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DAIRYING IN THE WAIRARAPA.

A Socio-Economic Survey Interpreted in Terms
of Historical Small Farm Settlement.

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Abbreviations

B.F.: Butterfat;

Pers. Com: Personal Comment;

N.Z. A. to J.: New Zealand Appendix to the Journals;

N.Z. Govt. Gaz.: New Zealand Government Gazette;

N.Z. Journal: The New Zealand Journal;

N.Z. Times: The New Zealand Times;

Wai. Age: The Wairarapa Age;

Wai. Std.: The Wairarapa Standard.

AN APPRECIATION.

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R.E. Hambly.

I N T R O D U C T I O N .

The term "Wairarapa" is often used today to define all the area east of the North Island axis ranges, from Woodville southwards to Palliser Bay, but this is not the historical context in which the name is used in this essay. Being in large measure an historical interpretation of dairying in terms of small farm settlement, the present work refers to the Wairarapa as that area in which small farm settlements had been established prior to 1873 and which was known at the time as the Wairarapa. On this basis the Wairarapa is defined as that area east of the Tararua and Rimutaka Ranges from Mauriceville south.

Since most dairying within this delimited zone has traditionally been located on the "Wairarapa Lowland", the unity of the survey area is established by all except the northernmost portion of the "Mauriceville Settlement", being within the catchment of the Ruamahunga River. The Mauriceville Settlement has been included because, although one of the "Forty Mile Bush" Settlements, its historical associations have traditionally been with the Wairarapa Lowland rather than with the other "Bush Settlements" further to the north.

Dairying in the Wairarapa is a product of historical evolutionary processes within the framework of the dual physical

environment (grassland and bushland) of the area defined. Although greatly modified by the passing of time, the historical influences are still observable in the present dairying landscape. Without a knowledge of the historical evolution which has occurred, the individuality of the Wairarapa as a dairying area could not be expressed, nor could the present be accurately interpreted. Because there has previously been little written on these aspects of the Wairarapa as a region, much of the historical background included has been assembled for the first time. As a consequence, it has been found both necessary and desirable to document historical processes in detail, in order to build up a case.

The purpose of Parts One and Two of this essay is to outline the evolutionary processes which have given the Wairarapa Dairy Industry its character and to establish the influence of the past on the present dairying scene. Part Three is an analysis of dairying in the modern period. It deals with the transition from dairying in the Wairarapa as a small farm occupation, to one in which large scale dairying, established along more rational lines has become more typical.

Treatment of the subject as outlined, although not a fully comprehensive coverage, will, it is hoped, provide background material for future comparative studies and research.

DAIRYING IN THE WAIRARAPA.

PART 1.

THE PIONEER PERIOD.

1854 - 1890.

Chapter 1. Pioneer Small Farm Settlements, 1854-1890.

The locational influence of pioneer small farm settlement on dairying in the Wairarapa is established.

Chapter 11. Small Farming - Precursor of Dairying.

Small farming becomes synonymous with dairying and small farm life inculcates in the small farmer personal traits which bear strongly on future development.

Chapter 111. The Small Farmer and the Genesis of the Dairy Factories. 1880-1890.

The dairy factory industry is initiated not by the dairy farmers, but in spite of them.

THE SURVEY AREA

LOCATION

C H A P T E R 1.

PIONEER SMALL FARM SETTLEMENTS. 1854 - 1872.

Dairying in the Wairarapa (Map 1.) is allied with the establishment and extension of small farming, so that historical perspective can best be gained by reviewing the circumstances influencing the establishment and evolution of small farm settlement. This again is allied with the Port Nicholson colony established by the New Zealand Company in 1840, since settlement in the Wairarapa was but an extension of that colony.

Colonists, both capitalists who had purchased land on trust, and labourers, were dispatched to Port Nicholson to find on arrival that not only were the sections unsurveyed in many cases ⁽¹⁾, but also that there was dispute as to the validity of the land purchases which had been made by the Company. Uncertainty of title caused a breakdown in the settlement scheme. An investigation into the New Zealand Co. land purchases ⁽²⁾ resulted in a reduction in claimed area from 20 million acres to 300,000 acres, and the Wairarapa, along with other areas, reverted to the Maoris ⁽³⁾. Because of this there was not sufficient land "to carry out the prearranged allocation of sections" ⁽⁴⁾. The delay resulting from this failure of the

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- (1) Sinclair, 1961, Page 62.
 - (2) Sinclair, 1961, Page 61.
 - (3) Carle, 1946, Page 121.
 - (4) Alley & Hall, 1941, Page 27.

Company to give possession of promised sections proved disastrous to many settlers (5).

The influx of men with capital who were expected to provide employment for the labouring class did not eventuate, while the greater part of the capital of those who did come had been expended on their land orders from the Company (6). The result was a lack of land and a lack of capital. This caused great hardship and suffering to those who had come to the Colony as agricultural labourers and artisans (7) since their ability to make a living rested on access to land to work and capital for payment. What money resources this group had initially possessed were in great measure "spent on purchasing what labour should have supplied (8)". It was not long before the Company realized that more labourers had been brought out "than there was capital to employ them" (9) and consequently it had "to give encouragement to the settlement of agricultural workmen on the land in their own right" (10). This was facilitated by the subdivision and leasing of bushland belonging to absentees (11) who, although having intended to have their farms started by labourers (12), had discovered the cost of arable cropping on the English pattern to be prohibitive (13).

(5) N.Z. Journal, Dec. 9, 1843, Pp. 317, 318.

(6) Alley & Hall, 1941, Page 28.

(7) Wakelin, Page 29.

(8) Alley & Hall, 1941, Page 35.

(9) Wakelin, Page 29.

(10) Ibid, and Sinclair, 1961, Page 79.

(11) Wakelin, Pp. 31, 32.

(12) Alley & Hall, 1941, Page 28.

(13) Sinclair, 1961, Page 80.

This was largely because most of the available land was economically valueless bush which proved to be a very expensive "weed" to eradicate ⁽¹⁴⁾. Thus the small farm, worked by the owner or lessee and his family, (although for many years providing only a precarious existence ⁽¹⁵⁾) became a characteristic unit of European agriculture in the Wellington (town) settlement.

Because the problems mentioned affected the New Zealand Co. settlement at Wellington, men of education and considerable capital ⁽¹⁶⁾ were attracted to the Wairarapa by reports of immediately available pastoral land. Although access was a problem ⁽¹⁷⁾ and Wairarapa land could only be purchased by the Crown, several groups of settlers visited the Wairarapa in 1843 with the intention of arranging pastoral leases from the Maoris ⁽¹⁸⁾. As a result "a number of settlers, in open defiance of the law" ⁽¹⁹⁾, entered the Wairarapa with their flocks and herds, and occupied extensive portions of it. Because of uncertainty of title and poor returns in the bush country, these "squatters" realized any form of investment in bushland to be a risk, while the prospects of rapid capital gain from pastoralism in open country ⁽²⁰⁾ were quickly recognized. Furthermore, insecurity of tenure was not a great problem to the pastoralists^{*}

(14) Alley & Hall, 1941, Page 43.

(15) Alley & Hall, 1941, Page 119.

(16) Franklin, Page 151.

(17) N.Z. Journal, Aug. 5, 1843, Page 219.

(18) Carle, 1957, Page 10.

(19) Wakelin, Page 31.

(20) Hill, 1962.

* A "PASTORALIST" is defined as one who occupies, but does not necessarily own, a large area of land and who practises extensive sheep or cattle grazing.

since their capital was invested in stock only (21). Thus, by July 1850 the pastoralists had taken up the grass and scrub lands of the Wairarapa (including the eastern hill country) having ignored the heavily forested areas (22).

However, as a means of more closely settling the Wairarapa Valley it was realized in the early 1850's, that small farming, because of its success in the bushlands of Wellington town and its vicinity, was to be advocated (23). This initiated a continuing campaign or policy from which the small farms and thus the present day dairy farms in the Wairarapa have resulted.

In 1853 purchase of most of the Wairarapa from the Maoris and a reduction in the price of rural land (24) initiated a movement towards small farm settlement. In that year the "Wairarapa Small Farms Association" had been formed, and it was this Association which negotiated for a 25,000 acre block of land to be set aside for small farm settlement in the Wairarapa. However, because of the political influence of the pastoralists (25) who already occupied much of the Wairarapa Valley, the Government provided land in two blocks consisting mainly of bushland which had been spurned by the pastoralists. These became the initial "small farm settlements" * known as Greytown and Masterton. (Fig.1)

(21) Alley & Hall, 1941, Page 50.

(22) Wakelin, Page 31.

(23) Wakelin, Page 32.

(24) Sinclair, 1961, Page 50.

(25) Franklin, Page 151.

* For the purpose of this essay, small farm settlements, special settlements, and special subdivisions are each defined as the subdivision of land blocks into a group of small farms.

PIONEER WAIRARAPA
SMALL FARM SETTLEMENTS
1854 — 1872

All Bush Settlements

diagrammatic representation

Bushlands

Land occupied by pastoralists

The bulk of the more successful inhabitants of these settlements had originally been the labourers of the Wellington settlement of the New Zealand Co. (26).

Thus the contrasting types of settlement in the Wairarapa (extensive and intensive) are attributable to the institutional and environmental difficulties confronting the early settlers at Port Nicholson. Lack of land, or at least the failure to secure title to land and poor returns from arable agriculture, led to the development of large scale pastoral runs on the more open eastern side of the Wairarapa and of its eastern hill country. Conversely the problem of employment for farm labourers led to their taking up small farms. Many of them later became members of the Small Farms Association, which pioneered settlement in the forested areas on the western side of the Wairarapa Valley.

From the beginning it has always been a principle in New Zealand settlement history to establish small farms. Yet not all settlement followed the pattern proposed in the Wairarapa, which was similar to that of the English village system where the farmer lived with his fellows in a residential cluster, while his farmland was located somewhere beyond. Each prospective Wairarapa small farmer was allotted a one acre town section and a 40 acre suburban section. The size of the 40 acre sections was decided by a majority decision of those taking part (27),

(26) Wakelin, Page 31.

(27) Bagnall, 1953, Page 9.

although one group believed the sections to be too small (28) and too remote from Wellington (29). Confidence in both the location of the settlement and size of sections was shown by the majority for several reasons. In 1853 when settlement plans were being formulated, the Australian gold rushes had opened up an important subsidiary market for dairy produce (30) and the outlook was one of economic promise (31). In addition it was believed that the settlements were to be proclaimed an Hundred * (32). The proposed 40 acre sections being within the dense belt of bush, the clearing of a large area posed an enormous task for the farmer and his family so that the size was judged to be sufficient. However, the settlers later found that the 40 acre sections were not sufficient to support a family. Yet although this was the case in these privately established settlements, the fostering of small farming became a feature of Government policy, which tended towards even more conservative farm sizes. This has also been of continuing significance in the evolution of small farming in the Wairarapa.

The story of small farms at that time is one of continual difficulty. For instance a dispute which arose over a

(28) Bagnall, 1954, Page 10.

(29) Bagnall, 1953, Page 9.

(30) Wakelin, Page 30.

(31) Bagnall, 1954, Page 21.

(32) Wakelin, Pp. 33,34.

* The "Hundred Ordinances" were merely land laws which permitted a settler a small holding with common grazing (Carle, 1957, Page 19). This meant that common grazing land would be set aside for the use of all stock owners, thus making it unnecessary for grazing land to be included in the individual's Holding.

Maori land claim that land to the east of the road through Greytown had not been purchased, was settled in favour of the Maoris, and almost two years were to elapse before alternative sections in other areas had been surveyed and allocated (33). As a result the small farm settlements became dispersed over the four subdivisions of Masterton, Greytown, Taratahi and Moroa. (Map 3.*) The establishment of these settlements initiated a new era for the Wairarapa. The small farmer in this one time bushland, living in self-sufficiency based upon the cow, (and domestic crops) introduced dairying to the bushlands of the Wairarapa Plain where it has remained, a century later, the characteristic land use.

Although there was no organized small farm settlement at Featherston comparable with those further north, suburban lands amounting to some 10,000 acres were subdivided by the Wellington Provincial Government for small farm settlement. These lands, situated on three sides of the proposed town of Featherston, had (prior to November 1856) been divided into sections of five to fifty acres in area, for private purchase. (34) The intention here must have been twofold; to foster close rural settlement and to establish a pool of labour, since many of the sections could not have supported a family.

(33) Bagnall, 1953, Page 21.

(34) N.Z. Govt. Gaz., Vol. 3, No. 23, Nov. 3, 1856, quoted by Carle, 1957, Page 21.

* All subsequent settlements and subdivisions are shown on this map. (Page 70a).

The upset price of suburban sections was much higher at Featherston than at the Association settlements and some feeling was generated at the time of sale, both against the price of the land and the quality of it ⁽³⁵⁾. But neither the circumstances of the area, nor the prices deterred small farmers from purchasing at Featherston. Although their land was more expensive, the Featherston settlers had one major advantage over those further north, in that they were some eight miles closer to Wellington than those at Greytown, and 22 miles closer to Wellington than those at Masterton. It was partly because of this that the Featherston small farm area later became the first in the Wairarapa to experiment in factory production and commercial dairying for export, early in the 1880's.

Most of the small farm settlers who took up sections in the Wairarapa subdivisions, had already had farming experience in New Zealand and they moved to the new area with some resources behind them. In contrast those who followed to settle in the Carterton area (Map 2.) in 1857 were recent arrivals ⁽³⁶⁾. Carterton arose out of one of the major problems faced in the establishment of the Small Farm Settlements. The problem took the form of a dense belt of bush which lay between the two major small farm settlements of Greytown and Masterton ⁽³⁷⁾. Known as the Three Mile Bush, it formed a barrier across the

(35) Carle, 1957, Pp. 23, 24.

(36) Bagnall, 1957, Page 7.

(37) Bagnall, 1957, Page 24.

DISTRICT LOCATIONS

proposed road route to the north. A solution to the problem of forcing the road through the area was the settling of immigrants on ten acre sections in the bush. They were to carry out the work of road construction, while working their small properties as a subsidiary activity ⁽³⁸⁾. By these means another small farm settlement was established by the Wellington Provincial Council as a linking settlement between Greytown and Masterton. But in this case the small farms were a "tool" employed by the authorities to clear the bush and construct the road, since permanent settlers in the vicinity of the proposed road works were recognized as providing the most suitable labour force. Also, by this time the advantages of small farm settlement as a method of bush clearing and land development was officially recognized. Big farms would not have achieved this because of the need to pay labour for clearing when no economic return was forthcoming.

Although the circumstances of these new settlers were so different from those of small farmers who were already settled, from the point of view of the size of holdings they had one thing in common with them; they turned to the cow for farm income. Future extension of bush clearing and milling extended the boundaries of small farming east and west of Carterton, creating the largest dairying "oasis" in the Wairarapa. (Map 7.)

(38) Wakelin, Page 37.

The Scandinavian settlement which was established in the Forty Mile Bush at Mauriceville in 1872 ⁽³⁹⁾, like that of Carterton, combined the establishment of communication with that of settlement ⁽⁴⁰⁾. Spawned by Vogel's Public Works Scheme of the 1870's, the project relied on contracts to be made with Scandinavian settlers who were to be brought to New Zealand. In return for their participation in bush clearing and road building, they were to be allotted 40 acre bush sections along the line of the proposed road ⁽⁴¹⁾, so that by the time their public works employment ceased they would be secure on their own farms. Therefore, these small farmers were not only used as a "tool" to cut out roads and bush and to fulfil the desired aim of small farm settlement; they were deliberately imported for the purpose.

However the settlers found the plan to be profoundly misleading since the Government failed to provide land along the intended road ⁽⁴²⁾, or to construct an access road to the subdivision ⁽⁴³⁾. The Government further failed to ascertain the area necessary to maintain a family in the second class hill country of the Mauriceville Settlement ⁽⁴⁴⁾. One commentator

(39) Petersen, 1956, Pp. 22, 23.

(40) Petersen, 1956, Page 10.

(41) Petition from Settlers, Immigration File, Im.6/8/1. National Archives.

(42) Ibid.

(43) Wai. Std. Sept. 21, 1876, Page 2.

(44) Petersen, 1956, Page 119.

wrote in 1885 that settlers who took up even 100 to 150 acre sections in bush country would be badly off "unless they had good roads and ready access to a market for their produce" (45). This was recognition of the absurdity of 40 acre farms in such country, and the necessity for access between property and market which, in the Mauriceville Settlement, had not been provided (46).

Unlike the small farmers of the bush areas of the plains, those at Mauriceville were unable to take advantage of the milling of the forest in their area, since because of their isolation and "without tramways or railways, a timber industry was impossible" (47). Because of this, the Mauriceville settlers missed the two specific advantages which accrued to the small farm settlements in the forested areas of the plains; the provision of milling as a diversifying economic activity and as a source of employment in the vicinity of the settlement. As a result they were forced to rely on what their land could produce and employment outside the settlement.

It is to be noted that it was because of the institutional and physical problems posed, rather than the specific economic possibilities of the area, that occupation resulted in a semi-intensive form of small farm agriculture. For all its physical unsuitability, the Mauriceville settlers utilized the land to produce the necessities of life, and in so

(45) Wai. Std. June 8, 1885, Page 2.

(46) Petersen, 1956, Page 42.

(47) Franklin, Page 160.

1. "For all its physical unsuitability", the Mauriceville Settlement became a dairying area. (Page 12).
2. "--- an area which, because of its topography, is much more suitable for sheep." (Page 110).

doing made dairying the basis of their farm economy.

These pioneer small farm settlements were important to the future of dairying in the Wairarapa for four major reasons. They established the location of dairying concentrations which remain in large measure even today. Because they were early established core dairying zones they gave rise to the initiation and propagation of the dairy factory industry, and today they include the only five surviving processing units in the Wairarapa. Official Government policy of fostering small farming was established through recognition of the success of the earliest settlements by their ability to survive in and subdue a hostile environment while developing its agricultural resources. Implementation of this policy has largely been responsible for the extension of small farm dairying in the Wairarapa up to the present and will continue to be important in the future. Also the circumstances of life in the bush and the hardships and privations suffered by the small farmers developed a typical small farm mentality which has continued to influence the outlook of Wairarapa dairy farmers even to the present day.

C H A P T E R 11.

SMALL FARMING - PRECURSOR OF DAIRYING.

For those who began the exodus from the Wellington area to the Wairarapa Small Farm Settlements in 1854, the move came at an unfortunate time. Since many of those who had balloted for land in these settlements had already had farming experience in the vicinity of Wellington ⁽¹⁾, they would naturally have been conversant with the condition of the market. For two years they would have noted the results of, and possibly taken part in, the expanding trade in dairy produce with the goldfield population of Australia ⁽²⁾. By weighing up their farming success against future intentions and market possibilities they developed an optimistic view of the prospects. But the prospects did not eventuate. Although the difficulty and expense of delivering goods over the Rimutaka Range to Wellington would have loomed large, land in the Wellington settlement which was occupied by many of them at high rentals (5/- to 20/- per acre per annum)⁽³⁾ was to be replaced in the Wairarapa by freehold land. It was this desire for land of one's own that appears to have been the driving force behind the small farmers' migration to the difficult and more remote environment

(1) Wakelin, Page 31.

(2) Statistics of N.Z., 1853-1856, Table 25.
Bagnall, 1954, Page 22.

(3) Wakelin, Page 32.

of the Wairarapa bushlands. As settlement continued to advance through the Wairarapa bush in later years, this desire was the motivating force in the spread of small farm settlement. Men and women were to be drawn to difficult bush areas, not just by a promise of employment, or of land to occupy, but by a promise of land of one's own ⁽⁴⁾. It should be noted that this was a contrasting aim from that of the authorities, who later fostered small farming in certain Wairarapa bush zones as a "tool" for the establishment of communications.

Early intentions were to undertake arable farming, but markets and economic conditions made a change in the intended style of farming, (forcing a monoculture in effect) to one that was insufficient for viable income. Prospects for small farmers in the Wairarapa were forecast in 1854 by Joseph Masters, the spokesman of the Small Farms Association. The faith which he had in the project was propounded in a budget which he believed could be reproduced by a farmer on the land in his first year of occupation ⁽⁵⁾. As outlined ⁽⁶⁾ the prospects were good and it is likely that many settlers were influenced by this forecast in their decision to take up land in the Wairarapa ⁽⁷⁾. Even had economic circumstances remained constant his prophecy was somewhat idealistic both from the point of view of the amount of labour necessary to carry it out and also in the estimated area

(4) Wai. Std., Feb. 11, 1874, Page 2, Leader.

