption.<sup>15</sup> The deficiencies on the coast, on the other hand, were of a generally more serious order, for they arose solely from the demands of the Sydney market. But while this deficit was of a more concentrated and substantial nature, it was also more easily satisfied by seaward importations from the coastal districts and from other Australian colonies or overseas suppliers.<sup>16</sup>

The volume of wheat movement within New South Wales was therefore very variable from region to region. Statistics do not permit a more sophisticated measurement of overland wheat trade but it is likely,

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14. For an account of the first successful navigation see SMH, 3/10/53. Three years later the paper could write that, "Adelaide flour is now travelling up the Murray in some quantity." See SMH, 20/6/56.

15. See article in SMH, 3/12/65 on conditions in Albury.

16. For overseas imports and imports from other colonies see Table 2, above.

bearing in mind problems of distance and cost, that this was slight in the interior. Only in the coastal districts of the Hawkesbury/Nepean Valley does it seem possible that extensive carriage of wheat was a regular occurrence. In 1850, for example, the Hawkesbury district, excluding the major deficit area of Cumberland, had an apparent surplus of the order of almost 84,000 bushels. The bulk of this surplus was almost certainly marketed in Sydney. For the year 1851, however, it is possible to gauge with a high degree of accuracy the internal coastal shipment of breadstuffs into Sydney (Figure 10).<sup>17</sup>

The importance of the coastal wheat trade is indicated by the shipment, in 1851, of over 15 per cent of the total wheat harvest of the colony into the Sydney market as grain. In addition some 7,311 bags of flour, representing an equivalent of a further 32,493 bushels of wheat was also imported by coaster, bringing the total wheat equivalent to over 17 per cent of total production. A complete breakdown of the statistics of intra-colonial shipments of breadstuffs over this twelve-month period indicates the relative importance of the different shipping centres and their agricultural hinterlands (Table 3).

The shipment of both grain and flour was clearly dominated by Newcastle and Morpeth, that is, by the Hunter Valley. These two ports combined accounted for 65.9 per cent of all grain movements by sea within the colony, and for over 97.0 per cent of all flour shipments. The closest competitor was the Illawarra/Shoalhaven district with some 16.4 per cent

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<sup>17</sup>. This information has been compiled from the daily returns in the "Coasters Inwards" column of the Herald.

**COASTAL MOVEMENT  
of  
BREADSTUFFS  
into  
SYDNEY  
1851**

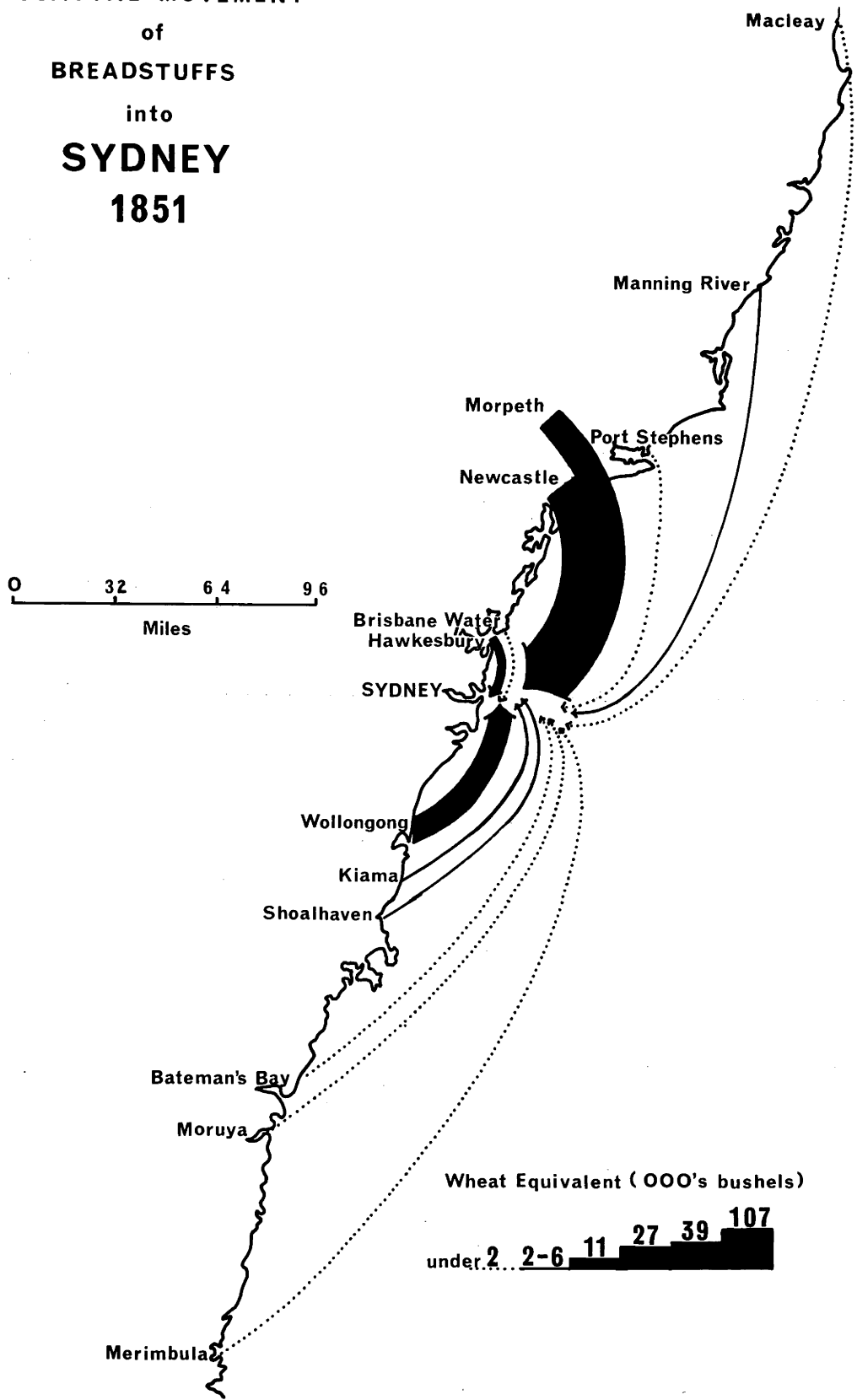




TABLE 3Coastal Breadstuffs Movement into Sydney, 1851

<u>Origin</u>	<u>Wheat</u> (bushels)	<u>Flour</u> (bags)	<u>Wheat:%</u> <u>of total</u>	<u>Flour:%</u> <u>of total</u>	<u>No.of</u> <u>Ships</u>
MORPETH	37,934	4,044	18.4	55.0	3
HAWKESBURY	11,462	1	5.5	-	14
WOLLONGONG	27,536	90	13.4	1.0	4
BATEMAN'S BAY	932	-	0.4	-	3
NEWCASTLE	97,695	3,083	47.5	42.0	22
KIAMA	5,900	-	2.8	-	4
SHOALHAVEN	6,187	3	3.0	-	16
MORUYA	1,659	-	0.8	-	7
MERIMBULA	482	-	0.2	-	1
M'LEAY	1,370	-	0.6	-	2
SHELLHARBOUR	6,500	-	3.2	-	5
MANNING RIVER	2,082	-	1.0	-	4
BROULEE	3,903	-	1.9	-	11
BRISBANE WATER	525	-	0.2	-	1
PORT STEPHENS	405	-	0.2	-	1

Shipments of less than 0.1 per cent of the total have not been included.

Source: Sydney Morning Herald, 1851 - "Coasters Inwards" column.

Note: The conversion formula of 3 bushels = 1 bag used to derive the total wheat shipment in bushels is probably an underestimate since both 3 bushel and 4 bushel bags were in use at this time. The conservative calculation has been preferred. Shipments of unspecified "Grain" have been assumed to be half wheat and half maize following the practice of the Maitland Mercury (see SMH, 7/12/54). Again, the tendency is probably to underestimate rather than overestimate the wheat content of these shipments. "Casks" of wheat were extremely rare, and have been ignored. In total, therefore, the figures given here are almost certainly conservative.

of total grain shipments, and only 1.0 per cent of flour movements. The disparity between the number of vessels carrying wheat from the different ports was most marked, particularly in the case of Broulee - eleven vessels and only 1.9 per cent of the total wheat movements - and Morpeth - three vessels carrying 18.4 per cent of the total wheat shipment and 55.0 per cent of the total flour shipment. This was indicative of two features: first, the carriage of breadstuffs was a random rather than a specialised function (any vessel would suffice); second, the less important centres received only occasional visits from numerous vessels, and did not provide sufficient regular trade to maintain the constant service of any individual coaster.<sup>18</sup> In the case of Newcastle and the Hawkesbury, of course, it is likely that the high number of vessels involved in the coastal wheat trade simply reflected the greater availability of shipping in these relatively important commercial areas.

The nature of wheat farming in 1850, on the eve of the gold discoveries, therefore becomes more clear. In the interior, beyond the Dividing Ranges, the "frontier" was made up of a highly fragmented, highly localised, industry which was oriented to the demands of local markets and the surrounding pastoral country, and contributing nothing of substance to the major wheat market on the coast. In turn, this coastal market was served by the well-established agricultural districts of the Hunter and the Hawkesbury/Nepean Valleys, and by importations of wheat from outside the colonial boundaries. Wheat trade between the coast and the inland

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<sup>18</sup>. See, for example, SMH, 9/1/52; 27/11/52; 26/3/52.

was, at best, intermittent and insignificant. In examining the effects of the gold rushes, therefore, three elements must be considered: first, the extent to which the wheat frontier showed signs of spatial movement and the opening up of new lands consequent upon the gold discoveries; second, the extent to which the existing agricultural districts, on the coast and in the inland, were affected by the rush to the goldfields; third, the extent to which the changes that occurred reflected changes not merely of scale, but also in the nature of the wheat frontier and the spatial relationships of the industry.

#### THE EFFECTS OF THE GOLD RUSHES

The influence of the gold rushes on the largely static wheat industry in New South Wales varied from region to region within the colony. The common assumption of widespread disruption in the industry must clearly be based to a considerable extent upon conditions on the coast, since these districts were overwhelmingly the most important. On the other hand, the inferred expansion of the late-1850's suggests a growth of the industry in the interior. Yet to what extent are these generalisations true, and how far do they imply changes of significance for the wheat frontier? In order to answer these questions it is necessary to examine, first of all, the situation on the extreme fringes of the frontier, in the pastoral districts.

##### The Pastoral Districts

With few exceptions, the major gold discoveries in New South Wales

in the 1850's occurred within the settled districts. They occurred on the tablelands and in the adjacent highland areas, relatively far from the principal grain-growing regions on the coast, but close to established local centres of production, particularly around Bathurst. Beyond the settled districts significant gold strikes were few over this period, yet where they occurred their influence is clearly discernible on the far-flung and fragmented wheat frontier.

In 1850 the pastoral districts contained a mere 5,146 acres of land under wheat, of which 4,183 were in the districts of New England, Murrumbidgee, and Monaro. Moreover, later returns would suggest that within these districts production was localised around the towns of Armidale and Tamworth in New England, Albury and Tumut in the Murrumbidgee, and the coastal townships of Broulee and Eden, in the Monaro. Throughout the gold decade the fortunes of these three districts varied considerably and this variation, it would seem, can be attributed to the effects of the gold discoveries. In New England the 1,640 acres of land under wheat at the beginning of the decade remained little changed until the second-half of the 1850's following the discovery of gold at the Rocky River, near Armidale. By 1858 the acreage of land under wheat in the Armidale district had increased to 2,390 and farming land in the vicinity of the town was said to be very scarce. Yet Duncan has clearly shown that this increase was closely tied to the market offered by the transient mining population, and that with the run-down of the goldfield at the turn of the decade wheat prices slumped and the industry in the Armidale district

contracted somewhat to a level little different from that of a decade before.<sup>19</sup>

In the Murrumbidgee district, however, changes were more substantial and more durable. Altogether the acreage of wheat in the district increased from 1,500 in 1850 to 3,480 in 1856, and to almost 9,000 in 1861.<sup>20</sup> By 1861, indeed, the Murrumbidgee accounted for almost half of all the wheat grown beyond the settled districts. The more detailed returns of 1861 also indicate that the areas of increase within the district had been highly localised. The bulk of the expansion had occurred around Albury where 4,556 acres of land were sown to wheat, and around Tumut in the northeast where wheat occupied almost 2,700 acres. In both these areas proximate goldfields were probably responsible for the expansion of the industry and the growth of local markets.<sup>21</sup> Certainly within the pastoral district as a whole population increased rapidly over the decade from 4,671 in 1851 to nearly 11,000 ten years later, and the detailed returns for 1861 show nearly 7,000 resident around Tumut and Albury.<sup>22</sup>

In the case of developments around Albury, however, the stimulus here came not from goldfields in New South Wales or merely from an essentially

<sup>19</sup>. This account of developments on the northern tableland is drawn from Duncan, R., Armidale: Economic and Social Development 1839-1871, (University College of New England, Regional Monograph, No,6, 1951).

<sup>20</sup>. The figures for 1850 and 1856 are taken from the Colonial Secretary's Returns of the Colony. The figure for 1861 is from the Statistical Register.

<sup>21</sup>. With regard to developments around Tumut see report of an election meeting, speech of Mr. John Hay, SMH, 16/1/56.

<sup>22</sup>. New South Wales Census, 1851 and 1861.

local increase in population, but from the nearby Ovens diggings in Victoria. Small quantities of wheat had been grown in the district since the early-1840's, and looking back to his first crossing of the Murray in 1843 Samuel Davenport recalled, "We waded through the river, and the thing that impressed itself on my memory was Mr. Brown's crop of wheat."<sup>23</sup> Production was small, however, and was entirely consumed locally, and although wheat-growing was listed as one of the district's industries by the local Bench of Magistrates, Albury was forced to fall back, from time to time, upon imported supplies. Yet by the middle of the 1850's, under the stimulus of the Ovens diggings, the picture had started to change:

A bountiful harvest has rewarded the farmer's toil, and our steam mill works long hours to keep pace with the quantity of grain which clamorous customers press upon it. Wheat may now be quoted at 16/- per bushel .. Two years since wheat was 60/- per bushel .. and then not enough .. to satisfy the wants of the district; but we were compelled to fall back upon Goulburn, Yass, and Melbourne to supply us.

This present year of our Lord, we find from excellent statistical data, there was enough wheat grown in the district to produce flour to the extent of 450 tons, over and above the actual consumption required, so that we became exporters and, fortunately, a market within a few miles of us that can take all, namely, the Ovens' Diggings. Thus in two short years we work the foreigner out of our market, and make him bid adieu to the hope of supplying this market in future years with flour.<sup>24</sup>

Moreover, this initial break with the restrictions of a purely local market was to be sustained and extended for the border districts by the

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<sup>23</sup>. Samuel Davenport to Dr. A. Andrews, 1911, Papers of Dr. A. Andrews Pertaining to Albury, (Mitchell Library, Mss AL707).

<sup>24</sup>. SMH, 12/3/65.

early completion of lines of railway from the Victorian capital to the Murray River.<sup>25</sup> By 1861, of all the pastoral districts, only the Murrumbidgee - centred around Albury - could show a clear and regular wheat surplus above and beyond the requirements of a local market (Figure 11).

Elsewhere beyond the settled districts events were less drastic. On the Monaro the acreage doubled between 1851 and 1861, chiefly as a result of the continued expansion of wheat production in the coastal districts around the town of Eden. The expansion of acreage in the extensive Lachlan district is more difficult to pin down, though it would seem likely that the discovery of gold on the Burrangong Creek near Young was largely responsible for the growth of the local market there. By 1861, of a total of 13,450 persons in the Lachlan district, 11,526 were living in the northeast in the vicinity of the goldfield.<sup>26</sup>

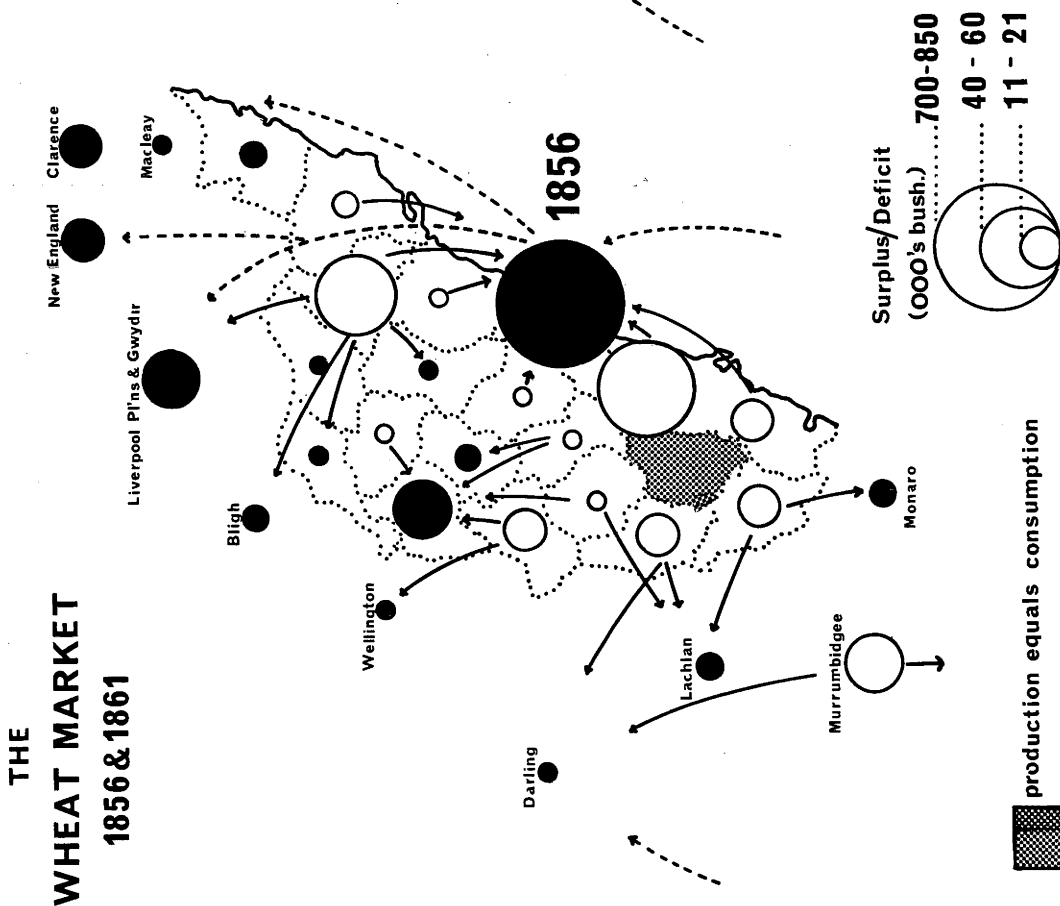
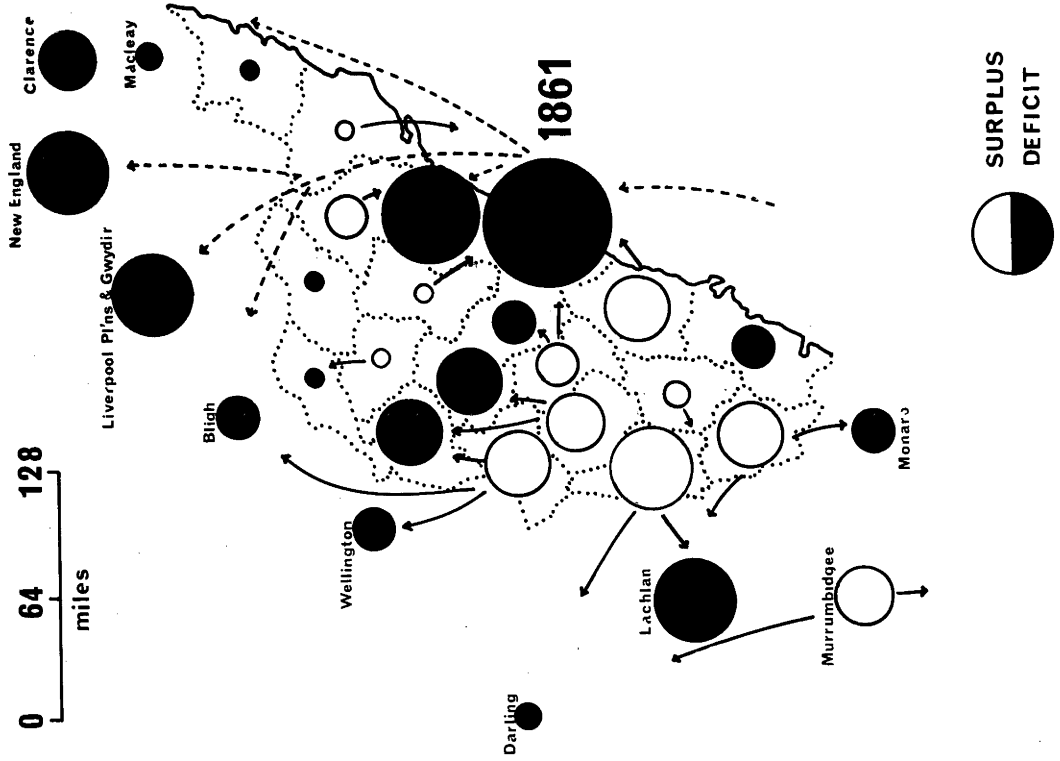
Yet, despite this overall growth in wheat production in the pastoral districts, there is little to suggest that any of these increases occurred in essentially "new" areas, or indeed that they represented anything more than local adjustments to local, and sometimes transient, situations. The limited, inward-looking nature of wheat farming remained unchanged, with the single exception of the Albury district where the incipient export trade was shortly to be fostered by the development of rail and river communication with Victoria. On the whole, however, the region remained

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25. See below, Chapter Five.

26. New South Wales Census, 1861.

# THE WHEAT MARKET 1856 & 1861



Arrows indicate inferred direction of wheat movement  
 - - - - Import & redistribution

Sources: Census; Statistical Register; SMH.



too remote to seriously influence, or to be influenced by, the markets of the east coast (Figure 11). The changes which are evident over the gold decade are changes in quantity, but not in kind.

### The Settled Districts

Of more apparent significance were events in the settled districts. For it was here, particularly on the coast, that the bulk of the colony's wheat was produced. Again, however, the major developments of the decade, though directly or indirectly attributable to the gold discoveries, were not of a scale sufficient to disturb the basic distribution pattern of the industry, or to suggest any major changes in the market orientation of wheat-growing. The outstanding characteristics of the wheat industry over this period appear to have been twofold: first, the steady decline in the ability of coastal producers to satisfy the growing markets of metropolitan Sydney and Newcastle; second, the emergence of the central tableland district around Bathurst, and the district of Yass and Queanbeyan, as suppliers of grain for adjacent deficit areas (Figure 11). At the same time, however, and for reasons already stated which had in no way changed, the likelihood of wheat trade from the inland to the coastal deficit areas remained remote.

Moreover, even those changes which are discernible, and which again will be shown to have reflected purely local conditions, run contrary to the generally accepted view of developments over this period. For, if it is accepted that "contraction" and "expansion" in an industry are largely meaningless unless seen in the context of market demand, then it is evident from Figure 11 that, for the colony as a whole, the period was one

of continued contraction. Far from showing an initial decline and subsequent recovery the industry produced progressively less wheat per head of population with the passing of the decade.

Quantitatively the events of the gold decade were dominated by conditions in the coastal areas, by the rapidly growing urban markets of Sydney and Newcastle, and by the failure on the part of coastal producers to maintain a comparable rate of growth in wheat output. Table 4 indicates more precisely the great extent to which the wheat deficit in this region influenced the pattern for the colony as a whole. With regard to the inland areas the pattern in detail was somewhat different, but again it was unlike that generally accepted. For, far from contracting over the early 'fifties it would seem that the industry tended to expand both relatively and absolutely, so that by 1856 the apparent gap between saleable surplus and deficit was considerably reduced. Over the latter half of the decade, when the industry was supposedly expanding as a result of the settlement of former gold-miners, the gap once again began to widen (Table 4).

In general, therefore, it would appear from the market calculations offered here that the decade from 1851 to 1861 saw a deepening of the problems of breadstuffs supply for the urban markets of the east coast, and an increased reliance upon overseas importations.<sup>27</sup> With regard to the inland districts, the period was characterised by the clear emergence of areas producing a regular saleable surplus of wheat for consumption in

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<sup>27</sup>. See below, Table 6.

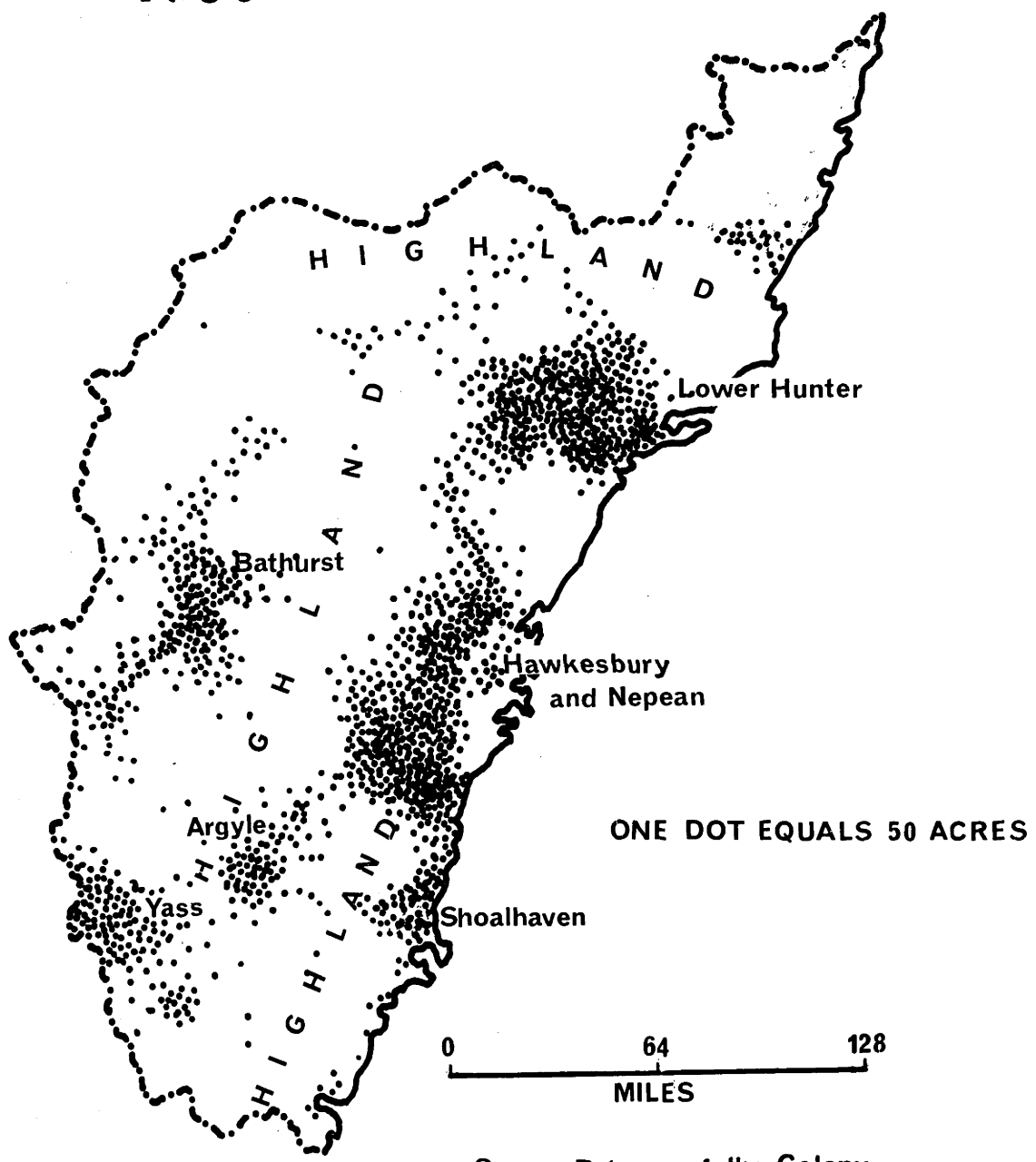
TABLE 4The Wheat Market: 1851, 1856 and 1861.

		<u>1851</u>	<u>1856</u>	<u>1861</u>
SETTLED DISTRICTS	Surplus	+247,908	+206,342	+196,245
(i) The Coast	Deficit	-486,684	-720,524	-869,778
	<u>BALANCE</u>	<u>-238,776</u>	<u>-514,182</u>	<u>-673,533</u>
SETTLED DISTRICTS	Surplus	+ 3,688	+ 71,699	+228,756
(ii) The Inland	Deficit	- 81,727	- 51,906	-104,160
	<u>BALANCE</u>	<u>- 78,039</u>	<u>+ 19,793</u>	<u>+124,596</u>
SETTLED DISTRICTS	Surplus	+251,596	+278,041	+425,001
<u>Total</u>	Deficit	-568,411	-772,330	-973,938
	<u>BALANCE</u>	<u>-316,815</u>	<u>-494,289</u>	<u>-548,937</u>
PASTORAL DISTRICTS	Surplus	+ 1,076	+ 25,858	+ 36,416
	Deficit	- 89,672	-101,542	-273,229
	<u>BALANCE</u>	<u>- 88,596</u>	<u>- 75,684</u>	<u>-236,813</u>
NEW SOUTH WALES	Surplus	+ 4,764	+ 97,557	+265,172
Total excluding coast	Deficit	-171,399	-153,448	-377,389
under (i) above.	<u>BALANCE</u>	<u>-166,635</u>	<u>- 55,891</u>	<u>-112,217</u>
NEW SOUTH WALES	Surplus	+252,672	+303,899	+461,417
<u>Total</u>	Deficit	-658,083	-873,972	-1,247,167
	<u>BALANCE</u>	<u>-405,411</u>	<u>-570,073</u>	<u>-785,750</u>

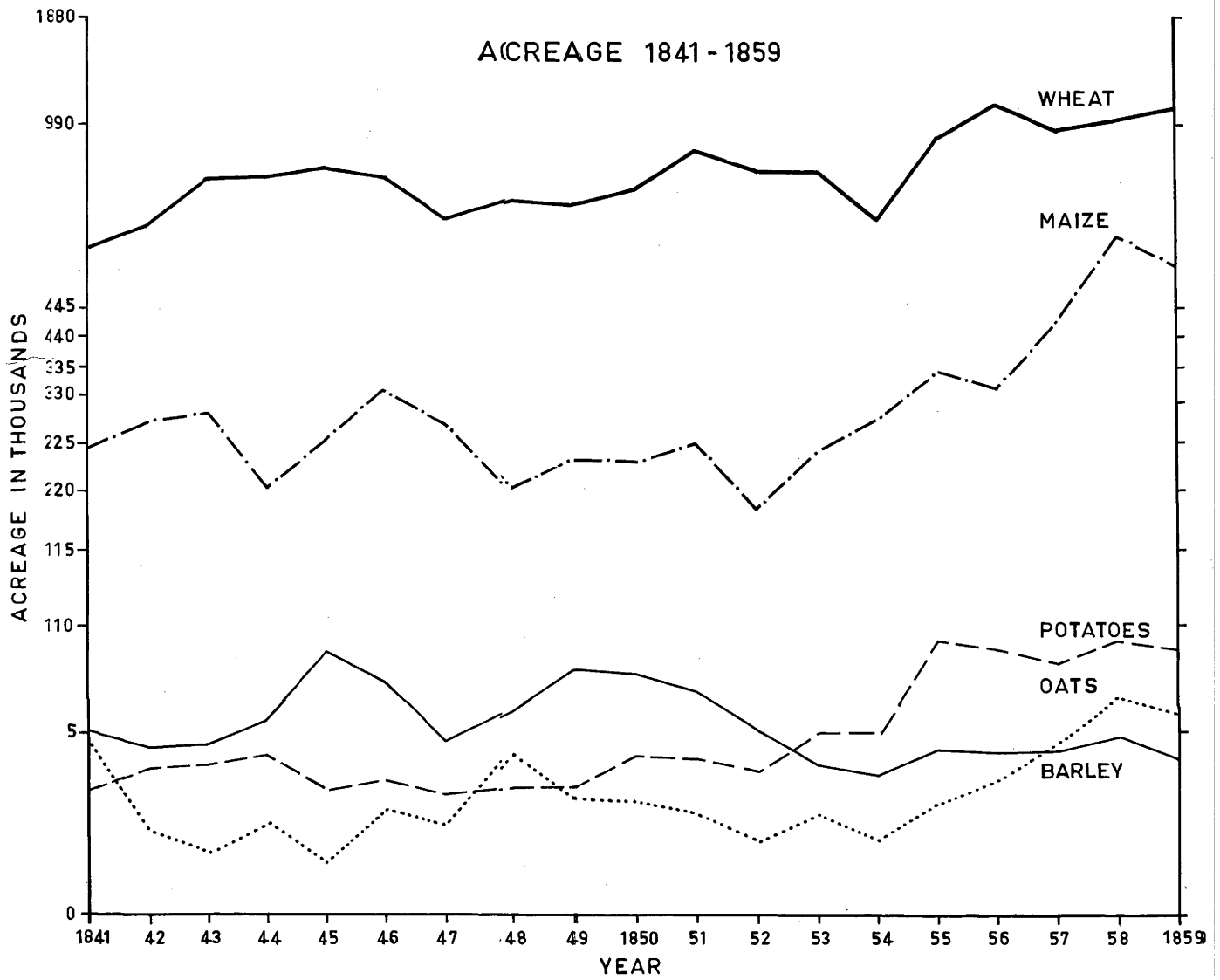
Sources:

Figures on wheat production used in these calculations are from Colonial Secretary's Returns of the Colony, 1851 and 1856, and from Statistical Register of New South Wales, 1861. Population returns were taken from the appropriate Census of New South Wales.

settled districts  
**WHEAT ACREAGE**  
**1856**



Source: Returns of the Colony



clear that the years of inferred decline - the early 1850's - were not years of severe disruption in any sense, and were not years of decline at all. The first effect of the rush to the diggings, indeed, was to stimulate an increase in acreage from 70,720 in 1850 to over 82,000 acres in 1851. Timing was important here: the immediate reaction to the speculative conditions created by the gold discoveries was permitted by the fact that gold was discovered in May, leaving a period of some three months before the close of the liberal wheat-sowing period. It will be shown, however, that the widespread speculation in breadstuffs in 1851 was largely without basis. The rush of immigrants that had occurred in California and was firmly expected to occur in New South Wales, and upon which predictions of wheat scarcity were founded, never happened. The years 1852 and 1853, therefore, saw a contraction in acreage from the over-optimistic level of 1851. Yet even in these years acreage was higher than at any time since 1845. This was not then a decline, but merely a return to more normal market conditions.

Acreage fell considerably in 1854. It would seem, as Dunsdorfs has suggested, that this was largely the result of labour scarcity and rising costs of production. Only in this one year, however, were these factors sufficiently influential to cause a substantial contraction in acreage. In addition to the fall in acreage in 1854, imports also slumped and the colony made a net export of 62,000 bushels.<sup>28</sup> The extent of the contraction in acreage, plus low yields and the fall in imports, stimulated expansion of acreage in the following year. The high prices offering for

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28. See below, Table 7.

breadstuffs in 1855 were said to have induced a growing demand for farming land.<sup>29</sup>

It might be expected, further, that if a decline occurred in the colony's major agricultural industry, this would be paralleled by decline in the subsidiary, and by implication less profitable, industries. Again, however, no decline can be correlated with the discovery of gold.

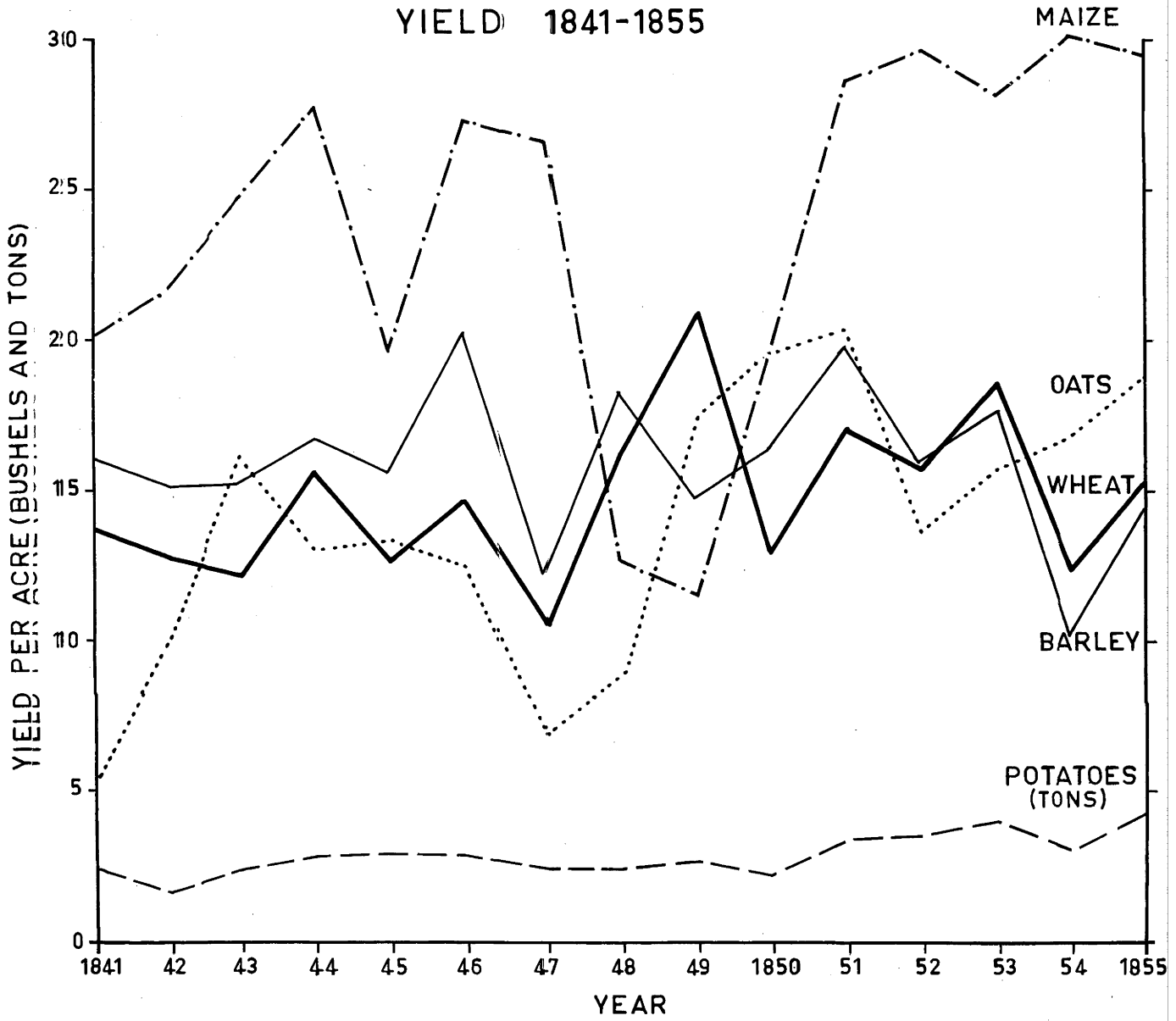
Next to wheat, the most important grain crop in New South Wales was maize. It is clear from Figure 13 that the acreage under maize also rose in 1851. A sharp reduction in acreage followed, again possibly as a result of over-supply on the market, but this was succeeded by rapid and continuous expansion after 1853. The acreage under barley did decline absolutely throughout the period. It is possible to suggest, however, that this was no more than a continuation of the trend started in 1849. Oats, the most insignificant of the grain crops, fits the conventional pattern described by Dunsdorfs quite well. Yet here, too, decline appears to have set in before the discovery of gold. Tentatively it might be suggested that the minor grain crops - barley and oats - were more seriously affected by the market conditions operating over the early gold-rush years as farmers tended to concentrate their energies on the production of wheat, combined with occasional carrying and gold mining.

In addition to the grain crops it is interesting to examine the situation of the major vegetable crop in the colony over this period. Potatoes were grown as a garden cash crop largely by tenant farmers also

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29. "Report ... on the State of Agriculture", NSWLC, VP, II, 313 et seq. See evidence of Edwin Hickey.

# YIELD 1841-1855





engaged in the cultivation of grain.<sup>30</sup> It is evident from Figure 13 that the acreage under potatoes increased considerably during the years of supposed disruption, between 1851 and 1854.

The fluctuations that are evident in the acreage of land sown to wheat over the early gold-rush years would, therefore, seem too insignificant and of too short a duration to suppose them to have been entirely caused by labour difficulties within the industry. Similarly, to account for the apparent recovery after 1854 solely in terms of settlement by ex-miners would seem equally as unreal. It will be shown that the large area sown to wheat in 1851, and against which decline in the succeeding years has been measured, was itself nothing more than a reflection of the new market opportunities that appeared to be offered by the discovery of gold. That these opportunities did not exist in fact, and did not materialise over the following years as a result of competition from imported bread-stuffs, caused no more than an adjustment to the real situation.

With regard to production within the industry and its ability to satisfy the demands of the home market, this has already been dealt with at a general level. Two further points need to be made. First, since the origin of much of the inferred disruption in the industry is taken to be a shortage of labour, it might be expected that this would be evident in yield variation since labour, at this time, was of particular importance in harvesting. It is clear from Figure 14, however, that yields for the period of inferred disruption were on the whole higher than the general average.

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30. "Report ... on the State of Agriculture", NSWLC, VP, 1855, II, 313 et seq. Evidence of Edwin Hickey.

The second point which must be made is that, contrary to experiences in Australia as a whole, the gold-rushes in New South Wales did not greatly influence the rate of free immigration, despite initial convictions that this would occur.<sup>31</sup> The bulk of population increase over the period, therefore, was still provided by assisted immigration, and it would clearly be difficult to show that such an increase was due to the attractions of the gold discoveries (Table 5). It is unlikely, even so, that the diggings siphoned off many of those entering the colony, since there were probably never more than 7,000 or 8,000 persons on the gold-fields at any one time in the early 1850's.<sup>32</sup>

TABLE 5

Immigration Into New South Wales: 1848 - 1857

<u>Year</u>	<u>Assisted</u>	<u>Free</u>	<u>Year</u>	<u>Assisted</u>	<u>Free</u>
1848	4,376	651	1853	10,412	3,355
1849	8,309	1,492	1854	7,309	2,673
1850	4,078	559	1855	14,567	3,116
1851	1,846	756	1856	7,210	9,791
1852	4,981	3,781	1857	10,205	5,373

Source: Statistical Registers

As Morrell has said, the New South Wales rushes were made up overwhelmingly of Australians.<sup>33</sup>

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31. See, for example, SMH, 20/5/51. See also the protracted discussions on the subject of immigration in Official History, 189-190 and 204-206. See also correspondence in SMH, 3/1/56; 18/4/56.

32. See estimates in SMH, 1/3/56.

33. Morrell, W.F., The Gold-Rushes, 413, (London, 1940).

It is also clear from Table 5 that the number of immigrants coming into New South Wales during the first four years of this period was not great compared to immigration totals from 1855 onwards. Table 6 therefore lends confirmation to the tentative market calculations offered earlier by showing that, in terms of per capita production, the years of supposed disruption in the industry were better able to satisfy the demands of the home market than the years of inferred recovery.

TABLE 6

Consumption of Breadstuffs: 1851 - 1860

Year	Population	Home Produce (bushels)	Net Imports (-) or Exports (+) (bushels)	Apparent Total Consumption	Home Produce % Total Consumption	Home Produce per Capita (bushels)
1851	197,168	1,404,000	276,000(-)	1,680,000	83.6%	7.1
1852	208,254	1,192,000	55,000(-)	1,247,000	95.6%	5.7
1853	231,088	1,386,000	627,000(+)	2,013,000	68.8%	6.0
1854	251,315	788,000	62,000(-)	726,000	100.0%	3.1
1855	277,579	1,338,000	1155,000(-)	2,493,000	53.7%	4.8
1856	286,873	1,761,000	1115,000(-)	2,876,000	61.2%	6.1
1857	305,487	1,293,000	781,000(-)	2,074,000	62.3%	4.2
1858	342,062	1,563,000	593,000(-)	2,156,000	72.5%	4.5
1859	336,572	1,600,000	342,000(-)	1,942,000	82.3%	4.7
1860	348,546	1,586,000	1052,000(-)	2,638,000	60.1%	4.5

Source: Statistical Registers. Population estimates are from Official History.

This pattern, as might be expected, is supported tenuously by the relationship between home production and imports as percentages of total apparent consumption. There can be little doubt that the increase in absolute numbers of immigrants was largely responsible for the decline

in the ability of the industry to satisfy demand after 1854. It would seem unlikely, however, that the marked increase in free immigration reflected the attractions of the goldfields some five to eight years after their initial discovery, particularly since the yield of gold in New South Wales fell sharply after 1852 and did not begin to recover until after 1857 (Table 7).

TABLE 7

Yield of Gold in New South Wales

<u>Year</u>	<u>Yield (£ Sterling)</u>	<u>Year</u>	<u>Yield (£ Sterling)</u>
1852	£2,660,946	1857	£ 674,477
1853	£1,781,172	1858	£1,104,175
1854	£ 773,209	1859	£1,259,127
1855	£ 654,594	1860	£1,465,373

Source: Coghlan, Sir T., Labour and Industry in Australia from the First Settlement in 1799 to the Establishment of the Commonwealth in 1901, I, 587, (London, 1918). Hereafter cited as Coghlan, Labour and Industry.

(ii) Prices and Profits

The news of the gold discoveries at Ophir led, almost overnight, to a sharp rise in the price of most commodities, but particularly of breadstuffs. The immediacy of this reaction indicates that the rise was very largely speculative in origin, at least in those areas away from the discoveries themselves. It was rooted in the confident expectation of a rapid, and indeed overwhelming, rush of immigrants to the goldfields after

the manner of the Californian experiences at the turn of the decade. This, together with the anticipated abandonment of farming land in the colony was reason enough for the rise in price of wheat and flour. In addition, however, the harvest of the preceding crop had been a poor one; yields had been low and many inland areas were having difficulty in securing sufficient wheat for local consumption. The most important contributory factor in the partial crop failure had been drought. At Albury the lack of rain had had "a ruinous effect upon the small cultivators", and by March 1851, before the rush to the goldfields, the price of wheat had reached 10/- per bushel compared to 6/- in Sydney; flour in Albury was £50 per ton, in Sydney it was only half that.<sup>34</sup> Crop failure on the tablelands, as well as having local repercussions, had created difficulties in the scattered market of the pastoral districts further west. Reports of wheat shortages in Goulburn, for instance, caused an immediate rise in the price of flour by some 25 per cent as far away as Wagga Wagga.<sup>35</sup> At least one correspondent proclaimed bitterly against the cultivation regulations on leasehold property, and the fact that prosecutions under these regulations had effectively caused the withdrawal of one source of grain.<sup>36</sup>

Nor did the coastal districts go unscathed. From Windsor, on the Hawkesbury, came the report that, "As we anticipated the wheat has turned out in most places an entire failure ...".<sup>37</sup> The Herald correspondent

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34. SMH, 1/3/51.

35. SMH, 19/3/51.

36. SMH, 3/5/51.

37. SMH, 12/1/51.

from the Wollombi was, as usual, more specific. The usual seed-time, he noted, had been exceptionally dry and in consequence the land had not been ploughed until "from six weeks to two months had elapsed beyond what experience has shown to be the best time for general sowing to secure a good crop". Since the normal growing period for wheat was about seven months, and since "during the last year or season there was little more than five, it could scarcely be expected that there would be the same maturity".<sup>38</sup>

The scarcity of wheat mirrored in the poor reports from the many different regions of the colony was sufficient to provoke comment by the Governor, Sir Charles FitzRoy, at the opening of the second legislative session in 1851. In his speech, delivered in October some five months after the discovery of gold, he attributed the high price of flour to the partial failure of the wheat crops.<sup>39</sup> Prices, in fact, had begun to rise sharply long before the news of the gold discoveries broke. Once the rush started the price of both wheat and flour soared. The Bathurst correspondent related how, on the goldfield there, in "the course of a few hours flour rose from 25/- per 100 lbs. to 32/-, 36/- and 40/-".<sup>40</sup> By the end of the month of May a bewildered Herald expressed amazement at the rapidity of the events which had overtaken the colony. "If anyone had predicted a fortnight ago", the paper declared, "that flour in two weeks would rise in value from £20 to £30 per ton in Sydney ... (he) would have been

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38. SMH, 24/1/51.

39. Official History, 180.

40. SMH, 19/5/51.

looked upon as a madman".<sup>41</sup>

The shortage of local grain, and the expectation of continuing high prices caused speculative eyes to turn to alternative sources. Here too, however, there were difficulties. Within Australia only South Australia produced a substantial export surplus at this time, and this had already been shipped to South Africa where the crop had been an entire failure. Another occasional source, New Zealand, was herself short of flour and was unable to export any considerable quantities to New South Wales.<sup>42</sup> Something akin to outright panic appeared to infect many observers. The sudden and startling rise in the price of breadstuffs, particularly in the interior which was divorced from the major source of home-grown grain and imported grain by long distances and miserable roads, brought forth serious allegations of monopoly and double-dealing on the heads of the local millers. In an effort to boost the price of flour still further, it was claimed, mill-owners were deliberately hoarding their stocks to intensify the existing market scarcity.<sup>43</sup> In part there may have been some justification for the complaints, though some of the claims that accompanied them were outrageously exaggerated. The Goulburn Herald, for instance, declared that, "It is a known fact that in this country there is a sufficient supply of wheat to maintain three times the number of inhabitants for three years to come".<sup>44</sup>

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41. SMH, 26/5/51.

42. SMH, 26/5/51.

43. SMH, 4/6/51.

44. SMH, 28/6/51, (quoted from Goulburn Herald)

These then were the conditions that had to be assessed by the colony's farmers after the gold discoveries had been announced in May 1851. On the one hand, they could abandon farm work in favour of the goldfields, uncertain though the returns might be. On the other, there was every indication that the wheat market would continue to offer unprecedented opportunities, slower and less spectacular than the goldfields, but apparently more certain. It is clear that many preferred stability. Isaac Shepherd, an absentee land-owner, had this report to make following a visit to his properties in King and Georgiana:

Notwithstanding the gold-mania, it is indeed pleasing to see that the important time of seed-sowing is not forgotten or neglected; everyone who has cleared land has ploughed and sown his seed, and in many cases I saw, where the timber is only thin on the land, the ground ploughed among the trees and sown with all the intention as the crops grow to bark the timber and kill it; there was never so much wheat grown as there will be this year, and it is evident that the probability of a large increase to our population within the ensuing twelve months is properly appreciated by our agriculturalists.<sup>45</sup>

Shepherd was correct in his appreciation of the wheat acreage position; there never had been so much land under the crop. Unfortunately, his predictions of a large population increase were to prove less accurate. Reports of a similar character poured in from all over the colony, from Bathurst, Orange, Wagga, Goulburn, and from the coastal districts, and the season this time was "remarkably fine" for sowing wheat.<sup>46</sup> At Camden the famous McArthurs were reported to have twenty-five ploughs at work

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<sup>45</sup> SMH, 4/8/51.

<sup>46</sup> See SMH, 28/5/51; 4/6/51; 9/6/51; 18/7/51. For the weather conditions at sowing time see SMH, 9/7/51.



for the coming, profitable, crop.<sup>47</sup>

The anticipated abandonment of farming pursuits did not occur. Farms were not abandoned because the two alternatives, gold-digging or cropping, were supplemented by a third choice which was the most attractive of all. The nature of wheat farming at this time required attendance upon the land and upon the crop only at the time of ploughing and sowing, say over April and May, and at harvesting in December or January. The farmer had few other liabilities: tillage involved no more than a single turn of the plough and perhaps a light harrowing; maize - the second grain crop on the coast - was not demanding in terms of labour, and even the harvest could be extended over many weeks without damage to the grain.<sup>48</sup>

It was possible, therefore, to spend fully half the year on the goldfields, and still be assured of a crop. The Herald, realising the possibility of successfully securing a crop, and at the same time satisfying the understandable urge to seek greater fortune at the diggings, tried to make it more certain.

Remember, farmers, first to SOW YOUR FARMS before you go (to the goldfields). The price of wheat will, no doubt, both this year and next, be very high everywhere in consequence of the influx of strangers.<sup>49</sup>

At the time the advice was good. Only later would it become evident that the premises upon which it was so confidently based were false, or at least exaggerated.

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47. SMH, 30/5/51.

48. For a discussion of the labour requirements of wheat and maize see SMH, 5/8/54.

49. SMH, 20/5/51.

It is clear that it was this possibility of combining agricultural operations with periodic visits to the goldfields that, in large measure, forestalled the reduction in acreage that might logically have been expected in 1851. Even before the end of May the Bathurst correspondent to the Herald noted that, "Nearly all the small settlers have returned, and are putting in crops of wheat, as being the safest gold-mine for them".<sup>50</sup> Elsewhere departure for the goldfields was delayed until all the crops were sown.<sup>51</sup> As the Herald said so pointedly, "wheat is wheat nowadays".<sup>52</sup>

Over the sowing period of 1851, therefore, the wheat farmer in New South Wales faced peculiar inducements to expand the acreage of land under crop. Every advantage was taken of the prevailing conditions and wheat sowing continued late into the year.<sup>53</sup> The high prices, however, did not continue to offer such remarkable opportunities for profit, for although prices rose absolutely throughout the early gold-rush period they were accompanied by rising costs of production, particularly of labour, and by rising costs of transport. Some light is therefore thrown onto acreage fluctuations over the period by a consideration of these two features.

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50. SMH, 28/5/51.

51. SMH, 18/8/51.

52. SMH, 13/10/51. See also FitzRoy to Grey, 15/8/51, Correspondence Relative to the Recent Discovery of Gold in Australia, I, (London, 1852), "agricultural labours especially have not been suspended."

53. Wheat Sowing continued in Goulburn even in late-July. See SMH, 29/7/51.

Although the prices of wheat and flour varied considerably from region to region within the colony, reflecting the inadequacy of transport facilities, the Sydney prices offer the best indication of influences within the wheat-growing industry generally since these were the prices affecting the major producing region. Within Sydney price variation from miller to miller was slight. When no wheat was available, or when the mills were not buying, nominal prices were quoted. Two quotations were normally given to cover the different qualities of wheat and flour, but although these occasionally refer exclusively to either imported or home produced flour or grain, this was not generally the case. It has not been found possible, therefore, to compile a price series referring solely to home produced wheat and flour. The highest prices have been graphed in Figure 15, and since the costs of production were essentially unchanged whatever the quality of the grain this figure represents the highest possible profit margin.

It is evident from Figure 15 that over the entire period, from 1851 to 1855, inclusive, the price of both wheat and flour rose considerably. It is clear that the wheat shortage at the beginning of 1851 had had a marked effect upon the price of breadstuffs, and it is likely that this rise alone would have proved sufficient to induce acreage expansion, even without the boom on the wheat market that followed the announcement of the discoveries at Ophir. Although prices continued to rise, however, this did not represent an equivalent increase in the profit margins available to the wheat farmer, since over the same period the costs of production were also rising.



A detailed costing of wheat production over this period, however, is not possible. Table 8 gives a general indication of costs for ten acres of wheatland based upon isolated figures obtained over the early 1850's from newspaper reports.<sup>54</sup> Inevitably the result is crude, but it should be stressed that the figures obtained are probably underestimated since no charge is made against interest or deterioration on any item of farm equipment or buildings, nor is any charge made against rent, nor is any charge made against the costs of bags, nor is any charge made against the costs of ploughing and harrowing although, even when performed by the farmer, this represents a real loss of alternative earnings.

TABLE 8

Cost of Production and Profit on Ten Acres of Wheat

Costs

i.	Seed: 1 bushel per acre @ 6/- per bushel	..	£ 3. 0. 0.
ii.	Harvesting: 1 man, 30/- per day for ten days	..	£15. 0. 0.
iii.	Threshing and Carriage: 1/8 per bushel, 12 bushels per acre	..	£10. 0. 0.
	Total Cost	..	£28. 0. 0.

Returns

	12 bushels per acre from ten acres:		
	720 bushels @ 6/- per bushel	..	£36. 0. 0.
	<u>Profit on Ten Acres of Wheat</u>	..	£ 8. 0. 0.

54. The quantity of seed is a low estimate. See Anon., "An Essay on the Culture of Wheat", New South Wales Calendar and Post Office Directory, 76, (Sydney, 1835). See also Coghlan, Sir T., The Wealth and Progress of New South Wales, II, 1898-1899, 344, (Sydney, 1899). Hereafter cited as Coghlan, Wealth and Progress. For harvesting estimates see SMH, 19/11/53. For threshing and carriage see SMH, 14/2/54.

It is evident that at a price of 6/- per bushel the return on ten acres of wheat, even under this minimum estimate of costs, was not very high. Wheat prices, of course, rose far above 6/-, but they were accompanied with rising costs of living as well as rising costs of production. Thus, in 1852, the Herald calculated that a return of 8/- to 10/- per bushel was necessary to make wheat-growing a profitable proposition.<sup>55</sup> Yet the average price of wheat over 1852 was under 8/-, and in 1853 it was under 10/- for wheat of the finest quality. Although in 1854 the average price rose to 12/- per bushel, yet in the same year the cost of agricultural labour rose by some 20 per cent.<sup>56</sup>

Wheat, in fact, was proving less of a "gold-mine" than people had anticipated. This interpretation would fit the general pattern suggested here: after the first flush of speculation in 1851, and the consequent expansion in acreage, rising costs and competition from imported wheat served to reduce the high profit margins and bring about a return to the more stable conditions that had existed before the gold discoveries.

### iii. Labour and Wages

Although this brief examination of prices has given some rationality to acreage fluctuations over the early gold-rush years, it fails to be entirely satisfying. This is a result, in part, of the inadequacy of data referring to costs, and in part because prices were conditioned by the importation of breadstuffs which were not foreseeable to producers. At

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55. SMH, 3/7/52.

56. See below, Table 9.

least one aspect of costs, however, are amenable to further investigation. These are the costs of labour.

The gold-rushes, it has been said often enough, were made up of men from all walks of life. But it must be assumed that doctors, dentists, solicitors and so forth were very much in a minority, and that the rushes were essentially composed of men from the "labouring classes". One immediate effect of the rush to the diggings at Ophir, and later at Turon, Araluen, Major's Creek, and Hill End in the same year, was by definition a sudden withdrawal of labour from other pursuits and an ensuing disruption of industry. Even here, however, care must be taken before inferring general and widespread disruption throughout all facets of the economy. Some industries were hit harder than others. Those relying on the permanent employment of "mechanics" and labourers were probably hit hardest of all. The Statistical Register included the following note in the tabulation of average wage rates in 1852:

Since the gold discoveries, mechanics, as well as any other labourers, are unwilling to enter into any engagements of a permanent character.<sup>57</sup>

On the other hand it has been suggested, not very convincingly, that shepherds were unused to hard physical labour and consequently found little to attract them in the arduous and uncertain life of the "digger".<sup>58</sup> Other industries, notably the agricultural industries, required a large labour force only at certain seasons. These industries, therefore, were

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57. Statistical Register, 1858.

58. Dunsdorfs, Wheat-Growing, 107.

less susceptible to immediate and continued depression arising from the sudden withdrawal of a permanent labour force. This applies particularly to wheat-growing; the harvest of 1850-1851 had already been gathered when gold was discovered in May, and much of the sowing had been completed for the succeeding year's crop. The bulk of the work had therefore been finished in time to permit the farmers their few months of disillusionment on the goldfields before the next harvest came around. It would seem likely, in fact, that the high turn-over of men on the diggings, and the very nature of the semi-permanent employment offered in agriculture, were mutually beneficial, the one providing a source of labour, the other providing a means of rebuilding a "stake" for further forays into the realm of Midas.<sup>59</sup>

That the labour situation was initially less serious in the rural industries than in other industries is suggested by the fact that farm labourers and shepherds were excluded from the statistician's remarks on the difficulties of hiring permanent labour. It is worthy of note also, though not necessarily of great significance, that after 1851 the wages of mechanics were quoted in day rates rather than annual rates, whereas it was still found possible to quote an annual figure for the employment of shepherds and farm labourers. The inference is that permanent labour was available in the rural industries even after the gold strikes. An examination of the percentage wage increases in the various forms of employment after 1852 shows that, whilst in most industries wide fluctuations were characteristic, the rates for agricultural and pastoral labour

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59. SMH, 14/10/51.



remained a good deal more stable, again indicating greater availability of labour in these industries (Table 9). In real terms too, it would appear that not only were wage rates for farm labourers and shepherds more stable, but that they eventually tended to settle at a higher level relative to the situation before the discovery of gold than did wages in other industries. The implications of this are more difficult to determine, particularly in view of the high level of immigration over the latter half of the decade. Tentatively, it might be suggested that the growing proportion of free immigrants meant that fewer were prepared to accept employment in poorly paid rural industries.

TABLE 9

Wage Rates: 1852 - 1858

(a)

Employment Category	1852	1853	1854	1855	1856	1857	1858
CARPENTERS	9/-	12/6	15/-	15/-	12/6	12/-	10/-
SMITHS	9/-	12/9	14/-	15/-	12/2	12/2	10/6
WHEELWRIGHTS	9/-	15/-	15/-	15/-	12/2	12/-	10/-
BRICKLAYERS	9/-	15/6	18/-	17/-	13/6	13/-	10/6
MASONS	9/-	16/-	21/-	17/-	13/6	14/-	10/6
SHEPHERDS	£25	£25	£25	£30	£30	£30	£30
FARM LABOURERS	£25-30	£26-31	£25-40	£30-40	£30-40	£30-40	£30-40

(b)

Employment Category	1852-3	1852-4	1852-5	1852-6	1852-7	1852-8
CARPENTERS	38.8%	66.6%	66.6%	38.8%	33.3%	11.1%
SMITHS	41.6%	55.5%	66.6%	35.1%	33.3%	16.6%
WHEELWRIGHTS	66.6%	66.6%	66.6%	35.1%	33.3%	11.1%
BRICKLAYERS	72.2%	100.0%	88.8%	50.0%	44.4%	16.6%
MASONS	77.7%	140.0%	88.8%	50.0%	55.5%	16.6%
SHEPHERDS	0.0%	0.0%	20.0%	20.0%	20.0%	20.0%
FARM LABOURERS	4.0%	0.0%	20.0%	20.0%	20.0%	20.0%

Note: All rates are day rates except for farm labourers and shepherds.  
Source: Statistical Register, 1859.

There would appear, however, to have been considerable regional diversity in the labour market over the gold-rush period, and this helps cast further light on acreage fluctuations within the wheat industry. In general there is no clear correlation between rising wages and labour scarcity and variations in acreage: although wages rose considerably after 1854 the acreage under wheat was also expanding. On the other hand, if the decline in acreage in 1854 is examined more closely on a regional basis it is evident that this decline was felt far more severely in the major wheat-growing areas of the coast than in the interior. In 1853 some 35,616 acres of land were sown to wheat in the coastal counties of Macquarie, Gloucester, Durham, Northumberland, Cumberland, Camden and St. Vincent. This represents about 61.3 per cent of the total wheat acreage within the settled districts. In the remaining thirteen counties of the settled districts some 22,444 acres of land were under the crop. The fall in acreage of some 11,000 acres in 1854 was made up of a reduction in the seven coastal counties of 9,015 acres, and in the interior of 1,084 acres. In percentage terms the acreage on the coast fell by 25.4 per cent, while the acreage in the interior fell by a mere 4.8 per cent.

In order to account for this difference between the two regions resort may be had to factors of weather. All that can be said in this regard, however, is that there is no evidence to indicate that climatic vagaries were responsible for the regional disparity of acreage. There is ample evidence, on the other hand, to suggest that the low yields which accompanied the low acreage in 1854 were, in part at least, the result of drought

over the latter part of the growing season.<sup>60</sup>

In the absence of climatic explanation other causes must be sought. Prices in Sydney, it has been shown, were still rising and it is clear from Table 6 that imports in the preceding year, though high, were by no means sufficient to glut the market. Only in the field of labour costs is there evidence to account for the regional diversity in conditions in 1854. It will be seen from Table 9 that the Statistical Register indicates a range of wages for labourers varying some £10 from minimum to maximum. It is probable that this variation was largely a reflection of the difficulties of communication, the long distances, and the consequent isolation of regions one from another, and that it refers to wages offered in the central coastal regions and wages offered in the interior. It would be unreal to suppose that so great a diversity in wages could be long sustained within proximate areas. Coghlan has stated that the lower rate applied to the older settled districts in the vicinity of Sydney.<sup>61</sup> While this may have been true in general, it seems most likely that over the period of the gold-rushes the position was reversed, with agricultural labour considerably more plentiful in the interior than in the coastal districts.

Reports of labour shortage in the old settled districts, particularly at harvest time, were widespread over the first half of the 1850's. Despite the fact that agriculture appears to have hit less severely than

60. Drought was reported by Herald correspondents from Bathurst on 10/10/54; Scone, Maitland and Patrick's Plains on 13/10/54; the Hawkesbury on 16/11/54; Armidale on 20/11/54; the Lachlan on 22/11/54; Braidwood on 19/12/54.

61. Coghlan, Labour and Industry, I, 430.

other industries there can be little doubt that the labour situation did deteriorate and that wages were forced upwards in consequence. As early as October 1851 the Maitland Mercury expressed concern for the excellent crop of growing wheat. The acreage sown had been large, but "whether a larger crop will be reaped is another question." "We trust", they said, "that every farmer will make every exertion to get back sons or relatives from the diggings in time for the harvest."<sup>62</sup> Similar problems faced the farmers at Camden who put forward the novel suggestion that persons intending to go to the diggings at Araluen should go via Camden and "take advantage of our harvest on their road, and gradually reap their way to the very spot, as the wheat ripens later gradually upwards."<sup>63</sup> The following season the correspondent from the Wollombi reported pessimistically:

The preparation of the ground for wheat is in a more backward state than has been the case for very many years. In ordinary seasons a large breadth has been sown during the month of April, but the quantity now in the ground is very trifling indeed, and many of the farmers have not ploughed a furrow. The state of backwardness may be to a small extent from want of energy; but the great want is labour. The season has been so favourable for vegetation that the surface of the earth is so thickly covered with grass that until eaten down it is scarcely possible to turn a furrow ... To what extent wheat may be sown this season is just now very uncertain.<sup>64</sup>

In fact, it has been shown that although the acreage declined somewhat from the high level of 1851 it remained extensive in spite of this gloomy report.

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62. SMH, 20/10/51, (Quoted from Maitland Mercury)

63. SMH, 22/11/51.

64. SMH, 7/5/52.

Correspondents from the interior, however, had few complaints to make regarding the supply of agricultural labour "despite the rush to the diggings". Only in "one or two places" was it feared that some of the crop might be lost as a result of the shortage of reapers.<sup>65</sup> In 1853 the cost of hiring reapers at O'Connell Plains near Bathurst was £1 per day, plus the traditional grog supply. This compared well with the 25/- per day, grog, and full rations paid out in the coastal districts.<sup>66</sup> One year later, in 1854, the wages offering at Wollombi had risen still further to 33/4 per day plus food and grog.<sup>67</sup>

These indications, and clearly they are no more than that, would suggest the greater difficulty of hiring labour in the coastal regions than in the interior. Indeed reports of labour scarcity from the table-lands are conspicuous only by their absence. By 1854 the situation in the older districts was becoming intolerable. Again from Wollombi, the Herald correspondent claimed that the costs of hiring labour at harvest time were so exorbitant that many farmers were turning to maize as their major grain crop because the harvesting could be "scattered over a greater length of time."<sup>68</sup> It would seem, therefore, that as well as uncertain market conditions arising from speculation in imported wheat, the commercial grain farmers in the coastal districts were faced with steadily rising labour

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65. SMH, 5/1/52.

66. For O'Connell Plains see SMH, 27/1/53; for coast, see SMH, 19/11/53.

67. SMH, 14/2/54.

68. SMH, 5/8/54.

costs, partly as a result of general inflation, and partly as a result of the attractions of the New South Wales goldfields. Yet at first the high prices for wheat forestalled any tendency to reduce acreage in spite of rising costs, and only after the experiences of difficult harvests in 1851, 1852 and 1853, were farmers unwilling to continue speculation on so large a scale. The contraction in acreage in 1854, however, was accompanied by a contraction in the level of wheat imports and a further rise in price. As a result of improving market conditions acreage again expanded in 1855 and continued to grow more or less steadily thereafter, though at a slower rate than the more rapidly expanding population.

In the interior, on the other hand, though wages were rising, they were doing so more slowly, and because of the transport problems facing wheat and flour movements, and the degree of insulation that this provided from the effects of large importations, the prices for wheat tended to be more predictable and the degree of contraction was correspondingly less. In neither case, however, can it be convincingly argued that the early gold-rush years were seriously disruptive for wheat-farming in New South Wales. In general, in the interior, the attractions of high prices and the attractions of gold-digging tended to cancel each other out, by promoting a greater degree of local specialisation in the production of wheat.

CONCLUSIONS

The "gold-fever" had run its course by 1856, and life in the colony was back, more or less, to normal. The rushes had had few visible effects. Although individual centres had seen absolute, and sometimes relative, increases in population, the gold-rushes themselves had not been sufficiently extensive or productive to form the basis for any really significant re-distribution of people. Even their direct effect on the rate of increase by immigration was probably slight. For this reason, and since no significant improvements had been made either in transport or in the problem of land access, there had been no significant re-distribution of wheat-growing. Quantitatively, the dominance of the coastal districts remained intact, despite local acreage increases in the interior. In turn, although the areas of surplus production in the inland had become more clearly defined, the region as a whole remained one of deficit, or of variable consumption, and no evidence has been found to suggest any kind of breakdown in the essential separation of local inland markets and the vast deficit area of the coast.

Contrary to the generally accepted view, therefore, it is suggested here that this period saw little relative change in the position of wheat-growing, and that in terms of the major colonial market those changes which are discernible point, not to initial contraction and subsequent expansion in the ability of the industry to satisfy this demand, but rather to a steady, if unspectacular, widening of the gap between home supply and consumption. The decade from 1850 to 1860, in fact, served largely to

emphasise the problems that were still to be solved before the colony could hope to become self-sufficient in breadstuffs. The changes that had occurred in the inland, though clearly of local significance, had brought these solutions no closer. The difficulties of the coast, similarly, did not in any way anticipate the collapse of the industry that was soon to occur there. In neither case had the changes in the volume of production been accompanied by any moves towards the integration of inland wheat-growing with the consumers of the major coastal market, and in this sense the nature of the wheat frontier was little changed.



PART TWO

CHAPTER 3.THE DECLINE OF THE COAST

Certainly our district commands  
piteous attention ...

Windsor correspondent, SMH, 22/10/63.

By the middle of the nineteenth century the wheat-growing industry in New South Wales had achieved a degree of balance and stability. Effectively it was split into two by the nature and distribution of the markets it served and by the limitations to transport imposed by the lack of railways. On the one hand the major colonial market in Sydney was served by the grain-growing areas of the coastal lowlands within the settled districts, particularly the Hunter and Hawkesbury/Nepean valleys. On the other hand, because of the barrier presented by the uplands surrounding Cumberland, production in the interior was highly localised and was restricted to the demands of small inland centres and the outlying squatting districts.

None could have foreseen, at the beginning of the 1860's, the full extent of the locational changes which would shortly occur in the industry. Only one facet of this change was, perhaps, predictable: to the contemporary observer two imminent events might have foreshadowed an increase in wheat acreage in the interior. The first of these was the probability of continued rail expansion. The question of motive power - steam or horse - still remained to be settled but seemed to matter little. What

did matter was that with every mile constructed railways, in any form, would reduce the arduous drag of the bullock waggons and by doing so would at last bring the inland farmer within reach of the metropolitan market. By opening up the country, essentially bringing it into touch with the markets, they would be the precursors of intensive colonisation, colonisation effected by the second of these imminent events - land reform. To its advocates at least the cry of "free selection" - echoing throughout the colony like a call to arms in 1860 - heralded the universal panacea, the cure for all the ills from which New South Wales had so long suffered. For the first time in three decades cheap land would abound. Farm production would soar as the working classes entered upon their birthright.

No one could deny that there was room for agricultural expansion. The net import of wheat had been steadily increasing over the latter half of the 1850's and in 1860 exceeded one million bushels for the third time in six years. At a conservative estimate it could employ some 50,000 acres of new land to make up the demand of the colony. Nobody supposed though, for there existed no reason to suppose, that the inland might actually replace the traditional coastal areas as the principal suppliers of the metropolitan market. Without a reliable export market the opportunities for expansion must have seemed at best limited. For even given railway expansion, the probability remained that in Sydney the most successful competitors would be those in adjacent areas or in areas with access to cheap water transport. The decline of these areas was unthinkable. Yet it happened.

The balanced state of the industry was rudely shattered in the decade from 1860 to 1870. The formerly highly localised and relatively unimportant centres on the high tablelands and the southwestern slopes expanded rapidly, while the principal centres of production on the coast declined to complete insignificance. It is tempting to seek some causal link between the two episodes, but such a search would be fruitless: it will be shown that the two processes were quite distinct and their timing was mere coincidence. Expansion of the industry in the interior was the outcome of the more liberal land laws introduced in 1861, which in some instances provoked definite over-production and in others permitted a rapid response to local market fluctuations caused largely by the opening of new gold-fields.<sup>1</sup> These initial developments in the interior were decidedly not the outcome of improved access to the Sydney market.

The most startling change in the distribution of wheat-growing over this period was not its expansion in the interior, however, it was its total decline on the coast. In retrospect it is not difficult to see that this decline was, ultimately, inevitable. In time the adoption of large-scale mechanised grain farming techniques, developed in the great mid-latitude grasslands, would most surely have despatched the small freeholders and tenant farmers of the New South Wales coast; yet at this time, and especially in this isolated colony the adoption of such techniques was still far off. Even in the 1880's the more "enlightened" and "forward-

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1. See below, Chapters 4 and 5.

looking" agriculturalists in New South Wales still saw the future of the industry to lie in the British "high-farming" mould. The gospel was of intensive devotion to small areas: mixed farming, regular crop rotation, heavy manuring and reliance upon high yields per acre. The fact that such advice fell largely upon deaf ears did not reflect the existence of an alternative system so much as the lack of any system at all. The decline, therefore, was not symptomatic of changing techniques or attitudes on the part of the farming population. It was not symptomatic of the replacement of men by machines on the rolling grasslands further west, for it pre-dated these developments by at least two decades in New South Wales. Nor was it symptomatic of a voluntary withdrawal - a leap-frogging action - to better land in the interior, made viable by the new market opportunities afforded by rail development. The decline had begun before the railway left Cumberland. It was rapid and irrevocable, leaving a gap in the market, not surrendering to a glut. It was a disaster for the individual farmer and for the colony as a whole, and it was not, of itself, indicative of better things to come.

The decline of the coast was, in truth, an isolated event. It was not affected by rising competitive areas, though it had its own effect by greatly increasing the market opportunities for producers elsewhere - in the colony itself, in the other Australian colonies and over the seas. Though eventually to prove final, it was not so accepted either by the coastal farmers themselves or by the agricultural commentators of the day. For twenty years there remained a stubborn hope that once the "enemy" was

beaten wheat-growing would again resume its rightful place in the economy of coastal agriculture. The "enemy" was a parasitic fungus popularly known as "rust".

#### HISTORICAL INCIDENCE OF STEM RUST

Of the seven major diseases infecting wheat crops in Australia only the rusts are thought to have been present in native grasses before the introduction of domestic grain.<sup>2</sup> To the earliest settlers, with their English backgrounds, this was one of the less familiar diseases and probably one of the many that were commonly designated "blight". It has been suggested that the use of this term was restricted to crop damage arising as a result of drought conditions.<sup>3</sup> Many instances of its use in such a context can be found. In 1804, for instance, Governor King reported that "drought and severe blight" had injured the crops.<sup>4</sup> Again, in 1814, Macquarie recorded that the crops had suffered blighting as a result of drought and heat.<sup>5</sup> On the other hand so limited an application of the

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2. The seven are: stem rust (*Puccinia graminis tritici*); leaf rust (*P. triticea*); flag smut (*Urocystis tritici*); bunt or stinking smut (*Tilletia caries* and *T. foetida*); loose smut (*Ustilago tritici*); take-all (*Ophiobolus graminis*); septoria (*Septoria nodulorum* and *S. tritici*). See Callaghan and Millington, *The Wheat Industry*, 279. The work of Waterhouse, W.L., in "Some Observations on Cereal Rust Problems in Australia", *Proceedings of the Linnaean Society of New South Wales*, LXI, 1936, has suggested the strong possibility of the existence of rusts in native grasses before the introduction of domestic grain.
  3. King, *The First Fifty Years*, XV, 635.
  4. King to Hobart, 1/3/04, HRA, I, v, 649.
  5. Macquarie to Bathurst, 19/1/14, HRA, I, viii, 121.

term was most unlikely: "blight", like "colic", simply indicated the presence of disease; it did not necessarily define a specific ailment or infer a particular cause. It is quite possible, therefore, that records of blight may, in some cases, refer to attack by rust. Waterhouse suggests that the reference to blight made by Collins could be reference to a rust attack.<sup>6</sup> The blanket nature of the term is further confirmed by an anonymous author, writing in the 1830's, who pointed out that "occasional diseases incidental to wheat were known by the general term blight."<sup>7</sup> The same author, however, records a specific association of the term. In describing this condition he notes that:

This disease sometimes destroys the whole of the crop, striking it as it were dead, in a few days; commonly a portion of it is only affected, then some of the stalks and ears become quite dead, some ears are wholly, others partly diseased, which diseased part directly turns white, and is of course abortive ...<sup>8</sup>

It may be that the particular association noted here referred to attack by the root fungus Ophiobolus graminis when the ears are sometimes bleached in consequence of the cutting off of the water supply.<sup>9</sup>

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6. Waterhouse, W.L., "Australian Rust Studies, No.I", Proceedings of the Linnaen Society of New South Wales, LIV, 616, 1929. Hereafter cited as Waterhouse, Rust Studies.
  7. "An Essay on the Culture of Wheat", New South Wales Calendar and Post Office Directory, 95, (Sydney, 1835).
  8. Ibid, loc. cit.
  9. For a description of this disease, popularly known as "take-all" see Brooks, F.T., Plant Diseases, 221-222, (Oxford, 1953).

As a result of this confusion in terminology, the only attack in epidemic proportions which can be certainly attributed to rust occurred in 1803.<sup>10</sup> For that year, Waterhouse quotes a reference in the Gazette as the first mention of the disease by its popular name of "rust".<sup>11</sup> The following month Governor King wrote that "our very promising appearance of abundant crops has considerably suffered by some very unusual blights while the wheat was in blossom, which is estimated to have destroyed a fifth of what might have been expected."<sup>12</sup> By the 1820's, however, rust seems to have held little terror for the colonial farmers. Though Montague Smith claimed its frequent appearance amongst the crops of the Hunter Valley, Atkinson - a popular authority with later writers - said in his often quoted statement that it was "not very common".<sup>13</sup> The evidence of the yield returns from 1832 until 1860 does not indicate widespread and severe losses in the coastal regions which might be attributed to epidemic crop disease and the average yields are, on the whole, remarkably consistent.<sup>14</sup>

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10. McAlpine states, in Wheat Rust in Australia, 42, (Melbourne, 1906) that rust was introduced only in 1825 on imported wheat. This is evidently incorrect. Hereafter cited as McAlpine, Wheat Rust.
  11. Waterhouse, Rust Studies, 616.
  12. King to Hobart, 21/11/1803, HRA, I, iv, 427.
  13. These early views are discussed in Waterhouse, Rust Studies, 616-617. See also Atkinson, Account, 43.
  14. See generalised statistics in Dunsdorfs, Historical Statistics.



This is not to say that the destructive potential of the disease was not well-known and recognised. The anonymous essayist, writing in the 1830's, compared the effects of rust with the more familiar smut, and concluded that:

This disease (rust) is far more destructive than smut as it often renders whole fields not worth cutting; and when it is not wholly destroyed, the grain is shrivelled and thin, of the size of rice. When the attack is slight the grain will not be much injured, nor the produce much lessened; but the straw is always very brittle and useless for any purpose, not even to make dung ...<sup>15</sup>

It was this then, a parasitic fungus, that was chiefly responsible for the decline of the coastal wheat-growing industry. That it never rose above nuisance value in the first seventy years is, perhaps, mysterious, particularly in view of the apparently favourable physical conditions which existed there. But there is no mystery about the rust epidemics on the coast in the 1860's, or about the havoc and destruction that they caused.

#### STATISTICAL EVIDENCE

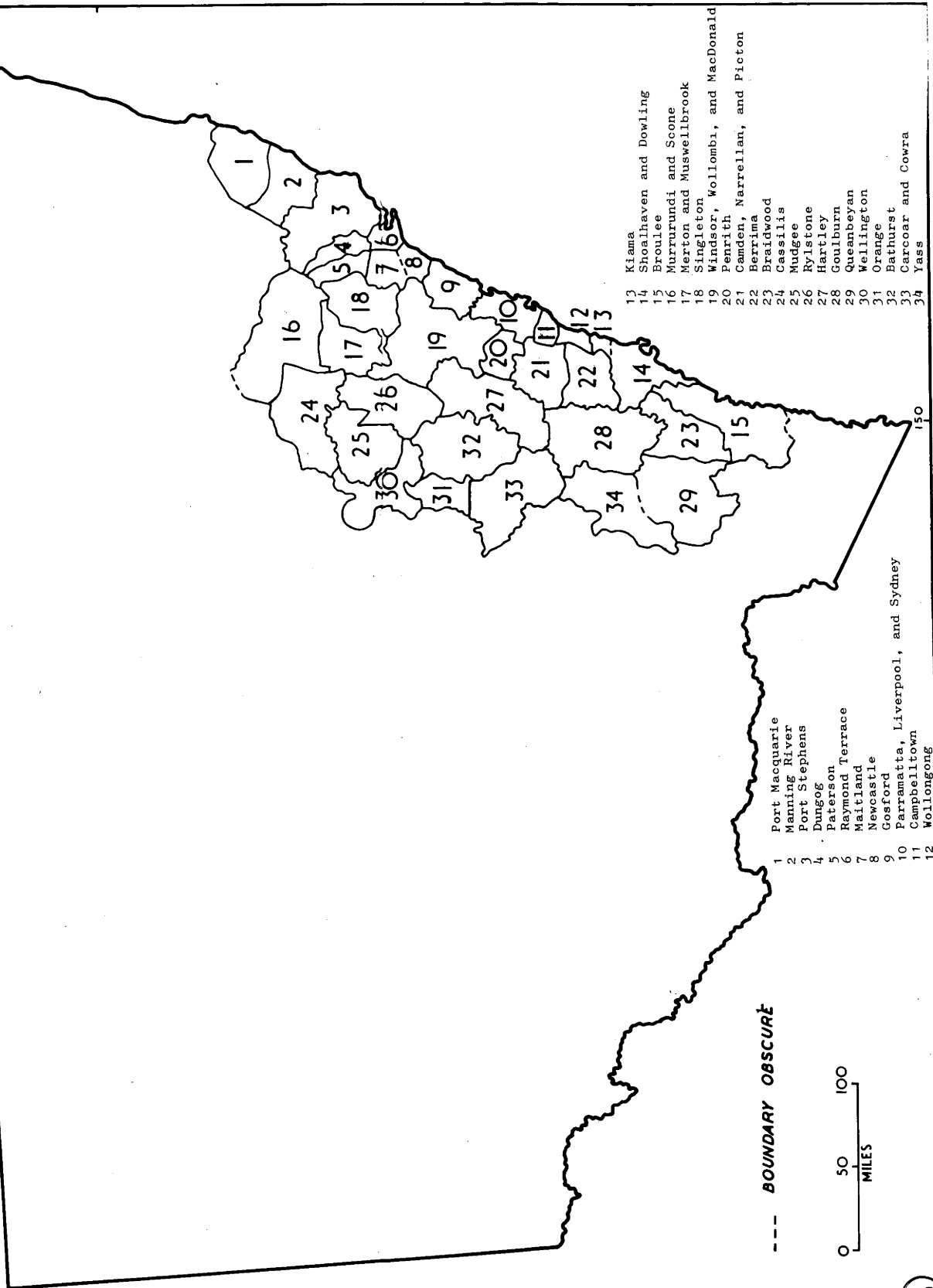
The study area and the statistical units employed in the discussion which follows are shown in Figure 16. These statistical units represent constant areas derived from amalgamations of the inconsistent and periodically redefined police districts used by the Statistical Register from 1858 to 1879.<sup>16</sup>

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15. "An Essay on Wheat", Ibid, 94.

16. For a discussion of this problem see Appendix II.

**POLICE DISTRICT UNITS  
WITHIN SETTLED DISTRICTS 1858-1879**



--- BOUNDARY OBSCURE



- 13 Kiama
- 14 Shoalhaven and Dowling
- 15 Broulee
- 16 Murrumbidgee and Soone
- 17 Merton and Muswellbrook
- 18 Singleton
- 19 Windsor, Wollombla, and MacDonal
- 20 Penrith
- 21 Camden, Narrellan, and Picton
- 22 Berrima
- 23 Braidwood
- 24 Cassilis
- 25 Mudgee
- 26 Rylistone
- 27 Hartley
- 28 Goulburn
- 29 Queanbeyan
- 30 Wellington
- 31 Orange
- 32 Bathurst
- 33 Carcoar and Cowra
- 34 Yass

- 1 Port Macquarie
- 2 Manning River
- 3 Port Stephens
- 4 Dungog
- 5 Paterson
- 6 Raymond Terrace
- 7 Maitland
- 8 Newcastle
- 9 Gosford
- 10 Parramatta, Liverpool, and Sydney
- 11 Campbelltown
- 12 Wollongong

Acreage fluctuations in the central coastal districts of New South Wales over the period 1861 to 1878 are shown in Table 10. The decline of the region, in both relative and absolute terms, is evident. The scale and rapidity of the acreage contraction can be gauged from the fact that, even as early as the mid-1860's, the acreage had fallen by 63.4 per cent from the level of 1861. By 1878 only 10.9 per cent of the area sown in 1861 remained under wheat. The most striking cases of decline occurred in the district of Camden, Narellan and Picton, where acreage fell more than 75.0 per cent in the four years from 1861 to 1865, and in the district of Windsor, Wollombi and M'Donald River where, between 1861 and 1864, the area under wheat fell from 9,377 acres to only 1,831 acres.

TABLE 10

Acres of Land Sown to Wheat in the Coastal Districts of New South Wales

1861 - 1878

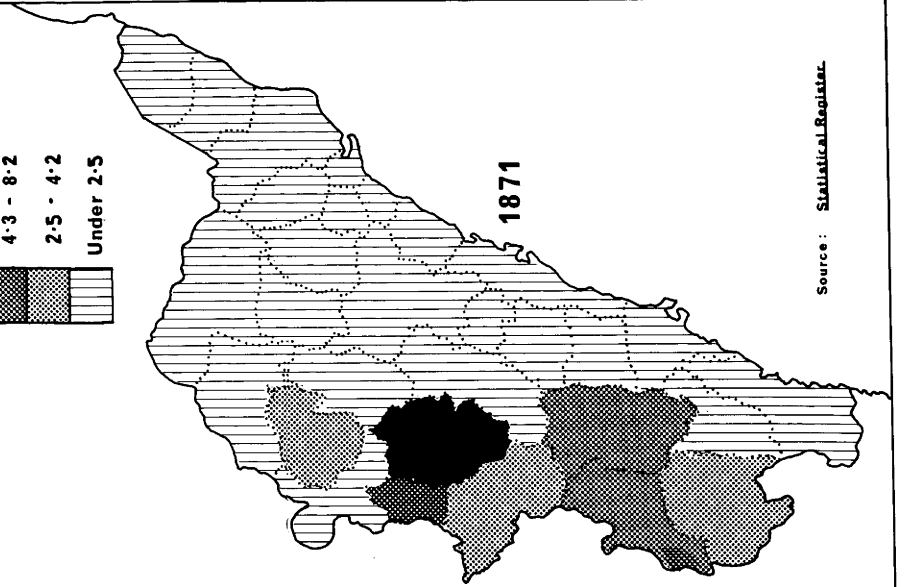
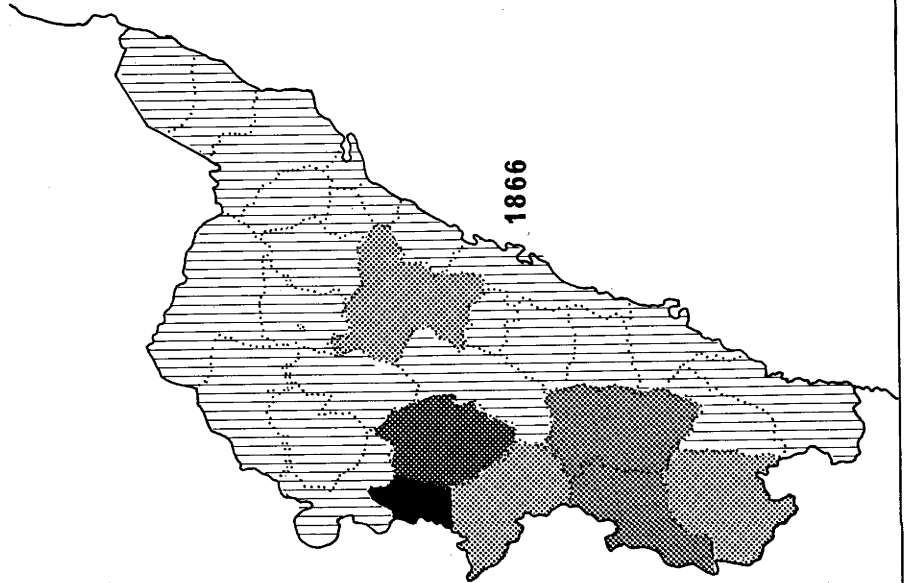
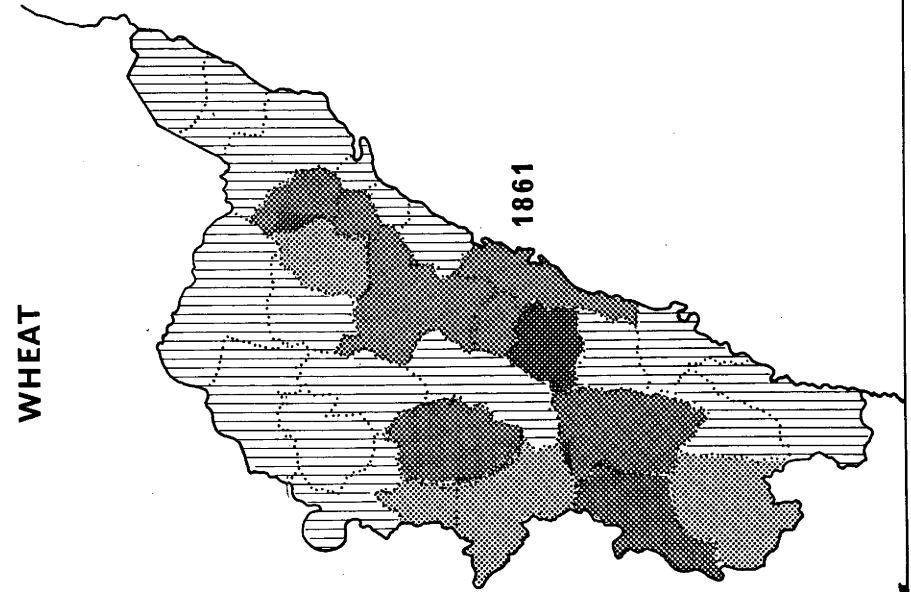
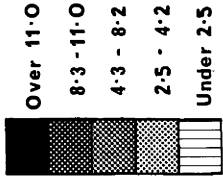
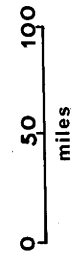
<u>Year</u>	<u>Acreage</u>	<u>Year</u>	<u>Acreage</u>
1861	60,397	1870	29,919
1862	50,370	1871	16,669
1863	35,919	1872	15,745
1864	20,105	1873	12,241
1865	22,102	1874	10,189
1866	25,414	1875	6,288
1867	17,195	1876	7,685
1868	21,819	1877	7,939
1869	31,503	1878	6,631

Source: Statistical Register, 1861-1878.

From being the "granary" of the colony in 1860, these coastal regions were reduced to complete insignificance in little over a decade (Figure 17). At the beginning of the 1860's about 50 per cent of all the wheat sown in the colony was concentrated in these regions, and of this more than 62 per cent was in the five units of Maitland, Dungog, Patrick's Plains, Windsor and Wollombi, and Camden, Narellan and Picton. By 1864 the coastal share in the colony's total wheat acreage had fallen to 19.2 per cent. The whole of the settled districts, despite a considerable increase in acreage in the inland portions, tended to lose place as a major wheat growing region, though until 1877 still boasting more than 50 per cent of the total wheat acreage in the colony. These developments are shown in Table 11.

In seeking to rationalise the initial drastic decline of 1863 and 1864, and the slower, prolonged, contraction of the succeeding years, the first recourse must be to statistics of yield. From these, shown in Table 12, many of the answers can be inferred.

settled districts  
of  
**WHEAT**  
PERCENTAGE DISTRIBUTION



Source: Statistical Register.

TABLE 11

Percentage Changes in Wheat Acreage Distribution Within the  
Settled Districts

1861 - 1878

Year	Acreage in Settled Districts as % of Total Wheat Acreage.	Acreage on Coast as % of Total Wheat Acreage.	Acreage on Coast as % of Acreage in Settled Districts.
1861	83.6	48.5	58.1
1862	78.2	46.5	59.4
1863	80.1	34.5	43.1
1864	71.9	19.2	26.7
1865	65.5	16.7	25.6
1866	70.9	14.6	20.5
1867	73.9	11.5	15.5
1868	70.3	13.6	19.3
1869	72.6	16.6	22.8
1870	65.0	16.4	25.3
1871	63.8	10.9	17.1
1872	62.6	8.9	14.3
1873	61.2	7.3	11.9
1874	60.8	6.1	10.0
1875	53.2	4.7	8.8
1876	49.7	5.2	10.6
1877	51.0	4.4	8.8
1878	44.0	2.8	6.4

Source: Based on Statistical Register, 1861-1878.

TABLE 12Average Wheat Yield in the Coastal Districts of New South Wales1861 - 1878

<u>Year</u>	<u>Average Yield (bushels/acre)</u>	<u>Year</u>	<u>Average Yield (bushels/acre)</u>
1861	11.4	1870	4.9
1862	9.2	1871	9.7
1863	2.0	1872	11.5
1864	3.5	1873	9.0
1865	9.8	1874	11.4
1866	6.8	1875	13.4
1867	6.3	1876	16.4
1868	11.2	1877	14.5
1869	13.5	1878	10.9

Source: Based on Statistical Register, 1861-1878.

Comparing the yield returns with the acreage fluctuations it would seem unlikely that a yield of 9.2 bushels per acre in 1862 could be responsible for causing the substantial contraction of 14,000 acres in the following year.<sup>17</sup> It would seem from other sources that this decline was brought about by poor seasonal conditions in the autumn of 1863, widespread floods severely hindering the preparation of the land for seed.<sup>18</sup> There can be

17. Sample returns for the settled districts, recalculated into police district units from the Register, are given in Appendix II, Table A.1.

18. See the retrospective account in SMH, 11/6/63.

little doubt, however, that the miserably low yield of 1863 was responsible for the even greater contraction in the area of land sown to wheat in the following season. Nor can there be doubt that a second year of pitifully low yields in 1864 militated strongly against increased speculation in wheat culture. The confidence of the farmers must have been severely shaken. Not until 1868 did the yield per acre show any promise of significant improvement, and it is perhaps indicative of the state of desperation to which the coastal farmers had been reduced by successive failures, that this increase in yield was immediately followed by a considerable increase in acreage. For two years the situation brightened. Acreages were optimistically high in 1869 and 1870, only to be countered in the latter year by yields once more slashed to below five bushels per acre.

An improving yield position in the drastically pruned industry over the 1870's did not again lead to an increased acreage - the lesson of the sixties had been learned at bitter cost. Maize was found by the farmers to be a more reliable staple. Though the total cultivated area showed an initial slump from 167,877 acres in 1861 to 140,211 acres in 1864, it had recovered before the decade was out, and after a second slump in 1870 it continued to increase in contradiction to wheat acreage decline.<sup>19</sup> The position with respect to grain crops on the coast in 1861 and 1878 is shown in Table 13 as a percentage of the total cultivated acreage.

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<sup>19</sup>. It will be seen that this decline is very nearly equivalent to the reduction in wheat acreage between these two years.



TABLE 13Grain Crops on the Coast in 1861 and 1878

Crop	<u>1861</u>		<u>1878</u>	
	Acreage	% Total Cultivated Area	Acreage	% Total Cultivated Area
WHEAT	60,397	35.9	6,888	4.1
MAIZE	38,509	22.9	56,376	34.0
OATS	14,733	8.7	22,146	13.3
BARLEY	2,485	1.4	5,215	3.1

With regard to wheat prices it can be seen (Table 14), that after the initial shock of the harvest failure in 1863, the price of wheat on the Sydney market rose by almost 100 per cent. The immediate reaction of speculators, however, in buying wheat and flour from abroad helped to counter any tendency to a maintenance of the high price level of 1864. Throughout the remainder of the period net import of wheat into the colony tended to increase and wheat prices remained at a relatively low, though stable level, when compared to the wild fluctuations of the gold decade.

TABLE 14Net Import and Wheat Prices in New South Wales1861 - 1878

<u>Year</u>	<u>Net Import</u> ( <u>thousand bushels</u> )	<u>Price</u>
1861	1,088	6/6
1862	875	7/-
1863	955	6/6
1864	1,923	12/-
1865	1,415	8/-
1866	1,932	6/6
1867	165	5/3
1868	1,235	6/6
1869	1,258	6/-
1870	1,265	5/6
1871	1,707	5/10
1872	1,199	6/-
1873	1,385	5/9
1874	1,368	5/6
1875	1,892	5/6
1876	1,893	5/6
1877	1,480	6/6
1878	2,146	5/9

Source: Statistical Register, 1861-1878.

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THE "PERPLEXING BLIGHT"

Most of the environmental hazards facing the coastal wheat-grower had been encountered more than once by 1860. Floods had come time and again to destroy growing crops and to sweep away stacks, implements and livestock. Drought too was familiar; more cruel and insidious than the

sudden destruction of the floods - lingering and parching; the losses less dramatic but more widespread. From time to time organic pests made their appearance; caterpillars were periodically a nuisance, weevil still found a way into the stacked wheat and bunt or rust occasionally decimated individual crops. In particularly hard seasons some farmers were ruined, but others took their place and most survived the worst that a capricious Nature could send. The acreage under wheat continued to expand, and with the expanding acreage the impact of single visitations grew less. Then came the 1860's, and in the wake of drought and flood there loomed a new threat - not new in form, but in proportion. The parasitic fungi, popularly called rust, began to sweep through the wheatfields in epidemic volume.

#### The Life-Cycle of the Rust

Rust usually made its appearance in spring or early summer (October in New South Wales) as orange or red streaks on the growing crops of wheat. When the attack was severe the fields would look "as if prematurely ripe for the sickle; but it is an illusion and, like the apple of the Dead Sea, yields nought but dust."<sup>20</sup> By harvest time, however, if the crops had not already been given up for lost and fed to the cattle or cut for hay, the redness had often disappeared to be replaced by dark-brown or black pustules. This led, not unnaturally, to the supposition that two species of parasite invaded the plant. They were even named differently;

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<sup>20</sup>. SMH, 17/11/63.

the reddish spores of the one became Uredo linearis, while the black spores of the other were Puccinia graminis.<sup>21</sup>

Not everyone was convinced. Among the sceptics was Sir Joseph Banks.<sup>22</sup> Could not the red and black spores, as many farmers supposed, be simply two stages in the life-cycle of the same parasite?<sup>23</sup> The answer, in the affirmative, was provided by the Tulasne brothers, working in France in 1854.<sup>24</sup> The fragile red spores - uredospores - were the means by which rust infection spread so rapidly among the green crops. They germinated rapidly and began to grow immediately on contact with their host. The black spores - teleutospores - were thick-walled, double celled, and considerably tougher. Unlike the uredospores, which broke loose from the plant to blow about in the wind, these spores remained in the stems and were the means of survival of the fungus over the long, cold European winter.

The germination of the black spores with the coming of spring gave rise to the third phase in the life-cycle of the rust. These were the "sporidia" whose function it was to affect the first penetration of the host plant. But what was the host plant? de Bary tried, but failed, to infect wheat with the third fruit, the sporidia. He concluded, rightly, that wheat rust must employ a second host.

21. The names were given by C.H. Persoon early in the nineteenth century. See Large, E.C., The Advance of the Fungi, 126, (London, 1940). Hereafter cited as Large, Fungi.

22. See ATCJ, 24/8/72.

23. For this opinion amongst farmers in New South Wales see report from Molong, SMH, 9/10/66.

24. Large, Fungi, 127-128.

A popular superstition in seventeenth century Europe held that the barberry bush, by reason of its "rusty" colouring, could infect adjacent fields of corn with the disease. So firm was the conviction that legislative measures were passed in Rouen, France, in 1660, requiring the destruction of all barberries near grain fields.<sup>25</sup> This was followed, in 1726, by the passing of similar measures in the United States, first in Connecticut and subsequently in other states.<sup>26</sup> The measures, if not the logic behind them, were justified by de Bary in 1865. He demonstrated that the sporidia of the wheat rust utilised the barberry bush as its second host. Here they formed the fourth fruit - the aecidiospores - which carried the fungus from the barberry to the wheat, there to complete the cycle by giving rise to the red spores on the green crop.<sup>27</sup>

The life-cycle, in effect, was known by the mid-sixties. There remained one puzzle however, particularly with regard to the propagation of the disease in Australia where the barberry was, to say the least, extremely rare. The teleutospores were adapted to weather the rigours of winter in the break between crops. In Australia, however, the crop was sown in March or April and harvested, usually, in December. The break between crops occurred, therefore, not in winter, but in summer. The teleutospore stage could not then be of any significance in Australia. Waterhouse has shown that the teleutospores are capable of over-summering,

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25. Chester, K.S., The Cereal Rusts, 5, (Mass., 1946). Hereafter cited as Chester, Rusts.

26. Ibid., loc. cit.

27. A fifth stage, the spermogonia, occurs between the sporidial and aecidiospore stages and represents the sexual act of Puccinia graminis.

but when the aecidiospores are normally produced the red spores are already established.<sup>28</sup> In other words, the gap between crops in Australia can be bridged by means other than the teleutospore/barberry/aecidiospore sequence.

The over-summering of wheat rust in Australia is achieved by the asexual propagation of uredospores. Credit for this discovery is usually accorded to McAlpine for his work in 1906, although it is shown below that Cobb made similar assertions as early as 1892.<sup>29</sup> The findings of both Cobb and McAlpine were confirmed by Waterhouse in 1920 and again in 1929. This means that, under Australian conditions, wheat rust does not, or need not, pass through a stage of great vulnerability comparable to the barberry stage in Europe and North America, where twentieth century barberry eradication programs, in the United States and Denmark for example, have considerably reduced the danger of epidemic rust infection. The over-summering of uredospores in volunteer wheat crops, wheat stubble and in native grasses presented a much more formidable problem. The eventual solution was to lie in breeding rust - resistant varieties, but in the 1860's this was an art yet to be learned.

The coastal wheat farmers in New South Wales were then truly defenceless. Even had they known of de Bary's work and had they been familiar with the threat of the barberry, they were powerless to combat the inner cycle maintained by the viable uredospores.

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28. Waterhouse, "Rust Studies", 673.

29. McAlpine, Wheat Rust, 21. But see below, Chapter 7.

The Decline 1861 - 1870

"The wheat generally is looking remarkably well, though at some places near Maitland the rust has made its appearance, and in consequence some of the farmers have cut it for fodder."<sup>30</sup> Thus, in early October, 1863, did the readers of the Herald gain their first indication of what was to follow; no panic, no concern - just a casual statement in passing. The "rust "has made its appearance." It had happened before, of course; rust was not unknown. It was nuisance; even, perhaps, a personal disaster for the individual farmer whose crop was infected, but it was nothing to alarm the general public. It would not affect the price of the Sydney loaf.

Six days later the Windsor correspondent, writing of the showery weather that had persisted for some eight or ten days, worried lest it should encourage the spread of rust "with which, unfortunately, a great proportion of these apparently beautiful crops are infected."<sup>31</sup> In the same edition, from Maitland again, came news of "serious complaints" amongst the farmers. "Until a week ago," the correspondent wrote, "rust was said to be confined to a few farms, and not to have extended much beyond Bolwarra, now, however, we hear it is spreading ... "<sup>32</sup>

Rust was familiar enough, but rust in epidemic proportions was something quite new. By the twenty-second of the month the mild appre-

30. SMH, 3/10/63.

31. SMH, 9/10/63.

32. Ibid.

hension had turned to little short of panic as a full realisation of the impending disaster began to penetrate:

Thousands of acres will be totally ruined, and little or no yield at all can be expected - Certainly our district (Windsor) commands piteous attention - one year visited by flood and another with a drought, and now, when it was expected in some degree to make up for the misfortunes of the past, another affliction sets in upon us, the result of which will be melancholy indeed. The farmers are bitterly complaining and many are cutting down and burning their crops.<sup>33</sup>

Well might the farmers bitterly complain. The decade had not been an auspicious one after 1860. The large area of land under wheat and the decent prices offering in 1860 had been followed by an unhappy sowing season in the following year. Floods - the old enemy - had swept down the valleys of the eastern rivers and from the major farming districts - the Hunter, the Hawkesbury, Windsor, Wollombi - the story was the same: the season was getting "well advanced" for sowing wheat and the unfavourable weather had seriously hindered agricultural operations.<sup>34</sup> The acreage under wheat would be less this year. The usual reports of personal distress found their way into the newspaper columns and the "alarm amongst farmers and settlers" was said to be "immense".<sup>35</sup> The acreage did decline, and the prices ruling after the abundant harvest of 1860 were not good.

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33. SMH, 22/10/63.

34. SMH, 4/5/61.

35. SMH, 2/5/61.



In 1862, rather than a turn for the better, things grew worse. This time drought, not flood, was the culprit. A wistful correspondent from Picton wrote: "The weather has been unusually fine for the time of year; too fine, unfortunately, for our farmers and stockkeepers, who bitterly deplore the lack of rain."<sup>36</sup> The drought held from sowing time through until October when welcome thunderstorms broke. For the cultivation paddocks though the relief came too late. "As far as the crops are concerned," wrote the Maitland correspondent, "the rain has come about six weeks too late ..."<sup>37</sup> The wheat had been cut or the cattle turned into the yellowing paddocks to find what succulence they could amongst the shrivelled ears. In some places losses had been so heavy that the Government had been forced to provide seed-wheat for the distressed farmers.<sup>38</sup>

Compared to what followed, however, 1862 had been an easy year. The farmers did not recoup even their seed and the Government had no hopes of repayment for its outlay after the drought. The yield of nine bushels per acre, thought to be so low for 1862, was almost five times as great as the yield in 1863 (Figure 18).<sup>39</sup> From Campbelltown came this sorry report:

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36. SMH, 12/6/62.

37. SMH, 7/11/62.

38. Official History, 376-377.

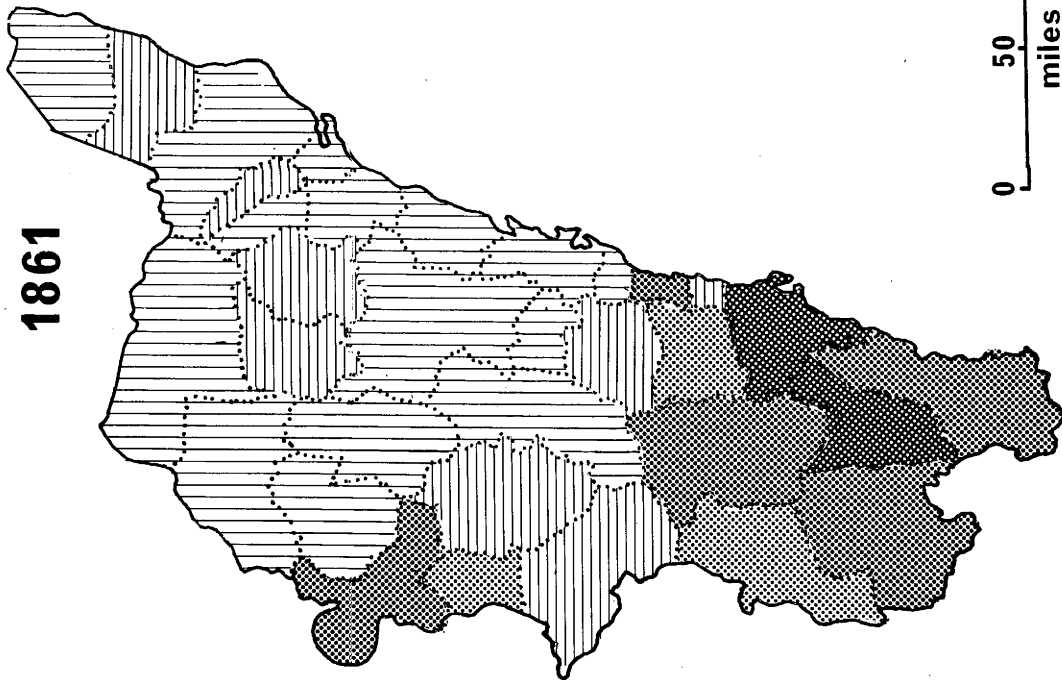
39. See Article on 1862 harvest in SMH, 14/10/63.

Source: STATISTICAL REGISTER

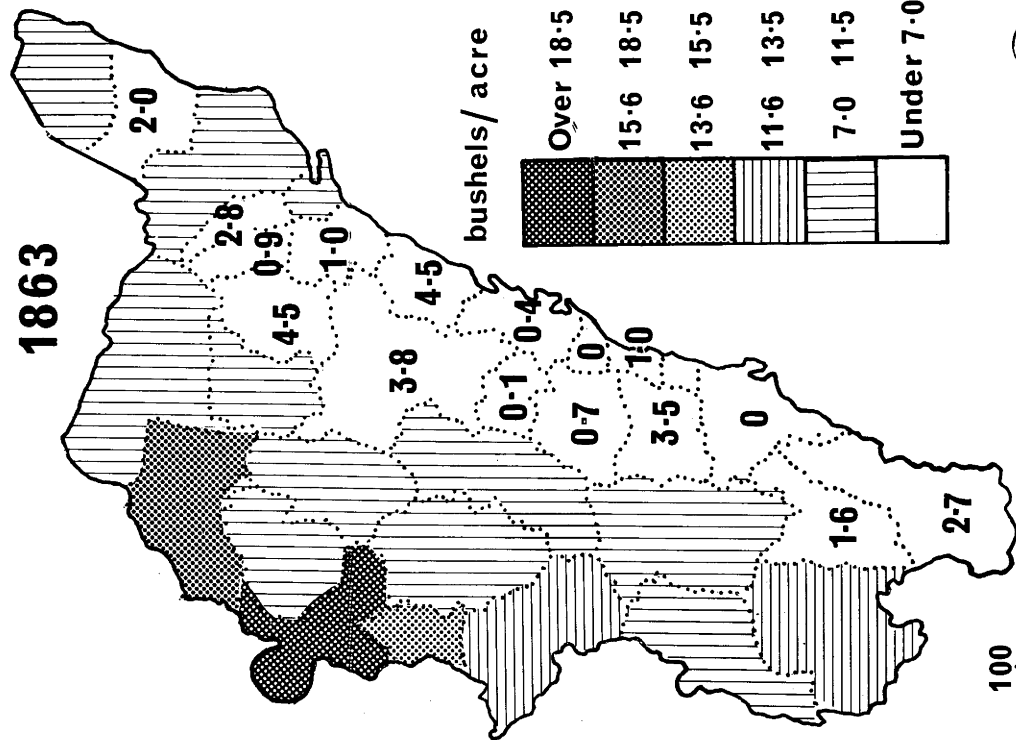
settled districts

# WHEAT YIELDS

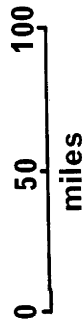
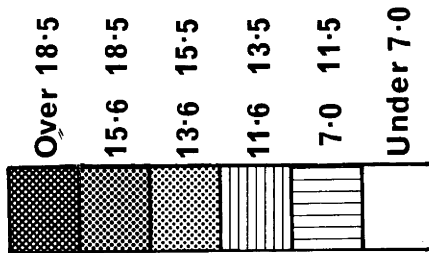
## 1861



## 1863



bushels/acre



How easily is the eye deceived; to the inexperienced many a florid countenanced youth or maid may appear to enjoy all the blessings of good health, while at the same time health is rapidly decaying by consumption. So it is with the wheat crops of Campbelltown district; at a distance they look ripe already to harvest, but on close examination how soon is the scene changed: instead of the ears being well filled with precious grain, they are parched and pinched-up, burnt with that fatal disease, the rust. Thus have the crops of our district been blasted; the hope of the husbandman cut off and the neighbourhood sadly impoverished. Farmers felt the loss of their crops last year and preceding years, but the present failure has saddened many a heart and led them to dread the consequences.<sup>40</sup>

The following year, 1864, brought no improvement. The losses caused by rust were severe and widespread, and most districts on the coast could have painted a picture as miserable as that from Singleton:

At a rough guess, about 8000 acres may be set down as the quantity of land under wheat in the Singleton district this season. Of this quantity, probably 5000 acres of wheat have already been mown for hay, or destroyed on account of the rust, and another thousand acres will most likely have to share the same fate, leaving 2000 for the harvest, which, at the average of 15 bushels to the acre, would yield 30,000 bushels; but as a considerable quantity of this grain will be more or less pinched, the net quantity of sound wheat may be set down as reaching probably about 25,000 bushels.<sup>41</sup>

This calculation, with its estimated average of just over three bushels per acre, was sadly accurate. After three bad seasons - two of them disastrously bad - the farmers began to cast around for a grain to

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40. SMH, 12/11/63.

41. SMH, 16/11/64.

supplant wheat. The acreage under maize began to increase as succeeding years showed no evidence that conditions were likely to substantially improve. Though the yields in 1865 and 1866 were a little better, the disease was still much in evidence on the Hawkesbury and around Maitland and frequent reports of savage destruction in the wheat fields took on the attitudes of commonplace events. From Windsor came the resigned comment that "there seems little hope of the Hawkesbury ever again becoming a wheat-producing district."<sup>42</sup>

### Reaction

Bewildered, angry and frustrated as they were, the coastal farmers, and indeed farmers all over the colony, were not content to stand idly by in the face of so enormous a threat. Though the precise nature of the disease was little understood amongst these "practical" men, yet most had their own theories, however wild, and their own "cures", however useless. There existed no Department of Agriculture at this time; no experimental stations staffed by competent mycologists or agricultural scientists. This was a task which, if tackled at all, had to be undertaken by the individual. The chances of success, accordingly, were slim. The newspapers, and particularly the newly published Town and Country Journal, tried hard to advise, but at best they too were only guessing. The true nature of the disease, and of its mode of propagation in Australian conditions, was to remain a mystery until Cobb began his pioneering work

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42. SMH, 16/11/67.

at the Department of Agriculture in 1892. Throughout the 1860's, however, suggestions poured in from all over the colony and from men in all walks of life, from consuls to clerics. Most of these suggestions concerned the need for thoroughly steeping the seed-grain before sowing: a technique which had for long been recognised as a preventative against another fungoid disease, stinking smut (Tilletia foetida). The better informed, of course, immediately recognised the folly of such advice: the two diseases were entirely different, the one infecting the crop via the seed, and the other via the growing leaves and stems. "As well might be prescribed", wrote one such informed gentleman, "a similar bath for an infant as a sure specific against the small-pox or ague in later life."<sup>43</sup>

But while many were writing to the newspapers advising steeps, or warning farmers to keep their children away from rusty fields lest they should be infected with "sores and scabs",<sup>44</sup> or claiming categorically that rust was, in fact, caused by an insect,<sup>45</sup> others were performing a more logical service. In March 1861 a Herald correspondent had said how very pleased he was to see that colonial farmers were at last beginning to take an interest in the different varieties of wheat and their properties.<sup>46</sup> Until then, little attention had been paid to the particular

43. SMH, 14/12/63.

44. ATCJ, 9/3/72.

45. SMH, 3/12/64; 25/11/63.

46. SMH, 26/3/61.

variety of wheat sown; it was either red wheat, white wheat, or bearded wheat. While crops were good, indeed, it is perhaps hardly surprising that scant notice was given to distinguishing the different varieties. With the coming of epidemic crop disease, however, and the intense scrutiny given to growing crops, it was quickly noted that different strains of wheat reacted in different ways. It became a matter of crucial importance to know whether the scourge could be avoided by sowing any particular one. Not that many farmers made conscious efforts at systematic selection using naturally occurring mutations, but many had a sharp eye allied to their lively interest that made up, to some extent, for their scientific shortcomings.

At least one of these farmers, however, made a positive effort to establish a new selection and to market it: this, some twenty years before William Farrer. This man, named Pratt, had noticed in his field what he assumed to be a cross between White Lammas and a bearded wheat. The plant was rust-free while all around were "smothered with the blight".<sup>47</sup> After four seasons Pratt had succeeded in raising an eight acre crop of rust-free wheat "in the very locality from which wheat culture has been banished by the terrible scourge".<sup>48</sup> Late in 1873 a sample of the new wheat arrived in Sydney, causing considerable excitement in anticipation of the miller's report on its flour-yielding qualities.<sup>49</sup>

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47. ATCJ, 8/11/73.

48. ATCJ, 8/11/73.

49. ATCJ, 6/12/73.

The results of the report must have been favourable for in March 1874 a short paragraph appeared in the Town and Country Journal advising farmers that quantities of seed from the wheat were on sale at one of the Sydney seed-merchants.<sup>50</sup> What had promised so well, however, met with a dismal anti-climax: while in the merchant's store, Pratt's seeds were attacked by weevil and had to be withdrawn from sale.<sup>51</sup>

This is but one case - there were others - of individual initiative attempting to find a solution by choosing or selecting particular strains of wheat.<sup>52</sup> They were all, to a greater or lesser extent, unsuccessful, but the principle of seeking prevention within the plant itself was a good one and foreshadowed by almost a generation the first scientific steps in breeding for rust resistance.

#### HOPES OF RECOVERY

With acreages slashed by more than 50 per cent and dwindling almost every year, the future of coastal wheat-growing must have seemed dim in 1870. Tradition, though, often dies hard, and these areas had a special place in the outlook of the colonial farmer. They were, even then, the good lands, enjoying every advantage and denied their rightful place as suppliers of the Metropolitan market only by a cruel fate. Nothing could better indicate this basic confidence in the region than the recurrent hope, and indeed the firm belief, that recovery was just around the corner.

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50. ATCJ, 28/3/74.

51. ATCJ, 30/5/74.

52. See, for example, ATCJ, 8/11/71; 2/3/72.

There was, after all, no reason to suppose - given the inadequate understanding of the disease - that these dreadful visitations would last for ever. With suddenness they came and with suddenness they would no doubt depart. When that day came it followed that the coast would take up where it had been forced to leave off, and once more earn the title of the "granary" of the colony. To some, keenly aware of the growing level of grain importations, it was a matter of great importance that the peculiar advantages of the coastal regions should be utilised. In recommending increased attention to the selection of seed-wheat, the Town and Country Journal stressed particularly "those districts near the coast, where, on account of the facilities of transport, it is most desirable that it (wheat) should be more extensively cultivated."<sup>53</sup>

The farmers themselves, ever optimistic as Australian farmers must be, still regarded wheat as a fitting crop to sow in the coastal lands when the chances of rust seemed low, or when prices for other crops were poor. It was no longer the major grain, of course, but the hope of profit made occasional gambles seem worthwhile. Thus, from Dungog:

Our farmers, owing to the very low price of maize, are sowing wheat and other cereals much more extensively than they have done for many years past, thinking, no doubt, it is as well to chance the rust, more especially as that destructive blight was not very bad last year.<sup>54</sup>

Prices, as always, were important. The new staples of the coastal regions

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53. ATCJ, 2/3/72.

54. ATCJ, 8/6/72.



were maize and hay, but the market was an uncertain one and the prices were not good (Figure 19). The wheat market too was low, thanks to extensive importations, but at least it was steady, and this was a strong recommendation.<sup>55</sup> Only rust, the "perplexing blight", prevented a widespread return to wheat-growing. Even this, it was felt, was just a matter of time:

That rust (*Puccinia graminis*) has permanently abolished wheat culture in these districts ought not to be taken as conclusive. At the beginning of the present century, the same fungus, for several years, destroyed the crops in the same localities in which, of late years, it has been so destructive, and which, at that date, may be said to have comprised the whole of New South Wales. It was then, as now, thought that wheat could not be successfully cultivated here on that account. But we have seen that the scourge, through many succeeding years, did not, to any serious extent, injuriously affect it; although, perhaps, it was never entirely absent - should rust again disappear from these districts, and why should we not expect it to do so now as well as it did before? Wheat may again be produced and its culture be as profitable as it is in other parts of the colony.<sup>56</sup>

So the hope continued that rust would eventually "run itself out". It was a stubborn hope, receiving little encouragement as each season brought reports of crop failure and widespread rust damage. Trial plots were laid out in the "old districts" in 1876 with a view to testing the vigour of the blight. They were infected and cut for hay.<sup>57</sup> Yet the

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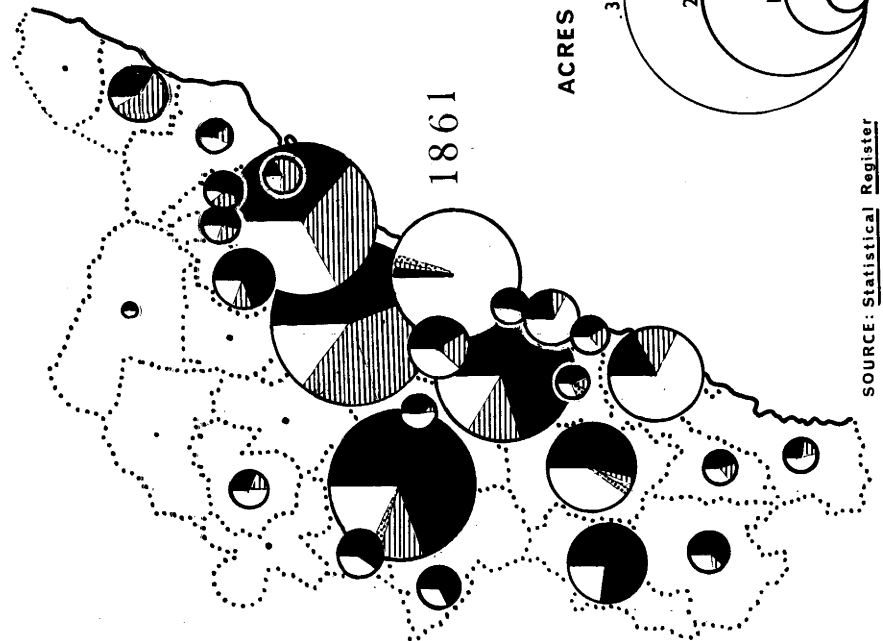
55. In 1871 the Journal wrote, "Maize is the great New South Wales grain, the other colonies cannot grow it so that there will always be a market for it." ATCJ, 18/2/71. It seems likely, however, that by the following year maize producers were suffering from low prices as a result of over-production.

56. ATCJ, 24/8/72.

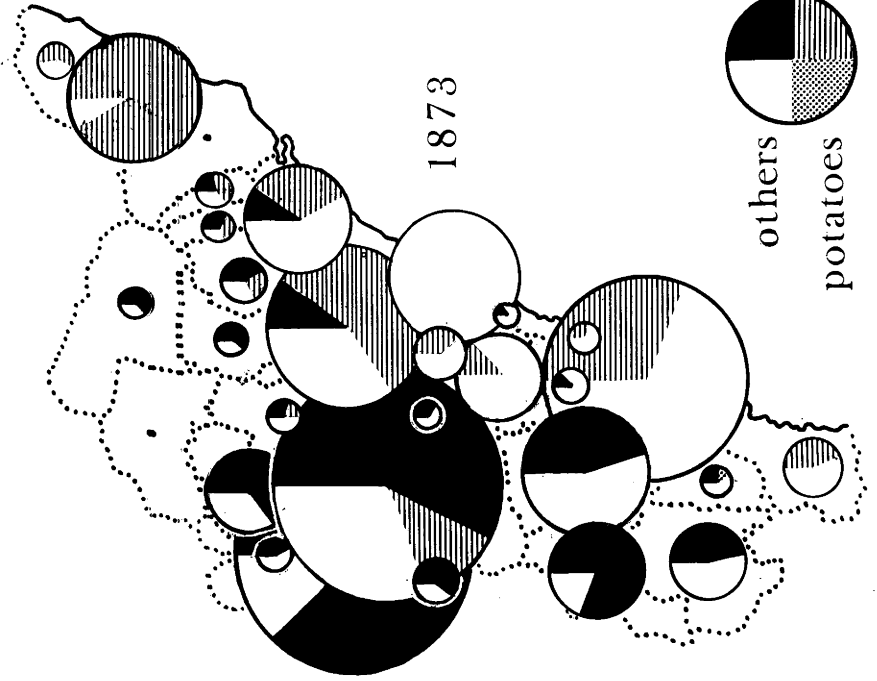
57. ATCJ, 25/11/76.

SETTLED DISTRICTS

# AREA UNDER CROP 1861 - 1873

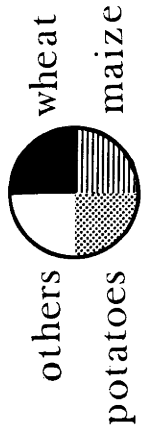
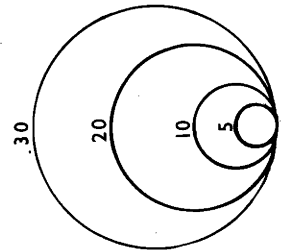


1861



1873

ACRES (000's)



hope persisted and was raised occasionally by isolated reports of rust-free crops. The season of 1876-77, despite the failure of the trial plots, was generally a fair one and the "agreeable sight and sound of the threshing machine so long suspended in the districts afflicted by rust ... once more raised the hopes of those settlers who had not been forced away."<sup>58</sup> The hopes were premature, of course; rust continued to strike, and for four decades continued to dominate discussions of wheat culture.

The most unhappy of all, perhaps, was that the disease continued to be so little understood. New South Wales, away from the mainstreams of scientific investigation in Europe, was not drawn into the controversy of "spontaneous generation"; it had no de Bary or Pasteur to erect new structures for an understanding of the pests which plagued their fields. The continued faith in the coastal lands and the hopes of eventual recovery were nothing more than an affirmation of faith in the traditional farming system and the traditional farming areas. Only time would show that the regeneration of wheat farming in New South Wales was occurring in new lands, under new techniques, on a new frontier.

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58. ATCJ, 10/2/77.

CONCLUSION

By 1866 the apparently stable, and even stagnant, locational pattern of wheat-growing had changed radically. It had changed in two directions, first by the decline of the traditional wheat-growing districts on the coast, and second by the expansion of wheat-growing in the interior. Yet it has been shown beyond reasonable doubt that the decline of the coast was essentially a consequence of relatively localised conditions, and that it did not reflect in any way the outcome of competition on the Sydney market from the expanding inland industry. The cause, stated simply, was epidemic crop disease.

If the preceding discussion solves one problem, however, it poses another, and one possibly more complex. For if - as now seems certain - the coastal decline was not connected in any way with developments in the interior and was, in fact, adventitious and purely local, how are these additional developments to be explained? What reasons are to be adduced for an expansion of acreage in the inland of the order of some 250 per cent between 1860 and 1866? If the Sydney market was, in fact, still beyond the reach of the inland producers, where and by whom was the additional produce consumed? In other words, an acceptance of the view that the coastal decline was caused by crop disease carries with it the implicit assumption that over the period of this decline the dual market structure of the industry was retained, and this raises the basic problem of what was happening on the inland market if the coast was being served by imported wheat.

Moreover, in view of the discussions in Part 1, other problems are raised. It was there argued that three major inhibitory factors limited the expansion of agriculture in the interior: the physical environment; the problems of land access; and the difficulties of communication. The sudden expansion of acreage in the interior, therefore, suggests that in some way all, or some, of these factors did not obtain over the early 1860's, and certainly over the late-1870's when acreage began to expand very considerably. The remainder of Part 2 is therefore devoted to an examination, first of the issue of land reform, and second of the problems of transport, with a view to determining the extent to which modification of these factors encouraged the extension of wheat-growing and affected the market conditions under which wheat-growers operated.

CHAPTER 4.THE LAW AND THE LAND

Let the squatters beware how they raise this storm, let them take care before the impending storm bursts upon them, and let them remember that they are dealing with the same people who under pressure in the mother country brought their monarch's head to the block.

(Mr. Buchanan on the second reading of the Alienation Bill, SMH, 31/1/61)

## THE LAW

The proponents of land reform in mid-nineteenth century New South Wales had one basic objective: the reversal of the pastoral hegemony that had persisted since 1847. Beneath the umbrella of this simple expression, however, there sheltered no single motive, nor did there exist catholic agreement on how best to achieve the goal. John Robertson and his supporters in the Lower House - their numbers swelled after the sweeping radical victories in the elections of late 1860 - put forward two principal motives.

First, land reform had been clearly demanded by the people in the proper exercise of their constitutional privileges and it was, therefore, the duty of each Member of the House to acknowledge, and to expedite the fulfilment of, this demand. Indeed and in truth most of them did acknowledge it, even amongst the Opposition and in the dominantly Tory Upper House.<sup>1</sup> In their heart of hearts the "old obstructionists" might

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1. See debates in Council on the Alienation Bill, introduced in January, 1861. SMH, 5/5/61 - 1/6/61.

still have agreed with the Herald that the Waste Lands Act of 1846 was the ideal system of administering the disposal of Crown Land within the colony, but by 1861 none were prepared to say so categorically.

Opposition came to centre, therefore, not upon the granting of reform, but upon the methods to be adopted and upon the degree of protection to be afforded to the pastoral tenants of the Crown. The second motive was, superficially, at least, a more straightforward one: a new land law was widely held to be the key to the solution of the depressed condition of the colony's agricultural industry. The lands, it was claimed, were "locked-up" in squattages; they must be "unlocked" and every encouragement given to people to settle and to farm. Once people were on the land, presumably, agriculture would take care of itself.

The distinction between these two apparently interdependent motives can be readily justified. The first was a political issue - a question of the assertion of the will of the majority, placed for the first time in direct opposition to the influence of the minority. This was the emotive side of the struggle and consequently the side which made certain of ultimate victory. Behind it lay the baser motives as well as the higher ideals, and what to some was an expression of principled radical democracy, to others was an outlet for accumulated frustration, militant bigotry, and unprincipled envy. Indeed this facet of the land question was little concerned with the land at all; any issue would have sufficed so long as it crystallised the inherent mistrust and mutual antipathy that is the essence of a class-structured society. The Land Bills, of course,

fitted the theme perfectly. The squatting class enjoyed privileges and wealth vested in the land - to strike at the source of this prosperity was indeed to strike a blow for the common man. Yet, though it is probably true that many of the supporters of reform were in actuality uninterested in the result - beyond the political ruination and the social levelling of the pastoralists - it was these very people that guaranteed the outcome. Robertson's Bills were whips to chastise the squatters and they were eagerly seized upon by an electorate willing, if only through sheer perversity, to perform the task.

Interconnected, though far from strictly interdependent, was the second motive of fostering a flagging agricultural industry. As an essentially pragmatic issue this had more to recommend it than the hollow rhetoric and often phoney idealism of many of the colony's radicals.<sup>2</sup> Agriculture was in a sorry state: techniques were backward and were widely held to be slovenly and lackadaisical; acreage and production were not keeping pace with population increase and the colony was forced to spend ever-larger sums on the importation of foreign grain. Pastoralism, because it required space, because it required capital, because it was associated peculiarly with a class that had created it and which it sustained, because in other words it was the very antithesis of the under-capitalised and meagre agricultural industry, was scorned as wasteful of the colony's vast resources; it excluded from the rich lands of the interior the man with little money and no credit - the farmer, the honest "yeoman" of an idealised English tradition. Only pastoralists could lease their land, yet for this privilege they paid ridiculously low rents. The

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<sup>2</sup>. See, for instance, the nominees' speeches at Morpeth in SMH, 26/11/60.



poor man, necessarily a farmer if engaged in rural pursuits, had to buy his land, and buy as dearly as anywhere in the Empire. This was not all. Auction was iniquitous, for by inflating the value of land it favoured every time the man of means over the earnest but impecunious would-be settler. Finally, there was the Survey Department with its antiquated and laboriously over-centralised mechanism - the passing of letters to and fro, the seemingly endless circumlocutions, the delays, the frustrations, the costs - hard for the poor man to bear, easier for the rich.<sup>3</sup> The division of motives is clear enough. The pragmatic issues were the sticks which armed the proponents, but they were not the cause of the battle and they were not the trophies to be won. By 1860 land reform had ceased to hide behind a makeshift shield of economic necessity and the issue had become starkly political. Some of the grievances were real ones, some were imagined, but all were sufficient to lend strength to Robertson's political arm and to give volume to the cry, more symbolic than literal, "unlock the public lands".

Even with respect to the second of these motives, however, some saw apparent flaws in the logic, weaknesses in the solutions posited, and inconsistencies which served to divorce still further the practical from the political. The squatters reigned on the "coveted" lands of the interior, from the Monaro in the south to the valleys of the Clarence and Richmond in the north, over the broad expanses of the western slopes and

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<sup>3</sup>. For a summary of these grievances see Manifesto of the New South Wales Land League, (Sydney, 1859).

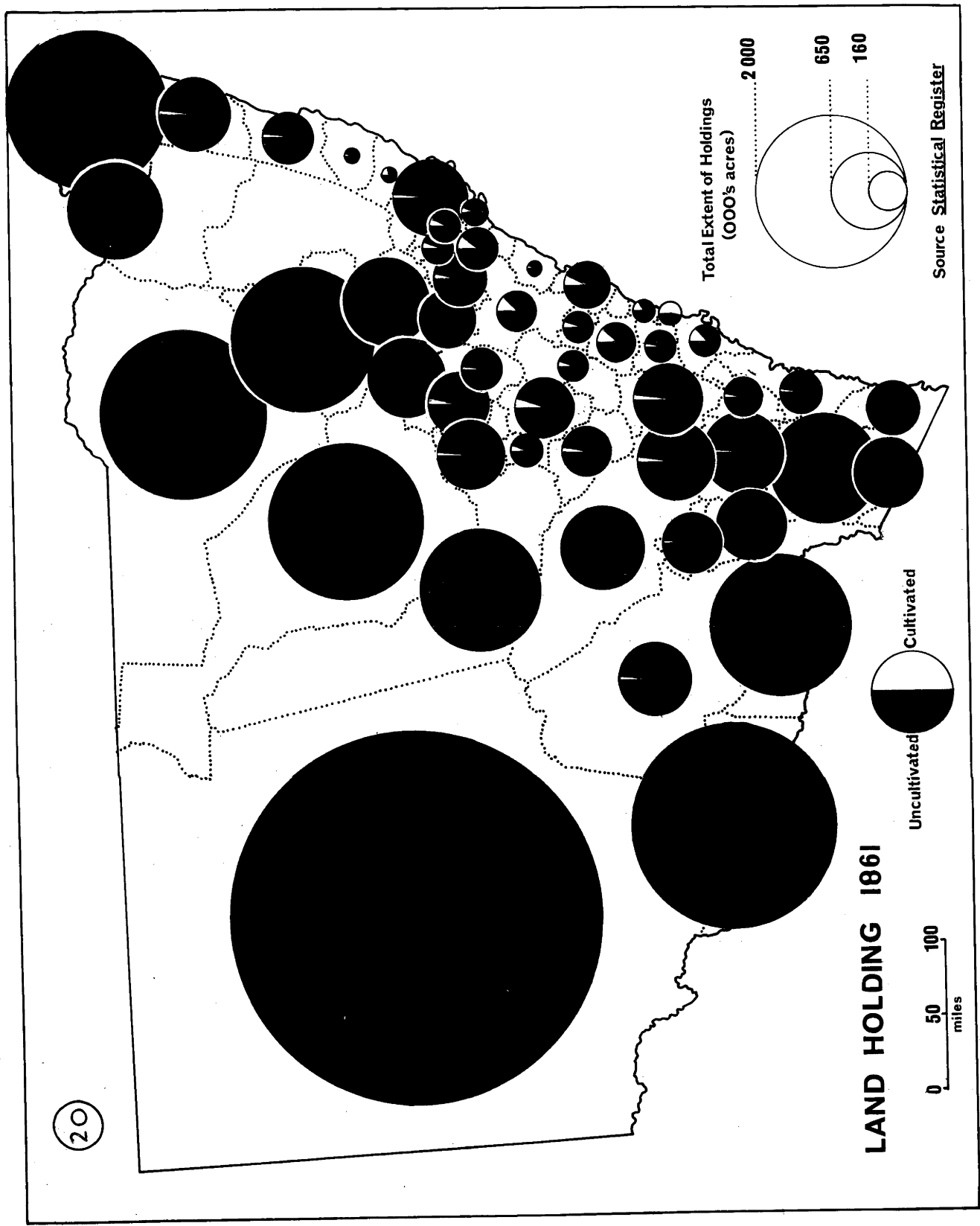
out to the margins of the semi-arid desert. These were the lands, beyond the settled districts, that were to be "unlocked"; these were the lands of the long leases and the rich soils from which, it was held, the potential farmer was barred as a result of the operation of the 1847 Order-in-Council (Figure 20). The opponents of reform felt it worthwhile, in considering these lands, first to pose the question, "Why were the squatters able to establish their empires in this environment without competition from agricultural interests and without themselves turning to the commercial production of grain for which these lands were in 1861, by inference, supposed to be so well suited?"; and then to ask whether, since the beginning of the agitation for land reform in the late 1840's, the conditions there had changed sufficiently to warrant a modification in the law aimed at encouraging a different form of economic activity?<sup>4</sup>

The facts were these, and they were indisputable: that when, over the fourth and fifth decades of the century, the squatters appropriated to themselves the lands beyond the "limits of location", these lands were useless as commercial farming lands and were widely acknowledged to be so; that when, towards the close of the fifth decade, Lowe began his attack upon squatting privilege it was an issue of principle since conditions beyond the settled districts had not changed sufficiently to warrant the encouragement of any other form of rural activity there; and that, even in the late-1850's, with the rise to prominence of Robertson and his "free

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4. Examples of this kind of argument are in SMH, 7/1/61, 28/1/61, 14/2/61, 11/5/61.

20



Total Extent of Holdings  
(000's acres)

2000

650

160

Uncultivated Cultivated

LAND HOLDING 1861

0 50 100  
miles

Source Statistical Register

selection" issue, they had still scarcely altered.

The conditions were, in the main, that these lands were inaccessible, yet the only market for any volume of agricultural produce was in Sydney. Local markets were very limited and, as a result, were easily satisfied. Furthermore, under the provisions of the 1847 Order, most leaseholders probably grew sufficient grain to satisfy the immediate station requirements and some, in contravention of the Order, placed quantities of grain on sale on the restricted local market. The ban on commercial agriculture on leasehold properties, it must be conceded, was neither a hardship for the squatter nor a brake on the progress of agriculture within the colony in general. While admitting the difficulties of reserving and purchasing freehold land beyond the settled districts, then, it must also be conceded, that agricultural settlement there, to be substantial and viable, required in 1861 more than the environment and a mere change of the law could then offer. It required railways. It required a swift, cheap, and reliable means of marketing agricultural produce. Without this there did not exist grounds for legislating for agricultural expansion in the region at that particular time. Though clearly politically expedient, therefore, a change in legislation aimed at the land beyond the settled districts was not an immediate economic necessity. It could be defended only in the name of the potential of the land and the future of the people. Yet how clearly signposted was this potential?

It is evident, and has been demonstrated,<sup>5</sup> that many people in the

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<sup>5</sup>. See above, Chapter 3.

colony still anticipated its agricultural future to lie largely within the settled districts, and more particularly in the lowlands of the coastal rivers. Improved communication facilities, it was hoped, would help supplement the grain production of the coast, would eliminate the need for importing foreign wheat, and would provide the colony with cheaper home-grown breadstuffs by giving the rich pockets of land on the tablelands a means of access to the metropolitan market. Beyond the mountains, however, the future was still somewhat clouded. Many believed, or pretended to believe, that the interior was and would remain good for nothing but the raising of sheep.<sup>6</sup> Even where agricultural development was mooted the prospect was restricted, as was the colonial practice, to the light alluvial soils of the rivers. The heavier soils of the inter-fluves - the red-brown earths and brown soils - were ignored. They were, in the main, an unknown quantity, though thought to be at once too dry and too difficult to work for the primitively equipped New South Wales farmer.<sup>7</sup> Beyond this the fundamental requirement was still communication with the Sydney market by rail. Yet, when agitation for land reform first began in the late 1840's, the railway issue was still in its infancy and even in the late-1850's the future of the steam-powered railway was very much in the balance. Had Robertson been successful in his first attempts to pass the Land Bills in October 1860 and in January 1861, the measures would have been instituted while the Legislature still pondered the relative merits

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6. Bathurst Free Press and Mining Journal, 18/5/61. Hereafter cited as BFP.

7. ATCJ, 21/3/74.

of steam railways at Penrith in the west, Singleton in the north, and Goulburn in the south was being strenuously argued by politicians and strongly supported by some of the press.<sup>8</sup>

Why, instead of pandering to a heterogeneous mob of followers did you not let that useless rag of a land bill rest in your bureau, until the iron horse was stalking his way from east to west, and from north to south? Then, John, a good and equitable land bill would have been a blessing to the colony.<sup>9</sup>

The writer of this letter to the Herald had a good point and one often repeated by the conservative elements in the colony: without railways agriculture in the interior could not survive on anything more than a local scale, and when the Bills were introduced there were no railways to speak of.

To the conservatives at least these economic arguments were sufficient to point to the folly and the poor timing of Robertson's proposals. The problem was further complicated, however, by an obvious but very important fact: unlike the United States, whose land laws almost certainly influenced Robertson, the legislators in the Australian colony were not dealing with unoccupied land, but with Crown Land already legally held under lease and with the massive interests of the most important colonial industry.<sup>10</sup> To disturb the traditional interests, they believed, could bring nothing but ruin. Here, indeed, lies the crux of the problem and the ultimate

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8. See comments in Maitland Mercury, 5/11/61. Hereafter cited as MM.

9. SMH, 20/11/60.

10. See King, C.J., Closer Settlement, 61-70. See also SMH, 3/1/59 for article on land systems in the U.S.A. printed at the request of the Land League.

justification which must be accorded Robertson's intentions, if not the results of the measures he introduced. Leaving aside all questions of political expediency and gain - though to a politician this might be sufficient justification in itself - it is clear that the position enjoyed by the pastoral industry was a dangerously powerful one, particularly with regard to the unlimited pre-emptive purchase right. Any effort to reduce this proto-monopoly of the public lands was, therefore, sound common sense. At the same time it remained important to do as little harm as possible to the pastoral industry. Robertson's problem, and his aim, was to provide an acceptable basis for partial dispossession of the existing lessees, when and if such dispossession should become necessary for the closer agricultural settlement of the colony, but at the same time to ensure that these lessees should not be harassed or harmed by land speculators acting under the provisions of a law to encourage bona fide settlement. He attempted, in fact, to legislate for the future and for the security of closer settlement in the colony. These intentions were reflected in his two "great principles" - free selection and conditional purchase.

#### The Provisions of the Law

Despite many difficulties and vigorous opposition from the colony's conservative elements, Robertson's Land Bills had become law by the close of 1861.<sup>11</sup> Of the many clauses in the Alienation and Occupation Bills

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11. For an account of these difficulties see Official History, 334-335.

few need discussion here. The principle features of the measures were the introduction of "selection before survey", the "conditional purchase" clauses, and the more direct provisions made to safeguard and to stabilise the pastoral industry. These alone need further comment.

The selection and purchase of Crown Lands held under lease, the lands reputed to be "locked-up", was in form permitted under the 1847 Order-in-Council. If the provisions of the Order failed to give sufficient scope for small freehold settlement then the fault lay rather with the administration of the law than with the law itself and, to some extent with the "vexatious uncertainty" of auction sale.<sup>12</sup> The process of selection was a slow one because the over-centralised administration made it slow, demanding, as it did, the petitioning of the Surveyor-General to have the relevant lot declared a reserve from lease, then to have the lot surveyed, and finally to await the offering of the lot for sale. It was the slowness, the cost, and the dubious end result of this system that led to the introduction of selection before survey. It was not, however, that the lands were "locked-up": the mechanism for "locking-up" existed in the pre-emptive right, but between 1847 and 1861 only 1,219,375 acres of land were sold at auction and in respect of pre-emptive rights combined.<sup>13</sup> The total area alienated throughout the entire colony in 1861 was a little over 7,000,000 acres out of a total, in the settled districts and the intermediate districts alone, of more than 112,000,000

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12. In introducing his Bills Robertson stressed the need for selection "with confidence". See SMH, 31/1/61.

13. King, Closer Settlement, 75. Unpublished data from New South Wales Department of Lands.



acres.<sup>14</sup>

If it had any justification beyond mere political pressure, therefore, the introduction of "free selection" was a positive move to circumvent some of the administrative problems facing settlement under the old system. In effect what was offered was the right to enter upon Crown Lands and settle and cultivate them without waiting on the rusty mechanism of survey and without the threat of competition by auction. Selection, however, was not truly "free". Conditions were imposed upon the applicant and non-fulfilment of these conditions rendered the selection liable to resumption by the Crown.

In the first place the areas over which selection was permitted were reduced by the exclusion of land held on reserve for public purposes, or on land held under mining lease, or within specified distances of towns of a given size, and finally on all Crown Lands held under lease or promise of lease by February 1858, for the duration of those leases. In most cases the exclusion of the leases from selection meant direct protection for the pastoralists until the falling in of the leases in 1865. Secondly, the size of the selection was limited. No land could be selected under 40 acres or over 320 acres in extent. The purchaser, however, was also to enjoy a grass-right of three times the area of the selection, on any adjacent Crown Land. On paper this was amply sufficient for cultivation and for stock; in practice the grass-right was to prove less

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14. Statistical Register, 1892.

than satisfactory.<sup>15</sup> Thirdly, the applicant was required to lodge a deposit of 25 per cent of the purchase money on the application being accepted; payment of the balance was to be deferred for three years. While this had the advantage, to the selector, of leaving cash in his hands when most he needed it, it also meant that the transfer of the title to the land could be withheld by the Government until the Secretary for Lands was satisfied that all other conditions had been met. Finally, Robertson imposed conditions demanding that the selector should reside upon and should improve his selection as a guarantee of his bona fides.

The conditions, in fact, were as important as the principle of free selection, for by them Robertson sought to attract only sincere and earnest would-be homesteaders. Without these conditions free selection would have meant little more than anarchy on the public lands. The problem was to impose conditions sufficiently stringent to minimise the profitability of speculation, but at the same time to hinder as little as possible the genuine selector. Robertson believed that the conditions he laid down were sufficiently stringent, and just as he was adamant upon selection before survey, so he insisted on the fulfilment of these guarantees - often in opposition to the demands of fellow radicals.<sup>16</sup>

"Conditional purchase", in fact, was the first line of defence for the pastoral lessee. A second, and more direct defence of pastoral investment was provided in the clauses permitting unconditional purchase.

15. See below, page 177.

16. See debates in SMH, 31/1/61, 15/2/61, 7/3/61.

Under these provisions land could also be purchased at auction in precisely the same manner as that provided for by the 1847 Order-in-Council. Thirdly, the pre-emptive right of the lessee was retained, but in a greatly curtailed form: pre-emption was allowed over one section (640 acres) in every 25 square miles of the lease. Even then some felt that Robertson had been over-generous.<sup>17</sup> Finally, where a lessee had effected improvements to the Crown Lands he was to be permitted to purchase, without competition, the land on which the improvements were made.

The provisions of the Acts - they were finally passed in October 1861 - were generous to both sides, almost to the point of ambivalence. To some radicals they "might have emanated from the most rabid squatter in the House", were it not for the thirteenth clause.<sup>18</sup> One thing is clear: that the ability of the pastoralist to protect his run came to depend solely upon the amount of capital he was able and willing to spend upon freehold purchase. Indeed, given the prevailing political atmosphere in the colony, the Acts were - as Buchanan said - surprisingly "moderate".<sup>19</sup>

Nevertheless there were many reservations, and not alone in the squatting camp. The Herald's claim that "the clumsy, the blundering, the hesitant will go to the wall; the shrewd, the far-seeing, the prompt in action and those who can always command resources on the instant will make

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17. MM, 16/2/61.

18. SMH, 31/1/61, The thirteenth clause of the Crown Lands Alienation Act permitted selection before survey.

19. Ibid, loc.cit.

gains", was much the same, in inference, as the more cautiously worded suggestion from the Free Press that "We have a latent suspicion that ... many practical difficulties in their working will be found to have been overlooked."<sup>20</sup>

#### The Working of the Law

The apprehension of the Bathurst Press was soon shown to have been justified. Many "practical difficulties" had indeed been overlooked, and as the Herald had feared the legislation proved to be too loosely worded, too imprecise and to leave too much to the discretion of the Government. Not only was the spirit of the Acts broken by the manipulation of the letter, but the administrative difficulties which had played so important a part in formulating the principle of selection before survey were shown to be similarly disruptive when faced with the demands imposed by the new system. Nevertheless, and without attempting to deny the existence of these shortcomings, they have received more than their fair share of attention, and the abuses of the Robertson legislation have been too readily accepted as conclusive proof of the "failure" of the Acts. There are many difficulties here.

First, to demonstrate the "failure" of the measures it is necessary that they be considered with reference to specific criteria. If, for instance, as seems almost certain, the immediate objective behind the

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<sup>20</sup>. SMH, 18/5/61; BFP, 30/10/61.

overwhelming support for land reform was very largely political - an attack upon the power of the squatters, not only on the land, but more importantly in the Legislature - then the degree of success of the measures cannot be assessed solely in terms of the growth of the agricultural industry, the extension of yeoman settlement or even the degree to which the unscrupulous used the law in the furtherance of personal ambitions or gains. Conversely, an examination of the political implications of the passing of the Land Acts cannot afford to discount completely their importance in the sphere of rural settlement and economic activity.

Second, it is a fact that quantitative evidence is sadly lacking for a detailed regional analysis of the full effects of the law upon the settlement of the land. It was impossible, even in 1873, for a Select Committee to obtain figures relating to the taking up of grazing rights by conditional purchasers.<sup>21</sup> In the field of land-use, agricultural developments are notoriously poorly recorded, and only over a span of three years is any attempt made in the Registers to equate the statistics with particular classes of holdings.<sup>22</sup> This means that over the bulk of the period in which the Robertson Acts were in force it is virtually impossible to discuss with confidence the regional significance of conditional purchase with respect to agricultural developments. This tends to throw a greater weight of responsibility onto the interpretation of

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21. "Select Committee on the Administration of the Land Laws", Further Progress Report, NSWLA, VP, 1872-3, II, 918.

22. See below, page 179

voluminous qualitative evidence. Since, however, this evidence is invariably biassed - everyone took a stand over this issue - the truth is exceedingly hard to arrive at.

Chief among the sources for an interpretation of the working of the Land Law have been a series of reports from Select Committees appointed in the 1870's and 1880's. Almost invariably these Reports were concerned with seeking out the abuses to which the law was subject. They were not concerned with demonstrating the success of the law in settling families on the land where this had occurred. They were, in effect, a forum for complaint and each witness made full use of every opportunity to strengthen the stand of the one side at the expense of the other. This approach was necessary, of course, for only by knowing where the gaps lay could they be filled. Consequently, the evidence before these Committees offers a necessarily distorted picture of the real events, and the accounts which have relied solely upon them almost invariably reflect this distortion.

There is, however, some evidence of a change of heart amongst recent commentators on the subject. The traditional view - put forward by the standard work of Roberts and relying almost exclusively upon the evidence before these Committees - held that the Acts had been a "failure ... in their basic idea, in their administration, and in their results to the State, the town-dwellers, the farmers and the squatters."<sup>23</sup> This attitude is re-echoed by King who believes them to have been "ill-conceived

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<sup>23</sup>. Roberts, Land Settlement, 225-226.

and most carelessly administered."<sup>24</sup> At the other extreme stands Buxton's recent statement that the "Acts were, in fact, as successful as they could have been under the circumstances."<sup>25</sup> Such widely divergent attitudes - indicative of the complexity of the subject - require further comment.

Robert's view rests principally upon the case presented in the Morris and Ranken Report of 1883<sup>26</sup>, even though, in his own words, this was clearly "biased".<sup>27</sup> His treatment of the positive results of free selection, in following the lines of the report, is superficial and unsatisfactory. Thus, while there can be no denying that the abuses listed by Roberts, and dealt with at greater length by Buxton, did occur, no real effort is made to assess the importance of conditional purchase in the changing rural scene or to acknowledge that not all the difficulties of rural settlement can be cured by a good dose of legislation.

Buxton, on the other hand, working in Riverina, was in a fortunate position to test the allegations of the 1883 report with reference to the major case studies presented. He found them to be over-stated and inaccurate.<sup>28</sup> His conclusion, nonetheless, must be regarded as over-

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24. King, Closer Settlement, 82.

25. Buxton, G.L., Land and People: Riverina 1861-1891, 258, (unpublished Ph.D. thesis, Australian National University, 1965). Hereafter cited as Buxton, Land and People.

26. "Report of Inquiry into the State of the Public Lands", NSWLA, VP, 1883, II, 77 et seq.

27. Roberts, Land Settlement, 230.

28. Buxton, Land and People, 257-258.

generous to Robertson. Ample opportunity existed to improve the wording of the Acts, to reduce the discretionary powers of the Government on matters of interpretation, and to foresee some of the more obvious administrative "circumstances" which were to have so damaging an effect upon the day-to-day working of the law.

A more balanced view would seem to be that the Acts were neither a "success" or a "failure" in any one sense. They did contribute to the expansion of the agricultural industry and to the settlement of the colony. They did circumvent some of the administrative problems of the old system. At the same time they were undoubtedly open to more abuse than was unpreventable and the Government did fail to take adequate steps to prevent this abuse, to reduce ambivalence, and to ascertain that the administration was sufficiently able to cope with the system of land alienation that was introduced.

Robertson's legislation, in fact, never had the opportunity to function as it was intended to function. Administrative problems, entirely beyond the scope of the Acts themselves, served to add frustration to the chaos caused by the infringement of the letter of the law and the inconsistencies in its interpretation. At the same time it is significant that the Acts were current, with only minor amendments, for almost a quarter of a century, and that during this time changes in the economic environment of the colony meant that the law operated in regions in varying stages of flux and re-adjustment. Chief amongst these changes was the extension of the railway system and the bridging of the hitherto impassable gap between



the Sydney market and the interior. It is not to be expected, therefore, that the legislation should have been uniform in its action and results either in time or in space. Yet it would seem most probable that the many weaknesses of the measures and of the administration have been considered without adequate recognition either of temporal or spatial variations, and that consequently they have received undue prominence and criticism. Nevertheless these weaknesses did exist and they did contribute largely to the bitterness of the class struggle that had focussed itself upon the land question.

(i) Administration

Notwithstanding the admission that "unfortunate land quarrels ... are a curse to this colony", many free selectors perceived the truth that "it is not so much a change ... that is required as an efficient and incorruptible administration of the law."<sup>29</sup> Even squatters' men, like Fitzpatrick, were prepared to admit that, "If carried out in its integrity, I think the Act would be perfectly right."<sup>30</sup> The major stumbling block to the smooth working of the law was still the Survey Department.

The Survey Department had been one of the principal objectives in Robertson's attack on the old system. Before the 1855 Committee on the State of Agriculture he had minutely criticised its laborious mechanism and its inefficiency, and had held this to be one of the reasons why the

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<sup>29</sup>. ATCJ, 20/10/77, 12/10/79.

<sup>30</sup>. Evidence before "Select Committee on the Working of the Land Laws", Further Progress Report, NSWLA, VP, 1872, II, 914.

progress of agricultural settlement had been so slow.<sup>31</sup> His selection before survey was a direct reflection of the inadequacies of the Department as he saw them. Yet it might have been obvious, even to so stubborn a man, that increased pressure for survey would be the inevitable outcome of success for his measures. He might have realised that by making every selector in effect his own surveyor the results could not fail to be a confusion of conflicting claims. He might also have realised that, once the pastoral leases ran out at the close of 1865, the squatter would be forced into a position where freehold purchase became the only sure protection against selection, and that, consequently, the pressures on an already over-worked, under-staffed and notoriously poorly organised Department would have been heightened still more. And, realising this, it might have been expected that this man - whom the Herald thought would make an excellent Surveyor-General himself! - would have been concerned to ensure that the Department was prepared for and able to cope with the rush of new work shortly to be demanded of it. The Department was not prepared; it was, in fact, "very low indeed in 1862"<sup>32</sup> and when, in 1865, the leases became open to selection, its resources were "utterly inadequate".<sup>33</sup> From the first, then, the Acts were faced with the weakness of one facet of the administration, probably the most important, little different from what it

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31. See above, Chapter 1.

32. Evidence of Surveyor-General before Committee on Land Laws, Progress Report, NSWLA, VP, 1872, II, 151.

33. Ibid, 155.

was under the old system and in many respects worse.

Some of the difficulties were technical, some were organisational and economic, others arose purely from the frailties of human nature, but combined the difficulties of survey formed a serious handicap to the efficient working of the Land Acts. For the first time the technical inadequacy of previous surveying methods was underlined as it became necessary to map, from lay descriptions, the precise locations of countless selections, without the benefit of a triangulated survey and relying on charts compiled from magnetic rather than true bearings and from the cavalier swinging of a length of chain.<sup>34</sup> To have corrected the situation, of course, would have taken years, and cost at least £180,000 - always assuming, too, that the Department was able to recruit and train a sufficiently large staff. This it could not do; the system of licensed surveyors still persisted in the 1870's with all the concomitant evils enumerated 15 years before.<sup>35</sup>

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34. Ibid, Appendix to Surveyor-General's evidence, 190 et seq.

35. Evidence of Surveyor-General before 1872 Committee, *ibid*, 153. Within the Survey Department the staff were hired on two bases. Licensed Surveyors, who dealt with the bulk of Selection Surveys, were employed on a part-time system, being paid in proportion to the area of land surveyed. Salaried surveyors, on the other hand, though permanently employed by the Department, were largely engaged in special survey work or in clerical work and map production at the Sydney office. There were several disadvantages to this system. First, licensed surveyors were not sufficiently under the control of the Surveyor-General. Second, and arising from this lack of control, it seemed likely that casual offers of more lucrative employment were likely to interfere with their conduct of government business. Third, the methods of survey they employed were unregulated and in many cases unreliable. Finally, it was impossible to effectively control the permanent salaried staff when they were aware that, in the event of resignation, re-employment as a licensed surveyor was almost certain. See "Report from the Commissioners Appointed to Inquire into the Surveyor-General's Department", NSWLC, VP, 1855, II, 12 et seq.

To make matters even worse, the Department was sub-divided into eight branches, housed under a variety of roofs, and lacking in the co-ordination and co-operation made necessary by the multitudinous complications of the new system.<sup>36</sup> Human frailty again found expression through the licensed surveyors and, as under the old system, survey priority was still governed largely by the remuneration it could bring. In describing the actual process of survey in 1872, Surveyor-General Adams had this to say:

(The pastoralist) ... is asked for a deposit of 6d per acre and when received the district surveyor is asked to examine the land and report on the subdivision ... on receipt of this report instructions are issued to the licensed surveyor ... (And) as these measurements tend to produce revenue, a certain preference is given to them, and being also remunerative to the surveyor there is but little loss of time between the issue of the instructions to the licensed surveyor and the survey of the land.<sup>37</sup>

On the other hand, Adams admitted that, although the period of time that elapsed from the application to the issuing of survey instructions for conditional purchase was a mere ten days, the completion of the survey itself took another six months on average, and occasionally as long as a year.<sup>38</sup> As before, the licensed surveyor, motivated by profit, was not prepared to make long journeys in order to survey isolated selections and tended instead to permit the accumulation of work in any one area, despite

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36. See evidence of Surveyor-General before 1872 Committee, *ibid*, 152.

37. *Ibid*, loc. cit.

38. *Ibid*, loc. cit.

the difficulties which this might cause to the selector.

These difficulties arose chiefly after 1865, beyond the settled districts, and with reference to the six million acres of reserves there. The nature of the administrative system, as Adams ruefully confessed, laid great responsibility upon the local land agent, who, through difficulties of communication, was frequently poorly informed as well as inadequately equipped with maps to provide the necessary information with respect to land reserved from sale or land applied for under pre-emptive purchase right.<sup>39</sup> To begin with, the local land agent's maps, like the maps at the Surveyor-General's office, were out-dated and imprecise. The information needed to keep these maps up-to-date was available only from the Gazette. Consequently, it was frequently the case that, in between the declaration of a reserve and the news reaching the local land agent, settlers were permitted to select there, to reside upon the selection, and to begin the arduous process improvement. When the reserve at last came to be surveyed the unhappy selector had to forfeit his lot and move off in search of new land. A similar situation arose with regard to pre-emptive purchase claims when leases fell-in at the close of 1865. Until these portions were actually surveyed neither the selector nor the land agent were aware of their precise location. It was essential, therefore, on both these counts, that there should be a minimum of delay between the issuing of instructions and the actual completion of surveys.

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<sup>39</sup>. Ibid, 152-154. Some 5,000,000 acres of reserves had been made on the advice of local squatters, simply because of inadequacy of the survey staff.

Problems of this nature inevitably created much bitterness amongst selectors, but few were really guarded against and probably none were totally avoidable. The drafting of preliminary descriptions of selections by trained surveyors would certainly have eased much of the litigation that followed the bungling efforts of would-be selectors, but as Robertson himself pointed out, there were simply not enough surveyors to cope with the existing work.<sup>40</sup> The only sure cure that the Surveyor-General could offer was "survey before selection and that under triangulation as in Victoria."<sup>41</sup> It was not an expedient suggestion, as Adams himself admitted, and the shortcomings of the Survey Department were in no sense a reflection of the adequacy or inadequacy of Robertson's legislation:

My opinions of the Acts have remained unchanged from the very first - that it was introduced as a strong remedy for a very great evil. That evil principally arose from the want of lands surveyed to meet the demands - a demand which is very difficult to anticipate in a country where the good land is so scattered and the population so diffused. Almost any land law short of the one we now have in force would fail to give the public satisfaction in this colony; and I think that notwithstanding individual cases of hardship under the Act it has been a very great success.<sup>42</sup> (Author's italics)

(ii) Interpretation and Collusion

There were many who would not have agreed with Adams. Perhaps ten years later he would have been less enthusiastic himself. Yet his evidence

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40. Ibid, 153.

41. Ibid, 158.

42. Ibid, 165.

was given at a time when the massive alienation of land that characterised the working of the Acts over the 1870's had already been under way for a full year; at a time when both selectors and squatters were seeking every means at their disposal to circumvent the provisions of the law; at a time when the gaps in the legislation were solidly before the public.

For the most part questions of the interpretation of the law and the administration of the law were not very serious, except with regard to the sale by auction of the key points of a squatting run or with the question of the disposal of forfeit selections. In the latter case interpretation rested with the government of the day and the difficulties could have been fairly easily overcome by standardising legislation. In the former case, however, interpretation rested much lower in the hierarchy - with the district surveyors - and was virtually unavoidable.

It was the practice, during Robertson's period of office as Secretary for Lands between 1861 and 1863, for forfeit selections to be open for re-selection. With the defeat of the Cowper Ministry in 1863 the new Secretary for Lands, James Bowie Wilson, directed that forfeit selections should be sold at auction in accordance with the provisions of the twentieth clause of the Alienation Act. The return of Robertson in 1865 resulted in a reversal to the original interpretation, apparently in an attempt to forestall the action of men like H.A.Thomas, a new England squatter. Thomas had employed dummies to take up and immediately forfeit prize selections on his run. The intention was to see the land put up to auction and thereby keep bona fide selectors well away. In the interre-

gnum, between the forfeiture of the selections and the land being offered at auction, Robertson returned to power and the land was thrown open to re-selection.<sup>43</sup> By the late 1870's, when the number of forfeited selections had reached considerable proportions and when Free Selectors Associations were beginning to make concerted efforts towards the complete abolition of sale by auction, the question of the disposal of forfeit selections - still unsettled - had assumed a prominent place in their campaigns.<sup>44</sup>

A weightier responsibility, however, lay with the district surveyors. One of the more significant of the abuses of the spirit of the law arose from the practise of "peacocking" runs, that is, purchasing freehold to key situations and thereby acquiring at no extra cost the control of the remainder. The purchasing could be done by the squatter using dummies, or by legitimate selection, survey and auction purchase of the land, or by the use of Volunteer Land Orders,<sup>45</sup> mineral leases or pre-emptive purchase rights. It is a fact seldom realised, however, that the administration provided the mechanism to refuse any application for survey which, in the opinion of the district surveyor, might interfere with the interests of the public estate. The "locking-up" of a run in this manner would certainly qualify. In the case of dummy selections clearly such a

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43. See evidence of W.W.Stephens, Ibid, 166.

44. See resolutions passed at First and Second Free Selectors Conferences in Sydney, 1877 and 1878 in ATCJ, 20/10/77, 14/9/78.

45. These Orders were granted "as an encouragement to young men to join the volunteer forces". Squatters purchased the Orders from the owners. NSWPD, 1883-84, 335.



decision would be a difficult one to make, but in the case of auction sales particularly - where the interests of the applicant were known to the surveyor - it was less difficult. This was the reason behind Adams' statement that "the district surveyor is asked to examine the land and report on its subdivision ...".<sup>46</sup> If the report was not favourable the application for survey could have been refused. In effect, therefore, the final arbiters of the public estate were in many instances the humble district surveyors. Perhaps Adams had a higher opinion of their integrity than the facts would seem to merit, as he firmly stated his opinion that thanks to this safeguard auction sales did not so easily "lock-up" a run.<sup>47</sup> It will be shown, however, that auction sales were very extensive over the seventies, and it was this mode of protection from the inroads of selectors that the Free Selectors Associations fought most bitterly.

Much of the energy spent in discussing the Robertson Lands Acts has been devoted to colourful descriptions of the activities of "dummy" selectors. Originally restricted to the taking of selections in the names of non-existent persons, the term was widened to include "vicarious selection" by an employee on behalf of a station owner, or alternatively by the selection of land on behalf of minors - a practice fairly common amongst conditional purchasers in some areas.<sup>48</sup> The true extent to which dummying served to protect the pastoralist, or to enlarge the selections of conditional purchasers is not known, but it would appear likely that, in the

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46. See above,

47. Evidence of Surveyor-General before 1872 Committee, Ibid, 166.

48. Evidence of William Hay in Third Progress Report of Committee on Land Laws, NSWLA, VP, 1873-74, III, 904.

former case, it was restricted in area and, in the latter case, in time by the passing of the 1875 Amending Act. This Act made selection on behalf of minors - persons under 16 years of age - illegal.<sup>49</sup>

The evidence for widespread dummyming by squatters has been drawn principally from Riverina. It is voluminous and convincing.<sup>50</sup> This is the area from which Morris and Ranken drew the evidence for their report; from which the bulk of the evidence before earlier Committees was drawn; and which received most attention in the contemporary press. Reports like this one from Albury were common:

For some time past large quantities of land have been selected weekly at our local land office, and it is beginning to be pretty generally known that not one-third of it is being taken up by bona fide selectors.<sup>51</sup>

At the same time, however, there appear to have been other regions beyond the settled districts that were scarcely affected at all. A correspondent from Grenfell, for instance, wrote that, "Dummysm does not seem to have been adopted here."<sup>52</sup> Even the antagonistic report of Messrs. Morris and Ranken had to admit that some areas had seen a substantial degree of "real settlement". The district around Young was a case in

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49. Crown Lands (Amendment) Act (39 Vic. No.13). The Act also contained provisions for altering the mode of payment. An adequate summary is contained in King, Closer Settlement, 90.
50. See evidence before Committess in NSWLA, VP, 1872, II; 1872-73, II; 1873-74, III. The Morris and Ranken Report is in 1883, II. However, no Minutes of evidence are presented, and the conclusions are, therefore, somewhat suspect. See also Roberts, Land Settlement, 231; King, Closer Settlement, 84-86.
51. ATCJ, 9/8/73.
52. ATCJ, 13/9/73.

point. Here the amount of land selected by 1870 was said to be "astonishing". Gold had been replaced by the "golden grain", and from the opening of the local land office in 1866 some 44,300 acres of land had been taken on conditional purchase. The 343 selectors had an average area of 129 acres.<sup>53</sup> Further north, around Dubbo, the early years of the 'seventies were characterised by widespread selection, again apparently unhindered by any extensive use of dummies. Until late-1865, of course, no land had been open to selection in the region with the exception of "a few reserves". With the closing of the pastoral leases, it was claimed, the Government made reserves of all the best land - probably on the advice of local squatters - and thwarted many would-be selectors who had come to the district from the east. In 1867 most of the reserves were cancelled and the remainder reduced, but by this time the district was in the grip of drought that persisted until 1869. In the first few months of 1870, however, more than 5,000 acres were selected, chiefly along the Macquarie River and within a 15 mile radius of the town.<sup>54</sup> Elsewhere Morris and Ranken were forced to admit a greater or lesser degree of settlement in consequence of the Robertson Land Acts around Bega, in the counties of Ashburnham and Cunningham, in New England, on the Clarence and Richmond Rivers, and throughout the whole of the settled districts.<sup>55</sup>

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53. NSWLA, VP, 1883, II, 94. ATCJ, 23/4/70.

54. ATCJ, 7/10/71, 14/10/71, 4/11/71.

55. NSWLA, VP, 1883, II, 93-98.

In the Intermediate districts, indeed, the prevailing picture in the 1870's was one of optimism.<sup>56</sup> More and more conditional purchases were being taken out, and more and more land was coming under the plough. This report from Coonabarabran is typical:

This district is fast becoming an agricultural one. Not a week passes but land is taken up by bona fide farmers or men anxious to become so. There is a large area under wheat which looks splendid, and as the proprietors of the flour mill in this town are prepared either to buy or grind the farmers cannot grow too much wheat or corn.<sup>57</sup>

Dummying, peacocking, selection by minors - all these received ample attention from contemporary spokesmen on both sides of the selectors' fence, as they have from later writers on the subject. The one aspect of the land laws that has received scantiest attention is, ironically, the land itself.

#### THE LAND

It has already been suggested that the major assessments of the Robertson legislation have concentrated almost exclusively upon a demonstration of the many, and admittedly colourful, abuses to which the measures were subjected. This criticism is valid: the abuses were real and, to some extent, they reflect discredit on the careless wording, the poor administration, and the lack of foresight on the part of the man who

56. The "Intermediate District" is enumerated in Appendix I.

57. ATCJ, 20/11/75. See similar reports in 12/4/73; 13/1/74; 31/1/74; 18/9/75.

framed the legislation. They do not constitute the whole story, however, and they have almost certainly been accorded exaggerated importance.

There are other, duller and less dramatic, fields to explore. Principal amongst these is a broad survey of the actual degree and distribution of settlement which took place during the currency of the measures, and of the part played by conditional purchase in a rapidly changing agricultural industry - for the purposes of this study, in a rapidly changing wheat-growing industry.

The 1860's were years of great significance in the history of the shifting wheat frontier in the colony. The old pattern of a dominantly coastal location with isolated, local pockets around the more important interior settlements was broken down completely, and in the space of five years almost totally reversed. The reasons for the coastal decline are beyond doubt - rust was overwhelmingly the responsible factor. To decide why the scales should have been so conveniently balanced by expansion inland, however, is much less easy. Two factors must be briefly noted. First, the gap on the metropolitan market was filled, not with home-produced grain, but with an expansion of the trade in imported grain and breadstuffs. Second, over the 1860's the New South Wales railway system did not progress with sufficient rapidity to open the Sydney market to producers in the interior.<sup>58</sup> To account for this expansion in the interior, therefore, it is necessary to investigate other features which

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<sup>58</sup>. For a discussion of these features see below, Chapter 5.

may have had bearing upon the wheat-growing industry. One of these, and the one that will be considered here, was free selection. Dunsdorfs has said that the "agrarian history of the period, as treated by all historians, has been a mere discussion of the Land Acts."<sup>59</sup> This is true. Yet the picture with regard to the effects of these Acts is the most confusing and contradictory element of all. Three attitudes are worth examining more closely.