(5) Bagnall, 1954, Page 21.

(6) Appendix 1. Page 184.

(7) Bagnall, 1954, Page 22.

each settler would have free of bush. Circumstances did alter however, as the market was changing even while the move to the Wairarapa was under way. The Australian gold rushes were not maintaining a stable market and the promise and prices of Masters' forecast were receding. "Wellington merchants in 1855 and 1856 complained of the dullness of business", and one Bagnall reports a merchant as saying that, "he did not expect a pound of New Zealand butter would be wanted in Australia within a few years" (8).

The coming of this, the first depression to affect Wairarapa farmers, struck at the basis of the livelihood of the small farmers. It also struck those pastoralists who had undertaken dairying (9) and who depended on it to produce an immediate "cash crop". ("Cash within the week" is usually the aim of any pioneer). However, the pastoralists, unlike the small farmers, were able to shift to other types of production (sheep), while the "little man" based on his small, log-littered clearing in the bush, had no alternative. Whatever the state of the dairy market, the small farmer was obliged to farm along lines similar to those originally outlined by Joseph Masters, but on a much less remunerative basis. From the mid 1850's therefore, dates the initiation of the present day pattern of dairy farms in the Wairarapa. The milch cow largely remained in the bush cleared areas west of the runholders, who turned almost exclusively to

(8) Bagnall, 1954, Page 22.

(9) Hill, 1962, Page 68.

sheep and beef. Dairying has remained the basis of the small farm economy, while except for special Government subdivisions, there has been little incursion of dairying into the former pastoral zones.

Poor communications retarded progress in the intended settlements. When small farm settlement was initiated in the Wairarapa in 1854, there was no proper road access to the valley. Although the first agricultural produce had been packed over the Rimutaka Hill in 1850 by one of the Pastoralists, the route on the Wairarapa side of the hill was still but a bridle track in 1853 ⁽¹⁰⁾. Not until 1856 did the first wheeled vehicle negotiate the hill ⁽¹¹⁾. Even with the opening of the Rimutaka Road to wheeled traffic, the problem of communication with Wellington was not completely solved, especially for those who had chosen to settle in Masterton, as another two years were to pass before the road to Masterton was practicable for carts ⁽¹²⁾. Since it was quickly realized that they would not be able to support themselves by farming, it became of vital importance for many of the settlers to find subsidiary employment beyond their individual holdings. The programme of road building therefore came to fill a basic need, with the majority of settlers from Greytown and Masterton gaining the greater part of their income from such employment in 1855 ⁽¹³⁾. A similar income pattern

(10) Carle, 1957, Page 36.

(11) Bagnall, 1954, Page 19.

(12) Bagnall, 1954, Page 31.

(13) Bagnall, 1954, Page 19.

occurred in later years as settlement evolved, although employment for the small farmers later came to include shearing and fencing on the sheep stations (14), and lumbering (15). Thus it was that another feature of early small farm settlement in the Wairarapa became established; the subdivision and settling of the land before (or at the best concurrently with) the construction of access and trunk roads, and the milling of the bush. The lack of roads was not conducive to trade if a market existed, but the building of roads did provide most of the money income of many early small farmers. It is apparent therefore, that dairying at an early stage became supplementary to outside employment as a source of income for these "little men". The fact that much of this needed employment was later provided by entrepreneur mill owners and pastoralists, did not prevent a growing antagonism and jealousy on the part of the small farmers towards these capitalists.

"The bush was by any measure a severe environment", writes one observer, adding that, "the greatest difficulty posed by the environment was the necessity of discovering a mode of utilizing the bush areas which would provide a sound economic basis for the permanent settlement of the bush" (16). Although the development of the dairying industry later provided this sound economic basis, the settlements in the Wairarapa bush had

(14) Bagnall, 1954, Page 22.

(15) Petersen, 1956, Page 58. Bagnall, 1953, Page 86.

(16) Franklin, Pp. 160-161.

already existed for several decades before commercial dairying was revived. To that extent they had been permanent settlements without a regular or sound economic basis. Though butter was for much of the period before 1890 the only farm produce with a marketable value to the small farmers, it was in terms of barter, rather than of sale, that the price of 4d. per lb. was sometimes quoted ⁽¹⁷⁾. However, butter still formed the basis of farm production, and the milch cow became the mainstay of the small bush farms. Generally speaking, supplementary income resulted from labouring on roads or sheepruns. The small farmers of the bush settlements overcame their greatest difficulty therefore, by ignoring that a sound economic base was essential, and went ahead by balancing their budgets with supplementary occupations.

Despite meagre economic returns from domestic butter-making, the early Wairarapa dairy farmer did not look for other outlets for his produce, and he failed to provide for markets that already existed. In 1886 it was still the reported practice for butter to be taken to the local store where goods were received in return; "the storekeeper paying a very nominal price for the butter and as a rule charging a good price for his goods, thus obtaining a profit in two ways" ⁽¹⁸⁾. Yet the existence of economic possibilities beyond the sphere of the local general store are known to have existed in the early 1880's. Because of a clinging stress on butter production both cheese and

(17) Wai. Std. Oct. 22, 1881, Page 2.
Petersen, 1956, Page 58.

(18) Wai. Std. Nov. 15, 1886, Page 3.

potatoes were being imported into the district from Canterbury⁽¹⁹⁾. The reasons behind the necessity to import cheese are conjectural. Many settlers either did not know how to make cheese, or they chose butter-making because it was easier. It is also possible that rennet could not be procured without slaughtering highly valued calves, which were the basis of the small farmer's future livelihood. Such action is not likely to have been considered. Whatever the reasons for the neglect of cheese, contemporary sources contain few references to cheese-making and therefore indicate its economic insignificance to the small farmer and to the district.

A Wellington correspondent in 1882 questioned why it was that Wairarapa dairy farmers were content to receive 4d. per lb. for butter during the season, while there was a market for good salt butter available in Wellington in winter⁽²⁰⁾. Salt butter on such a market would have returned far more in cash to the Wairarapa dairy farmer had he prepared and sent it to Wellington.

Available opportunities could therefore have afforded dairy farmers some economic relief had they only recognized and taken advantage of them. That they did not, can probably be attributed to ignorance of the situation or to conservatism. The supplying of the local store gave an assured, (if limited) and

(19) N.Z. Times, Nov. 16, 1880, Page 2.
 Wai. Std., Nov. 4, 1880, Page 3.
 Wai. Std., Jan. 18, 1881, Page 2, Leader.
 (20) Wai. Std., Aug. 31, 1882, Page 2.

immediate return to the individual farmer, while being easier and less uncertain than supplying theoretical markets beyond the Wairarapa Valley. Such exporting activity was left to the entrepreneur merchant ⁽²¹⁾ to whom the small farmer sold his butter.

Throughout the pioneer period the small farm settlers of the Wairarapa relied upon the milch cow and it became the symbol of the small farm system. Often the cow was the first animal to be purchased ⁽²²⁾ and it was the cow that matched the spread of grass among the stumps as the bush retreated ⁽²³⁾. A correspondent in a letter to the press, emphasised the importance that the settlers had placed on milch cows. "It never struck us," he said, "that as colonists more was required of us than the rearing of cattle and making butter" ⁽²⁴⁾. Many other references to the early settlement of the small farm areas bear out the initial and often overriding importance of the milch cow ⁽²⁵⁾.

This reliance on butter, almost from the inception of settlement in the bush areas, shows repudiation of the intended European type of agriculture to the extent that small farming became dependent not on arable cropping but surface sown pasture for grazing. The most outstanding and basic modification to the intended farming type occurred in soil preparation. Clearing the

(21) Wai. Std., Nov. 15, 1886, Page 3.

(22) Wai. Std., July 9, 1883.

(23) Bagnall, 1957, Page 24.

(24) Wai. Std., Jan. 3, 1874, Page 2.

(25) Bagnall, 1953, Pp. 22, 26, 86; 1954, Pp. 15, 18, 22; 1957, Pp. 15, 21, 24.

Petersen, 1956, Pp. 90, 121, 57.

bush was a difficult and time-consuming task, authorities being at some variance as to the time necessary, "for the standing bush to be turned into grass", and estimates vary from three to ten years (26). Yet the Mauriceville settlers were reported as having grazing available within two years of taking up their blocks (27). Because of the urgency to establish producing pastures, and the inability of a man and his family to achieve complete clearing because of the need for earning cash, no attempt could be made to prepare the land by ploughing or by breaking the surface in any way (28). Rotting stumps and logs barred the way. As "the majority of bush farmers wanted grazing rather than arable farms" (29), grass on unploughed and stump infested land became the crop of the small farm bush settlements and the milk of their cows the major harvest. Some grain crops were also grown in this way, although there was a concession to soil preparation by "grubbing" and "scratching" among the stumps before sowing (30).

With the need for the rejection of English practice, the relegation of the plough to an inferior status occurred. Wheat, although described as a staple crop of the early settlers⁽³¹⁾ was included in Joseph Masters' small farm budget as a subsistence crop, and in general wheat maintained this non commercial position in the small farm bush settlements. The expense of bought flour

(26) Alley & Hall, 1941, Pp. 98, 99, 101.

(27) Petersen, 1956, Page 89.

(28) Philpott, 1937, Page 211.

(29) Alley & Hall, 1941, Pp. 98, 99.

(30) Petersen, 1956, Page 57.

(31) Alley & Hall, 1941, Page 37.

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3. " --- grass on unploughed and stump infested land became the crop of the small farm bush settlements --- " (Page 22).
 Photograph by courtesy of the Alexander Turnbull Library.
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4. A serviceable post and rail fence emphasizes the link with the bush settlements of the past.

necessitated this domestic production (32). Besides wheat, the other arable crops mentioned in the budget, barley and potatoes, were specifically excluded from the list of products expected to bring financial returns. According to this forecast, income was to be realized from animals and poultry, with the emphasis being placed on what later became the complementary activities of dairying and pig raising. The above history has been cited to show that the English practice of mixed animal and crop farming (roughly sharing in the total income) was substituted for by necessity. They were forced to aim at mere self_sufficiency in food crops, and turned for "cash crops" to animal products, as mentioned. One writer observed that to achieve an immediate improvement in New Zealand's domestic economy, "the settlers had to pay greater attention to their stock, particularly to their milk supply for food and to wool for a marketable export" (33). Because of poor returns and small farms, dairy stock became the "staple" of the small farmer in the bush areas of the Wairarapa, while the sheep became the mainstay of the Wairarapa pastoralist, for the "big farmer" could not live by English style mixed farming either.

A comment on the rejection of arable cropping by the small farmers of the Wairarapa (34) was published in 1874. It attributed the situation to the land regulations of the Provincial Government and to "the miserable and wholly

(32) Petersen, 1956, Pp. 28, 58. Bagnall, 1954, Page 22.

(33) Alley & Hall, 1941, Page 38.

(34) Wai. Std., April 19, 1877, Page 2, Leader.

inadequate reserves" which had been "set aside for agricultural settlements", claiming that because of natural obstacles and one-sided legislation, "we have as a rule no farmers in the common acceptation of the term but only small and large graziers". The hypothesis was, that the provision of small farm bush settlements, "without any right of commonage and without any land available for the purpose", compelled the small farmer to provide pasture for stock to the exclusion of arable cropping.⁽³⁵⁾ It may be observed that provision of common land would have reversed the process of enclosure which at that time characterized British agriculture, and would have introduced to New Zealand the problems which enclosure was seeking to overcome. Nevertheless the absence of common grazing in the Wairarapa was regarded as a grave disadvantage and is the main reason given by the 1874 account for the small farmer's concentration on dairying. As has already been shown this was not the reason for the predominance of the cow. Some years later the same writer had come to realize that a change had occurred in small farm motives. In advocating the growing of potatoes in the Wairarapa, he made the following observation; "We prefer making butter to growing corn and potatoes. It is easier to do so, and like sensible people we choose the easiest way to make a living"⁽³⁶⁾. Thus by 1881 a farming system born of necessity had become a way of life through preference. A significant fact is that they had come to realize this for themselves.

(35) Wai. Std., Jan. 3, 1874, Page 2.

(36) Wai. Std., Jan. 18, 1881, Page 2.

Although the small farmer's outlook was sometimes criticized, he could not be blamed for being satisfied with what other observers regarded as a meagre existence (37).

Environmental difficulties, initially posed by the establishment of small farms in the bush, had been overcome at great personal cost and only extreme circumstances could have forced a small farmer to give up his land. Conversely, few small farmers accumulated sufficient resources to become large farmers and to go in for sheep. The majority therefore became proud of their success and content with an income which, if severely limited, was a product of their jealously guarded independence. In a letter to the editor of the local press in 1890, one small farmer wrote; "To convince you and others that it (small farming) does pay, I give you a list of my year's proceedings commencing August 1889" (38). Having taken up 50 acres five years previously, this farmer had transformed 45 acres of bush into grass and built up a small herd of 11 cows. In the season of 1889-1890 the herd produced 1,256 pounds of butter which was sold locally and realized an average price of 7d. per pound*. (An average of 3d. per lb. less than Joseph Masters had expected butter to realize in 1854 (39)). Income from butter-making,

(37) Wai. Daily, Aug. 7, 1890, Page 2.

(38) Wai. Daily, Aug. 6, 1890, Pp. 2, 3.

(39) Bagnall, 1954, Page 21.

Appendix 1.

* This is higher than most references indicate domestic butter was realizing in the Wairarapa throughout the period 1854-1890. Higher prices were only realized during the off-season when little was being produced. Butter in summer was often almost unsaleable. (Petersen, 1956, Page 121).

totalling £38.8.5½d., was supplemented by the sale of vegetables, fruit and eggs which together provided a further £11.14.6d. The figures quoted give a total of £50.2.11½d., (although the farmer concerned gave the total income as £73.1.10d.) to provide for a family of four adults and one child ⁽⁴⁰⁾. Thus 35 years after the original small farm settlements were established in the Wairarapa, a small farmer, occupying 50 acres, was content to receive less than one third of the income forecast for a small farm enterprise in 1854 ⁽⁴¹⁾. Despite this the figures show that without a dairy income the family would have been in precarious financial straits. When commenting on this letter and the poor return indicated, the Editor stated with reference to the small farmer, "and yet he has the assurance to be contented, to be proud of his success, to boast of his independence and to take delight in his little store" ⁽⁴²⁾. It is likely that such a modest budget was typical of the small farm economy in the Wairarapa over much of the period around 1890, and probably accounts for the fact that the small farmer, of necessity, had to look to his own immediate interests rather than those of the community, or even his own future.

To the small farmer who came to concentrate on the dairy cow as the basis of his existence it would be unwise to attribute any motive other than the need for the immediate

(40) Wai. Daily, Aug. 6, 1890, Pp. 2, 3.

(41) Bagnall, 1954, Page 21.
Appendix 1.

(42) Wai. Daily, Aug. 7, 1890, Page 2, Leader.

necessities of life. No variety of the local market encouraged other products; nor did he accept hardships in the knowledge that he might participate in some future boom in local or overseas markets. Under the prevailing conditions domestic dairy production had become recognized as a basic fact of small farm survival and dairying was carried on because it provided both food and income. It was not for some hypothetical, idealistic purpose.

It should be emphasised that despite the fact that he was striving only for immediate self-sufficiency the small farmer was an asset in the Wairarapa. By clearing and farming the bushlands he achieved what the pastoralist (with his commercial profit motive) would never have achieved - the permanent occupation and development of a very difficult natural environment which produced negligible economic returns in comparison with the effort expended. This resulted from the fact that the small farmer was prepared to spend a lifetime gaining little more than self-sufficiency in order to establish his own small farm.

Yet, from the point of view of community interest, there existed some less desirable qualities in the Wairarapa small farmers. They were described as being narrow-minded, intolerant, selfish, prejudiced and the most conservative group in the community. They became absorbed in their own pursuits, with no time to spare for interest in any affairs except their

own immediate need for economic survival. (43) So hardworking was the small farmer; so close to barely gaining a living, that he developed traits that were not conducive to co-operation, even with his fellow small farmers. Consequently the small farmer could not be the driving force behind the movement which led to the establishment of dairy factories in the Wairarapa in the last decades of the 19th century.

These results were inevitable and it would be unfair to expect otherwise. Having emerged largely from the former labouring class, under conditions of adversity and constant labour for barely sufficient income, the Wairarapa small farmers (like those all over the world) had no leisure for philosophy, politics or outside interests. Nor did they look to the future or relate to themselves the implications of advanced technology as it affected dairying. They were unlike the pioneers of Taranaki who are reputed by one writer to have viewed their land in terms of what they hoped to be able to do with it in the future (44). Axe in hand, the small farmer had proved to be the best "tool" for subduing the bush and for developing the agricultural resources of the Wairarapa, but "the 'struggle for existence' on a small bush farm (was) not calculated to make a public spirited citizen" (45).

(43) Wai. Std., Jan. 13, 1876, Page 2, Leader.

(44) Burnett, 1965, Page 102.

(45) Wai. Std., Jan. 13, 1876, Page 2.

CHAPTER 111.

THE SMALL FARMER AND THE GENESIS OF THE FACTORIES.

1880 - 1890.

Because of the small farmers' necessary pre-occupation with economic survival and the conservatism and independence which this engendered, it fell to the large land owners, professional men and entrepreneurs to attempt to stimulate improvements in the local dairy industry*. Being men of education and observation they were aware of agricultural progress, especially with regard to the rise of the dairy factory industry in the United States, and although faced by severe difficulties, they succeeded in establishing the dairy factory industry in the Wairarapa. They in general had nothing to gain personally, being motivated by a desire for local progress. But such a sentiment was regarded with suspicion by the small farmers and there is evidence that genuine concern for the district and its small farmers (1) was interpreted by the latter as being prompted by ulterior motives (2). The rise of the dairy factory industry in the Wairarapa was therefore a slow process, especially in

(1) Wai. Std. May 14, 1884, Leader.

(2) Wai. Std. May 5, 1884, Letter.

* This was also true of pioneer activity in the industry elsewhere. The "Edendale Factory" (1882) was established by the "New Zealand and Australian Land Company", (Philpott, 1937, Page 39) and the "Jubilee Factory" (1887), the pioneer dairy factory in Taranaki, was established by one Chew Chong, a Chinese entrepreneur. (Philpott, 1937, Page 64).

terms of the personal effort and disappointments of the sponsors. Such was the case because the dairy farmers' "isolationism" caused them to lag behind those with the foresight to attempt to introduce such an industry to the district.

Although during the early 1880's butter had largely only a trading value, (put variously by writers at 4d. or 5d. per lb. ⁽³⁾) and the production of cheese was hardly attempted ⁽⁴⁾, the most difficult task in establishing the industry in the Wairarapa was to convince the milk producers that they would gain rather than lose by factory establishment. Almost of necessity, being averse to any ideas which did not emanate from himself, or which committed him to obligations to others, the small dairy farmer prided himself on his success ⁽⁵⁾ and on his own ability to solve his problems. He rebelled against any proposition which would reduce his independence ⁽⁶⁾. Any agreement was therefore to be couched in terms of conditions laid down by each small farmer, not in terms of the small farmers as a group, and not in terms of general interest. Their jealousy, independence, conservatism and selfishness thus made it difficult to promote dairy factories in the Wairarapa. The result was that the successful initiation of the co-operative dairy factory system in the Wairarapa was accomplished not by

(3) Wai. Std. July 28, 1881, Page 2.

Wai. Std. Nov. 4, 1880.

(4) N.Z. Times, Nov. 16, 1880, Page 2.

(5) Wai. Daily, Aug. 6, 1890, Pp.2, 3.

(6) Wai. Daily Times, Jan. 17, 1901, Page 2.

the dairy farmers, but in spite of them.

The first known reference to the proposed establishment of a dairy factory appeared in the "Wairarapa Standard" of October 12, 1872. The editor wrote that he had previously pointed out the advantages to be gained by "the establishment of a butter factory on the American Principle" *, and that he was concerned that the matter should be taken further. (7) However, "there were few found willing to have anything to do with it" (8), and the suggestion failed to receive the necessary response.