Roberts has claimed that one "positive result" (his italics) of the 1861 Land Acts in New South Wales was that in the first five years of their operation the cultivated area in the colony increased from 250,000 acres to 460,000 acres.<sup>60</sup> The figures are wrong, but this is not very important.<sup>61</sup> What is surprising is that a positive relationship is so readily assumed without further questioning. How much of this increase occurred on conditionally purchased properties, for instance? Or, where did this expansion take place? Or again, what of the complex economic, environmental and technical controls to which the agricultural industry is so subject? What happened after the first five years? Did the increase represent an increased rate of growth, or merely an increase in the absolute area under crop? These and many other questions all need to be answered before a positive relationship can be established, and particularly before one can accept Roberts' conclusions that the Act had failed

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59. Dunsdorfs, Wheat-Growing, 122.

60. Roberts, Land Settlement, 224.

61. The Acts commenced operation in 1862 when the acreage under crop was 302,000. In 1866 the acreage was 451,000. See Statistical Registers.

"in their basic idea" - where this idea was intimately connected with the progress of agriculture.

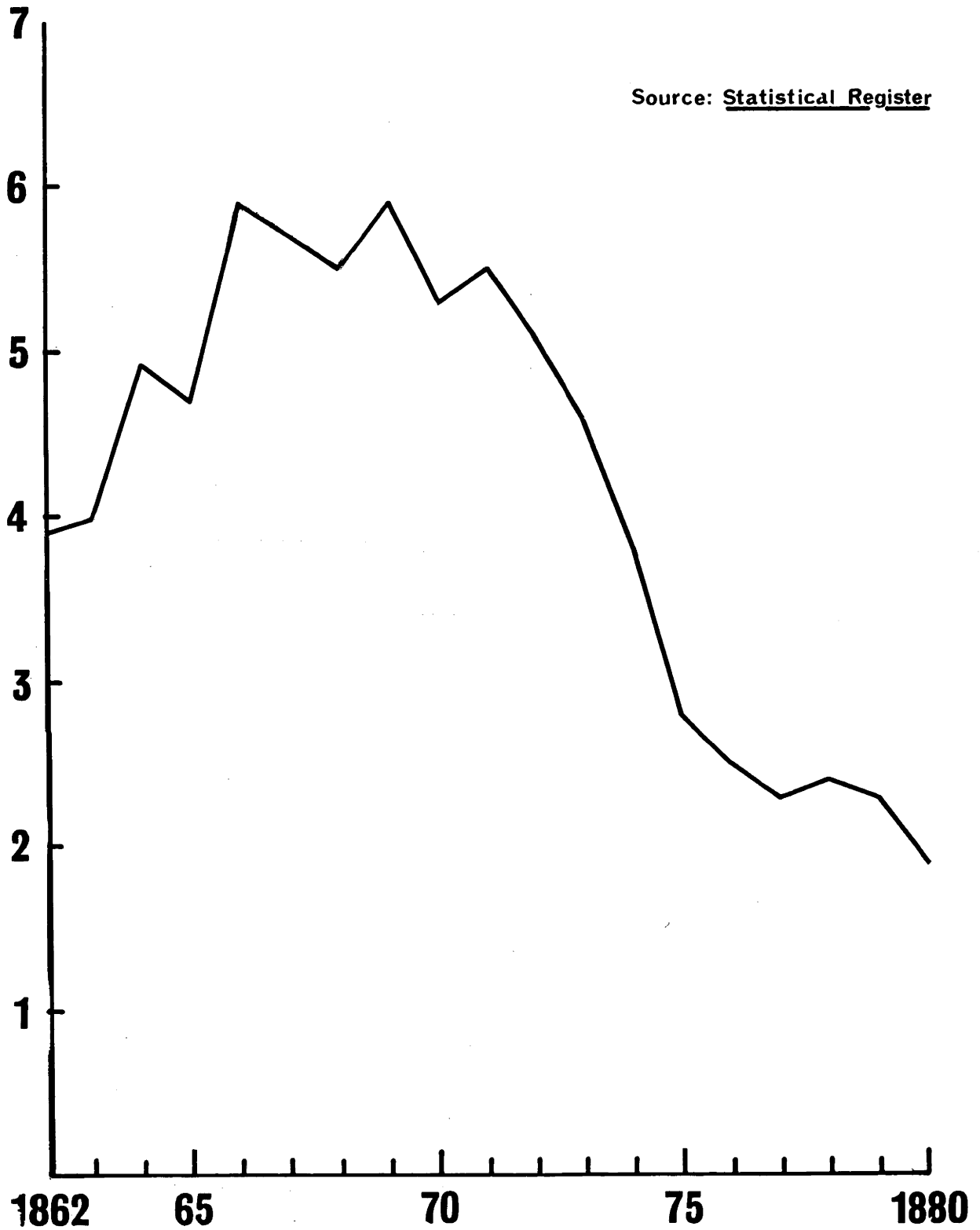
A slightly different approach is offered by King. Here it is claimed that the proportion of cultivated area to total alienated area was, during the currency of the Acts, "pathetically small". Therefore the Acts did not succeed in furthering small farmer settlement. Therefore, they were a failure.<sup>62</sup> Again, the facts are not strictly correct and are actually misleading. King has ignored completely the temporal variations in the workings of the law, an examination of which will show that the proportion of cultivated land to total alienated land was considerably increased over the first 12 years of the currency of the Acts, and only began to decline after 1874 (Fig.21). Even then the reason for the decline was not a falling off in the level of conditional purchase - these in fact were increasing rapidly - or a reduction in the cultivated area on individual selections, but rather it was a result of massive alienation to squatters, who did not, and were not expected to, cultivate their land. For this kind of yardstick to be properly indicative of the role of the Robertson legislation in increasing the quantity of land under the plough, the real test should be the increase in the cultivated area which occurred on free selected properties; that is, on land by hypothesis opened to cultivation. Here, as will be shown, the pattern is very different.

Finally, among these attitudes to the land law and agriculture it is important to notice the stand taken by the economic historian Dunsdorfs.

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<sup>62</sup>. King, Closer Settlement, 82.

# Percentage of Total Alienated Area Under Crop 1862-1880



Source: Statistical Register



This, as might be expected, tends to the other extreme of an almost complete divorce of the legislation and the uses to which the land was put. The Robertson Acts, he claims, "were only the legal framework for an economic development brought about by very complicated and manifold causes."<sup>63</sup> Though possibly nearer to the truth than either Roberts or King, this is again an over-simplification. It can scarcely be doubted that the attractive provisions of the free selection concept actually provoked land alienation by men with little capital, and men - it is fair to assume - with little knowledge of the economics of agriculture: it is difficult to deny altogether the mystique of land ownership. Once on the land it became imperative to cultivate. To some extent it is a chicken and egg relationship. Some, no doubt, were aware of the potential of the land as an economic concern; others probably sought the land as an escape from the servant/master relationship of hired labour; others sought the land for its own sake with little idea of the use they might make of it. It is clear, for instance, that conditional purchasers were the major wheat producers by the middle 'seventies.<sup>64</sup> Why? It is difficult to believe that they alone were able to foresee the growing opportunities in an expanding wheat market. They began to dominate the industry, in part at least, because they had no choice: they had taken to the land and they were compelled to use it. Yet, but for the attractive terms of the Land Acts, might they not have remained labourers? How great would the expan-

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<sup>63</sup>. Dunsdorfs, Wheat-Growing, 122.

<sup>64</sup>. See below, Table 21.

sion of agriculture then have been?

This is conjecture, of course, though perhaps not altogether idle. The truth concerning the influence of the land law on the development of agriculture probably lies somewhere in the centre of the conflicting viewpoints. The problem to be solved, therefore, is not whether the Acts were an outright success or a dismal failure, but simply to discover what really happened in the sphere of land alienation for cultivation. In investigating what really happened - so far as it is possible to decide - the objective is to discover the extent to which conditional purchases were the vehicle for the increase in wheat production in the interior after 1861. It has not been forgotten that, elsewhere, conditional purchases were put to other uses.

#### Land Alienation

The Robertson Land Acts were intended, in large part, to simplify the process of land alienation and to stimulate "yeoman settlement", the definition of "yeoman settlement" being, presumably, settlement on farms not larger than 320 acres in the first instance. The Acts in this regard are said to have failed. This conclusion immediately raises doubts, for clearly the legislation was nothing if not permissive. The most cursory examination of the statistics will show that between 1847 and 1861 the total area of land sold at auction and in respect of pre-emptive rights amounted to only 1,219,375 acres and that over a similar 13-year period beginning in 1862 some 6,576,974 acres were alienated by conditional purchase alone. Not all of these were dummies. The agricultural returns

for 1875 will show that 16,860 persons occupied 4,735,513 acres on conditional purchase tenures - an average of 280 acres per landholder. Even if a further 2,000,000 acres of selected land were forfeit, or lapsed, or transferred, this can hardly obliterate the solid achievement of nearly 17,000 settlers on four and three-quarter million acres.<sup>65</sup>

The real bone of contention, of course, following the lead of the Morris and Ranken Report, has little to do with conditional purchase. It is that vast areas passed into the hands of squatters via auction sales, and to a lesser extent improvement purchase, Volunteer Land Orders, and pre-emptive rights.<sup>66</sup> Only one reason is offered: that the pastoralists sought to protect their runs from the inroads of selectors. Yet there are other factors which will help explain the high level of pastoral investment in land over the 1870's. This was a period of unprecedented pastoral expansion in New South Wales, when the size of flocks more than doubled and when prices for wool were high and profits great. Capital investment in the industry took on two major forms: the enclosure of paddocks and the alienation of land. Enclosure, it was claimed, would give a greater carrying capacity, improved fleece weight, higher breeding rate, and would reduce labour costs. The purchase of land was an inevitable corollary to this, in part at least, because of a need to protect these investments. It was further stimulated by positive Government encouragement of auction sale in an effort to finance public spending

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65. Figures taken from Statistical Register, 1875 and "Report of Chief Commissioner of Conditional Sales", NSWLA, VP, 1882, II, 200.

66. Of land alienated beyond settled districts, other than by conditional purchase auction accounted for 78.9 per cent.

without resort to foreign loans.<sup>67</sup> There were, then, other reasons for pastoral investment in land; reasons that were enforced by the added threat of selection. The consequent creation of pastoral freehold, however, was partly a creation of Government fiscal policy; partly a function of changing methods in the industry itself; and by no means solely a reflection of the inadequacies of the safeguards built into the Acts.

Even so, the gross figures of land alienation over the period 1862-64 disguise completely the temporal and spatial variations in the working of the Acts (Table 15). The passing of Robertson's bills, despite the optimism of the pro-selector press, did not result in any immediate or overwhelming rush to the land. Conditional purchase over the first decade of the currency of the Acts was moderate in quantity, and there was surprisingly little alienation by pastoralists. The reason probably lies in the geographical distribution of selections. Over the first decade - that is, from 1862 to 1872 - most selections were taken up in the old settled districts, close to the major markets and to the slowly spreading railway lines. Beyond the settled districts there was no threat of competition for land before the pastoral leases fell in in 1865, and little interest

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67. See Butlin, N.G., Investment in Australian Economic Development, 1861-1900, 59-110, (Cambridge, 1964). See also Bailey, J.D., "Contrasts in the Australian and British Economies, 1870-1880", 36-42, Social Science Monographs, No.6, (Canberra, ANU, 1956). This point is seldom realised: revenue from land sales was largely the means of financing rail construction in the colony without resort to large-scale overseas borrowing. This does not, of course, normally feature in discussions on the value of the legislation. See below, Chapter 5.

in settlement even after 1865 because of the insuperable problem of communications, and the uncertainty regarding the physical environment.<sup>68</sup> By the early 1870's the outlook was beginning to change. Farming techniques were still backward and still based upon coastal experiences. The heavy soils were scrupulously avoided and agricultural settlement clung tenaciously to the lighter alluvia of the rivers. But experience was beginning to show that wheat could be grown - and grown successfully - in the lower rainfall areas of the central and south-western slopes and in eastern Riverina. The first stirrings of capitalised agriculture were to be seen on farms like "The Olives", at Major's Plains near Albury, where the Burrows Brothers held 2,500 acres as "one of the largest, if not the largest farm in Australia."<sup>69</sup> On it they had granary bins capable of holding 11,000 bushels of grain, 30 horses kept constantly working, with another 8 in reserve, reapers, threshers, double and single-furrow ploughs and eight fenced paddocks. Up to 900 acres were under crop in any one year on a five year paddock rotation of wheat, wheat, oats, fallow and feed, fallow and feed. Grain could indeed be grown west of the mountains and this was being proven every day. At the same time the railway had left Goulburn and was pushing out towards Murrumburrah on the slopes. As early as 1870 "the railway wheat" was rolling into Sydney, not only from Bathurst and Orange, but also from Mudgee, Carcoar, Yass, Queanbeyan and Burrowa.<sup>70</sup> "It is gratifying", the Journal commented,

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68. See Table 16 below. The developments listed here must be inferred from the absolute growth of freeholdings of all kinds over the period, since no distinction is made in the form of purchase.

69. ATCJ, 4/5/72.

70. ATCJ, 3/10/70.

"to know that these districts can do so much in supplying us with the staff of life ..."<sup>71</sup> It was in these districts, and in the districts still further west, that a new kind of farming was beginning its long period of gestation, and it was here, over the 1870's, that conditional purchase saw its great boom.

TABLE 15

Conditional Purchase in New South Wales

<u>Year</u>	<u>Number of Selections</u>	<u>Acreage</u>
1862	4,493	357,280
1863	3,558	259,369
1864	2,350	165,616
1865	2,166	151,450
1866	4,239	358,652
1867	2,995	232,176
1868	3,194	239,516
1869	4,999	397,328
1870	4,471	329,318
1871	4,751	358,682
1872	8,281	749,586
1873	13,417	1,391,719
1874	14,510	1,586,282
1875	14,517	1,756,678
1876	12,654	1,984,212
1877	12,009	1,699,816
1878	12,602	1,588,247
1879	7,540	924,136
Total :	<u>132,746</u>	<u>14,530,069</u>

Source: "Report of the Department of Lands, 1883",  
NSWLA, VP, 1883, III.

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<sup>71</sup>. Ibid, loc. cit. The quantity moved by rail cannot be ascertained. It should not be supposed, however, that this was very great. See below, Chapter 5.

The Morris and Ranken Report admitted to the success of conditional purchase in the settled districts, where, they said, it had "shaken down alongside the old grants without bringing monopoly and debt in its train."<sup>72</sup> There had been, in fact, a "great amount of beneficial family settlement,"<sup>73</sup> Beyond the settled districts, however, the pastoralist had gone to extreme and imprudent lengths to acquire land "under the not ill-founded conviction that he had to fight for his life."<sup>74</sup> The unspoken implication behind these conclusions, and behind the accounts of later writers, is that the settled districts enjoyed a greater degree of real settlement by free selection than did the remainder of the colony. This is not true. At the height of the pastoral boom, in 1877, when auction sales were at their greatest, the proportion of conditionally purchased freehold to other freehold was greater beyond than within the settled districts: 36.5 per cent of all freehold within the settled districts was conditionally purchased, compared to 42.9 per cent beyond. In absolute terms the settled districts had 7,729 selectors on 1,944,819 acres - an average selection of 251 acres. In the remainder of the colony 11,812 selectors occupied 5,188,235 acres - an average selection of 439 acres<sup>75</sup> (Fig.22).

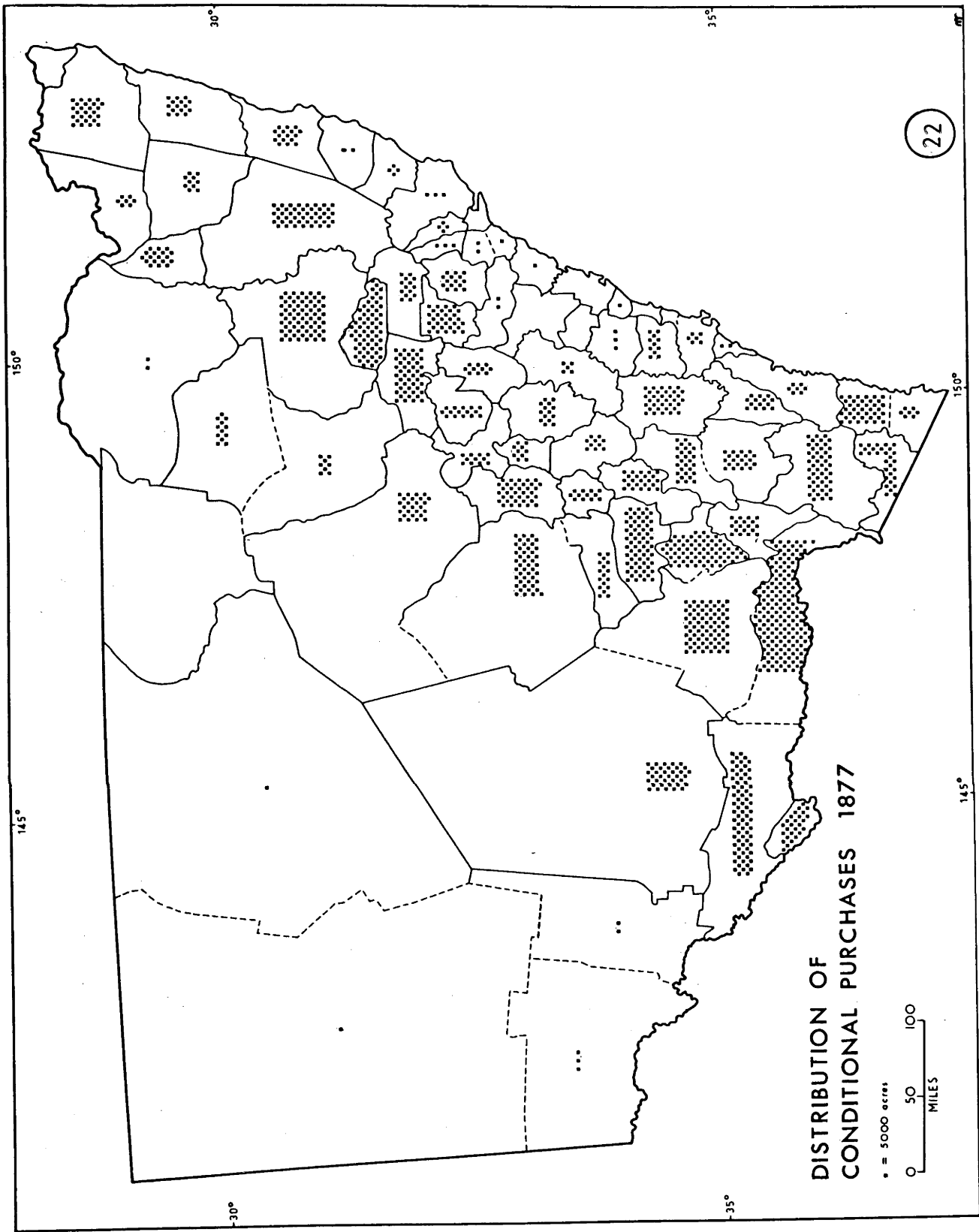
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72. NSWLA, VP, 1883, II, 84

73. Ibid., 83.

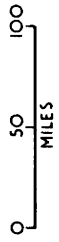
74. Ibid., loc. cit.

75. These figures have been calculated from the agricultural returns in the Statistical Register, 1877.



**DISTRIBUTION OF  
CONDITIONAL PURCHASES 1877**

• = 5000 acres





By 1883 this basic pattern had not changed: 31.6 per cent of all freehold within the settled districts was conditionally purchased, while 44.6 per cent of all freehold in the remainder of the Colony was conditionally purchased.<sup>76</sup> The other forms of freehold tenure showed a very different structure, however, reflecting the differences in the development of the two areas. The most important group of freeholds in the settled districts were the lands alienated before 1862: these formed 54.0 per cent of all the alienated land there. Auction sales since 1862 had accounted for a further 13.3 per cent. Improvement purchase and volunteer land order purchases made up a further one per cent, while conditional purchase accounted for the remainder.

Beyond the settled districts little land had been alienated before 1862 - only about six per cent of the 1883 total. There had been no need to purchase since leases were notably secure and selection unattractive. The changing conditions of the 1870's - when the need to improve and the need to secure runs were combined - led to a great upsurge of alienation by auction and by improvement purchase. Auction sale since 1862 accounted for 36.6 per cent of alienated land beyond

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76.

NSWLA, VP, 1883, II, 166 et seq. It is interesting to note that, until 1870, the proportion of freehold land actually under cultivation was greater beyond than within the settled districts. The pattern only began to change with large-scale alienations to pastoralists under the auction and improvement clauses of the 1861 Acts (See Table 16).

the settled districts in 1883, while improvement purchase made up a further 8.4 per cent. Alienation by volunteer land orders and in respect of pre-emptive rights, though receiving considerable contemporary publicity, was slight.<sup>77</sup>

The proportion of conditionally purchased land to land purchased under other systems between 1862 and 1883, therefore, was very much greater beyond than within the 20 counties. This is to be expected: most of the better land within the settled districts had been alienated long before the Robertson Land Acts were passed, and by and large, the free selector was probably welcome to what remained.<sup>78</sup> The fact remains, however, that half of all the land purchased over this period in the remainder of the colony was taken up under the free selection clauses of the 1861 Act.

Accurate figures on the proportion of freeholds of different sizes do not exist. An examination of average sizes of freehold properties, however, shows that the size of farms tended to decrease over the first decade of the working of the land law within the settled districts.<sup>79</sup> This might be expected and it would suggest that the tendency toward the alienation of relatively small areas under conditional purchase was strong, and that relatively few maximum selections of 320 acres were taken, (Table 16). After 1871, however, the average size of freehold properties within the settled districts once again began to increase.

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77. Ibid., loc. cit.

78. Ibid., 83.

79. "Farms" is used here to describe freehold property. There is no distinction in the land-use on holdings. It must be stressed that this refers to all freehold, not only conditional purchases.

TABLE 16

## Structure of Freeholds 1862-1877

<u>Year</u>	<u>Settled Districts (SD) and Remainder (BSD)</u>	<u>No. of Holders of Freehold</u>	<u>Total Acreage on Freehold</u>	<u>Average Size of Holdings</u>	<u>% Under Cultivation</u>
1862	SD	9,246	3,123,770	337	4.0
	BSD	5,185	1,113,227	214	3.5
1863	SD	8,786	3,353,727	381	4.0
	BSD	2,748	1,113,172	412	4.1
1864	SD	9,935	3,419,034	344	4.1
	BSD	3,138	826,206	263	6.3
1865	SD	10,386	3,340,332	321	4.7
	BSD	3,432	1,250,068	364	5.5
1866	SD	11,521	3,601,937	312	6.1
	BSD	3,652	1,314,975	360	5.4
1867	SD	11,930	3,695,671	309	5.1
	BSD	3,694	881,352	238	7.7
1868	SD	12,113	3,688,075	304	5.3
	BSD	4,397	1,330,221	302	5.8
1869	SD	12,411	3,791,258	305	5.7
	BSD	4,805	1,352,256	281	6.6
1870	SD	12,173	3,255,908	267	5.2
	BSD	7,579	2,016,285	266	5.4
1871	SD	12,740	3,174,208	249	5.6
	BSD	6,496	1,812,174	278	5.5
1872	SD	12,765	3,764,931	294	5.4
	BSD	7,353	2,541,258	345	4.5
1873	SD	14,941	4,908,526	328	4.1
	BSD	8,981	2,092,093	232	5.9
1874	SD	16,136	4,261,305	264	4.7
	BSD	7,174	4,688,574	653	2.9
1875	SD	15,615	4,812,503	308	3.7
	BSD	12,767	6,764,156	529	2.2
1876	SD	16,139	5,130,557	317	3.8
	BSD	14,512	10,831,719	746	1.6
1877	SD	16,167	5,323,291	329	3.9
	BSD	15,365	12,082,095	786	1.6

Source: Re-calculated from Statistical Registers.

Note: The accuracy of these figures cannot be guaranteed, the occasional wide fluctuations from year to year indicate this. The picture presented, however, gives an adequate indication of the general changes in freehold structure and distribution over the period.

There are two possible reasons: first, the alienation of larger areas by selectors; second, increased activity amongst pastoralists in purchase by auction. Since the average size of conditional purchases in 1877 was still only 251 acres, compared to the average holding of 329 acres, it would seem most likely that the rising state of the pastoral industry was primarily responsible for the increase in farm size within the settled districts after 1870.<sup>80</sup>

Beyond the settled districts the pattern is somewhat different. Here, over the first five years of the operation of the Acts, the tendency was towards an increase in the size of the average freehold. It is unlikely that the new legislation had any bearing on these developments, except possibly for the taking up of pre-emptive portions. After 1865 there is a tendency to a decrease in farm size that is almost certainly attributable to selector activity. Again, the decline lasted only until 1871 when the widespread alienation of land squatters led to a rapid increase in the average size of freehold properties.

With respect to land alienation, therefore, during the currency of the Robertson Land Acts, the following facts may be summarily stated:

- (i) The importance hitherto attached to dummying and peacocking as means of preventing selection, while considerable in some areas, has been overstated. It is guesswork to suppose that settlement would have been considerably extended had these practices not arisen.

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80. For evidence of this tendency see "Report of P.Scarr on the Proposed Railway from Galong to Burrowa", NSWLA, VP, 1890, V, 997.

- (ii) The first decade of the currency of the legislation was generally free from these abuses anyway, since selection occurred primarily within the settled districts.
- (iii) The falling in of the pastoral leases did not immediately stimulate widespread alienation by squatters or selectors since other conditions - chiefly economic and environmental - militated against alienation.
- (iv) The 1870's were a pastoral boom time and this, combined with Government fiscal policy and the stimulus to purchase against selectors resulted in massive alienation by squatters.
- (v) Despite this, by the late-1870's, the improved communication facilities and a more experienced re-appraisal of the environment led to widespread conditional purchase in the Intermediate Districts.
- (vi) Both relatively and absolutely, conditional purchase tenures were a more significant feature of land alienation beyond the settled districts than within them by 1883.
- (vii) Despite its many failings, therefore, conditional purchase contributed very largely to the settling and peopling of the colony, particularly beyond the settled districts.

#### Cultivation for Wheat

As with land alienation, so with cultivation: the important thing is not to demonstrate success or failure in the legislation, but to show what actually happened. Here, perhaps more than anywhere, critics have been too ready to condemn on the strength of Commissioners' reports or base statistical comparisons. Yet here, more than anywhere, other elements must be considered if the causes of developments are to be properly understood. Robertson was accused of short-sightedness; of

believing that his Bills alone could produce an agricultural miracle. What of railways, it was asked; what of agricultural technology and chemistry; what of the hard facts of environment? Precisely the same questions might be asked of his later detractors.

For the wheat industry the period of the currency of Robertson's Acts was a period of transition. Spatially, the distribution of wheat-growing was changing markedly without any very great expansion in the total acreage of land under crop. At the same time there was a growing awareness of the value of mechanical aids in reducing production costs; of the different qualities offered by the different kinds of wheat; of the techniques of farming in lower rainfall regions and of the benefits of agricultural chemistry.<sup>81</sup>

The period was characterised by the rapid rise and early eclipse of the tablelands as the most important wheat producing region in the colony, and by the steady expansion of wheat acreage on the western slopes and the eventual rise of the area to a position of dominance towards the close of the period. By 1881, in fact, the stage was set for the great wheat-growing boom of the next two decades: the environment had been tested and in its essentials had proved satisfactory. Lower yields had been compensated by larger farms and a reduction in labour costs due to increased mechanisation.

To the English farmer, of course, the picture was still one of slovenliness and inadequacy. "At present", wrote one in 1870, "the small

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81. Again it should be emphasised that these changes, though discernible, were far from being widespread. See below, Chapter 7.

farmers of this colony conduct their operations in a most primitive mode. Their knowledge of agriculture is limited to that which they may have acquired as farm labourers. As a science they know nothing of it."<sup>82</sup> But they were beginning to learn. There are grounds to suggest that the 1870's were the years of the emergence of new techniques on new land; that there developed over these years two distinct types of farming - the one in the old districts a legacy of undercapitalisation from the past, and the one in the new experimenting, testing, and growing. Conditional purchase played a major role.

In 1870 only threshing machines seem to have been in general use throughout the colony, and these very often on contract work.<sup>83</sup> For the rest colonial farmers were "worse provided with implements than were the farmers of England in the time of George the Third."<sup>84</sup> But increasingly, throughout the seventies, came reports of new and better implements from Britain, from California, from Victoria and South Australia. The more important wheat-growing districts reported an ever-increasing use of machinery:

The introduction of agricultural machinery into the Orange district is hailed by the Western Examiner as a sign of advancement in the right direction. For years past such aids as could be afforded by hand-powered machinery have been used, but it is only lately that the more powerful descriptions available for most of the usual agricultural operations have been introduced.<sup>85</sup>

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82. ATCJ, 29/1/70.

83. ATCJ, 5/2/70; for contract work see ATCJ, 12/3/70, 23/4/70.

84. ATCJ, 5/2/70.

85. ATCJ, 21/5/70.

The reason was a sound one, and one that was beginning to impress more widely: "only the use of various labour-saving inventions, now so easily to be procured, will enable the wheat-growers of this district to compete with the Californian and South Australian markets ..."<sup>86</sup>

It was in the 1870's, too, that the stripper first began to make its appearance in New South Wales. The first successful stripper had been constructed in South Australia as early as 1843. According to Callaghan and Millington the rapid growth of wheat-growing in South Australia and Victoria that followed the gold-rushes was made possible, in part, by the use of this machine.<sup>87</sup> In the oldest colony, however, land harvesting was the most important method of taking off a crop until the 1870's. There are possibly two reasons for this. First, farming in New South Wales was notoriously undercapitalised and largely in the hands of tenants until the Robertson Bills were passed. Second, the stripper was useless in wet weather and, since the bulk of the wheat was grown in the coastal valleys with relatively high summer rainfall, its use there would have been impractical.<sup>88</sup> On the drier and more open lands further west, however, changing attitudes were discernible towards the organisation of farming operations, as this report from Ten-Mile Creek, near Albury, indicates:

There are several farmers here growing wheat to an extent closely bordering on 200 acres, an opinion prevailing with them that the only method of growing wheat profitably is to do it extensively and then take off the crop with the stripping machine.<sup>89</sup>

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86. ATCJ, 5/4/73.

87. Callaghan and Millington, The Wheat Industry, 337-343.

88. For difficulties of stripping in wet weather see ATCJ, 28/12/72. When this happened there was no alternative but to revert to hand reaping.

89. ATCJ, 5/7/71. See also ATCJ, 7/12/70.



At the same time there would seem to have been a growing interest in the particular varieties of wheat sown, and in their ability to resist rust attack in particular. Though the rust had been most destructive on the coast it had begun to make occasional appearances - not yet in epidemic proportions - on the more westerly extremities of the tablelands and on the slopes.<sup>90</sup> Consequently a good deal of interest was paid to the reports of varieties which were supposedly rust resistant. Again the "fancy farmers" were apt to feel that if only agriculturalists would pay as much attention to the choosing of their seed as they did to the breeding of their livestock great improvements in the average yield could be expected.<sup>91</sup> Education, however, took time and the dissemination of information amongst relatively poorly educated men was a slow process. Model farms and a Department of Agriculture had been advocated, but in the 1870's nothing had yet been done in concrete terms. Some farmers were selecting seed wheat, however, and probably most were beginning to be aware of the advantages of local varieties at least.<sup>92</sup>

It is difficult to compile a list of the varieties in use at this time because of the use of local names, but the following all receive mention in the Journal over the 1870's:

Algerian	Californian	Egyptian
Golden Drop	Manning River	Purple Straw
Spelt	Wards	White Llama

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90. ATCJ, 5/11/70, 3/12/70, 10/12/70, 24/12/70, 2/11/72.

91. ATCJ, 26/2/70.

92. For model farms see ATCJ, 29/1/70. For Department of Agriculture see ATCJ, 18/9/75.

Red Llama  
 Broulee  
 Blue Velvet<sup>93</sup>

Molds  
 Goulburn

Tuscan Straw  
 Talavera

Mono-cropping had been one of the major complaints against New South Wales farmers for many years. In the settled districts this still persisted, as this report indicates:

It cannot be denied that farming in New South Wales has hitherto been little better than starving, and it must remain so until a new era of fresh ideas take the place of the present impenetrable dullness and impracticality of our people. The objects for culture must be extended and diversified. So long as the farmer confines his attention to a single crop, and that one precarious, so long must the present deplorable state of agriculture continue.<sup>94</sup>

Again, however, there was evidence of changing attitudes further west. Mixed farming for wheat and sheep was being fiercely advocated by the scientific writers in the Journal and some, at least, were beginning to listen. Among the problems to be overcome were the lack of capital and the difficulty of securing credit. "We know of several highly trustworthy selectors", wrote the paper, "who have lately been unable to obtain small advances of £50 and £100, although their farming property is worth from £1,000 to £4,000 respectively."<sup>95</sup> The grass-right of three times the selected area offered by the Land Acts had turned out to be totally inadequate, since it too was open to selection. As districts

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93. ATCJ, 1/4/71; 12/11/70; 29/4/71; 13/4/72; 18/11/71; 27/1/72; 13/4/72; 1/3/73; 8/11/73; 18/11/71; 3/1/74; 3/7/75; 1/7/76; 13/1/77; 30/11/78.

94. Article on farming in the old settled districts, ATCJ, 24/8/72.

95. ATCJ, 9/4/70. For financial inability of selectors to keep stock see ATCJ, 7/5/70.

became more densely settled, farmers with stock lost the grazing right and were frequently forced to abandon the selection and move on.<sup>96</sup> The value of artificial grasses - clover, cocksfoot and orchard grass - though powerfully advocated by the better informed, was not widely known and was seldom resorted to by conditional purchasers.<sup>97</sup>

As with the introduction of machinery, it was in the new regions beyond the settled districts that the idea of mixed wheat and sheep farms first began to gain a foothold. Here selections tended to be more substantial, and on the larger areas there was scope for maintaining flocks as well as growing wheat. Some selectors - around Deniliquin for example - concentrated exclusively on sheep.<sup>98</sup> Others - in New England - were said to derive the major portion of their income from wool.<sup>99</sup> Elsewhere, on the central and south-western slopes, sheep and wheat were combined in creating a new type of farm.<sup>100</sup>

There would seem then to be ample evidence to suggest that the 1870's were years of change in the technique of wheat farming. For the most part it still remained undercapitalised in plant and limited to not very extensive properties, but attitudes were changing, particularly in the west where new settlement was effected "not by mere penniless adventurers but by substantial yeoman."<sup>101</sup> The question that remains to be asked is:

96. ATCJ, 7/5/70; 16/3/72.

97. ATCJ, 9/4/70; 7/5/70; 21/5/70; 13/9/73; 13/2/75.

98. NSWLA, VP, 1883, II, 94.

99. ATCJ, 4/4/74.

100. ATCJ, 7/9/72.

101. ATCJ, 7/10/71.

What part did conditional purchase play in permitting the spatial shift of wheat-growing and in encouraging the changing technical aspects of the industry?

The most remarkable fact of the agricultural history of the colony over this period is that - Morris and Ranken notwithstanding - freehold farming in the lands beyond the settled districts rose from complete obscurity in 1861 to a position of dominance in the industry by 1878. While the area cultivated on freeholds increased only slowly in the settled districts, it increased swiftly and consistently in the remainder of the colony (Table 17).

TABLE 17

Area Cultivated on Freehold Property, 1862

<u>Year</u>	<u>Settled Districts</u>	<u>Remainder</u>
1862	126,265	39,322
1863	134,172	46,623
1864	141,525	52,651
1865	159,607	68,777
1866	222,151	93,540
1867	189,428	68,356
1868	198,751	78,325
1869	216,917	89,993
1870	171,964	109,930
1871	178,421	99,820
1872	206,543	116,371
1873	203,434	125,238
1874	202,414	140,107
1875	179,251	149,563
1876	197,457	177,825
1877	209,223	193,347
1878	213,255	252,531
1879	224,689	265,151

Source: Recalculated from Statistical Registers.

Furthermore, it would seem certain that the bulk of this increase beyond the settled districts occurred on conditionally purchased holdings. The evidence for this conclusion rests with the Statistical Registers for the years 1875, 1876 and 1877, when differentiation of the types of freehold was published. The results appear in Table 18.

TABLE 18

Cultivated Acreage on Conditional Purchase Holdings

<u>Year</u>	<u>Acreage Cultivated on Freehold</u>		<u>% of Total on C.P.</u>	
	<u>Settled Districts</u>	<u>Beyond</u>	<u>Settled</u>	<u>Beyond</u>
1875	179,281	149,563	43.2	75.9
1876	197,457	177,825	39.9	78.0
1877	209,223	193,347	41.3	78.0

Source: Recalculated from Statistical Registers.

Both relatively and absolutely, therefore, conditional purchase was a more significant feature of agricultural developments beyond the settled districts than within them. The question that will always be asked is, of course, whether or not this expansion might have occurred irrespective of the passing of the Robertson Land Acts? This would depend entirely upon the system that might have operated in their stead. Under the old system, however, it is probably fair to say that such expansion would have been unlikely.

At the same time, Shann's point must be acknowledged: that the increase in the cultivated area on conditional purchases was slight compared to the total quantity of land selected, and that in this respect at least, the results scarcely came up to the expectations which Robertson might have enjoyed.<sup>102</sup> Again the statistics for 1875, 1876 and 1877 illustrate the point adequately, as well as giving an indication of the spatial differences between selections in the older districts and the remainder of the colony (Table 19).

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<sup>102</sup>. Shann, E.O.G., Economic History of Australia, 207, (Cambridge, 1948).

TABLE 19

Cultivation on Conditional Purchases

<u>Year</u>	<u>Number</u>		<u>Area (acres)</u>		<u>Average Size (acres)</u>		<u>Cultivated Area (acres)</u>	
	<u>Settled Districts</u>	<u>Remainder</u>	<u>Settled Districts</u>	<u>Remainder</u>	<u>Settled Districts</u>	<u>Remainder</u>	<u>Settled Districts</u>	<u>Remainder</u>
1875	7,423	9,437	1,444,752	3,290,761	195	348	10.4	12.0
1876	7,544	11,309	1,639,542	5,593,001	217	494	10.4	12.2
1877	7,729	11,812	1,944,819	5,188,235	251	439	11.1	12.7

But if the proportion of cultivated land to alienated land started to fall, then at least in other respects the position showed signs of improvement, and at worst of stability. In terms of the cultivated area per head of population this is demonstrated by Table 20.

TABLE 20

Cultivated Area Per Head of Population

<u>Year</u>	<u>Area Cultivated on Freehold</u>	<u>Population</u>	<u>Cultivated Area Per Head</u>
1862	165,587	367,000	0.45
1863	180,795	378,000	0.47
1864	194,176	392,000	0.49
1865	228,384	411,000	0.55
1866	315,691	431,000	0.73
1867	257,784	447,000	0.57
1868	277,076	466,000	0.59
1869	306,910	485,000	0.63
1870	281,894	502,000	0.56
1871	278,241	519,000	0.53
1872	322,914	539,000	0.59
1873	328,672	560,000	0.58
1874	342,521	584,000	0.58
1875	328,814	606,000	0.54
1876	375,282	629,000	0.59
1877	402,570	662,000	0.60
1878	465,785	693,000	0.67
1879	489,840	734,000	0.66

Source: Statistical Registers. Population estimate from Official History (1883).

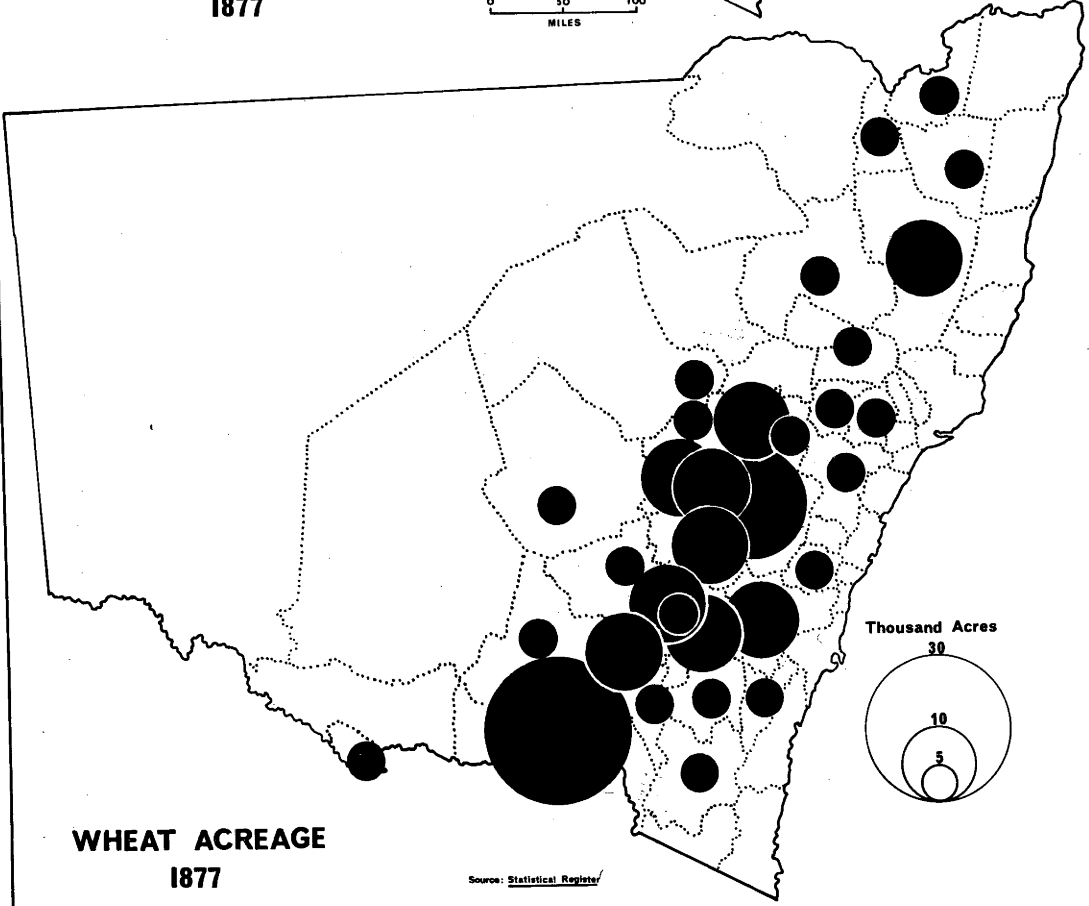
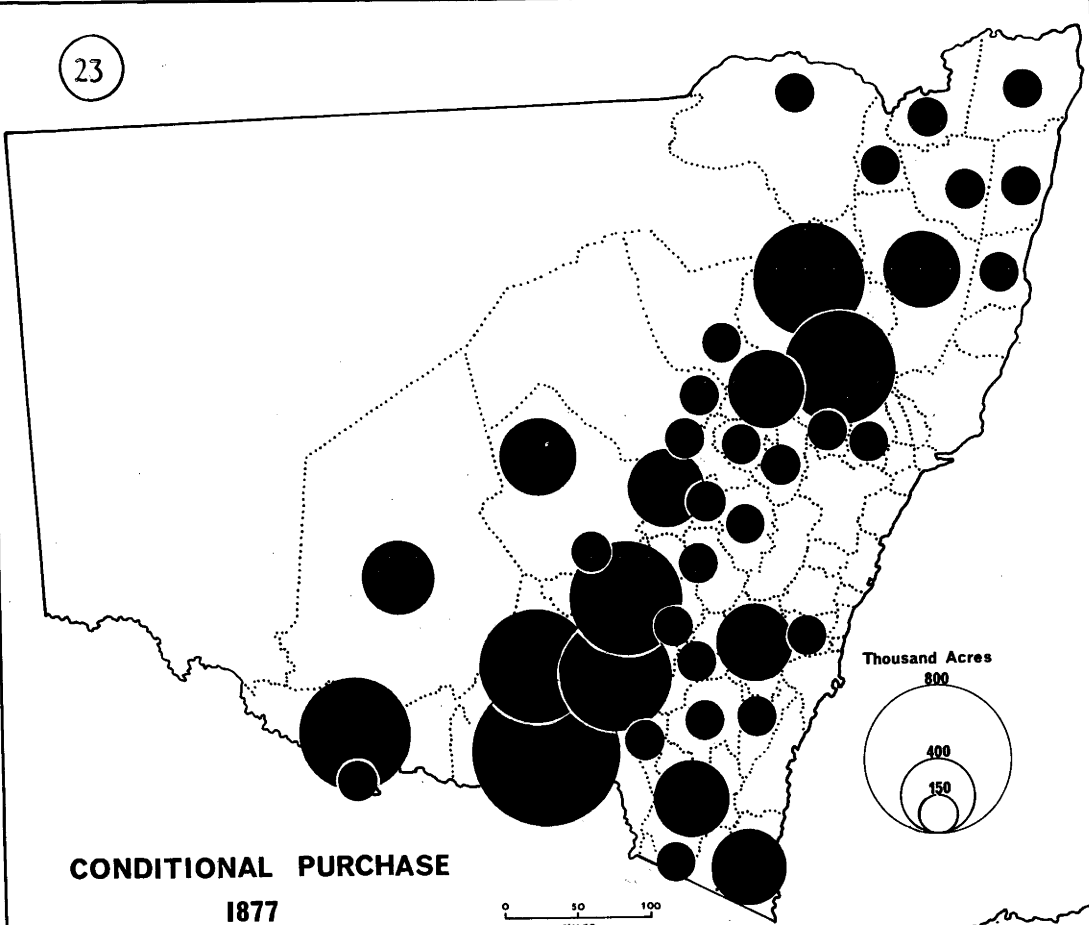


It is clear that this situation was maintained only by the rapid expansion of cultivation on free selected properties in the interior. The importance of conditional purchase tenure in extending - or in facilitating the extension of - the cultivated area in the colony would seem to be beyond doubt. In the wheat-growing industry the relationship between the crop and conditional purchases is even more marked (Figure 23).

The decline of the industry on the coast was followed by a sudden increase of acreage on the tablelands. In 1862 the county of Argyle had over 354,000 acres of freehold land, of which a meagre 4,578 acres were under wheat. By 1865, although the total of freehold land had fallen slightly, the acreage under wheat had increased by more than 100 per cent. Over the same period the wheat acreage around Bathurst grew by 9,023 acres - an increase of 114 per cent. Altogether the inland districts of the 20 counties saw an increase in wheat acreage of 240 per cent in the space of only three years.

Further west the Sydney market was still out of reach, as this report of an unusual transaction from Gundagai indicates:

We learn that a considerable quantity of wheat has been despatched from Gundagai to Sydney. The wheat is understood to be purchased for a Sydney miller, and must have been bought at a very low rate to make the transaction a paying one. The price paid for carriage to Goulburn is  $1/3$  per bushel. The carriers were three weeks on the road to Yass and are likely to be another week between Yass and Goulburn. 103



Source: Statistical Register

There were other markets, however, besides Sydney. The decline of the Hunter valley wheat-growing areas had left an opening for producers in the north:

Taking the northern district, including Muscleebrook, Scone, Murrurundi, Tamworth, Armidale, and Tenterfield, a large extent of fine wheat-growing land gives an excellent yield; and the numerous steam flour-mills in or near these towns supply all the inhabitants of the Upper Hunter and the squatting districts of Liverpool Plains, Namoi, New England, all the residents at the head of the Clarence and the borders of Queensland. Indeed the importers of Adelaide flour at Newcastle have little call in these districts now-a-days.<sup>104</sup>

The most startling developments, however, had occurred in the southwest, around the border town of Albury. Stimulated in the first instance by the markets offered on the Victorian goldfields, the acreage of wheat grown in the district had reached some 4,556 by 1861, and by 1868 had increased to 11,145 acres. The Victorian Government, eager to capture the wool trade of the flourishing Riverina pastoral industry had constructed a rail line to Echuca, while the South Australians, for the same reason, had pioneered river transport on the unpredictable Murray. It became the practice for Albury farmers to send wheat to Melbourne via the river as Echuca, and from there by rail to the capital. The attractions of the Victorian markets were strong and, though so far from Sydney, the district rapidly began to grow as a centre of free selector activity.<sup>105</sup>

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104. ATCJ, 8/10/70.

105. See reports from Albury in ATCJ, 20/1/72, 10/2/72, 29/6/72.

By 1875, of the 25 most important wheat-growing districts in the colony, Albury was the foremost with 21,817 acres of land under the crop. This was followed by the tableland centres of Bathurst and Orange with 14,582 and 10,685 acres respectively. These 25 districts together contained 91.1 per cent of the total wheat acreage in the colony and, of this, 68.4 per cent was grown on land conditionally purchased (Table 21).

Again, there is a contrast between the settled districts and the lands beyond. In the former the percentage of the total wheat acreage grown on conditional purchase holdings was relatively low - only 55.3 per cent. Beyond the settled districts the figure was markedly higher - 80.6 per cent. Again, this is a pattern which might be expected, given the different histories of land alienation in the two regions.

TABLE 21Distribution of Wheat Acreage in NSW - 1875

<u>District</u>	<u>Acreage</u>	<u>% of Total</u>	<u>% on Conditional Purchases</u>
ALBURY	21,817	16.3	84.0
ARMIDALE	4,979	3.7	55.0
BATHURST	14,582	10.9	18.5
BOOROWA	3,040	2.3	90.0
BRAIDWOOD	2,018	1.5	19.0
CARCOAR	4,752	3.5	50.0
COOMA	2,073	1.5	91.0
DUBBO	1,764	1.3	75.0
GOULBURN	7,374	5.5	49.0
GUNDAGAI	3,628	2.7	89.0
INVERELL	1,886	1.4	83.6
MOLONG	3,898	2.9	91.0
MUDGEE	5,988	4.5	69.0
MUSGLEBROOK AND MERTON	1,481	1.1	88.0
ORANGE	10,685	8.0	76.0
PATRICKS PL'NS	2,224	1.6	36.0
QUEANBEYAN	5,131	3.8	54.0
SCONE	1,659	1.2	74.0
TAMWORTH	4,705	3.5	86.0
TENTERFIELD	1,163	0.8	73.0
TUMUT	1,698	1.2	62.0
WAGGA WAGGA	1,365	1.0	77.0
WELLINGTON	2,628	2.0	70.0
YASS	5,548	4.1	61.0
YOUNG	5,762	4.3	92.0
TOTAL	121,848	91.1	68.4

Source: Statistical Register, 1875.

## CONCLUSION

In finally assessing this discussion of the Robertson Land Acts, it is convenient to consider separately the more general questions associated with the working of the law, and the more particular issues raised with regard to its consequences for the wheat-growing industry.

Contrary to the opinions expressed by Morris and Ranken, and re-echoed by Roberts, King, Shann and others, the free selection clauses of the 1861 Land Acts were more important both absolutely and relatively beyond the settled districts than within them. It must be stressed that this widespread condemnation of the most significant piece of legislation in nineteenth century New South Wales has been based largely upon the widespread alienation of land to pastoralists, at auction and by pre-emption, and the "locking-up" of farming land in pastoral estates. Yet, without doubt, this would have occurred under any of the alternative proposals put forward in the late-1850's, without necessarily being accompanied by the same degree of small settlement. For it must be admitted that the creation of freehold pastoral estates was fundamentally a reflection of the buoyant state of the pastoral industry coupled with deliberate government policy in raising funds for investment in public works without resort to large-scale overseas borrowing. It should be noted, furthermore, that the mechanism of prevention did exist, at least in form, and could at any time have been invoked. At a general level, therefore, it would seem reasonable to conclude that the land legislation

of 1861 and the developments associated with it have, on the whole, been viewed too narrowly and without due regard to prevailing economic and political conditions.

More specifically, the relationships between the expansion of wheat farming and the introduction of conditional purchase have been shown to have varied considerably between the settled districts and the interior, and to have been of far greater significance in the latter region. Again, this is contrary to the generally inferred pattern. It has been shown that the expansion of wheat farming in the interior, and in some localities in the settled districts, occurred almost exclusively on selected land. From the point of view of the development of the wheat industry, the Robertson Land Acts were clearly of great significance.

Yet, it must also be stressed that, although the mechanism of land access for the purpose of wheat-growing has been explained, and although the spatial variation in the impact of the new forms of land tenure have been demonstrated, this discussion has so far left unanswered some fundamental questions. It has already been suggested, for example, that the expansion of wheat farming over the 1860's - though occurring in part on conditionally purchased properties - was not directed at the major metropolitan market, and was not influenced by the expanding railway system. Although the means of land access have been demonstrated, therefore, it still remains to discuss the underlying causes of the expansion of the industry in the interior: causes that only partially reflect the influences of the new Land Acts, and that require for their explanation a more detailed investigation of other features.

CHAPTER 5THE ROLE OF THE RAILWAYS

Give us railways and a cheap  
home-grown loaf ...

ATCJ, 14/1/71.

The passing of Robertson's land legislation in 1861 was an event of profound importance for the colony. Yet, in strictly geographical terms, the success of this legislation in attempting to change the very nature of the rural economy in New South Wales, was necessarily limited. It was limited, not by virtue of the inadequacies of the legislative provisions it contained, still less by the widely publicised operation of dummyming, but by the physical problems of sheer distance which, more than any other factor, dictated the scale of agricultural operations in inland New South Wales. The truth remained, as it always had, that without access to the major deficit areas on the coast, the production of breadstuffs in the inland was determined by the capacity of essentially local markets, and could expand only as these markets expanded. Emancipation from this constricting situation depended primarily upon the construction of railways.

Yet, contrary to the general hypothesis, the history of the wheat frontier in detail involves more than a simple cause and effect relationship with the expansion of the railway system. It is true that, in the long view, the period from 1860 to 1880 was the founding period of a new



wheat frontier: a frontier "new" in the sense that its contacts in space were drastically revised; a frontier oriented towards new markets and permitted, as a result of an expanding railway system, to operate on a scale hitherto unprecedented. But it must be recognised that these benefits were realised only towards the close of the period, and that throughout the 'sixties and much of the 'seventies these conditions still do not obtain.

By inference, therefore, the geography of wheat-growing over this period falls into two phases: the first, a continuation of the pre-railway era when the wheat industry remained geared to the local market; the second, the beginning of a new frontier dependent upon the market of the major deficits area of Cumberland. Clearly, an interpretation of the wheat frontier based upon these premises must be intimately bound to the direction and the timing of railway building. For, over the first phase, and in contradiction to the usually stated view,<sup>1</sup> the influence of the railways is denied, while the second phase is seen to have its raison d'etre in the existence of rail communication. Before turning to consider in detail the developments on the frontier it is therefore necessary to examine the progress of railway construction throughout the period.

#### RAILWAY BUILDING 1869 - 1880

One of the most remarkable features of railway building, from the time the government took over the private companies to the completion of

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1. See, for example, the views of the Rural Reconstruction Commission (1944) in Dunsdorfs, Wheat-Growing, 162. See also Wadham, Land Utilisation, 17.

the major trunk lines, was that the general direction and orientation of these lines were never in question. It was assumed that the existing termini at Sydney and Newcastle would remain the pivots of future extension. From the former one line would push westwards, through the barren Blue Mountain massif, to the fertile tableland in the vicinity of Bathurst, and one line would extend southwards, through the agricultural county of Argyle centred on Goulburn, and on to the wealthy sheep county of eastern Riverina. From Newcastle a third line would extend to the north, following the gentle gradient of the Hunter Valley, to the tableland centres of Tamworth and Armidale.

In many ways, of course, this arrangement could hardly have been more inevitable or more clean-cut: as early as 1854 a Select Committee of Council had indicated that railways in the colony were to be viewed essentially as a more efficient substitute for the major trunk roads, and accordingly the lines followed closely the existing road pattern.<sup>2</sup> Moreover, since these roads linked the major colonial settlements with either Sydney or Newcastle, this seemed at the time not merely inevitable but also desirable. The pattern of trunk route development which emerged, therefore, was almost classic in its radial simplicity.<sup>3</sup> It bespoke the existing dominance of the metropolis, and, as some authors have recently indicated, it helped to ensure that this dominance would increase.<sup>4</sup> The

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2. "Report of the Select Committee on Roads and Railways", NSWLC, VP, 1854, 1187 et seq. See also Figure 6 above.

3. See the discussion of Bunge's minimum distance concepts in Haggett, P. Locational Analysis in Human Geography, 65-66, (London, 1965).

4. Rutherford, J., Logan, M.I., and Missen, G.J., New Viewpoints in Economic Geography, 362, (Sydney, 1966).

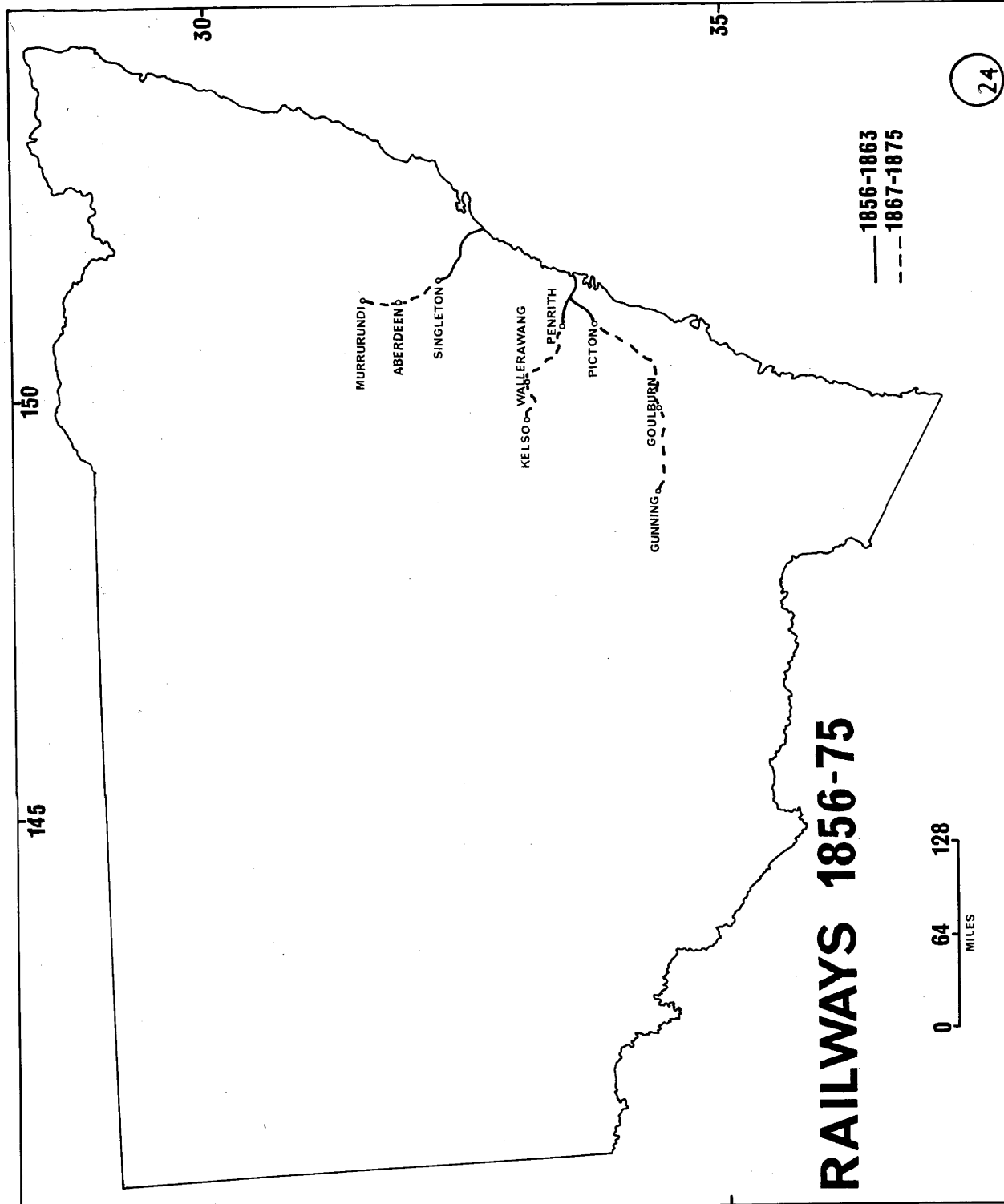
modification of this radial pattern only came to be mooted later when a direct line from Glen Innes to the north coast was urged, without success.<sup>5</sup>

With only occasional diversions, therefore, railway development between 1860 and 1880 concentrated on the major trunk lines. Three clearly marked stages are recognisable in this development. The first stage consisted essentially of tidying up the commitment of the now defunct private companies by the completion of lines for the densely settled and productive Cumberland Plain and Lower Hunter Valley. This occupied the government until the middle of 1863 when the lines had been extended to Singleton in the north, to Penrith in the west, and to Picton in the south. (Fig. 24a).

The second stage of trunk line construction lasted from 1866, when work began on the extension of the Penrith and Picton lines, until the mid-1870's when the northern line was opened to Quirindi, the western line to Bathurst, and the southern line to Gunning (Fig. 24b). By virtue of the terrain crossed, this second stage was at once the longest, in terms of time, the most expensive, and the most unproductive. In contrast the final stage of building proceeded with considerable rapidity over the late-1870's and by February 1881 the western line had been opened as far as Dubbo, and the southern line had been opened as far as the Victorian border at Albury. Progress in the north was somewhat slower due to the greater technical difficulties posed by crossing the New England massif, but even here the line had reached Tenterfield by 1886 (Fig. 26).

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<sup>5</sup> See Report of the Commissioner for Railways 1872-75, 9, Sydney, 1876)



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145

30

35

MURRUMBIDGE  
ABERDEENS  
SINGLETON

KELSO  
WALLERAWANG  
PENRITH  
PICTON

GUNNING  
GOULBURN

# RAILWAYS 1856-75

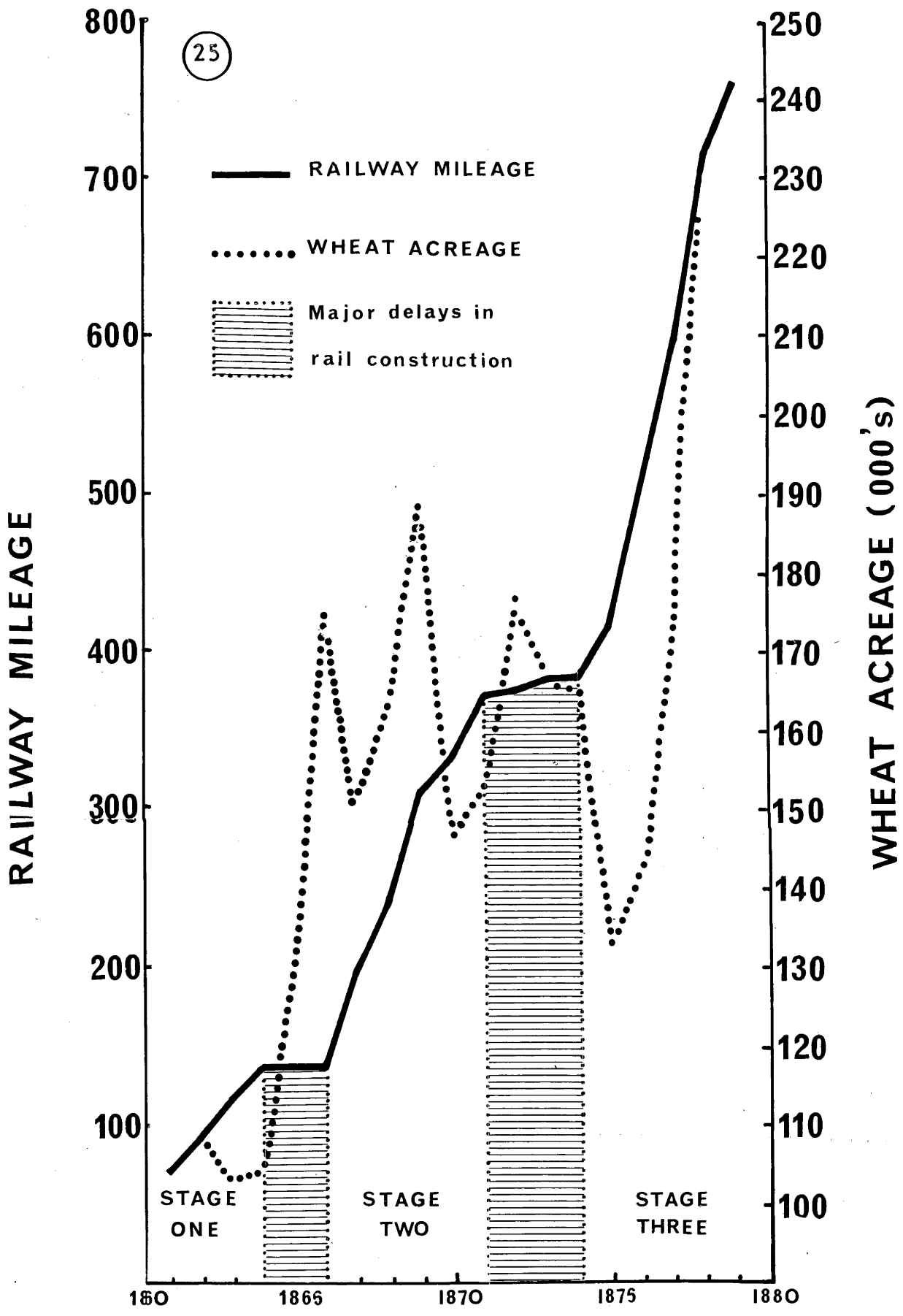
— 1856-1863  
- - - 1867-1875

0 64 128  
MILES

Yet the apparent straightforwardness of this programme, and the apparent single-mindedness which may appear to have inspired it, masks a fundamental and occasionally disruptive uncertainty on the part of the successive governments responsible for its completion. For if, at least for the time being, the question of routes had been settled with relative ease, there remained other, and sometimes more basic, issues plaguing government railway building. The cumulative effect of these issues, moreover, was sufficient to produce a markedly "stepped" pattern in the progress of trunk line construction, and to render a total of five years out of twenty almost completely unproductive of functioning railway. (Fig. 25).

Six major problems seem apparent: five of these were internal problems concerning only the government and people of the colony; the sixth concerned the border district of Riverina and the growing power and influence there of Victoria and South Australia, and this must be treated separately. Of the essentially internal problems the most fundamental were whether or not to construct railways at all, and if so what form this construction should take. Assuming that railways were to be built, or were to continue to be built, three further problems were raised: first, how were they to be financed; second, what construction priorities were to be established; third, what role, if any, was to be allowed to private enterprise? On none of these subjects did the government have a clear-cut policy in 1861 and moreover, because of the very fact of public ownership, the policies eventually worked out by one government were clearly not binding on its successors. The result was that the same issues were raised

(25)



during each authorised stage in construction, thus rendering its completion uncertain, its extension problematical, and on two occasions bringing work virtually to a standstill.

The first major hold up in the construction of the trunk lines occurred in the early 1860's with the completion of the lines for Cumberland and the Lower Hunter. Further extension of the trunks halted in July 1863 while the government undertook the construction of two minor branch lines from Maitland to Morpeth on the northern trunk, and from Blacktown to Richmond near Sydney. Not until these lines were completed in December 1864 did the government accept tenders for renewed work on the trunk lines, and not until 1867 did this renewed work begin to show fruits with the extension of the southern line from Picton to Mittagong.

The pre-occupation of railway building with two minor branch lines in the middle years of the 1860's was the first indication of the problems which would face government increasingly as the lines were extended and as public investment rose. The Blacktown to Richmond line had originally been constructed as an experimental horse-tramway at the insistence of those politicians, backed by Governor Denison, who persisted in opposing the construction of steam railways in so sparsely settled a colony.<sup>6</sup> More important than the conversion of this horse-line

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<sup>6</sup> For this opposition see "Report of the Select Committee on Railways", NSWLC, UP, 1848, 455. See also SMH, 10/3/54; 22/12/54; 16/4/55; 7/5/56. One of the fiercest critics of government railways was the young Stanley Jevons, see La Nauze, J.A., Political Economy in Australia, 41, (Melbourne, 1948). See also Chapter One above.

to take steam traffic, however, was the question of a branch railway from Maitland to Morpeth. For, although the government had shouldered responsibility for the trunk lines - . . and the anomalous Blacktown to Richmond line - . . it seemed clear to many that the construction of branch lines was a proper sphere for the re-introduction of private railway enterprise. The Maitland to Morpeth line therefore became a test case of some importance. Not only did it divert government attention from the construction of the railway trunks, but had private enterprise succeeded in capturing this line, it is likely that similar small-scale developments would have diversified the railway system at an early stage rather than waiting on the systematic approach of central authority. In addition, the Morpeth case presaged the kind of parochial argument which was later to develop on a larger scale with reference to branch lines throughout the colony.

Morpeth was the head of navigation on the Hunter River. It was the gathering point for the produce of the Hunter flats, the Upper Hunter, and the valleys of the Paterson and Allyn Rivers. In addition it was the receiving point for many of the goods sent by sea from Sydney and destined for the inland as far as Dubbo and Bourke. From Hexham to East Maitland, however, the Great Northern Railway had been constructed in a straight line, by-passing the river loop through Raymond Terrace and Morpeth. As a result, it was claimed "an impediment has been created to the natural progress of . . . (Morpeth) . . . and notwithstanding its many and great advantages, it has been thrown from the natural increase of prosperity which it ought to have enjoyed, by



the employment of the public revenue operating against that increase."<sup>7</sup>

Initially, however, the government refused to construct the branch line which the Morpeth tradesmen vociferously demanded. The reason illustrates well the confusion which existed in the government regarding the construction of railways: branch lines, they declared, should be "left to private enterprise" and this particular line was "especially a fitting subject".<sup>8</sup> This decision was greeted cynically by many of the Hunter residents who objected strongly to the prospect of a private railway financed largely by the directors of the steamship companies already plying the river.<sup>9</sup> For once, and somewhat unusually, the voice of the Hunter farmers held sway over the influence of local businessmen. The government made an about-face on their earlier decision, allowed the private Railway Company Bill to lapse, and undertook to construct the Morpeth line themselves.<sup>10</sup>

The consequences of this decision, for the immediate future of railway building, were considerable. The government had, by implication

<sup>7</sup> "Report of the Select Committee on the Morpeth and Maitland Railway Company's Bill", NSWLA, UP, 1861, II, 508.

<sup>8</sup> Ibid, 515.

<sup>9</sup> See George Sanders to Rev. J.D. Land, 30/10/61, Lang Papers, VII, 213. See also Whitley, T., Random Reminiscences of the Lower Hunter River 1855-57, Mss.

<sup>10</sup> The first attempt to pass the Bill failed through lack of a quorum. See NSWLA, UP, I, 1861-62, 413. For government decision see SMH, 21/12/61. The whole course of events is reported in detail in the Maitland Mercury, passim.

at least, given the cold-shoulder to private railway enterprise and accepted responsibility for branch line construction as well as the construction of the major trunks. By doing so it was possible, for a time, to determine the priorities of a railway building programme without outside interference, and effectively to silence the subject of branch line construction and subordinate it wholly to a programme of trunk extension. The cost had been considerable in terms of time lost, however, and between 1863 and 1867 only twenty miles of railway were opened.

Yet, even with regard to trunk line building, the government had early met with difficulties, and these difficulties had to be solved before the second stage of building could begin. For it was by no means universally accepted, even in government circles, that expensive steam railways were a satisfactory answer to the transport problems of the thinly settled colony. Already, by 1860, the Assembly had defeated one scheme proposing the integration of steam railways for Cumberland and horse tramways for the remainder of the colony. Then, in 1861, the Secretary for Public Works himself proposed a similar scheme to halt railway building on the western and northern trunks, and to extend the southern line only as far as Goulburn. From these three points, Singleton in the north, Penrith in the west, and Goulburn in the south, he suggested that horse-tramways might well prove a more economical and equally adequate solution.<sup>11</sup>

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<sup>11</sup> See SMH, 31/10/61 and Maitland Mercury, 5/11/61

Arnold's scheme raised an immediate controversy. It centred, however, not on the comparative advantages of steam and horse, but on the apparent favouritism shown in extending the southern line to Goulburn whilst denying further extension of the northern and western lines. Consequently, although Arnold's scheme was defeated, and although it was decided that hereafter work on the three trunk lines should progress simultaneously, the basic issue of steam versus horse was by-passed only to be raised with serious consequences at a later stage.

When the second stage of railway building began, therefore, the government was committed to a fragmented effort on three widely separated trunk lines, none of which was to have priority over the other two.<sup>12</sup> The second stage of building went ahead effectively until 1871, when the southern line was in operation as far as Goulburn, the western line as far as Rydal some 33 miles from Bathurst, and the northern line as far as Wingen between Murrurundi and Scone. At this point the second major break in continuity occurred. There were two principal causes. The first of these was labour difficulties and the repeated failure of contractors to meet the scheduled date for the completion of their sections. This led eventually to the introduction of the Agreements Validating Act of 1876 under which penalties were strictly enforced and uncompleted contracts surrendered.<sup>13</sup>

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<sup>12</sup> See the resolution to this effect in NSWLA, VP, 1861-62, I. See also SMH, 6/12/61.

<sup>13</sup> See Report of the Commissioners for Railways 1872-1875, 7, (Sydney, 1876).

But at the same time work on further extensions was delayed due to the revival of criticism against the expensive heavy steam railways. The reaction to the costly and unproductive nature of the lines now being driven through the barren Dividing Ranges was emphatic: in 1870 a Resolution was passed in the House, and re-affirmed in the following year, demanding in future the construction of lines "more suited to the wants of the Country than the present costly lines."<sup>14</sup> Once more, while the Engineer-in-chief investigated and reported upon the various means of reducing public expenditure on the transport system, authorisation for additional sections of railway was withheld, and three years passed with virtually no addition to the railway mileage in the colony.<sup>15</sup>

When, in 1876, work began in earnest on the third and final stage in trunk line building, most of the problems that had previously caused such disruption and uncertainty had been resolved, and the progress of construction gathered momentum. Trial surveys had been pushed on from Goulburn to the Murrumbidgee via Murrumburrah as early as 1867, and by 1870 as far as Tamworth in the north.<sup>16</sup> Work had been started on a

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<sup>14</sup> NSWLA, VP, 1871-72, I, 146. The motion was re-affirmed in the following years. See NSWLA, VP, 1872, I, 212. It stemmed, essentially, from a highly critical report to the Minister of Public Works in 1870 by J.H. Thomas. See "Report on the Proposed Tramway from Goulburn to Braidwood or Queanbeyan", NSWLA, VP, 1870-71, III, 293-296.

<sup>15</sup> For the reaction of the Engineer-in-Chief to proposals for cheaper railways see "Report of the Engineer-in-Chief Relative to the Cost of Proposed Extensions", NSWLA, VP, 1870-71, III, 279-284.

<sup>16</sup> Report of the Commissioner for Railways 1872-1875, 9, (Sydney, 1876).

trial survey to Albury in 1870 and was completed in 1873.<sup>17</sup> By the close of 1871 final surveys had been made from Goulburn to Yass, Bathurst to Orange, and Murrurundi to Tamworth. In 1876 tenders were accepted for the construction of these lines, and also for an extension from Yass to Wagga. By 1880 trial surveys had been made as far as Bourke on the western line, and for additional trunk lines to Hay in the south, Narrabri in the north, and to the Monaro at Cooma (Fig. 26).<sup>18</sup> In between 1875 and 1880, 413 miles of functioning railway were added to the New South Wales system, and the lines had reached Gerogery near Albury, Wellington in the west, and Gunnedah and Tamworth in the north. The initial trunk building era was almost ended.

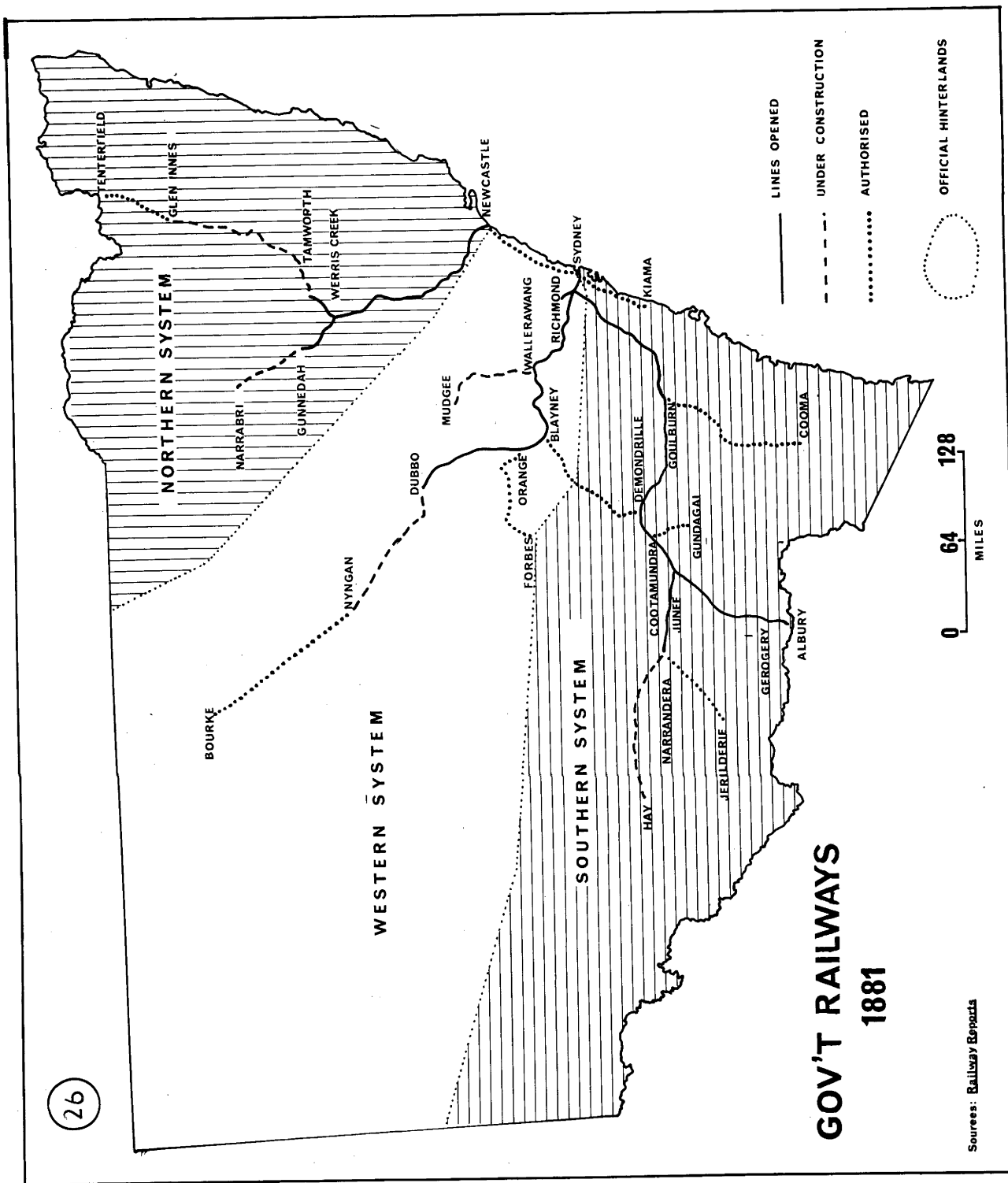
#### Developments in Riverina

It has already been suggested that the problem of the growing power and influence of Victorian and South Australian interest in Riverina make this area unique, and it is a uniqueness which, for the purposes of this study, is important. For it will be argued that the pattern of developments in Riverina, insofar as the wheat industry is concerned, were eccentric to the general pattern displayed by the remainder of the colony, and that this eccentricity derived from its

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<sup>17</sup> "Report on the Railways", NSWLA, VP, 1872-73, 507-508. The original order for the survey had been given in August 1870, but a change of government caused it to be temporarily rescinded.

<sup>18</sup> Report of the Commissioner for Railways 1877-89, (Sydney, 1881).



# GOV'T RAILWAYS 1881

Sources: Railway Reports

locale and the competing forces of regions outside New South Wales.

The border between the colonies of New South Wales and Victoria followed the left bank of the Murray River. In between the Murray and its tributary the Murrumbidgee lies the Riverina, its semi-arid plains sloping almost imperceptibly to the west and the Darling River. In the 1860's this was a stronghold of the squatter. On the eastern margins of Riverina, on the recent river alluvia in the vicinity of the border town of Albury, free selectors had begun to alienate considerable areas of land under the provisions of the 1861 Land Acts. The great wealth of the region, however, still lay in its livestock. Of the £1,801,000 worth of wool exported from the colony in 1862 some £517,000 worth crossed, or travelled down, the Murray River into Victoria and South Australia. Most of this was Riverina wool.<sup>19</sup>

The natural wealth of the region had long impressed both Victoria and South Australia. Because of its situation the "natural" outlet for this wealth was taken to be the Victorian capital of Melbourne. Indeed, in terms of straight-line distances, the whole of the region west and south Wagga was absolutely closer to the southern capital than to Sydney, and in reality the journey to Melbourne was infinitely easier than the long and expensive haul over the treacherous roads of the Dividing Ranges to Cumberland. For so long as 'natural' outlets consisted solely of overland journeys by dray the dominance of Melbourne as buyer and seller for the region was assured, and New South Wales was

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<sup>19</sup> See Butlin, Economic Development, 309.

powerless to compete for the fruits of one of the richest regions.

Over the late 1850's and early 1860's however, the complacency of Victoria was disturbed by the opening of navigation on the Murray and the increasing proportion of Riverina wool travelling down the River to South Australia. An overt and highly successful attempt to recapture and monopolise the Riverina wool trade was made from Melbourne in 1864 with the opening of a railway to the Murray, strategically placed to attract the maximum amount of traffic. The outcome was the shutting-out of South Australia as the trade of the River "from Albury to the Murrumbidgee junction became concentrated on Echuca.<sup>20</sup> The absolute dominance of Melbourne was finally sealed with the opening, in 1873, of a second line to Wodonga, opposite the New South Wales town of Albury.<sup>21</sup>

Throughout the 1860's, the almost complete divorce of Sydney from its valuable Riverina lands was increasingly driven home by these and other developments. It was a divorce born essentially out of distance and lack of communication, and nourished by the squatters' antagonism to the new Land Acts. It had found expression, as early as the 1850's in the sympathy of many Riverina inhabitants with prospects of annexation

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20. "Report on the Examination of the River Murray", NSWLA VP 1899, V, 573. See also Lyne, C., The Industries of New South Wales, 221, (Sydney, 1882) for the statement of Victorian motives see "Report ... on the Trade of the River", VicLA, VP, 1862-63, II, D.42, 1091 et Seq

21. For the reasons behind the extension of the second Victorian line to Wodonga see "Memoranda on Railway Extension", VicLA, VP, 1868, I, A.13. It was realised that a second line would "Secure to Melbourne the trade of a large and important district outside Victoria".



to a more-than-willing Victoria.<sup>22</sup> Early in the 1860's, however, this gave way to a vigorous Separatist movement which caused concern, not only in Sydney and London, but also in Melbourne where it was feared that an independent Riverina might enter into an exclusive trading agreement with South Australia.<sup>23</sup> The Separatist movement failed, but it was immediately followed by demands for the improvement of communication facilities in the region, and in particular for the construction of a line of railway from Deniliquin to the junction with the Victorian line at Echuca.<sup>24</sup>(Figure 27).

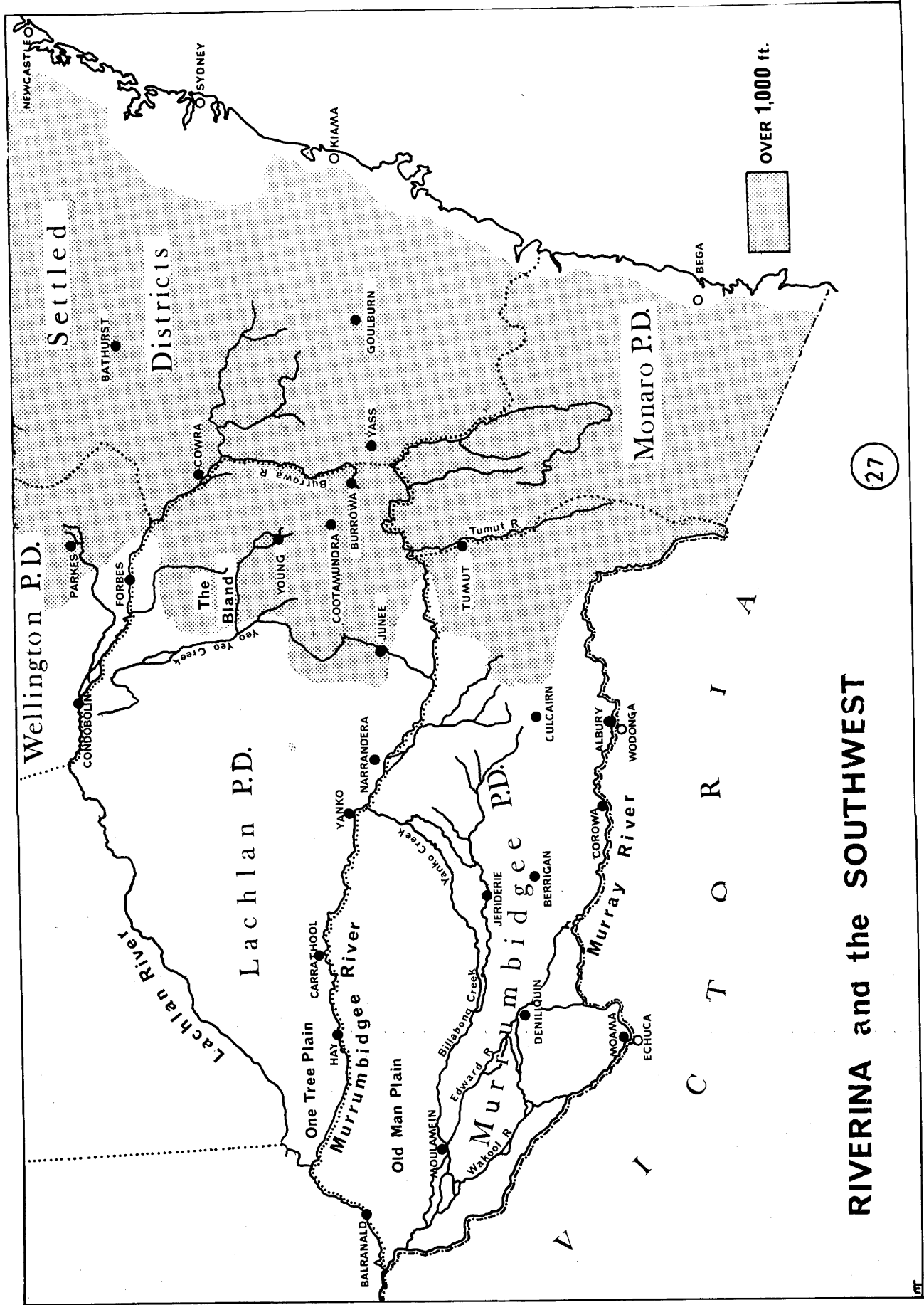
Deniliquin was the focus of the overland routes to the Echuca railhead. Roads converged there from Wagga via Urana, from the back-block via Canaga, from the Yanko region, from the Lachlan and Murrumbidgee by Wangaratta and Hay, from the Lower Murrumbidgee and Murray by Balranald, and by Moolpa and Moulamein from the Edward River South from Deniliquin the travelling stock route to Moama and the Echuca railhead, was, it was claimed, quite unable to support the large flocks which used it. The carriage of wool from Deniliquin to Moama cost between £3 and £5 per ton for the 45 mile journey, compared with the £3 per ton railway

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22 See letter from "Junius" in SMH, 2/1/52, "there is a growing wish to be united with Victoria". See also quotes from Albury Banner in SMH, 27/10/56

23 The movement went so far as to present a petition to the Crown. For the petition see NSWLA, UP, 1865-66, I, 666-668. For the rejection of the petition see NSWLA, VP, 1865-66, I, 687, for Victorian concern at the prospects of this move see "Report ... on the Trade of the River", VicLA, VP, 1862-63, II, D.42,1091 et seq.

24 The problems created by distance from Sydney had been one of the major plans of the Separatist movement.



**RIVERINA and the SOUTHWEST**

of these - the complete decline of the industry in the traditional agricultural districts of the coast - has already been considered and shown to have been due overwhelmingly to repeated outbreaks of stem rust in epidemic proportions. With regard to the contemporaneous increase in acreage in the interior, however, the problem is more complicated. At a general level this increase has so far been placed only within the framework of the introduction of a new law governing land alienation, and an apparent improvement - at least in the western districts - in farming techniques. Yet important though these elements were, and important though it has been to see the effects of Robertson's legislation in sober perspective, there remain other questions to be asked with respect to the apparent westward shift of the wheat frontier over this period.

In the final analysis it must be recognized that the new land law was largely permissive: it permitted a means of entry onto the land that had hitherto been lacking, it provided credit in the form of deferred payments at a time when credit was most needed, but of itself it did not determine that this land, or any portion of it, should be used for the production of wheat. If the introduction of the new law explains how wheat growing was able to develop on small properties in a region formerly almost wholly devoted to sheep raising, it does not explain why this development occurred. Nor does it explain why the expansion of wheat-farming in the interior before 1880 occurred in some districts but not in other, physically similar, districts: for it must be noted at the outset that throughout this period wheat-growing remained largely tied to a few favoured localities.

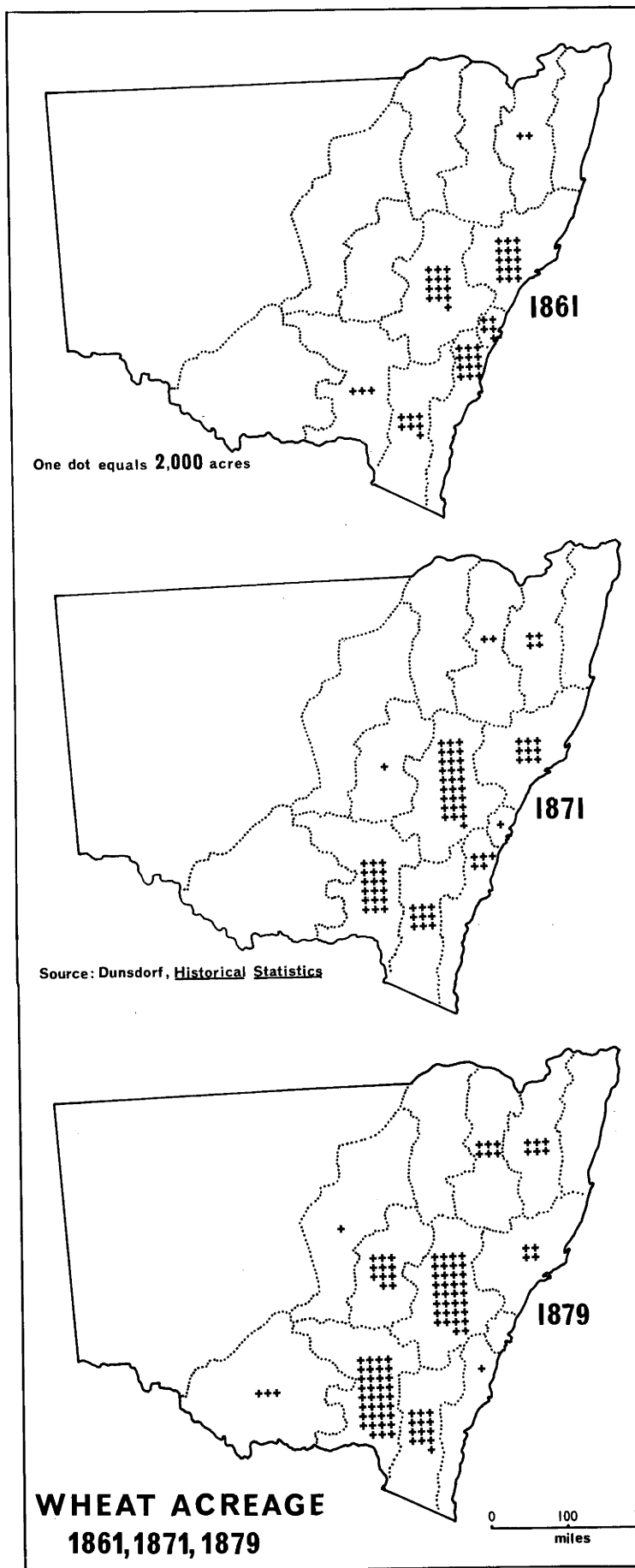
It is important to note also that, although on the whole this period was one of expansion for the inland wheat-growing areas, this expansion was not a continuous and uninterrupted process. It will be shown that the patterns of growth in the wheat industry varied from region to region within the colony, according to one or the other of two clearly defined patterns.

There are, therefore, three fundamental issues which must be considered in this examination of the changing geography of wheat-growing in the colony. First, why did the area of land under wheat in the inland districts increase over this period? Second, what were the factors that favoured this increase in some localities to a far greater degree than in others? Third, why did the process of this expansion show such clearly defined timing and periodicity in certain regions in the colony? In each case, it is suggested, the answers are to be found in an examination of the markets for wheat and breadstuffs, in the fluctuations of these markets, and in the changes in the accessibility of the metropolitan market resulting from the construction of railways.

For it will be argued here that the developments of this period fall into two clearly defined phases, varying in duration from district to district within the colony. The first phase is in many ways the most interesting, for it will be shown that the expansion of the wheat frontier over this phase occurred independently of the extension of the New South Wales railway system: it preceded rather than followed the growth of lines of communication with the metropolis. The first phase, in fact, depended primarily upon fluctuations in the capacity of local markets, and in this sense it will be shown that, although the

industry increased in size, the controls governing its relationship in space were essentially the same as those operating in the 1850's. The most significant changes of the period, however, occurred with the opening, in the different districts, of the second phase. This was marked by the extension of the railway network into these districts and the establishment of rapid through-communication with the major deficit area of metropolitan Cumberland. For it is with the opening of this phase that the basic geography of wheat farming enters into a new era.

It is necessary at this stage to digress briefly in order to introduce a further element with this consideration of the expanding wheat frontier in New South Wales. For, although the division into phases holds good for the bulk of the colony, and although most of the important wheat-growing districts exhibit the same basic pattern of expansion, one very important region stands out from the remainder on both these counts. This is the district on the Victoria border around the eastern Riverina town of Albury. It was earlier shown that this district received its first impetus from the breadstuffs market on the Victorian goldfields, and it has been shown further that the potential of the district, for the purpose of marketing wheat, was considerably strengthened at an early stage by the construction of rail lines with Victoria. Of all the inland wheat producing districts, therefore, this was the only one with a market which, throughout the period, did not depend upon the size of the "local" population. Consequently the pattern of expansion and contraction which will be shown to have



generalisation, and given the limitations which this implies from a locational standpoint, certain useful initial observations may still be drawn.

TABLE 22

Distribution of Wheat Acreage in New South Wales

<u>District</u>	<u>1861-1880</u>			
	<u>1861</u>		<u>1880</u>	
	<u>Acres 000's</u>	<u>% of Total</u>	<u>Acres 000's</u>	<u>% of Total</u>
Coast	65.4	52.9	10.6	4.1
Tableland	43.2	35.0	115.5	44.7
Inland	14.8	11.9	115.6	45.7

Source: Recalculated from Dunsdorfs, Historical Statistics.

On the negative side it is clear that any discussion of the wheat "frontier" in New South Wales throughout this period must de-emphasize the "frontal" implications of the term, and emphasize the exceedingly small scale of farming operations when compared to the total area of land even in the most densely farmed regions. This, of course, merely lends support to the suggestion already made that, under the 1861 Land Acts which became the chief vehicle for the expansion of agriculture in the inland, selectors did not push beyond the limits of settlement on a broad front in search of better lands. Rather, they invariably selected on Crown lands in the vicinity of an existing town and local market. In reality, therefore, small-scale agriculture insinuated amongst existing pastoral pursuits and diversified without displacing. Initially,

therefore, it might be suggested that to visualise the advance of the plough sweeping all else before it, as in the **case** of South Australia,<sup>28</sup> would, in the context of New South Wales between 1820 and 1880, be extremely misleading. In detail, of course, the point needs further development, but its likely validity is already evident.

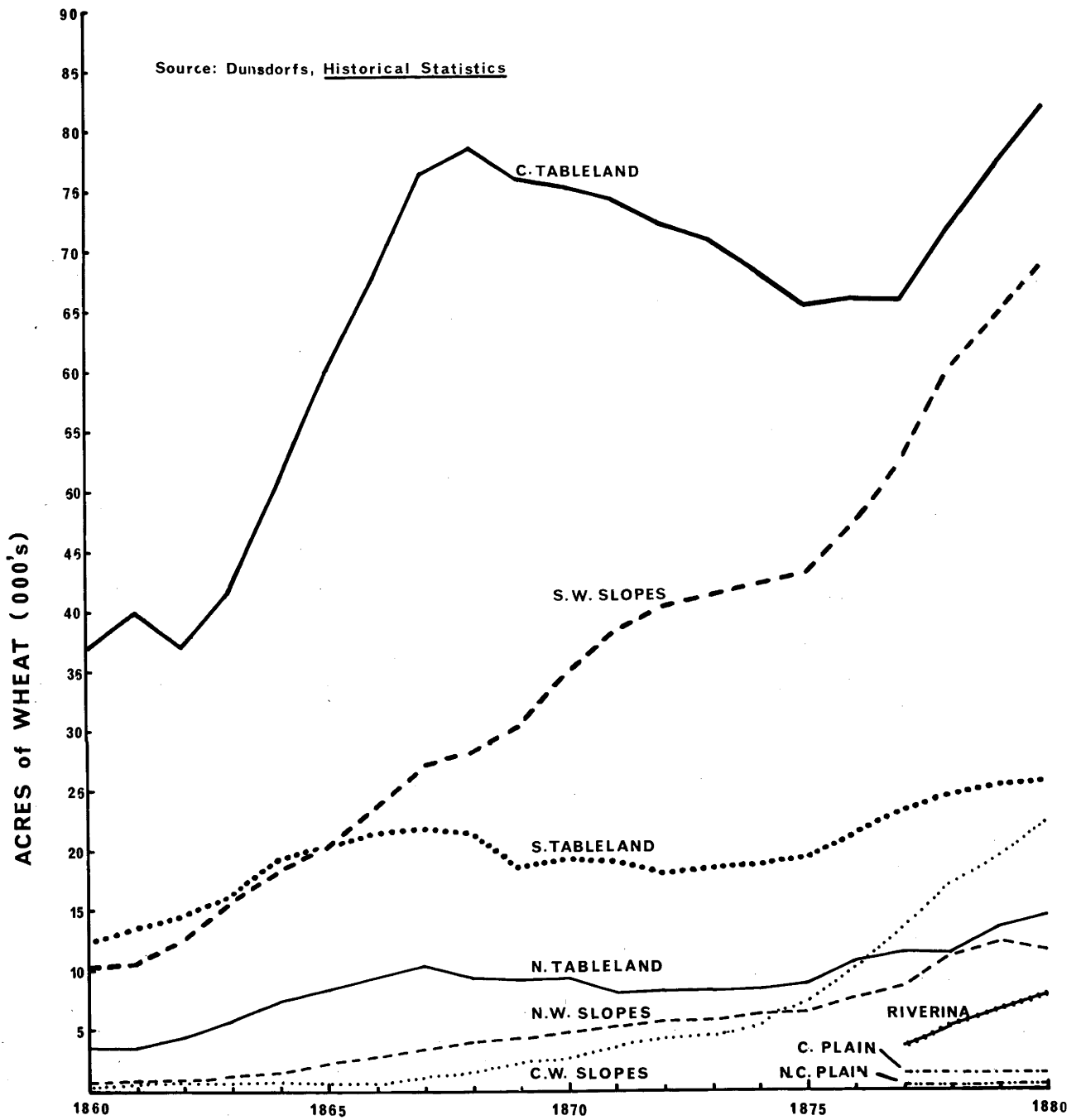
More positive observations, however, might also be drawn from Dunsdorfs figures. For if these are graphed for each Statistical Division, over the period in question, two major features become immediately apparent (Fig. 29). The first of these is the continued dominance of the Central Tablelands as the most important of the inland wheat-growing areas, together with the rapid rise to prominence of the South-western Slopes, particularly after 1875. Of a total wheat acreage of some 250,000 in 1880, these two regions account for almost 60 per cent. Again, although the point must further be refined, and acknowledging the level of generalisation inherent in the form of the statistics, this would seem to lend tentative support to the view that throughout the period wheat-growing remained largely tied to a few favoured localities.

The second major feature revealed in Figure 29 is perhaps more intriguing. For it is clear that, with reference to the two major wheat-growing areas of the Central Tableland and the South-western Slopes, the pattern of growth was markedly different. On the one hand, the sequence of developments on the Central Tableland shows a clear-cut discontinuity between 1868 and 1877, during which period the growth of

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<sup>28</sup> See Meinig, The Good Earth, 66-73.



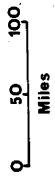


the industry was checked and the acreage of land under wheat contracted every year. In contrast, the pattern of growth on the South-western Slopes was very different, proceeding without interruption and without serious check throughout the period.

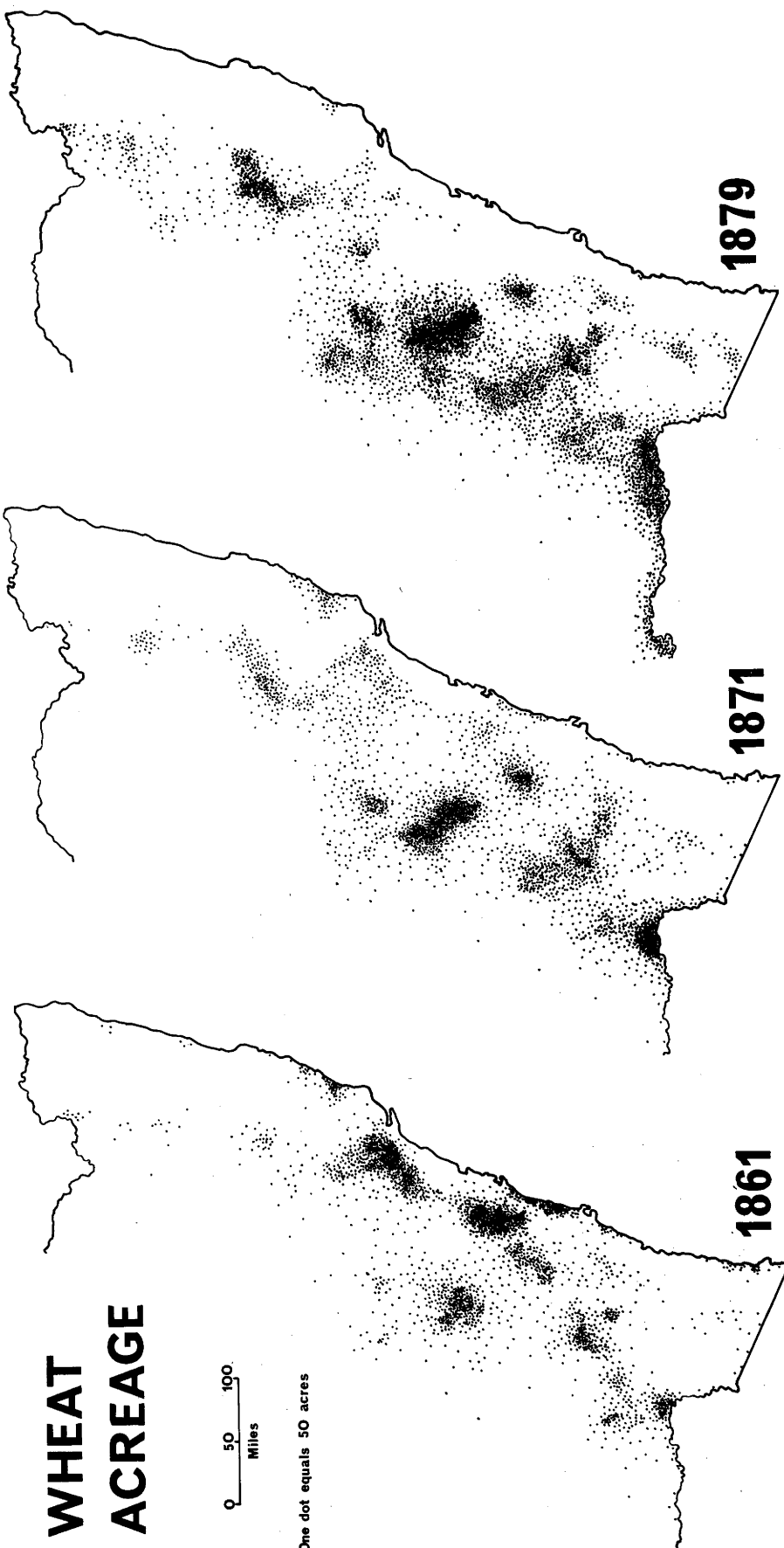
Furthermore, by examining the less important wheat producing districts, it is clear that the pattern for the Central Tableland is reproduced, with only slight variations in timing, also on the Southern and Northern Tablelands. Similarly, and again with only slight variations, the pattern for the South-western Slopes is repeated also on the North-west and Central Slopes. The sequence of developments within the wheat industry, therefore, would appear to have followed two different patterns in the different regions of the colony, and these patterns are linked to the geographical location of the regions with reference to the coast: the belt of country represented here as "tableland" shows a fluctuating growth pattern with a serious check in development between the late 1860's and the mid 1870's, while the more distant "slopes" appear to have expanded continuously.

Yet, clearly, the very general nature of the foregoing discussion, while helping to clarify developments in the wheat-growing industry and while raising some apparently interesting problems, needs to be considerably sharpened before these problems can be specifically enumerated and before answers in detail can be sought. The major requirement is to pinpoint with greater precision the actual locality of active developments. Figure 30 attempts to do this and is based upon the original collectors units re-defined in order to derive as

# WHEAT ACREAGE



One dot equals 50 acres



1879

1871

1861

Source: Statistical Registrar

nearly as possible units which are constant in area throughout the period.<sup>29</sup>

Figure 30a indicates the distribution of wheat acreage in 1861. Two features of this distribution should be noted. The first is the great concentration of activity in the coastal valleys of the Hunter and the Hawkesbury/Nepean, and in the narrow plain along the coastal margins of the uplands from Campbelltown to Wollongong. The second feature of note is that the important wheat-growing districts in the colony all appear as discrete and isolated clusters, giving no indication at this stage of the emergence of a recognisably belt-like region of wheat-growing activity. Excluding the coast, there were four important wheat-growing districts in 1861. On the Central Tableland virtually all of the wheat produced was grown in or near the district of Bathurst, on the flat and relatively fertile alluvia of the Macquarie River. To the south of Sydney, the closest of the inland wheat-growing districts was centred on the Goulburn Plains, in the county of Argyle, and the calcareous soils of this plateau district enjoyed a high reputation for the quality and value of the grain they produced. Separated from Goulburn by the higher granites of eastern Argyle, was the third major wheat-growing district on the Yass and Limestone Plains and the flats of the Molonglo River at Queenbeyan. Finally, on the Victorian border, and cut off from the Yass Plains by the northern extensions of the Kosciusko massif, was the district of Albury on the

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<sup>29</sup> See Appendix Two.

eastern margins of the Riverina: an area of rapidly expanding wheat production since the Victorian gold strikes of a decade before. These few major clusters of wheat production accounted, in 1861, for over sixty per cent of all the wheat sown in the inland districts of the colony.

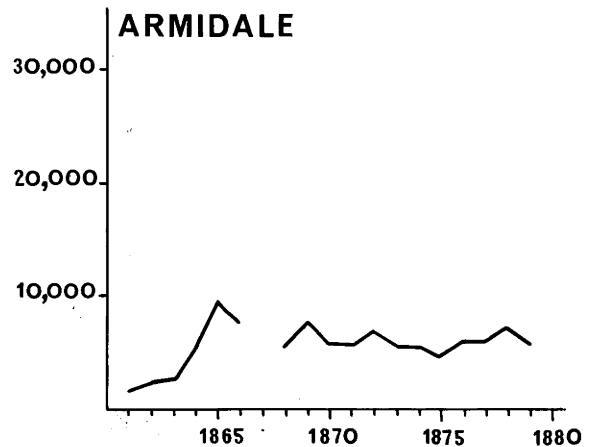
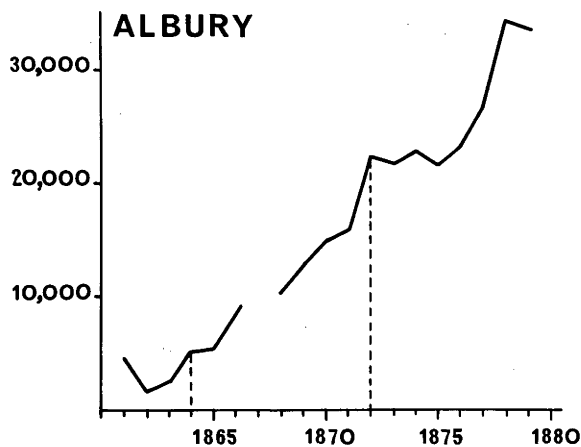
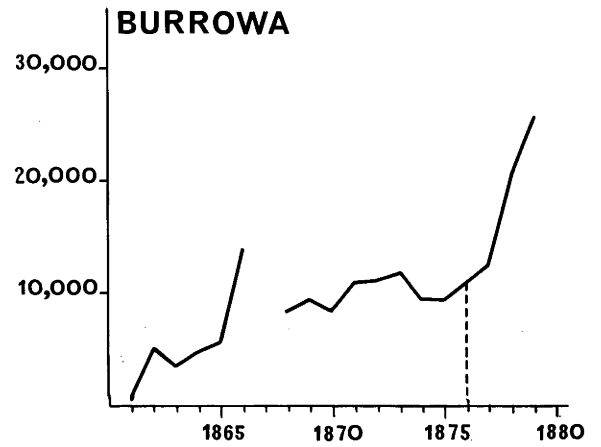
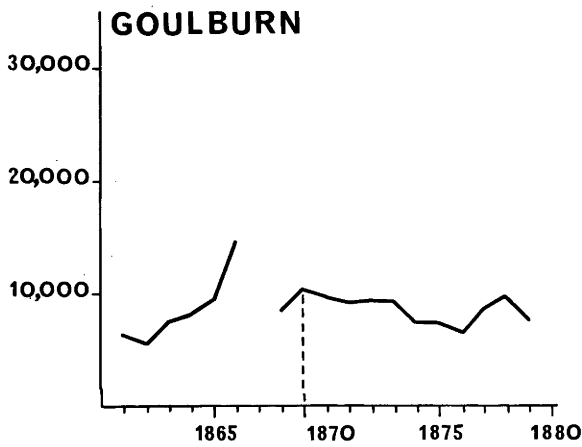
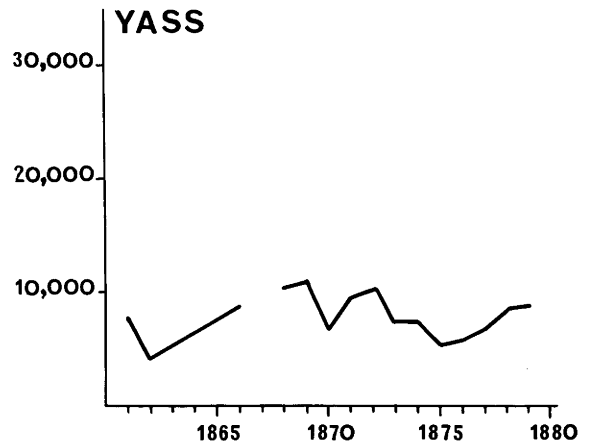
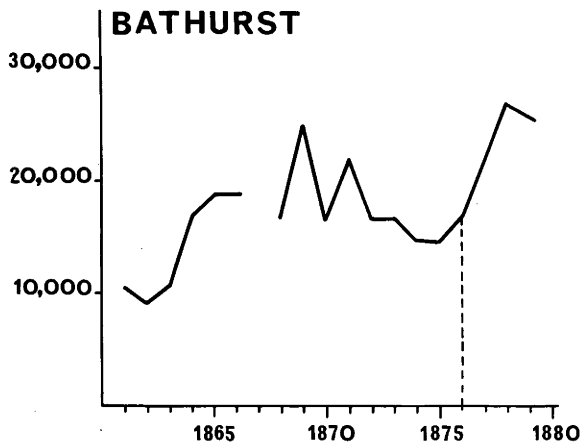
By 1871 the overall picture had changed drastically due to the almost complete abandonment of wheat-growing in the formerly dominant coastal districts (Figure 30b). In the inland, too, there had been developments of some significance; chiefly an increase in the acreage sown to wheat of the order of some one hundred per cent. Yet, it is particularly important to note that, despite this great increase in the total wheat acreage in the inland, this had occurred principally in the form of an intensification and extension of activity within and around the existing major wheat-growing districts. The discrete, cluster pattern, in other words, was still maintained. Thus, on the Central Tableland the concentration about Bathurst is seen to have extended north and west onto the basaltic soils of the Orange district. To the south of Sydney the county of Argyle remained an isolated wheat-farming district, while still further south wheat-growing around Yass and Queanbeyan had extended north and west along the Burrowa River and into the Young district of the South-western Slopes. In the extreme south wheat-growing in the Albury district had continued to increase in importance and, in terms of total acreage, was second only to the Bathurst/Orange district. On the Northern Tablelands, too, there had been a considerable increase in wheat acreage between 1861 and 1871, centred chiefly on the Peel River at Tamworth, and the Rocky River at

Armidale, and to a lesser extent around Glen Innes and Inverell.

Even in 1874 this clustered pattern of wheat-growing "districts" was still evident, though beginning to break down to some extent in the south-west, in favour of a recognisably belt-like distribution extending along the Murray to Albury, through the Wagga district and along the Murrumbidgee to Yass, Burrowa, and Young. (Figure 30c). To the west of the Blue Mountains, Bathurst and Orange remained the most important wheat producing area, extending by this time to Mudgee in the north, and along the Macquarie River to Wellington. Argyle, formerly a district of some importance, had been overshadowed by the newly developing areas of the South-west, the central west and the northern tablelands. Yet on the whole, and with the exception of the dramatic collapse of coastal wheat-farming, the whole period appears to have been one of a "filling-in" of a fragmented frontier, rather than one characterised by the horizontal movement of an industry.

Having, therefore, sharpened the discussion of the wheat frontier from the more general statement offered by Dunsdorfs' calculations some observations may now be made with more confidence. It would seem clear, for example, that the tentative indications concerning the nature of this "shifting frontier" were basically correct: it does seem a more accurate reflection of developments to regard this "shift", not as a frontal expansion, but rather as an intensification of production in certain favoured localities and the peripheral extension of these localities, for reasons yet to be considered. The frontier, in fact, grew from pre-existing scattered nuclei which, even by the close of the period, remain distinguishable by their relative importance as wheat-

# WHEAT ACREAGE IN SELECTED DISTRICTS 1861-1881



Phase One: Expansion and Contraction

In 1861 the production of wheat in the colony was still principally in the hands of coastal growers. The major agricultural districts of the interior - around Bathurst and Orange on the high tablelands, Burrowa on the Southwestern Slopes, and near Albury on the Victorian border - accounted for only 14.5 per cent of the total wheat acreage, and of this fully 8.0 per cent was in Bathurst alone. By 1866 the pattern had changed radically. The coastal areas, smitten by rust, now accounted for less than 15.0 per cent of the wheat acreage in the colony, while Bathurst, Orange, Burrowa, and Albury accounted for fully 40.0 per cent. In absolute terms the acreage in these four districts alone had increased from 18,914 in 1861 to 70,215 in 1866.<sup>30</sup>

Yet it is abundantly clear from Figure 24 that the New South Wales railway system was not responsible in any way for this remarkable increase. The Great Western Railway, in fact, had still not left Penrith, and a distance of 112 miles remained to be built before the line reached Bathurst. Moreover, the remaining distance involved the crossing of the Blue Mountains, over some of the most difficult and rugged terrain in the colony. Similarly in the south, although the terrain presented less formidable problems to the overland carriage of wheat to the railhead, the line again remained so far short of the major areas of expansion that

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<sup>30</sup> Figures calculated from Statistical Registers.



it could not hold out any attraction of cheap carriage to the producers on the Southwestern Slopes. It had still not extended beyond Picton, "the worst place that could be pitched upon for a terminus" as Arnold had called it, and was still over 148 miles from the Burrowa district, and over 80 miles even from Goulburn.<sup>31</sup> The expansion of wheat farming in the interior had occurred, in fact, during the first major period of government uncertainty with regard to railways, while construction was restricted solely to the Morpeth branch line and the conversion of the horse line between Blacktown and Richmond, and while the Assembly was still discussing the wisdom of extending the existing trunk lines beyond Cumberland.

Just as the influence of the railways can be so easily discounted over this early period, it may also be discounted for the decade which followed, particularly since the spectacular increase in wheat acreage was not generally sustained after 1866. For, despite the renewal of government railway building activity in that year, and despite the steady expansion of the trunk lines until the early 1870's, the acreage under wheat in the major agricultural districts actually began to decline. By 1871 the wheat acreage in Bathurst, Orange, and Burrowa had contracted from over 60,000 in 1866 to only 47,000, and this decline continued and deepened in most districts during the second major halt in railway building between 1871 and 1876. At best, therefore, it would seem that the influence of railway

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<sup>31</sup> The quotation is from SMH, 31/10/61. For an account of the progress of railway building over this period see "Report on the Progress of Works on the Southern, Western and Northern Extensions/, NSWLA, VP, 1871-72, II, 11-18.

extension throughout the 1860's and the early 1870's could only have been a negative one: the failure of the lines to penetrate as far as the inland agricultural districts put off the advantages they were known to afford.

For, of course, there was no doubt in the minds of the wheat-growers in the interior of the benefits that railways, once constructed, might be expected to bring. This extract from a petition in favour of a line from New England to the Clarence is typical of the attitude of the inland districts towards the prospects of cheaper communication:

The proposed railway is also to us of very great local importance as a means of developing the resources of these districts, now much retarded by the want of cheap and rapid communication ... The coast country being eminently successful in raising maize, sugar, arrowroot, tobacco, wines, etc., and the tablelands wheat and other productions of temperate climates, an interchange of these products would be mutually beneficial.<sup>32</sup>

A similar petition from the Jerilderie district indicates the characteristic parochial hyperbole with which the distant inland communities sought to impress the Sydney government, as well as indicating that the root cause of any hindrances which remained to the expansion of wheat farming was clearly seen to lie, not in questions of the availability of land or capital, but in a fundamental lack of mobility:

We consider it the duty of the government to provide every facility of access to market for these who settle on the land, and we have no hesitation in stating that, with proper railway communication, we could supply the whole of the interior with breadstuffs.... besides

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<sup>32</sup> NSWLA, VP, 1872-73, II, 439.

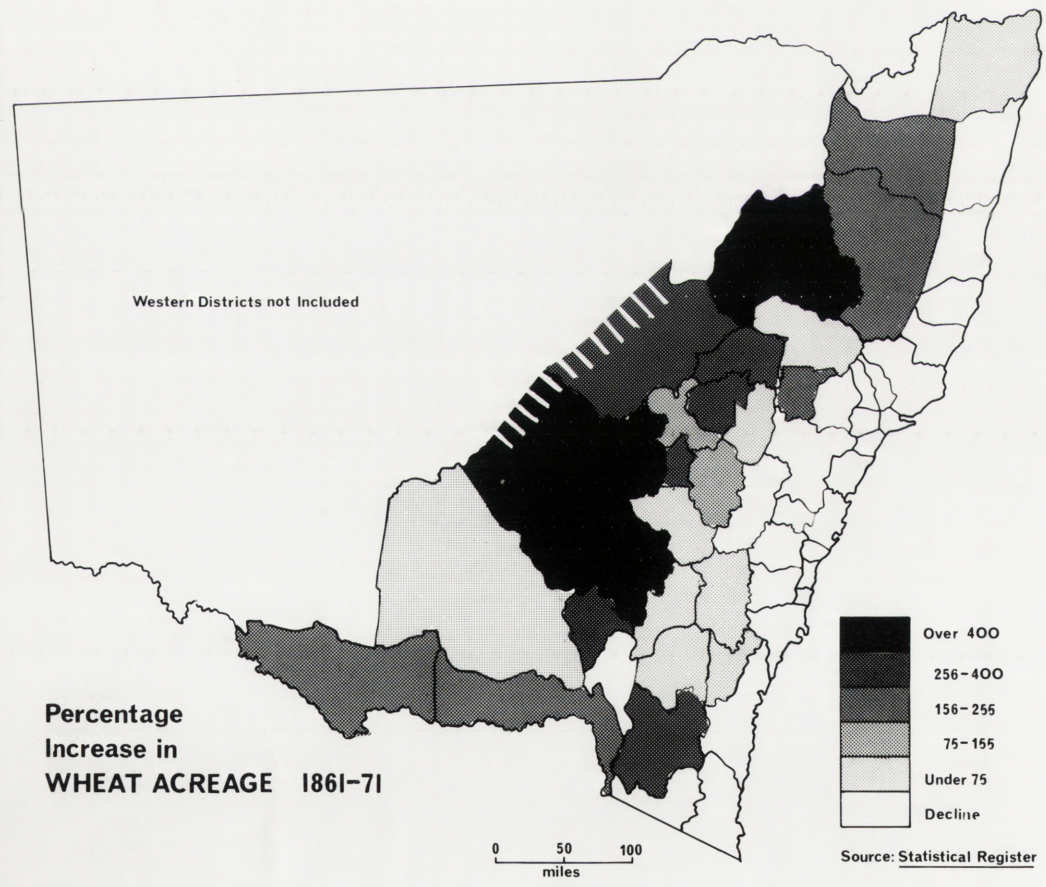
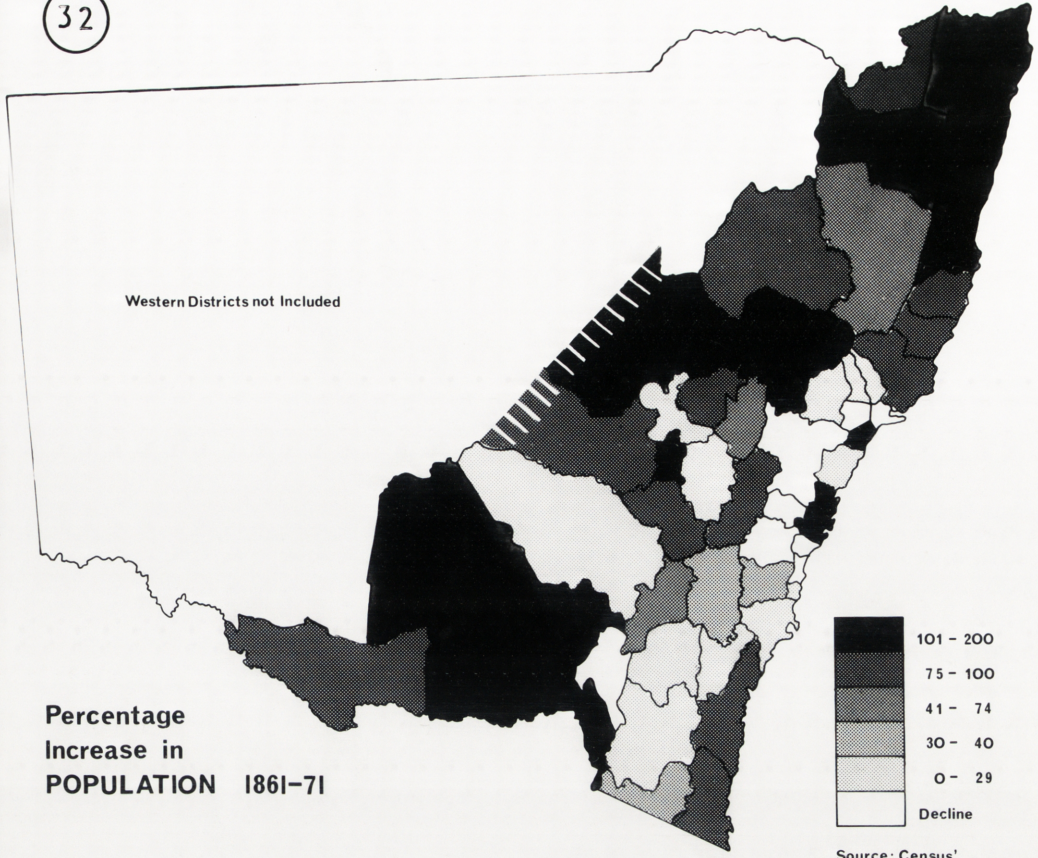
leaving a large surplus that could go to Sydney ...

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But if the influence of railways is so readily denied, and if it is agreed that, fundamentally, the developments in the wheat-growing industry over the 1860's and early 1870's depended upon the condition of those local markets which it had traditionally served, what happened to the state of those markets over this period? Initially it is necessary to recognise two different types of market in the inland: first, the market of the urban centres of the wheat-growing districts themselves; second, the widely scattered pastoral markets of the far west. It is clear from Figure 32a that the size of the aggregate population throughout the colony, and throughout the whole of the inland, was increasing over this period. It is also clear from Figure 32b, however, that the acreage of land under wheat in the agricultural districts was increasing at a rate considerably higher than that of the increase of population. This would indicate that, at least in part, the reasons for the rapid growth of wheat cultivation lay in developments in the far west.

The reasons, in fact, are straightforward. In 1861 the whole of the interior represented, on balance, an area that was deficient in the local supply of breadstuffs. In good years the wheat-growing districts on the tablelands were able to do something to supply a part of this deficiency, as well as to supply the requirements of their immediate localities. In bad years, however, the western districts were forced either to consume less, or else to purchase from the Southern colonies of Victoria and South Australia. What was happening throughout the 1860's was that the wheat-





growing districts of the tablelands and the slopes were becoming increasingly better equipped to cater for this western demand as a result of the widespread alienation of farming land under the Robertson Land Acts. It is no coincidence that a marked feature of the expansion of wheat-growing shown in Figure 31 is that this expansion was greatest in 1866 - the year when the pastoral leases came open to selection - and that this is particularly evident in those districts which were beyond the settled districts. This extract from the Tamworth Examiner indicates the continued dependence of the tableland districts, for a large portion of their wheat sales, on the markets of the pastoral regions in the west:

It is hardly possible to estimate the importance to this town of a good harvest, only by considering the depression which has prevailed during the past eight months in consequence of last year's failure. No one, we venture to say, could have believed that the partial loss of the wheat crop would have had such a prejudicial effect on all branches of business, but we have seen the results. Thousands of pounds have been sent out of this township to purchase flour for our customers on the Plains, which might have been distributed amongst our own farmers had the last season proved more propitious; and the worst of it is, that many who have hitherto looked to Tamworth for a regular supply of the staff of life, having to send down their teams with wool have availed themselves of the opportunity of bringing back [imported] flour from the Hunter which will last them for some months, so that the demand for the present crop will not be so great as it has been in past years.<sup>34</sup>

The most weighty support of this view of the nature of the inland wheat market between 1860 and 1870 is to be found in a detailed study of economic conditions in the Armidale district by Duncan. Working largely

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<sup>34</sup> SMH, 1/11/71.



from evidence in the Armidale Express, one of the few county newspapers to offer a surviving extended run of editions throughout the decade, Duncan found that here also the farmers relied for their market on the pastoral districts of the west and southwest once the swollen local market of the Rocky River gold diggings had declined in the late-1850's.<sup>35</sup>

Further support of this view, and incidentally of the view concerning the fundamental separation of wheat-growing in the inland from the wheat market on the coast is seen in the following observations made by the Herald at the close of the season 1870-71:

The colony is rapidly approaching the time when it will produce its own breadstuffs. This condition, so long desired, would have been reached this year but for an unfavourable season. Owing to the unusual weather there will be a deficiency of about 30,000 tons. But this demand exists mainly for the city. The grain-growing districts supply their own wants and those of the pastoral county behind them. The county has little or no surplus to send to town, but on the other hand it has little or no deficit requiring it to draw from Sydney. The imported flour will not be sent to the interior to compete with the local grower; the local grower will send little or none to Sydney to compete with the importer. Practically, there will be two separate markets served from two separate sources.

(Author's italics) <sup>36</sup>

Yet, even though some portion of the increasing quantities of wheat grown in the inland over the 1860's was absorbed in catering for the increased requirements of the pastoral districts further west, this is

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<sup>35</sup> Duncan, R., "Armidale: Economic and Social Development 1839-1871", Regional Monograph No.6, University College of New England, (1951).

<sup>36</sup> SMH, 18/3/71.

not sufficient to account for the extremely rapid increase in wheat acreage in the agricultural districts up to the mid-1860's. Between 1864 and 1866, for example, the total area under wheat expanded by some 70,000 acres. Moreover, it has been shown that this increase occurred principally in three areas: the Bathurst/Orange region of the central tableland; the Southwestern slopes around Burrowa and Young; and around Albury on the Victorian border. Discounting Albury because of the peculiar conditions which obtained there as a result of the availability of river and rail transport, what were the local market conditions in the remaining areas?

It seems likely, in fact, that the rapid rise in wheat production on the slopes, in the police district of Burrowa, was a response to increasing demand caused by the influx of miners from the now decaying fields on the southern tablelands to the new goldfields opened at Lambing Flat (Young) in 1860, the Lachlan in 1861, and Emu Creek in 1866. The scale of this influx is difficult to gauge for the middle years of the decade: the Census Returns of 1861 indicate that the number engaged in the mining of precious metals was 5,166, while a later report speaks of 6,000 miners working at the Tipperary Gully diggings alone.<sup>37</sup> Whatever the precise numbers on the Lachlan at the peak of productivity there, it would seem clear that they were considerable, and the rapid expansion of wheat-growing in the region - particularly after the falling-in of the pastoral

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<sup>37</sup> The report of 6,000 miners at the Tipperary Gully diggings is from Official History, 341.

leases there - probably reflects their presence. Even as late as 1873 the importance of the now-declining goldfield market was seen as a major factor in encouraging the diversification of rural activity in the region from the more narrowly pastoral economy which typified the slopes region further north.<sup>38</sup> For it is important to note that the goldfields began to decline in the latter half of the 1860's, and this decline coincides with the contraction of wheat acreage in the district: the exodus of the itinerant mining population is seen clearly in the Census of 1871, by which time the number engaged in the mining of precious metal had fallen to less than 1,500. It seems likely, therefore, that the initial expansion of wheat-growing, and its subsequent contraction, in this area at least, was a reflection of the fluctuating condition of the local market caused by the influx and eventual departure of a substantial mining population.

A similar case might be argued with regard to the wheat-growing districts of the central tableland. Under the 1847 Order-in-Council and over the early years of the Robertson Land Act, before the falling-in of leases beyond the settled districts, wheat-growing was largely confined to the Bathurst plains. From the mid-1850's until the mid-1860's this remained virtually the only area of substantial production, catering for all the surrounding markets including those of the adjacent Bathurst goldfields and the goldfields at Sofala and Tambaroora in the police district of Wellington. In all, some 4,500 miners were working at these

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<sup>38</sup> See petition regarding the Bogan Electorate, NSWLA, VP, 1873, II.



diggings in 1861, and Bathurst with its fifteen steam flour mills was the commercial hub of the central tablelands.<sup>39</sup> From the mid-1860's, however, wheat-growers in Bathurst were subject to increasing competition from areas formerly dominated by pastoralism. In particular free selection was concentrated on the rich basalt soils of the Orange district and over the second half of the decade Orange came to dominate wheat production on the tablelands. In part, no doubt, the rapid increase of acreage in the newly opened districts reflected the conditions laid down under the improvement clauses of the new Land Act. But in part also it reflected the opening of the new Gulgong goldfields and the influx of more miners into the region:

Heretofore, and until this goldfield was opened, the farmers [of the central tablelands] had a precarious market, and everything had to be sold at a low figure. This was of course very discouraging, and had the effect of rendering those engaged in agricultural pursuits careless. They neglected their fences, took no pains . . . ceased, in a measure, to till the ground they had settled upon, and the consequence has been that they were not able to meet the demands of so numerous a population.<sup>40</sup>

The Gulgong goldfield was of particular importance to the development of wheat-growing in the Orange district. "More than sixty tons of flour . . . have been landed at Gulgong, from Orange, this week", the Journal reported, and "was readily disposed of, in quantities, at £19 per ton."<sup>41</sup> By 1871 the mining population of the tableland

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<sup>39</sup> For the number of miners see New South Wales Census 1861. For flour mills see Statistical Register.

<sup>40</sup> ATCJ, 7/6/73.

<sup>41</sup> ATCJ, 1/2/73.

goldfields had increased to over 7,000 and wheat-growers seemed for a time indifferent to the prospects of a rail link with Sydney:

It is gratifying to note the advent of machinery which has taken place during the last three or four years. At the same time it must be admitted that only the general use of the various labour-saving inventions, now so easily to be procured, will enable the wheat-growers of this district (Orange) to compete with the South Australian and Californian markets, assuming that when the railway reaches this place they wish to forward their produce to the metropolis for sale. (Author's italics) 42.

Yet, if the tone of such reports is generally optimistic other commentators were less happy at the continued dependence of these western districts upon an essentially local market. "The only market the people of Orange have for their wheat and flour", said Nelson in the Assembly, "is the Great Western District," for the carriage of wheat to Sydney still remained prohibitive.<sup>43</sup> The grounds for doubting the security of an industry based, to no small extent, upon an itinerant mining population were, in fact, shortly to be realised. For, as in the Burrowa district, the acreage of land under wheat on the central table-lands actually began to decline over the first half of the 1870's. Moreover, although in both the Burrowa and the Bathurst/Orange districts the goldfields also began to decline, there is evidence to suggest that in neither case was this the sole reason for the contraction in wheat acreage. Duncan has shown for the Armidale district how, with the gradual departure of the miners in the late 1850's, the agricultural

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<sup>42</sup> ATCJ, 5/4/73. See also ATCJ, 15/7/71.

<sup>43</sup> ATCJ, 22/2/73.

industry failed to adjust, continuing to produce beyond the capacity of the market and eventually forcing down prices and causing a delayed contraction of the industry over the middle years of the 1860's.<sup>44</sup>

For the whole of the colony, however, an examination of the apparent state of the wheat market in 1871 suggests that, despite the booming state of the central tablelands goldfields, some inland wheat producers had already begun to produce more than they could sell. Figure 33 is based on an average per capita consumption of 7.5 bushels per annum. This is below the actual apparent consumption of 7.8 bushels per head in 1871 and it is possible therefore that the extent of the surplus recorded is exaggerated while the deficiencies are minimised. Nonetheless, it would seem that the central tableland was already producing more than it could successfully market, while on the south-western slopes and the northern tableland the industry had not yet come to terms with the reduced capacity of local sales. As early as 1865, indeed, the Carcoar correspondent of the Herald had complained, "I do not know what will be done with all the wheat we have; a large number of our farmers have got a great quantity of old wheat on hand, which they cannot dispose of at a paying price, and our mills are full of both flour and wheat."<sup>45</sup> Even at the close of the 1870's the Forbes Times could still write, "While wheat is being held by the farmers of the Forbes district

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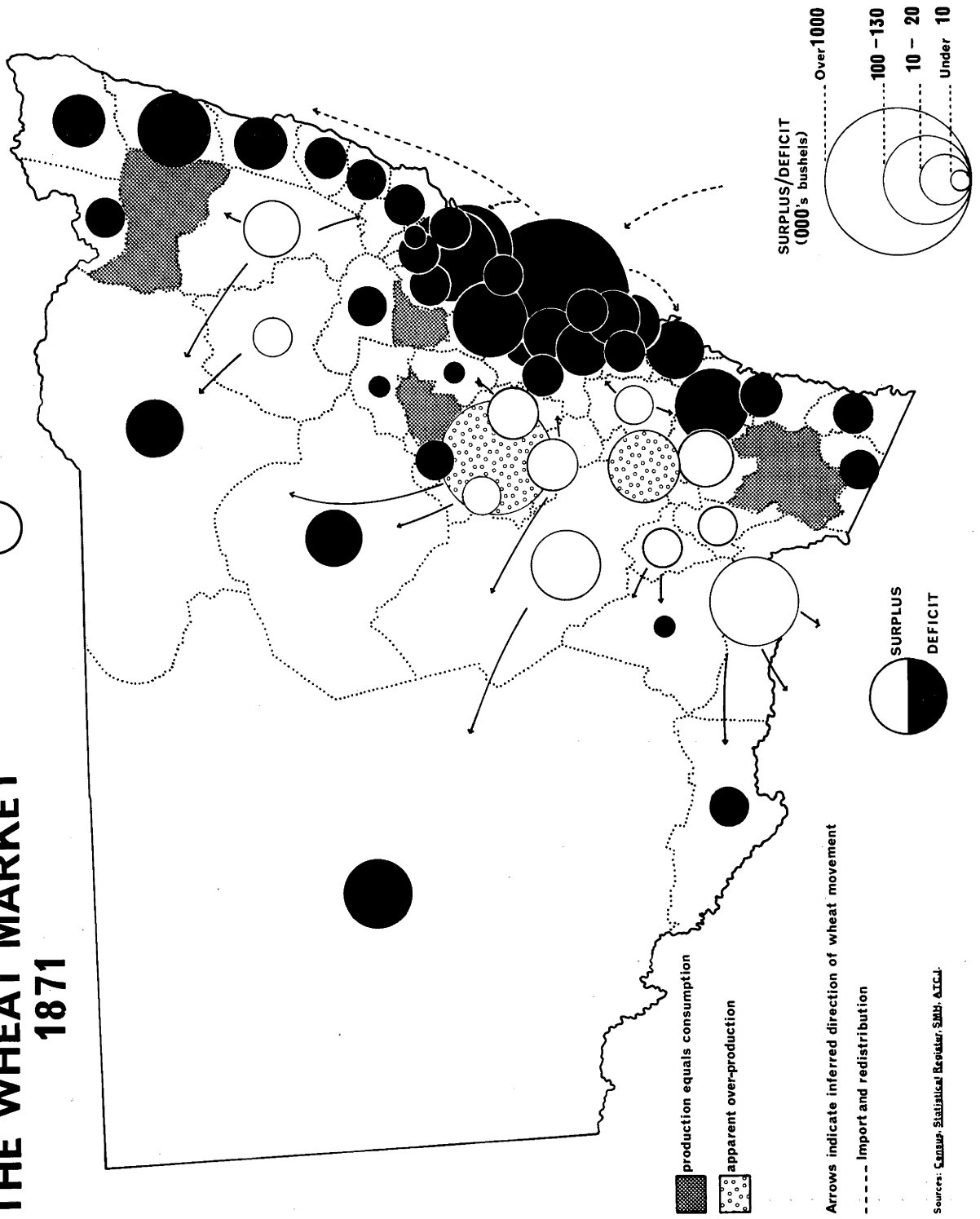
<sup>44</sup> Duncan, op. cit., passim.

<sup>45</sup> SMH, 3/1/65. Reports of overproduction from the inland districts were fairly common by the early 1870's. From Orange it was noted that, "The yield this year is plentiful, though the demand will not equal it." See ATCJ, 7/1/71. See also ATCJ, 13/1/71 for a similar report from the Lachlan.

# THE WHEAT MARKET

1871

33



production equals consumption  
apparent over-production

Arrows indicate inferred direction of wheat movement

--- Import and redistribution

SURPLUS  
DEFICIT

SURPLUS/DEFICIT  
(000's bushels)

Over 1000  
100 - 130  
10 - 20  
Under 10

Sources: Census, Statistical Register, SMH, A.T.C.

unsaleable at 4/-, a parcel of 10,000 bushels changed hands in Melbourne last week at 6/4 $\frac{1}{2}$ ."46

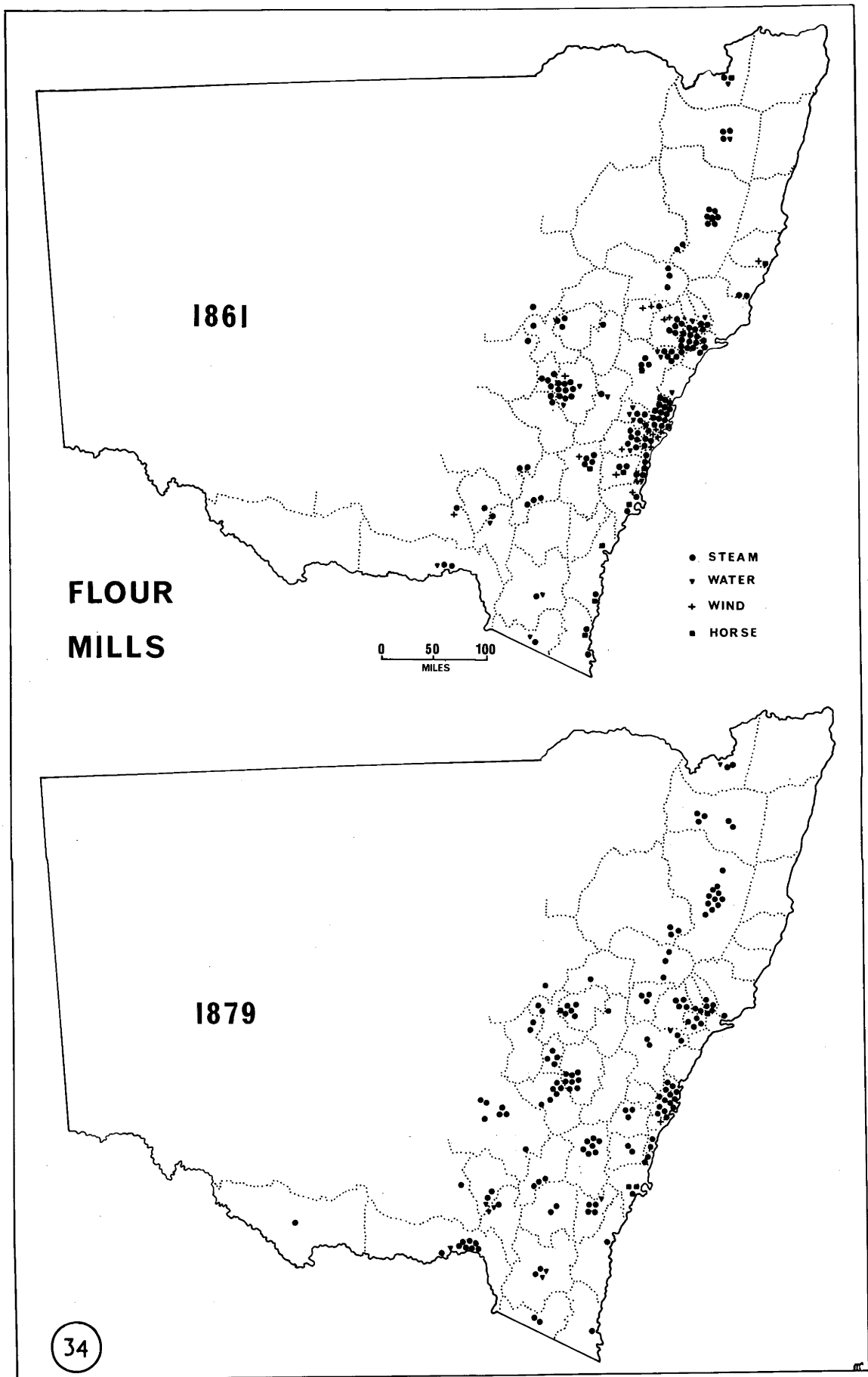
Moreover, such markets as did exist for the larger wheat-growing districts in the interior were also beginning to be eroded by the gradual spread of farming activities into districts formerly wholly devoted to pastoralism. Thus, although the acreage of land under wheat in the major agricultural districts contracted between 1871 and 1876, the total acreage fell comparatively little as a result of the expansion of wheat farming into new areas. Although this expansion was on a relatively small scale in the individual districts, and although the essential cluster pattern remained, the cumulative effect of these developments was to diminish the markets available to the major wheat-growing districts. It would seem likely that this gradual move towards self-sufficiency in former deficit areas accounts for the continued expansion of wheat acreage beyond the Slopes Divisions portrayed in Figure 29.

In this process the initial requirement was the establishment of local flour-milling facilities. As conditional purchase expanded over the 1870's the agitation for local country mills became intense. At Wallabadah, for example, wheat grown in the district had to be carted 30 miles into Murrundi or Tamworth for milling.<sup>47</sup> The result was that, in between 1861 and 1879, there were marked changes in the location of

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<sup>46</sup> Quoted in Grenfell Record, 18/10/79.

<sup>47</sup> See ATCJ, 21/1/71. For the widespread activity in the erection of new mills over this period see, for example, ATCJ, 17/2/72; 12/4/73; 3/11/73; 22/11/73.



flour milling activity. The heavy concentration on the coast and in Bathurst that had been evident in 1861, had given way to an industry more widely dispersed, and this movement reflected the increasing independence of the inland, together with the difficulties facing the traditional agricultural districts. (Figure 34).

#### Phase Two - Stabilisation.

It seems evident, then, that developments in wheat-growing on the tablelands and further inland were not dependent upon the New South Wales railway system over the 1860's and early 1870's. Yet it is possible to suggest that the expansion of the industry in these inland centres could not have been sustained without the eventual provision of rail communication with Sydney. The difficulties which so noticeably affected the major wheat areas over the early 1870's merely confirmed the restricted nature of market opportunities in the western districts. Moreover, while producers in the interior were forced to cut back on wheat acreage to combat over-production the vast market of the metropolis and the central coast was being served by imported breadstuffs from California and South Australia. Until rail connection was established between the coast and the inland agricultural districts, therefore, little scope existed for the continued growth of the industry. It has been shown, however, that over the first half of the 1870's the New South Wales railway system expanded comparatively little, and for a period of fully three years expanded hardly at all.

With the renewal of railway building activity in the second half of the decade the lines began to penetrate the major agricultural

districts of the tablelands and the western slopes for the first time, and with this penetration the spatial relationships of the inland industry began to change. Whereas, throughout the 1860's and early 1870's the industry had been forced to seek extended sales in the local area and in the surrounding pastoral country, now the way became open for sales in the major deficit region of the coast. From 1875, therefore, the wheat growing industry was able to expand at an unprecedented rate and with a high degree of confidence in the capacity of the new markets to absorb whatever they could produce. In the course of only four seasons, for example, from 1875 to 1878 the acreage of land under wheat in New South Wales increased by 100,000 acres, from 133,000 in 1875 to 233,000 in 1878. Thereafter, indeed, and despite occasional setbacks caused by seasonal conditions, wheat-growing expanded continuously until a peak of productivity was reached with over 4,000,000 acres under crop in 1915.<sup>48</sup>

The effects of the trunk line extensions in the second half of the 1870's were, therefore, immediate and dramatic. The decline which had faced the major agricultural districts on the tablelands and on the south-western slopes was reversed and in both regions the area under wheat began to grow at a remarkable rate. Moreover this new lease of life for the major wheat-growing districts occurred despite the continued local expansion elsewhere, and was more than sufficient to ensure the continued dominance of these two districts. Figure 35

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<sup>48</sup> Figures from the Statistical Register



illustrates both the percentage expansion of wheat-growing between 1875 and 1878, and the proportion of the total wheat acreage in each police district. It is clear from this that, although newer areas experienced a percentage growth exceeding that in the major wheat-growing areas, these districts still contained only very small proportions of the total wheat acreage in the colony, and it is likely that this growth, in districts like Bombala on the southern tableland and Cassilis, represented a continuing movement towards local self-sufficiency.

By contrast the established wheat-growing districts of Bathurst, Orange, Burrowa and Young, which have already been shown to have been more than self-sufficient, expanded in order to take advantage of new found market opportunities in the east. In Bathurst, for example, the railway reached the town in 1876 and by 1877 the acreage of land under wheat had increased from 16,000 to over 21,000.<sup>49</sup> One of the newspapers of the district, the Bathurst Independent, recorded the consequences for the agricultural industry:

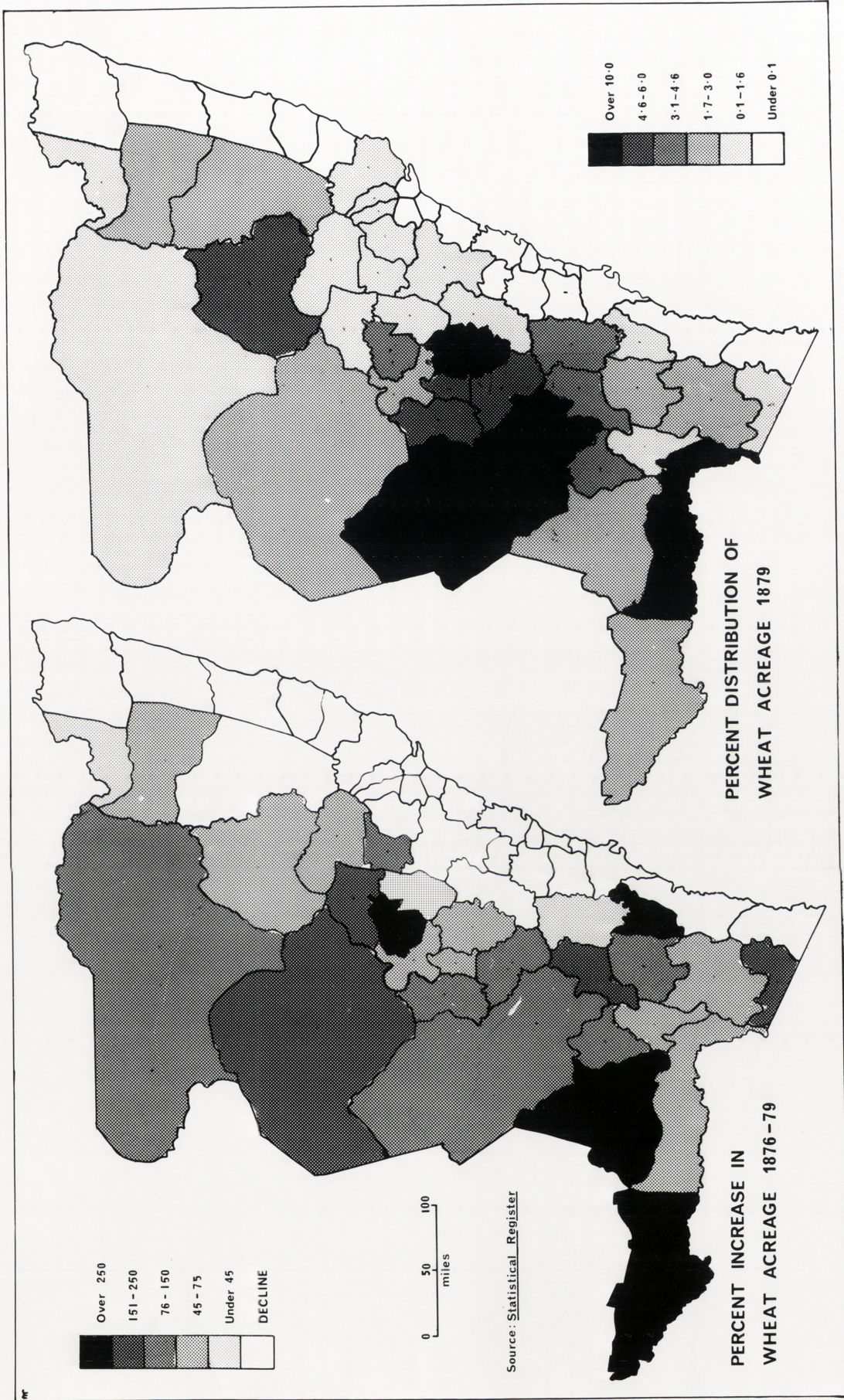
Anyone who visits our adjoining lands must be struck at the vast strides our farmers are making . . . and we believe with every prospect of good results. A few years since when the local markets had to be depended upon, the uncertain results of farming were passed by, and it seemed scarcely safe to risk very much in wheat, or hay growing crops; but now the great equalizing of markets has brought our farmers to the front with their bank deposits and well-to-do establishments. The eyes of many of our land-owners are now opened, and land on these famous Bathurst plains which were pastured with a stray flock of sheep are now under cultivation, and hundreds of these acres will this season yield their golden corn. 50

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<sup>49</sup> Statistical Register

<sup>50</sup> Quoted in Grenfell Record, 7/6/79.







A similar situation existed in the Burrowa/Young area of the south-western slopes after the arrival of the railway there in 1876: in only two years the acreage under wheat increased from 11,000 to almost 21,000. By 1879 the western trunk had reached Orange and the southern line had been extended as far as Wagga Wagga, and with these extensions came the expansion of wheat farming in districts which were formerly peripheral to the major centres of production (Figure 30c). Of these the Wagga district experienced the most remarkable increase in production. In 1876 the whole of the police district could boast only 1,300 acres of land under wheat. In 1877 the southern line was opened as far as Cootamundra in the north-east of the district, and the area under wheat expanded to 3,230 acres. In the following year the line was opened as far as North Wagga and the acreage under wheat increased by a further 2,000.

On the central tableland a similar situation existed. With the opening of the line to Bathurst the wheat acreage in the adjoining district of Carcoar increased from 4,700 in 1875 - a level which it had maintained for five years previously - to 6,600 in 1876 and 12,200 by 1879. Again, in both Mudgee and Wellington, where the area under wheat had been fairly constant over the first half of the decade, the attractions of rail communication were reflected in a steady expansion of acreage over the latter half of the 1870's.

In the north the extension of the trunk line took longer to penetrate the major commercial centres of the tableland. Armidale remained without rail communication with the coast throughout the period, and the line was opened to Tamworth only in 1878. Yet, for

the Tamworth district at least, the consequences were again immediately recognisable: in 1876 only 3,724 acres of land were under wheat; by 1878 this had increased to 11,000.<sup>51</sup>

The regularity of this pattern - the arrival of the railway and the subsequent extension of wheat acreage - would seem too consistent for a positive relationship between the two to be in doubt. The most conclusive evidence of this would clearly lie in a statistical return of the local derivation of wheat carried on the colony's railways. Unfortunately, however, for this early period detailed returns of this nature are not available.

It is perhaps significant, indeed, that not until 1878 were returns of any kind collected concerning wheat carried on the trunk lines. These returns are graphed in Figure 36, and lend at least some degree of support to the preceding argument: the bulk of the rapidly increasing traffic in breadstuffs being derived from the western and south-western districts. It would seem reasonable to suggest, therefore, that the recognition of a second phase - essentially one of stabilisation and the first stirrings of expansion under the impetus of a new market - best describes the developments of the latter half of the 1870's, and to suggest furthermore that this marked the beginning of the end of the old and narrowly localised wheat frontier.

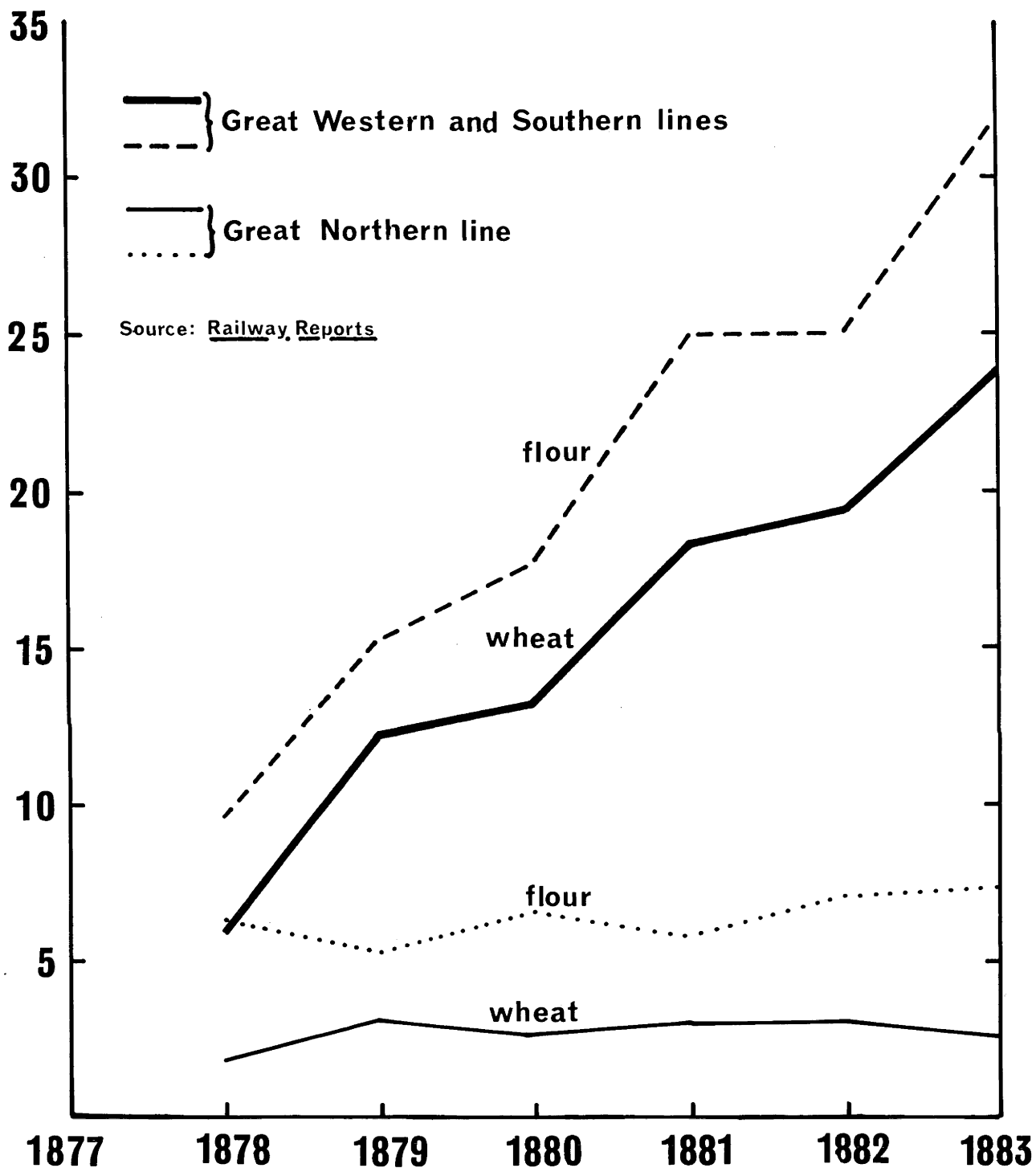
### Eastern Riverina

There remains one problem yet to consider, for in the foregoing discussion no mention has been made of the Victoria border region in

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<sup>51</sup> All the statistics quoted in this section have been recalculated from the Statistical Registers.

# WHEAT and FLOUR (OOO's tons) MOVED by RAILWAY



eastern Riverina. Yet it is clear from Figure 30 that, throughout this period, this was a region of ever increasing importance. At the same time the region was unique in that it relied, for this importance, not upon sales in New South Wales but upon the markets of Victoria in the south.

Small quantities of wheat had been grown in the Albury district since the early 1840's, and looking back to his first crossing of the river from Victoria in 1843, Samuel Davenport recalled, "We waded through the river, and the thing that impressed itself on my memory was Mr. Brown's crop of wheat."<sup>52</sup> Production, however, was small and was entirely consumed locally, though wheat-growing was listed as one of the district's "industries" in the returns from the Benches of Magistrates: even in 1851 the region was one of deficit (Figure 9). Over the 1850's, however, the pattern began to change and this change was dependent essentially upon the opening of a large and profitable market on the Victorian goldfields:

A bountiful harvest has rewarded the farmer's toil, and our steam mill works long hours to keep pace with the quantity of grain which clamorous customers press upon it. Wheat may now be quoted at 16/- per bushel . . . . Two years since wheat was 60/- per bushel . . . and then not enough . . . to satisfy the wants of the district; but we were compelled to fall back upon Goulburn, Yass and Melbourne to supply us.

This present year of our Lord, we find from excellent statistical data, there was wheat enough grown in the district to produce flour to the extent of 450 tons, over and above the actual consumption required, so

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<sup>52</sup> Samuel Davenport to D.A. Andrews, 1911, Papers of Dr. A. Andrews pertaining to Albury, Mss.

that we became exporters, and, fortunately, a market within a few miles of us that can take all, namely, the Ovens' Diggings. Thus in two short years we work the foreigner out of our market, and make him bid adieu to the hope of supplying this market in future years with flour. 54

In 1855 the first steamer had arrived at what was optimistically called Port Albury, and settlers from South Australia were "becoming alive to the advantages of cultivating wheat here, instead of growing their crops in South Australia and paying the freight to Albury."<sup>55</sup> In addition "lucky diggers from the Ovens' are investing their savings in the fertile lands bordering on the Murray; and the older residents are increasing the quantities of land under cultivation, and sending home for their relatives."<sup>56</sup>

Throughout the next two decades, and particularly after the introduction of free selection and the falling-in of the pastoral leases in 1866, the acreage of land under wheat in the Albury police district continued to expand with only one setback from 1873 to 1875. Yet Andrews has suggested that, in consequence of the Victoria protectionist policies and the tariff of 9d. per bushel on imported wheat, "the bulk of the grain that found its way over the border was merely imported in bond, gristed, and returned": in other words, the increase of production in these southern districts was directed primarily at markets within

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<sup>54</sup> SMH, 12/3/65

<sup>55</sup> SMH, 11/8/56.

<sup>56</sup> SMH, 27/10/56.

New South Wales.<sup>57</sup> This is clearly a point of great importance, and one which must be clarified if the thesis offered here is to stand.

There is, in fact, some evidence that Professor Andrews' statement holds good for the more distant areas of south-central Riverina. Recalling his experiences of the Berrigan district in 1879 before a Conference on Wheat-Growing some 30 years later, E.J. Gorman said that "the trouble was to know what to do with the wheat". He continued, "There was a stiff duty on wheat crossing into Victoria, and no mill in New South Wales nearer than Albury . . . . The wheat was eventually carted to Yarrawonga in Victoria and gristed in bond."<sup>58</sup> Yet certain points must be made with regard to the locale of the Berrigan district. In the first place, Berrigan is some 50 miles from Denliquia and 75 miles from Albury: to export the wheat produced in the Berrigan district, by rail, to Victoria therefore required an excessively long overland haul. On the other hand Berrigan was a mere 25 miles from Yarrawonga on the Murray. It was inevitable, in such a situation, and in the absence of a local flour mill, that gristing in bond in Victoria should have been the common practice.

Yet it is certain that for the most important wheat-producing areas in eastern Riverina the situation was very different. It is

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<sup>57</sup> Andrews, J., "The Emergence of the Wheat Belt in South-eastern Australia to 1930", in Andrews, J., (Ed.), Frontiers and Men: A Volume in Memory of Griffith Taylor 1880-1963, 50, (Melbourne, 1966). Hereafter cited as Andrews (Ed.) Frontiers and Men.

<sup>58</sup> "Conference of Wheat-Growers with Special Reference to Dry-Farming", Farmers' Bulletin, No. 42, (Sydney, 1910).



clear, for example, that as early as 1871 this had become one of the major suppliers of breadstuffs in the colony, and it is equally clear that no market within New South Wales - with the exception of the inaccessible central coast - could absorb this surplus, together with the surplus of the south-western slopes and central tableland. (Figure 33). Moreover, there could have been little purpose in exporting wheat in bond for gristing when, by 1878, Albury itself possessed no less than eight steam flour mills.<sup>59</sup>

The most telling point against Professor Andrews' assertion, however, lies in the operation of border customs collection. For, from 1867 until 1873, as a result of the operation of the Border Customs Agreement, no duties were collected on goods crossing the Murray: instead a lump sum payment was made by Victoria to New South Wales in lieu of the collection of monies.<sup>60</sup> Before 1873, therefore, the farmers of the border districts enjoyed not only cheap rail communication with the southern colony, but also the advantages of a trade that was absolutely free. Moreover, the dependence of wheat-growers in the area on the Victorian market is further illustrated by their reactions to the threat of the re-imposition of duty collection made in 1872:<sup>61</sup>

<sup>59</sup> See Statistical Register, 1878

<sup>60</sup> For the customs agreement see "Memorandum on Border Customs", VicLA, VP, 1867, IV, No. 23.

<sup>61</sup> "Proceedings of the Intercolonial Conference", NSWLA, VP, 1871-72, I, 845 et seq.

Parliament was bombarded by petition after petition in protest;<sup>62</sup> the news had a "depressing tendency on the (Albury) wheat market;"<sup>63</sup> and the expansion which had characterised the industry for a decade came to an abrupt halt (Figure 31). Yet the depression which followed the re-imposition of customs duties, though continuing to cause annoyance and concern to the Albury wheat-growers, did not persist for very long. By 1877 the acreage of land under wheat in the district was once again rising rapidly and the surplus, despite continued complaints, was still being sold principally in Melbourne. The border customs statistics, incomplete though these are, illustrate both the southerly orientation of the Riverina wheat trade and the overwhelming dominance of the eastern districts around Corowa and Albury (Table 23). They illustrate also the degree to which this trade was affected by the reimposition of duties after 1873.<sup>64</sup>

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<sup>62</sup> Ibid. See petitions from Wagga (page 865), Hay (page 867), Denliquia (page 869), Albury and Corowa (page 871). For official correspondence see pages 861-864.

<sup>63</sup> ATCJ, 20/1/72. For further accounts of reaction in the district see 10/2/72; 2/3/72; 29/6/72.

<sup>64</sup> It should be noted that for the brief period covering harvesting in the season 1873-74 these duties were again lifted. This possibly accounts for the unexpectedly large quantities of wheat and flour entering Victoria in that year compared to 1875 and 1876.

TABLE 23

(a)

Value of Wheat Exports via River Murray

<u>Year</u>	<u>Albury</u>	<u>Corowa</u>	<u>Moama</u>	<u>Total</u>
1870	£4,570	£337	-	£4,907
1871		Not available		
1872	£9,259	£3,674		£9,933
1873		Not available		
1874	£6,836	£277	-	£7,113
1875	£364	£2,308	£86	£2,758
1876	£10	£3,222	£259	£3,791
1877		Not available		
1878	-	-	-	£4,951

(b)

Value of Flour Exports via River Murray

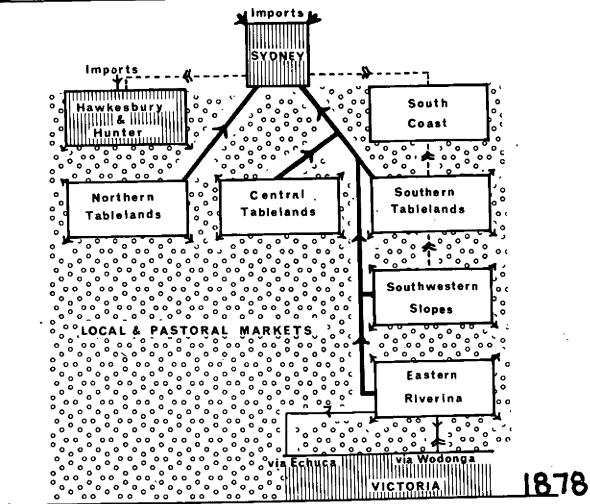
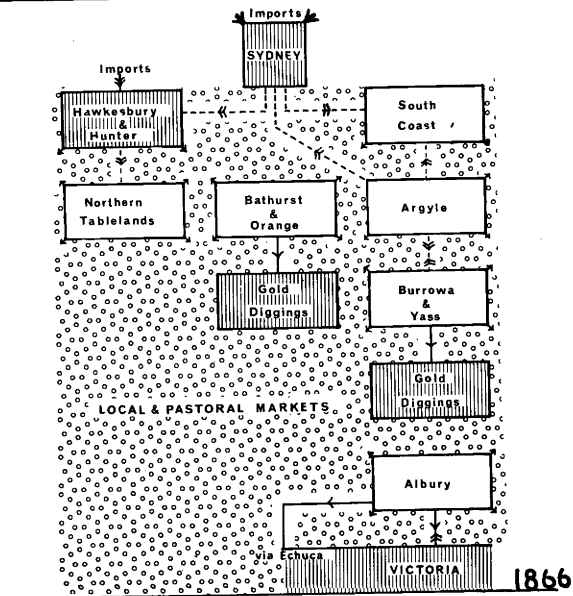
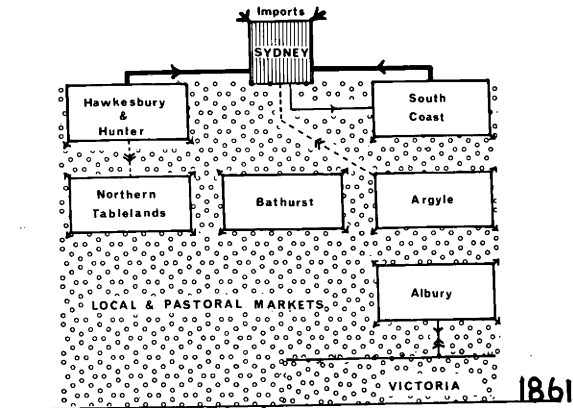
<u>Year</u>	<u>Albury</u>	<u>Corowa</u>	<u>Moama</u>	<u>Total</u>
1870	£3,251	£2,672	-	£5,923
1871		Not available		
1872	£6,275	£1,328	£2	£7,605
1873		Not available		
1874	£3,565	£7	-	£3,572
1875	£365	£49	£3	£417
1876	£141	-	£874	£975
1877		Not available		
1878	-	-	-	£3,070

Source: Statistical Registers

It would seem likely, therefore, that the protectionist policy of Victoria had little effect upon wheat-growing in the border districts of western Riverina, except to inhibit continued expansion, for a period, after 1873. And clearly even this was short-lived. For, again, there is little evidence to suppose that, before 1880, the New South Wales railway system was able to supply the stimulus to renewed expansion, since even in 1874 the southern trunk line was still 80 miles away from the Victorian border. It must inevitably be concluded that the developments of the wheat frontier in this district so remote from Sydney were overwhelmingly a response to the attractions of cheap and rapid communication with the capital of the southern colony.

TRADE RELATIONSHIPS  
in the  
WHEAT GROWING INDUSTRY

37



- DATA RELIABILITY
- GOOD (Statistical Register; Gov Reports: SMH)
  - - - FAIR (Gov Reports: SMH)
  - POOR (SMH)
  - Regular traffic
  - ↔ Occasional traffic
  - Wheat growing districts
  - ▨ Principal markets
  - ◻ Scattered markets

## CONCLUSIONS

The changing spatial relationships on the wheat frontier between 1860 and 1880 are shown diagrammatically in Figure 37. There are three points that should be re-emphasised in conclusion. First, it is clear that until the late 1870's the New South Wales railway system exercised little influence on the course of developments in the wheat-growing industry. In Riverina, indeed, this was delayed until the early years of the 1880's. Second, the causes of the great increase in wheat-growing before 1875 were essentially causes deriving from local conditions, the expansion and contraction of local markets, and were made possible for the most part by the availability of land under the new land laws of 1861. Finally, it should be stressed that the re-orientation of markets in the late 1870's had not proceeded far by the close of the period, and there still remained enormous problems to be tackled if the railways were to effectively promote land settlement throughout the whole of the intermediate districts.

In effect, therefore, this was a trial period and a transition period. By the close the railways and the "new" land laws were beginning together to produce the kind of returns, in the form of effective and economically viable settlement, that alone neither could do. It was a period therefore which marked the end of the old industry with its severe restrictions and heralded the establishment of a new industry, aimed at new markets, and using new techniques. But for the most part, even in 1880, much remained to be done before this new potential could be realised.

PART THREE

CHAPTER 6CLOSER SETTLEMENT AND THE RISE OF SHARE-FARMING

I think the time has come when steps should be taken to prevent the wholesale alienation of land, and when every acre sold should represent population and productiveness. That is the way to make a nation.

James Squire Farnell, NSWPD, 1883-84, 332.