Despite encouragement by the press a further eight years were to elapse before Messrs. Gilpin and Pardon, the proprietors of a retail business in Featherston, established the first dairy (cheese) factory in the Wairarapa (9) (Fig.6) (Map 4). For these entrepreneurs undertaking a pioneer venture, the decision to manufacture cheese was a logical one. Little domestic cheese was made locally, and there was no other factory enterprise in the North Island. An assured market would therefore have been expected locally and further afield, especially in the Wellington urban area. On the other hand a butter factory would have involved more risk because of the quantity of domestic butter being produced.

(7) Wai. Std. Oct. 12, 1872, Page 2.

(8) Wai. Std. Nov. 26, 1886, Page 2.

(9) Wai. Std. Nov. 4, 1880, Page 3.

N.Z. Times, Nov. 16, 1880, Page 2. (Philpott - page 204 - mentions only two factories in N.Z. prior to this, so from a national standpoint the Wairarapa was well to the fore.)

* American Principle :- "In practice the farmers who supplied the milk received as payment the whole of the return from the sale of the produce less the cost of manufacture and selling." (Philpott, 1937, Page 34.)

Several factors were responsible for this dairy enterprise being established at Featherston rather than elsewhere in the Wairarapa. The Featherston area had always held an advantage over the other Wairarapa settlements in that its proximity to Wellington made it not only more aware of the market in that centre but also that it was more accessible. This link was greatly strengthened by the extension of the railway to Featherston in 1878 ⁽¹⁰⁾. The Featherston district gained an additional advantage from this in that the railway was opened some 18 months before its extension to Greytown ⁽¹¹⁾ and two years before the link was made with Masterton ⁽¹²⁾. This was an important gain in the forging of commercial links with Wellington. It is not surprising therefore that this experiment in manufacture by the factory system and the later packing of dairy produce for export to London were initiated by businessmen at Featherston.

Messrs. Gilpin and Pardon's factory began making cheese early in November 1880 ⁽¹³⁾. As the first factory in the Wairarapa it was of much greater significance than its early intake of 250 gallons of milk a day possibly suggests ⁽¹⁴⁾. Although not a co-operative factory, it was the initial attempt to gain the co-operation of milk suppliers in an outside venture (and as a consequence the first failure).

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- (10) Carle, 1957, Page 50.
 - (11) Bagnall, 1953, Page 64.
 - (12) Bagnall, 1954, Page 62.
 - (13) Wai. Std. Nov. 4, 1880, Page 3.
 - (14) N.Z. Times, Nov. 16, 1880, Page 2.

Yet the enterprise was at first quite successful ⁽¹⁵⁾, and reports mention the production of excellent cheese ⁽¹⁶⁾, all of which was sold in the Wellington area ⁽¹⁷⁾. In the factory's third season it was reported that the proprietors were being offered milk in any quantity by the surrounding settlers. At the same time it was stated that the small factory (occupying the rear of retail premises in Featherston) was to be replaced by a much larger one to be built at South Featherston. ⁽¹⁸⁾ It is not known why this plan was never carried out, or why cheese manufacture was abruptly discontinued at the close of the 1882-1883 season ⁽¹⁹⁾. However it is likely the enterprise failed because of a withdrawal of support, since the factory, being unable to safeguard its supply, was at the mercy of the dairy farmers. Later evidence shows that a strengthening of the butter market would have rapidly reduced the supply of milk to the cheese factory.

Earlier "The New Zealand Times", in congratulating the factory entrepreneurs on their initiative, had noted the general apathy regarding such projects, and stated with reference to the Wairarapa, "that outside the timber trade there has been a lack of enterprise among the settlers there in promoting industries that are the natural outcome of agricultural settlement" ⁽²⁰⁾.

(15) N.Z. Times, Nov. 16, 1880, Page 2.

(16) N.Z. Times, Oct. 5, 1881, Leader.

(17) N.Z. Times, Dec. 6, 1882, Page 3.

(18) Ibid.

(19) Philpott, 1937, Page 32.

(20) N.Z. Times, Nov. 16, 1880, Page 2.

In 1881 Mr. Henry Pardon, the second mentioned entrepreneur, wrote of certain basic difficulties that made the expansion of the factory system, "more easily spoken of than done". He indicated several local problems, one of which was the small farmer's over-estimation of the value of his milk. He related one opinion that it was better to feed milk to the pigs than to accept $3\frac{1}{2}$ d. per gallon for it. (21) * Another problem concerned with inducing farmers to support a factory was the value they placed on skim-milk for calf raising. Many farmers insisted that they could not get by without this (22).

The reasons behind such an outlook were probably two-fold. Restricted money income, associated with the inflated (scarcity) value of producing milch cows or heifers, meant that small farmers would have relied entirely on natural increase for herd build-up. In addition any surplus calves would have been an important saleable commodity. Thus they would have had a premium value which the farmer found difficult to disregard. Both problems mentioned (basically a result of ignorance of the most profitable operation on a dairy farm) were common throughout the Wairarapa and each was partly responsible for the failure or postponement of several later enterprises.

(21) N.Z. Times, Oct. 8, 1881, Letter.

(22) Ibid.

* Butter was quoted at 4d.-5d. per pound on Nov. 4, 1880. (Wai. Std.) It took from two and one half to three gallons of milk to produce one pound of butter. (N.Z. Times, Oct. 8, 1881.) Thus $3\frac{1}{2}$ d. per gallon was equivalent to $8\frac{3}{4}$ d.- $10\frac{1}{2}$ d. per pound of butter, or about double the ruling rate.

The earliest recorded attempts to supply the "Home" market with Wairarapa dairy produce were undertaken by Featherston entrepreneurs and one James Donald. Messrs. Gilpin and Pardon exported a trial shipment of their factory produced cheese prior to October 1881 ⁽²³⁾, and one Toogood, a Featherston merchant, exported a trial shipment of butter at about the same time ⁽²⁴⁾. Although both initial cargoes were badly affected by heat ⁽²⁵⁾, butter exports continued with some apparent success, since Toogood is known to have tinned and exported 15 to 20 tons of butter between October 1881 and March 21, 1882 ⁽²⁶⁾. He was so confident that the "Home" market could absorb all New Zealand's surplus butter at payable prices, (even without refrigeration) that he offered to advance more than 50/- per cwt. on good butter forwarded through him ⁽²⁷⁾.

Although Donald was not an entrepreneur, and therefore an exception, he had formerly operated a timber mill at Taita ⁽²⁸⁾ and by 1882 he was a "big" dairy farmer with a herd of 60 to 70 cows ⁽²⁹⁾. Being a man of business experience, he became so successful as a dairy farmer that in March 1882 he; "imported machinery and dies for the manufacture of tins for preserving butter". The week that this apparatus was installed Donald sent

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- (23) N.Z. Times, Oct. 8, 1881, Letter.
 - (24) Wai. Std. July 12, 1881, Page 2.
 - (25) N.Z. Times, Oct. 8, 1881.
 - Wai. Std. July 21, 1881, Page 3.
 - (26) Wai. Std. March 21, 1882, Page 2.
 - (27) Wai. Std. July 21, 1881, Page 3, Letter.
 - (28) Pers. Com.
 - (29) Wai. Std. Aug. 19, 1882, Page 2.

a consignment of 25 cwt. of butter to Wellington for export. (30) *

However, the example of these small but notable enterprises did not inspire the Wairarapa dairy farmers who in fact tended to frustrate later attempts to develop the industry.

Following the failure of his initial attempt to foster interest in the erection of a dairy factory in 1872, the editor of the "Wairarapa Standard" continued to allot space to information on dairying and the factory industry in particular. Discussions which resulted, "brought about a better state of feeling" (31) on the subject and proposals for the establishment of a dairy factory at Greytown were set in train. However, this project was to be carried out only after a great deal of effort on the part of the sponsors. Mr. Coleman Phillips, the man largely responsible, was not a dairy farmer but a barrister and a land owner, who was an ardent supporter of the co-operative principle of dairying (32).

A favourable report made by an investigating committee set up at the initial meeting (33) indicated that the farmers were in favour of the scheme and that there were sufficient cows in the area to warrant a factory (34). It was later to be shown

(30) Wai. Std. March 21, 1882, Page 2.

(31) Wai. Std. Nov. 26, 1886, Page 2, Leader.

(32) Philpott, 1937, Page 44.

(33) Wai. Std. Aug. 13, 1881, Page 2.

(34) Wai. Std. Oct. 8, 1881, Page 2.

* This enterprise later developed into the largest dairy farm, and the largest farm butter factory in New Zealand. (The N.Z. Dairyman, Vol. 20, No. 11, Aug. 1916, Page 53.)

that verbal assent was not synonymous with an intention to participate. Yet it was on the basis of this report that a decision to form a company was made. (35) The required capital accumulated very slowly and letters to the editor were written in an attempt to foster support (36). One letter by Phillips lamented "the want of energy shown by the valley farmers", in the matter of support for the factory (37). In February 1882 the editor of the "Wairarapa Standard" commented on the fact that there was still no sign of the factory and asked why it was, "that such important enterprises lack energy in being carried out" (38). Because of the lack of progress the committee decided to publish a circular which was distributed to the dairy farmers in the district, the decision to proceed being dependent on the replies received (39).

Many dairy farmers failed to show an interest and there were few replies to the circular (40). However, promises of 189 cows or 340 gallons of milk were accepted as being sufficient and on the basis of this the proposed "Greytown Butter and Cheese Company" was formed and a "Memorandum of Association" drawn up by Mr. Phillips (41), was submitted (42).

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- (35) Wai. Std. Oct. 3, 1881, Page 2.
 - (36) Wai. Std. Oct. 13, 1881, Page 3.
Wai. Std. Dec. 3, 1881, Page 2.
 - (37) Wai. Std. Dec. 3, 1881, Page 2.
 - (38) Wai. Std. Feb. 7, 1882, Leader.
 - (39) Wai. Std. March 2, 1882, Page 2.
 - (40) Wai. Std. March 16, 1882, Page 2.
 - (41) Philpott, 1937, Page 44.
 - (42) Wai. Std. March 16, 1882, Page 2.

By August 26, 1882, the erection of the new factory was going ahead ⁽⁴³⁾, but the committee was still having difficulty in raising the finance. At a general meeting late in September 1882 the first chairman, Mr. Buchanan,* (later Sir Walter) indicated that in order to raise the required finance the Company planned to re-canvass the district ⁽⁴⁴⁾. With reference to the opening of the enterprise he said that he would place the factory in a position to start, but that if the settlers failed to supply the funds required by taking up the remaining balance of shares, nothing more could be done. ⁽⁴⁵⁾

Having begun cheese production*, the Greytown Factory continued to face the major difficulties which had threatened the enterprise earlier. Working capital was severely limited ⁽⁴⁶⁾, and from the beginning the factory was on a very insecure financial footing. This problem could perhaps have been overcome had the farmers undertaken their obligations to the spirit of the agreement to supply milk. Instead of the 340 gallons promised, only 150 gallons were delivered to the factory on the first day ⁽⁴⁷⁾, and a later report indicated that a daily intake of only 250 gallons ⁽⁴⁸⁾ was being maintained. According to the

(43) Wai. Std. Aug. 26, 1882, Page 2.

* Not a dairy farmer but one of the pastoralists.

(44) Wai. Std. Sept. 30, 1882, Page 2.

(45) Wai. Std. Oct. 3, 1882, Leader.

* The factory opened on January 2, 1883. (Wai. Std. Page 2). Even having experienced considerable delays it was the fourth Dairy Factory Company in N.Z. and the second in the North Island. (Philpott, 1937, Pp. 39-44.)

(46) Wai. Std. June 11, 1884, Page 2.

(47) Wai. Std. Jan. 3, 1883, Page 3.

(48) Wai. Std. Feb. 15, 1884, Page 2.

first annual report, the manager could have manipulated twice the milk for little increase in costs ⁽⁴⁹⁾. The problem was twofold. Some dairy farmers refused to supply the cheese factory, in the knowledge that with the factory in operation and milk normally destined for the dairy being diverted to cheese, there would be more demand and higher prices for domestic butter ⁽⁵⁰⁾. Also some of those who had agreed to supply the factory did so only at their own discretion. A report on the Greytown Factory in 1884 stated that, "the farmers make no conditions saving in the price of the milk. They are at perfect liberty to supply the factory when milk is plentiful and butter cheap; but when butter rises in value and milk is richer in quality, they politely withdraw their patronage and the factory is closed ten weeks earlier than it ought to be" ⁽⁵¹⁾. The individual small farmer, of necessity looking to his own benefit, would have found this practice advantageous, but it did not further the community enterprise. Greytown dairy farmers had not asked for a dairy factory, and judging by the lack of response, both in the taking up of shares ⁽⁵²⁾ and the supplying of milk, they did not want a dairy factory. As a result the situation arose that a co-operative enterprise was threatened by a lack of co-operation.

(49) Wai. Std. June 11, 1884, Page 2.

(50) Wai. Std. Sept. 15, 1886, Page 2, Leader.

(51) N.Z. A to J., 1884, Vol. 2, H9, "Dairy Factories in N.Z."
Wai. Std. Oct. 29, 1884, Page 2.

(52) Wai. Std. Oct. 13, 1886, Page 2, Leader.

The position was so critical that the chairman of directors in his second annual report wrote that, unless "more milk was provided future operations would be seriously jeopardised", the year's working having registered a loss of just under £200. Yet the cheese was a first class commodity, having realized more than Canterbury cheese on the New Zealand market.⁽⁵³⁾ Greytown cheese was also preferred above any other at "Bellamy's"⁽⁵⁴⁾ where by 1887 it had become the sole cheese available⁽⁵⁵⁾. Thus the lack of economic success is attributable not to a limited market, but to a limited production consequent on the failure of dairy farmers to participate.

For several years the same situation continued to influence the industry. In the annual report of 1886 the chairman stated that proper agreements, signed by those supplying the factory, were necessary to overcome the practice of farmers sending milk spasmodically⁽⁵⁶⁾. Continuation of the poor response of the farmers resulted in critical comments in the press, which understandably viewed the situation from the point of view of community interest. The local farmers were described variously as lacking a spirit of enterprise, apathetic and supine⁽⁵⁷⁾. "We are grieved to find such lukewarmness among our dairy farmers", stated one editorial. "They seem to be

(53) Wai. Std. June 11, 1884, Page 2.

(54) Wai. Std. Sept. 29, 1884, Page 3.

(55) N.Z. Times, Nov. 12, 1887, Wairarapa News.

(56) Wai. Std. July 14, 1886, Page 3.

(57) Wai. Std. Oct. 13, 1886, Page 2, Leader.

Wai. Std. Sept. 15, 1886, Page 2, Leader.

satisfied with 'grubbing along' in the old stereotyped fashion and care little for the improvements made by the machinery of modern days. They prefer to mess about with their milk at home rather than send it away after milking and get a fair price for it without any further bother." (58). Yet the problems remained even after the press had taken the trouble to prove that it was to the farmer's advantage to supply the factory (59). Their reluctance to do so can therefore only be explained in terms of independence, conservatism, or ignorance. When added to the trading difficulties of the depression of the late 1880's, the problems were sufficient to necessitate the reconstitution of the Company in 1888 and again in 1896 (60).

In theory the "Taratahi Butter and Cheese Factory" (also established in 1883) was initiated in much more satisfactory circumstances than the Greytown Dairy Factory, since there was no problem either in the taking up of shares or the guaranteeing of milk (61). As was the case with all such proposed dairy factories in the Wairarapa, except that of Mauriceville, assistance in promotion was forthcoming from entrepreneurs and large land-owners, with Mr. W. Booth, a local timber-mill owner, taking a prominent part (62). Unlike other similar enterprises several of the large land-owners also under-

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- (58) Wai. Std. July 14, 1886, Page 2, Leader.
 (59) Wai. Std. Sept. 15, 1886, Page 2, Leader.
 (60) Bagnall, 1953, Page 73.
 (61) Wai. Std. Sept. 5, 1882, Page 2.
 Wai. Std. Sept. 23, 1882, Page 2.
 (62) Wai. Std. Aug. 19, 1882, Page 2.

took to supply milk ⁽⁶³⁾. This meant that the factory was not to be entirely dependent on the whims of the small farmers and is probably one of the major reasons for the relative success of the venture as compared with the Greytown Factory.

Yet even with the advantages mentioned, the required finance was not made available when called for ⁽⁶⁴⁾ and although the Taratahi Factory received a greater milk supply than that of Greytown ⁽⁶⁵⁾ so many farmers withdrew their support when butter prices were improving that this factory was also forced to close its first season many weeks earlier than necessary ⁽⁶⁶⁾. The cheese produced at the Taratahi Factory was well commented upon in London ⁽⁶⁷⁾ and realized satisfactory prices ⁽⁶⁸⁾. Yet considerable losses were sustained by the Company in its early years ⁽⁶⁹⁾. Adequate support from the small farmers could well have obviated these financial results.

The fact that the situation was not all that it should have been was indicated by a press report some years after the establishment of both the Greytown and Taratahi factories. "It has only been by begging and praying that the dairy farmers as a rule have supplied the factories with milk and then they have haggled for the last farthing a gallon" the report stated. "As

(63) Wai. Std. Aug. 19, 1882, Page 2.

(64) Bagnall, 1957, Page 60.

(65) Wai. Std. Feb. 15, 1884, Page 2.

(66) N.Z. A. to J., 1884, Vol. 2, H9, Dairy Factories in N.Z.

Wai. Std. Oct. 29, 1884, Page 2.

(67) Wai. Std. June 27, 1884, Page 4.

(68) Wai. Std. Oct. 29, 1884.

(69) Wai. Std. Aug. 30, 1886, Page 2.

to taking up shares in the dairy companies, they have only done it under the strongest pressure" (70). Thus in order to enforce co-operation, the Greytown Factory Directors resolved that every milk supplier was to be a shareholder (71). Later evidence shows that this action did not improve the situation, probably because dairy farmers who were willing to supply the factory only at certain times, ceased supplying altogether.

The satisfactory trading position experienced by Featherston dairy farmers between 1880 and 1883 altered for the worse, by mid-1883 the Wellington butter market having become oversupplied. A meeting of Featherston dairy farmers was held to discuss the "depression in the butter market". This meeting resolved to form the "Featherston Farmers' Club", the purpose of which was to obtain better prices for their produce through "concerted action". Because it was felt that the refrigeration companies were not giving due consideration to the interests of the dairy farmers, a committee was appointed to arrange satisfactory proposals for shipment. Such action was taken, "with a view to prevent a complete glut in the market during the coming season". (72) This at least showed a desire on the part of the dairy farmers themselves to attempt some form of co-operation and is the first such movement known to have occurred in the Wairarapa.

The deputation was informed by the N.Z. Shipping Co.

(70) Wai. Std. Dec. 6, 1886, Page 2, Leader.

(71) Wai. Std. Dec. 6, 1886, Page 2, Leader.

(72) Wai. Std. Sept. 24, 1883.

that it would not provide accommodation for less than 100 tons of dairy produce and that the freight would be 1½d. per pound⁽⁷³⁾. The Wellington merchants further informed the deputation that they intended exporting no more butter, because the poor average quality of butter being produced meant "ruin for the sender"⁽⁷⁴⁾ *.

Although it was realized that a market was available in London, a change in manufacturing techniques was necessary⁽⁷⁵⁾. Two problems had to be faced; butter and cheese of sufficient quality to produce an adequate return, had to be made available in 100 ton lots. This pointed directly to a factory system of manufacture. The establishment of a butter factory was therefore suggested by the Featherston Farmers' Club⁽⁷⁶⁾.

At a meeting subsequently called by Coleman Phillips early in December 1883, it was resolved to form the "Featherston Cheese and Butter Company Limited"⁽⁷⁷⁾. As with earlier factory proposals, problems of finance and farmer participation arose⁽⁷⁸⁾ and concerted action to find markets was not to be translated into co-operative action to produce an exportable product. The main objection raised by the Featherston farmers to the proposed factory was their insistence on the vital

(73) Wai. Std. Oct. 19, 1883, Page 3, Letter.

(74) Ibid.

(75) Ibid.

(76) Wai. Std. Oct. 29, 1883, Page 2.

(77) Wai. Std. Dec. 7, 1883, Page 3.

(78) Wai. Std. Jan. 28, 1884, Page 2.

Wai. Std. March 28, 1884, Letter.

* This situation was due to the mixing of butter from many private sources to make up export lots. The end result was only as good as the poorest quality butter in the mix. (Wai. Std. Nov. 2, 1883, Page 2.)

importance of skim-milk for raising calves (79). With the best interests of the farmers in mind, Phillips therefore proposed the establishment of a separator factory and the placing of several separators among the surrounding farmers. (80) However no further support could be encouraged and the project had to be abandoned. Therefore the claimed objection had in fact only been an excuse for non-participation, since a separator factory would have overcome the problem. It was not until ten years later that a co-operative dairy factory finally became established at Featherston (81).

In late 1886, a call for the establishment of yet another dairy factory was made by some of the settlers in the Dalefield area to the west of Carterton (82). This area, served by several sawmills, had been progressively cleared and in the wake of lumbering activities small farmers had taken up much of the land (83).

A suggestion that the "struggling" Greytown Factory be re-sited where it would be centrally situated and accessible to dairy farmers from Dalefield, Matarawa and Waihakeke (84) was not acceptable to the Dalefield sponsors or settlers. At a meeting held later (December 2, 1886) under the chairmanship of Mr. W. Booth (of the Taratahi Factory) the settlers decided to establish

(79) Wai. Std. March 28, 1884, Letter.

(80) Ibid.

(81) Wai. Daily Times, Oct. 24, 1895.

(82) Wai. Std. Nov. 26, 1886, Leader.

(83) Dalefield Cheese Factory Golden Jubilee Booklet, Page 1.

(84) Wai. Std. Nov. 26, 1886, Leader.

a factory of their own (85). This can possibly be interpreted as the first indication of parochialism in the Wairarapa Dairy Industry.

Again the apathy of the small farmers was commented on in relation to the Dalefield project (86), and because it proved impossible to raise the required finance from the dairy farmers, much of the capital necessary to start the cheese factory was subscribed by Carterton businessmen (87). Had it not been for this fact, it is likely that the venture would have foundered. There does not appear to have been any problem over an adequate supply of milk to the factory, although there were suppliers known to be holding back milk at certain times in order to make butter (88).

The important part played by district newspaper editors in fostering the dairy industry was continued by one Payton of Masterton, who first advocated the establishment of a dairy factory at Masterton. But at the time it had been pointed out that because a profitable market for domestic butter had opened up in Sydney, (about 1884) such a scheme was not likely to succeed and nothing further was done. (89) However by 1887 the Sydney market had been lost and one Caselberg (a Masterton produce merchant) reventilated the subject, because he believed a dairy factory to be the only means of realizing good prices on the "Home" market. His grounds were that he had incurred severe

(85) Dalefield Cheese Factory Golden Jubilee Booklet, Page 1.

(86) Wai. Std. Dec. 3, 1886, Page 2.

(87) Dalefield Cheese Factory Golden Jubilee Booklet, Page 2.

(88) Minutes of Directors' Meeting, Sept. 25, 1888.

(89) Wai. Daily, Sept. 5, 1887, Page 2, Leader.

losses in exporting blended domestic butter to London. He proposed the establishment of a dual factory (butter and cheese) with the owners of the cows being "tied to it" as shareholders.⁽⁹⁰⁾ Having seen the problems caused at the Greytown and Taratahi Factories by the farmers withholding milk when they so desired, this was a reasonable precaution. But it was on this point that the outcome was to depend.

Various additional suggestions made included the participation of Mauriceville and other Forty Mile Bush settlements, either by railling their milk to Masterton or the establishment of branch factories or creameries in those areas.⁽⁹¹⁾ At an earlier date Coleman Phillips had also advocated a factory at Masterton and the placing of separators among the surrounding farmers⁽⁹²⁾.

Public support for the proposed factory was gained⁽⁹³⁾ but the question of the provision of finance by the dairy farmers⁽⁹⁴⁾ was the point upon which a final decision was to hinge. As pointed out by the local press, although there was ample proof that dairy factories were good for farmers and therefore warranted financial participation, the farmers in the vicinity of Masterton, like those at Featherston earlier, were not prepared to accept the opportunity to erect a factory⁽⁹⁵⁾. They merely refused to be convinced, since it can be assumed from the

(90) Wai. Daily, Sept. 5, 1887, Page 2, Leader.

(91) Ibid.

(92) Wai. Std. May 29, 1885, Letter.

(93) Wai. Daily, Oct. 31, 1887.

(94) Wai. Daily, Oct. 24, 1887, Page 2.

(95) Wai. Daily, Nov. 10, 1887, Leader.

evidence, that the failure of the planned company was due to a lack of desire to invest, rather than a lack of available finance. Also, the farmers were either not sufficiently convinced that the erection of a factory would forward rather than hinder their interests, or else the possession of independence was more vital to them. Whatever the reasons, a further attempt to form a dairy company and erect a factory in the Wairarapa was frustrated for want of support. Another thirteen years were to elapse before a co-operative butter factory was established in Masterton (96).

It is likely that those living at Mauriceville followed closely the attempts to establish a dairy factory in Masterton, (with which they had been given a rapid link by rail in 1886 (97)) and they were probably aware that the suggestion to include the "Forty Mile Bush" areas had been mooted. At one stage in the negotiations there was even a possibility of a branch factory being established at Mauriceville. Such a development would possibly have been regarded as a means of salvation for them had it eventuated.

The Mauriceville settlers must have been aware of the results gained by other dairy factories, since it is likely that any thought given to the formation of a factory of their own would have been in the light of markets which they knew to exist beyond Masterton. Their one chance of making their settlement

(96) N.Z. Dairyman, Vol. 6, No. 3, Dec. 1901, Page 36.

(97) Wai. Std. June 16, 1886, Page 2.

economically viable, was to produce a good quality product which could command a wider market than that available to them locally. Thus it was that, "in August 1889, a number of settlers met and (98) decided out of their necessity and poverty to take a great risk". An investment in the Mauriceville Dairy Co. Ltd. was made by seven of the settlers, their object being the erection of a factory for cheese and butter manufacture and bacon curing (99).*

This action was taken both because of and in spite of their poverty. They realized that any permanent improvement in their economic position could only come from such a move, while, because there was no outside assistance offering, or available, (as no bank loan could be secured for the enterprise (100)) the factory had to be provided from their own extremely limited resources.

The sacrifices necessary to establish such an industry were hardly sufficient for success and the Company almost foundered from the twin lacks already suffered by earlier enterprises; lack of capital and lack of supply (101). Whereas lack of capital was the result of a limited money income, lack of supply was the result of the low carrying capacity of their 40 acre hill blocks and the limited number of suppliers with access to the factory.

By 1894 the outlook had become extremely bleak because

(98) Petersen, 1956, Page 121.

(99) Petersen, 1956, Pp. 121, 122.

(100) Petersen, 1956, Page 122.

(101) Ibid.

* By concentrating on butter manufacture it became the first butter factory in the Wairarapa.

no capital was available. "There is no question that the district round about Mauriceville is in a most depressed condition", wrote a correspondent. "Stagnation broods over almost everything (and) settlers have discontinued all improvements" (102). Because of the prevailing conditions and financial difficulties, the Company in 1894 passed into joint ownership between the N.Z. Loan and Mercantile Agency Co. and the suppliers (103). Thus, although due to differing circumstances, the Mauriceville Factory suffered from the same problems which characterized those factories established, or failing to be established, earlier in the decade; a problem of provision of finance and of an ample supply of milk for processing.

However, in contrast with other projects, the Mauriceville Factory did not suffer from a lack of co-operation from milk producers. This was because the common Scandinavian heritage of the Mauriceville small farmers developed a unity of spirit which was lacking among the individualists on the plains. Also, they had either to establish a dairy industry, (which in their poverty they could not afford) or, being unable to raise sufficient income for minimum economic needs, they would have been forced to give up their land. After suffering extreme privations in developing their "farms" such action would only have been a last resort. A desire to co-operate to improve their circumstances resulted. On the other hand the small farmers of

(102) Wai. Daily Times, July 30, 1895.

(103) Wai. Daily Times, July 15, 1896.

the Wairarapa plains were satisfied with the livelihood their land provided, while by the decade under review their small farm life had become more stabilized. As a result the natural tendency of these small farmers towards conservatism and isolationism was fostered, rather than a spirit of unity and co-operation.

Apart from the establishment of factories by co-operative companies in the 1880's, there was an attempt made to form a different type of dairy company in the Wairarapa during that decade. Coleman Phillips believed that a new outlet for dairy produce from the Featherston area could be found in Wellington (in 1884) by selling fresh milk and cream at a "Wairarapa Dairy Market" (104). He thought that in spite of high rail freight charges Wairarapa dairy produce could be sold more cheaply than the ruling Wellington prices, while still giving a better return than the dairy farmers were already receiving (105). Although a manager and retail premises in Wellington were procured, the Featherston dairy farmers failed to support the formation of a Company (106) and the project was abandoned.

Some 23 years later (on December 24, 1907) the local press indicated that the "Featherston Fresh Milk Supply Association", a "combination of Wellington milk suppliers", had erected cool storage facilities for dairy produce (107). Thus again, although taking a different form from the company proposed

(104) Wai. Std. June 4, 1884, Page 2.

(105) Wai. Std. April 28, 1884, Page 2.

(106) Wai. Std. June 4, 1884, Page 2.

(107) Wai. Daily Times, Dec. 24, 1907.

earlier, it took many years for the Featherston suppliers to follow Phillips' suggestion and to agree on a course of action.

During the decade from 1880 to 1890 therefore, of seven attempts to establish dairy companies in the Wairarapa, three failed completely because of lack of support from the dairy farmers. In addition, the pioneer proprietary factory also failed. Two other factories (Greytown and Mauriceville) faced such severe financial and supply difficulties that they can hardly be classed as being successful ventures, with one company having to be re-constituted and the other becoming jointly controlled by the suppliers and a stock and station agency. Only two companies (Taratahi and Dalefield) can be said to have been successfully established, while even these suffered to some extent from lack of support from the dairy farmers. Furthermore, of those factories proposed or erected between 1880 and 1890, the Mauriceville Factory was the only one to be conceived and established by a genuine co-operation among the small farmers. It was also the only project which received no assistance (other than from the small farmers themselves) either in organisation or finance. Evidence quoted shows that without the incentive and drive which was given to the industry by entrepreneurs, professional men and large landowners, it is unlikely that any factories other than Mauriceville would have become established during the decade.

Thus, despite the small farmers' poor economic circumstances, as a group they failed to recognize the implications of the new techniques of manufacture and transport, which were to give access to new markets. With rail access to the Port of Wellington before the commencement of the refrigeration era, the Wairarapa was in a position to establish a flourishing dairy industry immediately, had the farmers been motivated towards it. Their reluctance to accept new principles and new ideas meant that the early potential of the dairy industry to improve the small farm economy, and consequently that of the Wairarapa, was not taken advantage of. The backwardness of the industry by 1890, considering the efforts made and the possibilities existing, can be attributed to the personal attitudes of the dairy farmers.

It should be stressed that apart from the dairy farmer's natural opposition to such ventures, his non-participation in the factory industry was influenced by several factors. He did not understand the monetary advantage which the cheese factory could provide. Conversely he was aware of the economic loss (imaginary rather than real) which would result from his inability to raise calves. Furthermore he could not equate the return gained from the sale of butter with factory payout per gallon of whole milk. A tendency to overvalue milk in terms of its butter producing potential was the result. Reluctance to change from the tradition of domestic butter-making was also

important and this influenced the farmer's withdrawal of support from the factory when butter prices appeared to offer a better return. Thus each dairy farmer made his decision to supply a factory or to continue domestic butter-making on the basis of what he believed to be in his best financial interests, whether or not this was a true interpretation of the facts. Such was the influence of his existence in the small farm environment of the Wairarapa bushlands. In comparison with what one writer has observed with reference to the settlers of Taranaki, the small farmers of the Wairarapa did not make a "picture of a pioneer society on the brink of an economic and technological revolution" (108).

By 1890, despite the difficulties encountered, the foundations of dairying and the dairy factory industry had been laid and a characteristic Wairarapa pattern was emerging. Small farming being synonymous with dairying, the pioneer small farm settlements had become core dairying areas. From this fact arose the unique character of the geography of dairying in the Wairarapa, since the area available for small farming (thus dairying) was largely limited to those bushlands which had not been occupied by the pastoralists. Except for the extensive bush areas in the vicinity of Carterton, future dairying expansion was therefore to depend not on peripheral extension, but on the

(108) Burnett, 1965, Page 101.

continuing implementation of Government small farm policy, (assisted by private subdivisions) which resulted in the implantation of small farm "oases" into the pastoral zones. The present pattern of dairying distribution in the Wairarapa results directly from this historical evolution. By this same process the early association and correlation of the factory industry with special small farm settlements was perpetuated, giving rise to the pattern of co-operative dairy factory distribution in the Wairarapa.

Furthermore the direct relationship between the dairy factory industry and small farm settlement is responsible for the fact that, unlike those in Taranaki, the dairy factory in the Wairarapa did not become the centre of small village settlement. Although each factory was established in a rural setting in its own milk supply area, no ancilliary services were attracted. This was because the villages or future towns of the Wairarapa had been purposely planned and established as part of the initial small farm settlements (which later became core dairying areas). Although the first Wairarapa dairy factories were erected earlier than those in Taranaki, almost 30 years of continuous small farm occupation had meant that servicing centres already existed in the district. As a result, all the early factories established in the Wairarapa, except that of Mauriceville, were situated in close proximity to one of the emerging towns. Therefore neither the factory nor its location gained

additional demographic, social or economic significance. This continued to be true of the industry as it evolved and new factories were erected. In no case did a dairy factory promote subsidiary activities or village settlement.

A further characteristic of dairying in the Wairarapa to emerge in this period relates to the small farmers themselves. Adversities of small farm life in the bush developed personal traits which tended to work against the factory system rather than towards it and the presence of co-operative factories was not synonymous with co-operation from the dairy farmers. Although the factory system later came to be accepted, the traditional attitudes of the dairy farmers have remained and these have influenced the evolution of the industry and the progress of liquidation and amalgamation of factories since 1950.

DAIRYING IN THE WAIRARAPA.

PART 11.

THE PERIOD OF MATURITY AND CONSOLIDATION.

Chapter 1V.

The Spread of Dairying Through Small Farm Settlements and Subdivisions. 1878 - 1958.

Having become established dairying is areally extended into the former extensive pastoral zones by an active and continuing small farm policy.

Chapter V.

Evolution of the Dairy Factory Industry: Institution, Liquidation and Amalgamation. 1890 - 1966.

The dairy factory industry matches the spread of small farms but is later greatly modified by economic and technological changes and in spite of the traditional small farm outlook dairying unity is almost achieved.

Chapter VI.

The Role of Small Farm Settlements in the Present Dairying Scene.

The present pattern of dairying distribution and the fragmentation of dairy farms is interpreted in terms of historical small farm influences.

CHAPTER IV.

THE SPREAD OF DAIRYING THROUGH SMALL FARM SETTLEMENT AND SMALL FARM SUBDIVISIONS.

1878 - 1958.

During this period the small farm system is consolidated. The desire (and aim) for settling New Zealand is at work and the feeling of people in New Zealand is towards having a strong stable community of small farmers to augment population and to allow the more effective utilization of the country's resources. Small farming is held to be desirable in itself and no longer is the small farmer regarded as a "tool", as he had been in earlier days.

The lack of available land in the vicinity of the original small farm settlements and the turning of jealous eyes to the large estates, led to the invasion of truly open country, (the core of the big farmers' lands) by the small farmer. Although much of the new land occupied during this period had originally been portions of pastoral runs, small farm settlements in many cases became established on land initially carrying bush, which had since been milled. The significant fact is that land formerly held in large individual units was subdivided to provide many farms on which dairying became established.

Government Subdivisions Under The "Land for Settlements Act"
1900 - 1915.

By 1891 it had become clear that to achieve the aims of the new generation, "it was not enough just to emigrate to the new land; it was necessary by political action to regulate the new social and economic order" (1). This philosophy was already being put forward by the local press in the Wairarapa as early as 1880, with a view to furthering the small farm system. The editor of the "Wairarapa Standard" commented that if it was to be for the welfare of the community at large, the Government was quite entitled to buy up estates for the purpose of small farm subdivision (2).

Settlement in the Wairarapa had been promoted in terms of the general principle, "that the grazier should have all the open country and that the agriculturalist should be confined to the bush" (3). This dichotomy was to be attacked. Over the years the cleavage between the small farmers and the "big farmers", the pastoralists, had become wider. The progressive clearance and close subdivision of the small farm areas (the former bush zones) had reduced the availability of land for purchase. Vast acreages, which were almost unpopulated, stretched from the valley of the Ruamahunga River to the east coast, but these were in the hands of the pastoralists. The original small farm subdivisions of Greytown, Masterton and Featherston,

(1) Sinclair, 1961, Page 155.

(2) Wai. Std. Jan. 29, 1880, Page 2.

(3) Wai. Std. Jan. 3, 1874, Page 2, Leader.

(approximately 35,000 acres) were by 1889 exceeded in acreage individually by three sheep runs in the Wairarapa, while in all 24 runs exceeded 10,000 acres in area ⁽⁴⁾. The capital value of these runs, 24 of which were each valued at over £20,000 ⁽⁵⁾, had been materially improved by the labours of the small farmers to the unearned benefit of the landowners. The small farmers, struggling to improve their land and building roads and railways, remained poor, while as a result of their labours they observed the runholders growing rich, "as it were in their sleep without working, risking, or economizing" ⁽⁶⁾. Although this is a fair comment of the situation the small farmers could not complain, since the employment they gained, both on public works and on the sheep runs enabled them to survive. Yet the situation did foster public opposition to the "Landed Gentry" and their extensive estates. If by 1891, when the Liberal Government came to power, the potential of the small dairy farm was not fully known, it was beginning to be recognized and the extensive pastoral runs became politically unacceptable, both locally and nationally. The Government, wishing to establish small farms in New Zealand, introduced legislation which gave it power to purchase estates for small farm subdivision ⁽⁷⁾.

The implementation of this legislation introduced a new era in the spread of small farming (hence dairying) in the

(4) N.Z. A to J., 1889, H25, Pp. 5, 6.

(5) Ibid.

(6) Wai. Std. July 13, 1883, Page 2, Leader.

(7) Wai. Star, May 26, 1897, Leader.

Wairarapa. But although the Wairarapa was an area where they were jealous of the acres of large holdings, it was some time before the first estates were "broken up" for small farms. The first indication of a desire for the Government to intervene in the area, appears to have been a petition signed by a group of people who desired the "Matahiwi Estate" to be subdivided for small farm settlement ⁽⁸⁾. A large area of this 6,000 acre block, close to the western boundary of Masterton, was said to be, "well adapted for close settlement" ⁽⁹⁾. However the offer ⁽¹⁰⁾ made to the owners by the Government was apparently not accepted.

By 1901 little progress had been made in the resumption of large estates in the Wairarapa. One hill country estate had been purchased, but this did not become a dairying subdivision ⁽¹¹⁾. Two other offers were refused, Prime Minister Seddon reported, because the prices asked had been too high and the land was either of poor quality, swampy, or liable to floods ⁽¹²⁾. However, Seddon was concerned about the lack of progress being made in the Wairarapa, since one of the Government's principal aims in promoting small farm settlement was to bring about an increase in population. On one visit to the Wairarapa he pointed out that between 1896 and 1901 the population of the South Wairarapa had grown from 5,402 to only 5,419 ⁽¹³⁾. At the same

(8) Wai. Star, Jan. 9, 1897, Leader.

(9) Wai. Star, July 8, 1897.

(10) Ibid.

(11) Wai. Daily Times, May 11, 1900, Leader.

(12) Wai. Daily Times, July 27, 1901, Page 3.

(13) Wai. Daily Times, Feb. 7, 1902.

time he said that although some two years previously the Government had undertaken to secure land for settlement, nothing had been achieved. Either the estates offered had been unsuitable or the Government's offers had not been accepted.⁽¹⁴⁾ He therefore stated his willingness to invoke the compulsory purchase clauses of the "Land for Settlements Act" if necessary, since he felt that land should be acquired⁽¹⁵⁾.