## CONTEXT

Developments in the wheat-growing industry after 1880 cannot be fully appreciated without reference to parallel developments in pastoralism. Until 1880 at least the two pursuits were carried on independently, on different holdings of widely differing size structure, and by two widely separated social classes. In a sense the breakdown of these clear-cut divisions had started in 1861 with the passing of the Robertson Land Acts. Only then, as Malenbaum has correctly noted, did the prospects for colonial agriculture begin to brighten as a blow was struck, if largely in principle, against the persistence of a squatting hegemony.<sup>1</sup> Nonetheless, in practical terms, the long currency of the 1861 Acts did not lead to any fusing of the two great rural pursuits: on the contrary, the tendency was towards an increase in the fundamental antipathy between the two. By 1880, indeed, the land laws had served their purpose. The social attitudes

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<sup>1</sup> Malenbaum, W., The World Wheat Economy 1835-1939, (Harvard, 1963), 147.



underlying the principle of free selection were accepted by the majority of the community, and further legislation would be unable to ignore this; there could be no return to the principles of the 1847 Order-in-Council. Yet the essential simplicity of the law was outdated; more varied forms of tenure were needed to meet the changing physical conditions encountered by the expansion of settlement into the more westerly regions of the colony; the highly centralised mechanism of land administration needed to be re-organised to cope with the increasing body of work demanded of it; the alienation of land to squatters under the auction and improvement clauses needed to be re-assessed for the choicest portions of the public estate were rapidly being committed to sheepwalks. Conditions had changed and the law needed to recognise this.

Similarly, it can be argued that the gradual extension of the trunk lines between 1860 and 1880 had also helped to lay the foundations for a re-assessment of the social and economic potential of land settlement in the interior. Again, the significance of rail developments was less in the practical results, in terms of tonnage of agricultural produce carried into Sydney over the period, and more in the increasing certainty that continued expansion and a benevolent freight policy could gradually see the radical alteration of the prospects of farming beyond the tablelands. A concrete alternative to sheep-rearing was becoming feasible.

Improvements in technology were also apparent, but here too the importance was in the promise they afforded rather than in the results they had produced. Capitalisation on the farm was still generally at a

very low level, but it was beginning to improve, and it was beginning to be demonstrated that lower cost farming on large areas in the vicinity of a market or of a railway could be a profitable pursuit. Most importantly the mechanism to expand the area under crop on individual holdings was becoming available. It required only capital.

By 1880, however, none of these factors had exercised much positive influence on the relationship between pastoralism and agriculture. The squatter, indeed, was more than ever confident of the future of wool-growing. Throughout the 1870's investment by pastoralists had been high. In part this investment had gone into the purchase of freehold title to the choicest portions, or the most strategic areas, of a run - the "peacocking" of land that has been dealt with at some length by Roberts.<sup>2</sup> In part, also, pastoral investment had been directed to the technical upgrading of the industry at a time of high prices and good profits. By 1880 the fencing of paddocks had superseded the free-running of sheep and the labour costs of shepherding had been largely eliminated. Butlin has calculated that in 1871 some 20,000 miles of fencing existed throughout the colony, and that by 1880 this had increased to 750,000 miles.<sup>3</sup> Flock numbers were increasing, flock quality was high, and to the individual pastoralist the industry seemed impregnable.

The conditions affecting the relationship between the two rural industries showed more evident signs of change after 1880. The first,

<sup>2</sup> Roberts, *Land Settlement*, 227-229.

<sup>3</sup> See Butlin, *Economic Development*, 57-180. See page 75 for fencing estimates. See also Butlin's "Distribution of the Sheep Population: Preliminary Statistical Picture, 1860-1957" in Barnard, A., (ed), *The Simple Fleece*, 281-307, (Melbourne, 1962).

and most obvious, change came with respect to the laws governing the alienation and occupation of Crown Lands. The Robertson Acts were replaced in 1884 by new measures intended to reduce the indiscriminate alienation of the public estate, to enlarge the opportunities for the small capitalist seeking to take up land, and to correct the fundamental administrative shortcomings of the old law. While retaining some of the principles laid down by Robertson, however, the new law marked the end of an era of largely uncontrolled land settlement and set the stage for a series of closer settlement measures, introduced after 1900, which tended to enforce the break-up of the large pastoral holding and to permit the enlargement of the smaller freehold farm.

At the same time the railway network in the colony was being rapidly expanded in an effort to compete with Victoria and South Australia for the valuable wool clip of the Riverina and western slopes. The outcome of this expansion, taking place over the 1880's, began to take on an aspect not anticipated by the colonial railway builders: the small settlers in the vicinity of the new lines were quick to appreciate the advantages of rail communication with the Sydney grain market, and important new wheat-growing centres began to arise almost overnight. So pronounced was this tendency that by 1890 government policy regarding the objectives of further railway building had undergone a fundamental change: new lines were mooted and designed to serve, not the pastoralist, but the wheat farmer. For two decades almost the whole of additional railway investment sought to tap the rapidly expanding agricultural traffic in the regions proposed to be served.

In another sense, too, agriculture was in the ascendancy. The growing importance of the new farming regions in the west, and the relatively rapid increases taking place, particularly in the production of wheat over the 1880's, were at last sufficient to lead to formation of a separate Department of Agriculture and the appointment of scientific officers to work on the improvement of farming techniques and the quality of crops. Although this work did not begin to show practical results on a large scale until after 1900, there is clear evidence of a quickening of interest in the upgrading of agriculture amongst individual farmers which, allied to the increasingly widespread adoption of mechanical aids, pointed to improving efficiency and an improving ability to compete with external producers. On the home market, growing protectionist sympathies shielded the wheat industry between 1891 and 1896 with the imposition of a duty of 10d per cental on imported grain, and it was over this period that the greatest percentage expansion of acreage occurred. When imports again became free, in January 1896, the industry was on the verge of satisfying home demand completely.<sup>4</sup> By 1898 a surplus of over 1,000,000 bushels was exported principally to the United Kingdom, and a place in the rapidly expanding world wheat trade was assured for the colony. Moreover, the Department of Agriculture had not been idle, and under its auspices the scientific officers were beginning to provide wheats at once suitable for production in the Australian environment and acceptable in terms of milling and baking qualities to buyers overseas.

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<sup>4</sup> For the imposition of the duty see NSWPD, 1891-92, 5927.

Beginning in the 1880's, with the extension of the railway system beyond the three main trunk lines, therefore, and rapidly gaining momentum under the favourable conditions of freighting and protection over the 1890's, the acreage of land under wheat in the colony began to expand at an unprecedented rate. In contrast, however, the pattern was quite the reverse in the pastoral industry. Investment in capital equipment continued over the 1880's and the size of flocks continued to grow, but the financial condition of the industry was very different from the previous decade. Prices, which had risen rapidly until the mid-1870's, had begun a sharp down-turn after 1882. In part this may have been a reflection of the expansion of Australian wool supply on the British market. In addition, however, the costs of production were rising. Many factors were responsible. The expansion of the industry over the 1880's, by bringing into production marginal lands, called forth the need for greater capital investment per unit produced. At the same time, and partly for the same reason, the quality of flocks was deteriorating and their real value falling, while overstocking and the growing depredations of rabbits were having an adverse effect upon the physical conditions of pastures. Rising wages and rising rents under the new land law added further to the narrowing margins between costs and returns. All these factors contributed to the growing inability of the pastoral industry to meet the charges that had been incurred by the heavy investment of the boom in the early 1880's. By the close of the decade it was not uncommon for fixed interest commitments to exceed annual station earnings, and by the mid-1890's the industry was in a state of severe depression with stations being abandoned,

financial institutions foreclosing, and flocks contracting rapidly.<sup>5</sup>

It was under these conditions, becoming increasingly evident as the 1890's progressed, that erstwhile pastoralists began to seek a higher return on capital invested in station properties. They did this by diversifying their interests to include the large-scale production of wheat, either on their own behalf or more commonly by entering into share-farming agreements. In addition, the size of stations was reduced by the subdivision of leasehold areas under the conditions of the new land law, and by the private subdivision and sale of freehold portions as discrete farms. These tendencies to rationalise the size of pastoral holdings and to diversify station interests might have been only temporary and short-lived had not the climatic conditions of the early 1900's accentuated the already depressed condition of the industry with the onset of the most severe and calamitous drought in the history of the colony. By 1902 the sheep population of New South Wales had fallen to its lowest level since 1878 with a decline of some 31,000,000 sheep since 1891. In the second-half of the decade the industry began to recover, but it was a drastically different industry from that of 1880. In area the pastoral holding had been considerably reduced, partly as a result of enforcement through the new closer settlement legislation, but largely as a result of voluntary rationalisation. At the same time there were few holdings on the western slopes and in eastern Riverina that did not cultivate wheat on a greater or lesser scale, and share-farming on formerly exclusively pastoral proper-

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<sup>5</sup> This summary is based upon Butlin, Economic Development, 57-180, and upon Butlin's contributions to Barnard, A., (ed), The Simple Fleece, (Melbourne, 1962), Chapters XXI, XXIII, XXVI.

ties now accounted for some 20 per cent of the total wheat production in the colony. The still incomplete breakdown of the social and economic division between pastoralist and farmer was, of course, just beginning; there remained vast estates cheek by jowl with small, undercapitalised selections, but already by 1911 changes had been sufficient to be remarkable. While, on the one hand, the pastoralist turned increasingly to the profit to be made from the large-scale production of wheat, the farmer was being permitted, through the medium of larger holdings more realistically tailored to the climatic conditions of the newly-opened regions, to run stock as an essential complement to a well managed arable property. The mono-cropping of both wool and wheat, in those regions which were environmentally suited to both, was becoming a thing of the past and a new type of structure, stronger and more stable, was arising from the marriage of the two.

The bases for the profound changes in the size and structure of the colonial wheat-growing industry, therefore, were fourfold: the course of land legislation; the increasing participation of pastoralists in commercial grain production, particularly in the form of share-farming; the steadily improving level of agricultural technology and the work of the Department of Agriculture on the more scientific aspects of grain farming; and the re-assessment of the environment permitted by the extension of rail facilities.

#### THE PROGRESS OF LAND REFORM

John Robertson's Acts survived 23 years of mounting criticism before finally being repealed in 1884. During these 23 years the colonial wheat-

growing industry had changed markedly. It remained, of course, inadequate and technically backward, but the fundamental change in the distribution of wheat acreage meant that the great Sydney market was now served almost exclusively by imported grain since the decline of its major source of colonial wheat on the Hunter and Hawkesbury in the 1860's. In the main the most important wheat-growing areas in 1884 were still those which had developed in the interior under the various stimuli of local markets in the 1870's, and although ever-greater quantities were beginning to find a way to the metropolis by rail the bulk of home-produced wheat was consumed locally, or in the pastoral districts of the west, or - in the case of the border districts - in Victoria. The total area under wheat had seen a large relative increase of over 100 per cent, from 123,000 acres in 1861 to 275,000 acres in 1884, but in real terms the colony still lagged far behind its sister colonies of Victoria and South Australia, and still remained a net importer. What increases there had been had occurred mainly on the southwestern slopes and the central tablelands, and had occurred overwhelmingly on conditionally purchased selections.

By 1880, however, the feeling was current that this increase had not been sufficient, and that despite the long period of their operation the Land Acts had failed in one of their basic aims: to settle the land with a yeoman farming population. Yet it is possible to argue that the situation in the interior was only just beginning to conform to the conditions necessary for the general success of free selection, for only now was rail connection with the metropolitan market being extended into the heart of the rich country of the slopes and eastern Riverina. The widespread



failure of selectors in many regions had been a reflection, not of the inadequacy of the law, but of the lack of economic opportunities. Thus, it is of great importance to note that, when the law was repealed in 1884, free selection was gaining momentum, not losing it. During 1882 some 2,392,217 acres had been taken up on 14,606 selections, a total "far in excess of that of any previous year."<sup>6</sup> Robertson's free selection measures, by the close of 1882, had seen the taking up of 127,117 selections, exclusive of those declared void, those lapsed, or those forfeited, and the total area of these selections amounted to over 15,500,000 acres. Moreover, not only were the numbers of selections increasing, but their average size was becoming greater. Only when land reform seemed imminent, and still more favourable conditions likely, did the number and area of selections contract (Table 24).

TABLE 24

Conditional Purchase 1875-1883

<u>Year</u>	<u>Number</u>	<u>Area</u>	<u>Average Size</u>
1875-1879	59,322	7,953,089	134 acres
1880	8,583	1,147,001	133 acres
1881	14,420	2,399,202	166 acres
1882	14,606	2,392,217	163 acres
1883	10,674	1,617,712	151 acres

Source: "Report of the Department of Lands 1883", NSWLA, VP, 1883, II, 76

Note: 1875 has been adopted as the earliest comparative year since the Crown Lands Amendment Act of the year permitted an increase in the maximum area of a selection from 320 acres to 640 acres.

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<sup>6</sup> "Report of the Department of Lands 1883", NSWLA, VP, 1883, II, 73. The reduction in the number of selections due to the imminence of further reform contrasted sharply with the expansion of auction sales to pastoralists which was attributed to the same cause. See "Report of the Department of Lands 1882", Ibid., 4.

On the credit side of the Robertson ledger, therefore, it was possible to argue a case for the continuance of the existing law, with only minor amendments, on the grounds that its full advantages were only just beginning to be realised. This, in fact, was the approach adopted by Hoskins when the principle of free selection came under fire in the Assembly in 1880.<sup>7</sup> On the debit side, however, there were many apparent grounds for complaint. "That there has been some success is of course admitted", said the Herald in an unusual bout of generosity, but "no candid person can refuse to admit... very serious drawbacks."<sup>8</sup> Yet, whereas in 1861 the main body of complaints had issued from squatters and conservatives generally, fearful for the security of vested pastoral interests and the future of the "educated" classes, now the most vocal reformers were the free selectors themselves. Though continuing to oppose "indiscriminate selection", pastoralists and their supporters uttered their views in more muted tones, for on the whole they had been little damaged by the law. Aided in part by good seasons and high wool prices, in part by the financial policy of the government, and in part by Robertson's own determination to protect "by every means in my power every existing right", almost 11,000,000 acres of Crown lands had been purchased by pastoralists at auction by 1883.<sup>9</sup> Moreover, there would seem to be little truth in the not-uncommon assertion that enforced land purchase against free selectors was primarily responsible for the growing

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<sup>7</sup> NSWPD, 1880-81, 389

<sup>8</sup> SMH, 12/10/82 and 30/10/82

<sup>9</sup> See Robertson's speech on the second reading of his Land Act Amendment and Consolidation Bill, NSWPD, 1882, 1160.

indebtedness of the pastoral industry. In the main this was a function of rising costs generally, excess capacity, and falling prices.<sup>10</sup> Thus, while paying lip-service to reform of the principle behind Robertson's measures, pastoralists were, on the whole, wary of any modification which might transgress on the unconditional sales that were their primary defence, and one of the few remaining privileges of their wealth.

Free selectors, however, were less cautious. Over the 1870's Free Selectors' Associations had been growing in number and in strength, and though rejecting amalgamation with more avowedly political and radical organisations, had become a body of some political influence by the late 1870's.<sup>11</sup> They were, moreover, confident in the popular approval for their egalitarian views, and consequently had no scruples against giving them full and frequent airing; it seemed that they stood only to win. By 1877 their major demands were becoming clear, and at the suggestion of the Albury Association a conference was called in Sydney in an effort to achieve redress of their grievances by presenting a united front.<sup>12</sup> Their objectives were basically three fold: first, to end land alienation to pastoralists; second, to improve the conditions of selection; third, to correct the faulty administration of the law. With remarkable

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<sup>10</sup> Butlin, Economic Development, 166-180

<sup>11</sup> At the first Conference in Sydney in October 1877 the Free Selectors' Associations rejected a proposal to amalgamate with the Sydney Working Men's Defence Association. See ATCJ, 20/10/77.

<sup>12</sup> Ibid.

consistency the views expressed at the first of these Free Selectors' Conferences remained unchanged when, from the re-named "Land Reform Conference", they were presented by deputation to John Robertson in 1882.<sup>13</sup>

Predictably, the most important was the insistence that the auction sale of Crown land should cease altogether, and that sales to leaseholders by virtue of improvements, promised or accomplished under the Amending Act of 1875, should also cease. In fact, by choosing to ignore the possibility of non-residential selection, what this amounted to was a demand that conditional purchase should become the only means of alienating land.

Amongst the supporters of free selection the desire to see an end to auction sales had been current from the mid-1870's when pastoral investment in land reached massive proportions. In 1887 the Yass Free Selectors' Association had recommended a gradual reduction in the area offered for competitive purchase with a view to its eventual abandonment by the early 1880's.<sup>14</sup> At the first Free Selectors' Conference, however, the line had hardened somewhat, and immediate cessation of the system formed the subject of their first resolution.<sup>15</sup> Others were less certain. The Town and Country Journal, though pro-selector, was unwilling to see the end of "the fairest test of land values."<sup>16</sup> Again, recognising the

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<sup>13</sup> SMH, 12/10/82 and 13/10/82.

<sup>14</sup> ATCJ, 10/3/77

<sup>15</sup> ATCJ, 20/10/77

<sup>16</sup> ATCJ, 10/11/77

need for methods of alienation other than conditional purchase, but at the same time unwilling to countenance a continuation of large-scale alienation to squatters, some recommended that holders of more than 3000 acres of freehold should be prohibited from further purchase at auction.<sup>17</sup> Carrying this view further, but ignoring the alternative, the Herald argued feebly that "a great majority of the people of the colony shall be precluded from the purchase of country lands unless they first pay toll to the free selector."<sup>18</sup> The more outspoken conservatives, however, declared that "the stoppage of sales of Crown lands at auction is calculated to interfere with legitimate settlement and enterprise."<sup>19</sup>

The remaining demands of the free selectors' organisations largely concerned the selector himself, and the conditions of purchase. It is worthwhile noting, however, in view of the proposal made in 1877 by the Secretary for Lands, Thomas Garrett, to raise the maximum area of selections to 2,560 acres, that these demands did not involve an extension of the largest permissible area for the individual selector, though they did require that family selection, contiguous where possible, should be made lawful, and that parental residence should suffice for all the

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<sup>17</sup> ATCJ, 30/3/78

<sup>18</sup> SMH, 12/10/82

<sup>19</sup> ATCJ, 16/2/78. See report of a meeting of squatters and tradesmen at Dubbo. The outcome of the meeting was the formation of the Northwestern Land League.

family.<sup>20</sup> In addition they sought the reduction of the deposit on conditional purchases to 1/- per acre, the abolition of interest payments due under the conditions of the 1875 Amending Act, and payment of the balance in nineteen yearly instalments of 1/- per acre. They sought also the right to select on any portion of a lease, notwithstanding the existence there of improvements, and they sought the right to re-select on forfeited purchases. The demands were not all one way, however, and the Free Selectors' Associations were willing to see the imposition of more severe residence conditions, and more stringent conditions governing the transfer of selections. Finally, in 1882, as the "Land Reform Conference" they recommended a re-organisation of the administrative machinery of the Department of Lands, with the establishment of local Land Boards and the reduction of the discretionary powers of the Minister, and the establishment of a separate Department of Agriculture and experimental farms to provide practical advice and assistance to the free selector.<sup>21</sup>

On the whole, this dissatisfaction with the condition of land legislation on the part of free selectors and their supporters had become evident only after 1875. As late as 1876 the Town and Country Journal had expressed itself strongly in favour of the 1861 Acts, claiming that their popularity was evinced by the inability of the opposition to secure their repeal.<sup>22</sup> But though the basic principle of selection before survey

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<sup>20</sup> For Garrett's proposal see below, 258. With regard to this proposal see ATCJ, 27/10/77, correspondence from Daniel P. Hulbert.

<sup>21</sup> SMH, 13/10/82.

<sup>22</sup> ATCJ, 9/12/76.

remained popular, the demands of the free selectors for modification of the practical mechanism were becoming more insistent. That matters were coming to a head was evident when Thomas Garrett, Minister for Lands in the Robertson Ministry, resigned his post on the grounds that the Premier had refused to accept the propositions on his Amending Land Bill.<sup>23</sup>

Garrett's propositions were very largely an embodiment of the demands made at the first Free Selectors' Conference. Although auction sale was to be retained, Garrett sought to abolish sales by virtue of improvements, to reduce the deposit on conditional purchases, and to reduce the value of improvements demanded of the conditional purchaser. In addition, he sought to increase the maximum area of a selection from 640 acres to 2,560 acres. Garrett's move, though unsuccessful, was the beginning of the end for Robertson's land legislation. It gave official recognition to the growing volume of opposition to existing law, and to the growing political significance of free selectors as a body. It was the first of a series of abortive land Bills which ended only with the final repeal of the 1861 Acts and their public castigation at the hands of the commissioners Morris and Ranken.<sup>24</sup> This series of Bills which were to follow the resignation of Garrett had several features in common: all were designed to give further concessions to the free selector, to limit the conditions under which pastoralists could have land withdrawn from selection, and to tighten

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<sup>23</sup> ATCJ, 20/10/77.

<sup>24</sup> The findings of these Commissioners were considered above, Chapter 5.

control of dummy purchases.<sup>25</sup> They also had one other feature in common, for none represented a radical departure from the basic principles of land alienation laid down under the Acts of 1861.

Robertson himself twice sought to amend the law after 1878.<sup>26</sup> The second of these occasions was in 1882 when he was serving as Secretary for Lands in a Ministry headed by Sir Henry Parkes. The Consolidation and Amendment Bill which he introduced was little more than a re-drafted copy of the 1861 measures, with the addition of extensive provisions for checking the abuse of the law. The term of residence on a conditional purchase, for instance, was henceforward to be extended to seven years, and in the case of transfer of the title the transferee had to complete a full three years residence. Despite these tighter conditions, however, Robertson remained adamant that descriptions of the abuses to which his

<sup>25</sup> With the exception of two attempts by Sir John Robertson the other abortive Bill was introduced by the Farnell Ministry in 1878. This Bill proposed alterations in the method of balance payment on conditional purchases, and also proposed the reduction in the value of improvements on selections to 10/- per acre. It acceded to the Free Selectors' Associations demand for family selection by permitting parents to select up to 80 acres for each child. Non-residential sales were to be permitted at a cost of 30/- per acre. According to Sir Henry Parkes the Bill "was nothing but the stringing together of the most conflicting and adverse clauses (of the existing law) and, considered with the statements of Ministers, was utterly unintelligible ... " See ATCJ, 25/5/78 for Bill, and ATCJ, 27/7/78 for Parkes' Ministry, but this dealt only with the minor problem of pre-leases. See Official History, 589-590, and 599-600.

<sup>26</sup> On the first occasion, in 1878, Robertson moved that the House should go into Committee to discuss the amendment of the law. Though the outline of a Bill was given this was never formally presented since the motion was defeated. See ATCJ, 2/2/78.



Acts had been subjected were very largely "sheer childish nonsense."<sup>27</sup> He insisted, and correctly, that "vast numbers of selectors have never sold their land ... and nine-tenths of the wheat produced in New South Wales is grown on free selected land."<sup>28</sup> Indeed, there could be little gain saying this: even Garrett who was committed to oppose the Bill, had to acknowledge that, "If the old law had remained in force, and had had the same effect which it had before 1861 ... we should have had now little or none of that wheat-growing land under cultivation which at present contributes so large a portion to the wheat required to feed the people."<sup>29</sup>

Robertson failed, however, because he continued to ignore the problem of auction sales to pastoralists. These were to continue, even though additional provision was made for limited non-residential selections for town and city dwellers seeking country homes. His reasons were twofold: first, he believed, or claimed to believe, that auction was not having any detrimental effect upon the progress of selection; second, he was not prepared for the revenue to undergo the financial loss which the cessation of auction sales would inevitably involve.<sup>30</sup> It was this failure - to break down what O'Connor called the "adamantine walls of monopoly!" - that

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<sup>27</sup> NSWPD, 1882, 1161.

<sup>28</sup> Ibid., loc. cit. For comments on Robertson's speech and the measures in general, see SMH, 9/11/82.

<sup>29</sup> Ibid., 1246.

<sup>30</sup> NSWPD, 1882, 1162.

ensured Robertson's defeat.<sup>31</sup>

The opposition to the new Bill was led by Alexander Stuart. Though confused and contradictory, Stuart's speech held the elements of what seemed to be a radical departure from the old system. He began by attacking the fundamental principle of what he called "indiscriminate free selection before survey", though admitting that "if the House is prepared to sanction, and if the country is prepared to sanction, the continuance of the main or vital principles of the present law, then I at once acknowledge that the Bill is an immense improvement ..."<sup>32</sup> In fact, however, Stuart's success came, not with his attack upon the principle of free selection, but with his ideas concerning the much-publicised land quarrels which had arisen as a result of the failure of the 1861 Acts to give security of leasehold tenure to the pastoralist.

Stuart proposed that the land in the colony should be classified into three divisions: the eastern division was eventually demarcated much along the line of the present western boundary of the slopes; the central division embraced Riverina and the central plains country; the western division constituted the remainder of the colony. All Crown leases in the colony would be subject to division: one half would be leased to the squatter for seven, ten, or fifteen years in the eastern, central, and western divisions respectively, and the other half would be resumed by the

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<sup>31</sup> Ibid., 1230

<sup>32</sup> Ibid., 1171

Crown.<sup>33</sup> To compensate for any loss of revenue which the reduction in the area of pastoral leases would entail, rentals would be increased. On the resumed portion of the run conditional purchases were to continue, with an increase in the maximum area and a reduction in the deposit, but without any rights of pre-lease, and as far as possible within surveyed areas. New forms of leasehold tenure were also to be introduced to permit small capitalists to engage in grazing in the western division. Significantly, the sale of Crown land at auction and by virtue of improvements was to cease.<sup>34</sup>

In essence, these were the major features of the 1884 Land Act, introduced by Farnell after the defeat of Robertson on his Consolidation and Amendment Bill. The idea of resumption was nothing new: it had already been adopted in Queensland, and it had been recommended for New South Wales since 1878 when it was put forward as a pro-squatter principle.<sup>35</sup> Indeed, in its accustomed role as the prophet of doom on land matters the Herald declared of the new Parliament that "if it has enacted a law calculated to destroy the free selector and to aggrandize the squatter, it has done nothing outside its instructions."<sup>36</sup>

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<sup>33</sup> NSWPD, 1882, 1185. For details of the Bill which was later based upon these principles see NSWPD, 1883-84, 326-342.

<sup>34</sup> As a result of the defeat of Robertson's Bill Parliament was dissolved and a Ministry headed by Stuart came into power on 5 January, 1883. On the 23 January auction sales were stopped. For Robertson's defeat and the election results see Official History, 641-642. For cessation of auction see "Report of the Department of Lands 1883", NSWLA, VP, 1883, III, 56.

<sup>35</sup> See resolutions of Northwestern Land League, ATCJ, 16/2/78.

<sup>36</sup> SMH, 4/11/84. The attraction of this policy for the squatter was clear: it gave absolute protection from free selectors over half of the run.

The aggrandizement of the squatter, however, was not to occur, nor indeed was the new law to show much success in the encouragement of bona fide agricultural settlement. Although the subdivision of the runs was completed by August 1885, the new rent appraisals were delayed, and by 1887 it was estimated that the arrears on pastoral rents owing to the Crown amounted to some £2,000,000.<sup>37</sup> More significant from the point of view of additional farming settlement, however, was that the government exercised no control over the subdivision of runs. It was soon found that pastoralists had taken every advantage of the new law to effectively secure leasehold tenure of the choicest portions of their runs. This was most marked in the central and eastern divisions where the bulk of the agricultural land was located. By 1887 it was noted that:

Water frontages have been taken, and lands valuable for pastoral and agricultural purposes, and from their proximity to a town, have been monopolised by the squatter. While the people have been forced back 40 or 50 miles from a township, the pastoral tenant has been allowed to select the half of his run nearest the place of settlement.<sup>38</sup>

The manner of leasehold subdivision, therefore, probably accounts in part for retarded progress of conditional sales to selectors. The rate of conditional purchase, which had reached a high level on the eve of the reform of the Robertson Land Acts, fell away sharply after 1884, and only

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<sup>37</sup> NSWPD, 1887, 400. As a result of these arrears and the widespread distress in rural areas caused by the drought of the 1880's and the fall in wool prices, Garrett introduced an Amending Act in 1887 that deferred rental payments.

<sup>38</sup> NSWPD, 1887, 543.

with the falling-in of the eastern division leases in 1890 did the situation show signs of improvement<sup>39</sup> (Table 25). Nor indeed did the new conditions of extended residence succeed in the prevention of extensive selection transfers. Of the conditional purchases made in the southern New England district between 1885 and 1887, for instance, it has been shown that no less than 25 per cent changed hands at least once over the following decade.<sup>40</sup> Moreover, the high rate of forfeitures on conditional purchases, which had provoked sympathy for the relaxation of the improvement conditions of the 1861 Acts, actually increased markedly after 1884: forfeitures before 1883 involved a total of some 1,012,932 acres; in the seven years from 1884 to 1890 inclusive no less than 7,088 selections of an area of 1,103,587 acres were forfeited.<sup>41</sup>

TABLE 25

Conditional Purchase 1885-1890

<u>Year</u>	<u>Number</u>	<u>Acreage</u>
1885	5,377	1,165,351
1886	6,080	963,196
1887	4,769	793,004
1888	5,463	865,199
1889	6,205	903,159
1890	8,526	1,713,577

Source: "Report of the Department of Lands 1890", NSWLA, VP, 1891-92, IV, 8.

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<sup>39</sup> "Report of the Department of Lands 1891", NSWLA, VP, 1891-92, IV, 109. It must not be overlooked, however, that the financial condition of the colony was deteriorating rapidly and it is likely that this too had a restrictive effect on land purchase.

<sup>40</sup> Smailes, P.J., and Molyneux, J.K., "Evolution of an Australian Rural Settlement Pattern: Southern New England, New South Wales", Institute of British Geographers, Transactions, No.36, 1965, 31-53.

<sup>41</sup> "Report of the Department of Lands 1890", NSWLA, VP, 1891-92, IV, 41.

By the early 1890's, however, the problems of land settlement were beginning to show marked changes in two directions. First, it was beginning to be appreciated that the continued alienation of land in small blocks was not fulfilling the widely held objective of fostering bona fide settlement and stimulating agricultural production. The acreage of land under wheat was increasing, it was true, but there were no grounds to suppose that the expansion over the 1880's had occurred in any significant proportion on newly acquired selections. The truth was that the problem was no longer solely a matter of providing the machinery of land access as it had been in 1861. Rather, the difficulty now was to improve the condition of existing settlers, in an effort to keep them on the land. Legislation could help in this, of course, particularly by permitting the enlargement of existing holdings under easier conditions, at the expense of the pastoral lease. This applied particularly to the eastern and central divisions where the whole of the agricultural land in the colony was located, and where the division of runs under the 1884 Act had had the most seriously restrictive consequences. This policy of permitting the enlargement of existing purchases in preference to new selections was inaugurated by the Department of Lands after the falling-in of the central division leases in 1889,<sup>42</sup> under the authority of the Crown Lands Act of

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<sup>42</sup> "Report of the Department of Lands 1900", NSWLA, VP, 1901, IV, 6.

1895.<sup>43</sup>

In the main, one of the most significant features of government provisions for additional settlement after 1884 was the tendency to positively encourage the development of marginal lands, normally under leases from the Crown. The amount of good agricultural land available for further selection, indeed, was remarkably limited. In the central and eastern division in 1894, out of a total area of 115,000,000 acres, only 26,000,000 remained open to further conditional purchase or conditional lease, "and a great proportion of that area, certainly in the eastern division, is barren or mountainous country which will not support a settler."<sup>44</sup> In the central division alone, with an area of 55,000,000

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<sup>43</sup> NSWPD, 1894-95, 433, 445. This was the first major departure from the land system initiated by the Stuart Ministry in 1884. Under the provisions of this Act the resumed portions of leases that remained unoccupied were open to re-lease by the squatter, in an effort to improve the physical condition of the land after a decade of drought and rabbit infestation. In addition, homestead selections and settlement leases were to be encouraged in the western division for the same reasons. Provision was made for the withdrawal from lease of an area not exceeding one-half of the lease. The lessee would receive tenant right on any improvements erected on the resumed area. On the remaining portion of a run so divided the squatter was to receive an extension of lease "proportioned arithmetically to the area withdrawn." Homestead selections were a new form of tenure and amounted virtually to perpetual leases. The conditions of purchase were generous but the conditions of residence were strict. The maximum area of a homestead selection was to be 1,280 acres and the minimum price 10/-. Conditional purchasers under other Acts were to have the right to transfer their tenure to a homestead selection. Under this Act nobody could purchase Crown land who already held freehold title to more than 2,560 acres. Moreover, only Australian citizens could become owners of freehold in New South Wales. An earlier Act, passed in 1889, had already gone far in easing the conditions of freehold selection, including provision for the suspension of payment in cases of "illness, drought, flood, or other such contingencies ... " See NSWPD, 1889, 1264-1274.

<sup>44</sup> NSWPD, 1894-95, 436. Speech of Carruthers, Minister for Lands, on the introduction of the 1895 Crown Lands Act.

acres, little over 7,000,000 remained open to selection. "Almost half the land has been alienated", said Carruthers, "and the remaining half is either under lease or under reserve, or comprises that portion of land which is open to selection."<sup>45</sup> Yet, on the other hand, he noted that:

We have a large extent of country, which, if it were once cleared, would be of extreme value for the purpose of occupation and settlement - scrub country, mallee country, swamp country, which cannot be made fit for profitable occupation until large sums of money have been expended on it.<sup>46</sup>

Accordingly, he proposed to introduce settlement leases of up to 1,280 acres on agricultural land, or 10,240 acres on grazing land for periods of 28 years. Rents were to be fixed at a rate of 3d in the £ on the appraised value of the land. Four conditions were imposed: residence, fencing, clearing, and the extermination of vermin. At the end of the lease the tenure could be changed to the perpetual lease of a homestead selection.<sup>47</sup>

In the same Bill, Carruthers introduced the radically new policy of resuming freehold land. Should the necessity arise, he said, "the Government may require to resume freehold land for the purpose of closer settlement."<sup>48</sup> In fact, the clause was defeated in committee, but following the example of Queensland, Western Australia, South Australia, and Victoria, the principle was successfully re-introduced, after a second failure, in 1901. Yet, although freehold resumption became the outstanding principle

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<sup>45</sup> Ibid., loc. cit.

<sup>46</sup> NSWPD, 1894-95, 441.

<sup>47</sup> NSWPD, 1894-95, 441.

<sup>48</sup> Ibid., loc. cit.



of land alienation after 1900, its consequences were slight in the first decade of the present century. Compared with alienation by conditional purchase, indeed, all the new tenures introduced after 1884 were relatively insignificant<sup>49</sup> (Table 26).

The second major change in the nature of land settlement after 1884 concerned the changing character of the colonial station and the freehold farm. Despite the drought years of the 1880's and the second half of the 1890's the acreage of land under wheat continued to expand (Table 27). At the same time, for a variety of reasons already indicated, sheep numbers were falling and the pastoral industry was undergoing a period of severe depression. In an effort to recoup greater returns on the capital invested in stations, therefore, pastoralists began to turn to wheat production on an extensive scale, making full use of the expanding railway network.<sup>50</sup> While it is not possible to distinguish between wheat cultivated on small conditionally purchased freeholds, and wheat cultivated on erstwhile pastoral freehold, it is possible to indicate the rapid and profound change in cultivation on holdings of different sizes (Table 28).

The most significant feature of these developments is clearly the rapid growth in the importance of cultivation on holdings larger than 1,000 acres. The implication would seem to be that over the 1890's and the first decade of this century there was a definite diversification in

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<sup>49</sup> For a discussion of closer settlement legislation see King, Closer Settlement, 187-220.

<sup>50</sup> The importance of rail development over this period is discussed below, Chapter VIII.

TABLE 26

Land Alienation 1892-1910

<u>TERRITORY</u>	<u>1892</u>	<u>1895</u>	<u>1900</u>	<u>1910</u>
Grants and Sales before 1862	7,146,579	7,146,579	7,146,579	7,146,579
Unconditional Sales after 1862	14,198,910	14,370,726	14,589,429	14,904,397
Volunteer Land Orders after 1867	167,395	167,795	168,495	170,650
Land Granted for Public Purposes	179,414	233,515	240,559	230,908
Homestead Selections				1,729,154
Conditional Purchase: deeds issued	2,246,094	2,648,330	3,711,636	14,560,791
<u>Total Area Covered by Deeds . . . . .</u>	<u>23,937,392</u>	<u>24,566,945</u>	<u>25,856,698</u>	<u>38,742,479</u>
Conditional Purchase Pending	20,115,467	20,266,061	20,130,259	15,614,036
Homestead Selection Pending		57,331	1,416,025	
<u>Grand Total: Alienated and Pending</u>	<u>44,052,859</u>	<u>44,890,337</u>	<u>47,402,982</u>	<u>54,183,064</u>
Land Acquired for Closer Settlement by resumption of Freehold				686,879
Land Alienated under Closer Settlement Acts				619,018
<u>Total Alienated or Pending 1910 only</u>				<u>54,115,203</u>

Source: Statistical Registers

TABLE 27

Wheat Acreage and Sheep Numbers 1880-1910

<u>Year</u>	<u>Wheat Acreage</u>	<u>Sheep Numbers</u>
1880	252,540	32,318,000
1881	221,888	33,062,000
1882	247,361	31,796,000
1883	289,757	34,418,000
1884	275,240	30,379,000
1885	264,867	34,551,000
1886	337,731	37,528,000
1887	389,390	42,837,000
1888	304,803	42,336,000
1889	419,758	49,477,000
1890	333,233	54,113,000
1891	356,665	57,971,000
1892	452,921	55,455,000
1893	593,810	53,900,000
1894	647,483	56,143,000
1895	596,684	46,508,000
1896	866,112	48,011,000
1897	993,350	43,952,000
1898	1,319,503	41,248,000
1899	1,426,166	36,214,000
1900	1,530,609	40,021,000
1901	1,392,070	41,857,000
1902	1,279,840	26,649,000
1903	1,561,111	28,659,000
1904	1,775,955	34,527,000
1905	1,939,447	39,507,000
1906	1,866,253	44,132,000
1907	1,390,171	44,462,000
1908	1,394,056	44,680,000
1909	1,990,180	48,980,000
1910	2,128,826	51,580,000

Source: Statistical Registers. Sheep numbers have been taken directly from Butlin, N., "Distribution of sheep, 1860-1957", in Barnard, A., (ed.), The Simple Fleece, 300-301, (Melbourne, 1962).

property management, with the beginnings of the emergence of mixed sheep and wheat properties. It is likely, however, that a considerable portion of this increase in cultivation on the larger holdings did not reflect the direct participation of squatters, but rather reflected the growing importance of a method of wheat farming unique to New South Wales amongst the Australian colonies: share-farming.

TABLE 28

Area Under Crop on Freehold and Rented  
Holdings of Different Sizes 1892-1910

('000)

<u>Size of Holding</u>	<u>1892</u>		<u>1895</u>		<u>1900</u>	
	<u>F</u>	<u>R</u>	<u>F</u>	<u>R</u>	<u>F</u>	<u>R</u>
1-30 acres	21.7	19.5	24.4	23.3	30.4	23.4
31-400 acres	317.1	142.4	257.4	196.8	548.2	226.3
401-1000 acres	192.0	35.0	226.9	65.7	444.3	92.0
1001-10,000 acres	207.0	22.1	283.4	36.0	607.8	55.0
Over 10,000 acres	44.7	0.8	109.3	2.4	306.2	7.8

<u>Size of Holding</u>	<u>1905</u>		<u>1910</u>	
	<u>F</u>	<u>R</u>	<u>F</u>	<u>R</u>
1-30 acres	28.6	19.8	29.1	15.8
31-400 acres	574.8	201.6	591.1	148.1
401-1000 acres	626.1	75.5	853.0	61.8
1001-10,000 acres	761.0	42.8	1,067.0	49.4
Over 10,000 acres	312.4	1.3	277.4	2.8

Source: Statistical Registers

Note: Rented Holdings do not include those held on a share-farming basis.

## THE RISE OF SHARE-FARMING

Notwithstanding the conditional purchase clauses of the 1861 Acts the accumulation of large freehold estates was a marked feature of land alienation after 1870. The Amending Act of 1875, though doing much towards eliminating open dummyming, was not completely successful as the concern for the practice in later Land Bills indicates. The major element of the system which encouraged alienation by pastoralists, however, was the unconditional sale of land at auction under governments more concerned with revenue than with land settlement. The greatest obstacles to more extensive bona fide settlement under the 1861 Acts, therefore, were threefold: first, the antipathy of the pastoralist and the expansive nature of the pastoral industry; second, the limitations imposed upon selectors by the operation of the conditional purchase clauses and the limitation of area open to the selector; third, and most important, the absence of adequate rail facilities and the distance from markets.

Despite the extension of the railway system, however, the Act of 1884 also failed to achieve the degree of small farm settlement which had been its primary objective. The reasons this time lay in the failure to prevent the continued accumulation of freehold estates and the growing scarcity of land. The drastic reduction of auction sales and the conditions designed to prevent dummyming were thwarted by the enormous transfer of selections from purchaser to pastoralist. Between 1882 and 1900 some 37,576,898 acres of conditionally purchased land were

transferred "which to a very large extent went to increase the area of the large estates."<sup>51</sup> By the early 1890's Crown land suitable for cultivation was scarce, particularly in the vicinity of towns, local markets, and existing railways.

For the potential farmer, therefore, the greatest problem was to acquire well-situated freehold land, at a time when the expanding railway network was opening-up new markets for the sale of surplus country produce. Concurrently, however, the pastoral industry was in difficulties, and the owners of freehold estates were finding traditional sheep-rearing inadequate to cover the heavy expenses incurred in the purchase and improvement of these estates. It was almost inevitable, under these circumstances that a form of tenancy should arise to take advantage of the opportunities offered by the expanding market for wheat.

In February 1894 the Grenfell Record directed "special attention to an advertisement in this issue to farmers who wish to obtain areas for wheat-growing...."<sup>52</sup> The advertisement offered cultivation paddocks of 150 acres, "TO LET - ON THE HALVES SYSTEM", and the newspaper continued,

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<sup>51</sup> "Report of the Commission of Inquiry into Rural, Pastoral and Dairying Interests in New South Wales, With Particular Reference to Share-Farming", NSWPP, 1917-18, I, 157 et seq., Chapter 1. Hereafter cited as "Commission on Share-Farming".

<sup>52</sup> GR, 3/2/94

It appears to us the system of co-operation initiated by Mr. Greene and now followed by Messrs. J. Q. and P. Wood on the fertile areas of Brundah, will prove the salvation of scores of industrious people, and result in vast benefit to the district. In these cases the possessors of capital whilst seeking to secure a reasonable return on their investment, afford labour the opportunity of equally participating in the profits accruing...<sup>53</sup>

This is possibly the earliest example of the publicity later to be widely accorded to share-farming for wheat in New South Wales. It is, of course, an employers'-eye view of the system and gives an ill-balanced picture of the real division of capital investment, management functions, and benefits to be apportioned from the production of wheat on a share-farming basis. The significance of the advertisement however, lies chiefly in its timing and its implications. It appeared at a time when there was no longer any doubt of the course headed by the pastoral industry. It implied, in the first place, a willingness on the part of the owners of large estates to diversify the occupational structure of the estate by renting land for the purposes of cultivation. This would indicate that the advantages to be derived from cultivation, either in direct financial returns or in indirect physical benefits to the property, would be greater than the returns or benefits to be derived from continuing the existing occupational structure of the exclusive rearing of sheep. Second, it would suggest a market for such terms amongst existing or potential farmers in the colony, resulting either from the inadequacy of the law governing the alienation of land, or the lack of land open to alienation and suitable for cultivation, or the need to enlarge existing agricultural operations in order to augment income

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<sup>53</sup> GR, loc. cit.

or to gain the maximum benefits from capital invested in agricultural machinery.

It is important, furthermore, to note that in a situation which - for any combination of the reasons already discussed - encouraged the emergence of a form of rural tenant, this form should take on the unique character of extensive share-farming in an increasingly capitalised industry. The fact that share-farming developed rather than a more direct form of cash tenancy would seem to have been a reflection of the relative strength of the land-owner's position arising from the scarcity of land in relation to the demand for it. The strength of the land-owner's position, together with his motives for preferring share-farming above cash tenancies, can best be seen in the nature of the share-farming agreement.

#### The Share-Farming Agreement

The standard share-farming agreement, if one may be so defined in the presence of innumerable variants, was the "halves" agreement. In general this was the agreement that operated in the most favourable wheat-growing areas, usually close to an existing market or to a line of railway. Under the terms of the "halves" system the land-owner provided the cultivation paddocks, already cleared, fenced, and ready for the plough. In addition, he provided the seed wheat and bluestone for pickling against smut, and he contributed one-half of the cost of bags and twine and one-half of the cost of cartage to a railway siding or market. In the rare instance of manure being used on the land, the owner again contributed



one-half, and occasionally all, of the cost.<sup>54</sup> The share-farmer, for his part, provided the whole of the labour necessary to produce the crop, his own and any seasonal help which might be required. He provided the whole of the machinery necessary to work the land and harvest the crop, and he provided and maintained the horses necessary to work the machinery. He also contributed the second-half of the costs of bags, twine, and cartage, and occasionally half the cost of manure. In addition, however, the share-farmer normally had to provide dwelling accommodation for himself and his family, and it must be borne in mind that the share-farming contract, even in the form of a legal document, seldom extended over a period of more than three years.<sup>55</sup> Many share-farmers, therefore, preferred to live under canvas while tending to their crop, rather than invest in a substantial dwelling under an insecure tenancy system.<sup>56</sup> The crop, under the "halves" agreement, was divided equally.

Variations in the "halves" agreement, and in the equal division of the crop, might reflect any one of a number of features. In the 1890's, for instance, before the system had been widely adopted, it was not uncommon for a land-owner to finance a prospective share-farmers, and to take up to two-thirds of the produce as additional interest on his greater

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<sup>54</sup> "Commission on Share-Farming", NSWPP, 1917-18, I, 157 et seq., Chapter 3. See also Exhibit No.3 to this report for the "Iandra" agreement.

<sup>55</sup> "Commission on Share-Farming", Ibid., loc. cit.

<sup>56</sup> Ibid., See Evidence of W.Egan, Tullamore, "I was three years living in a tent". See also Evidence of G.Huggard, Tullamore, "I have been living in a tent for two years".

investment.<sup>57</sup> On the other hand, in cases where the land-owner provided only the land, or where the land was not cleared, the share-farmer would normally expect a return of more than half the crop for his extra outlay.<sup>58</sup>

The division of the costs of production, however, was by no means the only criterion determining variation from the "halves" agreement. The state and quality of the land, the reliability of the rainfall, the yield potential of the area, and the distance from a rail siding or local market were all reflected in the division of the crop. Environmental factors such as these were compensated for, not by varying the proportion of the return to each party, but by making concessions of one, two, or three bushels per acre to the share-farmer before division was made.<sup>59</sup> The importance of these concessions is evident from the fact that they were made before division of the crop; they were in the nature of a guarantee in regions of accepted uncertainty, and were necessary in order to attract the share-farmer.<sup>60</sup> On the other hand, the "Iandra" agreement, for instance, permitted the share-farmer the whole of the produce over 20 bushels. The concession in this case, coming after division of the crop,

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57 "Commission on Share-Farming", NSWPP, 1917-18, I, 157 et seq. Chapter 3. By the second decade of the present century, the Commission found, few land-owners were prepared to offer direct financial assistance to the prospective share-farmer. See, in this context, Evidence of B.J. Stocks, Murrumburrah.

58 "Commission on Share-Farming", Ibid., Evidence of W.J. Campbell and J.H. McColl.

59 "Commission on Share-Farming", NSWPP, 1917-18, I, 157 et seq., Chapter 3.

60 Ibid., loc. cit. See also GR, 5/2/98 for report of hearing before Parliamentary Standing Committee on Public Works on the subject of a railway from Koorawatha to Grenfell. See Evidence of Duncan Angus Cameron.

was in the nature of a bonus to the share-farmer, attainable by a combination of diligent farming and fortuitous weather.<sup>61</sup>

In general the rapid development of share-farming over the 1890's and the first decade of the present century had many critics, not least amongst share-farmers themselves. In government circles the system found little favour as a result of its apparently transient nature. It was small comfort to a Legislature seeking to effect the permanent settlement of the land by a class of small farmers to witness the remarkable growth of an army of landless cultivators. "They have no interest in making homes for themselves", said Carruthers in 1896:

They simply use the land so that they can have half the produce each year for themselves and they do not care how they leave the land. Tenant farming of this character is not likely to be productive of permanent settlement or permanent good in the country. The halves system results in no permanent good to the state; it results in a wasteful system of farming and very often in exorbitant rents ... 62

The many sittings of the Parliamentary Standing Committee on Public Works over the 1890's carried the argument further. Share-farmers, they considered, were the tools of the land-owners, to be used in bad times as an alternative source of income, or as a means of clearing and improving the better areas of an estate, only to have their contracts discontinued in the event of an improving wool market.<sup>63</sup> Yet, on occasion, the same

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<sup>61</sup> "Commission on Share-Farming", *Ibid.*, Chapter 3.

<sup>62</sup> NSWPD, 1896, 538.

<sup>63</sup> "Report of the Parliamentary Standing Committee on Public Works on the Proposed Railway from Culcairn to Germanton", NSWLA, VP, 1900, V, 1103 et seq.

Committee was forced to acknowledge the popularity of the system:

Although it is certain that with a good price for wheat, and reasonable crops, the owner of the land under the shares system will receive a very large return for his expenditure, still the popularity of the system, under present conditions, is proved by the extension of operations, for where carriage by team is not too far from a railway station, the large holders have no trouble in obtaining tenants on the proposed terms ... At present the tenant farmer is prepared to pay in kind to the extent, at times, of half the crop and during last season he apparently prospered under these conditions.<sup>64</sup>

The most severe criticism of the system, however, was provided by the Commission on Share-Farming in 1918. On the credit side, and from the land-owner's point of view, the advantages of share-farming were five-fold: first, it increased the productivity of the land, formerly unimproved and devoted to sheep; second, it provided for the division of estate management; third, it provided distinct advantages when worked in conjunction with grazing in the form of eating back, stubble feeding, and feeding on failed crops, often at a time when grass was scarce; fourth, tillage tended to improve the subsequent stock-carrying capacity of the land; fifth, it tended to enhance the capital value of the land. To the share-farmer also there were advantages in the system: it provided an avenue to permanent settlement for the man of small means; crop failure normally entailed less personal loss on a share-farm than on a freeholding; the share-farmer had greater opportunity to shift from exhausted soils to

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<sup>64</sup> GR, 26/3/98.

better soils; more incentive was provided to reach the objective of permanent settlement than under a system of wage-earning.<sup>65</sup> Despite this, however, the Commission found many faults with the system, arising chiefly from the inequitable returns on capital invested.

The returns to the land-owner, the Commission decided, were too high, particularly bearing in mind the indirect advantages which share-farming gave in the improvement of property values and the degree of insurance provided by the existence of a crop in drought years. It was indeed an invariable item in every share-farming agreement that the land-owner reserved the right to the complete disposal of a failing crop, and to depasture starving stock upon a share-farmer's crop without consultation.<sup>66</sup> Even excluding these indirect benefits, however, it would seem likely that the net profit returns were higher for the land-owner than for the share-farmer. Satisfactory estimates of the actual costs and direct returns of the system to both parties are not available before 1917. Bearing in mind the rising costs of agricultural machinery as a result of war shortages, however, it is possible to give some indication of the relative profitability of the system.<sup>67</sup> The calculations in Table 29 have been derived from the numerous cost estimates submitted to the 1917 Commission, but

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<sup>65</sup> "Commission on Share-Farming", NSWPP, 1917-18, I, 157 et seq. Chapter 3, passim.

<sup>66</sup> "Commission on Share-Farming", NSWPP, 1917-18, I, 157 et seq. Chapter 3, see Exhibits of report.

<sup>67</sup> For a discussion of the effects of the 1914-18 war on the costs of agricultural machinery in New South Wales, see "Commission on Share-Farming", Ibid., Chapter 4.

TABLE 29

Estimated Costs and Returns on 300 Acres of Wheat  
Farmed on "Halves"

Costs

<u>To Land-Owner</u>	£.	s.	d.
(i) Interest on capital value of land at 9/6 per acre	142	10	0
(ii) 225 bushels seed wheat at 5/- per bushel	56	5	0
(iii) Superphosphate at 1/3 per acre	18	5	0
(iv) 750 bags at 8d per bag	25	0	0
(v) Cartage at 1/- per bag	37	10	0
(vi) Maintenance	7	10	0
	Total Cost to Land-Owner £287 0 0		

To Share-Farmer

(i) Depreciation on plant and horses at 10 per cent	45	10	0
(ii) Superphosphate at 1/3 per acre	18	5	0
(iii) 750 bags at 8d per bag	25	0	0
(iv) Cartage at 1/- per bag	37	10	0
(v) Stock fodder	10	0	0
(vi) Ploughing, harrowing, cultivating, and drilling at 7/9 per acre	116	5	0
(vii) Machine harvesting at 5/- per acre	75	0	0
	Total Cost to Share-Farmer 327 10 0		

Returns

Cash return on 15 bushels per acre sold at 3/6 per bushel	£387	0	0
<u>Net return to Land-Owner</u>	£106	10	0
<u>Net return to Farmer</u>	£ 66	0	0

Source: "Commission on Share-Farming", Ibid., passim.

Note: A similar re-cast costing estimate appears in Dunsdorfs, Wheat-Growing, 249. Again the estimate is based largely upon that submitted to the commission by Jones. Under this estimate, however, the difference in "profit" to the land-owner and share-farmer is only £5 in favour of the land-owner. The difference in the two estimates arises from the inclusion, in the estimate made here, of the costs of farming operations based upon the lowest estimates given to the Commission. It is considered that these charges must be offset against any gross returns in any effort to estimate net profit. Moreover, Dunsdorfs makes no charge on the value of the land. In the estimate given above a charge of 8 per cent is made on an estimated capital value of £6 per acre. By ignoring this item, and ignoring depreciation charges on the farmer's plant, it is clear that the disparity in returns would be even greater.

have been based principally upon those submitted by J.Jones, a farmer and grazier from Grenfell.

There were other disadvantages to the system of share-farming which the 1917 Commission thought it necessary to underline. Several of these stemmed largely from the insecure nature of the share-farming agreement, for although some contracts were in written form, many were merely verbal agreements, nebulous, and easily broken by either party. As a result the share-farmer had little interest in erecting permanent improvements such as a dwelling and shelter for agricultural machinery, and as a consequence of the latter, depreciation charges tended to affect a considerable proportion of the gross returns.<sup>68</sup> The temporary nature of the contract also encouraged the adoption of exploitative techniques, while the diversification of crops and livestock permitted on the long-term, cash-rented property was completely absent on the share-farm. The pastoralists' most common complaint - that share-farmers left the land in a "dirty" condition - was probably justified, yet this was only to be expected under an insecure system where a rapid profit was the only objective and where the tenant had little hope of remaining long on his "farm".<sup>69</sup>

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<sup>68</sup> "Commission on Share-Farming", NSWPP, 1917-18, I, 157 et seq., Chapter 3.

<sup>69</sup> Only one example of land being offered to share-farmers with the option to purchase on expiration of the contract has been traced. See "Commission on Share-Farming", Ibid., Evidence of A.Stewart, Parkes. In an interview conducted by the author in 1965, Mrs.J.Cass, wife of the former Chairman of the Wheat Marketing Board, suggested that the complaint of "dirty" farming was still the most common charge levelled against share-farmers.

In general, few land-owners denied the profitability of share-farming. Greene of "Iandra" had told the Grenfell electorate in 1894 that, "Statements had been made to the effect that what he was now doing would pay him well, and he hoped it would, and not only him, but also the others who were co-operating with him."<sup>70</sup> In 1918 the share-farming Commission reported that most land-owners were well-satisfied with the system, but many were prepared to concede that for it to be profitable to the farmer a gross yield of at least 16 bushels per acre, at an average net price of  $3/4$  per bushel, was necessary. The New South Wales average yield from 1906 to 1916, the Commission found, had been only 11 bushels per acre, sold at an average price, at rail, of  $3/4$ .<sup>71</sup>

Amongst share-farmers themselves there was great diversity of opinion with respect to the merits of the system. T.J.Byrne, a share-farmer on Greene's estate near Grenfell, farmed 500 acres with an up-to-date plant consisting of 20 horses, 3 harvesters, 3 ploughs, 3 drills, and 3 cultivators. Although Byrne had been share-farming for 13 years, however, he still could not afford his own property because, he said, "the game is no good".<sup>72</sup> He estimated that for every share-farmer who had been successful enough to leave "Iandra" and purchase a freehold farm, there had been 10 failures. Similarly, J.W.O'Brien of Young told the Commission that he

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<sup>70</sup> GR, 7/7/94.

<sup>71</sup> "Commission on Share-Farming", NSWPP, 1917-18, I, 157 et seq., Chapter 3.

<sup>72</sup> Ibid., Evidence of T.J.Byrne.



had share-farmed for 12 years on 550 acres of wheat land, and that although he was a "good farmer" he was still unable to show "any cash in the bank for it".<sup>73</sup> One witness remarked bitterly that share-farming was "little better than slavery".<sup>74</sup> Other witnesses were less outspoken in their condemnation of the system.<sup>75</sup> Many apparently believed that easing of the conditions of the share-farming agreement, particularly with regard to some of the fringe benefits then enjoyed exclusively by the land-owner, would make the system not only more equitable but more secure.<sup>76</sup> Occasionally, however, the Commission interviewed tenants who were amply satisfied with the system. George Sheather's was a case in point. Sheather worked his share-farm in conjunction with his small property, and in the course of 7 years had succeeded in building up a plant valued at £1,000 and was virtually clear of all debt. In general, Sheather said, he preferred share-farming to cash-renting since, in the event of crop failure, he stood to lose little more than the value of his labour.<sup>77</sup>

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<sup>73</sup> Ibid., Evidence of J.W.O'Brien.

<sup>74</sup> "Commission on Share-Farming", HSWPP, 1917-18, I, 157 et seq. Chapter 3. Evidence of J.Thoms.

<sup>75</sup> It should be noted that the Commission's hearings were in open court, and it is likely that many share-farmers were inhibited by the presence of their land-owner or his representative. Few were as frank and outspoken as Byrne and Thoms, although most succeeded in conveying a degree of dissatisfaction with the system.

<sup>76</sup> Ibid., See, for instance, Evidence of M.O'Connor, Murrumburrah. See also GR, 26/2/98 for "Report of the Parliamentary Standing Committee on Public Works on the Proposed Railway from Koorawatha to Grenfell", Evidence of T.Bryant.

<sup>77</sup> "Commission on Share-Farming", Ibid., Evidence of George Sheather.

Share-Farming and the Wheat Frontier

Notwithstanding the occasional satisfactory reports of the system from some share-farming tenants, it was a feature of land "settlement" generally disparaged. At the same time, however, there could be no denying its popularity, in the sense of its rapid expansion. The 1918 Commission gave official blessing to the popular belief that share-farming for wheat had started in 1893 on the "Iandra" property of G.H. Greene, from where the system had spread widely amongst erstwhile pastoralists.<sup>78</sup> Yet, although there are ample grounds to doubt that "Iandra" was the first to begin share-farming, Greene was certainly the greatest pioneer of the system, and his agreement became almost standard in the better wheat-growing areas.<sup>79</sup> By 1898 Greene had 17,500 acres cleared for the plough, and the vast bulk of these were farmed on shares.<sup>80</sup> From a position of complete obscurity in the 1890's, the "halves" system rose rapidly to dominate all other forms of private tenancies, and to account, by 1910, for more than 20 per cent of the total wheat acreage in the colony.

The expansion of share-farming acreage occurred in those regions which experienced the greatest absolute expansion in wheat-growing after 1890, that is, on the southwestern slopes and in eastern Riverina. The

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<sup>78</sup> "Commission on Share-Farming", NSWPP, 1917-18, I, 157 et seq. Chapter 3.

<sup>79</sup> Ibid., See Evidence of W.Pettit, "In my young days I had experience (of share-farming) on the south coast, but that is 40 years ago." See also Evidence of W.C.H.Roberts, "We were years before Iandra in a small way".

<sup>80</sup> GR, 26/2/98.

causes of this expansion have already been indicated: the main were the outcome of improved market access by the provision of railways, the relative profitability of wheat-growing compared to sheep-rearing, and the adoption of new techniques making possible extensive farming in a relatively arid environment. The importance of share-farming in these rapidly developing new wheat regions was considerable.

The early collection of statistics regarding share-farming acreages, however, leaves much to be desired. Not until 1899 is share-farming tabulated in the Register, and by this time the system was already well-established in the wheat-growing industry and in the dairying industry. Unfortunately, from 1899 to 1902, no distinction is made between acreages under shares in these two industries. From 1902 this is partly remedied by the separation of share-farming acreages into those farmed for "grain", and those farmed on dairy properties. It is not until 1915, however, that the acreage under wheat is distinguished as a component of "grain".

In an effort to remedy this situation Dunsdorfs has made estimates of the area farmed on shares for wheat from 1904 to 1915 (Table 30).<sup>81</sup> According to these estimates 310,000 acres of wheat were grown on shares in 1904, and 565,000 acres in 1911. These figures represent respectively 17.5 per cent and 23.8 per cent of the total area under wheat, and 91.1 per cent and 91.5 per cent of the total area cultivated on shares for "grain". It is possible, however, that even this may be a low estimate since only those areas cultivated on shares for "grain" in the coastal regions were unlikely to be producing wheat, and in 1911 these areas

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Dunsdorfs, Wheat-Growing, 246.

accounted for only 0.6 per cent of "grain" share-farming.<sup>82</sup>

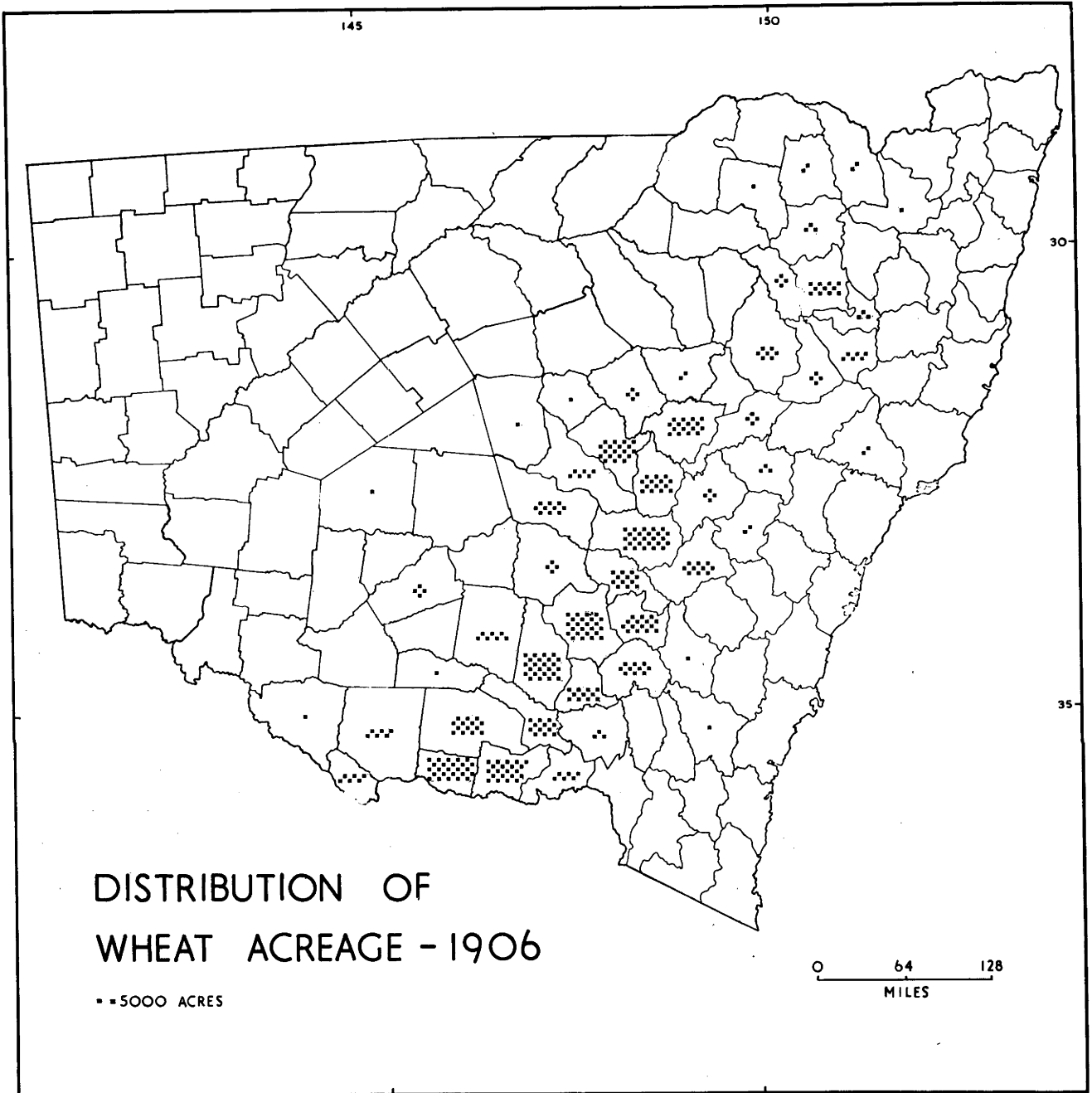
TABLE 30

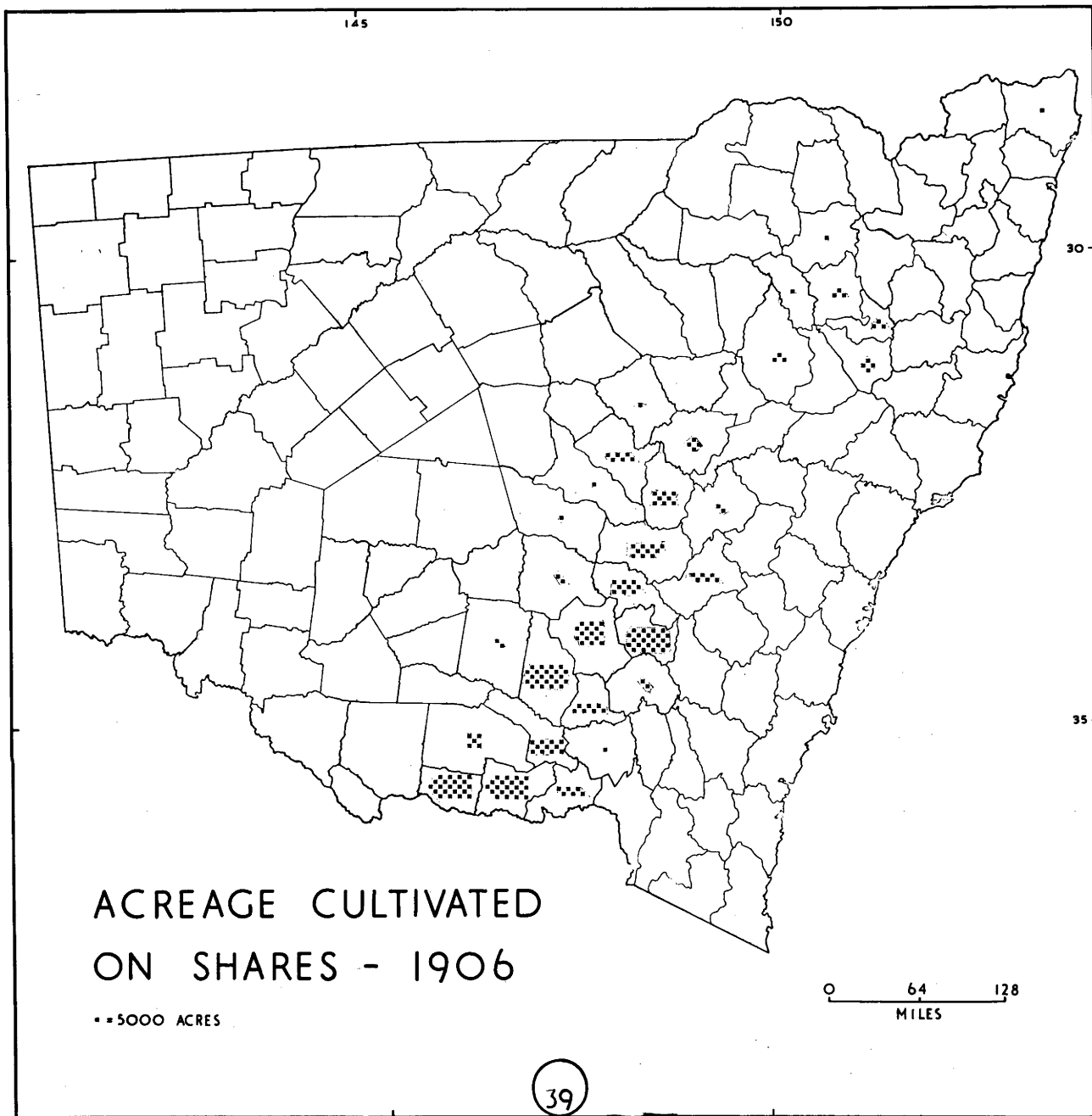
Wheat Farmed on Shares 1904-1910

<u>Year</u>	<u>Acreage</u>
1904	310,000
1905	368,000
1906	392,000
1907	319,000
1908	282,000
1909	326,000
1910	434,000

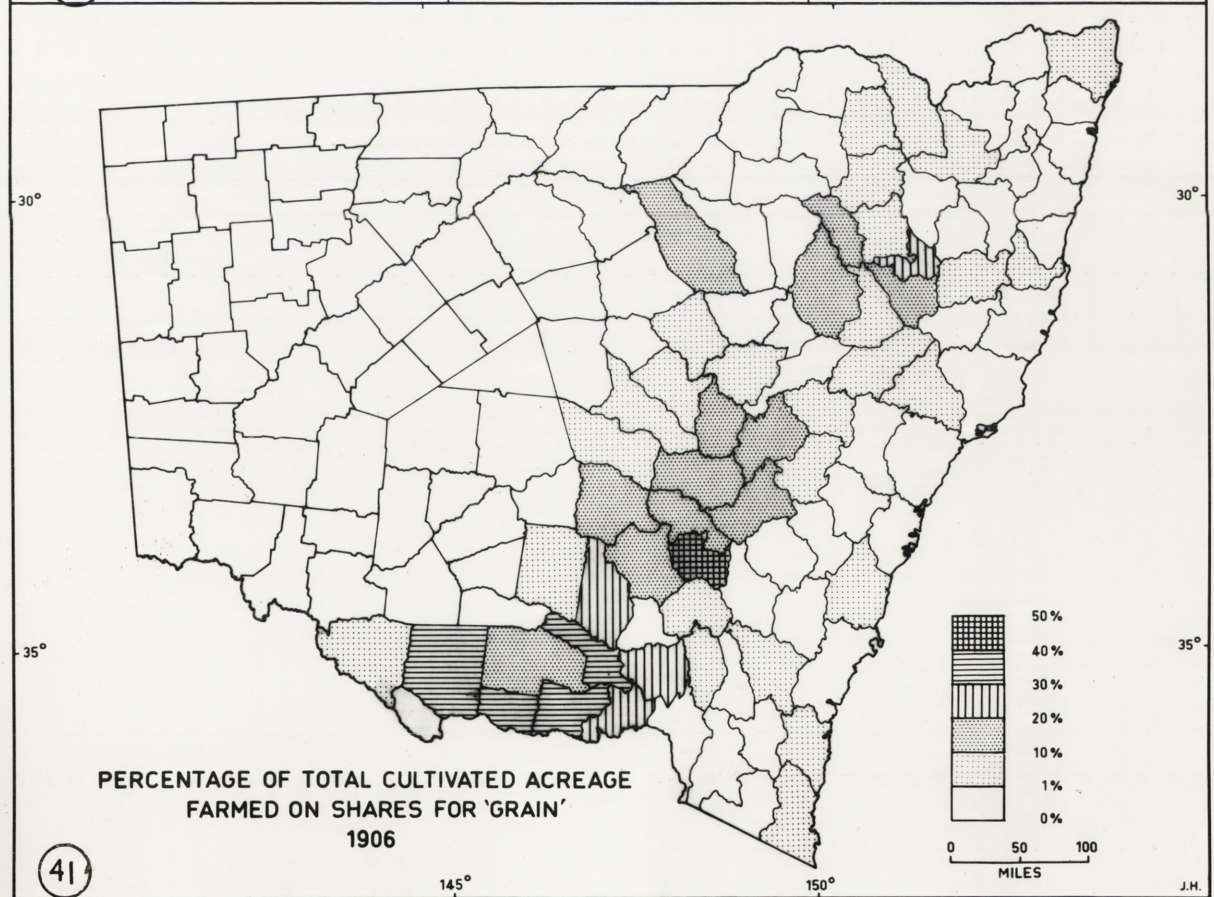
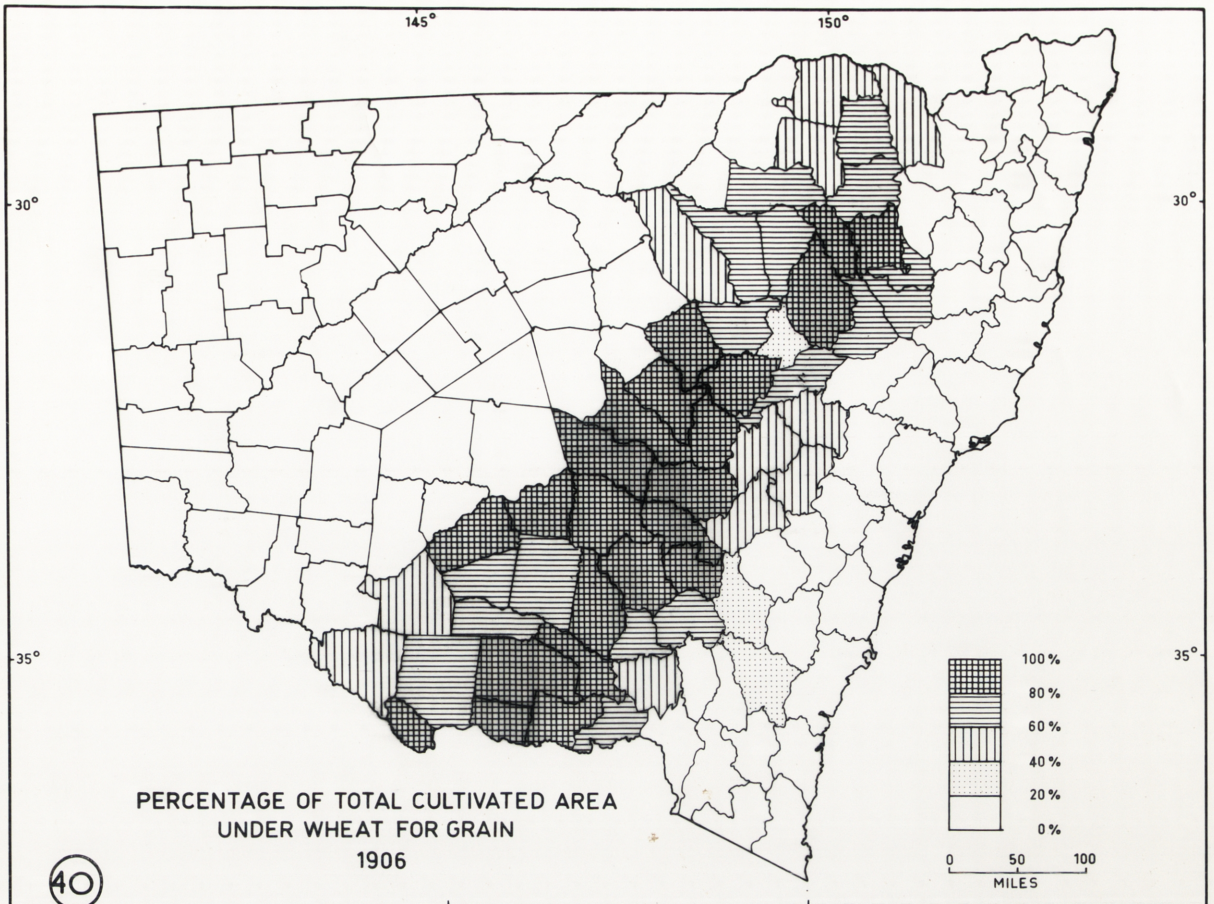
Source: Estimates from Dunsdorfs,  
Wheat-Growing, 246

By Dunsdorfs' reckoning, therefore, share-farming for "grain", and share-farming for wheat were virtually synonymous. Whilst accepting this inference completely, however, it is helpful to supplement the conclusion graphically. The map series (Figures 38-41) is based upon the official statistics for the year ending March 1907. The choice of year was purely arbitrary. Figure 38 shows the distribution of wheat acreage on a county basis, giving an adequate impression of the major wheat-growing areas and focussing attention on the dominance of the southwestern slopes and Riverina. The absolute acreage farmed on shares for "grain" is mapped in Figure 39. The close spatial relationship between the two is apparent, share-farming distribution trending roughly northeast/southwest along the line of the emergent wheat belt, and becoming less important in the lower latitudes. In addition Figures 40 and 41 record the acreage under wheat and the acreage under shares for







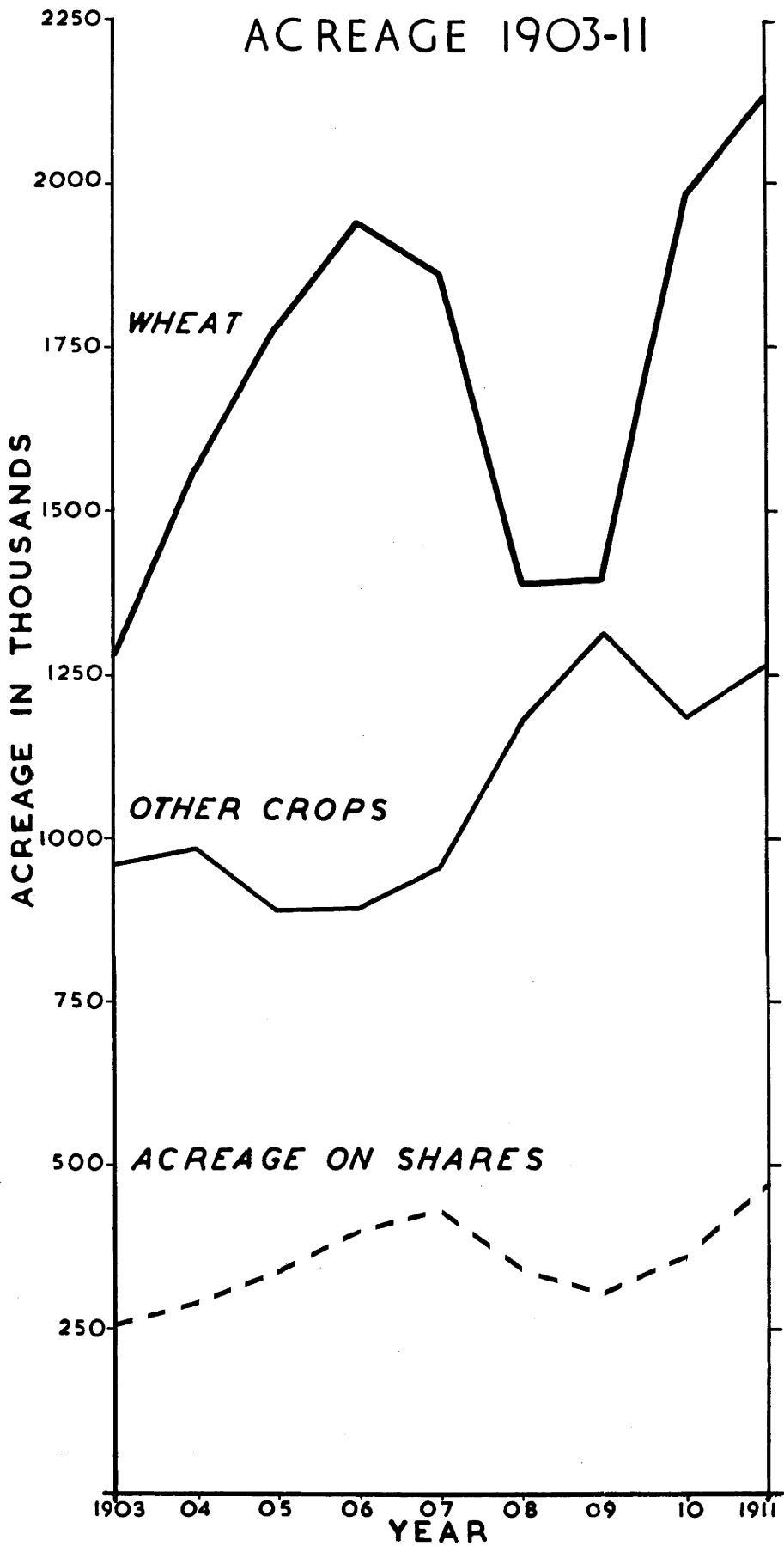


"grain" as percentages of the total cultivated areas. From this it is clear that share-farming for "grain" was most widely spread in those areas with a high percentage of the total cultivated area under wheat. The anomalies that occur, in those areas with a high percentage of the total cultivated area under wheat and little or no share-farming, can be explained with reference to Figure 38 which shows that these areas had only small absolute acreages under wheat and consequently a low total cultivated area.

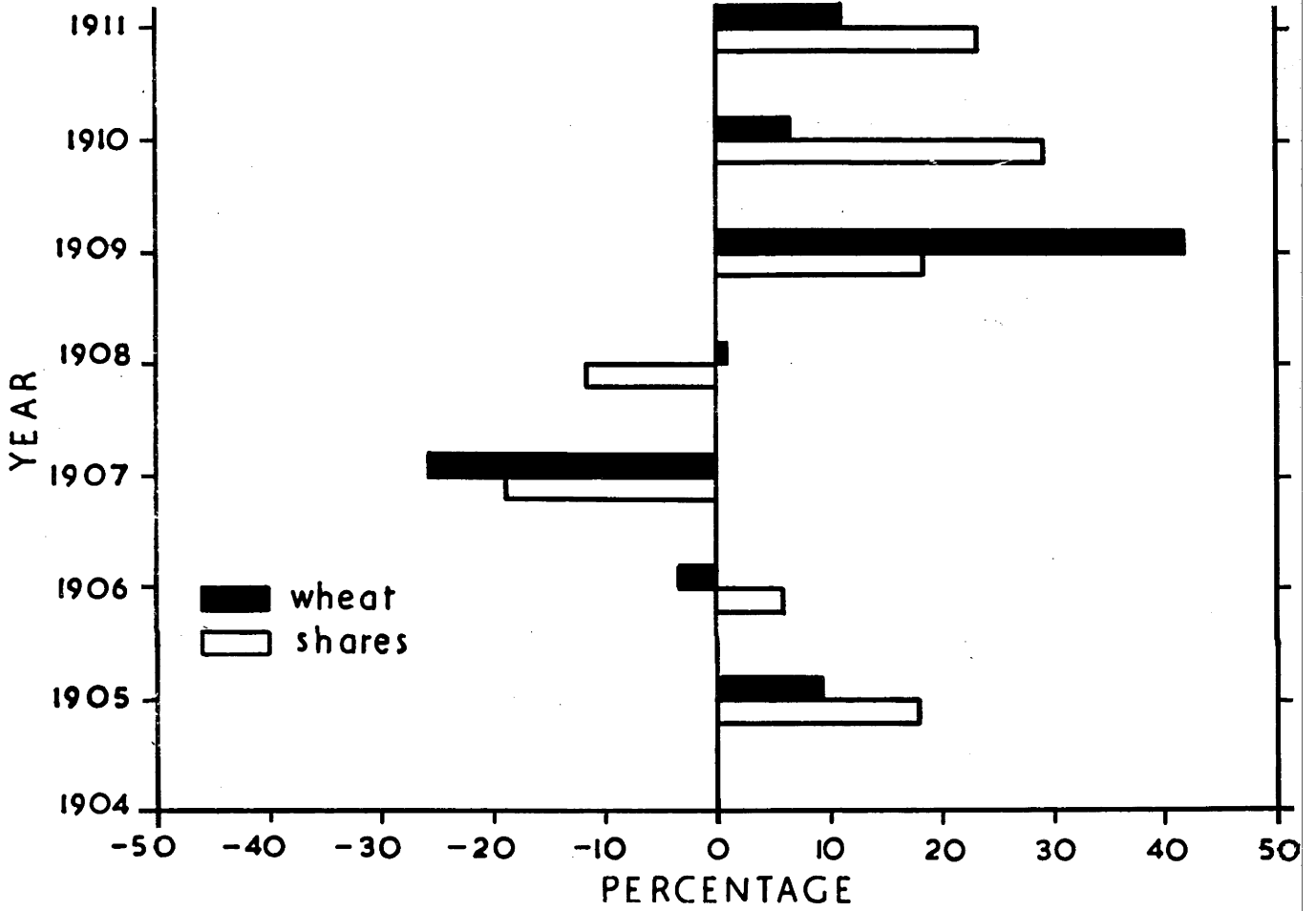
The close relationship between wheat and share-farming for "grain" through time is indicated by Figure 42. The annual percentage variations in wheat acreage and share-farming acreage indicate that fluctuations in share-farming acreage tended to follow changes in wheat acreage with a seasonal lag. This has interesting implications. In years of falling wheat acreage, for instance, the acreage under shares tends to be more stable, possibly reflecting the contract nature of the system together with the lack of alternatives open to the share-farmer. On the other hand, in years of increasing wheat acreage, share-farming tended to rise rapidly after the initial lag of one season. In turn this possibly reflects the speculative nature of the venture, particularly on the part of the land-owner, (Figure 43).