Because the suburban lands of Greytown and Featherston had been limited by the sheep runs to the east⁽¹⁶⁾, there had been little extension of small farming in these areas except as a result of two private small farm schemes. Because of this, the southern part of the valley had stagnated, not only in population growth but also from the point of view of the expansion of dairying⁽¹⁷⁾. In announcing the subdivision of a group of small dairy farms at "Morison's Bush" in 1896, the following statement appeared in the local press; "The land being held in large blocks, it is small wonder that the entire district has stagnated⁽¹⁸⁾". This situation caused the Government to turn its attention to the acquiring of portions of pastoral runs in the southern part of the valley, the first two blocks bought being "Tawaha" and "Dry River", both of which were in the vicinity of Martinborough. (Fig. 2) (Map 3).

(14) Wai. Daily Times, Feb. 7, 1902.

(15) Ibid.

(16) Bagnall, 1953, Page 5.

(17) The N.Z. Dairyman, Vol.12, No.2, Nov.1907, Page 68.

(18) Wai. Daily Times, March 5, 1896.

FIG. 2

LAND FOR SETTLEMENTS SUBDIVISIONS

1900 — 1915

Extension of Small Farming
into Pastoral Zones

diagrammatic representation

Bushlands

Land occupied by pastoralists

The Tawaha Estate was a section of the large sheep run occupied by Mr. C.R. Bidwill since 1844. Some 2,350 acres of this estate were taken under the compulsory purchase clauses of the "Land for Settlements Act" ⁽¹⁹⁾ after the death of Mr. C.R. Bidwill Junior. The Estate, acquired in 1905 ⁽²⁰⁾, was opened for selection in March 1906 having been subdivided into 16 dairy farms and seven ordinary farms, varying in area from 50 to 275 acres ⁽²¹⁾. None of the dairy farms was smaller than 50 acres while ten ranged from 70 to 123 acres. One of the important features of this subdivision was that seven of the dairy farms and two of the ordinary farms were fragmented at the time of selection. Each fragmented farm consisted of a main block and a small additional block of about 13 acres in area, which was situated between one and one half miles from the main farm ⁽²²⁾. The purpose of the small block attached to each of these farms was to provide a flood free section.

A measure of the confidence of the Government in establishing dairy farms on the Tawaha Estate, was the fact that a section was set aside for the erection of a dairy factory ⁽²³⁾. The settlers did not regard the site as the most suitable and they later chose another for their factory, beside the Ruamahunga River.

(19) Wai. Daily Times, Feb. 3, 1906, Leader.

(20) N.Z. A. to J., 1906, Vol.1, C5, Pp.4, 6.

(21) Tawaha Selection Pamphlet.
Wai. Daily Times, March 23, 1906, Page 6.

(22) Tawaha Settlement Sale Plan 447.
Tawaha Selection Pamphlet.

(23) Tawaha Settlement Sale Plan 447.

In 1905 the Government also purchased the Dry River Estate to the south of Martinborough ⁽²⁴⁾. This block, which included 16,000 acres ⁽²⁵⁾, extended into the hills from the Ruamahunga River.

The Dyer Settlement, as it was called, was opened for selection at two different times, the block including the dairy farms being selected in June 1906 ⁽²⁶⁾. The Dry River Station consisted mainly of dissected hill country, but the area between the Ruamahunga River and the main road running south from Martinborough, was set aside for dairying. There were eight dairy farms in this subdivision, varying in area from 112 to 167 acres. The homestead block, because of the value of improvements ⁽²⁷⁾, was kept as a larger unit than the others, being 329 acres ⁽²⁸⁾. The survey of this block also made provision for a dairy factory site ⁽²⁹⁾ which was not utilized, the settlers later choosing a section adjacent to the Dry River.

Both the Tawaha and Dyer Settlements were of great significance to the South Wairarapa, because they introduced more intensive farming and greater rural population. In addition they were directly responsible for the invasion of dairying and the dairy factory industry into an area which had formerly been characterized by extensive sheep and cattle runs.

(24) N.Z. A. to J., 1906, Vol.1, C5, Pp. 5, 6.

(25) Ibid.

(26) Dyer Selection Pamphlet.

(27) Pers. Com.

(28) Dyer Selection Pamphlet.

(29) Dyer Settlement Sale Plan 455.

A further major block to be purchased by the Government under the compulsory clauses of the "Land for Settlements Act" was the "Carrington Estate" (30), situated to the north west of Carterton. This Estate had developed through the progressive purchasing of blocks of timbered land for the purpose of milling (31). Unlike other milling zones in the vicinity of Carterton, the land had not been subdivided for small farming as clearing progressed. Consequently a large estate had been accumulated, on which general farming had been undertaken in conjunction with milling (32).

The land acquired by the Government exceeded 5,000 acres (33) and although not subdivided into 60 dairy farms as predicted at the time by the press (34), dairying became a significant feature of the settlement. Of a total of 28 farms to be established only three, (being steep hill country) were purely sheep farms. Of the others, ten were designated as dairy farms and 15 as dual dairying and sheep farms. Those designated as dairy farms ranged in area from 78 to 121 acres, while the dual farms varied from 90 to 342 acres. (35)

This State sponsored subdivision, like those of Tawaha and Dyer, resulted in the establishment of a co-operative dairy company within the settlement. Unlike the earlier two, this subdivision occurred in an area where dairying had shown progress-

(30) N.Z. Times, June 17, 1907.

(31) Bagnall, 1957, Page 65.

(32) Somerset Playne, 1912, Page 87.

(33) N.Z. A. to J., 1909, Vol.2, C-D, C5, Page 5, Table C, Part 1.

(34) N.Z. Times, June 17, 1907.

(35) Carrington Selection Pamphlet.
Carrington Settlement Sale Plan 546.

ive expansion into the bushlands west of Carterton and some dairy farmers on the settlement preferred to supply the existing Belvedere Dairy Factory rather than that at Carrington when it began operations (36).

Apart from these major settlements, there were several other smaller Government subdivisions which resulted in an increase in the incidence of dairying in the Wairarapa. In 1914 the Government purchased 1,030 acres of the "Mikimiki" Estate (37) which lay towards the Tararua foothills west of Masterton, for subdivision into the five farms of the "Falloon" Settlement. Most of the land in this settlement was heavily rolling country, yet dairying became established and most of the properties retain that emphasis today.

The Matahiwi Estate, in which the Government had shown an earlier interest (38), was also, according to one Carle, taken over by the Government in later years and subdivided into small farms (39). Although no other reference to it was found, subdivision is known to have taken place, resulting in the formation of a further co-operative dairy factory.

This, the second phase of small farm subdivision in the Wairarapa, saw the spread of small farming beyond the former pioneer settlements and their associated bushlands. Of the major dairying settlements established at this time, Dyer and Tawaha were the first to include portions of true pastoral runs, although some of the dairy farms located on alluvial river lands

(36) Pers. Com.

(37) N.Z. A. to J., 1915, Vol.1, C5, Table E, Page 3.

(38) Wai. Star, July 8, 1897.

(39) Carle, 1946, Page 138.

had formerly been bush covered. The Dyer settlement was also the first extension of small farm dairying east of the Ruamahunga River. Situated towards the foothills of the Tararua Range the other three subdivisions had originally been bush covered and had undergone clearing, much of the timber having been milled.

In each of the subdivisions a secondary pioneer stage was initiated, since the land was mostly unimproved and much was infested with stumps and littered with logs. But the land had been oversown and there was pasture available on the new farms.

The farms provided in the Government subdivisions during this period included relatively large acreages, indicating a liberal small farm policy in contrast with those carried out in the Wairarapa earlier. It also contrasted with the small size of dairy farms being advocated in the local press at the turn of the century ⁽⁴⁰⁾. One of the original Dyerville settlers recalled that at the time of settlement they believed their farms to be too large. His own reaction to acquiring a 166 acre dairy farm was that a man with so much land should have been a millionaire. ⁽⁴¹⁾

Although initial hardships were encountered by these settlers in providing shelter, improving their land and making a living ⁽⁴²⁾, they did not suffer the privations of the pioneers, nor did they embody a typical small farm tradition. Consequently

(40) Wai. Daily Times, Dec. 11, 1900, Page 2.

(41) Pers. Com.

(42) Pers. Com.

they did not possess the extreme conservatism and independence, characteristic of the pioneer settlements. This is indicated by their almost immediate co-operation to establish dairy factories, with four of the five small farm settlements so far discussed giving rise to dairy co-operatives.

Soldier Settlements 1878 - 1958.

As well as providing farms for civilian settlers, it also became Government policy to provide farms for men who had served with the armed forces; a policy which was introduced very early in New Zealand's history. The implementation of this policy resulted in a new series of small farm settlements and introduced to the Wairarapa its most recent phase of organised small farm settlement.

The earliest of such subdivisions to be undertaken in the Wairarapa was at "Kaituna", (Fig.3) to the west of Masterton. Although the writer could find no official reference to it and the date of establishment is not known, it is understood that the Kaituna subdivision was surveyed and cut into small farms as gratuity payments for soldiers who were veterans of the Maori Wars (43). The allotments are said to have ranged from about 80 acres to 268 acres, there being about one dozen sections north of the Waingawa River (44) *. As the bush was cleared from this

(43) Pers. Com.

(44) Pers. Com.

* Such a subdivision is indicated on a survey plan of the area dated 1878-1886, on which there is shown ten, 63 acre sections and two larger ones of 273 acres and 210 acres respectively, in the vicinity of Kaituna. There are a further ten, 63 acre sections on the South bank of the Waingawa River indicating a further portion of the same subdivision. (Plan of Lands in the Survey Districts of Miki-miki and Waiohine 1878-1886, National Archives Group LS-W, No.26/1. Map 4.)

FIG. 3

SOLDIER SETTLEMENTS

1878 — 1958

Further Extension of Small Farming
into Pastoral Zones

diagrammatic representation

Bushlands

Land occupied by pastoralists

subdivision dairying became established sufficiently for the provision of a dairy factory, which in later years incorporated the supply from the adjacent Falloon Settlement.

With the return of soldiers from the First World War the Government purchased several further blocks on which soldier settlements were established. Economic conditions had changed markedly from the time the first major Government settlements had been made in the Wairarapa early this century and these changes had an important bearing on Government land policy in the post war years. Very high returns from agriculture gained by farmers during the war and Government land purchase activity afterwards, produced an inflated demand for small farms and small farm land. This demand resulted in artificially high land values which bore little relation to the land's actual productive capacity at that time.

In purchasing such land for lease to soldier settlers Government policy was to settle as many men as possible on a given area (45). This policy was assisted by the necessity of providing farms small enough to enable soldier farmers with few resources to meet the capital charges on high value land. A marked reduction in the area allotted to each small farm in the soldier settlements resulted. This repeated a fault of the pioneer small farm era in the Wairarapa; the provision of farms which proved to be uneconomic units. One example of this is worthy of mention. The homestead block in the Dyer Settlement

(45) Pers. Com.

which had been left as a large dairy farm exceeding 300 acres, was repurchased by the Government after the war for subdivision. From this block six small dairy farms were made available to returned soldiers (46). These farms were provided on land where the Government had fifteen years previously seen fit to have all the dairy farms exceeding 100 acres. Found to be uneconomic, they were later amalgamated into three units.

The first block to be bought for discharged soldier settlement was a further portion of the original Bidwill Estate, known as "Pihautea". In 1918, the land having been offered to the Government, 2,200 acres was purchased (47). By 1920 a further 595 acres had been purchased from Mr. M.E. Bidwill (48).

Pihautea was the first of the new settlements to be subdivided, being opened for selection in mid 1919 (49). Thirty properties were available in the settlement, only five of which, being situated on a rolling clay ridge, exceeded 100 acres. Although most of the other farms were between 50 and 100 acres, four consisted of less than 50 acres. All of these 25 properties were situated on the alluvial flood plain of the Ruamahunga River. (50) This extension of small farm dairying in the South Wairarapa was directly responsible for the erection of a dairy factory to serve the settlers.

(46) Pers. Com.

(47) N.Z. A. to J., 1918, Vol.1, A-D, C5, Page 5.

(48) N.Z. A. to J., 1920, Vol.1, A-D, C9A, Page 2.

(49) Pihautea Settlement Sale Plan 747.

(50) Ibid.

The smaller area, purchased from M.E. Bidwill, known as the "Rotatawai" or "Marama-a-Mau" Settlement, was subdivided into six farms averaging just under 100 acres (51).

The "Tyer Estate", one of the next to be purchased under the "Discharged Soldiers' Amendment Act", had been offered to the Government as early as 1901, but it had been regarded as poor quality land, being swamp and thin shingle country, and no purchase was made (52). In 1920 the same land, 1,578 acres in area, was purchased from Messrs. Tyer Bros. (53). The original subdivision, as in the case of Tawaha, included the fragmentation of several farms. Of the 19 farms in this block, six were fragmented at the time of selection. Each consisted of two blocks approximately one mile apart, the intention being to provide some of each class (swamp and shingle) of land (54).

The "Battersea" Settlement, as it was called, was the only major subdivision since 1906 which did not result in the establishment of a dairy factory. Although this was not necessary, since farms were within range of the Greytown Dairy Factory, the productive capacity of the land was so low for many years that the settlers could hardly have afforded a factory.

Mr. H.A. Bunny, the owner of "Ahiaruhe Station", offered part of his estate for sale by public auction in January 1920 (55). That the property was to be sold privately

(51) Pers. Com.

(52) Wai. Daily Times, July 27, 1901, Page 3.

(53) N.Z. A. to J. 1921-22, Vol.1, A-C, C5, Table E, Page 6.

(54) Pers. Com.

(55) Ahiaruhe Subdivision Poster and Map.

OVERLAY
DISTRIBUTION OF CO-OPERATIVE
DAIRY FACTORIES

SPECIAL SETTLEMENTS AND SUBDIVISIONS

was unfavourably commented on by the press, as it was felt that the block should have been purchased by the Government for soldier settlement (56). However, although the auction was held most of the 14 sections were not sold, only about three having reached the reserve price (57). A local group of returned soldiers formed a syndicate, and through the local "Patriotic Society" approached the Government to buy the block (58). This the Government agreed to do and later 648 acres were purchased (59). Having been purchased in this way, the settlement was not opened for general selection, but was balloted for by the syndicate among themselves to choose their individual sections (60). A further co-operative dairy company was the direct result.

Two other small estates to the east of Masterton were also bought by the Government. The "Te Whiti Estate" of about 360 acres, which provided farms for seven returned soldiers (61) was purchased at over £80 per acre (62). This property had been used for dairying previously although on a more extensive scale, and two small proprietary cheese factories had operated there prior to 1913, one of them being registered as a co-operative factory between 1905 and 1908 (63). Eight more returned soldiers

(56) Wai. Age, Jan. 8, 1920, Page 4, Leader.

(57) Pers. Com.

(58) Pers. Com.

(59) N.Z. A. to J. 1921-22, Vol.1, A-C, C5, Table E, Page 6.

(60) Pers. Com.

(61) Pers. Com.

(62) Wai. Age, May 8, 1920, Page 4.

(63) N.Z. Dairy Division Series 2 Duplicates, Aug. 1906 and June 30, 1908.

were provided with dairy farms on land which had been purchased at Te Ore Ore. Of these properties, six were in the vicinity of 70 acres, while the majority of those at Te Whiti were 50 acres⁽⁶⁴⁾. Neither of these settlements resulted in the erection of factories, since there were insufficient suppliers to warrant it. However, each fell within the cream collection radius of the Masterton Dairy Company⁽⁶⁵⁾.

Almost from the beginning, some of the soldier settlement farms were recognised as being too small to be economic units. Many of the settlers faced severe difficulties in meeting their heavy capital charges⁽⁶⁶⁾ and some were threatened with eviction⁽⁶⁷⁾. It was reported in December 1921 that all the settlers on the "Battersea" subdivision were "hopelessly up against it"⁽⁶⁸⁾. Their difficulties are illustrated by one farmer selected at random who, with an estimated income of £308, faced yearly capital charges of £271, which included £219 rent⁽⁶⁹⁾. Similar problems, if not so severe, faced soldier settlers on the other subdivisions⁽⁷⁰⁾.

Some of the soldiers became severely distressed at their predicament⁽⁷¹⁾, and according to original settlers,

(64) Pers. Com.

(65) Wai. Age, Aug. 19, 1920.

(66) Wai. Age, Nov. 24, 1920, Leader,

(67) Evening Post, Dec. 17, 1921, Page 9.

(68) Ibid.

(69) Ibid.

(70) Evening Post, Dec. 20, 1921, Page 9 and Dec. 29, 1921, Page 7.

(71) Evening Post, Dec. 29, 1921, Page 7.

farmers walked off properties at Te Ore Ore, Te Whiti, Battersea and Pihautea (72).

A Government report from an enquiry board set up in 1923 to investigate conditions in the soldier settlements, recommended that uneconomic units which became available should be offered to the holders of adjoining sections (73). Amalgamation followed almost immediately and over the years there has been a progressive reduction in the number of individual dairying units located in the soldier settlements. Today only five of the original 19 sections of the Battersea subdivision remain, and six soldier farms in the Dyer Settlement have been amalgamated to form three. Nine farms at Ahiaruhe have been reduced to five. Similar movements have occurred at Te Whiti, Te Ore Ore and Pihautea. Despite modifications in farm size these settlements still tend to contain some of the smallest and therefore the least economic individual dairying units in the Wairarapa.

Even those who in later years succeeded in establishing viable farms initially suffered severe difficulties. Although it was Government policy to subdivide the blocks and put in survey pegs, all other necessary work in establishing the farms had to be done by the farmer. Some settlements did not even have internal road access provided before occupation. The standard five per cent rent on farms held under Government lease amounted to as much as £200 per annum for a 50 acre dairy farm, while

(72) Pers. Com.

(73) N.Z. A. to J. 1923, Vol.1, A-D, C9A, Pp.28, 29

other capital charges were incurred as a result of a £750 Government loan.

The loan proved to be totally inadequate with the prevailing high costs and low income from dairy produce, and repayment and interest constituted an extra problem. For a farmer with no private means this loan had to provide capital for: housing, milking shed, stock, (about £17 per head ⁽⁷⁴⁾) compared with £10.10.0d. for soldier settlers in 1947 ⁽⁷⁵⁾,) fencing, (wire cost £70 per ton ⁽⁷⁶⁾) stumping, draining, and on some farms a water supply. (One farmer paid £300 for water reticulation ⁽⁷⁷⁾.) Many settlers found it impossible to provide adequate housing and were forced to live in tents or whares in sub-standard conditions. They also lacked capital for improvements which would have led to basic financial security.

A further difficulty had to be faced. Most of the land in the settlements was regarded as first class and the settlers were charged accordingly. All the settlements were within the former pastoral zone, but consisted largely of unimproved and previously forested alluvial river lands, or kahikatea swamp. Many farms therefore included unproductive areas of stumps, scrub, or swamp on which high rents were charged.

On looking back, the greatest criticism that survivors of the original soldier settlers have of the initial subdivisions, is that the farms were too small to provide sufficient income

(74) Pers. Com.
 (75) Pers. Com.
 (76) Pers. Com.
 (77) Pers. Com.

over and above working costs. Thus was repeated in the 1920's, the problem of the pioneer small farm settlements in the Wairarapa; insufficiency of land. But these more recent small farm settlers did not suffer the environmental and institutional difficulties of the pioneers; they suffered as a result of the economic revolution, their greatest problems being financial rather than physical. Having suffered economically, they were later to be among the first to realize the economic advantages inherent in the modern movement towards factory amalgamation.

Government purchasing activity stopped in the Wairarapa in 1921 and was not resumed until after the Second World War when several more properties were purchased. The largest diaring block to be bought at this time was that of Mr. W. Barton, situated at the northern end of Lake Wairarapa. This land, like that which formed the Battersea Settlement, had been offered to the Government in 1901, but because of its unfavourable characteristics and the high price asked, it had been refused (78). From the land finally purchased by the Government, nine new farms were developed as the "Purakau" Settlement, where the first rehabilitation farms were occupied in 1947 (79).

Three other block purchases made by the Government provided for the establishment of a further eight dairy farms. The "Kahikatea" Settlement east of Masterton provided four, while

(78) Wai. Daily Times, July 27, 1901, Page 3.

(79) Pers. Com.

the "Ruamahunga" Settlement, (a further subdivision of the original Ahiaruhe property) and the "Booth" Settlement, (being the subdivision of the homestead block of the original Carrington Estate) provided two each.

The conditions under which these latest dairy farmers were settled differ greatly from those following the First World War. The Government not only purchased and subdivided the land but in most cases undertook the building of houses, milking sheds and fences, and in the case of the Purakau Settlement even purchased the cows. In addition to these advantages the farms were larger than many of those in the earlier soldier subdivisions. As a result the more recent rehabilitation farms have proved to be much more successful than many of those established earlier.

With the occupation of the Booth Settlement in 1958 Government small farm activity is seen to have been a feature of the Wairarapa almost to the present. Future Government activity is also planned in connection with a major flood control and land development scheme in the Lower Valley.

Special Private Subdivisions 1878 - 1922.

In addition to the state sponsored subdivisions mentioned, the pattern of dairy farm and dairy factory distribution in the Wairarapa has also been influenced by private schemes to create small farms. In each case all or part of a larger holding has been subdivided to provide a group of small dairy farms. As a result of this private activity two further co-operative dairy factories were established in the Wairarapa.

The first Wairarapa resident to promote small farming by the subdivision of large blocks was one Coleman Phillips. As early as 1878 he had begun preparations for the settlement of some 3,000 acres of swamp land at "Kaiwairai" (80). (Fig.4) In order to subdivide it into small farms as he wished, he had been instrumental in having the Battersea Road built through Joseph's Swamp (81), in addition to laying out £1,500 on the construction of a major drain (82). Once this had been done, the land was subdivided into "small dairy farms to sell on deferred payment" (83).

Apart from this settlement at Kaiwairai, Phillips promoted a further settlement at "Matarawa", where it was reported in 1884 that he had 1,200 acres cut up into small farms for sale (84). An adjoining block was subdivided in later years. In promoting such schemes in the Wairarapa Phillips preceded Government activity in the same sphere by 22 years.

The only other small farm subdivision known to have taken place in the South Wairarapa before the Government became active in purchasing land, was the subdivision of part of the Morison's Bush Run, one of the original pastoral estates which had been taken up in 1847 (85). As advertised, the subdivision included "fifteen magnificent, highly improved small farms ranging in area from 40 to 150 acres" (86). All the farms were

(80) Phillips - Miscellaneous Letters, Page 42.

(81) Wai. Std. May 5, 1884.

(82) Wai. Age, July 5, 1916, Page 3.

(83) Wai. Std. May 5, 1884.

(84) Wai. Std. May 5, 1884, Letter.

(85) Bagnall, 1953, Page 5.

(86) Wai. Daily Times, March 5, 1896.

PRIVATE SUBDIVISIONS1878 — 1921

Further Extension of Small Farming
into Pastoral Zones

diagrammatic representation

Bushlands

Land occupied by pastoralists

well placed, being situated within one and a half and three miles of the Greytown Dairy Factory.

Mr. C.R. Carter, after whom Carterton was named, acquired his "East Taratahi" or "Parkvale Estate" between 1858 and 1863 (87). On his death in 1916 his will provided for the subdivision of the estate into 19 lots, the land being vested in and administered by the Public Trust. Eleven of the farms ranged from 75 to 105 acres, while there were two over 400 acres and two small lots under ten acres (88). Dairy farming became the major occupation on the block from the beginning and to day the majority of the farms are dairying units, all of which are situated in close proximity to the Parkvale Dairy Factory.

A further subdivision brought about by the terms of a will was that of a property at "Ahikouka" bordering the south bank of the Waiohine River. Although this was a private subdivision the terms provided that the five farms were to go to members of the Imperial Forces. Leases were for seven years with right of renewal for a total of 44 years from date of first occupation in 1922. Each of the farms in this block is small, the acreages ranging from about 40 to 50 acres. (89)

Two further private small farm subdivisions carried out in the southern part of the Wairarapa Valley were of great importance because they depended on the provision of their own dairy factories. In 1910 one A. Robinson began dairying on a

(87) Bagnall, 1957, Page 66.

(88) Carter File, Public Trust, Carterton.

(89) Pers. Com.

property at "Kahutara" near the eastern shore of Lake Wairarapa. Because there was no dairy factory in the vicinity, the planned introduction of dairying necessitated the erection of a proprietary factory ⁽⁹⁰⁾. In 1914 Robinson made the decision to subdivide the property into small dairy farms and to sell his Lakeview Factory as a going concern ⁽⁹¹⁾. As a result of the subdivision a co-operative factory was established in 1914 ⁽⁹²⁾.

The other private subdivision known to have been directly responsible for the erection of a co-operative dairy factory, was that carried out on one of the original pastoral runs ⁽⁹³⁾ by Mr. J. McMaster of "Tuhitarata". In 1921 a portion of the estate, on the rich alluvial flats bordering the Ruamahunga River, was subdivided into six dairy farms of 100 to 110 acres ⁽⁹⁴⁾.

As was emphasized in Part 1. of this essay, dairying in the Wairarapa developed as a direct response to small farm settlement under the conditions then prevailing. The evidence of this chapter shows that the significance of special subdivisions to small farm dairying has been a continuing phenomenon of dairying evolution. But the greatest importance of the small farm subdivisions outlined is not so much in the number of dairy farms established, but in other associated factors. The settlements resulted largely from Government intervention which

(90) N.Z. Dairyman, Vol.16, No.10, July 1912, Pp.31,32.

(91) N.Z. Dairyman, Vol.18, No. 6, March 1914, Page 82.

(92) Annual List of Creameries, etc., 1913-1929, List as at June 1915.

(93) Bidwill and Woodhouse, 1927, Pp. 128, 129.

(94) Pers. Com.

initiated a change in the established pattern of land holdings and land utilization, and small farm dairying became superimposed on the former extensive pastoral landscape. The significance of this to the present distribution of dairying in the Wairarapa is reinforced by the fact that there has been little encroachment of small farm dairying into the former pastoral zones other than in the form of special subdivisions mentioned. Thus the original duality of settlement types is still preserved and dairying zones exist as "oases" in the midst of sheep lands. This leads to the conclusion that dairying would not have become established in many areas of the Wairarapa had it not been artificially introduced. Furthermore, the isolated nature of many of the small farm subdivisions and the concentration on dairying within them gave rise to many new co-operative dairy factories in the Wairarapa. Consequently the evolution of the pattern of both dairy farm and dairy factory distribution in the Wairarapa is largely attributable to the historical processes outlined.

CHAPTER V.

EVOLUTION OF THE DAIRY FACTORY INDUSTRY: INSTITUTION, LIQUIDATION AND AMALGAMATION.

1890 - 1966.

Despite the initial peasant-like reluctance of the dairy farmers, the almost unexpected establishment of a dairy industry had been accomplished in the Wairarapa and with the spread of small farming into the former pastoral lands a continuing development of the dairy factory industry occurred. Two important facts should be emphasized. Not only is there a direct locational link between the establishment of small farm settlements and the spread of the factory industry, but during this period there is a more rational approach, in that the erection of processing units occurred almost simultaneously with settlement. The dairy factory had therefore become synonymous with viable dairy farms in the minds of those who came to occupy the new small farm subdivisions in the Wairarapa.

In more recent years the pattern of distribution of dairy factories established as a result of special subdivisions, has been greatly modified by changing economic circumstances, a reduction in the number of dairy farmers and the inauguration of a new transport medium. The more recently established factories have ceased production and only five processing units remain, each of which is associated with zones of pioneer small farm bush settlement.

The spread of the factory system of dairy produce manufacture can be linked, as was the spread of dairying itself, with the expansion of small farm settlement. (Fig. 5. Compare Maps 3 and 4). Where such settlement was inaugurated at an early date, there the factory system was initiated, with the proviso that sufficient support by the dairy farmers was forthcoming. Featherston, Greytown, Taratahi and Masterton, all zones of original small farm settlements, either built dairy factories, or brought forward proposals to such an end. Areas settled a little later, like those of Dalefield and Mauriceville, followed suit and because the proposals were accepted, built dairy factories which preceded those co-operatives later erected at Masterton and Featherston. Both the latter projects had earlier been abandoned for want of support.

Gradual extension of small farming into the bush areas, east and west of Carterton shifted the dairying centre of gravity from the Taratahi district. With the spread of dairying into these areas farmers began to feel the burden of taking their milk to the Taratahi Factory from those zones ⁽¹⁾. Suppliers of the Taratahi Factory from the Belvedere district, having failed in their attempts to have a branch factory established either by the Taratahi ⁽²⁾ or Dalefield ⁽³⁾ Companies relinquished their shares in 1896 ⁽⁴⁾ and formed a company in their own burgeoning

(1) Wai. Daily Times, Aug. 22, 1900, Page 2.

(2) Deller, Unpublished Ms.

(3) Dalefield Cheese Factory Golden Jubilee Booklet, Page 5.

(4) Wai. Star, Aug. 9, 1897, Page 3.

DIAGRAMMATIC REPRESENTATION OF
CO-OPERATIVE DAIRY FACTORIES IN RELATION TO
SMALL FARM SUBDIVISIONS.

FACTORY DISTRIBUTION 1880 — 1965

small farm area.

Meanwhile in 1895, the Featherston Co-operative Dairy Co. had been formed ⁽⁵⁾, the local farmers finally deciding to co-operate. This decision was influenced by the fact that the "N.Z. Farmers' Dairy Union" of Palmerston North, which had established a creamery at Featherston some years previously, had not, in the opinion of the local farmers maintained an acceptable payout ⁽⁶⁾.

One other small co-operative is known to have existed prior to 1900. The Kopuaranga Butter Company, known to have been producing butter in the 1895-96 season ⁽⁷⁾, had by the following season been replaced by a skimming station of the N.Z. Farmers' Dairy Union. Nevertheless it was significant as the first co-operative butter factory in the Wairarapa Valley.

By the turn of the century six co-operative dairy companies were established in the Wairarapa, five of which were producing cheese. This made the Wairarapa unique in the North Island, since it was the only area to specialize in cheese manufacture from the start ⁽⁸⁾. Yet even in the Wairarapa the industry had been conceived in terms of buttermaking, little mention being made of cheese manufacture by the advocates of the factories. Plans for all the early factories, except Dalefield, were for butter factories, or at least dual units for the

(5) Wai. Daily Times, Oct. 24, 1895.

(6) Carle, 1957, Page 136.

(7) N.Z. Dairy Division Series 2, Duplicates, No.6.

(8) Somerset Playne, 1912, Page 411.

manufacture of both butter and cheese ⁽⁹⁾, and except for Masterton, all new co-operatives to be established after 1901, specialized in cheese making. (Fig.6)

Concentration on cheese resulted from a combination of several influences. Because butter was the major regional dairy product, an unsupplied market for local cheese existed and therefore there was less risk involved in cheese manufacture as against butter. This was probably the chief factor in the establishment of the pioneer proprietary cheese venture. However, in all likelihood, the most important reason for the Greytown Factory (built as a dual plant) commencing cheese making, was that the first manager employed was a cheese maker and not a butter maker. Successful production and satisfactory prices consolidated the choice and perpetuated cheese making as new factories were established. This would have been especially true where such factory establishment called for financial participation by "small men", since a proved industry is more likely to have been fostered than an unproved one. That concentration on cheese had been a move in the right direction was emphasized by a commentator in 1901. He estimated that over the previous ten years a cheese factory supplier had received an average payment of three farthings extra for every ten lbs. of milk, over a supplier whose milk had been made into butter. ⁽¹⁰⁾ This was an important consideration to those dairy farmers who desired to supply a factory.

(9) Wai. Std. April 18, 1882, Page 2.
 Wai. Std. Aug. 19, 1882, Page 2.
 Wai. Daily, Nov. 7, 1887, Page 2.
 (10) Wai. Daily Times, Jan. 15, 1901, Page 2.

TIME-LINE SHOWING ESTABLISHMENT AND DISESTABLISHMENT OFWAIRARAPA DAIRY FACTORIES.PROPRIETARY FACTORIES.CO-OPERATIVE FACTORIES.

- 1883, MESSRS. GILPIN AND PARDON.
- 1916, TARUREKA.
- 1920, AHIARUHE. • 1905, WATHAKEKE.
- 1900, SOMERSET. • 1919, ROCKINLET.
- 1905, TE WHITI. • 1905, PARKVALE.
- 1916, PUKIO. • 1908, MANUI.
- 1908, LONGBUSH. • 1907, FLAXLANDS.
- 1916, DRY RIVER.
- 1917, GLADSTONE. • 1913, TE WHITI.
- 1914, LAKEVIEW.
- 1917, KOKATAU.
- 1919, TAUMATA.

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GREYTOWN. TARATAHI, 1939.

DALEFIELD.
MAURICEVILLE, 1962.FEATHERSTON. KOPUARANGA, 1896.
BELVEDERE.

MASTERTON. PARKVALE, 1962.

KAITUNA, 1924.

TE WHITI, 1909.

TAWAHA, 1949. OTARAIA, 1930.
LONGBUSH, 1917.

CARRINGTON, 1956.

LAKEVIEW, 1938.

KOKATAU, 1955.

BIDWILL, 1958. AHIARUHE, 1958.

LOWER VALLEY, 1958. PIRINOA, 1952.
MATAHIWI, 1927.
WATHAKEKE, 1962.

ELMDALE, 1960.

Reference

- Date of disestablishment

MATAHIWI Date of
establishment unknown

Between 1900 and 1906, when Tawaha and Dyer were settled, four new co-operative factories were established. One of these resulted from revived interest in a dairy factory at Masterton. Initial plans were in terms of a cheese factory, but most of those who guaranteed vows for the project did so on the stipulation that a butter factory would be built (11). The probable reason for such a condition was that even at that time many of the farmers had separators for use in making dairy butter (12). It was finally agreed that a butter factory would be built and butter making commenced in December 1901 (13).

By the late 1890's dairying had spread into the bush and swamp areas to the east of Carterton where a new factory was planned. In this area there was still reluctance on the part of local dairy farmers to participate and it was four years before the Parkvale Dairy Company finally received guarantees from intending suppliers (14). When the new Parkvale Factory commenced cheese manufacture in 1901, the Taratahi Factory again lost suppliers. (15)

The first of those new factories linked with special Government subdivisions was that erected at Kaituna. This block, much of which was heavily rolling (16), was not part of a dairying area and the small sections were surrounded by larger sheep farming blocks. The dairy farmers decided in 1903 to co-operate

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- (11) Wai. Daily Times, March 11, 1901.
 - (12) N.Z. Dairyman, Vol.5, No.6, March 1901, Page 6.
 - (13) N.Z. Dairyman, Vol.6, No. 3, Dec. 1901, Page 36.
 - (14) Wai. Daily Times, Jan. 17, 1901, Page 2.
 - (15) N.Z. Dairyman, Vol.6, No.11, Aug. 1902, Page 45.
 - (16) Pers. Com.

and built a factory of their own rather than supplying the Masterton Factory some nine miles away. Although there were 20 suppliers by 1920, manufacture was not maintained and by 1925 the factory had given up independent production ⁽¹⁷⁾. Those farmers still engaged in dairying installed cream separators ⁽¹⁸⁾ and had their cream carried to the Masterton factory on contract.

A small proprietary cheese factory is also known to have been in operation in 1900-01 at Te Whiti, to the south east of Masterton. By the season of 1905-06 this factory had become a co-operative but production ceased within five years ⁽¹⁹⁾

"Longbush", one of the earliest subdivisions to be made by the Government in the Wairarapa was, like the later ones of Dyer and Tawaha, within the eastern zone of large sheep runs. Being largely hill country beyond the eastern rim of the plain, the farms were designated as grazing ⁽²⁰⁾ *. Some dairying was apparently carried on as a subsidiary activity to sheep since by 1906 a proprietary cheese factory had become established there. By the 1908-09 season, following establishment of the adjacent "Mahupuka" Settlement ⁽²¹⁾, the proprietary factory had become a co-operative ⁽²²⁾, but suppliers having dropped to four, the factory closed in 1915. Some dairying continued in the area, with home separated cream being collected under contract by the

(17) Annual List of Creameries, Etc. June 1920 and June 1925.

(18) Pers. Com.

(19) N.Z. Dairy Division Series 2 Duplicates Aug. 1906 and June 1909.

(20) N.Z. A. to J. 1908, Vol. 2-C, C5, Page 8.

(21) N.Z. A. to J. 1906, Vol. 1, C5, Page 4.

(22) N.Z. Dairy Division Series 2 Duplicates June 1909.

* Because of this neither the Longbush Settlement nor the later mentioned Mahupuka Settlement are described in detail in Chapter IV.

Masterton Factory (23). (Fig.8,Page 102a).

Settlers on the Government subdivisions of Tawaha, Dyer and Carrington soon decided on the erection of factories to serve the settlements, and in each case a factory was in operation during the second season after selection. To the small farm philosophy of the time such action was not only economically desirable, it was expected. Although having gained acceptance by the small farmers very slowly in the initial stages, some 23 years had elapsed during which the advantages of the factory system had gained wide acceptance. During this period the Government's subdivision policy was aimed at dairying, where possible, as being the most efficient and effective form of small farm settlement. That the Government expected dairy factories to be established as a natural outcome of the small farm subdivisions is indicated by its classification of units as dairy farms and by the provision of land for factories. That the sites were found by the settlers to be less suitable than others, does not alter the contention that co-operative dairying was expected to be the inevitable outcome of such Government activity in areas almost completely untried for dairying.

It was also commonly accepted that there were advantages in gaining supply from a limited radius, especially for cheese making, and it became not only acceptable but desirable that where supply was sufficient for a one or two vat factory one should become established. In 1900 this outlook was

expressed by a commentator who wrote; "Given sufficient suppliers, factories may be within five miles of each other without detriment to trade" (24). The point at issue was the interpretation of what constituted a sufficient number of suppliers rather than what was a suitable radius of supply. Seven suppliers were sufficient to establish the Otaraia Dairy Factory on the Dyer Settlement, while the initial suppliers to the Tawaha and Carrington Factories were 12 and 17 respectively (25).

Suppliers to such small factories did not lose financially as can be seen from the following statement made in the "Dairyman" in 1912, when the writer criticized the "monster factory" as being an "expensive ornament" and wrote; "Apparently, from the amounts paid out for butterfat last season it is a case of the bigger the factory the bigger the loss" (26). By relying on the personal skill of the manager to turn out a first-class article, the small factory was proving to have an economic advantage over the larger concerns which relied more on paid labour.

Although by 1915 the highest total of factories in the Wairarapa had been reached (Fig.7), eight of these were proprietaries which gradually went out of production during the war years, leaving one only in operation by 1920. But several new co-operative factories began production in the years following the war. Of these Bidwill and Ahiaruhe can be attributed

(24) N.Z. Dairyman, Vol.4, No.12, Sept.1900, Page 10.

(25) N.Z. Dairy Division, Series 2 Duplicates, June 1908 and June 1911.

(26) N.Z. Dairyman, Vol.17, No.3, Dec.1912, Page 70.

DISTRIBUTION OF DAIRY FACTORIES IN TIME.

Five Year Intervals.

FACTORIES.

directly to the subdivision of blocks of land for soldier settlement.

By 1925 the maximum extension of the co-operative factory system in the Wairarapa had been reached and from that date on the number of factories decreased gradually until 1955, since which date there has been a marked reduction. Of the three factories which ceased production prior to 1940 two were very small factories with few suppliers. The small factory at Matahiwi had seven suppliers and an output of only 21 tons of cheese in 1925-26, the year before it ceased cheese manufacture⁽²⁷⁾. Lakeview had a much greater output and continued successful production until 1938-39 when it too went into liquidation⁽²⁸⁾. The only other factory to go out of production before 1940 was the Taratahi Dairy Factory, the second co-operative in the Wairarapa. Originally near the centre of small farm dairying, it suffered on successive occasions from the withdrawal of supply as the centre of dairying shifted further into the bushlands. A gradual downward trend in production is evident in the years following 1928-29, when 220 tons of cheese was made⁽²⁹⁾, until by 1938-39, the season before liquidation, production had been reduced to 86 tons⁽³⁰⁾. Those dairy farmers remaining transferred their supply to Belvedere, the factory that the Taratahi Directors had earlier refused to establish as a branch.