# ACREAGE 1903-11



# PERCENTAGE GAIN OR LOSS IN ACREAGE



CONCLUSIONS

The remarkable expansion of share-farming for wheat in New South Wales, over this period, has been dismissed as "a mad scramble for wheat".<sup>83</sup> In a sense, of course, this is correct, but it masks a host of complex processes at work to make such a scramble at once necessary, possible and desirable. Furthermore, it overlooks the uniqueness of form taken by the scramble, for in no other colony did the system reach such proportions.<sup>84</sup> The emergence of a tenancy, of some kind, was made necessary by the widespread alienation of Crown lands after 1870 and the wilful preference of revenue above settlement: a course which, at the time, had a sound basis in financing the expansion of public works. It should be noted, however, that large freehold estates were not the only employers of share-farmers; the small freehold grazing unit of 1500 or 2000 acres, possibly representing accumulated conditional purchases, was seldom without its share-farm by 1916.<sup>85</sup> The emergence of a tenant system of any kind, on such a scale, was made possible ultimately by changing agricultural techniques and by the extension of the rail system and the ready market for colonial wheat in Europe. Such a course was desirable to the pastoralist for a number of reasons: the changing attitude towards property management and the recognition of the value

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<sup>83</sup> King, Closer Settlement, 121.

<sup>84</sup> For a brief comparative review of the system in the mainland colonies see Dunsdorfs, Wheat-Growing, 247-251.

<sup>85</sup> "Commission of Share-Farming", NSWPP, 1917-18, I, See Evidence of W.J.Campbell and P.V.Carter.

of mixed sheep/wheat properties; the generally depressed condition of the pastoral industry over the 1890's and 1900's and the heavy indebtedness of stations. To the share-farmer a degree of independence was offered above that obtainable as a wage-labourer, and there existed the possibility that good seasons might permit the accumulation of sufficient capital to purchase a freehold farm. As an element in the expanding wheat frontier, therefore, share-farming filled a gap created by the re-assessment of the environment and the legacy of extensive pastoralism.

CHAPTER 7SCIENCE AND THE FARMER

The time has arrived when farmers can no longer sit quietly down amongst the least instructed of the producing classes, leaving it to chance and the chapter of accidents whether they make money by their business or not...

Agricultural Gazette, 1890

PROBLEM

Throughout the nineteenth century the problem of agricultural education received less attention in New South Wales than in either South Australia or Victoria. It was generally accepted, from the early writings of David Collins to the comments of Timothy Coghlan in the first decade of the twentieth century, that farming in the colony was slovenly and exploitative in the extreme. Beyond frequent castigation, however, the problem received little practical attention before 1870. Only occasionally did newspapers carry articles urging the adoption of more sophisticated crop rotations, more efficient machinery, more thorough tillage, and the use of manures to replenish the soils. Invariably the advice echoed the teachings of the English "high farmers" - notably Lawes and Gilbert at Rothamstead - and emphasized intensive cultivation and high yields from relatively small areas. Though excellent in England, where the "high farming" movement had been embraced enthusiastically by a wealthy land-owning class, this advice was singularly unrealistic under the particular and peculiar situation of the impoverished small holder and tenant farmer of New South Wales. Improvement of this kind demanded capital, initiative, and a degree of

market stability notably lacking in the colony.

Government did little to help. The superficially benevolent and invariably romanticised concern for the virtues of the yeoman farmer found no expression in the provision of experimental farms or education facilities. In this, however, the situation was the same throughout Australia; the difference was to show after 1870 when the older colony lagged far behind the agricultural education programmes of South Australia and Victoria. The revolutionary ardour of the land reformers was the beginning and the end of concern for agriculture before 1870. The "agricultural revolution", so fondly predicted by the Robertson camp in 1861, did not materialise. More land went under crop, it is true, and in the interior important regional growth of wheat-farming gave a foretaste of the future and reflected a greater degree of flexibility in the rural economy, but in general the theory and techniques of farming remained primitive and unimproved.

After 1870 there were unmistakable signs of improvement, particularly beyond the settled districts. Mechanised harvesting techniques were becoming the rule rather than the exception on the larger, conditionally purchased freeholds of the southwestern slopes. Agricultural Societies were springing up all over the colony and squeezing increasing sums of money from a sometimes reluctant Treasury. More attention was being paid to the particular characteristics of individual wheat varieties, and the continued threat of rust stimulated selection for hardier plants. The first consistent effort to dispel the prevailing ignorance of the farming community was made with the publication of the Australian Town

and Country Journal, which tackled with vigour the massive and thankless task of disseminating up-to-date information on the progress of agricultural chemistry and pathology, together with reports and assessments of new crops and crop rotations and the trials of agricultural machinery. Particular individuals, no doubt seeking to emulate the fame of men like Mechi at Tiptree Hall, began to devote small areas to the establishment of model farms for the instruction and betterment of local district farmers.<sup>1</sup>

Didactic writing and farming practices seem to have been at loggerheads over the 1870's. On the whole the current of "informed" opinion on the topic continued to favour the intensification of farming on the English model with the emphasis on increased profits through increased yields. On the other hand practical improvements in the industry concentrated largely upon the introduction of machinery with the emphasis here on increased profits through reduced costs. Although such improvements were distinct enough to be worthy of comment, however, their importance should not be over-emphasised. Compared to South Australia and Victoria mechanisation in New South Wales was still in its infancy.

Government participation was restricted to the issue of grants to Agricultural Societies, generally used to stage an Annual Show built

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<sup>1</sup> At Cowra, for instance, a Mr.J.Alford acquired some selections for "teaching farmers how to grow wheat by clean and scientific cultivation". ATCJ, 8/4/71. Ploughing matches, formerly organized by local landowners, were by this time organized by Agricultural Societies. For an account of a ploughing match at Braidwood, organized by Dr.Braidwood, see "Papers of P.C.Mowle" (National Library, MSS.).

around the display of livestock rather than arable produce and machinery. This contrasted sharply with Victoria, where a separate Department of Agriculture had been formed under the Minister for Lands as early as 1872, and with South Australia where, in 1875, a Select Committee made the recommendations that led to the establishment of Australia's first agricultural college and experimental farm.<sup>2</sup> Parallel developments in New South Wales had to wait until the mid-1880's when increasing agitation on the part of country Members forced the government to investigate the possibilities of establishing schools and farms for the improvement of agricultural education and practices. In 1890 the Department of Agriculture was separated from the Department of Mines and the first issue of the Agricultural Gazette made its welcome appearance. In co-operation with an increasing number of enthusiastic private individuals, among them William Farrer, there emerged a concerted attack upon the particular problems of farming in a little understood environment. Properly planned and properly directed, the knowledge and curiosity of Science was employed with remarkable success to improve the practice and position of the man on the land.

The problems facing the improvement of agriculture in the colony were of two kinds: first, the practical problems associated with capitalisation and organization on the farm; second, the theoretical and experimental problems associated with understanding more fully the nature of the environment. The one was essentially a problem for the

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<sup>2</sup> ATCJ, 18/9/75. See also Meinig, The Good Earth, 117-118, 122, for developments in South Australia.



individual, hindered or abetted indirectly by government policy on such subjects as land alienation, tariff protection, and railway operation. The second, because to be successful it required central direction and considerable capital, and because it was not immediately productive of revenue, was a problem for government, hindered or abetted by the degree of co-operation offered by individuals.

#### PRACTICAL FARMING

Dunsdorfs has suggested that, in the first half of the nineteenth century, wheat-growing techniques in New South Wales "compared favourably with the primitive agriculture of the small English farmers...", and that the farmers in the oldest wheat-growing districts of the colony compared well with the most progressive of their English counterparts.<sup>3</sup> This insistence on the technical parity of the Colonial and English farmer seems over-generous to the former. It overlooks the rapidly expanding role of wealthy land-owners and substantial tenant farmers in England after 1793, and over-emphasises the importance of the more highly capitalised land-owner in New South Wales.<sup>4</sup> Yet the point is an important one for, throughout the period, agriculture in the colony sought to

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<sup>3</sup> Dunsdorfs, Wheat-Growing, 74-75. The statement is based upon J.H.Clapham's description of agricultural techniques in An Economic History of Modern Britain, 1820-1850, 450-475 (Cambridge, 1959). Hereafter cited as Clapham, Modern Britain.

<sup>4</sup> See Court, W.H.B., A Concise Economic History of Britain, 25-30 (Cambridge, paperback ed., 1960). See also Clapham, Modern Britain, 452: "The economic and territorial dominance of the large farm was already well established by 1830...".

reproduce the English system in a completely different social and natural environment.

By 1851 more than half the 24,700,000 acres of farmed land in England consisted of holdings of 200 acres or more.<sup>5</sup> Court has said that after 1830 the bulk of English farm produce was derived from tenant holdings of upwards of 100 acres, and that although the tenant with less than 100 acres was still common "he was no great contributor to national income."<sup>6</sup> Moreover the consolidation which followed enclosure meant that the role of the small-farm was diminishing absolutely.<sup>7</sup> Comparable figures do not exist for New South Wales, but the scattered evidence that is available suggests that the tenant farmer in New South Wales seldom occupied more than 50 acres. Before the Committee on the State of Agriculture in 1855 Edwin Hickey, a land-owner from the Hunter valley, claimed to have 3,000 acres under cultivation - chiefly maize and wheat - on tenant farms ranging in size from 20 to 50 acres.<sup>8</sup> An article in the Herald in 1850 advised prospective tenants to seek farms with 30 to 40 acres of arable land, and a similar amount for pasture for working cattle.<sup>9</sup> It is unlikely that the average small freeholding in New South Wales exceeded this figure.

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<sup>5</sup> Clapham, Modern Britain, 452

<sup>6</sup> Court, Economic History, 37

<sup>7</sup> Ibid., 36-37

<sup>8</sup> "Report of the Select Committee on the State of Agriculture in New South Wales", NSWLC, VP, II, 313 et seq.

<sup>9</sup> SMH, 5/7/50

But while the larger farms in England, particularly in the eastern counties, were essentially arable or mixed farms, relatively few of the larger holdings in New South Wales engaged in commercial grain farming. Even then this was almost exclusively through tenants - paying rents of up to £3 per acre in the Hunter valley in 1855 - and seldom on the scale of Hickey's operations.<sup>10</sup> Isaac Shepherd, a land-owner in the counties of King and Geogiana, had never sown more than 50 acres of wheat in one season in 20 years of farming and grazing.<sup>11</sup> Alexander Park, a Member of the Legislative Council and land-owner in the county of Durham, considered that his 100 acres of wheat in 1855 was unusually extensive for the colony.<sup>12</sup>

In general it would seem then that the range of holdings of different sizes engaged in the commercial production of grain tended to be wider in England than in the colony and that the larger holdings were dominant. Colonial agriculture, on the other hand, was overwhelmingly in the hands of "persons cultivating small portions of land either their own property or held at low rents from some of the great proprietors".<sup>13</sup> One feature of the Colonial tenant system not evident in England was the widespread

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<sup>10</sup> With one exception, Hickey claimed, he had more land under cultivation than anyone on the Hunter. "Report ... on the State of Agriculture, *Ibid.*, 313 et seq.

<sup>11</sup> Ibid., Evidence of Isaac Shepherd.

<sup>12</sup> Ibid., Evidence of Alexander Park.

<sup>13</sup> SMH, 24/4/52. An idea of the size of small freehold farms can be obtained from the newspaper advertisements and reports of land sales. The Gross Vale Estate on the Hawkesbury was subdivided into 39 farms of between 20 and 75 acres, SMH, 12/4/55. See also SMH, 3/3/51; 24/1/53; 2/3/54.

adoption of the clearing lease, under which the subjection of the land was held equivalent to rent, "a nominal payment only being extracted for the purpose of asserting the proprietorship".<sup>14</sup> Sometimes these short-term leases were extended to cash tenancies, but more usually they were an expedient to prepare the land for more intensive pastoral occupation.<sup>15</sup> The attraction of the clearing lease reflected the lack of capital amongst prospective farmers in the colony. This was compounded over the 1830's and 1840's by a rising minimum price for Crown lands and the increasing scarcity of good land in the more accessible of the agricultural districts: eight of Hickey's tenants eventually purchased farms of up to 50 acres at a cost of £30 per acre.<sup>16</sup>

As well as a greater degree of capital investment in land being discernible in the English system over the first-half of the nineteenth century, there would also appear to have been a greater degree of investment in farm improvement, the maintenance of soil fertility, mechanisation, and private experimentation. Investment in this sense, culminating in the "high farming" philosophy, found no parallel in New South Wales, where poverty went hand in hand with a lack of initiative. Atkinson, a discerning commentator on the Colonial rural scene, declared in 1826:

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<sup>14</sup> SMH, 24/4/52. See also SMH, 5/7/50.

<sup>15</sup> Some of Edwin Hickey's tenants started on clearing leases and remained as cash tenants at £2 per acre. "Report ... on the State of Agriculture", NSWLC, VP, 1855, II, 313 et seq. The estate of Alexander Berry, MLC, at Broughton Creek offered clearing leases for "seven or eight years, in farms of ten, twenty or forty acres ... ", SMH, 24/1/53.

<sup>16</sup> "Report ... on the State of Agriculture", Ibid., Evidence of Edwin Hickey.

If a foreigner who had travelled through England, were afterwards to visit New South Wales, he would scarcely be able to persuade himself that the inhabitants were derived from the same stock; he could hardly believe that the people who, in the mother country, cultivate their lands with such persevering industry and intelligence, should here become so extremely slothful and negligent; yet such is the case - the state of agriculture being rude and miserable in the extreme ... their farms exhibit to this day nothing but a scene of confusion, filth, and poverty.<sup>17</sup>

The initial task of clearing on new land was, of course, more widespread in the colony than in the mother country, although the expansion of acreage onto waste land in Britain was closely associated with problems of drainage.<sup>18</sup> Ideally, the purchaser would remain employed for hire over the two years generally felt to be necessary to effectively clear a small farm. During this period the larger trees would be ring-barked, and the smaller trees, less than a foot in diameter, would be cut down or grubbed out by the roots. Once dry, the ring-barked trees would be burned off and the ashes spread over the paddock as the first, and probably the final, application of fertiliser.<sup>19</sup> The ideal, however, was often ignored. Clearing was seldom thorough and the stumps were frequently left standing. "Nothing can be more slovenly, more conducive to the growth of weeds", one writer declared, "than the practice of sowing land with the stumps still standing, and the ground encumbered with unburnt logs".<sup>20</sup>

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<sup>17</sup> Atkinson, Account, 28.

<sup>18</sup> Clapham, Modern Britain, 458-460; Court, Economic History, 20-21.

<sup>19</sup> SMH, 5/7/50.

<sup>20</sup> Ibid., See also Atkinson, Account, 30.

The open-field, three-course rotation of two crops and fallow was still common over much of England in the first-half of the nineteenth century. It was varied, however, with improved rotations of four, five, or six courses employing green crops of beans, pease, clover, or turnips in place of fallow.<sup>21</sup> This contrasted sharply, even in its most primitive form, with the almost complete lack of any rotation in Colonial agriculture. Normal practice amongst coastal wheat-growers was to sow maize in the wheat stubble, and to follow this with a wheat crop "chipped into the ground in a most imperfect manner" between the standing rows of maize.<sup>22</sup> In 1835 it was claimed that, "Much of the land now growing wheat has been under that crop, alternated with maize, for thirty years!"<sup>23</sup> Such a system, it was admitted, would have been considered very poor farming even amongst the most primitive of English small-holders.

Not only was the cropping system exhaustive, however, but little effort was made to restore the fertility of the land by the application of fertilisers. Again, both these features were a reflection on the lack of capital in the industry. The most obvious fertiliser - animal dung - was in short supply on the small 50 acre patches of the New South Wales farmer, where the sole stock would normally be limited to a few working cattle. Sheep-folding, widely used in Britain, might have been more extensively

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<sup>21</sup> Clapham, Modern Britain, 464-465.

<sup>22</sup> "An Essay on Wheat", CPOD, 67.

<sup>23</sup> Ibid., 67. See also Atkinson, Account, 30-32.

employed in the colony "were it not that sheep runs are generally far distant from arable farms".<sup>24</sup> Indeed, it was the boast of many Hunter river farmers that their land required no manure.<sup>25</sup> Others realised that taking off three crops every year, one of wheat and one of wheat and maize, continuously, and without manure, could lead only to disaster.<sup>26</sup> The sole concession made to the soil was the ploughing in or the burning off of stubble:

The practice of burning the stubble is an old one, and in the absence of any rotation, or alternation, of crops, has more reason to recommend it than a farmer from Europe would be disposed to admit ... Where a luxuriant crop has been harvested, it is common to see the stubble a foot, or eighteen inches high. As it would be impossible to plough such a stubble fairly under ... the plan of burning it, in the first instance, has been adopted to get rid of the difficulty ... It is not believed, that by reducing the stubble etc., to ashes, any material portion of their fertilising properties is lost to the land, particularly if soon succeeded by a shower.<sup>27</sup>

There is no evidence to suggest that bone-dust, widely used in England, was a popular manure in the colony before 1850; the anonymous writer of the "Essay on Wheat" does not record it amongst his list of Colonial fertilisers.<sup>28</sup> Marl was not known to exist in the colony in 1835, and rape-dust

<sup>24</sup> "Essay on Wheat", CPOD, 71.

<sup>25</sup> "Report ... on the State of Agriculture", Ibid., Evidence of Edwin Hickey.

<sup>26</sup> Ibid., Evidence of Alexander Park. See also Atkinson, Account, 32.

<sup>27</sup> SMH, 6/8/50.

<sup>28</sup> "Essay on Wheat", CPOD, 68-71. The methods of fertilisation discussed are the application of animal manure, oyster shell lime, and ashes.

seems to have been unheard of. The most remarkable developments in England were the introduction of guano and mineral superphosphate in the 1840's, neither of which were in use in the colony in any quantity even in 1890.<sup>29</sup>

Lack of both capital and initiative amongst New South Wales farmers over the first half of the nineteenth century was most evident with regard to the scarcity of agricultural machinery and the dependence upon imports for all but the most primitive tools. Ploughs and harrows, indeed, were the only machines in general use, and the substitution of iron for wood in plough manufacture after 1850 is the only improvement worthy of note.<sup>30</sup> Even then resort was frequently had to the hoe in order to sow wheat in a field of standing maize, or to replace the plough when drought had weakened or killed the scarce and valuable working cattle.<sup>31</sup> Seed-drills, "well established" in England in 1840, were known in the colony but were not in general use, and wheat was normally sown broadcast following the plough.<sup>32</sup> The broadcast sowing machine, with a spinning disc to distribute the seed, had been imported in small numbers from England in 1835, but there is no evidence of its having found widespread favour.<sup>33</sup>

<sup>29</sup> Clapham, Modern Britain, 456-457. The first advertisement for "super-phosphate of lime" that has been traced appeared in SMH, 8/7/71.

<sup>30</sup> Callaghan and Millington, The Wheat Industry, 317.

<sup>31</sup> SMH, 29/7/51: "Those who lost their bullocks by the drought have put it (wheat) in with the hoe ...".

<sup>32</sup> Clapham, Modern Britain, 462. For a discussion of the progress of mechanisation in English agriculture see Fussell, G.E., The Farmers Tools, (London, 1952).

<sup>33</sup> "An Essay on Wheat", CPOD, 78-79.



There was little difference between England and the colony in harvesting techniques; hand reaping dominated both systems, although in England greater interest was shown in the development of mechanical harvesters and the adoption of machines developed in the United States. Even there, however, progress was slow before 1850:

The first reaping machine patented in England was Joseph Boyce's of London in 1799 ... The following year an inventor contrived a large pair of shears running upon wheels for the purpose of cutting down the crop; but this and several other machines of more or less merit failed until the Rev. Patrick Bell brought out his cutting apparatus ... For 25 years after the appearance of this machine - that is until 1851 - nothing new was produced by the machinist.<sup>34</sup>

Threshing in England was performed on a contract basis by portable machines, worked by hand or by horse, and increasingly, after 1840, by steam power.<sup>35</sup> The travelling thresher was a rarity in the colony in 1835, however, although an "enterprising gentleman at Williams River has lately introduced one in that neighbourhood ..." <sup>36</sup> Threshing was still largely performed by flail as late as 1850, and the importation of an English machine was still considered worthy of note in the Sydney papers.<sup>37</sup> Some idea of the scarcity of Colonial-made implements can be gathered from

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<sup>34</sup> SMH, 22/3/71. Convict gangs were employed as reapers before 1840 in New South Wales. See "An Essay on Wheat", CPOD, 99.

<sup>35</sup> Clapham, Modern Britain, 461. The mechanical thresher was not universal in England, however, and the more backward regions still depended on the flail.

<sup>36</sup> "An Essay on Wheat", CPOD, 104.

<sup>37</sup> SMH, 14/3/51. This was a horse-powered machine, on hire at £1.10.0. per day with horses, or £1 per day if the farmer provided horses.

the auction sale of a thresher, with an 80 bushel capacity, that had been constructed "by the first machinist in the colony".<sup>38</sup>

There can be little doubt, therefore, that in the first half of the nineteenth century agricultural techniques in the mother country were considerably in advance of those in the colony, despite the depression following the end of the Napoleonic Wars and the near-panic that accompanied the repeal of the Corn Laws. Certainly in the field of experimentation there was a richness and variety in the machines invented that, whether successful or not, indicated a lively interest and a degree of capital rare in New South Wales. Here the ex-convict tenants and the small freeholders were seldom trained agriculturalists, and their operations were notable only for their extreme simplicity and crudity.<sup>39</sup> The condition and advantages of the few wealthy farmers were atypical of the state of wheat-growing in general.

There is evidence of some improvement in the colony over the 1850's, particularly with regard to the mechanisation of farm operations. This was a reflection, at least in part, of the labour shortages caused in the coastal wheat-growing areas by the gold rushes.<sup>40</sup> The McCormick "Virginia Grain Reaper", first exhibited in New York in 1851, was already in use on

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<sup>38</sup> SMH, 29/4/51. Reports of imported threshing machines and reapers attracted considerable attention over the 1850's as a result of labour shortages. See SMH, 19/11/53; 16/12/53.

<sup>39</sup> For the preponderance of ex-convicts amongst tenant farmers see "Report ... on the State of Agriculture", NSWLC, VP, 1855, II, Evidence of Alexander Park, MLC.

<sup>40</sup> SMH, 19/11/53.

the Hawkesbury in 1853.<sup>41</sup> Hussey's reaper, also shown for the first time in New York in 1851, was at work in Tumberoora in 1855.<sup>42</sup> By 1859 the Camden district could boast the only two steam-powered threshers in the colony.<sup>43</sup> Such machines, however, were not in general use, and the vast bulk of the 282 reaping and threshing machines in New South Wales in 1860 were small hand or horse-driven implements.

The value of imported agricultural implements, dominated by purchases from Great Britain, increased rapidly over the gold-rush decade from a total value of only £625 in 1852 to over £23,000 in 1857 (Table 36). The optimism was not long sustained, however, and the devastating rust outbreaks over the 1860's brought a rapid contraction in investment in farm machinery. Imports dropped in value to a bare £3,133 in 1867, and in the same year the number of reaping and threshing machines, which stood at 419 in 1864, fell to only 359. The distribution of implements also showed the extent of the coastal decline: in 1864 some 89.0 per cent of all reapers and threshers were in the old settled districts; by 1868 this had fallen to 72.4 per cent, with an absolute decline of 99 implements.<sup>44</sup>

Over the same period English agriculture was enjoying a period of unprecedented prosperity, with rising prices following the recovery from the industrial depression of the late-1840's.<sup>45</sup> The process of consolid-

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<sup>41</sup> SMH, 16/12/53.

<sup>42</sup> SMH, 31/1/55.

<sup>43</sup> Statistical Register, 1859.

<sup>44</sup> Figures calculated from Statistical Registers.

<sup>45</sup> Clapham, Modern Britain, II, 272.

TABLE 36(a) Value of Imported Agricultural Implements

<u>Year</u>	<u>Great Britain</u>	<u>Victoria</u>	<u>North America</u>	<u>Others</u>	<u>Total</u>
	£	£	£	£	£
1860	11,656	3,906	5,631	160	21,353
1861	4,499	978	392	25	5,894
1862	5,731	1,342	3,652	245	10,970
1863	7,906	495	1,612	127	10,140
1864	5,060	1,415	1,505	180	8,160
1865	5,329	191	1,319	-	6,839
1866	4,620	291	5	-	4,916
1867	2,859	147	107	20	3,133
1868	3,244	250	219	-	3,713
1869	5,986	1,064	698	182	7,930
1870	6,820	1,588	547	6	8,916
1871	5,206	1,206	351	15	6,778
1872	7,078	4,147	235	20	11,480
1873	8,638	2,560	72	-	11,270
1874	10,928	1,857	378	-	13,163
1875	10,526	3,658	1,345	12	15,541
1876	9,697	5,456	1,258	326	16,737
1877	11,480	16,388	2,534	2,009	32,411
1878	16,715	22,712	2,917	800	43,144
1879	17,872	14,754	10,097	2,712	45,435
1880	13,175	13,906	2,466	2,514	32,061

(b) Export of Agricultural Implements

<u>Year</u>	<u>Australian Colonies</u>	<u>New Zealand</u>	<u>New Caledonia</u>	<u>Others</u>	<u>Total</u>
	£	£	£	£	£
1860	1,749	431	90	70	2,340
1861	375	883	30	119	1,407
1862	881	523	16	-	897
1863	868	464	22	3	1,357
1864	199	45	10	-	254
1865	479	20	8	-	507
1866	133	48	16	-	197
1867	-	-	-	-	-
1868	41	34	49	73	197
1869	119	-	14	2	135
1870	280	9	158	350	797
1871	-	-	-	-	-
1872	50	-	166	244	460
1873	725	25	223	14	987
1874	1,224	-	70	28	1,322
1875	571	-	39	14	624
1876	1,164	400	111	34	1,709
1877	2,581	22	95	23	2,721
1878	-	-	-	-	-
1879	3,321	45	-	268	3,644
1880	3,646	554	-	131	4,331

Source: Statistical Registers.

ation of holdings was continued, and the use of steam power in tillage and threshing was greatly extended. Improved drainage techniques "worked wonders" for the heavy clay soils after the introduction of machine-made drain pipes in the 1840's.<sup>46</sup> With the exception of farmyard manure, guano was the most important fertiliser; an average of 298,000 tons was imported annually between 1854 and 1858, compared to the 28 tons imported into New South Wales in 1861.<sup>47</sup> Crop rotation, still a rarity in the colony despite the progress made in mechanisation, was becoming more elastic in England as farmers began to understand the local requirements of different soil types.<sup>48</sup>

With this increase in prosperity came an increase in propaganda for the British method of farming, culminating in New South Wales with the diatribes of William Johnston.<sup>49</sup> The method of wheat cultivation in the colony, he declared, consisted of "one imperfect turning of the soil with the plough, the seed neither properly cleaned nor changed from soil to soil of different qualities, and sown on the surface, and harrowed to cover it".<sup>50</sup> Under this "pernicious system, originated in ignorance and misapprehension" the finer tillage implements - cultivators and scarifiers of

<sup>46</sup> Ibid., 270.

<sup>47</sup> Ibid., 273, (f.n.) New South Wales figure is taken from Statistical Register, 1861.

<sup>48</sup> Clapham, Modern Britain, II, 274.

<sup>49</sup> See Johnston, W., Australian Agriculture and Livestock Farming: Their Practical Defects, (Sydney, 1886), hereafter cited as Johnston, Australian Agriculture. See also articles by Johnston in ATCJ, passim.

<sup>50</sup> ATCJ, 10/6/76.

American design - were ignored in favour of the harrow - "a trumpery affair".<sup>51</sup> To Johnston the very idea of twelve bushel yields was a disgrace, and the only salvation lay in a return to the English system.

He continued:

The great mistake in this country has been trying to grow it (wheat) on alluvial soils. No doubt there is phosphate and other needed substances in these lands, but the quantity will naturally be small. Alluvial deposits having been brought from all sorts of soils, and the most friable being easiest washed away, while clays are the most difficult, it can easily be seen that these deposits will have little of the clay in their composition, and without the clay they cannot have much of the alkalies so prominent in all good clay soils.<sup>52</sup>

That a colony with 200,000,000 acres and only 600,000 people should be unable to grow sufficient wheat for local consumption, he declared, was "ridiculous".<sup>53</sup> In his view there were two basic reasons: first, settlers continued to seek alluvial soils that were not suited to the intensive cultivation of the crop; second, continuous cropping and a lack of manure rapidly exhausted the land and deprived the crop of its nutrients. Thus, although the colonial farmer had distinct climatic advantages, "the British farmer gets as much wheat out of his land by growing one crop in five years as the colonial farmer gets by growing it five years successively".<sup>54</sup> His solution lay in the greater application of capital to

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<sup>51</sup> ATCJ, 23/9/76. The description of the harrow is from ATCJ, 5/2/70.

<sup>52</sup> Johnston, Australian Agriculture, 3.

<sup>53</sup> ATCJ, 13/5/76.

<sup>54</sup> ATCJ, 17/6/76.

farming ventures and a re-organisation of the system of cultivation:

I would ... advise all farmers to at once drop the yearly system of sowing wheat, and adopt the British plan of growing it once in four or five years. Manure your land, for the best of it will not continue to give good crops without it; work your land well with the manure in it, that it may be mixed thoroughly; put in good seed, and, if possible, change it from a soil different from your own; give the seed a dressing with bluestone to kill smut or rust, and when you sow it harrow thoroughly and roll, for wheat must have a firm bed. With these directions properly carried out, you will find that wheat growing pays quite as well as it does in the old country.<sup>55</sup>

Much of Johnston's criticism was valid, even with respect to mechanisation which, though increasing over the 1870's, still left much to be desired. Reporting on the Bathurst Agricultural Show in 1871 the Herald noted with regret that the display of agricultural machinery was very poor "for it is precisely in this direction that the farmers of this district fail to keep pace with the rest of the world".<sup>56</sup> A similar note of dissatisfaction with the implement section followed the Metropolitan Exhibition of the following year.<sup>57</sup> The new machines, too, were having their teething troubles. There were occasional complaints about the condition of grain threshed in the threshing machines, the damage being attributed to the overloading of the screens and sieves.<sup>58</sup> A wire binder

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<sup>55</sup> ATCJ, 17/6/76.

<sup>56</sup> SMH, 14/4/71.

<sup>57</sup> ATCJ, 11/5/72. The display of Victorian machinery, which had done much to make the implement section interesting in 1870, had been withdrawn by the Melbourne manufacturers because of the poor facilities provided.

<sup>58</sup> SMH, 4/10/71.

purchased from the U.S.A. lasted a year or so before being "consigned to the scrap heap".<sup>59</sup> Furthermore, the improved machines remained largely beyond the reach of the pocket of the small farmer. In 1876 Thomas Hungerford noted that, "There are scarcely any small farmers now who keep their own threshing machines", and asked, "Why ... cannot the small farmer have his grain saved by means of the travelling stripper?"<sup>60</sup> In 1878 a correspondent from Parkes noted sadly that, of the two threshing machines in the district, "One is not hired out at all, and the other has been broken down".<sup>61</sup> In the whole of the colony there now existed only one steam plough, and one steam harrow, and although a portable engine and steam threshing machine, with elevator, was catalogued by a Sydney agent imports were made only on order.<sup>62</sup>

Yet it could not be denied that a certain amount of progress, at least in mechanisation, was being made over the 1870's, and if those responsible were men of capital then this was neither unusual, nor to be deplored. On the contrary, it was an early indication of the direction which further progress would take.<sup>63</sup> Furthermore, since much of the new

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<sup>59</sup> Schumack, S., An Autobiography or Tales and Legends of Canberra Pioneers, 107-108, (Canberra, 1967). Based upon the manuscript "diary" of Samuel Schumack (1850-1940) and edited by his sons, Samuel and John Schumack, with a Foreword by L.F.Fitzhardinge.

<sup>60</sup> ATCJ, 9/9/76.

<sup>61</sup> ATCJ, 23/2/78.

<sup>62</sup> ATCJ, 29/3/73. The numbers of steam implements are from the Statistical Register.

<sup>63</sup> Improvement over this period has already been indicated. See above, Chapter 5.



and expensive machinery was designed to cope with relatively large areas it would have been of little value on the smaller paddocks of the tenant farmer in the settled districts.<sup>64</sup>

Although the double-furrow plough was coming into widespread use in the southwestern districts by the mid-1870's, the major improvements were directed towards harvesting the grain. This reflected, on the one hand, the high cost of hand reaping - £1 per day plus rations and grog - and the urgency of gathering the crop in the Australian climate where "grain ripens so quickly that unless harvested at once, when ready, it will get over ripe, lose in quality, or shed and be lost altogether".<sup>65</sup> In the drier districts of the southwest the South Australian stripper was gaining widespread popularity, though it had disadvantages. Following heavy rains at Ten-Mile Creek the Herald correspondent noted that:

Harvest work in consequence has been greatly retarded, and the stripping machines cannot be employed as constantly as their owners would wish, as they require warm weather to admit of the grain threshing out properly. Almost the whole of the wheat crops in this district are taken off with these machines, it being undoubtedly the quickest and most economical method of securing the grain. The reaping and threshing being performed at one operation and a winnowing machine on the field to clean up enables the farmer to secure the grain as it is reaped and thus escape the risk of unfavourable weather. The grain is besides at once ready for market, and the grower is enabled to avail himself of any rise in the market which may occur, while with hand reaped wheat or with

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<sup>64</sup> This had been the case in Britain also, where trials of the Bell, Hussey and McCormick reapers, held at Stirling in 1853, had led to the conclusion that none "was deemed suitable for small farmers". See Fussell, The Farmers Tools, 131.

<sup>65</sup> For the use of the double-furrow plough see ATCJ, 4/4/72 and 22/4/76. For wage rates and comments upon harvesting see ATCJ, 7/12/78.

that taken off with a mowing machine all grain would be in the stack exposed to fire and bad weather and the pleasure of the owner of the threshing machine.<sup>66</sup>

The older mowing and reaping machines nonetheless persisted in the moister settled districts. The English Burgess and Keyes' combined machine seems to have been the most popular, some 200 of them were in use in the Goulburn, Hawkesbury and Hunter districts in 1870.<sup>67</sup>

The growing interest in more sophisticated agricultural machinery is reflected in the increase of imports over the 1870's. At the beginning of the decade the value of imported implements was set at £8,961. By 1875 this had increased to £15,541, and by 1880 to £32,061. Great Britain, which had dominated the import market in agricultural machinery, had been overhauled by Victoria in 1877. Imports from North America were not very substantial before 1879, but by 1890 had reached a value of over £17,000. The import of fertiliser was a sporadic business, and was dominated by occasional substantial shipments of guano from Callao, much of which was eventually re-exported to the other colonies. More important was the local manufacture and export of bone-dust fertiliser which stood at £12,681 value by 1880.<sup>68</sup> It seems likely nonetheless that relatively little fertiliser was in use within the colony (Table 37).

The late 1870's and 1880's, indeed, seemed to be heralding a new era in wheat-farming in New South Wales. True, the improvements which were becoming evident were chiefly in the form of greater mechanisation, while

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<sup>66</sup> SMH, 11/1/71.

<sup>67</sup> ATCJ, 29/10/70.

<sup>68</sup> Figures from Statistical Registers.

TABLE 37Import and Export of Guano

<u>Year</u>	<u>Import</u>	<u>Export</u>
1861	£ 203	£ 571
1862	£ 547	£ 310
1863	£1,550	£ 510
1864	£14,070	-
1865	£1,056	£ 197
1866	£ 180	£1,774
1867	£ 90	£ 214
1868	£ 960	£4,166
1869	£ 694	£ 438
1870	£ 50	£1,523
1871	£4,200	£ 973
1872	£ 688	£1,737
1873	£13,112	£9,648
1874	£ 317	£7,587
1875	£2,278	£ 513
1876	£ 200	£ 709
1877	£ 70	£ 644
1878	£ 572	£ 811
1879	£2,727	£ 612
1880	£1,680	£ 236

Source: Statistical Registers.

crop rotation, fallowing, fertilising, and mixed farming remained the province of the more wealthy as well as the more enlightened. In large measure, of course, the expansion of the industry over these years reflected the new market opportunities offered by the extension of the railway system, which helped compensate the older colony for the greater compactness of South Australia and Victoria. At the same time, however, the fundamental labour-consuming activities of wheat-farming were being steadily replaced by newer and better machinery. Nowhere was this more evident than in the sphere of harvesting operations. The revolutionary reaper and binders from England and North America had been tried in the colony by 1877 and shown to be remarkably efficient.<sup>69</sup> Optimists predicted the rapid expansion of acreage, self-sufficiency, and entry of the colony into the world wheat market as an exporter that would surely follow their general introduction.<sup>70</sup>

Reaping and binding of the sheaf on the English and American model, however, proved at once too expensive, and less practical in New South Wales than the indigenous technique of stripping the ears and threshing the grain in the one machine. Ideally this technique demanded uniform crops and dry weather; it performed poorly on crops that had been laid by storm. The great advantage of the stripper was that it freed the farmer of the dependence upon travelling threshing machines and eliminated the

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<sup>69</sup> ATCJ, 7/12/78. At the Wangaratta trials first prize was won by Osborne's Self-Binding Harvester. In general the American machines were preferred because of their lighter draught, see ATCJ, 10/11/77.

<sup>70</sup> ATCJ, 7/12/78.

need for stacking. Until the 1890's, however, the stripped ears were deposited in heaps to await the slow and laborious process of winnowing. The combination of the two operations of stripping and winnowing marked the last significant advance in harvesting machinery before the construction of the first header-harvester in 1911. The inventor of the new stripper-harvester was a Victorian, H.V. McKay.<sup>71</sup> By 1909 the success of the McKay organisation had placed his "Sunshine" company in a position verging on monopoly of the Australian market in harvesting machines.<sup>72</sup> By 1910 the Corowa correspondent of the Journal could write, "It is astonishing what a large number of harvesters are now in use". Strippers and old hand winnowers, though still in use on some properties, appeared "to be almost a thing of the past".<sup>73</sup>

Although the most startling improvements over the period were in the mechanisation of harvesting techniques, a quieter revolution was apparent in tillage and seeding implements. Broadcast sowing, by hand or machine, though still common at the turn of the century, was being steadily replaced by the more efficient and cheaper drill. "According to the

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<sup>71</sup> For a resume of McKay's career see Callaghan and Millington, The Wheat Industry, 343-345

<sup>72</sup> "Report from the Royal Commission on Stripper Harvesters and Drills", CAPP, 1909, II, 1496. Despite the £12 duty on imported stripper-harvesters and the £6 duty on imported strippers, McKay's prices were still higher than those of Massey-Harris and the International Harvester Company. Interest rates on imported machines, however, were up to 27 per cent and since most were sold only on terms this gave a distinct advantage to the cash sales of Australian machines. See 1485-1487.

<sup>73</sup> ATCJ, 14/12/10. "Giant" strippers of the old model were in use on "Iandra" in 1912. They had a capacity of 16 acres per day. See "A Visit to Iandra", AG, XXIII, 490 and 641.

advocates of drilling", wrote Coghlan in 1899, "the proper quantity to sow is 8 lb or 9 lb per acre, whereas for broadcast sowing not less than a bushel is used, and generally rather more".<sup>74</sup> Five years later he was able to note, with evident satisfaction, that "throughout the State the seed drill, and in many districts the seed and manure drill, are coming into almost general use".<sup>75</sup>

The extension of the wheat belt over the 1890's and 1900's into areas of increasing aridity was also focussing attention upon problems of tillage and moisture conservation. The whole issue of arable farming in an arid environment had been the basis of the evolution, in North America, of the Campbell or "dry farming" system. Under Campbell's system as soon as the crop was harvested the land was worked with the plough to form a dust mulch. The mulch was left undisturbed until early spring with the exception of a light harrowing after every fall of rain. In spring the land was again ploughed to destroy weed growth and then left, with the exception of harrowing after rains, until December. The soil was then ploughed to a depth of 7 inches or more so that the sub-soil was raised to form a dust mulch, and the top soil became the seed-bed.<sup>76</sup> The

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<sup>74</sup> Coghlan, T.H., The Wealth and Progress of New South Wales, II, 1898-1899, 344 (Sydney, 1899). See also Thompson, J.L., "The Grain Drill and Horse Hoe", AG, X, 1899, 253: "the drill is only just beginning to be appreciated in the Australian Colonies." The 8 lb of seed quoted by Coghlan was, of course, an underestimate.

<sup>75</sup> Official Year Book of New South Wales, 1904-1905, 299 (Sydney, 1905) Seed and manure drills had been available in the colony from the late 1890's, see Grenfell Record, 3/9/98.

<sup>76</sup> See the discussion of dry farming by Professor R.D.Watt in "Conference of Wheat-growers with Special Reference to Dry Farming", Farmers Bulletin, No. 42, Department of Agriculture of New South Wales, 27-28, (Sydney, 1910). Hereafter cited as "Conference of Wheat-Growers".

maintenance of a dry mulch was basic to dry farming theories; as Watt explained it "will let rain water down through it but will not allow the moisture coming from below to rise through and be evaporated from the surface".<sup>77</sup>

The value of bare fallowing with a surface mulch was believed by the advocates of the Campbell system to prevent the loss of moisture from the soil through capillary action. It has since been shown that the premise is false, and that any conservation of moisture arising from bare fallowing can be largely attributed to weed control.<sup>78</sup> Callaghan and Millington have shown that, though permitting the extension of wheat cultivation in the horse-power era by spreading the work of tillage over many months, the introduction of the bare fallow was also the beginning of serious deterioration in soil structure arising from excessive tillage.<sup>79</sup> At the time, however, it appeared to open new vistas for the extension of arable settlement under arid Australian conditions.

The development of the rotary disc plough came in conjunction with the evolution of dry farming practices. Designed in the United States and intended to cope with the particular problems of cultivation in dry weather, when the ground was hard, the disc plough soon became popular

<sup>77</sup> Ibid., 28

<sup>78</sup> Callaghan and Millington, The Wheat Industry, 123.

<sup>79</sup> Ibid., loc.cit. Bare fallowing was not new in the colony when Campbell's system first attracted attention, see, for instance, Puckney, R.L., "The Advantages of Bare Fallow", AG, 1890, I, 28. By 1897 the principles upon which the Campbell system was based were well known, see Hennessey, J.D., The New-Chum Farmer, 21 (Sydney, 1897).

under the arid conditions of Australian wheat-farming.<sup>80</sup> In general it was found superior to the mould-board in preparing the seed-bed since it pulverised and packed the soil more thoroughly. On the other hand, although the disc plough "pulled easier and penetrated the ground somewhat better ... where the ground contained enough moisture the mould-board did the best work".<sup>81</sup>

The growing acceptance of dry farming techniques marked the final break with the remnants of British farming practice. In part the colony was the loser, for despite the good advice of the newly created Department of Agriculture, the tendency was towards mono-cropping. The development of a mixed farming system, utilising sheep-folding, and substituting fodder crops for the long fallow had already started, but for the majority, and particularly the growing army of share-farmers, simple bare-fallowing - allied by this time with the occasional use of superphosphate - was the only other element in a still exploitative wheat culture. In the sphere of mechanisation, of course, the decline of British influence had been long evident, and can be largely explained in terms of the changing natural environment of wheat production, from the moisture east to the

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<sup>80</sup> As early as 1898 a commentator could note, "I have seen them in operation in almost every part of New South Wales". See Thompson, J.L., "The Spalding-Robins Steel-frame Rotary Disc Plough", AG, 1898, IX, 1209. In the same year G.H.Greene of "Iandra" wrote to the company agents in Sydney and rated the new plough far above the old mould-board, see Grenfell Record, 3/9/98. By 1916 they were regarded as standard equipment on an "up-to-date" farm, see "Report ... on Share-Farming", NSWPP, 1917-1918, I.

<sup>81</sup> "Dry Farming: Report by Sen. J.H. McColl of the Proceedings at the 3rd Trans-Missouri Dry-Farming Congress, Cheyenne, Wyoming, February, 1909", CAPP, 1909, II, 1331. See also comparison by G.H. McKeown, Manager, Wagga Experimental Farm, in "Conference of Wheat-Growers", 1910, 35.



more arid west. Harvesting in particular had followed an entirely independent line in Australia generally and in New South Wales after 1870. In no small measure this was a reflection of need to secure the grain rapidly in an environment where ripeness was swiftly followed with over-ripeness, shelling, and the loss of a substantial portion of the crop. In ploughing the particular difficulties of the arid environment were met by the adoption of particular machines designed to perform under just these conditions. In terms of farming practice New South Wales had belatedly taken its place alongside the great "new" wheatlands of Canada, the United States, Argentina, Russia, and its sister Colonies. For the most part, the traffic in ideas and improvements had been one way, with the colony as the receiver. There were other fields, however, in which an otherwise eclectic farming community produced leaders rather than followers.

#### THE DEPARTMENT OF AGRICULTURE

The late 1880's and 1890's were characterised by a growing official concern for, or interest in, the state of agriculture in the colony. Yet this was not a tardy recognition of the fundamentally backward condition of farming, but rather it marked an increasing awareness of the potential of New South Wales, particularly with regard to its newly emerging wheat lands, and the evident degree of improvement and expansion in the industry then underway.

Between 1860 and 1890, and disregarding the complex and contentious issue of land reform, the attitude of government towards agriculture seemed surprisingly indifferent. Largely, of course, this was a reflection of prevailing free trade doctrines: a policy of economic

"purity" that in New South Wales sometimes approached the status of a moral code. It was also, however, an indication of the aura of hopelessness that pervaded all discussions of colonial agriculture. This attitude can be seen, for example, in the decision of the New South Wales Agricultural Society Council to recommend the appointment of a government-subsidised travelling lecturer in pastoral affairs, while choosing to ignore the more urgent educational requirements of the farmer on the grounds that "there is no immediate prospect of being able to do anything for the advancement of agricultural education..."<sup>82</sup>

Agricultural affairs were never mentioned in the annual reports of the Department of Mines and Agriculture. The closest contact government had with the industry was the annual vote for subsidies to Agricultural Societies. These were increasing over the 1870's and 1880's, and by 1879 some 51 Societies received a total of £4,994 in subsidies. A decade later this had increased to £9,664 shared between 96 Societies.<sup>83</sup> Yet there is good reason to doubt that even these trifling sums were applied to the practical, and admittedly difficult, business of improving the knowledge and technique of Colonial farming. Even as late as 1892 the newly appointed Director of Agriculture could write of these Societies that, "While it may be freely admitted that some ... are doing excellent work ... it cannot be denied that others show little desire to do anything except hold a medley show once a year - a show which often has little

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<sup>82</sup> ATCJ, 9/3/72

<sup>83</sup> Agricultural Gazette, III, 741-742

of agricultural interest to recommend it".<sup>84</sup> The prime offender, indeed, was the largest and most influential of all: the New South Wales Agricultural Society in Sydney. The work of this Society in improving the quality of livestock and livestock produce was commendable, William Johnston wrote in 1876, but what, he asked, "has it done to improve the cultivation of the soil?"<sup>85</sup> By 1887, when the subject of grants to Agricultural Societies was under review, it was claimed that the annual show of the metropolitan Society was "more in the nature of a show of trotting and things of that kind", and that, "if they go on as they have been doing, in another year or two they will have pugilistic rings and running tracks".<sup>86</sup>

There were signs of an awakening interest in the early 1880's, when individual Members began to question the government on the subject of agricultural education. The Premier, Parkes, freely confessed that the subject had not been considered by his government, but stated his intention of pursuing the matter further.<sup>87</sup> In 1881 the same question was repeated, though this time Parkes declared that "we are not prepared at the present

84 "Report of the Director of Agriculture to the Under Secretary for Mines and Agriculture", NSWLA, VP, 1892-93, VIII, 640.

85 ATCJ, 23/9/76. The clearest confirmation of this complete lack of interest in problems of agriculture on the part of this paradoxically named Society is to be found in the total absence of articles on arable farming in the short-lived Journal of the New South Wales Agricultural Society.

86 NSWPD, 1887-88, 2226 and 2229.

87 NSWPD, 1880-81, 188

time to take any steps" towards the formation of agricultural schools or model farms.<sup>88</sup> By 1883 the topic was again "engaging the attention of the Minister".<sup>89</sup> Members continued to harass the government until, in 1885, W.S.Campbell, the Chief Draughtsman of the Department of Mines and Agriculture, was ordered to report on the districts of Clarence and Richmond with a view to the establishment of model farms in the areas.<sup>90</sup> Campbell's report, together with the report of Harrie Wood, the Under Secretary for Mines and Agriculture, on the creation and working of the Victorian Department of Agriculture and the creation of agricultural colleges, were submitted to the government in 1888.<sup>91</sup> In November 1889 R.L.Pudney, formerly Principal at Dookie and Longerenong Colleges in Victoria, was hired to advise the government on the establishment of experimental farms and agricultural schools, and later in the month, Pudney and Campbell recommended that an agricultural college should be set up at Ham Common. In the estimates for the Department of Mines and Agriculture in 1890 provision was made for the expenditure necessary for the creation of a separate Department of Agriculture. On 10 February

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<sup>88</sup> NSWPD, 1881, 74.

<sup>89</sup> NSWPD, 1883-84, 1148

<sup>90</sup> Campbell was later to inspect the Inverell, Monaro and Orange districts. See NSWPD, 1885-86, 2314. The reports were eventually published as a handbook. See Campbell, W.S., Reports on Certain Agricultural Districts of New South Wales (Sydney, 1888).

<sup>91</sup> "Report of the Department of Agriculture", 1891, Under Secretary for Mines and Agriculture to Minister for Mines and Agriculture, NSWLA, VP, 1892-93, VIII, 625.

1890 H.C.L. Anderson was appointed as the colony's first Director of Agriculture.<sup>92</sup>

The general operations of the New South Wales Department of Agriculture were started early in 1891. The objectives described by the Director were numerous, ambitious, and far-reaching. The greatest task, he freely admitted, would be to gain the confidence of the men on the land. The Department would engage in the collection, arrangement, publication, and dissemination of "all useful information in regard to agriculture in all its branches".<sup>93</sup> It would introduce and distribute new seeds, new cereals, new plants and cuttings from overseas. It would recommend the best methods of cultivation, the most improved "instruments of husbandry", and the most suitable crops and varieties for the many different districts in the colony. It would educate farmers by lectures, demonstrations, the establishment of experimental farms, and by encouraging healthy competition through a system of national prizes. In addition the Department would investigate the insect life of the colony with a view to enlightening farmers on the damage likely to be caused by particular insects, and its treatment, and also to indicate those species

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<sup>92</sup> "Report of the Department of Agriculture", 1891, Ibid., 626. From 1893 the Departments of Agriculture and Forestry were amalgamated "in the interests of economy ... and for convenience of management". See "Report of the Department of Agriculture and Forests", NSWLA, VP, 1894, III, 1035.

<sup>93</sup> The objectives of the new Department are given in "Report of the Department of Agriculture for 1891", Director to Under Secretary for Mines and Agriculture, NSWLA, VP, 1892-93, VIII, 628.

which could be regarded as the farmers "friend". An answering service, a museum and a library would be created, and the Department would endeavour to give assistance in the extension of markets for colonial produce. By all these means the Director hoped to be able to "raise the status of the settlers, who will found a generation of farmers, instead of dummies, to make agriculture the mainstay of the country."

Anderson had no illusions about the magnitude of the task he had undertaken, or about the quality of the raw material he sought to upgrade. He stressed his belief in the need for land-ownership as opposed to the still widespread tenancy system, and emphasised the urgent demand for skill amongst both farmers and farm labourers. "The class of men which constitutes the bone and sinew of England, Ireland and Scotland", he wrote, "--men attached to their districts by all the most sacred ties of humanity, men who have become skilled in the inherited traditions of their forefathers -- such a class is almost entirely absent from this colony..."<sup>94</sup> And, he continued,

We have a large amount of what may be called routine farming; the same crops are grown year after year without any system of rotation or any effort to maintain the fertility of the soil by judicious treatment. This system is natural, unfortunately, in districts where the farmers are small tenants, and in such districts the very worst farming is to be found in New South Wales. But where men are cultivating their own small holdings, and have to get the greatest possible yield from a limited area, it is incredible that they should go on persisting in the same crops, the same seed deteriorating year by year, the same methods of cultivation, the same breeds of stock, the same old-fashioned implements of husbandry, the same disregard for profitable minor industries of well-managed farms... But the greatest hope for the certain progress and prosperity of the future lies in the better education of our farmers' boys and girls.<sup>95</sup>

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94 Ibid., 630

95 Ibid., 631

Now, however, there were hopes for real progress. So long as experimentation and improvement had been left in the hands of individual farmers -- individuals with little or no capital and probably even less technical or scientific training -- then so long had real progress in the betterment of farming practices been denied. The creation of a central organisation for the direction of agricultural experiments, financed by government and staffed by experts, meant that a consistent attack upon many of the problems facing practical farming could be launched with every hope of success.

Cobb, Guthrie and Farrer: Examples

There were many difficulties facing wheat-growing in 1890. The new Department was equipped and staffed to deal only with those problems directly concerning the production and quality of the crop. It was not equipped or able to deal with the indirect problems created by the lack of an adequate railway system, for instance, or the growing need for the abandonment of bagged wheat and the adoption of bulk-handling facilities.<sup>96</sup> The work on wheat, in fact, was principally under the direction of the plant pathologist, Dr.N.A.Cobb, and was largely focussed, over the first few years, upon an investigation of rust in the wheat plant.

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<sup>96</sup> Cobb did, in fact, go to the United States to investigate bulk-handling facilities there. He declared, "I cannot find words powerful enough to stigmatise this universal use of bags. Because this thing is wrong in principle and can be remedied." See Agricultural Gazette, VI, 1895, 804. (hereafter cited as A.G.). The remedy, however, was not introduced until after the First War despite the frequent reports in favour of bulk-handling. See, in particular, "Report of the Burrell Engineering and Construction Company, Chicago, Illinois, Regarding the Bulk-Handling of Wheat in New South Wales", NSWPP, 1913, 2nd session, I, 57-68.

The disasters of the 1860's in the coastal wheat-growing lands of New South Wales had not been repeated on a scale of such relative significance over the 1870's and 1880's. On the other hand, scarcely a year had passed without losses, of a greater or lesser degree, due to rust. The same problem, of course, faced all the wheat-producing colonies particularly in view of the rapidly growing volume of produce and the consequently greater financial losses sustained in bad years. The difficulty, in fact, was common to all the great grain-growing countries, but the first moves towards a solution were made in Australia. In 1890, as a result of a particularly severe rust epidemic in the previous harvest, -- an epidemic which cost South Australia an estimated £1,500,000, Victoria an estimated £750,000, and New South Wales an estimated £100,000 -- an Intercolonial Conference was held in Melbourne to consider possible solutions to the problem.<sup>97</sup>

The outcome of this historical first Conference was the appointment of a Committee to draw up a series of resolutions on the subject, which they considered would be of value to the farmer in reducing the possibility of rust epidemics. These involved early sowing, the cutting of the crop in the "dough" stage before it was fully matured, the careful choice of seeds from varieties known to possess at least some degree of resistance to the disease, the avoidance of graminaceous crop successions, and the thorough clearing and burning of all infected straw. In addition, however, the Committee also recommended specific lines of research which would best

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<sup>97</sup> This conference, and those that followed, were summarised in the Agricultural Gazette, and their resolutions given in full. See "Rust in Wheat", A.G., 1890, I, 41-42.



be carried out by the different Departments of Agriculture in the colonies. First, they recommended research into the relationship between rust and animal and chemical manures, and the value of steeps in rust prevention or control. Second, they recommended an investigation of the relationship between rust and the methods of cultivation employed, drainage techniques, and the varieties of wheat sown. Third, they recommended an investigation of the value of burning infected straw, and of sowing and reaping at different times of the year. Finally, they recommended a study of intermediary hosts, and of the effects of climate on the outbreak of rust.<sup>98</sup>

The Conference was held in May 1890. In the following month, in an address to the Conference of Agricultural Societies, F.B.Kyngdon advised the formation of Committees within the Societies to test the value of rust-resistant wheats, of different techniques of seed-bed preparation, of the efficacy of steeps, and of the value of different methods of destroying the fungus both on the growing crop and in stubble.<sup>99</sup>

A study of the findings of the Committee at the Intercolonial Conference, and of the advice of Kyngdon to the Agricultural Societies, indicates clearly that there remained, even in 1890, much uncertainty concerning the nature of the rust fungus, its life-cycle, and its method of infecting the wheat plant. It was still believed, for instance, that rust over-summered in the teleutospore stage in Australia, as it did in Europe: hence the emphasis on intermediary hosts. It was yet to be

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<sup>98</sup> Ibid., loc. cit.

<sup>99</sup> "Rust in Wheat", A.G. 1890, I, 73-74.

realised that the principal means of survival of the fungus in this environment lay, in fact, in the a-sexual propagation of the red spores. There remained too a stubborn hope that treatment of the seed with some kind of pickle - a method which had proved successful with bunt - might yet prove a success in the fight against rust.<sup>100</sup> Though much of the advice given to farmers was basically sound, it was founded overwhelmingly upon practical experience with little knowledge of the underlying principles. There was evidently a fundamental need for the compilation of a body of information dealing exhaustively with all the known facts relating to the disease and its incidence in Australia. In addition to his numerous other duties this work was undertaken by the pathologist of the New South Wales Department, Dr. N.A. Cobb.

In his "Contributions to an Economic Knowledge of Australian Rusts", Cobb sought to dispel many of the illusions then prevailing with regard to the disease. He stressed that the solution to the problem would not be made overnight, and was certainly "not the work of a day, nor of a month."<sup>101</sup> He confessed that much had yet to be learned about the disease but encouraged farmers to continue experimentation with new varieties and different methods of culture, since "Even a blind hen finds a kernel now and then."<sup>102</sup> Cobb was adamant, however, that experiments with seed-steeps should not be continued. "Rust does not attack the seed except in

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100 The bluestone pickle for bunt prevention was, by this time, giving way to the Jensen hot-water treatment. See "The Hot-Air Treatment of Bunt or Stinking Smut", A.G., VII, 1896, 82.

101 Cobb, N.A. "Contributions to an Economic Knowledge of Australian Rusts", A.G., 1890, I, 185. Hereafter cited as Cobb, "Contributions".

102 Ibid., loc. cit.

rare cases", he declared, "and has never been known to enter the seed while in the soil ... "<sup>103</sup>

Cobb recognised that one of the principle lines of attack must be the selection and improvement of rust-resistant wheat varieties. Yet he also saw clearly that this approach would inevitably be seriously complicated by the problem of wheat nomenclature and the difficulty of keeping seed-wheat true to name. He therefore emphasised the need for cleanliness in farming operations, and the need for a uniform system of wheat nomenclature throughout Australia.<sup>104</sup> It was largely as a result of Cobb's efforts that the Wheat Nomenclature Committee was formed, and the work of identifying and describing true wheat varieties grown in Australia was started.<sup>105</sup>

Cobb's work on the rust fungus has unfortunately been overshadowed by the far greater attention given to William Farrer, the pioneer wheat-breeder. He has been somewhat unfairly criticised by Farrer himself, and by Farrer's biographer, Archer Russell.<sup>106</sup> The criticism rests largely

<sup>103</sup> Cobb, "Contributions", A.G., 1892, III, 183.

<sup>104</sup> Cobb, "Contributions", A.G., 1893, IV, 503-505.

<sup>105</sup> "Rust in Wheat", Report of the 3rd Intercolonial Conference, A.G., 1892, III, 226. The first significant step in this work was published in 1893 when Cobb described 90 varieties of wheat. See A.G., 1893, IV, 431. For the importance of this work to the wheat-breeder see A.G., 1892, III, 484. See also Cobb, N.A., "The Hardness of Grain in the Principal Varieties of Wheat", A.G., 1896, VII, 279.

<sup>106</sup> Except at the time of his earliest contact with Cobb, Farrer was never complimentary to his work. See, for instance, his criticism of Cobb's nomenclature plots and stud plots at the Wagga Experimental Farm, "Report of the Wheat Experimentalist", NSWLA, VP, 1899, III, 764. See also Russell, A., William James Farrer, 60-68, (Melbourne, 1949). This biography of Farrer, though useful, is over-generous to a degree, and many of the "visionary" qualities conferred upon him were commonplace knowledge.

upon Cobb's insistence that work upon stem rust should not overlook the importance of the other major rust fungus in Australia, the spring or leaf rust. Yet, it is clear, that as early as 1894 Cobb was under no illusions about which of the two was most destructive. "The decisive struggle between the rust and the crop", he declared, "takes place on the stalk."<sup>107</sup> Even if Archer Russell is correct in supposing that Cobb over-emphasised the importance of leaf rust, and that this set Farrer on the wrong track, there seems to have been ample justification for this "mistaken pathological approach" since of the samples sent to Cobb for investigation the majority were invariably infected with leaf rust.<sup>108</sup> In one respect, at least, and a most important one, Cobb's scientific approach to the problem far outstripped that of the technician, Farrer: Cobb was convinced, as early as 1892, that the principal means of rust infection in Australia lay in the a-sexual propagation of the uredospores. He wrote:

During the past two years it has been proved that the wheat rusts existing in the uredo stage all the year round in Australia, either on self-grown wheats, oats, barley, etc., or on certain grasses, and there can be no doubt that the uredospores thus originating are one of the chief sources of infection.<sup>109</sup>

The originality of Cobb's assertion has been completely overlooked. It was not, as Large has said, "generally accepted" in Australia that rusts existed in both the teleutospore and uredospore stages throughout the year,

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<sup>107</sup> Cobb, "Contributions", A.G., 1894, V, 248.

<sup>108</sup> Farrer's concentration upon leaf rust followed the visit of Cobb to Farrer's farm at Lambrigg in December 1891. In the previous March Cobb had examined 97 samples of rusted wheat, of which 94 were infected with leaf rust. See Cobb, "Contributions", A.G., 1890, I, 214.

<sup>109</sup> Cobb, "Contributions", A.G., 1892, III, 186.

and it was certainly barely suspected that the red spores might be a primary source of infection.<sup>110</sup> Cobb's work, in this regard, in fact, actually received a set-back from Farrer in 1898 when the now-influential wheat-breeder declared his support for the views of the Swedish Professor Erikssen. After investigating the incidence of rust in Sweden, Erikssen concluded that infection of the plant was, very largely, the result of "a disease within the cereal itself, which disease may in many cases be inherited through the seed from the parent plant, in which it leads a latent symbiotic life as mycoplasma."<sup>111</sup> His own observations, Farrer said, tended to support this view.<sup>112</sup>

Cobb's work on wheat, as well as his other pathological investigations, was not confined solely to a theoretical account of the major disease affecting the plant. Under his direction small plots of all the wheats available in Australia were cultivated and, by "eliminating many duplicates hitherto cultivated in the different colonies under different names", the number of true varieties had been reduced by 1892 from 600 to 375.<sup>113</sup> Under his direction, also, the Department enlisted the assistance of private farmers - among them William Farrer - to raise seed-wheat

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<sup>110</sup> Large, Fungi, 298.

<sup>111</sup> Erikssen, J., "General Review of the Principal Results of a Swedish Research into the Rust of Cereals" in "The Making and Improvement of Wheats for Australian Conditions" by Farrer, W., A.G., 1898, IX, 251-259, hereafter cited as Farrer, Making and Improvement.

<sup>112</sup> Ibid., passim. Footnotes to Erikssen's paper.

<sup>113</sup> "Report of the Department of Agriculture", 1892. NSWLA, VP, 1893, II, 951.

of a reliable quality and variety. Seeds intended for commercial distribution were given to the farmers, but no other financial aid was afforded. All except one of those engaged in the production of seed grain in 1893 found that the work was profitable.<sup>114</sup> Largely as a result of Cobb's enthusiasm, and his insistence upon the importance of maintaining type and quality in seed-grain, a large number of requests were made annually for seed to be used for experimental purposes by individual farmers, and in the season 1894-95 some 2,000 packages of seed were distributed.<sup>115</sup>

At an early stage in the history of the Department Cobb, and the chemist Guthrie, showed a keen interest in the work of a private farmer, William Farrer of Lambrigg, Queanbeyan. Farrer had been attracted to the problem of rust in wheat following a newspaper controversy on the subject in 1882.<sup>116</sup> In 1886 he resigned from his post as a licensed surveyor to concentrate his attention upon the improvement of the wheat varieties sown in Australia. His first experimental work was started in that year, and until 1888 he was engaged in collecting information in regard to the particular qualities of a large number of wheats acquired from all over the world. In 1889 he made his first break with the standard method of improvement by selection by attempting to cross-breed from two different

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<sup>114</sup> "Report of the Department of Agriculture and Forests", 1893, Pathologists report, NSWLA, VP, 1894, III, 1052.

<sup>115</sup> "Report of the Department of Agriculture and Forests", 1894-95, Pathologists report, NSWLA, VP, 1895, IV, 1106.

<sup>116</sup> Farrer, "Making and Improvement", A.G., 1898, IX, 131.

varieties.<sup>117</sup> From this point Farrer's cross-breeding expanded rapidly as he began to develop a clear-cut system for the organisation and annotation of his work. Although his goal was to produce rust-resistant varieties, Farrer soon realised that other variables in the wheat plant would have to be considered if he was not to waste time on wheats which, though possessing rust-resistant qualities, were inferior in other respects.<sup>118</sup>

Farrer, however, had neither sufficient knowledge nor adequate equipment to test these other variables for himself, and shortly after the creation of the Department of Agriculture he wrote to the Director seeking professional assistance in his undertaking. In this letter Farrer asserted his belief that varieties of wheat might be bred in which the gluten content of the grain was greatly enhanced. He suggested a series of analyses of different wheats in order to decide which had the greatest gluten content and the highest value to the millers; these wheats only would be used in his cross-breeding experiments. He also recommended an investigation into the best time for harvesting grain; if cutting in the dough stage was preferable, he pointed out, then he could ignore the problem of shelling.<sup>119</sup>

<sup>117</sup> Ibid., 132. Though the first to experiment with cross-bred wheats in Australia, Farrer was not the first in the world: in 1888 Dr. W. Saunders, Director of Experimental Farms in Canada, had started cross-breeding. See Large, Fungi, 304.

<sup>118</sup> Farrer, "Making and Improvement", Ibid., 132-133.

<sup>119</sup> The Director's comments, and a paraphrase of the letter itself, are in A.G., 1891, II, 452. See also Russell, Farrer, 60-61.

Farrer's request for aid received immediate response. Cobb, together with two assistants, spent five weeks with Farrer at Lambrigg, during which time the pathologist began his valuable work on identifying true wheat varieties.<sup>120</sup> Guthrie, the Departmental chemist, began the long series of analyses of Farrer's wheats which were to prove so time-saving to the little-experienced, though enthusiastic, wheat-breeder. In both Cobb and Guthrie Farrer found immediate support for his plans to "make" wheats. In 1892 Cobb wrote in his "Contributions" that cross-breeding had "often been advocated" as a means of up-grading the quality of wheats. He continued:

In this connection, mention of the name of Mr. Wm. Farrer of Lambrigg, Queanbeyan, New South Wales, will excite no envy. Mr. Farrer had taken the matter up enthusiastically, and in the season 1891-92, having under cultivation no less than 130 varieties of wheat, made no less than 1,500 crosses ... Work of this sort, carried on thus vigorously, bids fair to become a national benefit.<sup>121</sup>

For two years much of the work done at Lambrigg, particularly on wheat nomenclature and the identification of varieties, was under the direction of Cobb. By 1894, however, Farrer was working alone: "Mr. Wm. Farrer", Cobb wrote in his annual report, "has had entire charge of the wheat sown at Lambrigg, and the entire results ... are due to his well-known aptitude in, and enthusiasm for, this work."<sup>122</sup> Cobb's continued

<sup>120</sup> "Report of the Department of Agriculture, 1891", Pathologists Report, NSWLA, VP, 1892-93, VIII, 677.

<sup>121</sup> Cobb, "Contributions", A.G., 1892, III, 185.

<sup>122</sup> "Report of the Department of Agriculture 1894", NSWLA, VP, III, 1894, 1052.



support of Farrer's efforts, though not graciously received, is evident from this report by the Director in 1895:

The sowing and selecting of these cross-bred wheats requires considerable time each year, but Dr.Cobb is of the opinion that the time is well spent. So far as I know no such extensive or systematic crossing of the various wheats has ever been made, and it is possible that, by selection from among the large number of crosses that are available through Mr.Farrer's efforts, some valuable varieties of wheat may yet be produced.<sup>123</sup>

Despite the hint of impatience in this report, the early 1890's were years of considerable progress. Thanks largely to Cobb, emphasis was at last being placed upon the importance of pure seed wheat and true varieties, and as the varieties became better known so Farrer was enabled, with more certainty, to predict the outcome of his many experiments with cross-breeding. In addition, Farrer's samples were being examined for milling qualities by Guthrie, and the orientation of Farrer's work was showing definite tendencies to breed for milling and baking qualities as well as for rust-resistance. Guthrie was able to show that the popular wheat varieties in New South Wales tended to be soft, easily-milled, and to give flour of a coveted whiteness. On the other hand, however, it was also made clear that these wheats were deficient in gluten and flour-strength, that their nutrient value was consequently very low, and that they were all prone to attack by rust. It was very largely by the pen of Guthrie that the battle for the acceptance of harder wheats with a higher nutrient value and better disease-resisting qualities was waged. It was Guthrie's

analyses that demonstrated to a stubborn milling industry the practicability of using hard wheats and the advantages to be gained from their higher flour-yielding capacity. He addressed himself, too, to the farmers. In the selection of the most suitable varieties, he declared, one of the most important points - and perhaps the most important point - to consider was the suitability of the grain for milling purposes, for, "unless the harvest can be satisfactorily disposed of, it is of little moment whether it is early or late, rust-proof, or prone to disease."<sup>124</sup> There can be little doubt of Guthrie's influence on Farrer, and when the latter eventually joined the Department in 1898 as wheat experimentalist his duties were to consist primarily of "making and breeding new wheats with a view to improving the strength of flour ... "<sup>125</sup> The milling industry which, as late as 1896, had been a "prominent obstacle" to the adoption of harder wheats also showed clearly the influence of Guthrie's persuasive pen: by 1900 the chemist could write:

As a result of the consistent advocacy by the Department of the production of strong-flour wheats, it is satisfactory to note a considerable change in the attitude of millers and wheat-growers towards this class of grain ...<sup>126</sup>

Despite the many thousands of crosses made by Farrer over the 1890's, however, it is doubtful if this aspect of his work had very much signifi-

<sup>124</sup> "Notes on the Milling Qualities of Different Varieties of Wheat", A.G., 1895, VI, 159. See also "Further Notes ... " in A.G., 1897, VIII; 1901, XII; 1896, VII.

<sup>125</sup> "Report of the Department of Agriculture", 1898, NSWLA, VP, III, 716.

<sup>126</sup> For stubbornness of millers, see for instance, "Rust in Wheat Conference", A.G., 1895, VI, 438 ... For Guthrie's note on the improving situation see "Report of the Department of Agriculture", 1900. Chemist's Report, A.G., 1901, XII, 902.

cance for the average farmer in the colony. Even in 1899 the most popular wheats were the older well-tried varieties. Purple Straw and Steinwedel were the most common in the rapidly expanding wheat-growing areas of the southwest; both were drought resistant, but were weak flour types and were highly liable to rust attack. A cross-bred variety, with Steinwedel as a parent, which Farrer chose to call Steinlee, seems to have offered the earliest indication of success in practical, commercial, terms. It had been introduced into South Australia in the mid-1890's and by 1899 Farrer claimed it was "beginning to be grown there on a large scale."<sup>127</sup> In New South Wales, however, the wheat experimentalist's name was most closely associated with an American selection he had introduced, Blounts Lambrigg, and a sport from this variety known as Early Lambrigg which Guthrie proclaimed to "yield a flour of phenomenal strength, with a very high gluten content, and by no means so bad a colour as usually accompanies such a percentage of gluten."<sup>128</sup>

The first breakthrough for Farrer came in 1898 as a result of his cross-breeding experiments with the strong-flour, late-maturing Fife wheats, and the early maturing, and therefore rust-escaping Indian wheats. In his "Milling Notes on the Lambrigg Harvest 1897-98", Guthrie wrote:

The present batch of results will be of interest to those who have followed this work for two special reasons. In the first place, it represents very clearly the success Mr. Farrer is having in this breeding of strong-flour wheats suitable for growing

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<sup>127</sup> For descriptions of Steinwedel and Purple Straw see Farrer, W., "Notes on Some of the Wheats Which Are in General Cultivation in New South Wales", A.G., 1899, X, 410-411. For Farrer's note on Steinlee see page 411.

<sup>128</sup> Guthrie, "Further Notes...", A.G., 1897, VIII, 757.

in Australia. The wheats examined include a large number of cross-bred wheats between strong-flour wheats on the one hand -- which are often of low colour and are too late for successful cultivation in the dry districts -- and on the other wheats which possess good flour colour and are early enough for our climate, but are generally of low strength. The batch named 'Fife-Indians' are specially noteworthy in this connection. The results are not strictly regular but they show a marked improvement in the matter of strength, and in many cases equal improvements in other good milling qualities... If Mr. Farrer succeeds in finding half-a-dozen or so of these high-class strong-flour wheats which will suit the requirements of the different districts in the colony, he will have done more than anyone has yet thought possible.<sup>129</sup>

Samples of the more successful Fife-Indians, together with a selected wheat from Blounts Lambrigg, which Farrer named Bobs, a new variety Federation, and several older varieties were sent to Saddleworth, South Australia on the request of a Mr. F. Coleman. At the end of the harvesting season, Coleman wrote to inform Farrer that "These wheats have attracted the attention of several farmers and members of the local Agricultural Bureau; three or four in particular have been especially admired, viz., 'Bobs', 'Plover', 'Field Marshall', and 'Federation'."<sup>130</sup> Coleman considered Bobs to be the finest wheat, and indeed this variety, after

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<sup>129</sup> Guthrie, F., "Milling Notes on the Lambrigg Harvest 1897-98", A.G., 1899, X, 902.

<sup>130</sup> "Experimental Wheats", A.G. 1902, XIII, 386-388.

being propagated at the Bathurst experimental farm over 1901 became Farrer's first commercially successful wheat.<sup>131</sup> In a note at the end of Coleman's letter, published in the Agricultural Gazette in 1902, however, Farrer gave the first public information on the new variety, Federation. It was he said, the result of a cross between Purple Straw and a Fife-Indian wheat known as Yandilla. The yield from one-fifth of an acre of Federation sown at the Wagga experimental farm had been 29 bushels. The variety yielded a high percentage of flour of a good colour and texture, and of a higher strength than Purple Straw wheats. Since it ripened as early as Steinwedel, and was more rust-resistant, and less liable to shelling "it is possible that it may replace that variety with advantage as a producer of grain, but the shortness of its straw unfits it for a hay wheat."<sup>132</sup> In fact, Farrer had overlooked one of the most significant qualities of his new cross-breed: the short, stiff, straw made Federation an extremely easy wheat to harvest with the stripper and gave a high degree of tolerance to strong winds and storms. These qualities, combined with its prolific yields rapidly found favour with colonial farmers. By 1906 it had become a "favourite with both farmers and millers".<sup>133</sup>

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<sup>131</sup> Farrer believed Bobs to be a successful cross of Blounts Lambrigg and Nepaul or skinless barley. This, of course, was impossible and, although Farrer disapproved of selection to improve wheats there is little doubt that Bobs was a selection of Blounts Lambrigg. For Farrer's view see A.G., 1902, XIII, 388; and "Notes on the Wheat 'Bobs'; its Peculiarities, Economic Value, and Origin", A.G., 1904, XV, 849.

<sup>132</sup> "Experimental Wheats", Ibid., 388.

<sup>133</sup> Guthrie, F., "Descriptive Notes on Typical Varieties of Wheat Grown in New South Wales", A.G., 1906, XVII, 1187.

CONCLUSIONS

Unfortunately Farrer did not live to see his Federation wheat dominate the paddocks of New South Wales. The influence of this variety on the wheat frontier before 1910 was probably not very great; its drought-resistant qualities and its high yields, however, gained rapid favour for another decade and was succeeded as the premier wheat variety only in 1929.<sup>134</sup> Farrer had not lacked eulogists, and it is not proposed to add further to an already substantial collection of works on the qualities and character of Australia's first wheat-breeder. For the purposes of this study, the significance of William Farrer, Guthrie and Cobb, lies less in the practical results of their work -- which was only just beginning to be appreciated -- and more in the timing of their ideas. For this timing, indeed, was symptomatic of the great expansion of interest in the wheat-growing industry which occurred after 1880. It was, to no small extent, a result of this expansion in the first instance, and a realisation that more could yet be done under the auspices of a central government authority. Once the work was underway, its importance in directly influencing an industry in many respects still backwards increased steadily. It was yet another aspect of the growing concern for agriculture which stemmed inevitably from a growing appreciation of the value of the industry in both social economic terms, and as such it was a significant element in the revolution which transformed the character of wheat farming in New South Wales after 1880.

In some respects this revolution appears to have been a sudden

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134 Dunsdorfs, Wheat-growing, 194. Unfortunately there are no statistics of area sown to particular varieties before the 1920's.

process. In reality, however, it had been gestating since the 1870's when the first advances in harvesting techniques began to characterise the wheat paddocks of the southwest. The capitalisation of the industry nevertheless seems to have gathered impetus over the 1890's, partly no doubt because of the growing interest of pastoralists in the commercial production of grain. The actual process of capitalisation though is a difficult one to tie down. Basically it would seem to have been dependent upon the new marketing facilities created by the extension of the railways.<sup>135</sup> Once this condition had been met farmers were able to expand the area under crop, which both required and permitted the more extensive use of machinery. Comparing farming operations in 1902 and 1916, E.Facey outlined the advantages to be derived from increasing mechanisation on the farm:

In 1902, the year I started, I drove the plough myself and put down a man's wages at 25/- a week and 10/- a week for keep, for 12 weeks -- £21. That does not include fodder because I think that is equal for both years. The cost of plant that year was £125 and allowing 10 per cent for depreciation that is £12.10.0. Twelve weeks ploughing and sowing, averaging 20 acres per week, comes to £34.10.0., at 2/10½ per acre. In 1916, one man's wages for twelve weeks at 35/- per week, food at 17/6d per week -- twelve weeks at £2.12.6d equals £31.10.0. Six horses at £25 each, £150; harness at £3 per head, £18; plough, £40 -- that is, £208 for plant, which at 10 per cent depreciation means £20.16.0. ... But this man, with a six horse team did 300 acres. That works out at 3/6d an acre which shows an increase of 8½d an acre on the cost of putting in, but as a set off 60 acres more crop was put in through our better system of farming.

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See below Chapter VIII

I am not quoting drilling in this at all, because if we drill we get the advantage in the saving of the seed and the better crop; so that the old system of harrowing was actually the costliest although the cheapest for money. In the 1902 harvest I stripped with a winnower with two men and myself. Three men at 6/- a day for four weeks, with 10/- a week for keep amounts to £27.12.0. That man makes a total of £35.12.0. for 240 acres at 3/6½d per acre. In 1916 I had two men with an 8 foot harvester, at 10/- a day for four weeks, with food at 17/6d a week -- £31. Ten per cent depreciation of harvesters is £14 -- total £45 for 300 acres. That works out at exactly 3/- per acre, so that I find that harvesting today is 6½d less than it was in 1902. Extra expense of putting in the crop this year, £10.2.6d, is nearly counter-balanced by the lesser charge of taking it off, £8.2.6d, but against that the farmer has 60 acres more crop.<sup>136</sup>

It is unlikely, of course, that the revolution in agricultural techniques had reached all districts and all farmers even by 1910, but the strides taken in the capitalisation of the industry and in the improvement of farming practices and the appreciation of farming as a practical science had already progressed far enough to lift the industry well clear of the slough in which it had wallowed for a century. By comparison, the events of the post-1880 era had indeed been revolutionary.

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<sup>136</sup> "Commission on Share-farming", NSWPP, 1917-18, I., Evidence of E.Facey.



CHAPTER 8COMPLETING THE PATTERN

When I came here before the railway, speaking from memory there were 5,600 acres under cultivation in what was then the police patrol, which extended to Trundle and various other places. Over the same area now I estimate there are 150,000 acres. That has come very largely as the effect of railways on the development of the district.

"Commission on Share-Farming", NSWPP, 1917-18.  
Evidence of Henry Bowditch, journalist, Parkes.

Many factors contributed towards the rapid expansion of wheat farming after 1880. There existed, of course, a substantial market for wheat on the densely settled east-central coast. Beyond that there lay the rapidly growing market of Western Europe. Yet these same markets had existed for decades without eliciting the kind of response that was shortly to transform the rural economy of inland New South Wales. This response, therefore, must have rested largely upon changing conditions within the colony itself and within the wheat-growing districts. The desirability of an expanded wheat industry, in fact, was determined to a considerable extent by the declining profitability of sheep-rearing after 1890, and the consequent urgent need for pastoralists to seek an alternative and higher return on their fixed investments. They did this by growing wheat, either for themselves or on a share-farming basis. At the same time, government policy with regard to the alienation and leasing of

land encouraged the rationalisation of holdings which changing economic circumstances was making simultaneously acceptable. Hand in hand with the decline in exclusively pastoral estates, therefore, was a tendency towards the enlargement of smaller properties under a series of Closer Settlement Acts which enabled the development not only of wheat farming on a larger scale, but also of wheat/sheep combinations. Contemporaneously, technical conditions within the wheat-growing industry were also changing, due in part to an increasing appreciation of the scientific bases of agriculture, and also due in part to the increasing participation of former pastoralists with access to more substantial capital.

Yet if this brief review explains to a considerable degree the reasons behind the desirability of expanding wheat production, it does not wholly explain how such an increase came to be possible, and it does not explain the locational pattern which emerged in the industry after 1880. For with regard both to the feasibility of a rapid growth in wheat production and to its location, the most important and most basic single influence was undoubtedly an intensifying rail network. The addition of new lines probing further west, together with the "filling-in" of the open spaces between the trunk lines, progressively removed the dependence of the wheat farmer upon essentially local markets, and permitted the unrestricted rise of a viable alternative to the raising of wool. In consequence, therefore, one of the most remarkable features of the emerging wheat "belt" in New South Wales after 1880 was its increasing degree of dependence upon railway transport.

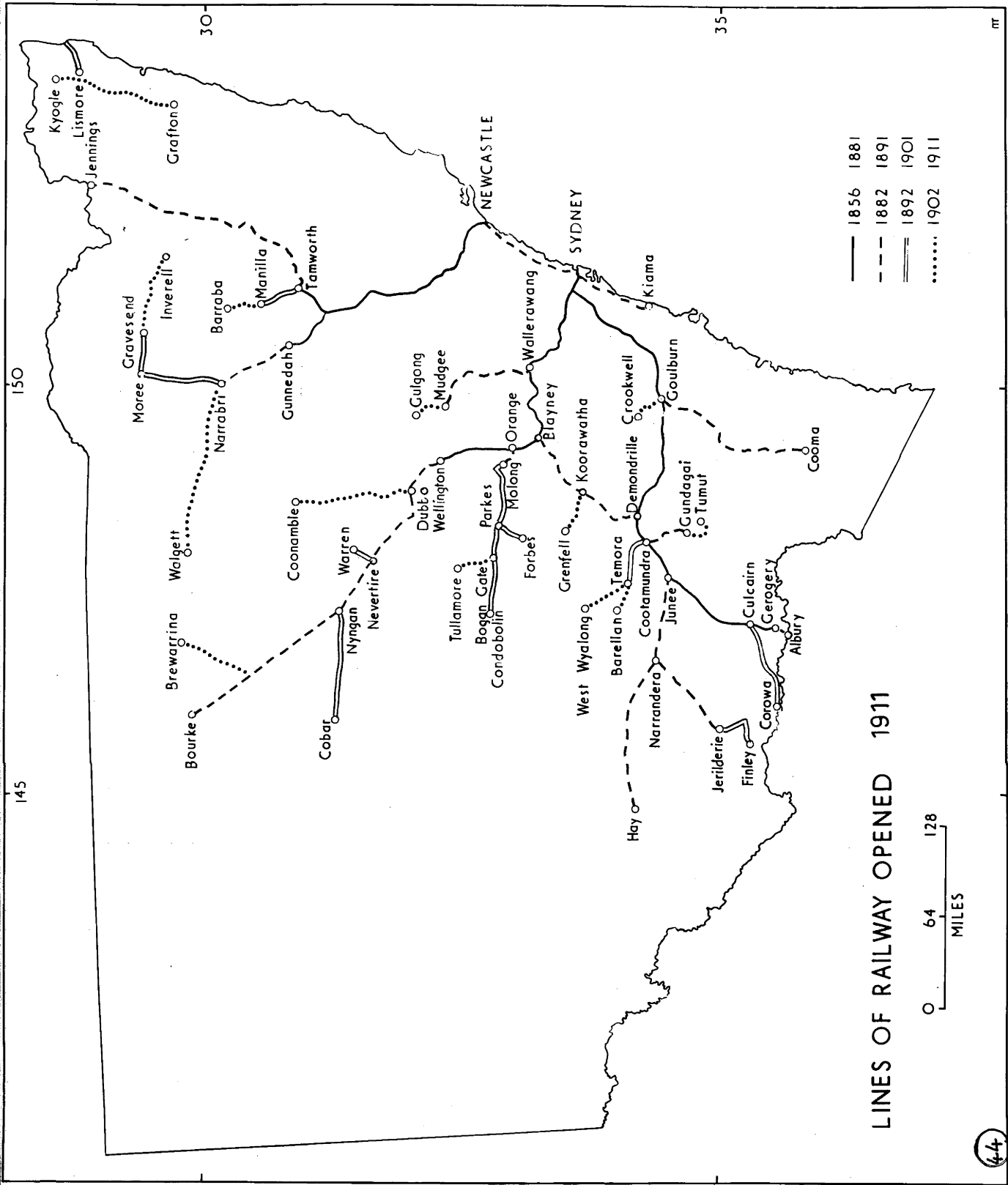
In considering the ever-growing influence of the railways over this period, three issues seem of major importance. The first of these concerns the overall policy of the government with regard to railway construction. It was a policy, above all, dominated by the general depression which persisted throughout the colony in the 1890's and the early 1900's, and it was a policy therefore largely dictated by considerations of finance and revenue. The second issue of importance is closely allied to the first, and concerns the more specific problems facing the government in choosing which lines to build and in deciding on the criteria against which to make this choice. The third, and for present purposes the most important issue, is the effect on the wheat frontier of those lines which were eventually constructed.