(27) Annual Lists of Creameries, etc., June 1926.

(28) Dairy Board Production Statistics.

(29) Annual List of Creameries, etc., June 1929.

(30) Dairy Board Production Statistics.

The Tawaha Factory went out of production in 1949 when it was burnt down. Having only 11 suppliers, and the subdivision being within range of several factories, the settlers were refused permission to rebuild and had to transfer their supply.

Recent Factory Evolution: Amalgamation and Liquidation.

Changing economic conditions of recent decades, as seen in steadily rising costs unmatched by increased realization from the sale of cheese, affected the economic foundations of the small factories of the Wairarapa. These changes were aggravated in some cases by the limited supply areas of the small farm subdivisions and the fact that little extension of dairying into the surrounding sheep lands had occurred. Furthermore the industry had been characterized by a steady reduction in the number of dairy farmers. That increasing operational costs were not counterbalanced by increasing supply meant that some of the factories were becoming less economic and they could not match the payout of the larger concerns. Because of the relative isolation of many of the factories and the absence of a practical means of transporting whole milk, economic relief could not be gained by transferring supply elsewhere. But the introduction of the milk tanker, a revolutionary innovation which overcame the transport difficulty, made possible the amalgamation of companies and allowed this most recent feature of Wairarapa dairy factory evolution to proceed.

While it has been shown that small farm settlement has been responsible for the development and expansion of dairy-

ing and the dairy factory industry, it can also be shown that the recent process of amalgamation and liquidation, although basically economic in origin, has been influenced by the attitudes of the dairy farmers. Life in the pioneer bush settlements established a strong tradition of individualism, conservatism and parochialism among the small farmers. In these areas tradition is still a powerful force and the fact that families have been associated with the same district and the same factories for up to 80 years or more means that their traditional small farm attitudes are stronger than in the new subdivisions. Consequently they have shown the greatest reluctance to amalgamate and the least unity of spirit. Conversely, those dairy farmers in the more recently established dairying subdivisions, in lacking both the small farm tradition and long factory association, were the first to accept the principle of amalgamation, and even pioneered the means of carrying it out.

Pirinoa, the southernmost dairy factory in the Wairarapa Valley, was the first to enter into an amalgamation. This factory was one of several to be inaugurated after the First World War. Although being established in a predominantly sheep farming area where holdings were traditionally large, Pirinoa was the only co-operative dairy factory in the Wairarapa which did not result from small farm subdivision. Dairying when it became established, was more a constituent of a dual farming economy, with the major emphasis of both surrounding farmers and

suppliers still being on sheep farming ⁽³¹⁾. Although it was suggested that a future intake of 15,000 gallons of milk a day at Pirinoa was possible ⁽³²⁾, dairying did not become more fully established in the area and the number of suppliers is not known to have increased beyond the 14 of 1941-42, from which date the number had dropped to eight by 1951 ⁽³³⁾. It was at this stage that successful negotiations for an amalgamation were entered into with the Lower Valley Dairy Company. The Pirinoa Factory was closed and its suppliers transferred to the Lower Valley Factory.

One important aspect of this amalgamation was that it pioneered in New Zealand the use of milk tankers for the once daily collection of whole milk for cheese manufacture. The initial application to use a milk tanker for this purpose had been turned down by the Dairy Division of the Department of Agriculture, the major objections being to the mixing of night and morning milk and the belief that with the equivalent of three tanker loads to be collected, the milk could not be across the factory stage by 9 a.m. When it had been satisfactorily proved that the conditions laid down for the supply of milk could be complied with, a provisional license was granted ⁽³⁴⁾.

It is most significant that the first factory suppliers to see the advantages of amalgamation were those supplying Pirinoa, the only dairy co-operative in the Wairarapa not

(31) Pers. Com.

(32) Wai. Age, Aug. 31, 1922.

(33) Pirinoa Co-op Dairy Co. Balance Sheets.

(34) Pers. Com.

associated with small farming. Being unhindered by either small farm tradition or conservatism, they were prepared to allow the closure of their factory in order to amalgamate and more importantly, to pioneer a new transport technique, if it was to be to their economic advantage.

Through its success in this amalgamation, tanker transport was soon to transform the pattern of factory distribution as well as the system of milk collection, over a wide area of the Wairarapa plain. As a method of bulk milk handling it proved ideal under Wairarapa conditions where small pockets of intensive dairying existed separated in many instances by large areas where sheep farming is predominant.

Such a transport system, if it is to be efficient, must in its turn depend on high quality roads, and these the Wairarapa possesses. The many shingle strewn river beds in the district, although a potential flood threat, had from the first given the Wairarapa a considerable advantage over some of the other dairying areas in the North Island, such as the Waikato, as unlimited quantities of quality shingle for road making were available, and good quality roads existed at an early stage (35).

But the basis of the most efficient tanker transport is not only good roads, but heavy duty roads. In the Wairarapa an extensive network of class two roads (most of which are sealed) covers the plain, making it, "one of the most efficient road transport systems in the country" (36). Because class two

(35) Daniell, Page 14.
Wai. Std. Aug. 19, 1882, Page 2.

(36) Mason, 1954, Page 11.

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5. " --- one of the most efficient road transport systems in the country." (Page 93).
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6. " --- isolated whole milk supply areas are now linked by tanker with a more distant processing plant." (Page 182).

highways allow greater axle-loads the dairy companies in the Wairarapa have been able to utilize tankers of 2,000 gallons capacity or greater, for milk collection. In other areas in the North Island where many of the rural roads are class three, tankers of this capacity are not permitted (37). The advantages gained by the Wairarapa companies because of this are three-fold: it means greater economy in the number of tankers and drivers and a complementary increase in the length of collection run that can be made before returning to the factory with a load. Both these advantages lead to lower collection costs per pound of butterfat. Tanker transport has therefore become the dominant method of milkcollection in the Wairarapa, with almost 6/7ths. of all butterfat in whole milk being collected by this method in 1964-65 (38).

The second amalgamation to be recorded was that between the Kokatau and Parkvale Companies in 1955. The Kokatau Dairy Factory had originally been established in 1912 because of bad feeling between the Parkvale Company and one of the suppliers, against whom the Company had initiated court proceedings. The supplier retaliated by building a private cheese factory on his own farm, which became a co-operative after his death in 1917. Although having only five suppliers, the Kokatau Company was very successful, being reputed to have one of the highest productions per supplier in New Zealand. The aim of this Factory's amalgamation with Parkvale was the more economical manufacture of cheese

(37) Pers. Com.

(38) Pers. Com.

in one factory (39). Although Kokatau was not associated with a recent subdivision and is therefore an exception to the suggested rule, it was one of the more recent co-operative factories to be established.

Amalgamation between the Carrington Dairy Co. (which had been established in the Carrington Settlement in 1910) and the Belvedere Dairy Co. was suggested in 1955 when the Belvedere Company was carrying out a rebuilding programme (40). But no basis of agreement was arrived at. Instead, the Carrington Directors made the decision to go into voluntary liquidation.

Suppliers to the Carrington Factory, although occupying one of the Government subdivisions, were closely associated with and affected by the traditions and parochialism of the long established small farm zones nearby and it is likely that district jealousies played some part in this decision. It has also been suggested that individual suppliers would not have fared so well financially had they agreed to amalgamation (41). Although ideally the assets of a company should be looked on as the assets of a Wairarapa industry, it is part of small farm tradition to serve immediate self interest rather than community interest, even when the community is seeking the same economic goals. Significantly, after liquidation most of the remaining supply was transferred to the factory with which amalgamation had earlier been declined.

(39) Deller Unpublished Ms.

(40) Ibid.

(41) Pers. Com.

Having pioneered and proved the practicability and efficiency of tanker transport in the Wairarapa, the Lower Valley Dairy Co. was one of several which soon formed amalgamations on the basis of this system, when at the end of the 1957-58 season three factories, Bidwill, Lower Valley and Ahiaruhe, ceased operating. The first two amalgamated with the Featherston Dairy Co. and the latter with the Parkvale Dairy Co.

Although having had their land opened for selection as recently as June 1919, the soldier settlers of the Pihautea sub-division had resolved to erect a factory as early as March 1920⁽⁴²⁾, and the new Bidwill Factory began processing in the 1921-22 season. This factory proved to be most successful, reaching a maximum output of 413 tons of cheese from 31 suppliers in 1940-41⁽⁴³⁾. However after this season the number of suppliers gradually dwindled to 19 in 1958, the year in which amalgamation with the Featherston Dairy Co. took effect. Two seasons before amalgamation, the Bidwill Dairy Factory was selected by the Department of Agriculture to undertake experiments in the manufacture of rindless cheese for export⁽⁴⁴⁾, and it became the first factory in New Zealand to concentrate exclusively on the new process⁽⁴⁵⁾.

The Lower Valley Factory was erected in 1922⁽⁴⁶⁾ for suppliers from the recently settled private subdivision at Tuhitarata. The suppliers, numbering between seven and ten after

(42) Bidwill, Minutes of Directors' Meeting, 24 March, 1920.

(43) Bidwill Co-op Dairy Co. Balance Sheets.

(44) Pers. Com.

(45) Pers. Com.

(46) N.Z. Dairyman, Vol.26, No.12, Sept. 1922, Page 40.

1942, increased to 18 following amalgamation with the Pirinoa Dairy Co. (47). This number was maintained until the final amalgamation with the Featherston Dairy Co. in 1958.

The other amalgamation which took place in 1958 and which depended on tanker transport, was between the Ahiaruhe and Parkvale Companies. The Ahiaruhe Factory had been a successful proprietary cheese factory since the early 1890's (48), and was the largest proprietary cheese concern in the Wairarapa. When the block in the vicinity of the factory was bought by the Government for a soldiers' syndicate, the factory, having been leased for a year, was bought and formed into a co-operative dairy company (49). However, the potential number of suppliers was limited and a gradual reduction brought the total suppliers to ten in 1957-58 prior to amalgamation (50).

Elmdale, the one surviving factory in the Lower Valley, joined the movement for amalgamation in 1960. From the beginning it held an advantage over the other Government dairying subdivisions by possessing larger farms, the dairy farmers at Dyer-ville being able to increase herd sizes considerably, so that by 1957-58 the average herd size was 80, whereas that on the Pihautea Soldier Settlement across the Ruamahunga River was only 51 (51). The larger herd sizes had meant higher production from relatively few suppliers, the highest attained being 464 tons of

(47) Lower Valley Co-operative Dairy Co. Balance Sheets.

(48) N.Z. Times, June 10, 1891, Page 4.

(49) Pers. Com.

(50) Ahiaruhe Co-op Dairy Co. Balance Sheets.

(51) From Base Figures supplied by the Dairy Board.

cheese from 23 suppliers in 1952-53 (52). But although it was possible for this factory to maintain economic production, the advantages of amalgamation were soon apparent and the Company successfully finalized arrangements for amalgamation with the Featherston Dairy Co.

The greatest advantage of such amalgamations to the individual suppliers lay in improved butterfat receipts. One farmer stated that as a result of his factory's amalgamation with another, payout for butterfat had increased as much as sixpence per pound (53). With such financial results to be gained it is surprising that the movement did not gather momentum earlier. That it did not can probably be attributed to a desire to retain traditional factory links. Weight is given to this observation by the fact that the latter four amalgamations described, concern the closure of factories which had been erected on special settlements during this century. The first three mentioned (of these) were erected after 1920. Each factory had resulted from a special subdivision and was isolated from the traditional outlook of the pioneer small farm zones. Therefore the lack of traditional influences helped foster the movement towards amalgamation in these subdivisions before the concept was accepted elsewhere.

Until 1960 it had been the small local factories with few suppliers and limited supply which had understood and been

(52) Elmdale C-op Dairy Co. Balance Sheets.

(53) Pers. Com.

prepared to take advantage of amalgamation once the problem of bulk transport of whole milk had been solved. But the advantage of union between companies had never applied only to small factories facing the problems of diminishing payout, rising overhead costs and the cost of installing modern sophisticated cheese-making machinery. The advantages were also applicable to the union of larger concerns in the form of greater efficiency, financial advantages to the suppliers and more unified long-term planning. That such amalgamations did not eventuate as early as they might have done can be largely attributed to a desire to maintain the regional independence of individual factory concerns. This is group "isolationism" as against the individual "isolationism" of the 1880's.

In 1961 discussions were initiated towards the amalgamation of two of the larger companies in the vicinity of Carterton. Parkvale, having insufficient processing plant to cater for the milk supply, was becoming overtaxed. In order to overcome the problem, costly building additions and alterations to the factory were needed. At the same time the Belvedere Factory possessed plant capacity beyond its ability to utilize. In this situation the two companies decided that it would be mutually advantageous to amalgamate, and the Central Wairarapa Co-op Dairy Co. was formed.⁽⁵⁴⁾ It was the original intention to keep both factories in operation, but the Parkvale Factory has since been closed down and the whole supply is dealt with at

(54) Deller Unpublished Ms.

Belvedere. This union was of great importance to the Wairarapa because it was the first successful amalgamation between long established factories situated within zones of pioneer small farm bush settlement.

Although the movement towards unity in the dairy industry through amalgamation made considerable progress in the more recently established subdivisions, not all negotiations were successful. Nor were amalgamations achieved as early as they might have been. The Waihakeke Dairy Company withdrew along with the Greytown and Dalefield Companies from amalgamation discussions, which took place in 1957-58, each of them having at that time decided to maintain their independence. (That each of these Factories is situated within the zone of pioneer small farm bush settlements strengthens the contention that the traditional small farm outlook has hindered the progress of amalgamation.) However, after only a further four years of independent operation the Waihakeke Dairy Company, like Carrington before it, chose to liquidate rather than to amalgamate. Having gained immediate advantage by so doing, the remaining supply was diverted to one of the factories with which an earlier proposed amalgamation had failed.

Between 1941 and 1962 Masterton and Mauriceville, the two home separator butter factories, lost 971 suppliers (55). During the 1930's both factories had undertaken extensive

(55) Masterton and Mauriceville Co-op Dairy Co.'s Balance Sheets

7. RELICS OF THE SMALL FARM SETTLEMENT ERA.

DERELICT FACTORIES OF THE WAIRARAPA

INCLUDING DATE OF CLOSURE.

Lakeview, 1938.

Kaituna, 1924.

Taratahi, 1939.

Kokatau, 1955.

Pirinoa, 1952.

Carrington, 1956.

Lower Valley, 1958.

Ahlaruhe, 1958.

Bidwill, 1958.

Elmdale, 1960.

Waihakeke, 1962.

Mauriceville, 1962.

Parkvale, 1964.

competitive cream collection runs and had built up a large body of supply from the plains to the south as far as Palliser Bay. Two technological innovations, home separation and motor transport, allowed cream to "be lifted from farms, no matter how far distant from the factory" (56).

Many cream suppliers were sheep farmers who undertook dairying as a subsidiary activity to gain ready "tucker money" during the depression of the 1930's, but more prosperous times caused most of these suppliers to relinquish dairying. This greatly affected the Masterton and Mauriceville Factories as the continuing loss of supply seriously undermined their economic operation. By the 1961-62 season, supplies to Mauriceville had fallen so low that it was realized the Company could not continue. As a result this Factory also went into voluntary liquidation. The decision was probably influenced by mutual suspicion and jealousy, which was engendered between the Mauriceville and Masterton Factories over a long period of direct competition for suppliers. The resultant climate would not have been conducive to successful amalgamation proposals.

During 1965 arrangements for the amalgamation of the Greytown Wairarapa Co-op Dairy Company with the Featherston Dairy Company were finalized and put into effect. Although having in its early years suffered from both financial and supply problems, the Greytown Factory became one of the most successful in the valley. But in recent decades it has suffered from a steadily

decreasing number of suppliers, having dropped from 65 in 1944-45 to 53 in its final season (57). The main influencing factors in the amalgamation were the problems concerning necessary or projected expenditure which would have been incurred by the introduction of new cheese making equipment to replace older plant and the purchase of milk tankers, at a time when supply was declining (58).

Amalgamation now allows more efficient tanker utilization and a greater diversification of product, since the Featherston Dairy Company has two factories, Greytown a cheese making concern and Featherston itself, which is a butter and casein unit. The amalgamation also allows for non-duplication of administrative expenses and therefore decreases overhead costs. A feature of this amalgamation is that the Greytown Company is the first to agree to amalgamation, having formerly refused to do so. This indicates that, with time, the traditional outlook of the long established dairying zones is being modified as modern concepts become more deeply entrenched and the advantages of amalgamation are more readily conceded.

By December 1965 therefore, the pattern had altered very greatly from that of 1915 and 1925. A steady reduction in the number of operational factories over the years either by liquidation or amalgamation, had changed an area with 19 co-operative enterprises, to one where five factories and four

(57) Greytown Wairarapa Co-op Dairy Co. Balance Sheets.

(58) Pers. Com.

DIAGRAM SHOWING AMALGAMATION AND LIQUIDATION OF CO-OPERATIVE
DAIRY FACTORIES.

8. OPERATIONAL DAIRY FACTORIES OF THE WAIRARAPA, 1966.

Masterton Co-op Dairy Co. Ltd.

Central Wairarapa Co-op Dairy
Co. Ltd. (Belvedere).

Dalefield Co-op Dairy Co. Ltd.

The Featherston Dairy Company's
Greytown Factory.

Featherston Co-op Dairy Co. Ltd.

companies were operating. Yet even this situation is likely to alter in the near future, since negotiations are under way for a projected amalgamation between the Masterton and Central Wairarapa Dairy Companies (59), and as a result, it is quite possible that by the 1966-67 season there will be only three dairy companies in the Wairarapa. This move has been precipitated by the crisis in supply faced by the Masterton Factory which has caused grave problems in economic operation. Union with the Central Wairarapa Dairy Company would solve these problems. It would also provide a more diversified base* by bringing together a cheese and butter unit, as well as incorporating the Wairarapa Milk Treatment Station, which is owned by the Masterton Dairy Company.

Negotiations towards amalgamation between the Central Wairarapa, Dalefield and Greytown Dairy Co.'s had already been mooted when the Greytown Company announced its intended amalgamation with the Featherston Company. The other two companies also abandoned discussions. These moves were initially precipitated by plans each of the factories was beginning to consider for the installation of very expensive automatic cheese-making machinery, costing in excess of £50,000 (60). To install such machinery and yet not have the milk supply to utilize it fully, is economically unsound. Since it is recognized that

(59) Pers. Com.

(60) Pers. Com.

* The main advantages of diversification as seen by local farmers are: the ability to increase production of the most profitable product, and to form a buffer against fluctuating realizations of individual products.

with this machinery one factory could handle the supply now being processed in two, the major problem would have revolved around the agreement as to which factory was going to install the new equipment, since parochialism is still a feature of the district. However, because of a shortage of capacity in the 1965-66 season, the Central Wairarapa Company is making definite preparations for the installation of the new automatic machinery, to be completed for the 1966-67 season. The Dalefield Dairy Co. has for a time suspended plans for the installation of the equipment. Either the intention is to maintain independent production as long as possible without the new machinery, or to initiate further amalgamation proposals with Central Wairarapa. If this second course of action is followed, as seems advisable, two major companies only would remain, almost completing the possible moves towards dairying unity in the Wairarapa.

Such a step would be wise, since there has been a marked trend away from dairying even in areas traditionally devoted to it; the two companies, Central Wairarapa and Dalefield having between them lost eight suppliers between the 1962-63 and 1964-65 seasons ⁽⁶¹⁾. A reduction such as this may not appear to be significant from a total of 161 suppliers, but on the average herd size and average butterfat per cow for 1964-65 this could mean a loss of some 599 cows or 173,733 lbs. of butterfat. ^{(Figs. 11,12).}

If this trend continues, the ability to cover the duplication of such costly capital equipment would be severely prejudiced, especially when the loss of each supplier not only reduces supply

(61) Central Wairarapa and Dalefield Co-op Dairy Co.
Balance Sheets.

but adds to the capital burden of those remaining. Amalgamation would obviate these problems.