#### RAILWAY POLICY AFTER 1880

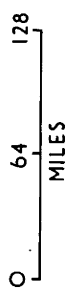
The linking of the New South Wales and Victorian railway systems at Albury in 1883 marked the closing stages of the trunk building era. In retrospect, and despite the shaky and unwilling start and the persistent scepticism in influential circles, the achievement was considerable. Compared to South Australia and Victoria, the older colony had faced and overcome peculiar physical difficulties in the improvement of communications facilities. Because of its peninsula character South Australia had, from the first, enjoyed the advantage of relatively easy access to the sea; her roads and later her railways were short and direct, serving numerous small ports along an extensive coastline.<sup>1</sup> Victoria, though less

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<sup>1</sup> For an account of railway building in South Australia see Meinig, The Good Earth, 124-157.



LINES OF RAILWAY OPENED 1911



- 1856 1881
- - - 1882 1891
- ≡ 1892 1901
- ..... 1902 1911

The policies which were to govern railway building after 1888 were largely worked out by the end of the decade. Four major aspects of these policies should be noted. First, and of singular importance, it was determined that all proposed railway lines should be capable of earning profit. The sole exception to this basic maxim was in the case of lines with over-riding strategic importance.<sup>3</sup> The remaining aspects of the new policy were designed to ensure that the railways would indeed pay. In place of the heavy lines which had hitherto been standard, the government introduced what came to be known as "Pioneer" railways: these consisted of light lines and light locomotives allied to minimum expenditure on permanent way and facilities.<sup>4</sup> A more novel feature was the introduction of the "betterment principle" whereby assistance in the cost of construction was sought from the residents of the districts to be served. "Betterment" schemes, based on the argument that the nearness of a railway invariably increased the value of adjacent private property, not only saved money for the government but were also seen as a test of the sincerity of those districts seeking railway connection with the main network.<sup>5</sup> In detail the different schemes proposed ranged from insistence on the free

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<sup>3</sup> Policy statement on Railways, NSWPD, 1888, 5362. The suggestion was extremely well received, see SMH, 8/6/88.

<sup>4</sup> Light railways had first been proposed in 1883 by the Stuart Ministry. See "Railway Proposals of the Government", NSWPD, 1883-84, 5406. The proposals went against the recommendations of the Engineer-in-Chief. See "Report of the Engineer-in-Chief on Light Railways", NSWLA, VP, 1889, V, 225.

<sup>5</sup> For the introduction of the "betterment principle" see "Report of the Railway Commissioners for 1891", NSWPD, 1894-95, 4537. This report also contains several alternative schemes for applying the principle.

grant of freehold land for railway building, to suggestions for graduated land taxes in the vicinity of the lines.<sup>6</sup>

The most effective check on indiscriminate expenditure, however, was the appointment of the Standing Committee on Public Works. The Committee was appointed under the Public Works Act of 1888 to investigate and report upon all proposed government expenditure on public capital formation. It was designed specifically to provide "the most substantial check upon misdirection of funds and extravagance", and it performed this function with remarkable diligence throughout the period.<sup>7</sup> Consequently, each projected railway was minutely examined, voluminous evidence was taken concerning the character and potential of the district to be served, and by its wholehearted adoption of the government's proposals for economy railway building was carefully controlled and maximum return for minimum investment was scrupulously sought. It is, therefore, against this general background of financial stringency that railway building after 1888 must be viewed.

### Choosing the Lines

Until 1880 railway building concentrated almost exclusively upon the construction of the three major trunk lines. The objectives of trunk line

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<sup>6</sup> See, for example, "Parliamentary Standing Committee on Public Works, Railway from Culcairn to Germanton", NSWLA, VP, 1900, V, 1103 et seq. Hereafter cited as PSCW. See also "PSCW, Railway from Bogan Gate to Bulbodney", NSWLA, VP, 1900, V, 1155; "PSCW, Railway from Tumut to Gundagai", NSWLA, VP, 1900, V, 405.

<sup>7</sup> For the formation and duties of the Committee see NSWPD, 1888, 2420. An amending Act in the following year extended the period of service of Committee from one session to a whole Parliament before re-election. See NSWPD, 1889, 1160.

construction tended to be general rather than particular: they were designed to replace the trunk roads of the colony as highways for merchandise of all kinds. If anything, they were viewed principally as a means of supplying the interior, rather than as avenues to the metropolis for the produce of the inland.<sup>8</sup> At the same time, the long term view of the eventual function of the railway, operating in conjunction with a liberal land policy, was beginning to be realised as each extension "as it is opened for traffic assists in developing the resources of the interior of the Country and promotes its settlement ...."<sup>9</sup>

Over the late 1870's and 1880's, therefore, there began to emerge a fuller appreciation of the role the railways were playing, and might play, in developing the formerly inaccessible interior. For the most part the wealth of the inland lay in its sheep population, located primarily on the rich lands of the slopes and in Riverina. But whereas formerly the vast trade in this pastoral produce was largely denied to Sydney as a direct result of the cheaper communications facilities to Victoria and South Australia, it was now beginning to be realised that this situation was no longer inevitable.<sup>10</sup> Railways could provide the means of competition which

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<sup>8</sup> Thus, the initial concessions on freight rates to residents of Riverina were made "to afford every reasonable inducement .... to obtain their supplies direct from Sydney." See "Correspondence on Railway Differential Rates", NSWLA, VP, 1888-89, II, 806.

<sup>9</sup> "Report of the Railway Commissioner for 1880", NSWLA, VP, 1881, IV, 18.

<sup>10</sup> Despite the fact that New South Wales had four times as many sheep as South Australia, and two and a half times as many as Victoria "the other colonies shipped three times as much wool .... simply because they had men at the head of their affairs who pushed on public works with vigour." See NSWPD, 1879-80, 204.

before had been so markedly lacking.

Over the 1880's, therefore, in addition to the completion of the trunk lines to the colonial borders in the north and south, a number of major branch lines were also constructed (Fig.45). The most important of these were the substantial forks on the northern and southern lines, designed specifically to counteract the attraction of alternative markets, and to draw the wool traffic onto the trunk lines while opening the interior markets to the Sydney merchants. In the north the task was not difficult for the competition here came from the uncertain river transport of the Darling system. In the south, on the other hand, competition with the Victorian railways was only resolved after a bitter and prolonged freight-rate battle.<sup>11</sup>

The new lines constructed over the 1880's, therefore, reflected a recognition of the changing potential of the colony to share in the wool trade of the interior. In addition to the completion of the northern branch to Narrabri and the southern branch to Hay, they included a line from Narranderra to Jerilderie bisecting the Riverina longitudinally and intended to siphon off the trade of the privately owned Deniliquin-Moama line. A second major fork from the Great Southern Line to the wool-rich Monaro at Cooma was also constructed, and a short line from Cootamundra to the high pastures of Gundagai was to serve as a starving-stock line to

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<sup>11</sup> See particularly "Correspondence on Differential Freight Rates", NSWLA, VP, 1888-89, II. See also Butlin, Economic Development, 360 and Smith, R.H.T., Commodity Movements in Southern New South Wales, (Canberra, 1962).



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BOURKE

NARRABRI

JENNINGS

MUJOGEE

NEWCASTLE

SYDNEY

HAY

GUNDAGAI

JERILDERIE

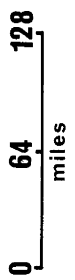
ALBURY

COOMA

KIAMA

# GOV'T RAILWAYS 1891

- Trunk lines
- - - Pastoral lines
- ..... General service lines



Source: Railway Reports

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better watered upland pastures. Over this period also the Great Northern Line was connected with Sydney, thus dispelling the complaint that its absence "not only lost ... the shipment of wool from Sydney, but ... lost the important traffic between the merchants and the squatters."<sup>12</sup>

It would seem clear that the major objective of additional railway construction throughout the 1880's was to secure a greater portion of the rich interior wool trade for Sydney. Agriculture, on the other hand, had not yet assumed sufficient significance to be a cause of railway construction. This, if Parkes is to be believed, applied even to the line from the Great Western Trunk at Blayney to the southern line at Demondrille, passing through the relatively rich farming lands of the Young/Koorawatha districts of the southwestern slopes, where selection had been considerable and where the existence of the southern trunk had already had a marked effect in stimulating wheat-growing.<sup>13</sup>

It would seem certain, therefore, that the extension of the rail system over the 1880's, in principle, had little or nothing to do with the existence of pockets of wheat-growing - by now relatively substantial - in the inland. By the close of the decade, however, the situation had started to change, and this change was accelerated over the 1890's as the pastoral industry lapsed into severe and prolonged depression. The decline of the pastoral industry over these years - a result of market conditions, drought,

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<sup>12</sup> Speech of Mr. McElhone on a motion to bring the northern districts into contact with the Sydney market. NSWPD, 1879, 202.

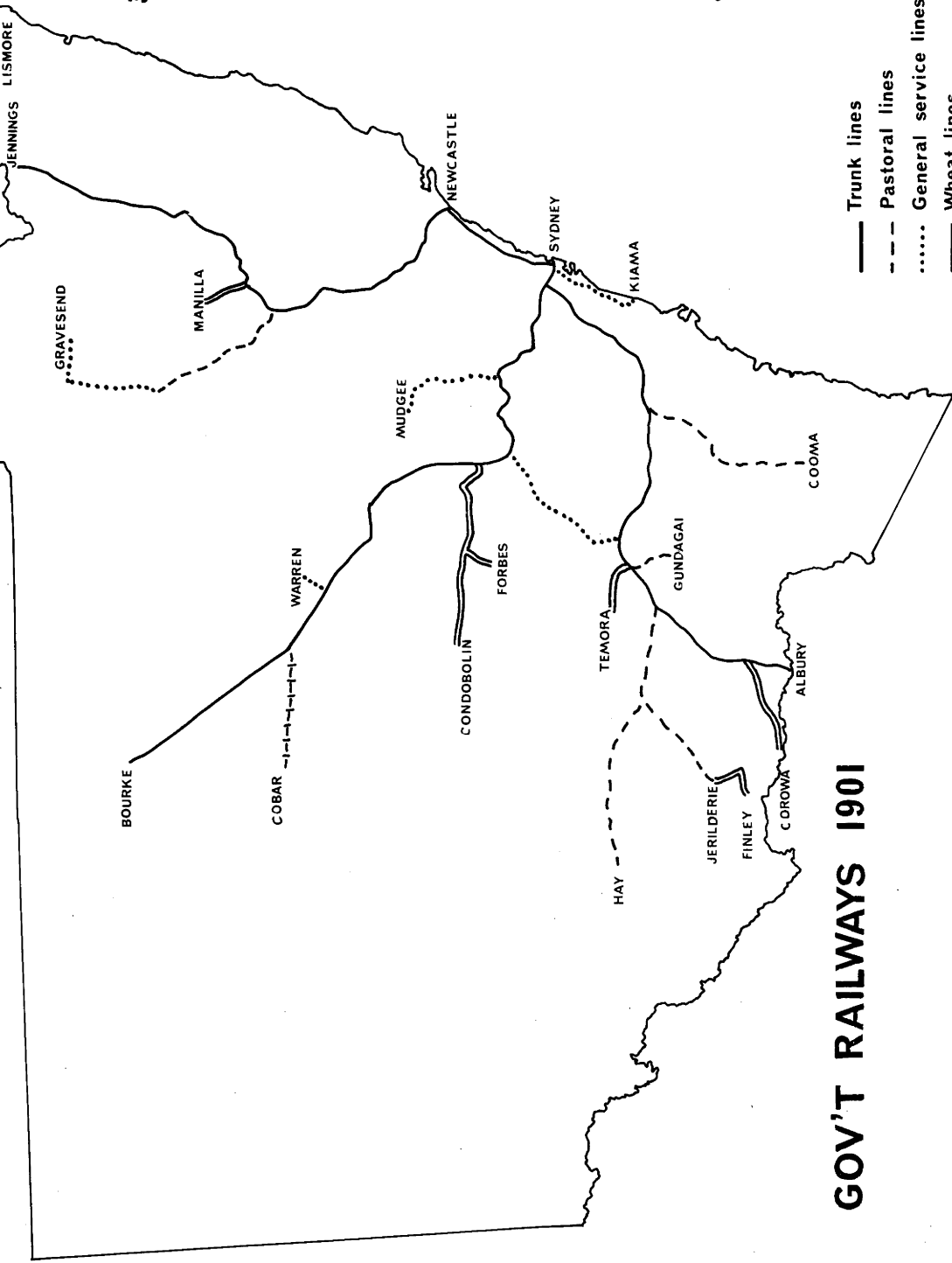
<sup>13</sup> See Fig. 48 below. See also NSWPD, 1880-81, 1156.

and the physical deterioration of stations due to overstocking and the depredations of rabbits - did not have its parallel in agriculture. On the contrary, the industry began to expand with great rapidity due to the participation of former graziers and the additional marketing prospects created by construction of the pastoral lines.

Over the 1890's, therefore, the railway builders had a rapidly changing situation with which to contend. Since the demands of the pastoral industry were less rigid than those of arable farming with regard to transport facilities, since the pastoral industry was also in decline, and since agriculture was greatly in the ascendent, it was inevitable that the criterion of railway building should switch from the demand and potential of wool traffic to the demand and potential of the new trade in wheat. In consequence, therefore, the lines constructed over the next two decades, and particularly on the western and southern systems, were designed in very large measure to cater to the demands of wheat farmers (Figs.46 and 47). It remains now to consider the processes of interaction between the expanding railway system and a wheat industry at last coming into its own.

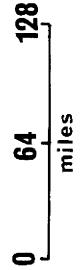
#### RAILWAYS AND THE WHEAT FRONTIER

After 1890 the new criterion of railway building, at least in the south and central west, was wheat-growing and wheat-growing potential. Wherever a railway could be reached, sometimes up to a distance of 45

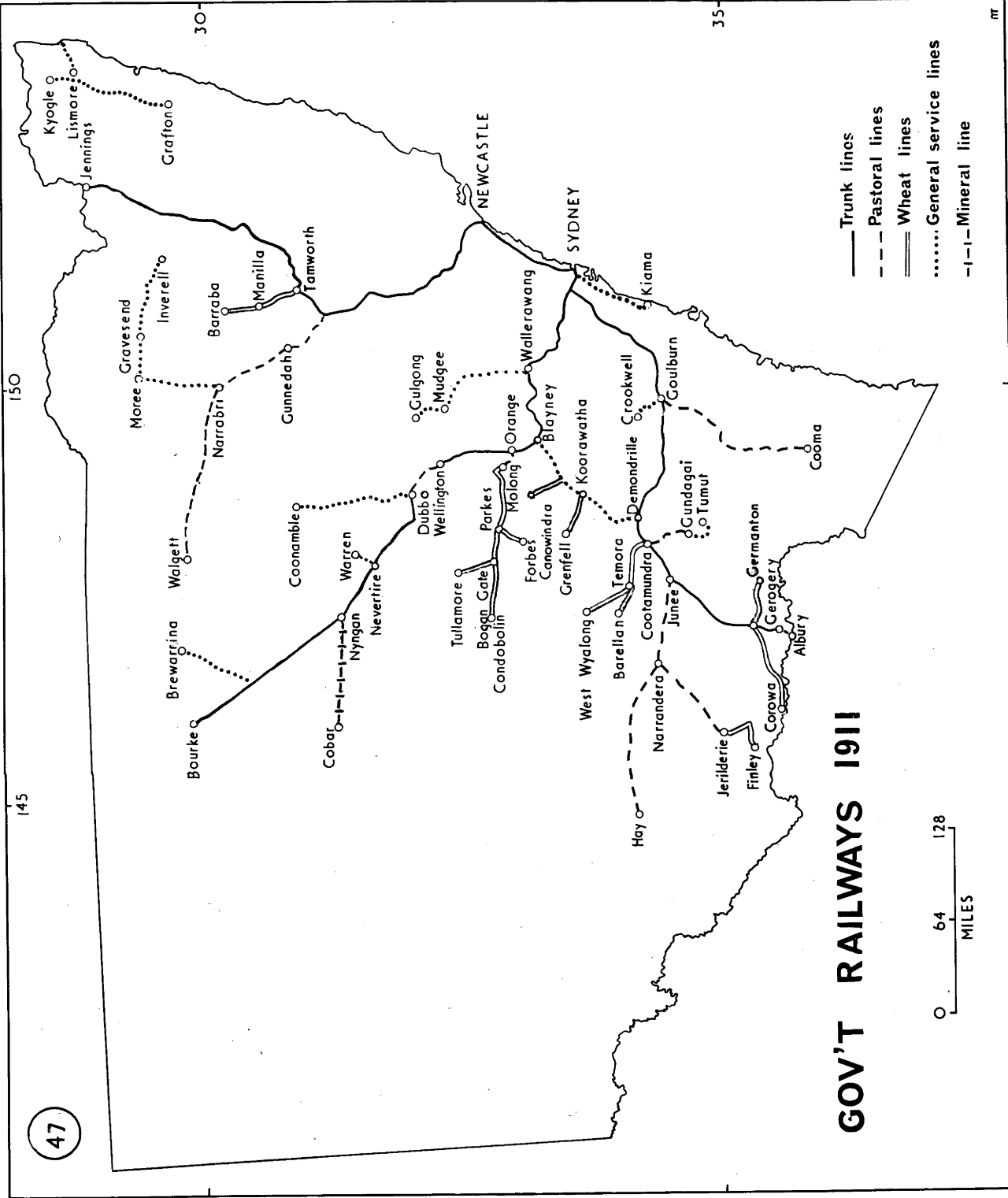


# GOV'T RAILWAYS 1901

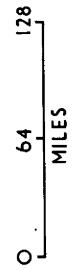
- Trunk lines
- Pastoral lines
- General service lines
- Wheat lines
- Mineral lines



Source: Railway Reports



# GOV'T RAILWAYS 1911



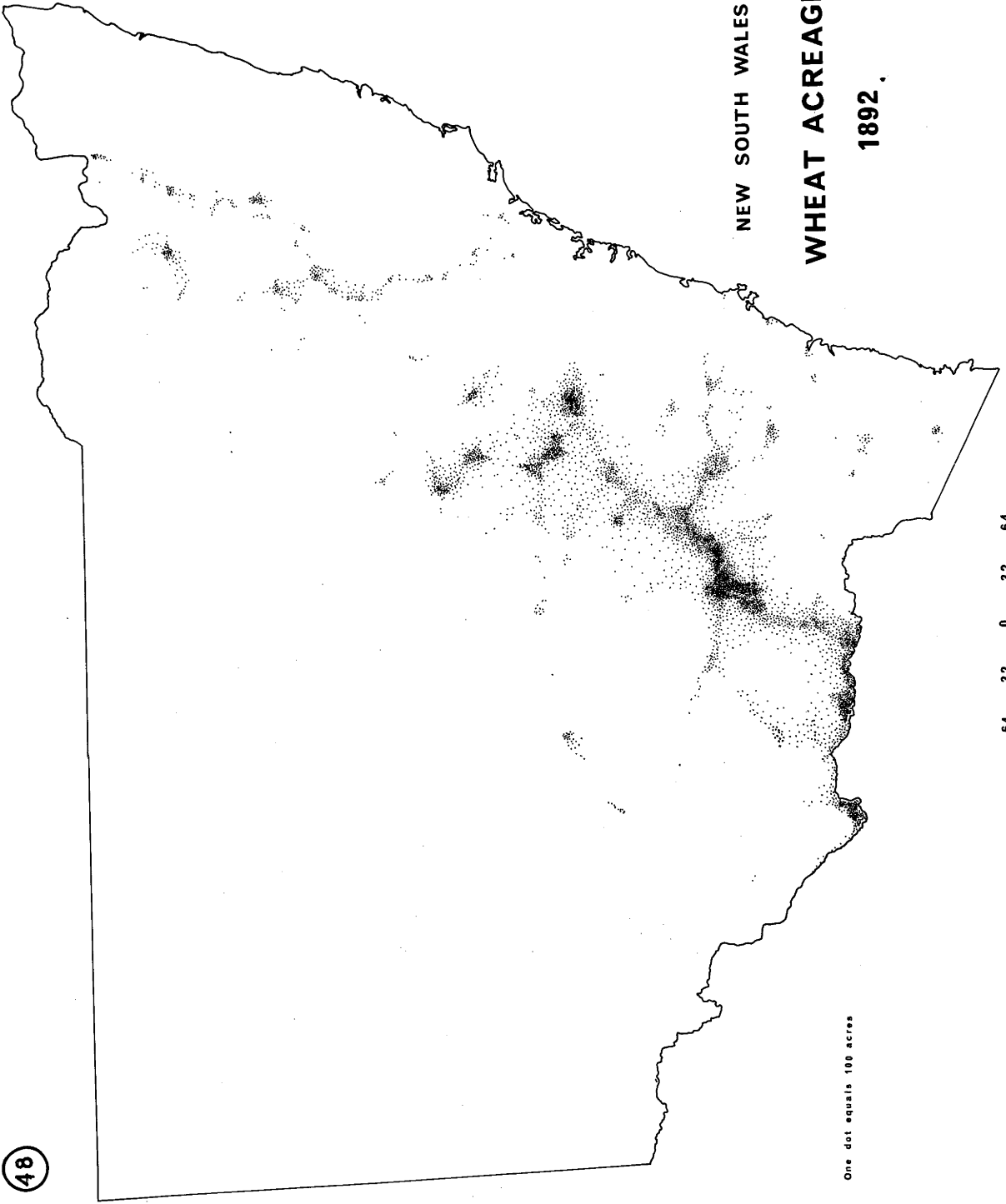
miles, land was going under the plough (Fig.48).<sup>14</sup> More land was being cleared in anticipation of railway development; districts like Corowa were said to have "shown more progress since the railway has been advocated than at any previous time."<sup>15</sup> The 1884 Land Act had opened large tracts of country which were formerly the exclusive domain of the pastoralist and prohibited through sheer distance from enjoying the returns of an expanding wheat industry. By 1890, however, with the extension of the pastoral lines, particularly in Riverina, and aided by rapidly improving techniques, more and more land was coming within viable reach of rail communication and export markets. Large estates in the vicinity of the lines were beginning to experiment with the sub-letting of wheat farms for cash rent or on shares. Asked if he would be prepared to let farms in the event of railway construction to his district, the owner of Wallbundry station replied, "To let or sell it, because there is only a certain return to be obtained from sheep, and a great more can be got from agriculture."<sup>16</sup> Some idea of the difference in the returns to be expected

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<sup>14</sup> It has been suggested that at this time wheat was carted from Hillston for a distance of 70 miles. See Andrews, J., "The Emergence of the Wheat Belt in Southeastern Australia to 1930", in Andrews, J., (Ed.) Frontiers and Men, 58. This is probably an over-statement. At Hillston itself the wheat-growing industry served only the local market, though within the Hillston "district" wheat was carried up to 40 miles to the railway at Carrathool. See "Report of H.A.Gilliat, Examiner of Public Works, Railway ... towards Hillston", NSWLA, VP, 1891, V, 599.

<sup>15</sup> "PSCPW, Railway from Culcairn to Corowa", NSWLA, VP, 1889, II, 385.

<sup>16</sup> Ibid., Evidence of W.Kiddle.

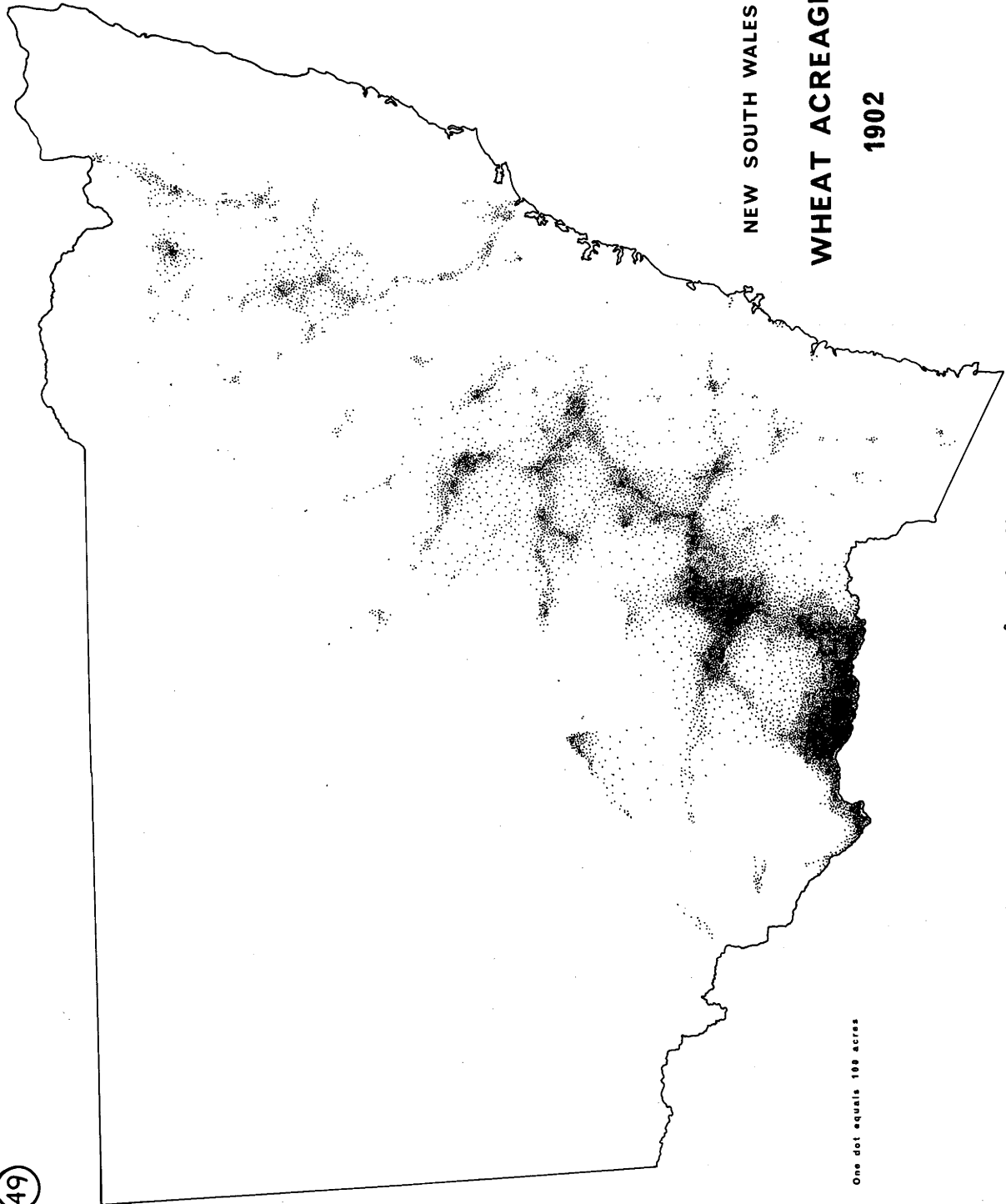


NEW SOUTH WALES  
WHEAT ACREAGE  
1892.

64 32 0 32 64  
miles

One dot equals 100 acres

Source: Statistical Register



NEW SOUTH WALES  
**WHEAT ACREAGE**  
1902

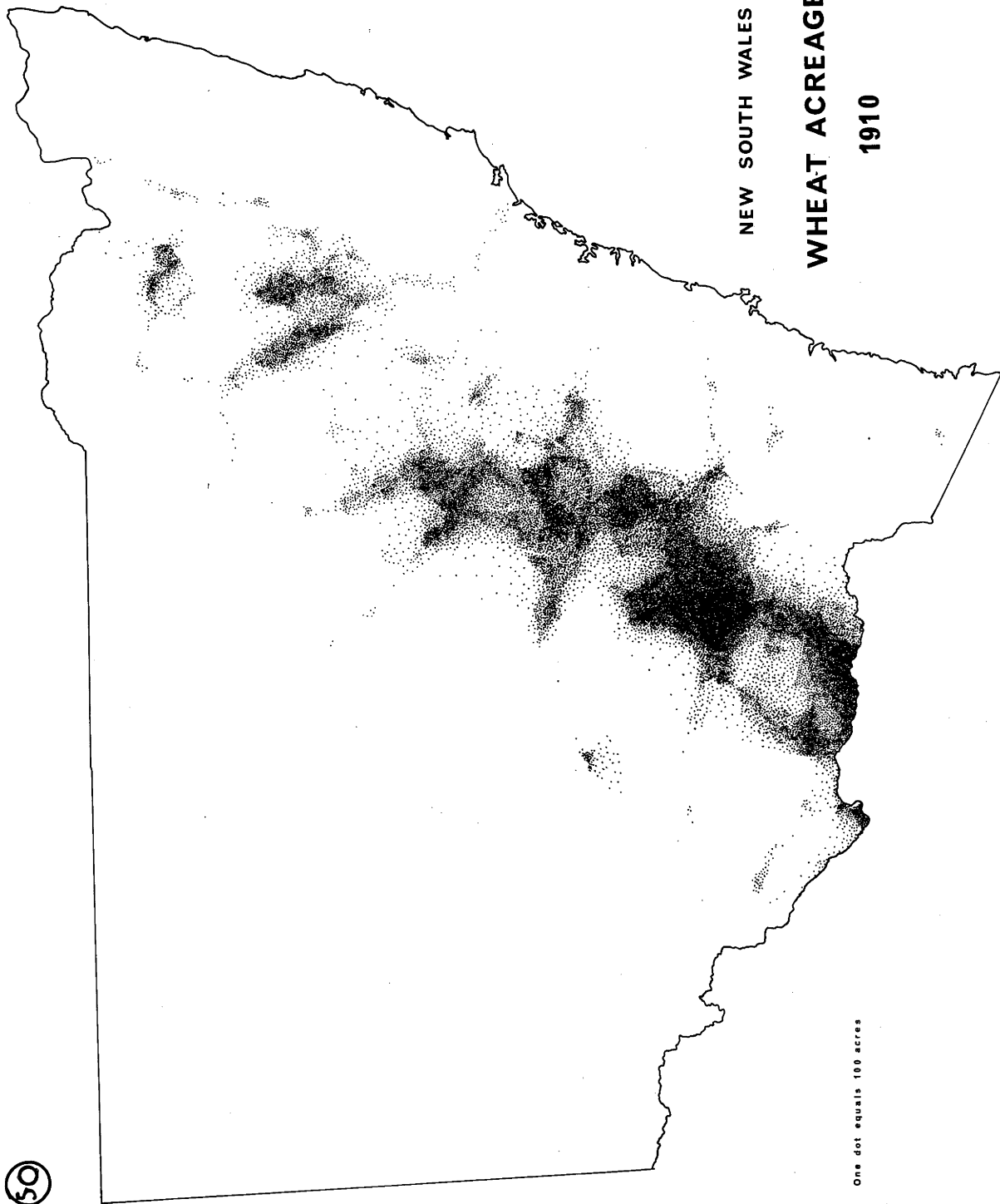
One dot equals 100 acres



Source: Statistical Register



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NEW SOUTH WALES  
WHEAT ACREAGE  
1910

64 32 0 32 64  
miles

One dot equals 100 acres

Source: Statistical Register

from grazing and agriculture can be seen from the evidence of F.C.Piggin of Corowa who calculated that sheep might yield up to 4/- per acre, while the return on wheat-farming was likely to be anywhere from £2 to £8.<sup>17</sup> Many graziers were themselves seeking to share in the higher returns of wheat-growing. Like G.H.Greene of Iandra, they were finding agriculture to be "the only way in which we can make purchased land pay. We cannot make it pay by simply keeping stock on it."<sup>18</sup> Others, not yet within reach of rail communication, admitted that "if the cost were reduced it would enable us to obtain such a price for our land that it would not pay to run sheep on it."<sup>19</sup> Rather than being a mere adjunct to land policy, therefore, the railways began to emerge as a powerful instrument of closer settlement.

At the same time there were doubts and limitations. The strenuous building activity of the 1880's had not succeeded in averting the severe pastoral depression at the turn of the decade, and the colony exhibited an ever-increasing desire to economise on railway expenditure, to avoid the log-rolling local political influences that had so embarrassed the Stuart Ministry in 1883, and to ascertain by minute scrutiny that the lines constructed would be paying ones. Unfortunately, however, wheat-growing on the scale that was emerging in the 1890's, was an unknown

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<sup>17</sup> Ibid., Evidence of F.C.Piggin.

<sup>18</sup> "PSCPW, Railway from Grenfell to Wyalong", NSWLA, VP, 1899, 295, Evidence of G.H.Greene.

<sup>19</sup> "PSCPW, Railway from Culcairn to Corowa", NSWLA, VP, 1889, II, Evidence of W.Kiddle.

quantity. The unprecedented re-orientation of rural economy towards agriculture tended, therefore, to induce caution rather than optimism, mistrust rather than rejoicing. The changing distribution of the crop, and its cultivation in regions of lower and more variable rainfall also caused concern. The wheat boom, it was feared, might prove to be only a temporary phenomenon, the Riverina and western slopes gradually reverting to pasture. If such was indeed to be the case then caution was amply justified.

There were some grounds for this concern. It was becoming generally realised that a few years' cultivation greatly improved the stock carrying capacity of pastoral land; an attractive proposition in the depressed industry. In share-farming districts in particular, and wherever tenant farming was important, it was feared that the squatters were using the farmers to this end during a difficult period, only to abandon wheat-growing as conditions improved. Much of the evidence sought by the Public Works Committee in such areas, therefore, attempted to establish the degree of permanency which might be expected from the share-farming system.<sup>20</sup> Similar doubts, of course, expressed themselves with regard to graziers sowing wheat on former pastoral properties. With some justification this was felt to be a stop-gap measure for the duration of the pastoral depression.

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<sup>20</sup> "PSCPW, Railway from Culcairn to Germanton", NSWLA, VP, 1900, V, 1103 et. seq. See also "PSCPW, Railway from Grenfell to Wyalong", 1899, Evidence of G.H.Greene, 295.

A second brake on the enthusiasm for further railway construction into potential wheat-growing areas again reflected fears for its permanency, this time centred upon the extension of the industry into regions with low and increasingly variable rainfall. Before 1890 the wheat frontier had been confined largely to the stable rainfall regions of eastern Riverina and the tableland margins of the slopes; the major climatic difficulty, in fact, had tended to be one of an excess rather than an insufficiency of moisture. The spread of settlement under the new land laws, however, had given rise to locally oriented wheat-growing industries as far west as Cudgellico and Hillston. On the other hand, some claimed that railway extension might encourage expansion in such areas; on the other, it was feared that variable rainfall might produce retreat. Quoting from a report by the South Australian Government Astromer, Examiner Gilliat wrote:

Over the northern district... the small annual average rainfall on the plains is largely made up of summer rains (November to March), leaving a very small quantity for the winter and spring, or wheat-growing season. Over the southern districts, on the other hand, the percentage of winter rain is largely in excess of that for the summer months. Wheat-growing can be successfully prosecuted only when the latter conditions prevail.<sup>21</sup>

The same situation, he felt, was applicable in New South Wales, with the distinction this time from east to west. In consequence he declined to recommend any extension of the railway beyond the proven wheat-growing

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<sup>21</sup> "Report of H.A.Gilliat, (EPW), Railway...Towards Hillston", NSWLA, VP, 1891, V, 600.

district of Temora within the twenty inch isohyet.<sup>22</sup> Gilliat's caution, and the scepticism later displayed by Timothy Coghlan towards wheat production in these western districts was, under the technical circumstances of the day, amply justified. Even at Temora, with an average rainfall some four inches higher than in the Hillston district, wheat yields between 1895 and 1903 averaged less than seven bushels per acre. At Hillston itself the average yield over the same period was a meagre 4.3 bushels.<sup>23</sup> The surplus wheat supply, so confidently expected at the time of Gilliat's report, was very far from being realised.<sup>24</sup>

Despite these fears for the permanency of wheat-growing in the more margined areas, however, and despite the difficulties of the colonial Treasury over the 1890's, successive governments were unable to turn a deaf ear to the demands of areas of proven productivity, particularly in Riverina and the southwestern and centralwestern slopes. Here, access to existing railway lines, even over considerable distances had resulted in a vast increase in wheat acreage. In turn, this became a weapon with which to demand and secure improved communication facilities, designed to extend still further the acreage under wheat. By 1900 the consequences of a decade of wheat-line building were unmistakable, and over the first decade of the new century there emerged

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22 Ibid., 601

23 "Memorandum on the Area of New South Wales Suitable for Wheat-Growing", NSWPP, 1904, IV, 513-514. The statistics are taken from the map prepared by the Statistician to accompany the report, and held in the Mitchell Library.

24 "Report of H.A.Gilliat", Ibid., 599

a clearly defined belt of wheat-growing activity closely tied to the lines which, in part, had created it and, in part, it had called into existence. (Figs. 49 and 50).

For the question of which came first, wheat or railways, is not easily solved. In detail there were marked regional and temporal differences in the relationships between railways and the wheat frontier, and since these differences explain the means as well as the precise locale of frontier advance they are of crucial importance. It will be argued in the sections which follow that the sequence of developments on the wheat frontier followed one or other of two patterns in the different regions in the colony. For the north, it will be shown that expansion here was relatively late, still fairly localised, and that it tended to post-date the development of the railway system. On the other hand, it will be shown that the sequence of developments in the south was more complicated, that here the expansion of wheat farming into new areas occurred at an early stage, that it ran ahead of the willingness of government to provide local wheat lines, and that only with the demonstration of local capabilities were government persuaded to construct feeder lines from the main trunks and branches. These final sections, therefore, turn attention from the more general to the particular in investigating the impact of additional railway construction from each of the three major trunk systems.

#### Wheat Lines in the North

In the northern districts the most important wheat-growing areas in 1890 were located on the tablelands in the vicinity of the major

settlements. The industry was geared to the service of local markets and the scattered pastoral market of the slopes and plains further west. In the whole of the northern division of the colony less than 40,000 acres of land were sown to wheat in 1892, despite the claims that "there is no part of Australia better adapted for growing wheat than this..."<sup>25</sup> "Anyone who has travelled over the colony", insisted McElhone, "must know that the land in the southern and western districts was not to be compared with that in the northern districts for the production of cereal crops."<sup>26</sup> The main problem here, as it had been in the south, was access to markets. It had been claimed earlier that the absence of through rail communication with Sydney was the cause of large quantities of grain "rotting in the land" in the New England and Inverell districts,<sup>27</sup> and over-supply of the local market was an all too common occurrence.<sup>28</sup>

There were, however, other limitations to the expansion of grain farming in the northern districts. In particular the character of the soils over much of the slopes and plains was such as to preclude any serious consideration of closer settlement. The most important wheat-growing areas were located on the black soils of the Coolah-Scone-Gunnedah

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<sup>25</sup> Railway from Narrabri to Walgett, NSWPD, 1896, 3944

<sup>26</sup> Railway Connection with the Northern Districts, NSWPD, 1879-80

<sup>27</sup> Ibid.,

<sup>28</sup> "PSCPW, Railway from Wellington to Werris Creek", NSWLA, VP, 1900, V, 796, Evidence of W.Nash, Coonabarabran.

triangle south of the Nandewar Range. Further north, on the limited areas of black soil on the Waterloo plains about Glen Innes and the red-brown earths at Inverell, small local industries served the demands of the border districts. Intruding between the black soil triangle of the south and the black and red soils of the north, however, lay the impoverished solonetz soils of the Baradine-Pilliga scrub country, of little attraction to the farmer. North and west of the Castlereagh the great belt of heavy textured grey and brown soils of the semi-arid plains were devoted almost exclusively to pastoralism. Only the narrowing belt of red-brown earths, sweeping in an arc from the western trunk at Nyngan to the outlying black soils of Coonamble seemed to offer promise of an agricultural future west of the slopes. Even here, however, there was little incentive to construct agricultural feeder lines. In the first place, a fundamental requirement in railway building policy remained that the profit potential of the region to be served should have been demonstrated before construction. In the absence of any market, though, not even the "finest agricultural land in New South Wales" around Coonamble, could boast more than a few hundred acres of wheat. In the second place, and as a corollary to the first, the "individuals living in that part of the country ...(were)... chiefly carriers, drovers and others, who do not care twopence if they never see a railway there".<sup>29</sup>

The completion of the Hawkesbury bridge, in 1889, connected the

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<sup>29</sup> Railway from Nevertire to Warren, NSWPD, 1896, 1440.



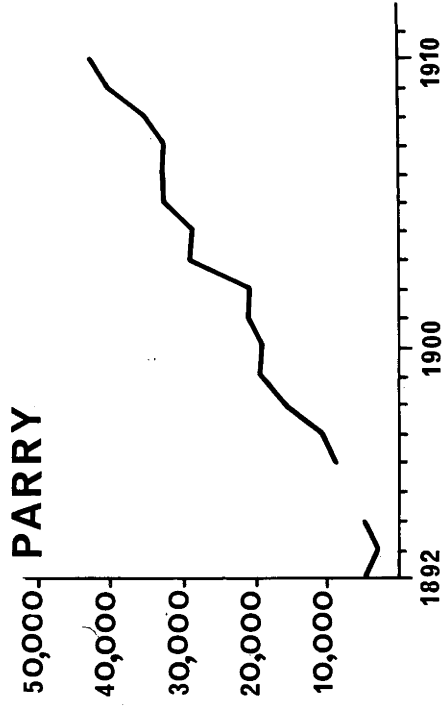
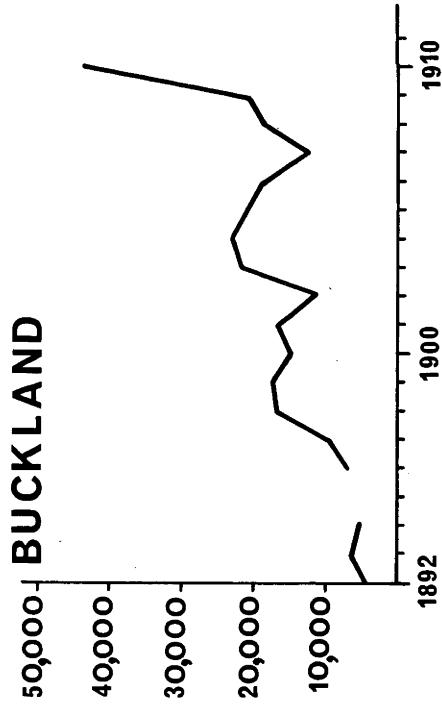
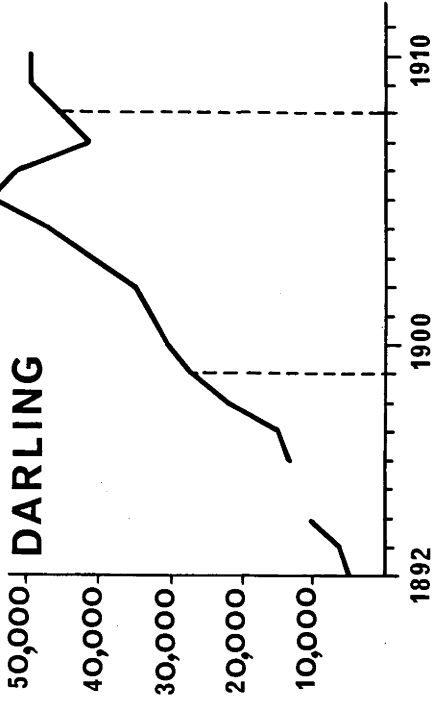
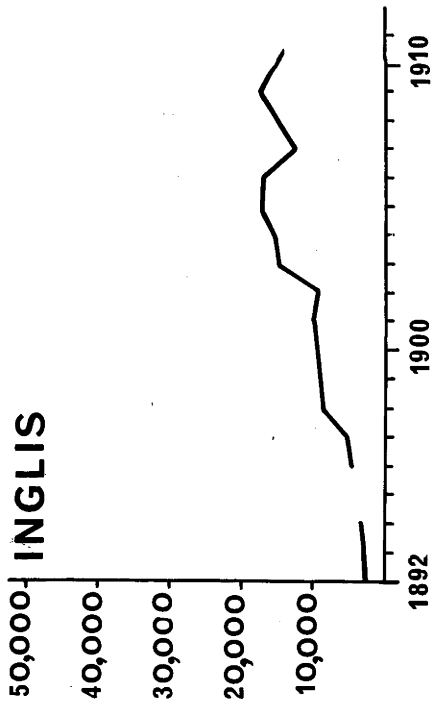
northern railway system with Sydney. The response, though slow at first, gathered momentum over the 1890's in the counties of Darling, Parry and Buckland close to the northern trunk line (Fig.50). Only here, in the vicinity of an existing railway, and on good soils of high natural fertility, could wheat-growing compete effectively with dairying and pastoral pursuits. Moreover, it was only in this district that any agitation for the construction of additional wheat lines existed. The single wheat-line built on the northern system - the line from Tamworth to Manilla, and later to Barraba - would, it was hoped, "induce not only the holders of small areas to cultivate their land, but also permit the pastoralists to make arrangements with farmers over much of the larger estates".<sup>30</sup> The impact of this line, opened to Manilla in the county of Darling in 1899, would seem evident from Figure 51. Of the remaining lines built on the northern system before the First World War two - to Brewarrina and Walgett were pastoral lines, one - to Cobar - was a mineral line, and the rest - to Warren, Moree, Inverell and Coonamble - were general service lines.

The principal developments in wheat-growing in the northern and north-central portions of the colony over this period reflected the influence of this combination of soil types and existing railway lines. Though by 1911, the black soil counties of Nandewar, Pottinger, Parry, Buckland and Darling could boast some 150,000 acres of land under wheat, the northern districts generally were becoming proportionally less

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<sup>30</sup> Railway from Tamworth to Manilla, NSWPD, 1896, 4156.

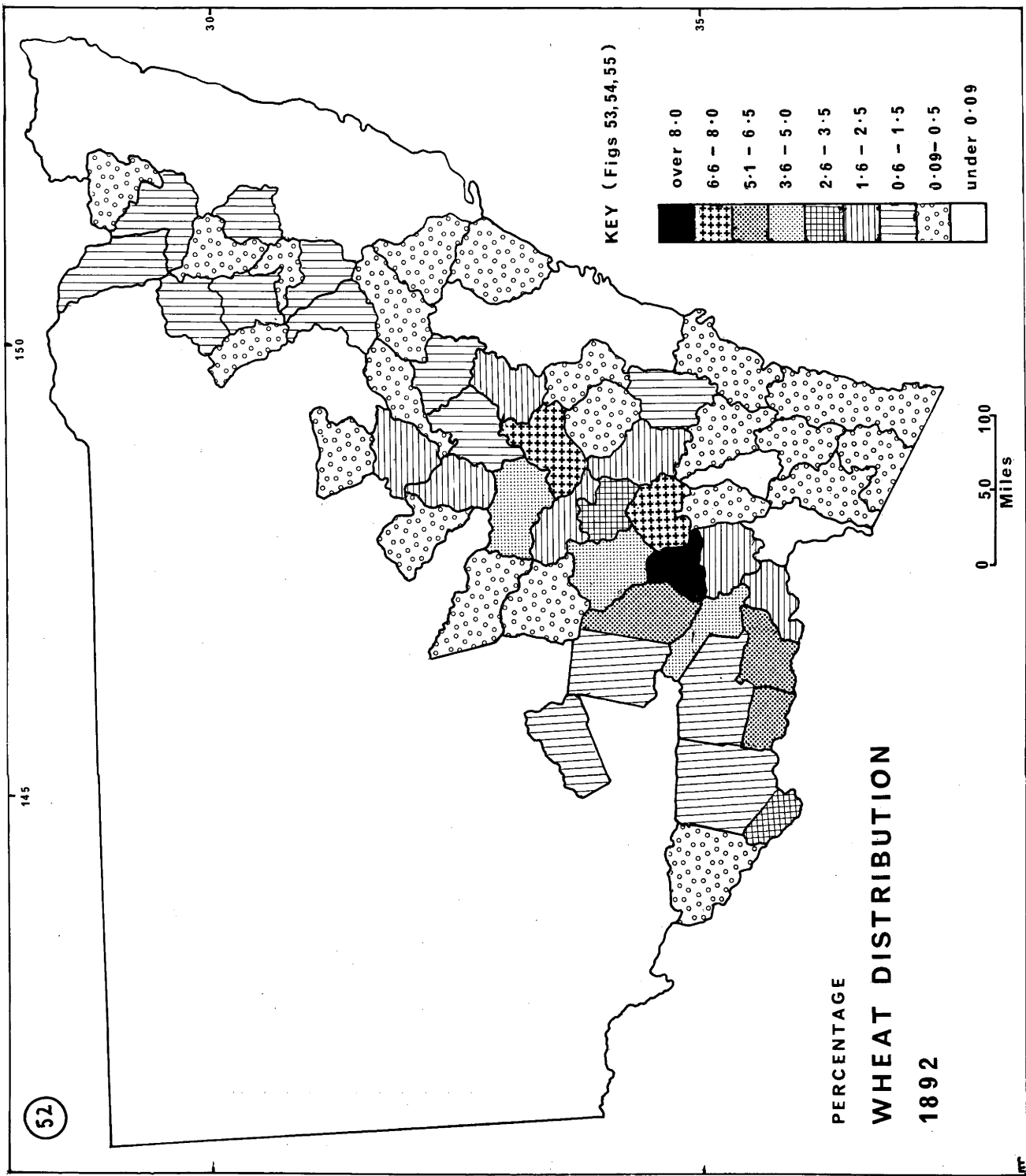
# WHEAT ACREAGE IN SELECTED COUNTIES: NORTHWESTERN SLOPES 1892-1911



----- Opening of branch lines

important as a wheat-producing region. To the west the Baradine scrub and the heavy grey and brown soils remained largely pastoral country, and even on the black soils of Coonamble wheat still occupied less than 1000 acres. In terms of physical shift in the frontier of wheat cultivation, however, the industry had been virtually static with the exception of the narrow belt of red-brown earth above Narromine on the Namoi. Here, but only here, in the counties of Lincoln, Gower and Ewenmar, there had been some slow, but steady, expansion of wheat farming in districts in every sense "new" (Figs.52 to 54). Yet, in terms of their contribution towards the growing volume of wheat traffic moving down the railways into Sydney, the role of these northern districts continued insignificant (Fig.55).

The sequence of development in the north, therefore, was the antithesis of that which characterised the southwestern and central portions of the colony after 1890. On the north-western slopes and north of the western trunk the expansion of wheat-growing post-dated railway construction and was dependent entirely upon it. With the single exception of the Tamworth-Barraba line, the railways constructed after 1890 did not follow the requirements of an existing industry or an expanding frontier. Because of the limitations imposed by soil types, the absence of any broad belt of soils adapted for wheat-growing and comparable to the red-brown earths of the south, and the fact that the naturally fertile black soils were adequately served by trunk line construction, there was little to be gained by the construction of developmental wheat lines into marginal areas. In the south, on the

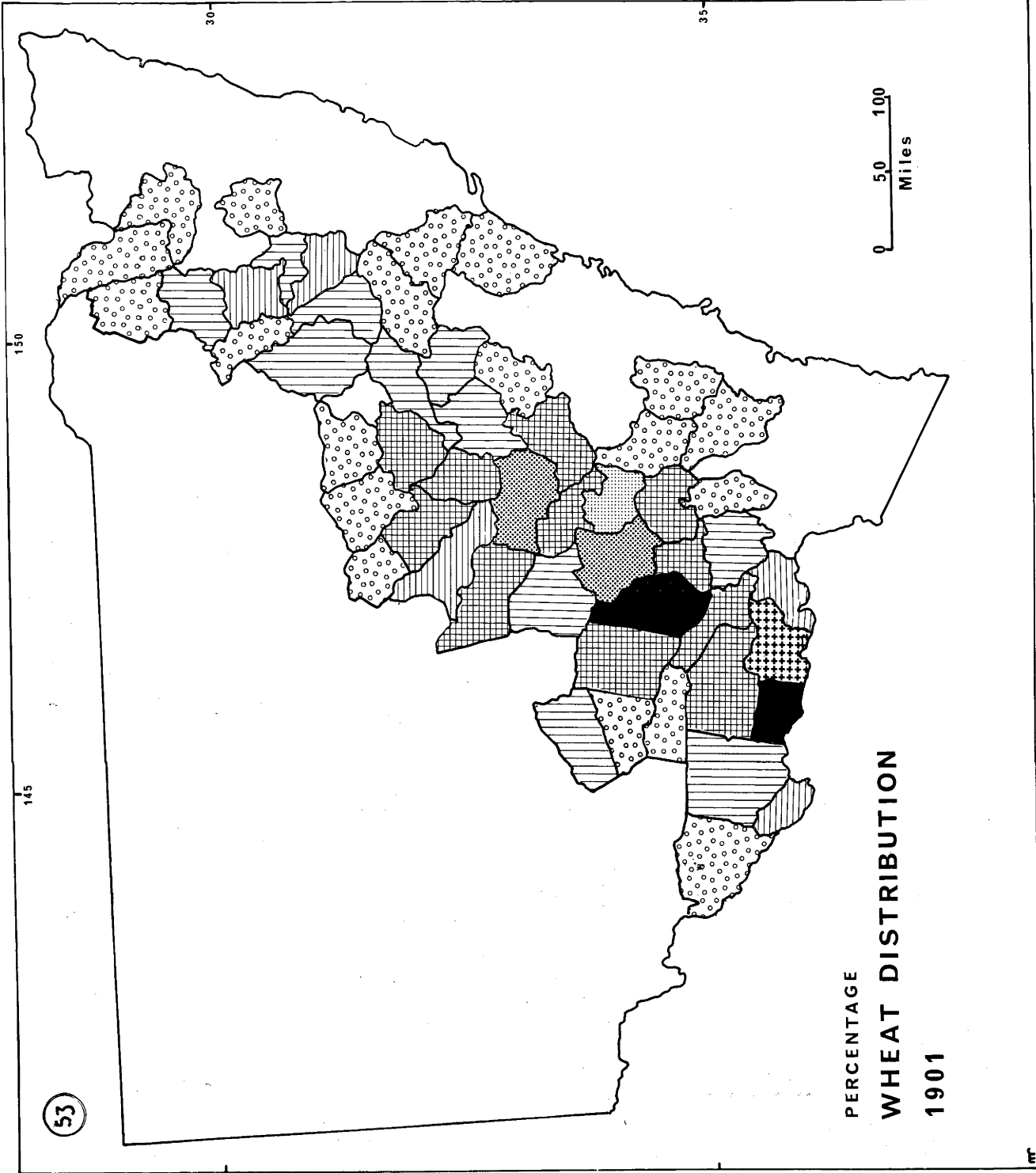


KEY ( Figs 53,54,55 )

over 8.0
6.6 - 8.0
5.1 - 6.5
3.6 - 5.0
2.6 - 3.5
1.6 - 2.5
0.6 - 1.5
0.09 - 0.5
under 0.09

PERCENTAGE  
**WHEAT DISTRIBUTION**  
1892

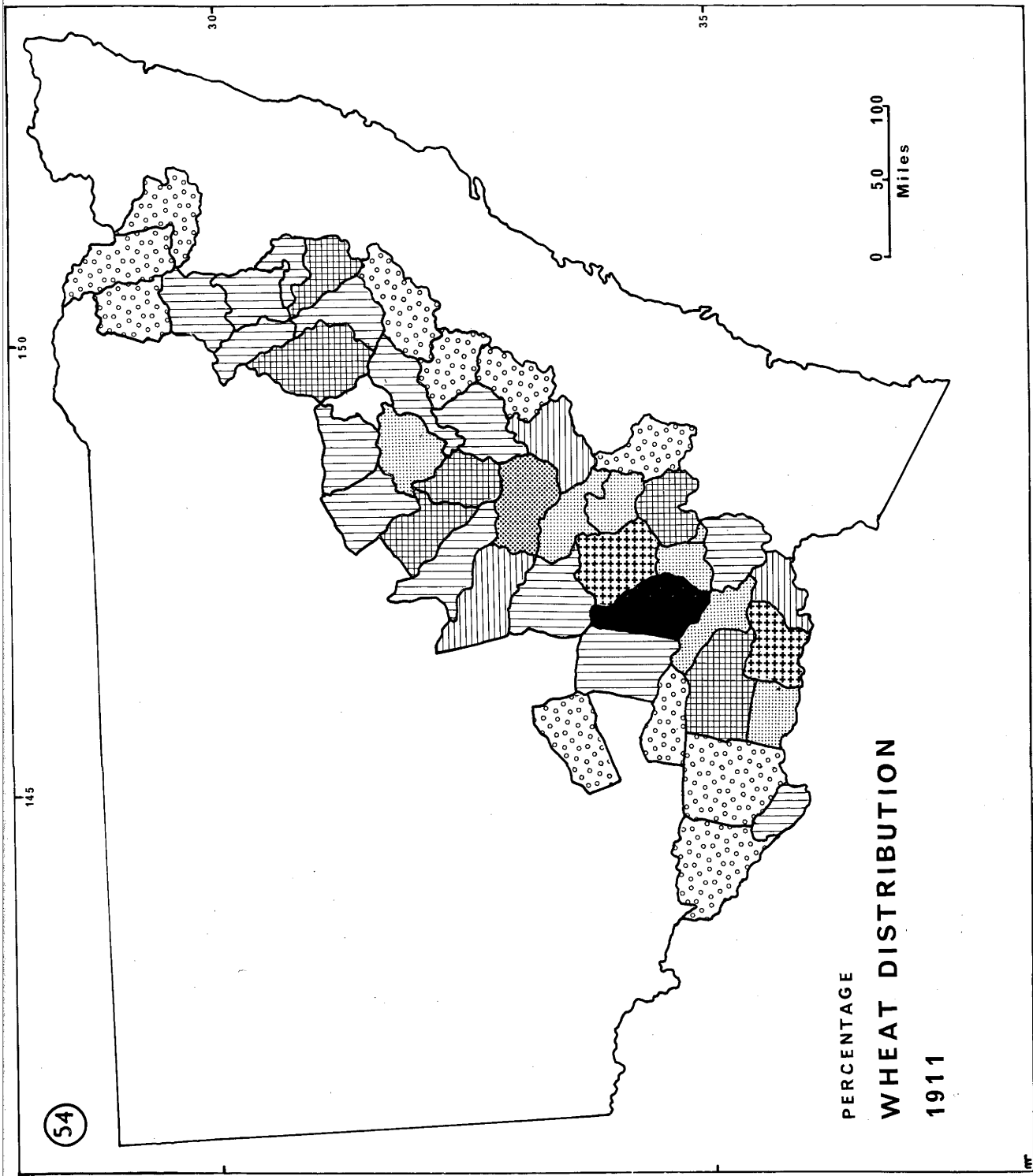
0 50 100  
Miles



PERCENTAGE  
WHEAT DISTRIBUTION  
1901

53

nr



PERCENTAGE  
WHEAT DISTRIBUTION  
1911

54

57

other hand, the sequence was very different. Here the trunk lines barely reached the fringes of the red-brown earths; there remained vast areas of land eminently suited physically for the production of grain, yet only on the margins, in the vicinity of the trunks, was any development possible. By successively attacking the problems of the fringe areas by the construction of short lines, the wheat frontier was permitted to shift further and further to the west and in so doing to encourage additional railway building once the agricultural potential of the regions had been demonstrated.

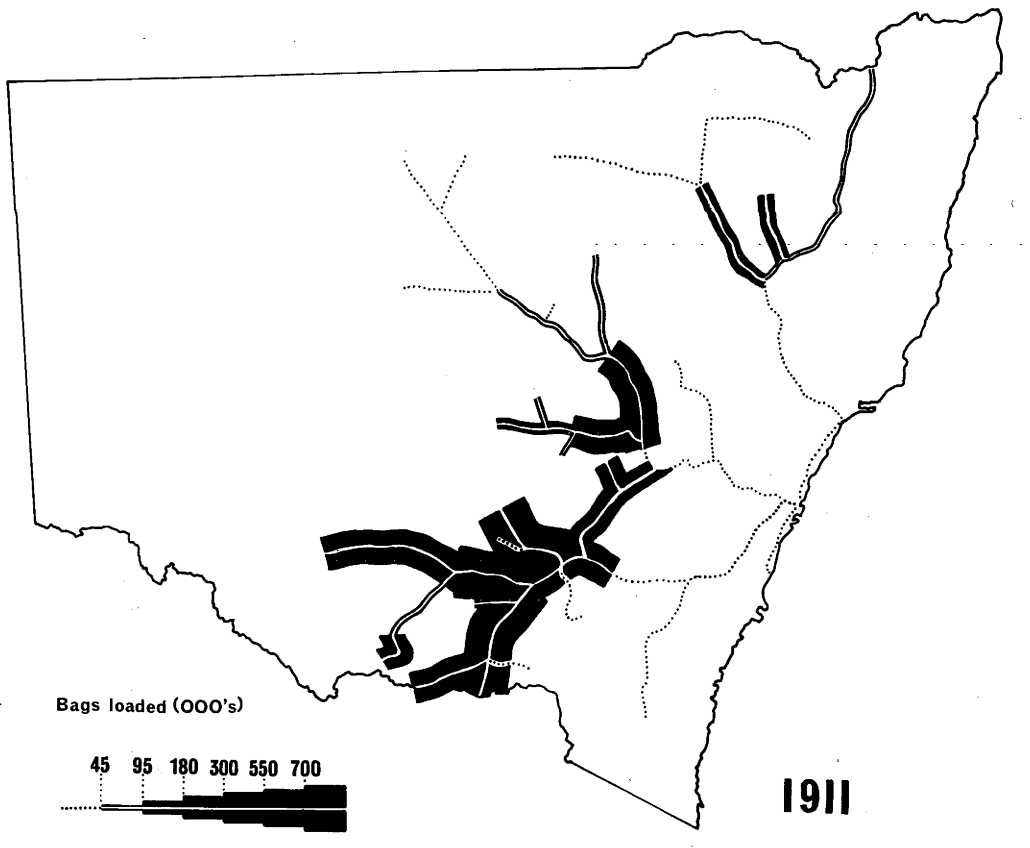
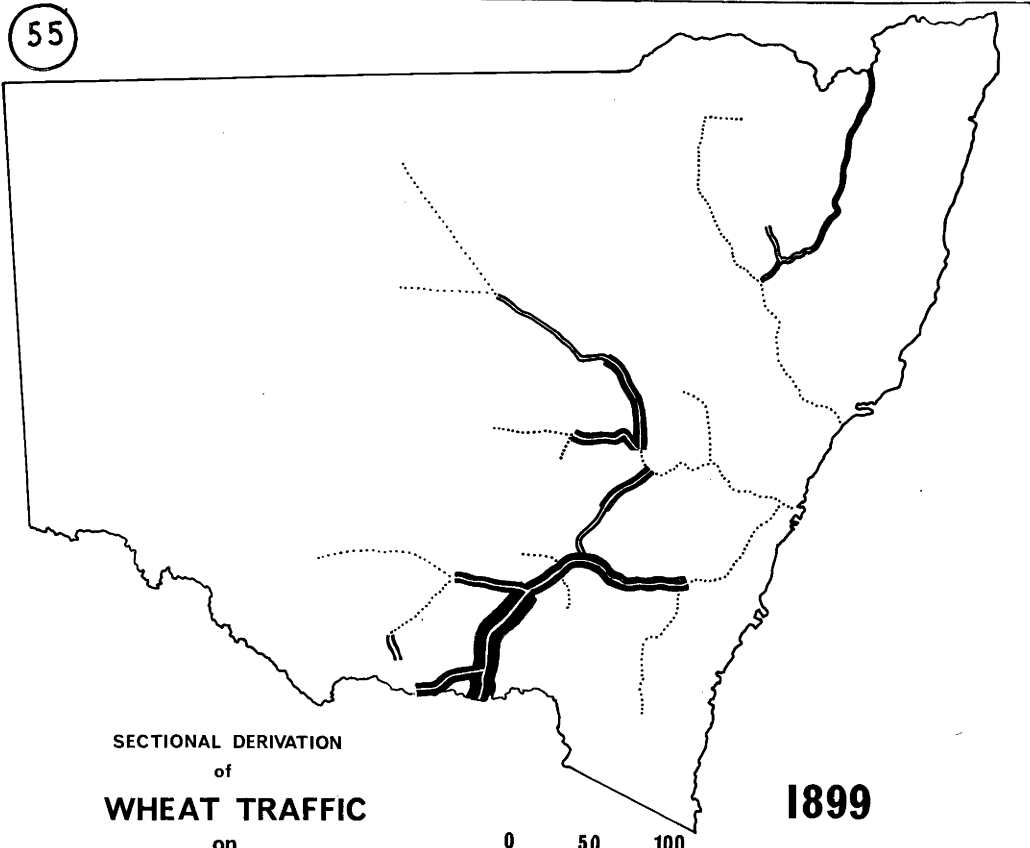
#### Wheat Lines in Riverina<sup>31</sup>

In Riverina the principal developments in wheat-growing, between 1860 and 1890, had occurred on the red-brown earth soils, stretching in a broad belt east of a line from Albury to Wagga Wagga, and west of a line from Echuca, through Deniliquin, and along the course of the Yanko Creek. To the west lay the heavy grey and brown soils and the arid saltbush shrub of the pastoral 'plains' country; to the north of Griffith as far as the vicinity of Hillston in the west and Weja in the east lay the solonized brown soils of the semi-arid mallee, where development waited longer on improved communications facilities and techniques. Within the red-brown earth belt, the emergence of wheat-growing had concentrated chiefly in a narrow strip of country along the course of the Murray river from Albury to Corowa. For the remainder the whole of

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31

For the purposes of this discussion "Riverina" includes the county of Hume, officially classified as a southwestern slopes district.



Source: Railway Reports



the vast Murrumbidgee electorate could boast only 5,600 acres under the crop in 1881. This highly localised distribution of wheat-growing in 1880 reflected the orientation of production to Victorian markets, and the importance of river transport and the railheads at Echuca and Wodonga. Of the 36,000 acres of wheat in Riverina in 1881, no less than 30,000 were in this narrow strip of border country.

By the mid-1880's, however, the pattern had started to change. The principal wheat-growing districts of the previous decade were being joined by new areas to the north and west exploiting the New South Wales country markets over the newly constructed pastoral lines through Narranderra and Jerilderie (Figs. 48-50). Even in the older established areas of eastern Riverina the markets had switched, under the impetus of rail connection with the Victorian system, favourable freight rates, and the heavy duty on imported wheat imposed by the southern colony, to the mills of Goulburn and Sydney.<sup>32</sup>

To the west of these older areas, in the Clear Hills-Tocumwal-Mulwala triangle, and particularly around Berrigan, the extension of the pastoral line to Jerilderie was having a marked effect. A flour mill had been established at the railhead in anticipation of the stimulus which the line would afford to local wheat production with the provision of access to "outside markets in the colony."<sup>33</sup> In 1885 the mill had

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<sup>32</sup> "PSCPW, Railway from Culcairn to Corowa", NSWLA, VP, 1889, II, 390, Evidence of G.J.Roberts. Connection with the Victorian system allowed the grain to pass from New South Wales, over the Victorian lines, and back into New South Wales via Albury.

<sup>33</sup> "Report of S.Alexander, EPW, Proposed Railways for Riverina," Minutes of Evidence, NSWLA, VP, 1891, V, 485, Evidence of T.Wise, miller.

handled the whole of the produce of the district - 310 bags of wheat, milled and sold within the town. In 1889 the same mill purchased 11,994 bags and the miller estimated that a further 3,000 bags were sold to other buyers. In 1890 26,000 bags were disposed of locally, 2,000 were sent by rail to Narranderra and Hay, and 2,000 were sent to Sydney.<sup>34</sup>

In northern Riverina, as in the Jerilderie region, the expansion of wheat-growing post-dated the completion of the pastoral lines. The area had not enjoyed the early stimulus provided by river and rail communication with Victoria in the south, and the emergence of the wheat industry there was a phenomenon entirely created by internal colonial developments. In February 1881, the Riverina fork was opened from Junee to Narranderra, and 6,000 acres of land were prepared to receive wheat. Two years later the wheat acreage had more than doubled, and by 1885 had reached some 20,000. In 1892 the counties of Bourke and Mitchell alone boasted more than 48,000 acres of land under wheat for grain.

It is clear that these developments in Riverina over the 1880's were similar to those in the northern districts over the 1890's and the early 1900's in that they were dependent upon the provision of market access which resulted from the construction of pastoral lines or general purpose railways of a "national" character. On the other hand, the southern districts were blessed with direct rail communication with Sydney at a time when, in the north, the only markets were small and scattered, and connection with the metropolis was barely mooted. By

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<sup>34</sup> Ibid., loc.cit.

1890, therefore, the southern districts had achieved considerable strides in the development of a wheat export industry, and had demonstrated, at a time when the north was unable to compete, that a thriving wheat industry could do much for the railway revenues. "So long as the border duties remain in force", wrote Alexander, "the sole market for the produce of Riverina will be within the colony and the traffic ... will be over the colony's railways."<sup>35</sup> At the same time, however, the full potential of the rich Riverina soils could not be realised until the pastoral lines were supplemented with a closer system of branch railways. Despite the considerable degree of expansion over the decade the average acreage sown to wheat on Riverina farms tended to be small, "it being found useless to crop any more land until better means of getting it to the market are provided."<sup>36</sup> Production, in fact, had tended to outstrip the resources of local carriers, and carriers from outside the district could not be relied upon when good seasons called them home.<sup>37</sup> Not only was team haulage scarce by 1890, its costs ate deeply into the profit margin of the wheat farmer, and its slowness and uncertainty meant a delayed response to market fluctuations and a serious

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<sup>35</sup> "Report of S.Alexander, Proposed Railways for Riverina," NSWLA, VP, 1891, V, 872.

<sup>36</sup> "PSCPW, Railway from Culcairn to Corowa," NSWLA, VP, 1889, II, Report from Sectional Committee.

<sup>37</sup> "PSCPW, Railway from Culcairn to Germanton," NSWLA, VP, 1900, V, Evidence of J.Ross.

loss of opportunity when markets were high.<sup>38</sup>

The problem for Riverina after 1890, therefore, was to capitalise on the gains already made, and to persuade the government to embark on a considerable programme of wheat-line development. In line with the new policy of putting profitability first, the first attempt to tackle the problem was made in the southeast, around Albury, in a district by now well known for its proven productivity. As early as 1883 the Stuart government had acknowledged the peculiar difficulties of the rich border country west of Albury, and a part of the vast railway scheme proposed in that year had been a light line from Culcairn to Corowa. The proposal had been rejected "on the grounds that it would act as a feeder to the railways of Victoria."<sup>39</sup> An investigation by the Public Works Committee in 1889, however, revealed that the district traded primarily with country districts in New South Wales and with Sydney; "on account of the duty" the Victorian markets were barred. In addition the Committee underlined the remarkable problems which distance from the trunk line and poor roads had created there:

So difficult is it under present circumstances to reach a market in New South Wales that in order to get produce to Albury, Goulburn, Hay, Wagga or Sydney it is necessary for many of the farmers, or those who purchase from the farmers, to export it to Victoria, across the Murray river, in bond, and have it sent in that condition by the Victorian Railways, via the Springs, to Wodonga, from which place it comes back on the Murray to Albury where it can be placed in railway trucks for transmission along the Southern Railway.<sup>40</sup>

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38 "Culcairn to Corowa", Ibid., Evidence of W.Schillig

39 "Culcairn to Corowa," Ibid., 383

40 Ibid., 384

Alternatively the wheat could be sent to Melbourne in bond for export, by sea, to Sydney.<sup>41</sup>

Not only were the hardships evident (for many areas suffered greater hardships as a result of far worse communications facilities), but the great potential of the region was also evident. Exports of wheat from the district amounted to some 4,089,970 lbs per annum and there was general agreement that the construction of a railway would see this figure greatly increased.<sup>42</sup> This increase could be expected not only from holders of relatively small areas, who, like John Guskett, would be prepared to "cultivate every inch", but also on the larger properties which would be sold or leased "because under the altered circumstances, agriculture will be so much more profitable than sheep-farming."<sup>43</sup>

The line was opened to traffic in October 1892 when the acreage sown to wheat in the county of Hume was 27,000. The following year this had increased to 42,000, and by 1899 no less than 116,000 acres of land were sown to wheat. (Fig.56).

In Riverina proper, the problem of tapping the wheat-growing potential of the region needed planning on a larger scale. "Nearly the whole of the country", wrote Examiner Alexander, "is land that can be ploughed and will bear crops."<sup>44</sup> Railways could be projected in any and

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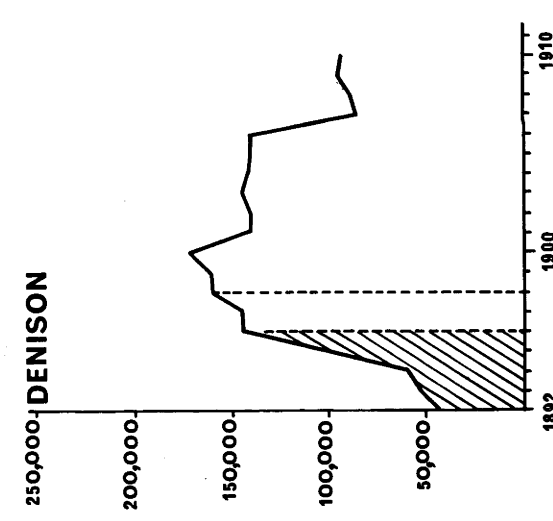
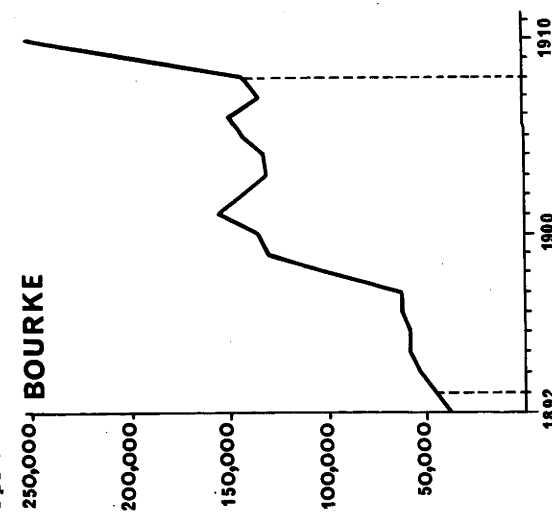
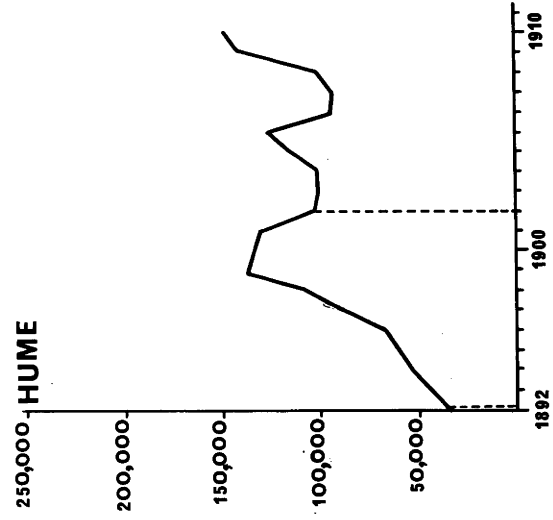
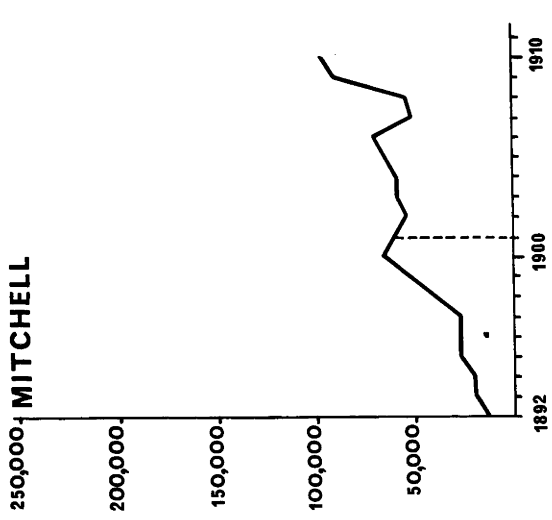
<sup>41</sup> Ibid., Report of Sectional Committee, Minutes of Evidence, Evidence of W.P.Martin.

<sup>42</sup> Ibid., Report of Sectional Committee, Evidence of W.P.Martin.

<sup>43</sup> Ibid., Report of Sectional Committee, Evidence of J.Guskett.

<sup>44</sup> "Report of S.Alexander, EPW, Proposed Railways for Riverina", NSWLA, VP, 1891, V, II, 867

# WHEAT ACREAGE IN SELECTED COUNTIES: RIVERINA 1892-1911



--- Opening of branch lines  
 //// Existing proximate line

every direction and the flat and featureless country would raise no engineering problems; there were no obvious routes dictated by physical configuration. It was evident, therefore, that to achieve the optimum integration of the system, railway planning needed tackling on a regional scale. The difficulty, as Alexander pointed out, was that each branch line proposal was advocated in the interests of a particular district and from purely personal motives, taking no cognisance of the needs of other areas or the possibility of competition with existing lines.<sup>45</sup>

In the event, and despite the good intentions shown by the government in Alexander's report, construction was piecemeal; there were actual needs to be served and potential profit to be gained and these considerations again took preference over lines which, for much of their distance, would be developmental and at first unprofitable. The first and most obviously profitable line to construct was shown by Alexander's report, and the later report of the Public Works Committee, to be an extension of the Jerilderie pastoral line into the rich wheat-growing districts to the south. In 1890 Alexander estimated that 3,000 tons of surplus wheat were in store in the district that "was available for export as up traffic."<sup>46</sup> As in the Culcairn-Corowa district it was shown that lack of carriage to existing railhead was not only the cause of wheat lying unsaleable, but the only

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<sup>45</sup> "Report of S.Alexander", Ibid., 867.

<sup>46</sup> Ibid., 872. So firmly did the government believe in the profit potential of this line that they eventually waived the application of any "betterment principle". NSWPD, 1894-95, 4538 and 4772.

hindrance to rapid and profitable expansion of the industry with wider cultivation and the break-up of pastoral estates.<sup>47</sup>

The terminus of the line, it was decided, would be Berrigan, a town which would then "be the depot for a vast quantity of produce".<sup>48</sup> The greater part of the country which the line would serve was in the county of Denison, the total area of which was 778,000 acres, of which 62,000 were under cultivation. Despite claims that such a line was merely a form of "drastic protection" against the natural trend of trade to the south, its construction was approved and the line opened to Berrigan in October 1896.<sup>49</sup> Fourteen years later E.J.Gorman recalled that:

(In the Berrigan district) the trouble was to know what to do with the wheat. There was a stiff duty on wheat crossing into Victoria and no mill in New South Wales nearer than Albury ... The wheat was eventually carted to Yarrawonga in Victoria and gristed in bond. In dry years the crop was cut for hay and chaff and sold at £6 a ton. With the building of the flour mill at Jerilderie the wheat was carted 32 miles until the opening of the railway to Berrigan. This was the first commercial wheat grown in the Berrigan district.<sup>50</sup>

By 1897, in the county of Denison alone, the acreage under wheat had increased to some 145,000 acres, making it pre-eminent amongst all grain growing counties (Fig.56). In 1898 the Berrigan line was extended to

<sup>47</sup> "Report of S.Alexander," Ibid., 868.

<sup>48</sup> Railway from Jerilderie to Berrigan, NSWPD, 1894-95, 4538.

<sup>49</sup> Ibid., 4540.

<sup>50</sup> Conference of Wheat-Growers, Farmer's Bulletin, No.42, (Department Agriculture, 1910), 125-126.



Finley, though the government insisted, in this instance, that the land be given free.<sup>51</sup> In the debate on the Finley proposal the Secretary for Public Works outlined the policy of government towards railway development in the grain lands of Riverina:

A direct line from Jerilderie to Deniliquin would be located for the greater part of its distance in plain country, much inferior for agricultural occupation to the timbered belt known as the Murray Fringe. The line from Jerilderie to Berrigan conducts the railway system by the shortest route out of the plain country into the timbered loamy lands where farming operations are sure to succeed; thence turning westerly towards Deniliquin via Finley good land will be traversed till within a few miles of that place; this line therefore forms part of a line which, after the completion of such arrangements as this colony deems necessary, will join the two systems at Moama; towards the east the (Public Works) committee believe suitable land for settlement extends in large belts to the Rock. Thus the line from Berrigan to Finley will eventually form part of a complete system passing through one of the best grain producing districts in the colony, of which for the present the Berrigan-Jerilderie line forms the easiest outlet.<sup>52</sup>

These hints of a positive policy of railway extension through Riverina suggest that Alexander's report had found considerable favour. He had recommended, in opposition to all eight of the official proposals submitted for his examination, a line bisecting the rich country between the river and the Hay railway, to pass from The Rock to Murray Hut, via Savernake, Clear Hills and Berrigan.<sup>53</sup> The first step in the implementation of such a scheme was taken in 1897 with the approval of a line from The Rock to

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<sup>51</sup> Railway from Berrigan to Finley, NSWPD, 1896, 3942.

<sup>52</sup> Railway from Berrigan to Finley, Ibid., 3943.

<sup>53</sup> "Report of S.Alexander", Ibid., 886.

Lockhart, aimed at the potentially rich wheat lands of the Mount Galore, Brookong, Urana, and Clear Hills districts. The fact of the piecemeal completion of this line, which had to wait until after 1911, merely confirms the over-riding importance in rail development over this period of an existing substantial traffic in districts proposed to be served.

The opening of the Lockhart line was the final act in railway extension in Riverina before 1911. By 1915, however, the line had been carried on through Urana to Oaklands, and by 1925 a third short branch from the southern trunk had connected Henty with the Rand. Though the actual mileage of the lines constructed between 1890 and 1911 was slight, there can be no doubting their enormous effect on the wheat-growing industry of the region. In 1880 the whole of Riverina contained barely 43,000 acres of wheat. In 1890, under the stimulus of the pastoral lines, this had increased to 54,000 acres. By 1900, with the construction of the feeder lines, the Riverina proper and the county of Hume boasted more than 600,000 acres of wheat and premier place amongst the colony's grain-producing districts.

#### The Wheat Lines of the South and Central West

With the exception of the Victorian border region of the Murray Fringe country, the most important wheat-growing areas in the colony in 1880 were located along the line of the southern and western trunks, in the Cootamundra-Young region of the southwestern slopes, the Orange-Bathurst-Cowra region of the tablelands, and the central western slopes in the Molong electorate. In each case the original rise to prominence of these

areas, following the 1861 Land Acts, had mirrored the changing capacity of local markets. The optimism of the late-1860's, the consequent over-production, and the cutting-back of acreage with the decline of these local markets has already been considered.<sup>54</sup> With the extension of the trunk lines, however, the situation had taken on a new look as production oriented towards external markets and the metropolis. In 1879 the Secretary for Public Works described how, "nine or ten years ago" the district of Orange had been supplied with American flour. Now the district was producing not only enough for local consumption, but "such quantities that the producers found it necessary to send it to the Sydney market."<sup>55</sup> "The railway", he insisted, "had brought about the change ..."<sup>56</sup> Similar feelings of optimism for the wheat farmer were evident in other districts close to the railway. In Bathurst, the local press boasted that:

Anyone who visits our adjoining lands must be struck at the vast strides our farmers are making in this direction, and we believe with every prospect of good results. A few years since when local markets had to be depended upon, the uncertain results of farming were passed by, and it seemed scarcely safe to risk very much in wheat, or hay growing crops; but now the great equalizing of markets has brought our farmers to the front with their bank deposits and well-to-do establishments. The eyes of many of our land-owners are now opened, and land on these famous Bathurst Plains, which were pastured with stray flocks of sheep are now under cultivation, and hundreds of these acres will this season yield their golden corn.<sup>57</sup>

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<sup>54</sup> See above, Chapter 6.

<sup>55</sup> Railway Extension from Wallerawang to Mudgee, NSWPD, 1879, 1999.

<sup>56</sup> Ibid., loc. cit.

<sup>57</sup> Quoted in Grenfell Record, 7/6/79.

Over the 1880's the influence of the trunk lines began to extend beyond the small nodal areas that characterised the wheat frontier of the previous decade, but even so there remained extensive tracts of red-soil country beyond and between the railway trunks yet admirably adapted to wheat-growing in other respects. By 1890 the experiences on the eastern fringe of the red-brown earths, in the vicinity of the trunks and the Murrumburrah to Blayney link line, had clearly demonstrated the potential of the slopes environment for wheat-growing(Fig.48). On the other hand, the areas to the west were, as yet, thinly peopled and offered little hope of an early return on railway investment. The tendency, therefore, in keeping with attitudes throughout the rest of the colony, was for Parliament to accede to railway building in the relatively highly developed areas of the east, but - for the west - to await closer settlement rather than to promote it. Railway building concentrated upon areas of proven value, the lines being constructed in response to existing development rather than in anticipation of consequent growth; they were not "pioneer" railways in the American sense. Once the initial extension had been constructed this would bring areas further west into more or less viable contact with the railway; the districts exhibiting most substantial development could then be considered for further extension. It was a merit system, of a kind.

This tendency is perhaps best illustrated with regard to proposed extensions through Temora in the county of Bland to the scrub country of the Cudgellico and Hillston regions. Under the stimulus of the southern trunk agricultural settlement had extended from Cootamundra north west to the Yeo Yeo Creek at Stockinbingal, and in the vicinity of Temora up to a

distance of 40 miles from the railway. In 1885 the local miller at Temora had purchased 18,000 bushels - "all the wheat grown within a radius of 20 miles."<sup>58</sup> Three years later the needs of the district were amply supplied by one-third of the wheat grown in the same area, and 50,000 bushels of surplus produce were hauled to the railhead for sale elsewhere.<sup>59</sup> Under the provisions of the 1884 Land Act, holdings in the district tended to be large, and settlers combined wheat-growing with sheep-rearing. The extension of a light railway to Temora, it was confidently predicted, would lead to an enormous increase in the area under wheat.<sup>60</sup> West of the Mandamar, however, although population had increased greatly under the new Land Acts, most of the settlers were graziers. The production of wheat had not yet reached the level necessary to satisfy local consumption requirements and, despite good soils, rainfall was less reliable than in the Temora district. Railway extension towards Cudgellico, though it would "unquestionably tend to develop a considerable area of land well adapted for the cultivation of wheat", was not recommended.<sup>61</sup> Similarly, a railway to Hillston was "not warranted by actual settlement". Instead, the government were advised to complete the Temora line and wait upon "the development of agriculture that will follow" before providing for further extension to the west (Fig.57).<sup>62</sup>

The decision with regard to railway extension west of Temora was a

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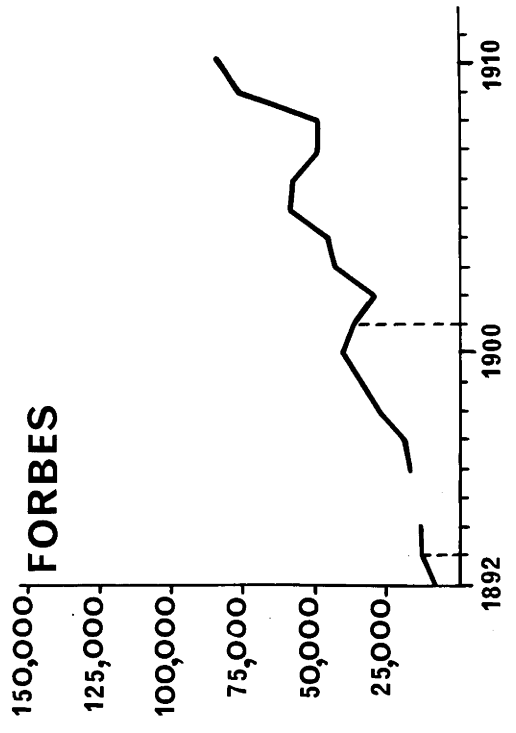
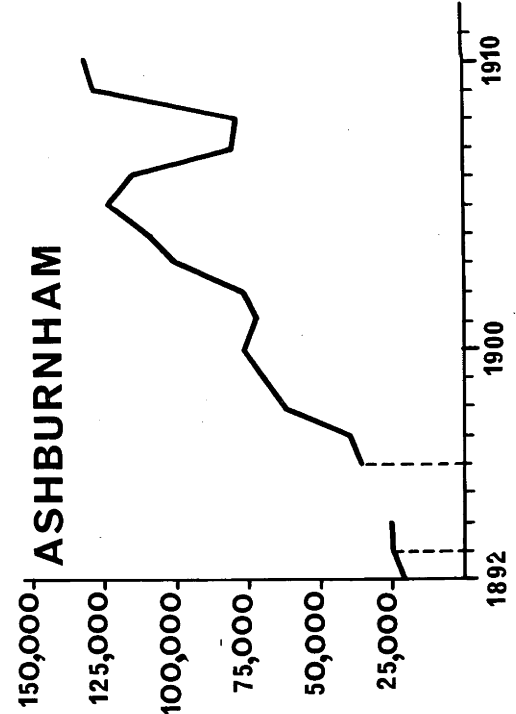
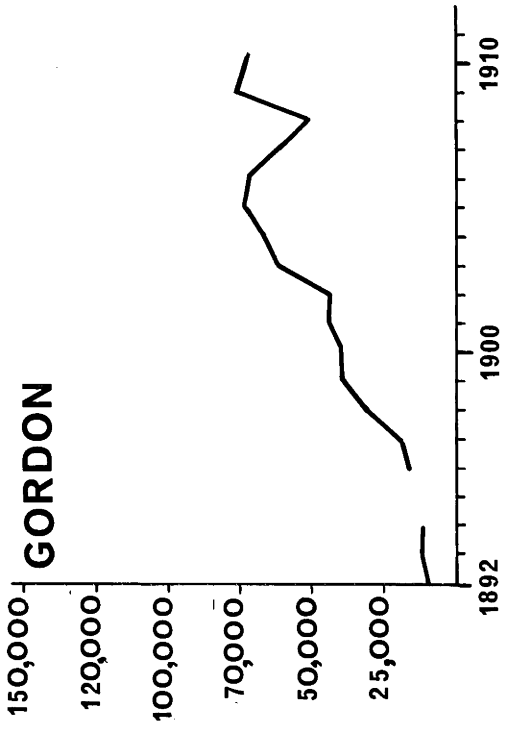
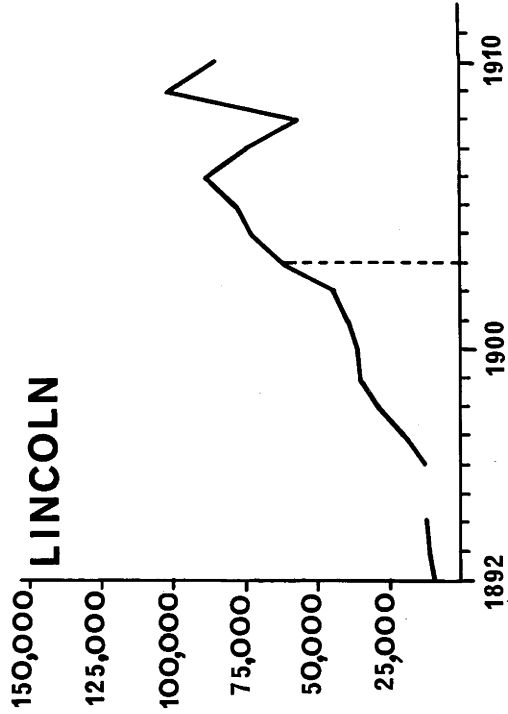
<sup>59</sup> Ibid.

<sup>60</sup> Railway from Cootamundra to Temora, NSWPD, 1890, 1335.

<sup>61</sup> "Report of H.A.Gilliat", Ibid., 601.

<sup>62</sup> Ibid., 601.

# WHEAT ACREAGE IN SELECTED COUNTIES: CENTRAL WESTERN SLOPES 1892-1911



----- Opening of branch lines

reflection of the mounting obsession with the costs and returns of railway building under the financial stresses of the 1890's. It had been aggravated by a repeated failure to keep construction costs within the limits of the allocated votes.<sup>63</sup> The same obsession was reflected in the refusal to provide for the construction of a light railway from Culcairn to Germanton (now Holbrook), a flourishing wheat-growing district to the east of the southern trunk on the southwestern slopes. Here, in the latter half of the 1890's, the wheat acreage had expanded rapidly on the share-farming system, so that "during the season 1898-99, out of 115,000 bags of wheat received at Culcairn railway station, 90,000 came from the Germanton district."<sup>64</sup> In this case, however, it was argued that development was proceeding satisfactorily and that the construction of a feeding line would be unlikely to add significantly to the railway revenues. Only if the land were given free, and a betterment tax to cover the working expenses of the line were imposed, could its construction be considered.<sup>65</sup> The decision, again, indicated that the choice of lines rested upon profit for the railways, rather than the needs of the people. Since this profit was unlikely to accrue from further development in wheat-growing, and since there were few prospects of Sydney capturing the return supply trade, the line held few attractions.<sup>66</sup>

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<sup>63</sup> Ibid., loc. cit.

<sup>64</sup> For a detailing of these failures see Railway from Jerilderie to Berrigan, NSWPD, 1894-95, 4542-4543.

<sup>65</sup> "Culcairn to Germanton", NSWLA, VP, 1900, V, 1103. 104, Ibid.

<sup>66</sup> Ibid., 1103 et seq.

To the north, in the vicinity of the former gold-mining town of Grenfell, the construction of the Murrumburrah to Blayney link line in the mid-1880's had eased somewhat the burden of heavy transport costs to the trunk lines that had plagued the district in 1879, when the arduous overland haul so lessened the value of the crop to the farmer "as to yield him poor return for his labour."<sup>67</sup> The provision of a light feeding line to the district, however, again waited upon the great extension in acreage following the pioneer share-farming experiments of men like G.H.Greene. Indeed it was later claimed on Green's behalf that he had been "induced to extend this form of wheat production in order to augment the revenue and secure the approval of the Railway Commissioners to the construction of the line" to Grenfell.<sup>68</sup> Thus, although such a line had been sought strenuously from the late-1870's, when the district boasted only a small local industry, its construction was delayed until 1901 when the acreage under wheat in the county of Monteagle exceeded 50,000<sup>69</sup> (Fig. 48).

A similar situation had been apparent north of the Weddin Range in the counties of Ashburnham and Cunningham, west and south of the Great Western Trunk Line. Here, in the late-1870's, the Forbes Times was bitterly complaining that, "While wheat is held by the farmers of the Forbes district unsaleable at 4/-, a parcel of 10,000 bushels changed

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<sup>67</sup> Grenfell Record, 15/3/79.

<sup>68</sup> "Report on Share-Farming", NSWPP, 1917-18.

<sup>69</sup> For early agitation see Grenfell Record, 26/4/79, 19/6/79.



hands in Melbourne last week at 6/4½."<sup>70</sup> As in Grenfell, however, the provision of a railway to the district had first to await the re-orientation of policy in favour of tapping wheat-growing districts, and second to await the expansion of the local industry in response to the stimulus of the distant western trunk. Even then, there were a number of routes to be examined before a line was chosen to serve the south-central west. Again the obsession with finance dictated that the route through Parkes should be chosen, rather than the alternatives through Cudal and Borenore or from Cowra, on the grounds that it would cost less.<sup>71</sup> The re-routing of the subsequent extension to Condoblin, opened in 1898, to encompass the incipient wheat-growing district of Trundle, to the north was also opposed stubbornly on the grounds of expense, even though the settlers there had "spent large sums of money in clearing heavily scrubbed land in anticipation of the construction of a railway ... "<sup>72</sup> Trundle and Tullamore in the county of Kennedy had yet to reach the qualifying status of producing an exportable wheat surplus. In 1898, when the Condoblin line was opened, county Kennedy could boast only 10,000 acres under wheat; in 1908 when a line to Tullamore was opened the figure had more than doubled, and by 1911 had reached 33,000 acres. Looking back on the course of events in the Trundle district, D.Looney recalled:

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<sup>70</sup> Quoted in Grenfell Record, 18/10/79.

<sup>71</sup> Railway to Parkes and Forbes, NSWPD, 1890, 1593.

<sup>72</sup> Railway from Parkes to Condoblin, NSWPD, 1894-95, 7450.

Land began to increase in value when wheat-growing began; that is, when wheat-growing began people took notice of it, and then the railway line coming here made a tremendous difference, and when it came to Bogan Gate and Condoblin, that made a great difference. Then when the line ran northwards, it added very considerably to all lands adjacent to it.<sup>73</sup>

The provision of adequate rail communication for the expanding wheat-growing industry of the southern and central western slopes was by no means completed in 1911. By 1915 a short section of line had been opened from Cowra to Canowindra, and by 1925 this had been extended to Eugowra, while Stockinbingal had been connected to Forbes by a major line roughly parallel to the Murrumburrah-Blayney link. Even in 1917, however, a Royal Commission was led to remark that a system of light feeding lines should be still further extended in the interests of developing the wheat-growing potential of the colony.<sup>74</sup> Of the remaining lines constructed before 1911, however, the western extension of the Temora line to Wyalong, opened in 1903, was in part a wheat line, but chiefly a line designed to serve the mineral areas of Reefton and Grafton.<sup>75</sup> Of the two tableland lines constructed after 1880, to Crookwell and to Mudgee-Gulgong, only the latter was designed as a wheat line primarily. "The wheat-growing capacity of the district", claimed the Secretary for Public Works in 1879, "was second to

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<sup>73</sup> "Report on Share-Farming", NSWPP, 1917-18. Evidence of D.Looney.

<sup>74</sup> Ibid.

<sup>75</sup> "PSCPW, Railway from Grenfell to Wyalong", NSWLA, VP, 1900, V, 1097. It was the attraction of the mineral traffic that determined the Committee's decision in favour of the original proposal for a line from Grenfell.

none in the colony."<sup>76</sup> Within a decade, however, the importance of the tablelands had paled before the massive strides taken by the industry further west.

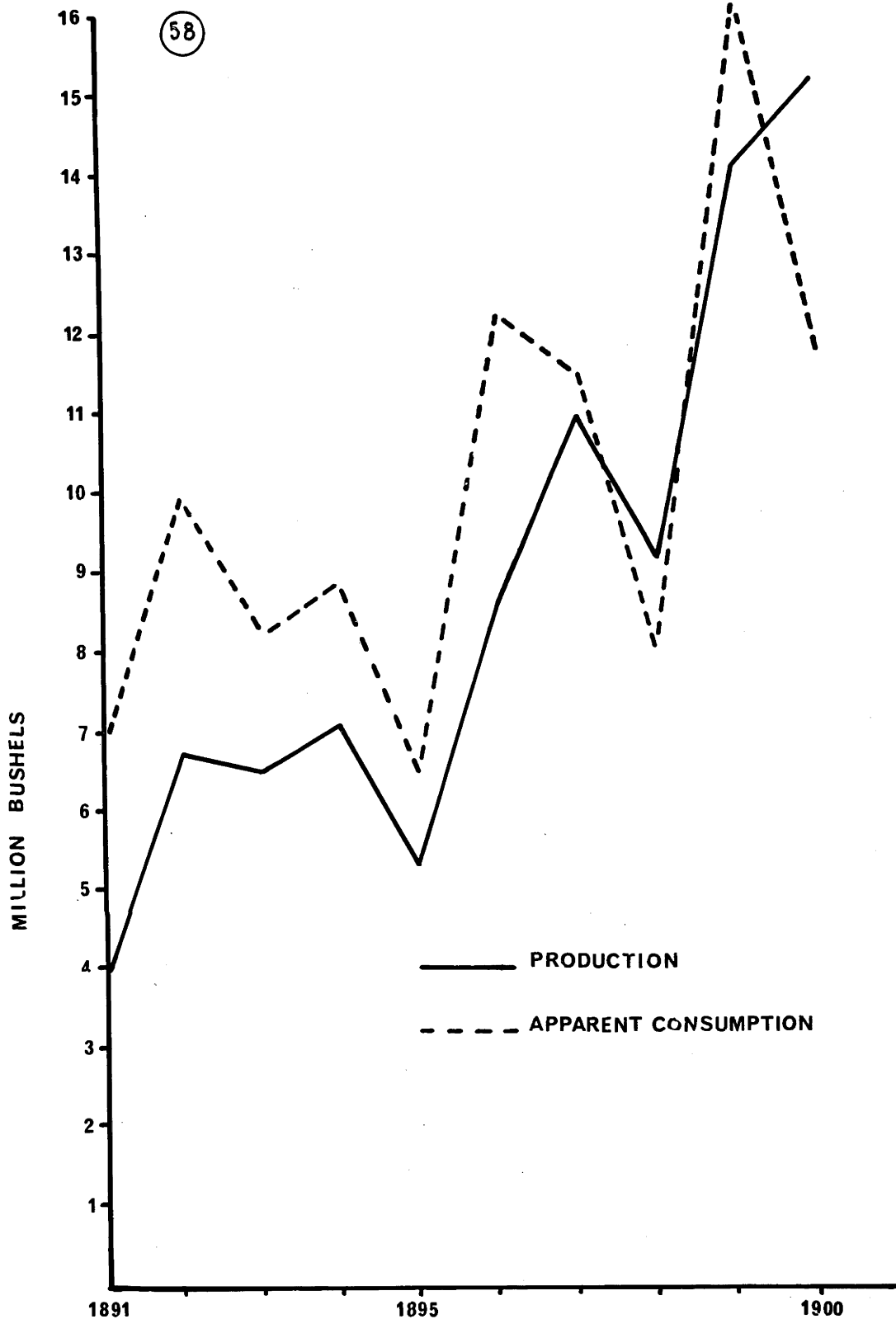
### CONCLUSIONS

Three major factors governed the location of wheat-growing in New South Wales before 1880: the physical problems created by the barren Dividing Ranges and the inaccessibility of the coastal market to inland producers; the overwhelming domination of the inland by pastoralists engaged exclusively in the production of wool; and the difficulties of connecting these areas with the coast by railway. By 1890 all these problems, in some degree, were beginning to recede. The Land Acts of 1884, combined with the severe depression into which the colony was plunged, served to encourage the diversification of station economies and the rationalisation of station size. In turn, this was made possible by the completion of the railway trunks, the construction of major branch lines, and the provision of an increasingly dense network of rural feeder lines, particularly in the southern and central regions.

For the colony as a whole the consequences of the rapidly changing character of rural investment were early seen, and by the turn of the century production, for the first time, began to regularly outstrip consumption (Fig.58). There had emerged, also, a more clearly defined "belt"

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<sup>76</sup> NSWPD, 1879, 1999.



**PRODUCTION and CONSUMPTION of WHEAT**

**1891-1900**

of wheat-growing activity and though, on the western margins, there was little additional inland movement after 1890, most areas saw a consistent and substantial increase in wheat acreage. On the east, on the other hand, the last significant remnants of an earlier - and less stable - frontier were disappearing (Figs.52-54).

In considering the expansion of wheat farming after 1880, and the role played in this expansion by an extending and intensifying rail network, several features have emerged which help throw light on the nature of this relationship and upon the precise mechanism of this expanding frontier, Ultimately it would seem that - directly or indirectly - the policy of the government with regard to railway construction was a crucial factor, but it was a policy in itself largely determined by the changes which were occurring in the rural economy of the inland.

In the first place, it was this policy which determined the basic locational framework of branch-line building over the 1880's: a framework devised to enable the colony to compete on more equal terms with Victoria and South Australia for the wool trade of the interior. The expansion of the wheat industry in the vicinity of these pastoral lines, therefore, was incidental and barely anticipated. The decline of sheep-rearing over the 1890's and the general commercial depression which persisted forced a re-evaluation of railway building and an even greater emphasis on prospective returns. It was for this reason that the government undertook the construction of additional feeding lines from the main trunks and branches into areas of established wheat productivity. It was this insistence on profitability, therefore, that sought out

established areas - areas within reach of existing lines - and that tended to encourage not further movement on the frontier, but a general expansion and intensification of the industry in situ. Movement of the frontier did occur, of course, but it was a slow and cautious response to existing lines and to a generally improving situation in the comparative advantages of wheat farming: it was not a function of the development of exploratory railway building. For the most part, over this later period, the government functioned as might a private company.

The construction of lines designed specifically to serve the wheat-growing industry was the inevitable outcome of a train of events set in motion by the completion of the trunk lines and the extension of the pastoral lines encouraging and making possible the exploitation of a rapidly growing market, together with a changing appreciation of the environment of the interior and, possibly to a lesser extent, improved techniques and the application of scientific principles to farming and to wheat-breeding. At the same time, however, it has been shown that the major concern, in every instance, was the revenue of the railways. The effects consequent upon their extension were, indeed, in the nature of a bonus. So, the frontier moved west.

SUMMARY AND CONCLUSIONS

The shift of the wheat frontier in New South Wales was a complex phenomenon, occurring in two major stages roughly separated by the decade 1880 to 1890. The first of these stages had been the decline of the coastal wheat-growing areas and the expansion of local centres in the interior. The second had been the spread of wheat farming from these local centres to cover vast areas of the western slopes and plains country.

The first stage of this shift was largely coincidence. The coastal regions, which had dominated wheat production for almost three-quarters of a century, declined as a result of a specific phenomenon -- stem rust -- which slashed yields and totally destroyed the confidence of the coastal wheat producer. Even had there been no concurrent expansion of acreage in the interior, the wheat "frontier" would still have given the appearance of a "shift". In fact, however, local centres on the tablelands, the slopes, and in the region of the Victorian border at Albury, did experience a considerable expansion of wheat acreage. Yet it is clear that these two processes -- the decline of the coast and the rise of local inland centres -- were not connected in any way. They could not be: they were serving different markets. The outcome of the first stage, therefore, was simply to increase the dependence of the major colonial grain market, on the eastern seaboard, upon imported grain supplies.

The second stage -- the expansion of hitherto local industries to meet the demands, first of the Sydney market, and later of the world wheat market -- was more complex, yet more continuous. The seeds of this expansion had been planted for almost two decades, and it was

triggered off in the course of little over five years, from 1893 to 1898. Spatial shift, however, was only marginal to the developments of these years: the "frontier", in the sense of the outer edge of wheat-growing activity, changed relatively little. Far more important than the tentative groping to the fringes of the mallee country was the filling-in of the slopes and the eastern margins of the plains, in areas already tested with wheat paddocks. Expansion in quantity, not space, was the most significant feature of the colonial industry after 1890.

Certain themes run through and bind together both these stages, so that the first is incomplete without the second, and the second is incomprehensible without the first. The most important of these were the processes of government. Their influence, of course, was negative as well as positive, since inactivity could be as significant in slowing a process, as activity could be in speeding it. On the other hand, some themes quite divorced from central authority, or connected to it only indirectly, were also current through both stages, and as with the processes of government their relative importance varied through time and in space. Again, certain incidents and developments were peculiar to each stage, having little effect on the future and drawing little from the experiences of the past, but seemingly of significance only for the contemporary scene.

Of these isolated and strictly finite phenomena the most remarkable were the gold-rushes of the early 1850's. It has been shown that they exerted little influence on the colony as a whole, despite the initial hysteria, and that their importance was still less for the wheat-growing



industry. Yet, at the time, and to many later authors, their importance seemed considerable. Far more significant, in terms of the distribution of wheat farming, were the later and less lauded rushes to Gulgong and the Lachlan, while the Ovens diggings in Victoria were the major causes of the initial expansion of agriculture in the Albury district. The relative importance of the Gulgong and Lachlan rushes, of course, is largely a reflection of the coastal decline: their effects being magnified in the amputated industry.

The most significant of the non-governmental processes, perhaps, was the course of pastoral expansion, with its vast repercussions throughout the social, political, and economic life of the colony. Over the first stage of the shifting wheat frontier this was largely a negative force, obstructing and overwhelming the grubbing of the "cockie". Later, when the conditions for pastoral investment deteriorated, the same large land-owners were responsible in no small part for the rapid expansion of wheat farming and the development of an extensive share-farming industry. Similarly the problem of crop disease runs through both stages. In terms of the shifting wheat frontier, of course, this was most important in the 1860's with the ravishment of the coastal wheat paddocks, but it should not be overlooked that this was a continuous problem and the one which, more than any other, occupied the attention of the Department of Agriculture after its formation in 1890.

Over-riding and overwhelming all else, however, was the role of government in the fields of land legislation and railway development. These two great themes underlie the basic pattern and structure of wheat-

growing throughout the entire period. Allied, but of less apparent significance, was government activity in other spheres: immigration policy; tariff policy; agricultural education; and the central direction of agricultural research.

Land legislation has been, and remains, one of the most absorbing aspects of rural settlement in nineteenth century New South Wales. The land legislation of 1861 stands out as a milestone in the progress of the colony from almost every point of view. The genesis and working of Robertson's Acts have no less significance for the social and political historian than they have for the student of land settlement. To each they represent the great break with the traditions and emphases of the past and the embrace, in form at least, of a design for the future.

In the history of the wheat frontier the role of land legislation is one of infinite complexity. In the most simple and direct view the Land Acts of 1861, and their subsequent amendments and replacements, sought to provide a means of ready access to the land in a way which the existing law had failed to do. Under the free selection clauses agricultural settlement grew patchily to meet the requirements of existing, though localised markets and these pockets became the nuclei around which the greater quantitative expansion of the post-1890 era would occur. The first stage in the shift of the wheat frontier onto the tablelands and slopes, therefore, occurred almost exclusively on conditionally purchased properties. Yet, still maintaining the direct view, it was under the Robertson Acts that the accumulation of large pastoral freeholds began, to the eventual exclusion of the small settler.

Yet the influence of land legislation goes deeper and becomes tied

inextricably to the entire course of investment in public works throughout the period. In a sense the alienation of land to pastoralists, not only under Robertson's Acts but also under the new law introduced in 1884, was disastrous for the course of closer settlement. This, very largely, has been the cause of posterity's condemnation of Robertson. At that time, however, there seemed good reason to welcome a steady flow of revenue from the sale of public lands, and the course taken for the investment of this revenue was sound and itself of enormous significance. It is somewhat ironic that the railways which were to make closer settlement desirable should have been financed by a process which made it difficult. In general, however, the effects of the Robertson Acts were favourable for the wheat-growing industry over most of their currency and in most areas. The restrictive impact of pastoral freehold was probably little felt before 1880, though this increased as the century progressed and conditions in the interior changed. At first, indeed, there would seem to be evidence of positive over-production in the small tableland centres like Orange. Gradually, however, the wheat-growing industry became more closely tailored to the demands of the restricted local markets, until the extension of rail facilities and the opening of the Sydney market heralded the beginning of the second stage. Even then, however, there can be little doubt of the continuing importance of free selected holdings in a new and rapidly expanding wheat frontier.

The establishment of a railway network was the second great theme involving the direct control of government. Although the construction of railways had little obvious influence on the first stage of frontier

expansion, it was during this period that the groundwork was laid -- in the form of the three major trunk lines -- which was to be the most fundamental requirement for the growth of the industry after 1890. The earlier period was important in other respects also, for it is clear that the events which actually happened and which today have about them an aura of inevitability were often the outcome of chance or seeming good fortune. The decisions regarding the nature of railways, though having little apparent importance for the wheat frontier, were really an important negative force, since the heavy and expensive works which were determined, and which were in truth far beyond the immediate requirements of the colony, severely slowed the progress of construction. Similarly, too, the initial failure of private railway enterprise was to have important repercussions for wheat farming resulting from the very different nature of railway planning and the volume of capital investment in railways under government control. The direct influence of railway building on the wheat frontier, however, was greatest after 1890, when the pastoral branch lines had been completed and had given impetus to the small local centres of production on the slopes and in eastern Riverina. The re-orientation of government policy, away from the failing attractions of the pastoral industry, to tap the potential of these expanding centres of wheat production was primarily responsible for the vast quantitative increase in wheat acreage and the final break with the inadequacies of the past.

Appendix 1.THE INTERMEDIATE DISTRICTS

The "Intermediate districts" for the purposes of the Land Act of 1861 consisted of the following counties:

Auckland	Gowen
Dampier	Napier
Wellesley	Lincoln
Wallace	Gordon
Beresford	Kennedy
Cowley	Inglis
Buccleugh	Parry
Wynyard	Buckland
Selwym	Darling
Goulburn	Jamison
Hume	White
Denison	Barradine
Wakool	Pottinger
Townsend	Nandewar
Cadell	Hawes
Caira	Murchison
Waradgery	Burnett
Clarendon	Stapylton
Bourke	Courallie
Cooper	Benarba
Dowling	Denham
Nicholson	Arrawatta
Sturt	Clive
Boyd	Hardinge
Urana	Sandon
Mitchell	Gough
Bland	Vernon
Gipps	Clarke
Forbes	Buller
Monteagle	Rouse
Harden	Drake
Ashburnham	Richmond
Cunningham	Gresham
Narromine	Clarence
Oxley	FitzRoy
Gregory	Raleigh
Leichardt	Dudley
Ewenmar	

Appendix 2.NOTES ON THE STATISTICAL REGISTERProblems of Interpretation

The only comprehensive source of agricultural statistics, covering the second half of the nineteenth century in the colony, is the official Statistical Register. Unfortunately, the failure of the Register to adopt any constant areal unit for the purposes of recording information over much of this period raises problems - all of them serious and some insoluble - in the examination of any extended time series. At different times statistics are presented in counties, police districts and pastoral districts (1858-1872); police districts alone (1872-1879); electoral districts alone (1880-1891); and finally, after 1891, in counties alone. None of the different units are wholly comparable, and few are even partially comparable. Between-unit comparability is therefore very difficult. Furthermore, with the exception of the counties, the remaining units employed were subject to periodic re-definition, thereby complicating even the within-unit comparability.

i. The Register 1858-1872.

Before 1858, statistics relating to New South Wales were collected in the Colonial Secretary's Returns of the Colony. The areal units employed in these Returns were counties and pastoral districts. Twenty counties - formerly the "limits of location" of Governor Darling but after 1847 the

settled districts - covered the central portion of the coast and the tablelands, and contained virtually all of the agricultural industries. Up to 1857 therefore, agricultural statistics are presented in county units.

After 1857 and the inception of the Register the counties and pastoral districts were retained as the basic units, but a refinement was added: the original units were subdivided into their component police district parts. Because the use of the police districts in conjunction with the counties tends to break down the size of each, they permit a greater degree of accuracy in the interpretation of the distributions which they represent. For purposes of comparison with the period before 1857, however, it is necessary to ignore the police districts. The use of police district units is further complicated as a result of the more intensive subdivision of the colony for administrative purposes which was occurring over this period. This applies chiefly to the districts beyond the settled districts where, between 1860 and 1872 the number of police districts or parts of police districts represented increased from twenty-nine to forty-two. Within the settled districts themselves the number of police districts or parts of police districts represented increased from thirty-nine to forty-four. Since only one comprehensive police district map appears to have survived - a map published in 1859 - the promise of increased accuracy must be purchased at the heavy cost of re-draughting boundaries from the published descriptions contained in the Government Gazettes.

ii. The Register 1873-1879.

After 1872 the practice of subdividing counties and pastoral districts into police district components was abandoned and statistics for the entire colony were recorded in police districts alone. Again, as a result of the re-definition of boundaries in 1872 and 1878, the number of police districts increased and the boundaries of several were considerably modified. The loss of the counties and pastoral districts means that, within the police districts themselves, distributions can no longer be placed with quite the same accuracy.

In terms of time series comparisons also the loss of the counties means that comparison of the period before 1857 with the period after 1872 is made far more difficult. Furthermore, for the period after 1858, until 1879, the only units constantly employed are police districts. But because these districts were themselves frequently changed there can be no absolute areal comparability over this period unless groups of police districts can be amalgamated to form constant gross units (Figures A1-A4).

The Solution

For the purposes of this investigation the only regions of significance before 1860 are those within the twenty counties of the "settled districts". Furthermore, the bulk of the expansion in the interior over the greater part of the 1860's and 1870's also occurred within the limits of the "settled districts". However, since the settled districts were defined in county units, and since the counties were not used for statistical purposes after 1872, some alternative measure, coincident with

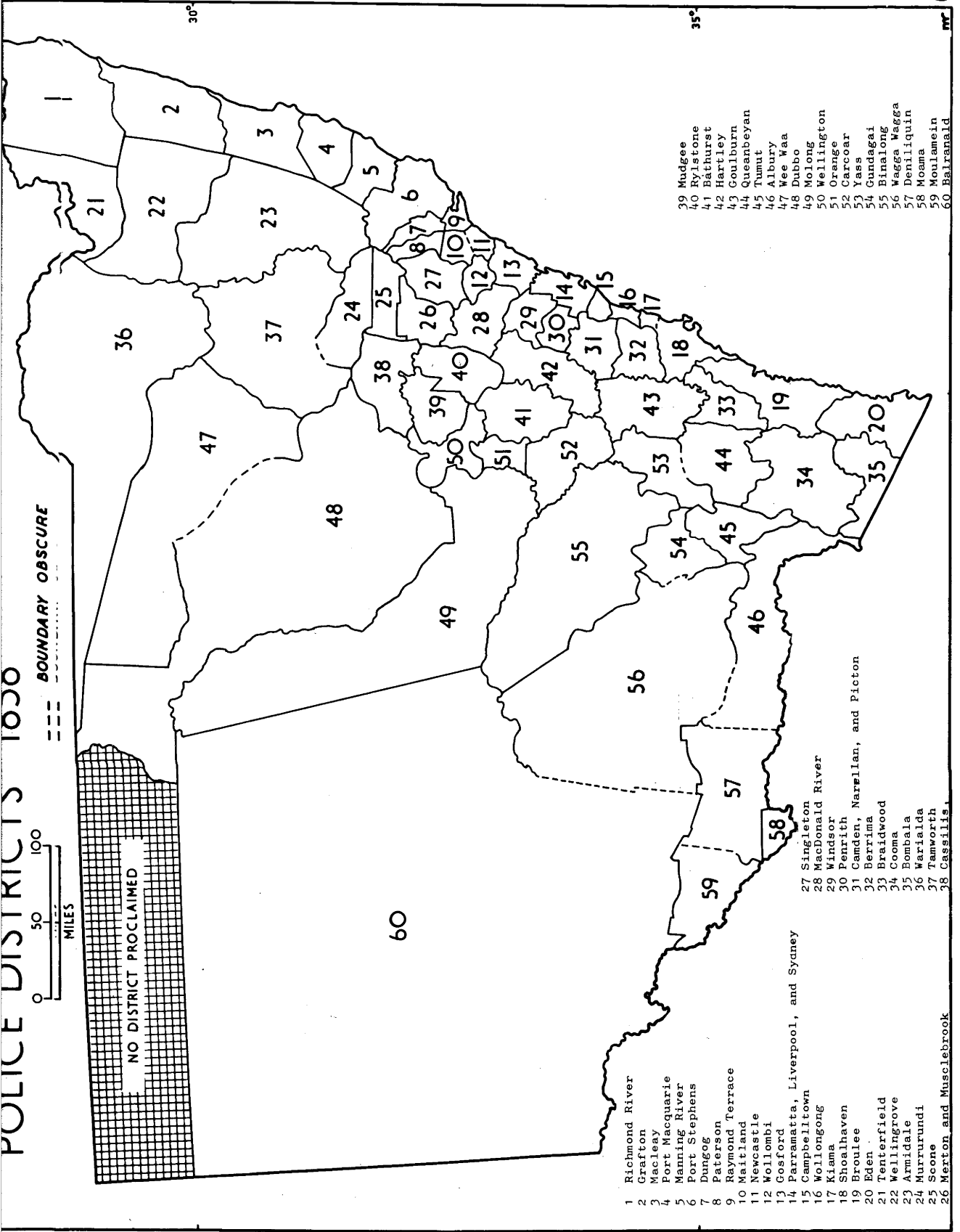


# POLICE DISTRICTS 1030

--- BOUNDARY OBSCURE



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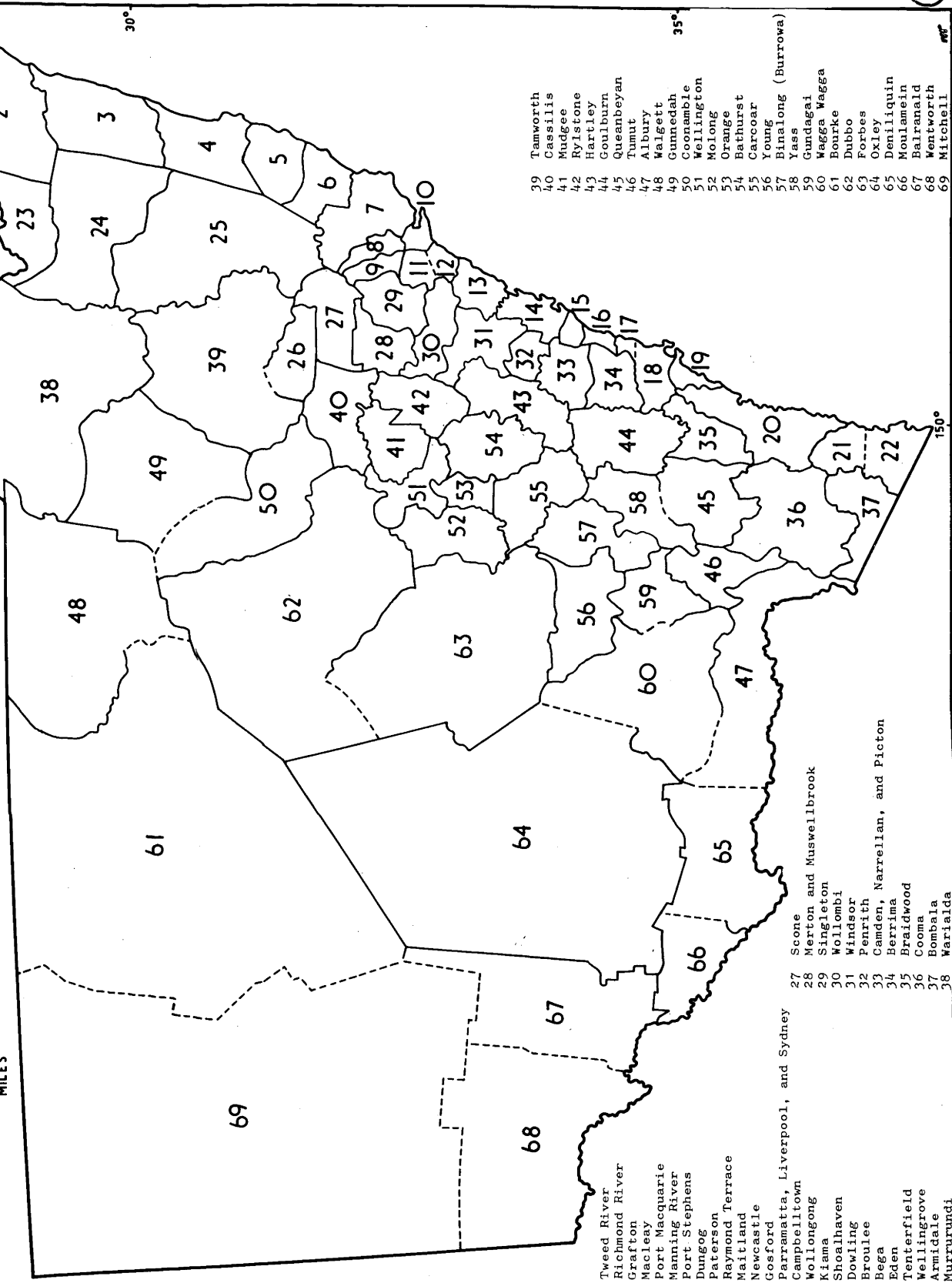
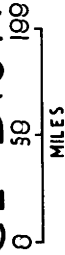


- 1 Richmond River
- 2 Grafton
- 3 Macleay
- 4 Port Macquarie
- 5 Manning River
- 6 Port Stephens
- 7 Dungog
- 8 Paterson
- 9 Raymond Terrace
- 10 Maitland
- 11 Newcastle
- 12 Wollombi
- 13 Gosford
- 14 Parramatta, Liverpool, and Sydney
- 15 Campbelltown
- 16 Wollongong
- 17 Kiama
- 18 Shoalhaven
- 19 Broulee
- 20 Eden
- 21 Tenterfield
- 22 Wellingrove
- 23 Armidale
- 24 Murrumbidgee
- 25 Scone
- 26 Merton and Masclebrook
- 27 Singleton
- 28 Macdonald River
- 29 Windsor
- 30 Penrith
- 31 Camden, Narrellan, and Picton
- 32 Berrima
- 33 Braidwood
- 34 Cooma
- 35 Bombala
- 36 Warialda
- 37 Tamworth
- 38 Cassilis

- 39 Mudgee
- 40 Rylstone
- 41 Bathurst
- 42 Hartley
- 43 Goulburn
- 44 Queanbeyan
- 45 Tumut
- 46 Albury
- 47 Wee Wee
- 48 Dubbo
- 49 Molong
- 50 Wellington
- 51 Orange
- 52 Carcoar
- 53 Yass
- 54 Gundagai
- 55 Binalong
- 56 Wagga Wagga
- 57 Deniliquin
- 58 Moama
- 59 Moulamein
- 60 Balranald

# POLICE DISTRICTS 1865

--- BOUNDARY OBSCURE



- 1 Tweed River
- 2 Richmond River
- 3 Grafton
- 4 Macleay
- 5 Port Macquarie
- 6 Manning River
- 7 Port Stephens
- 8 Dungog
- 9 Paterson
- 10 Raymond Terrace
- 11 Maitland
- 12 Newcastle
- 13 Gosford
- 14 Parramatta, Liverpool, and Sydney
- 15 Campbelltown
- 16 Wollongong
- 17 Kiama
- 18 Shoalhaven
- 19 Dowlings
- 20 Broulee
- 21 Bega
- 22 Eden
- 23 Tenterfield
- 24 Wellinggrove
- 25 Armidale
- 26 Murrumbidgee

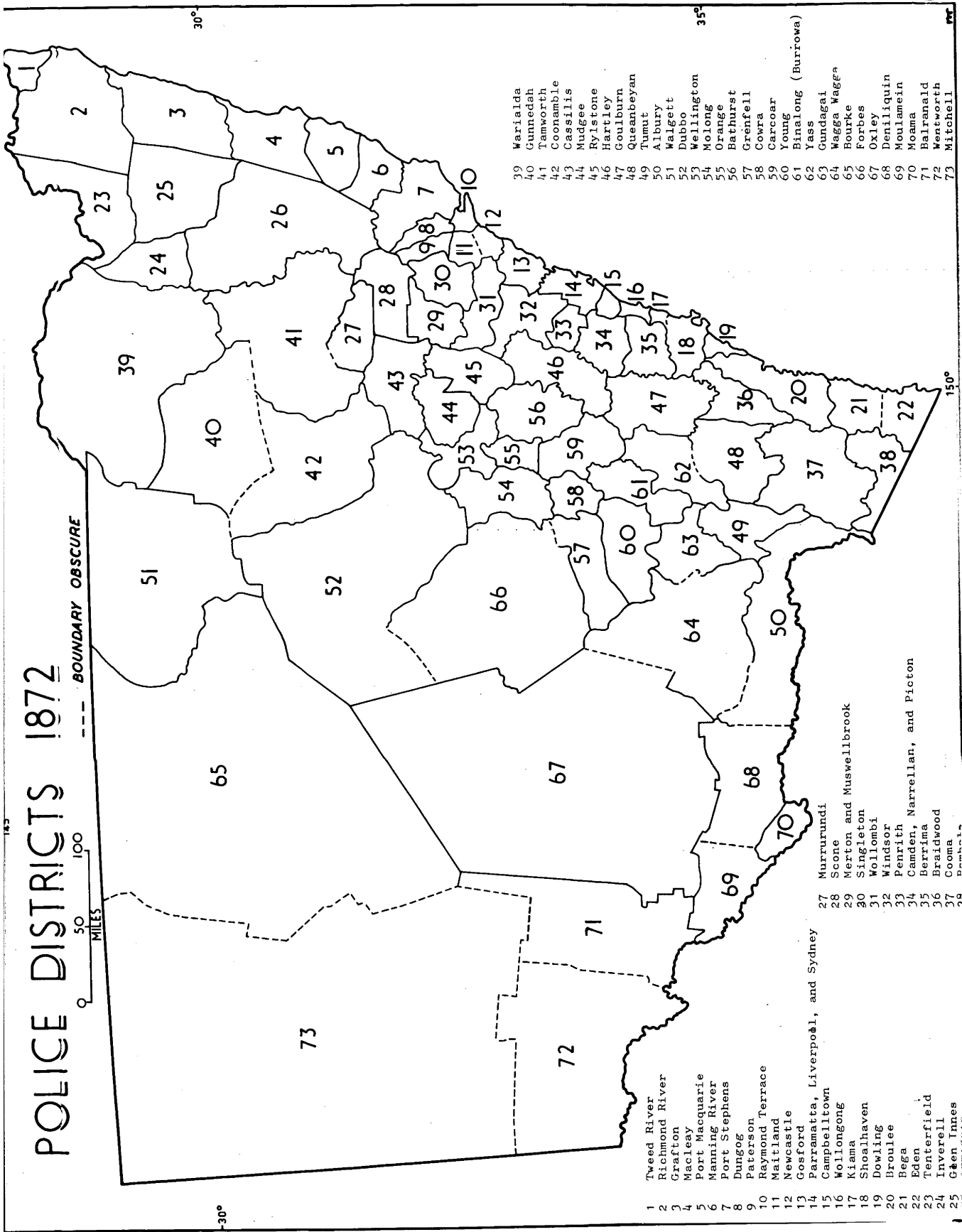
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- 28 Merton and Muswellbrook
- 29 Singleton
- 30 Wollombi
- 31 Windsor
- 32 Penrith
- 33 Camden, Narrellan, and Picton
- 34 Berrima
- 35 Braidwood
- 36 Cooma
- 37 Bombala
- 38 Warialda

- 39 Tamworth
- 40 Cassilis
- 41 Mudgee
- 42 Rylistone
- 43 Hartley
- 44 Coulburn
- 45 Queanbeyan
- 46 Tumut
- 47 Albury
- 48 Walgett
- 49 Gunnedah
- 50 Coonamble
- 51 Wellington
- 52 Molong
- 53 Orange
- 54 Bathurst
- 55 Carcoar
- 56 Young
- 57 Binalong (Burrowa)
- 58 Yass
- 59 Gundagai
- 60 Wagga Wagga
- 61 Bourke
- 62 Dubbo
- 63 Forbes
- 64 Oxley
- 65 Deniliquin
- 66 Moulamein
- 67 Balranald
- 68 Wentworth
- 69 Mitchell

# POLICE DISTRICTS 1872

--- BOUNDARY OBSCURE

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MILES



- 1 Tweed River
- 2 Richmond River
- 3 Grafton
- 4 Macleay
- 5 Port Macquarie
- 6 Manning River
- 7 Port Stephens
- 8 Dungog
- 9 Paterson
- 10 Raymond Terrace
- 11 Maitland
- 12 Newcastle
- 13 Gosford
- 14 Parramatta, Liverpool, and Sydney
- 15 Campbelltown
- 16 Wollongong
- 17 Kiama
- 18 Shoalhaven
- 19 Dowling
- 20 Broulee
- 21 Bega
- 22 Eden
- 23 Tenterfield
- 24 Inverell
- 25 Glen Innes
- 26 Armidale

- 27 Murrumbidgee
- 28 Scone
- 29 Merton and Muswellbrook
- 30 Singleton
- 31 Wollombi
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- 33 Penrith
- 34 Camden, Narrellan, and Picton
- 35 Berrima
- 36 Braidwood
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- 40 Gunnedah
- 41 Tamworth
- 42 Coonamble
- 43 Cassilis
- 44 Mudgee
- 45 Rylstone
- 46 Hartley
- 47 Goulburn
- 48 Queanbeyan
- 49 Tumut
- 50 Albury
- 51 Walgett
- 52 Dubbo
- 53 Wellington
- 54 Molong
- 55 Orange
- 56 Bathurst
- 57 Grenfell
- 58 Cowra
- 59 Carcoar
- 60 Young
- 61 Binalong (Burrowa)
- 62 Yass
- 63 Gundagai
- 64 Wagga Wagga
- 65 Bourke
- 66 Forbes
- 67 Oxley
- 68 Deniliquin
- 69 Moulamein
- 70 Moama
- 71 Bairnald
- 72 Wentworth
- 73 Mitchell

# POLICE DISTRICTS 1878

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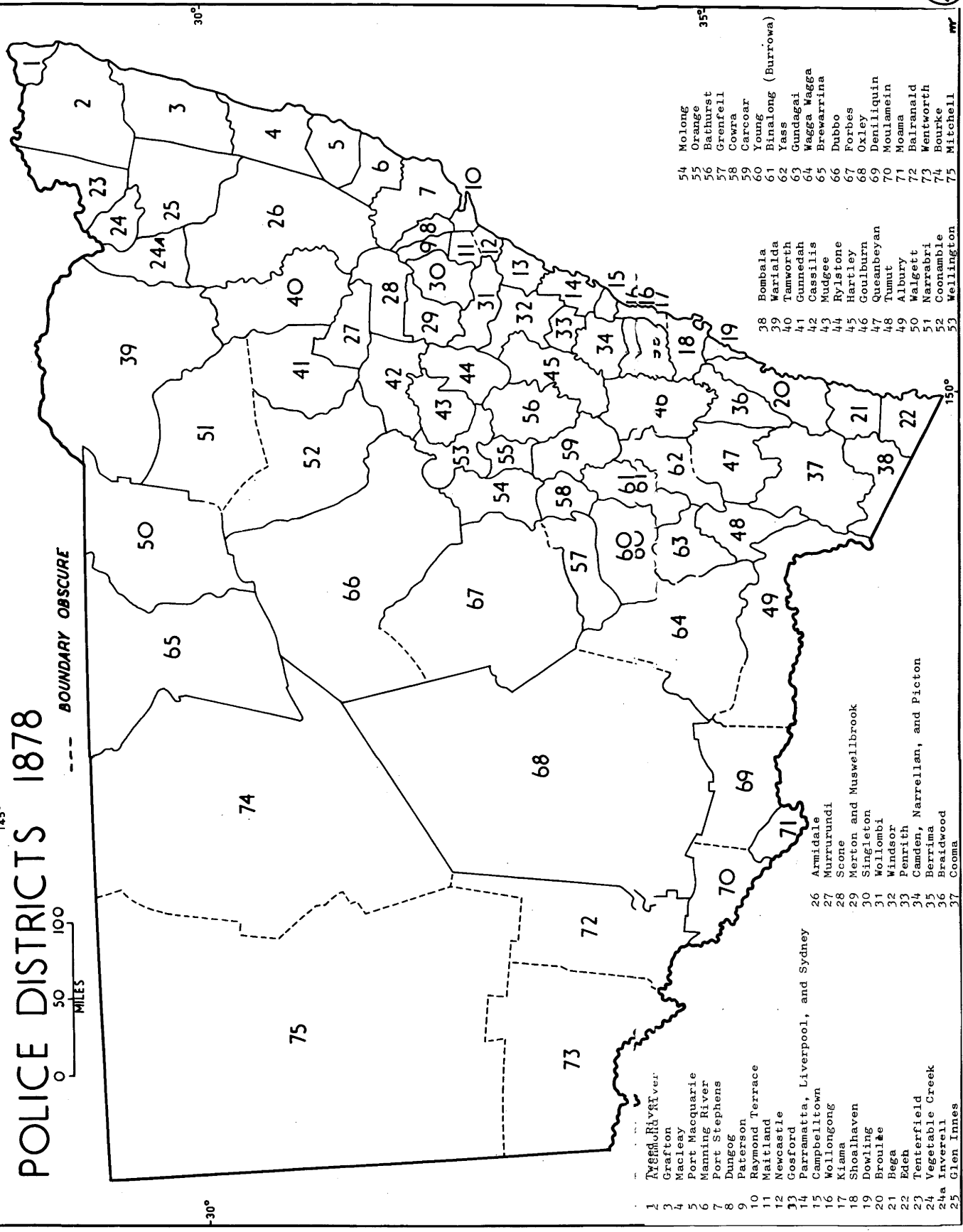
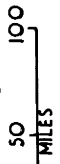
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30°

35°

A4

--- BOUNDARY OBSCURE



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- 2 Grafton
- 3 Macleay
- 4 Port Macquarie
- 5 Manning River
- 6 Port Stephens
- 7 Dungog
- 8 Paterson
- 9 Raymond Terrace
- 10 Maitland
- 11 Newcastle
- 12 Gosford
- 13 Parramatta, Liverpool, and Sydney
- 14 Campbelltown
- 15 Wollongong
- 16 Kiama
- 17 Shoalhaven
- 18 Dowling
- 19 Broulee
- 20 Bega
- 21 Edah
- 22 Tenterfield
- 23 Vegetable Creek
- 24 Inverell
- 25 Glen Innes

- 26 Armidale
- 27 Murrurundi
- 28 Stone
- 29 Merton and Muswellbrook
- 30 Singleton
- 31 Wollombi
- 32 Windsor
- 33 Penrith
- 34 Camden, Narrellan, and Picton
- 35 Berrima
- 36 Braidwood
- 37 Cooma

- 38 Bombala
- 39 Wariada
- 40 Tamworth
- 41 Gunnedah
- 42 Cassilis
- 43 Mudgee
- 44 Rylstone
- 45 Hartley
- 46 Goulburn
- 47 Queanbeyan
- 48 Tumut
- 49 Albury
- 50 Waggett
- 51 Narrabri
- 52 Coonamble
- 53 Wellington

- 54 Molong
- 55 Orange
- 56 Bathurst
- 57 Grenfell
- 58 Cowra
- 59 Carcoar
- 60 Young
- 61 Binalong (Burrowa)
- 62 Yass
- 63 Gundagai
- 64 Wagga Wagga
- 65 Brewarrina
- 66 Dubbo
- 67 Forbes
- 68 Oxley
- 69 Deniliquin
- 70 Moulamein
- 71 Moama
- 72 Balranald
- 73 Wentworth
- 74 Bourke
- 75 Mitchell

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the settled districts must be adopted. Fortunately, the bulk of the police districts within the settled districts were fairly constant and by using police districts and amalgamations of police districts the problem can be solved with reasonable accuracy.

Having established a constant boundary for the period 1858 to 1872, it next becomes necessary to establish constant areal units within this boundary. The police districts and parts of police districts which were used to present the statistics of the settled districts up to 1872 (as components of counties) and the changes to which they were subjected are shown below.

Police Districts and Parts of Police Districts Within  
Settled Districts 1858-1872

<u>Name of Police District</u>	<u>Remarks</u>
BATHURST	Unchanged.
BERRIMA	Unchanged.
BINALONG	Part only used. Subdivided to form Binalong, Young, and Forbes in 1865. After 1868 called "Burrows".
BRAIDWOOD	Unchanged.
BROULEE	Unchanged. Part beyond settled districts proper.
CARCOAR	Subdivided 1869 to form part of Cowra.
COWRA	Created 1869. Part only within "settled districts". Slight northern boundary modification in 1878.
CAMDEN, NARELLAN, PICTON	Unchanged. In 1870 units used separately.
CAMPBELLTOWN	Unchanged.
CASSILIS	Unchanged.
DUNGOG	Unchanged.
DOWLING	Created in 1865 by subdivision of Shoalhaven. In 1870 called Ulladulla.

Name of Police DistrictRemarks

GOULBURN	Unchanged.
HARTLEY	Unchanged.
GOSFORD	Unchanged. After 1864 called "Brisbane Water".
KIAMA	Unchanged.
M'DONALD RIVER	After 1864 abandoned. Part amalgamated with Windsor and part with Wollombi.
MACLEAY	Part only within settled districts. This part unchanged.
MAITLAND	Unchanged.
MANNING RIVER	Unchanged.
MOLONG	Part only within settled districts. After 1865 subdivided to form Molong, Forbes and Dubbo.
MUDGEE	Unchanged.
MURRURUNDI	Redefined 1865. With Scone forms constant unit apart; from minor variation in northern boundary.
MUSWELLBROOK & MERTON	Unchanged.
ORANGE	Unchanged.
PARAMATTA & LIVERPOOL	Unchanged. In 1864 two components divided.
PATERSON	Unchanged.
PATRICK'S PLAINS	Unchanged. Otherwise called "Singleton".
PENRITH	Unchanged.
PORT MAQUARIE	Unchanged.
PORT STEPHENS	Unchanged.
QUEANBEYAN	Unchanged.
RAYMOND TERRACE	Unchanged.
RYLSTONE	Unchanged.
SCONE	Redefined 1865 with Murrurundi forms constant unit.
SHOALHAVEN	After 1865 subdivided to form Shoalhaven and Dowling.
SOFALA	Part of Bathurst. Used separately only in 1861 and 1870.
SYDNEY	Unchanged. A collection of small police districts which were used separately only in 1870.
TAMBAROORA	Part of Wellington. Used only in 1861 and 1870.
NEWCASTLE	Unchanged.
WELLINGTON	Unchanged. Includes Tambaroora.
WINDSOR	Part of M'Donald River added in 1864.
WOLLOMBI	Part of M'Donald River added in 1864.
YASS	Unchanged.

It will be seen that, of the forty-four units, or groups of units, represented here, thirty are constant in area, wholly within the settled districts proper, and used throughout the period with no changes other than an occasional change of name. Furthermore, since Sofala and Tambaroora are wholly contained within the boundaries of Bathurst and Wellington respectively, in all but two years the total number of units can be reduced to forty-two, and the total number of constant units increased to thirty-two. This leaves ten yet to be accounted for.

The external boundaries of the three police districts of M'Donald River, Windsor and Wollombi are constant throughout the period. After 1864 the police district of M'Donald River was abandoned and part included with Windsor and part with Wollombi. By combining all the figures for the three units up to 1864 and for the surviving two after 1864 the total number of units can be reduced to forty and the number of constant units increased to thirty-three. Similarly, by amalgamating the district of Dowling, created in 1865, with Shoalhaven, from which it was created, the total number can be reduced to thirty-nine, and the number of constant units increased to thirty-four. Five units remain.

Decisions concerning the remaining five units must be made arbitrarily. The erection of constant units within the "settled districts" from these five is impossible. Since, however, the bulk of the police district of Cowra, created in 1869, still falls within the boundary of Carcoar as it was before subdivision, Cowra and Carcoar will be regarded as one unit and for immediate purposes the pre-1869 boundary of the latter will be maintained. The remaining three units, Molong, Binalong and

Macleay will be ignored. In area Macleay is insignificant within the "settled districts" and in terms of wheat acreage contributed little. Molong and Binalong will be ignored because of their vast area before subdivision. It is almost certain, however, that acreage here was within the settled districts; the figures that follow are therefore probably an underestimate. The thirty-five constant units thus erected are those shown in Figure 16 in the text.

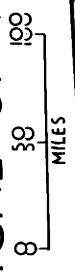
For the purposes of the investigation of the coastal decline in Chapter 3, the coast is held to consist of the following police districts, or groups of police districts, wholly or largely within the settled districts.

Berrima	Paterson
Broulee	Patrick's Plains
Camden, Narellan and Picton	Port Macquarie
Campbelltown	Port Stephen
Dungog	Raymond Terrace
Gosford (Brisbane Water)	Sydney (Metropolitan)
Kiama	Shoalhaven and Dowling
Liverpool and Parramatta	Penrith
Maitland	Windsor, Wollombi and M'Donald River
Marming River	
Newcastle	Wollongong

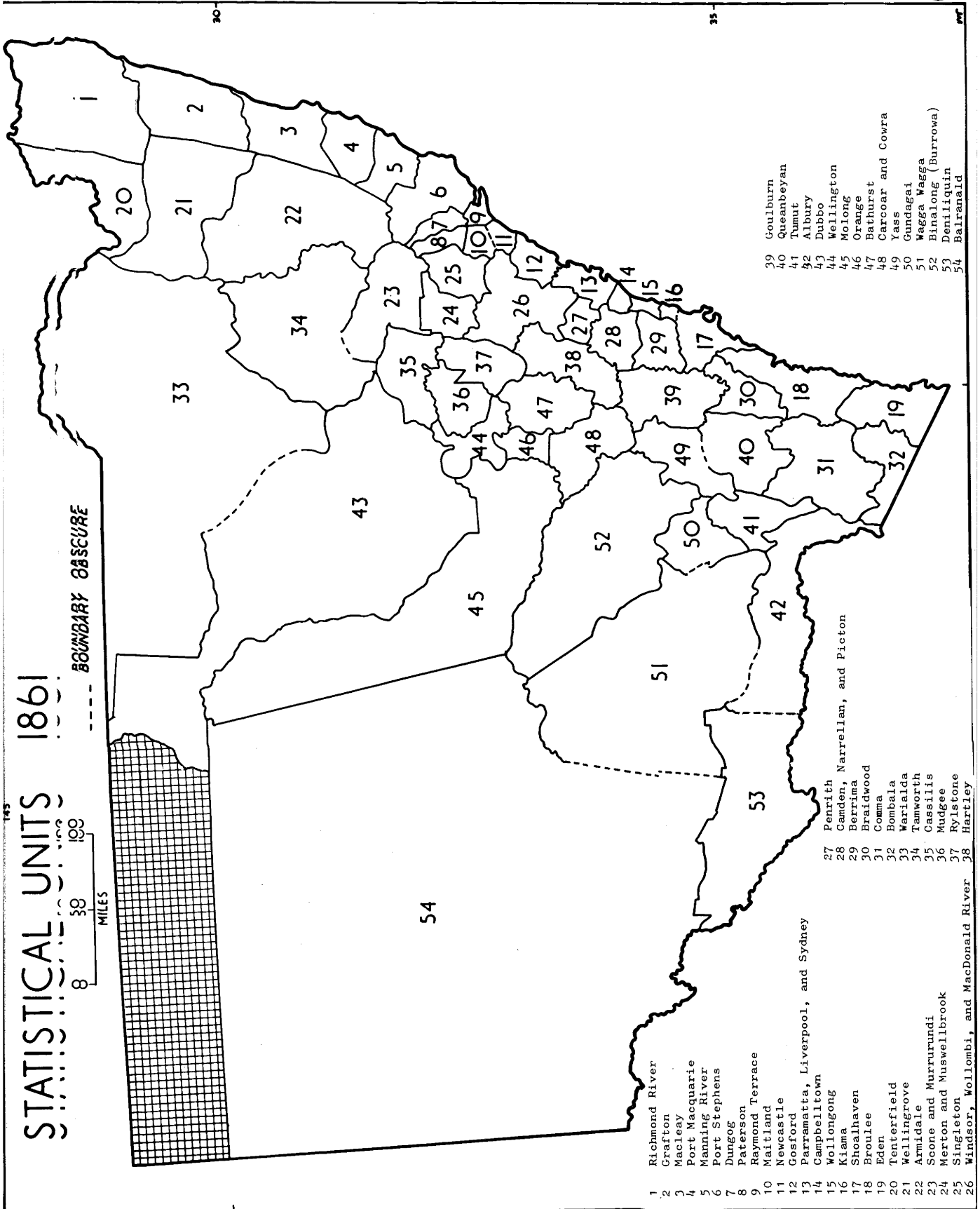


Beyond the settled districts, however, re-definition involved far more substantial changes. In an effort to retain a degree of comparability nonetheless, a fixed number of units beyond the settled districts has been generally employed in this study. It should be noted, however, that even though these represent police district amalgamations, the nominal units are not constant in area throughout the period. Since the bulk of the wheat acreage in the colony was in clearly defined and constant units, this is not too serious. A sample of the corrected statistics thus derived is shown in Table A.1. The actual area covered by each nominal unit in each sample year should still be noted. These are mapped in Figures A5-A8).

# STATISTICAL UNITS 1861



--- BOUNDARY OBSCURE



- 1 Richmond River
- 2 Grafton
- 3 Macleay
- 4 Port Macquarie
- 5 Manning River
- 6 Port Stephens
- 7 Dungog
- 8 Paterson
- 9 Raymond Terrace
- 10 Maitland
- 11 Newcastle
- 12 Gosford
- 13 Parramatta, Liverpool, and Sydney
- 14 Campbelltown
- 15 Wollongong
- 16 Kiama
- 17 Shoalhaven
- 18 Broulee
- 19 Eden
- 20 Tenterfield
- 21 Wellington
- 22 Armidale
- 23 Scone and Murrumbidgee
- 24 Merton and Muswellbrook
- 25 Singleton
- 26 Windsor, Wollombi, and MacDonalid River

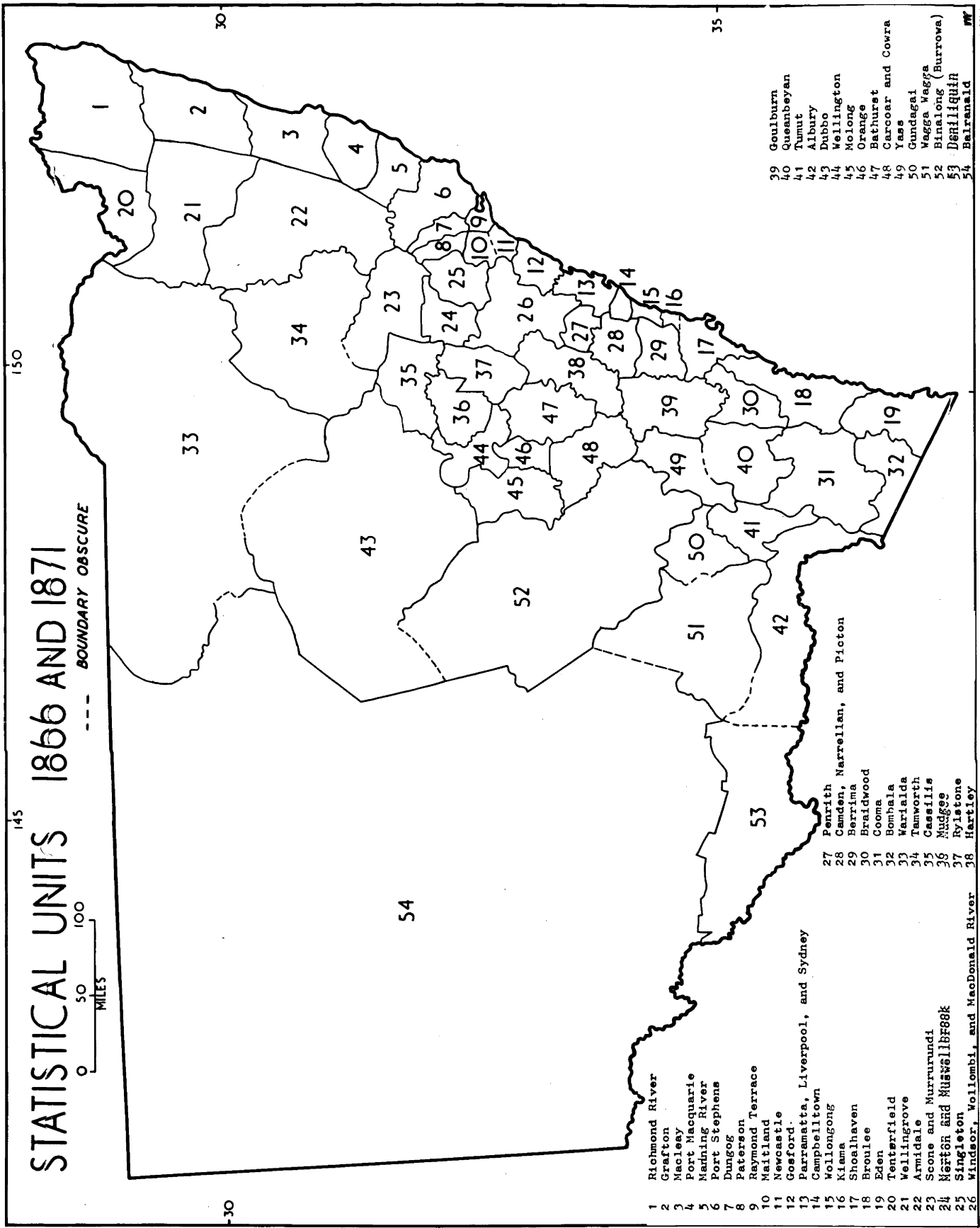
- 27 Penrith
- 28 Camden, Narrellan, and Picton
- 29 Berrima
- 30 Braidwood
- 31 Comma
- 32 Bombala
- 33 Warialda
- 34 Tamworth
- 35 Cassilis
- 36 Mudgee
- 37 Rylstone
- 38 Hartley

- 39 Goulburn
- 40 Queanbeyan
- 41 Tumut
- 42 Albury
- 43 Dubbo
- 44 Wellington
- 45 Molong
- 46 Orange
- 47 Bathurst
- 48 Carcoar and Cowra
- 49 Yass
- 50 Gundagai
- 51 Wagga Wagga
- 52 Binalong (Burrowa)
- 53 Deniliquin
- 54 Balranald

# STATISTICAL UNITS 1866 AND 1871



--- BOUNDARY OBSCURE



- 1 Richmond River
- 2 Grafton
- 3 Macleay
- 4 Port Macquarie
- 5 Manning River
- 6 Port Stephens
- 7 Dungog
- 8 Paterson
- 9 Raymond Terrace
- 10 Maitland
- 11 Newcastle
- 12 Gosford.
- 13 Parramatta, Liverpool, and Sydney
- 14 Campbelltown
- 15 Wollongong
- 16 Kiama
- 17 Shoalhaven
- 18 Broulee
- 19 Eden
- 20 Tentersfield
- 21 Wellingrove
- 22 Armidale
- 23 Scone and Murrumbidgee
- 24 Merton and Muswellbrook
- 25 Singleton
- 26 Windsor, Wollombi, and Macdonald River

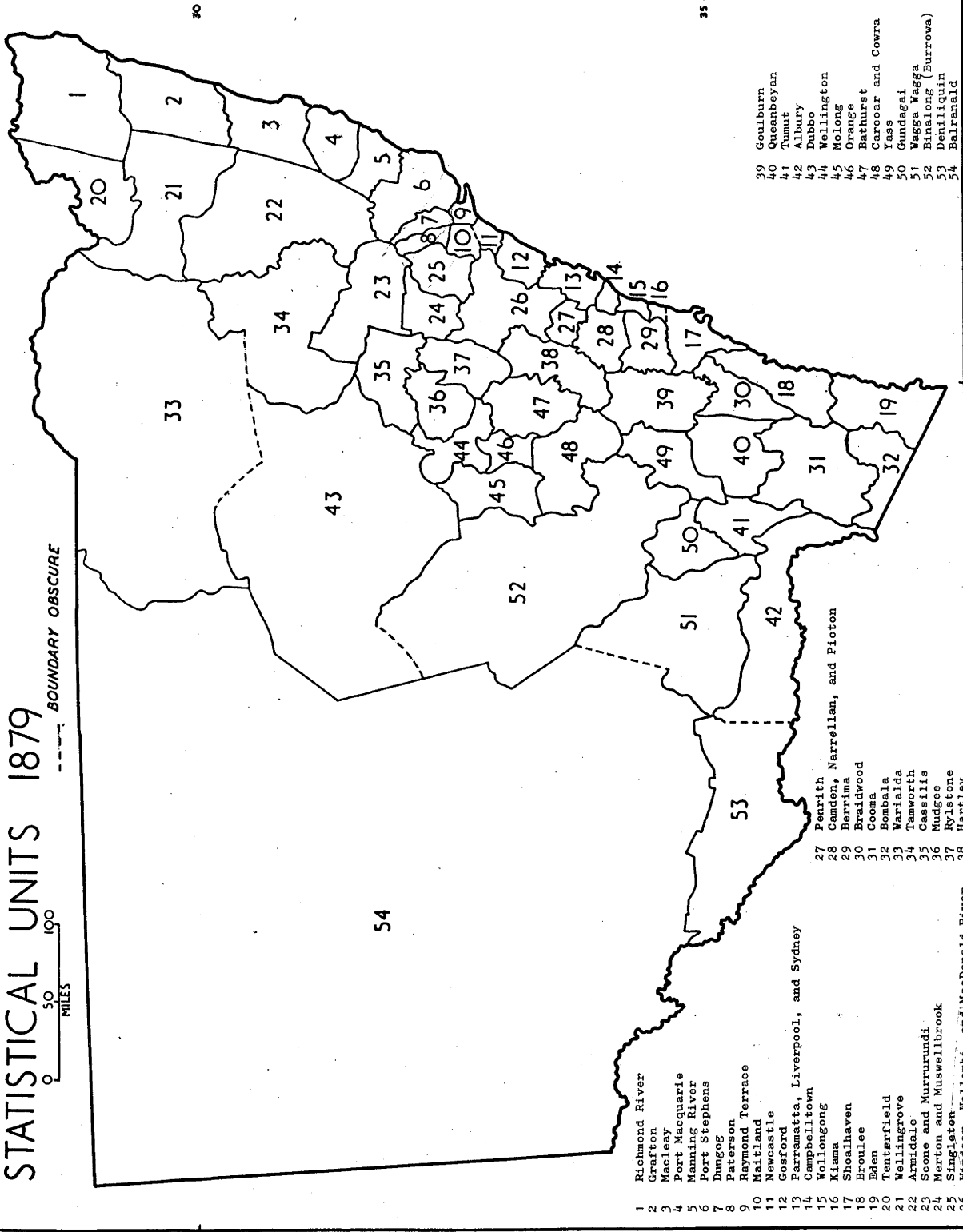
- 27 Penrith
- 28 Camden, Narrellian, and Picton
- 29 Berrima
- 30 Braidwood
- 31 Cooma
- 32 Bombala
- 33 Warialda
- 34 Tamworth
- 35 Cassilis
- 36 Mudgee
- 37 Rylstone
- 38 Hartley

- 39 Goulburn
- 40 Queanbeyan
- 41 Tumut
- 42 Albury
- 43 Dubbo
- 44 Wellington
- 45 Molong
- 46 Orange
- 47 Bathurst
- 48 Carcoar and Cowra
- 49 Yass
- 50 Gundagai
- 51 Wagga Wagga
- 52 Binalong (Burrows)
- 53 Deniliquin
- 54 Bairnsdale

# STATISTICAL UNITS 1879

BOUNDARY OBSCURE

0 50 100  
MILES



- 1 Richmond River
- 2 Grafton
- 3 Macleay
- 4 Port Macquarie
- 5 Manning River
- 6 Port Stephens
- 7 Dungog
- 8 Paterson
- 9 Raymond Terrace
- 10 Maitland
- 11 Newcastle
- 12 Gosford
- 13 Parramatta, Liverpool, and Sydney
- 14 Campbelltown
- 15 Wollongong
- 16 Kiama
- 17 Shoalhaven
- 18 Broulee
- 19 Eden
- 20 Tentfield
- 21 Wellingrove
- 22 Armidale
- 23 Scone and Murrumbidgee
- 24 Merton and Muswellbrook
- 25 Singleton
- 26 Windsor, Wollombi, and Macdonald River

- 27 Penrith
- 28 Camden, Narrellian, and Picton
- 29 Berrima
- 30 Braidwood
- 31 Cooma
- 32 Bombala
- 33 Warialda
- 34 Tamworth
- 35 Cassilis
- 36 Mudgee
- 37 Rylstone
- 38 Hartley

- 39 Goulburn
- 40 Queanbeyan
- 41 Tumut
- 42 Albury
- 43 Dubbo
- 44 Wellington
- 45 Molong
- 46 Orange
- 47 Bathurst
- 48 Carcoar and Cowra
- 49 Yass
- 50 Gundagai
- 51 Wagga Wagga
- 52 Binalong (Burrowa)
- 53 Deniliquin
- 54 Balranald

TABLE A1

## Wheat Distribution by Police Districts 1861-1880

DISTRICT	1861		1866		1871		1876		1879	
	Acreege	% of Total	Acreege	% of Total	Acreege	% of Total	Acreege	% of Total	Acreege	% of Total
(Goulburn	6,365	4.9	14,276	8.1	9,175	5.9	6,851	4.6	7,983	3.4
(Bathurst	10,354	8.0	18,976	10.8	21,811	14.0	16,403	11.0	25,227	10.8
(Carcoar	3,477	2.7	5,247	3.0	4,769	3.2	6,616	4.4	12,241	5.2
(Wellington	1,002	0.7	2,275	1.3	1,760	1.1	3,258	2.1	5,504	2.3
(Orange	3,364	2.6	29,670	16.9	14,542	9.3	8,003	5.4	11,676	5.0
(Cassilis	195	-	584	0.3	864	0.5	704	0.4	1,818	0.7
(Merton and										
(Muswellbrook	478	0.3	1,327	0.7	1,707	1.1	1,573	1.0	3,035	1.3
(Murrurundi	901	0.7	988	0.5	1,042	0.6	658	0.4	1,330	0.5
(Scone	724	0.5	1,733	0.9	1,539	1.0	1,479	0.9	2,136	0.9
(Berrima	1,631	1.2	873	0.4	900	0.6	180	-	55	-
(Kiama	2,085	1.6	481	0.2	280	0.1	65	-	11	-
(Camden, Narellan,										
and Picton	12,728	9.9	4,151	2.3	2,555	1.7	1,845	1.2	172	-
(Shoalhaven	2,222	1.7	581	0.3	134	-	52	-	36	-
(Wollongong	1,704	1.3	494	0.2	381	0.2	9	-	8	-
(Hartley	1,301	1.0	1,255	0.7	1,239	0.8	745	0.5	729	0.3
(Penrith	8,678	6.7	799	0.4	782	0.5	134	-	19	-
(Rylstone	952	0.7	1,218	0.7	1,064	0.7	1,125	0.7	1,234	0.5
(Windsor	9,377	7.2	4,476	2.5	1,909	1.2	1,025	0.7	680	0.2
(Campbelltown	1,940	1.5	409	0.2	542	0.3	190	-	1	-
(Parramatta	1,270	0.9	245	0.1	196	-	65	-	7	-
(Dungog	3,080	2.3	1,506	0.8	1,356	0.9	646	0.4	307	0.1
(Maitland	7,439	5.7	3,551	2.0	1,286	0.8	251	0.1	49	-
(Paterson	2,637	2.0	2,122	1.2	928	0.6	659	0.4	451	0.1
(Patrick's Plains	5,015	3.9	3,745	2.1	2,455	1.6	1,914	1.2	1,575	0.6
(Raymond Terrace	1,030	0.8	198	-	57	-	10	-	0	-
(Newcastle	81	-	91	-	6	-	0	-	0	-
(Manning River	2,288	1.7	1,074	0.6	1,603	1.0	219	0.1	142	-
(Port Stephens	1,319	1.0	961	0.5	1,020	0.6	412	0.2	277	0.1
(Yass	7,937	6.1	8,936	5.1	9,561	6.4	2,792	1.8	8,463	3.6
(Port Macquarie	389	0.3	369	0.2	111	-	5,643	3.8	4	-
(Braidwood	1,653	1.2	3,545	2.0	1,985	1.3	11	-	2,138	0.9
(Queanbeyan	3,755	2.9	6,280	3.5	5,756	3.8	1,969	1.3	4,435	1.9
(Gosford	95	-	80	-	12	-	4,259	2.8	0	-
(Mudgee	1,250	0.9	3,771	2.1	5,789	3.8	12	-	9,265	3.9
(Broulee	978	0.7	527	0.3	268	0.1	6,437	4.3	212	-
TOTAL SETTLED										
DISTRICTS	109,694	83.6	126,814	70.9	99,385	63.8	76,215	49.7	101,220	42.3
(Binalong (Burrowa)	640	0.4	13,249	7.6	11,042	7.4	11,000	7.4	25,133	10.7
(Molong	327	0.2	299	0.1	2,288	1.5	5,240	3.5	12,297	5.2
(Dubbo	336	0.2	716	0.4	1,094	0.7	2,334	1.5	6,048	2.5
(Grafton	283	0.2	406	0.2	0	-	0	-	2	-
(Tenterfield	572	0.4	675	0.3	4	-	1,155	0.7	1,549	0.6
(Richmond River	0	-	0	-	13	-	16	-	0	-
(Warialda	45	-	88	-	56	-	376	0.2	661	0.2
(Wagga	2,990	2.3	2,574	1.4	3,550	2.3	1,333	0.8	5,750	2.4
(Tamworth	433	0.3	2,282	1.3	4,509	3.0	6,562	4.4	10,881	4.6
(Eden	1,298	1.0	1,112	0.6	155	-	47	-	52	-
(Cooma	418	0.3	1,070	0.6	2,109	1.4	2,425	1.6	3,875	1.6
(Bombala	801	0.6	905	0.5	480	0.3	771	0.5	1,982	0.8
(Tumut	2,696	2.0	2,864	1.6	2,371	1.5	2,131	1.4	3,390	1.4
(Albury	4,556	3.5	8,320	4.7	15,936	10.6	23,117	15.6	33,790	14.4
(Balranald	0	-	7	-	14	-	0	-	385	0.1
(Deniliquin	24	-	69	-	573	0.3	1,642	2.2	6,701	2.8
(Gundagai	787	0.6	3,938	2.2	3,647	2.4	4,975	3.3	9,439	4.0
(M'Leay	80	-	30	-	16	-	11	-	0	-
(Armidale	1,913	1.4	7,790	4.4	5,652	3.7	6,037	4.0	5,625	2.4
(Wellingrove	547	0.4	1,816	1.0	1,842	1.2	2,763	1.8	4,580	1.9
TOTAL BEYOND										
SETTLED DISTRICTS	18,746	13.8	48,210	26.9	55,351	36.1	71,935	47.8	132,140	55.6
GRAND TOTAL	128,440		175,024		154,736		148,150		233,360	

Appendix 3.THE EXTENSION OF THE NEW SOUTH WALES RAILWAY SYSTEM

<u>Date of Opening</u>	<u>From Where Opened</u>	<u>To Where Opened</u>
September 1855	Sydney	Parramatta
September 1855	Redfern Tunnel	Darling Harbour
September 1856	Granville	Liverpool
March 1857	Near Newcastle	East Maitland
March 1858	Near Newcastle	Newcastle
May 1858	Liverpool	Campbelltown
July 1858	East Maitland	West Maitland
July 1860	West Maitland	Lochinvar
July 1860	Parramatta Junction	Blacktown
December 1861	Blacktown	Rooty Hill
March 1862	Lochinvar	Branxton
May 1862	Rooty Hill	South Creek
July 1862	South Creek	Cross Roads
September 1862	Campbelltown	North Menangle
January 1863	Cross Roads	Penrith
May 1863	Branxton	Singleton
July 1863	North Menangle	Picton
May 1864	East Maitland	Morpeth
October 1864	Rookwood Cemetery Branch	
December 1864	Blacktown	Richmond
March 1867	Picton	Mittagong
July 1867	Penrith	Weatherboard
December 1867	Mittagong	Sutton Forest
May 1868	Weatherboard	Mount Victoria
August 1868	Sutton Forest	Marulan
May 1869	Singleton	Muswellbrook
May 1869	Marulan	Goulburn
October 1869	Mount Victoria	Bowenfels
March 1870	Bowenfels	Wallerawang
July 1870	Wallerawang	Rydal
October 1870	Muswellbrook	Aberdeen
April 1871	Aberdeen	Scone
August 1871	Scone	Wingen
April 1872	Wingen	Murrurundi
April 1872	Rydal	Lockes Platform
July 1872	Locke's Platform	Macquarie Plains
March 1873	Macquarie Plains	Raglan
February 1875	Raglan	Kelso
November 1875	Goulburn	Gunning
April 1876	Kelso	Bathurst
July 1876	Gunning	Bowning
November 1876	Bowning	Binalong
November 1876	Bathurst	Blayney

<u>Date of Opening</u>	<u>From Where Opened</u>	<u>To Where Opened</u>
March 1877	Binalong	Murrumburrah
April 1877	Blayney	Orange
August 1877	Murrurundi	Quirindi
November 1877	Harden	Cootamundra
April 1878	Cootamundra	Bethungra
July 1878	Bethungra	Junee
September 1878	Junee	North Wagga Wagga
October 1878	Quirindi	West Tamworth
March 1879	Werris Creek	Breeza
September 1879	North Wagga Wagga	Wagga Wagga
September 1879	Breeza	Gunnedah
June 1880	Orange	Wellington
September 1880	Wagga Wagga	Gerogery
February 1881	Wellington	Dubbo
February 1881	Gerogery	Albury
February 1881	Junee	Narrandera
February 1881	Junee Triangle Loop	
September 1881	Narrandera	Darlington
January 1882	West Tamworth	Moonbi
March 1882	Darlington	Carrathool
March 1882	Campbelltown	Camden
May 1882	Wallerawang	Capertee
July 1882	Carrathool	Hay
July 1882	Gunnedah	Boggabri
August 1882	Moonbi	Uralla
October 1882	Boggabri	Narrabri West
October 1882	Dubbo	Nevertire
February 1883	Uralla	Armidale
June 1883	Nevertire	Nyngan
June 1883	Albury	River Murray
January 1884	Joppa Junction	Tarago
June 1884	Capertee	Rylstone
August 1884	Armidale	Glen Innes
September 1884	Nyngan	Byrock
September 1884	Rylstone	Mudgee
September 1884	Narrandera	Jerilderie
October 1884	Sydney	Hurstville
March 1885	Tarago	Bungendore
March 1885	Demondrille	Young
September 1885	Byrock	Bourke
December 1885	Orange	Molong
December 1885	Orange Fork	
December 1885	Hurstville	Sutherland
March 1886	Sutherland	Waterfall
March 1886	Loftus Junction	National Park
June 1886	Cootamundra	Gundagai
September 1886	Glen Innes	Tenterfield
September 1886	Strathfield	Hornsby

<u>Date of Opening</u>	<u>From Where Opened</u>	<u>To Where Opened</u>
November 1886	Young	Cowra
April 1887	Hornsby	Hawkesbury River
June 1887	Clifton	Wollongong
August 1887	Gosford	Hamilton
August 1887	Woodville Junction	Islington Junction
September 1887	Bungendore	Queanbeyan
November 1887	Wollongong	North Kiama
December 1887	Queanbeyan	Michelago
January 1888	Mullet Creek	Gosford
January 1888	Tenterfield	Wallangarra
February 1888	Cowra	Blayney
October 1888	Waterfall	Clifton
May 1889	Hawkesbury River	Mullet Creek
May 1889	Michelago	Cooma
January 1890	Hornsby	St. Leonards
July 1890	Homebush	North Strathfield
April 1892	Yass Junction	Yass Town
July 1892	Nyngan Junction	Cobar
October 1892	Culcairn	Corowa
June 1893	Kiama	Nowra
September 1893	Cootamundra	Temora
December 1893	Molong	Forbes
May 1894	Lismore	Mullumbimby
December 1894	Mullumbimby	Murwillumbab
February 1895	Sydenham	Belmore
October 1896	Jerilderie	Berrigan
December 1896	Parkes	Bogan Gate
April 1897	Narrabri Junction	Moree
April 1897	Narrabri Loop	
May 1897	Rookwood Cemetery	
January 1898	Nevertire	Warren
March 1898	Bogan Gate	Condobolin
September 1898	Berrigan	Finley
September 1898	Broken Hill	Tarawingee
September 1899	West Tamworth	Manilla
February 1900	Moree	Gravesend
May 1901	Koorawatha	Grenfell
July 1901	The Rock	Lockhart
August 1901	Clyde	Carlingford
September 1901	Byrock	Brewarrina
November 1901	Gravesend	Reedy Creek
November 1901	Cobar	The Peak
March 1902	Reedy Creek	Inverell
April 1902	Goulburn	Crookwell
September 1902	Culcairn	Germananton
February 1903	Dubbo Triangle Loop	
February 1903	Dubbo	Coonamble
October 1903	Gundagai	Mount Horeb



<u>Date of Opening</u>	<u>From Where Opened</u>	<u>To Where Opened</u>
October 1903	Old Casino	Lismore
December 1903	Mount Horeb	Tumut
December 1903	Temora	Wyalong
December 1903	Narrabri West	Burren Junction
July 1905	Burren Junction	Cryon
November 1905	Grafton	Casino
November 1905	Casino	Old Casino
November 1906	Temora	Ariah Park
December 1906	Burren Junction	Collaremebri East
August 1907	Bogan Gate	Trundle
April 1908	Waratah	New Line to Bullock Island
April 1908	Islington Junction	Scholey-Street Junction
June 1908	Rookwood Cemetery	
September 1908	Manilla	Barraba
November 1908	Cryon	Walgett
November 1908	Ariah Park	Barellan
December 1908	Trundle	Tullamore
April 1909	Mudgee	Gulgong
April 1909	Belmore	Bankstown
June 1910	Old Casino	North Junction
June 1910	North Junction	Kyogle
September 1910	Cowra	Canowindra
November 1910	Gulgong	Dunedoo
December 1910	Lockhart	Mucra
December 1910	Narromine	Peak Hill
March 1911	Cootamundra North Junct.	Cootamundra West
May 1911	Fassifern	Toronto
July 1911	Flemington	State Brick Works

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