The independence of the dairy farmers has therefore practically disappeared since last century when, looking to their own interests, they failed to give solid support to the factory industry. Once the factories had become established and had proved successful in the eyes of the local farmers, their independence was translated into the small local factory based on group or areal independence. The suspicion and intolerance of the small farmer now became directed at the surrounding districts and their competitive factory concerns, so that the whole system became based on what might be termed "micro-parochialism". Although not independent in the strict sense, the small farmer preserved more of his independence and individuality in the smaller concern, because in general he was joined with a group of men from the one locality, who, because of their proximity to one another would be understood. In a small concern too, the supplier had a much greater influence over the establishment and in many cases the Directors formed a large proportion of the total number of suppliers. Another feature which worked against the build up of a unity of spirit among dairy farmers occurred where, with factories in close proximity to one another, suppliers often tried to play one factory off against another by transferring supply (62). For

(62) Pers. Com.

those who remained loyal, suspicion of neighbouring factories grew. At the same time, strong district loyalties were engendered. Just as personal traits of small farmers had hindered the establishment of the dairy factory industry, so these traditional loyalties have served to hinder the progress of amalgamation in the long established small farm dairying zones of the Wairarapa.

However, there were also physical and financial reasons for the small factory system. Although roads were generally good, during the horse and brake era, considerable savings in time and effort were gained by having only a short journey to the factory. Also, some of the special subdivisions, having been implanted as isolated pockets of dairying in an expanse of sheep country, were not within reasonable proximity of existing factories. When these facts are added to the contention made earlier, that the small factory did not lose financially, there would have been no advantage seen in a factory taking in a wide supply area. In such a situation, under prevailing circumstances, the farmer would lose more time, and possibly money, and more of his independence and individuality, while in return having less control over the operations of the company. Thus it was that the small local factory in the Wairarapa became the social and economic compromise of the dairy farmer to the co-operative system, which of its very nature reduced his independence.

The progress of amalgamation in the Wairarapa, (facilitated by the milk tanker), if less spectacular than some

would wish, indicates an awareness in modern times of a need for unity of action, if not for a unity of spirit. This has been brought about by the necessity of reducing expenses at a time when overhead costs including the cost of labour have been rising steadily. Also the capital demands of modern factory equipment have outstripped the financial capabilities of the small factory. Such unity of action is made even more essential where these increases have not been matched by increased payments for butterfat. Because of the technological and financial revolution in the dairy factory industry, the "monster factory", far from being an "expensive ornament" (63), has become the modern answer to the future of the dairy industry in the Wairarapa and the process of amalgamation the means of achieving it.

(63) N.Z. Dairyman, Vol.17, No.3, Dec. 1912, Page 70.

C H A P T E R V I .

THE ROLE OF SMALL FARM SETTLEMENTS IN THE PRESENT DAIRYING SCENE.

It has been established that the expansion and evolution of dairying in the Wairarapa occurred as a continuing response to historical factors, embodied largely in areal extension through the implementation of small farm policies. An expected corollary would be the ability to discern in the present dairying scene, the influences of past action. This it is possible to do, since the inheritance of the past can be shown to have been responsible both for the pattern of distribution of dairy farms and the extent to which farm fragmentation has come to characterize the area.

The Distribution of Dairying in the Wairarapa, 1965.

The present day distribution of dairying lands in the Wairarapa is shown on the map of land occupied by dairy factory suppliers in 1965 (Map 7). Because the map shows all land owned or occupied by suppliers, whether or not it is used exclusively for dairying, it does not show the extent to which dairying is characteristic of specific farms. This limitation of the map must be noted, because the common practice of dual farming (dairying and sheep) in some parts of the Wairarapa, means that on many of the larger farms dairying is only a subsidiary activity. As a result, some areas gain a dairying emphasis which they do not warrant and the map shows important extensions of

dairying beyond the zones of small farm subdivisions, which in some cases do not exist. Nevertheless, if the farm distribution map is compared with that of the small farm subdivisions (Maps 3 and 7) it will be seen that in general there is a close correlation between them. Thus the stated premise that historical factors have been a major determinant in the evolution of dairying in the Wairarapa is borne out in the present distribution of dairy farms.

The map includes 424 farms or 91.2% of all farms which supplied more than 1,000 lbs. of butterfat to dairy factories in the Wairarapa in the 1964-65 season. Of the 9% of farms which have not been included, some could not be located on the available cadastral maps, because re-subdivisions have altered section numbers, or because holdings were not listed under the name of the supplier in the county rate files, from which the basic data was obtained. Those not included in these two categories are mainly isolated hill country farms supplying the Masterton Dairy Factory, and as such do not influence the pattern except by extending the fringes of dairying towards the east coast. Inclusion of two categories of land occupance allows differentiation between farms which are single units and other lands, owned by individual suppliers, which consist of non-adjacent blocks.

The map shows two major concentrations of dairying, both of which were either pioneer zones of small farm settlement or developed and extended as a result of later small farm subdivisions. Carterton is the focus of a zone in which dairying is

the predominant land use over a large area, most of which was originally part of the "Three Mile Bush". The second dairying concentration is located in the southern part of the valley. In this zone, to the south and east of Featherston, progressive extension of small farming into the former pastoral lands has occurred. Between the two extensive dairying "oases" and linking with them, lies a narrow belt of dairying, the result of further special subdivisions. Many of the other isolated pockets of dairying shown on the map were created artificially as special subdivisions, most of which retain their dairying emphasis.

Although the Mauriceville area has lost much of its former dairying significance, the influence of the small farm subdivision is still evidenced in the predominance of fragmented farms (the result of amalgamation of 40 acre blocks to make viable units) and in continuing dairying activity in an area which, because of its topography, is much more suitable for sheep. At the present time only two farms remain as purely dairying units, the others having become dual farms (1).

Limited small farm subdivision in the Masterton area is reflected in the reduced incidence of dairying in that locality, although this is also partly due to the small farmers' transference from dairying to cropping and grain growing early this century (2). However, there still remains a limited concentration of dairying land in the vicinity of Masterton which is linked with the original small farm subdivision. In addition

(1) Pers. Com.

(2) N.Z. Times, May 3, 1907, Page 3.

several other pockets of dairying east and west of Masterton are located on Government subdivisions.

Dairying continues to characterize the Falloon Settlement and a large portion of the Carrington Settlement where, although the rainfall is favourable, the heavily undulating nature of much of the land would normally be regarded as unsuitable for dairying. That dairying has survived in such areas, underlines the importance of initial settlement policy. All the other small farm subdivisions continue to be characterized by dairying, although aggregations and amalgamations have in many cases altered the number of farms.

An attempt to discover the present importance of original small farm subdivisions has been made from the individual rate cards of all those farms shown on the dairyfarm distribution map. The figures do not include those occupying farms within the small farm subdivision of Featherston, (which is a major dairying block) many of those on the Taratahi Plain subdivision, or those occupying special private subdivisions, since these are not specifically named on the cadastral maps or rate cards. Yet the results are still of marked significance.

On this basis 30% of the farms of all dairy factory suppliers shown on the farm distribution map were originally either part of a "Small Farms Settlement", a "Land For Settlements Subdivision", or a "Soldier Settlement". Special settlement lands are occupied by 37.7% of all suppliers to the Featherston Dairy Factory. Of these, most occupy land in four

soldier settlements, while the rest have land either in the Tawaha or Dyer Settlements. Suppliers of the Greytown Factory include 36.5% who occupy land in either the Greytown Small Farms subdivision, or soldier settlements, while 30% of those supplying the Central Wairarapa Dairy Company occupy special settlements. The land these suppliers occupy is either in the Carrington Settlement, the Ahiaruhe, Ruamahunga and Booth Soldier Settlements, or is part of the original Carterton Township subdivision. Masterton suppliers, who occupy a total of 14 special settlements, constitute 25.6% of all suppliers to that factory, while those farmers supplying the Dalefield Factory, who possess land in the Carterton Township subdivision, account for 10.8% of all suppliers.

The percentages outlined are measurably increased by including the number of suppliers known to occupy special private or trust subdivisions, in which case at least 40% of all present day suppliers to dairy factories in the Wairarapa are accounted for. Inclusion of those in the important Featherston Small Farm block would increase this total even further. The greatest number of dairy farms remaining are in those areas surrounding Carterton where, following the milling of the bush, progressive small farm subdivision occurred. Although subdivided into small farms and characterized by small farming they were not special block subdivisions and are therefore not referred to as special subdivisions.

Because of the limitations of the map which were indicated earlier, these percentages are lower than would

normally be expected. This derives from the fact that many suppliers to dairy factories are not strictly dairy farmers in that only a portion of their income is earned from dairying. A further analysis based on the results of the dairy farm survey carried out by the writer,* (in which 104 completed returns were received) indicates the greater importance of special subdivisions to pure dairy farming in the Wairarapa. Of a total of 70 farmers who gain 90% or more of their income from dairying, 54 or 77% stated that their farms had originally been sections on special small farm subdivisions. Of these 58.5% occupy portions of Government subdivided blocks. Thus not only is there a general similarity between the present distribution of dairying and small farm subdivisions, but there is a much closer correlation between pure dairy farms and special subdivisions. This is an expected phenomenon resulting from the initial small size of farms.

A further feature of the questionnaire analysis is that although most of the special subdivisions were made so long ago, only 27% of the farms were known to have had additional land incorporated with the original area, while the additions which have been made have tended to accrue to the larger units. Of 11 farms averaging 55 acres, which have resulted from special

* Explanation of Survey: A total of 410 questionnaires was distributed, one going to each dairy factory and town milk supplier in the Wairarapa, except for suppliers to the Master-ton butter factory, who in the 1964-65 season supplied less than 2,000 lbs. of B.F. Consequently, although the 104 questionnaires returned constitute only a 25% reply, they virtually represent one quarter of all dairy farmers in the Wairarapa and as such can be regarded as a satisfactory sample. (Appendix 11) Page 185.

subdivisions, ten are the original size. In contrast, eight out of 15 pure dairy farms, between 150 and 224 acres, have accumulated more land and, of 11 farms with a present area exceeding 225 acres, four have been increased in area. This seems to indicate that the larger the original farm sizes were, the more successful farmers have been in providing the resources necessary to purchase more land. The small farms have probably remained small because the original area was too restricted to provide excess capital resources over and above living and working expenses, thereby effectively preventing the acquisition of additional land. Therefore, not only has the past been inherited in the pattern of distribution of dairying, but farms of insufficient size have also been inherited.

The present day location of dairying eastwards across the plain, is apparently unaffected by a marked decline in rainfall from west to east to levels below those generally deemed necessary for dairying. (Map 5). This is illustrated by the extension of dairying into the zones of lowest rainfall, especially in the vicinity of Martinborough, emphasizing that where dairying has become established in response to small farm settlement, it has remained, apparently regardless of advantages or disadvantages in the physical environment. Although this strengthens the correlation between present day dairying lands and small farm subdivisions, the two maps^(Maps 3 and 7) showing those features do not show why the initial small farm settlements, and so the present major zones of dairying, came to be located where they are. These locational influences are best noted by comparing

MEAN ANNUAL RAINFALL

1921 - 1950

N.Z. METEOROLOGICAL SERVICE

scale
0 4 8 12 miles

REFERENCE

— 45 — ISOHYETS IN INCHES

□ BOROUGHS

the former two maps with the natural vegetation map. (Map 6).

Distribution of dairying in the Wairarapa is largely the result of historical factors, the most basic feature of which was the establishment and spread of small farm settlement. Yet to the extent that the original selection of land for these settlements was due to historical and physical determinants, both these factors, as they affect the present day pattern, must be considered.

The co-existence of contrasting vegetation regimes, grassland and bushland, was the physical determinant of initial European occupation, while the pre-existence of a pastoral culture complex occupying the unforested lands, was the historical determinant of small farm settlement patterns. Because of interplay between these influences in an historical setting, the pattern of natural vegetation distribution becomes significant, since it is known that the distribution of small farm settlements was closely correlated with the vegetation zones which were least attractive to the pastoralists.

Because of the difficulty of mapping natural vegetation zones of the Wairarapa from available maps showing vegetation, a different technique has been used in the preparation of the present map. A natural vegetation map has been compiled by grouping all the soil types into three major categories according to the natural vegetation under which the soils were formed. It cannot be categorically stated that the vegetation regimes shown were present at the time of European settlement, since there had been a marked modification of the climax vegetation by the

NATURAL VEGETATION LOWLAND WAIRARAPA GENERALIZED

COMPILED FROM PROVISIONAL SOIL MAP 1952
SOIL BUREAU D.S.I.R. TAITA.

LEGEND

- BROADLEAF-PODOCARP FOREST, TOTARA, MATAI, KAHIKATEA WITH SCRUB, FERN & MANUKA.
- KAHIKATEA, SEDGES & FLAX.
- SCRUB, FERN & GRASSES.
- GENERALIZED BOUNDARY OF LOWLAND.

R. E. WAMBLY

Maoris. This was especially true of lands to the East of the Ruamahunga River and in the south east of the Valley where lower rainfall regimes facilitated the burning of the bush. The western plains, however, remained bush covered.

There has been no attempt to show the relative importance of forest trees as opposed to lesser forms of vegetation within the major categories. What the shaded portions of the map do indicate, is land, the soils of which show by their present structure that forest trees were present as part of the natural vegetation cover. They also show the major swamp zones which were characterized by stands of Kahikatea as well as swamp vegetation. It is within these zones, which were more hostile to the pastoralists, that the small farm settlements were initiated. Conversely the unshaded areas indicate land which was characterized by a natural vegetation cover which did not include bush. These areas, being most suited to pastoralism, were not made available for small farm settlement.

As the natural vegetation was a response to a physical equilibrium between climate, soils and drainage, the grassy plains were dry (due to light soils since isohyets run north and south while vegetation zones trend east and west) and therefore less suitable for dairying than areas with heavier soils. Yet even in these drier areas dairying is successfully practised by some farmers. Physical conditions therefore are not entirely responsible for the relative absence of dairying in these former grassy plains. Part of the answer must lie in the fact that the subdivisions carried out in these areas provided larger blocks,

which made it possible for sheep farming to become established as a matter of choice rather than necessity ⁽³⁾. Although subdivision policy in these areas may have been dictated partly by physical factors, it does not alter the contention that dairying would have become more characteristic of these zones had they been included within the 40 acre small farm subdivisions. Added weight is given to this argument by the influence of later Government subdivision policies to the south and east of the valley. Dairying remains a characteristic of the subdivisions, in areas which are often regarded by the dairy farmers themselves as more suited to sheep.

In contrast to the grassy plains, the heavier, damper areas, which had given rise to the bush, were made available for small farm settlements because of the impediments of the vegetation to extensive pastoralism ⁽⁴⁾. That these areas of heavier soils later proved more suitable for dairying meant that the historical pattern was perpetuated not initiated. Yet even in these zones of heavier soils the presence of quite extensive land areas devoted exclusively to sheep or dual farming, indicates that the physical features are conducive to both forms of land utilization. Therefore the presence of concentrated zones of dairying within the region, although largely coinciding with a particular natural vegetation and soil pattern, has been

(3) Taratahi Plain Subdivision Plan No.10545, also Roll Plan 10585; 353).

(4) Wai. Std. Jan. 3, 1874, Page 2, Leader.

determined by criteria other than physical factors. This hypothesis is strengthened by the observation that the physical conditions of some of the present dairying subdivisions are reproduced over large areas of the plain, north and west of Masterton and south of Featherston, where dairying is almost entirely confined to scattered individual farms. In addition, almost all the dairying carried on east of the Ruamahunga River, southwards from the Te Ore Ore subdivision, is confined to areas of special subdivisions. Therefore the lack of dairying, in areas where it can be successfully carried on, can be directly related to the failure to establish small farm settlement, while the dominance of dairying in certain areas can, in the main, be attributed to progressive small farm subdivision.

Failure to establish dairying over large areas where it could be profitable is largely the result of two major influences, one historical and the other physical. Most of this land has traditionally been held in large blocks, having originally been characterized by extensive pastoral runs. Much of it is still occupied by the descendants of the pastoralist families. Where private subdivisions have been undertaken they have generally enabled sheep farming to remain as the dominant land use.

One commentator, writing of New Zealand in 1936, outlined a situation similar to that which still characterizes much of the South Wairarapa and other parts of the Wairarapa Valley. When referring to land with dairying capabilities, which was used

for sheep farming he wrote; "Generally it has been held by the present occupiers for long periods and the cash indebtedness represented is not high, so that a fair net income can be earned without the adoption of more intensive methods; or else it is held by men who are financially strong and who prefer sheep farming to dairying"⁽⁵⁾. These apparently constitute the main reasons why dairying has not become more widely spread in the traditional sheep lands of the Wairarapa beyond the special subdivisions. Yet floods and drainage problems have reinforced these social and economic circumstances in working against the establishment of more intensive forms of agriculture.

In the area south of Martinborough, "up to 30,000 acres, including both sides of the (Ruamahunga) river are flooded every two or three years and lesser areas suffer overflows as frequently as eight times per year"⁽⁶⁾. As a result, the small farm subdivisions of Tawaha, Pihautea, and to a lesser extent Tuhitarata, are reported to have been a failure up to a point⁽⁷⁾. Over much of the area south of the Waihenga Bridge near Martinborough, flooding "is too frequent to allow agricultural development beyond low standards and production on the area is well below potential for the soils"⁽⁸⁾.

This flood threat, while not preventing dairying on the special subdivisions, has had the effect of maintaining lower land values, so that large areas of fertile lands are

(5) Hamilton, 1944, Page 96; Quote from Fawcett E.J., 1936, in Chapter 21, Agricultural Organization in N.Z., Melbourne University Press.

(6) Lower Wairarapa Valley Development Scheme, Page 4.

(7) Lower Wairarapa Valley Development Scheme, Sec.3, Page 2.

(8) Lower Wairarapa Valley Development Scheme, Sec.3, Page 9.

9. and 10. "Over much of the area (south of Martinborough) flooding, 'is too frequent to allow agricultural development beyond low standards, and production on the area is well below potential for the soils.' " (Page 119)

occupied by a few individuals who gain an adequate return from less intensive forms of farming. Only the comprehensive flood control and drainage scheme for the whole area, at present being undertaken by the Wairarapa Catchment Board, could enable the full dairying potential to be realized.

This, the biggest flood control scheme yet attempted in New Zealand ⁽⁹⁾ is, according to many dairy farmers, the "key" to the future of dairying in the Wairarapa. At a cost of some £2½ million, 40,000 acres of highly productive land will be given flood protection, while allowing the development of full economic potential of 25,000 acres which are at present not fully utilized. Drainage and stopbanking will allow the high production capabilities of a further 13,000 acres of lake bed, swamp and marginal land to be developed ⁽¹⁰⁾.

An economic survey carried out as part of the background to the scheme indicates the extent to which dairy production could be influenced. Possible increases in production in the dairying subdivisions of Tawaha and Pihautea, are estimated at 224,000 lbs. of butterfat, and the extra butterfat potential from the present more extensively farmed areas is put at 838,800 lbs. ⁽¹¹⁾.

The mere overcoming of the flood threat is of itself hardly likely to increase the incidence of dairying on these lands where sheep farming is traditional and prejudice against dairying is strong. This is more likely to result from associated economic factors, as higher land values will necessitate more

(9) Addinell, 1965, Page 13.

(10) Lower Wairarapa Valley Development Scheme, Introduction.

(11) Lower Wairarapa Valley Development Scheme, Sec.3, Pp.21,44.

intensive farming, which in turn will initiate subdivision.

Potential output from the 13,000 acres of new farmland to be created by the scheme (Map 3) is quoted at 2,666,305 lbs. of butterfat ⁽¹²⁾, if the whole area were utilized for dairying. Present proposals of the Lands and Survey Department are for the creation on these lands of some 70 new dairy farms ⁽¹³⁾.

As the "key" to the future of dairying in the Wairarapa, this scheme is of major significance in that it will be the most important single factor to influence the incidence and distribution of dairying since the establishment of initial settlement. As a future continuation of official small farm policy it will create the largest dairying subdivision yet undertaken in the Wairarapa, as well as creating a further major "oasis" of dairying in the zone of former pastoral runs. Thus it can be claimed that the future distribution of dairying in the Wairarapa (like that of the present) will continue to develop in close correlation with planned small farm settlements.

Yet it is the writer's belief that by providing farms of 100 to 125 acres in this subdivision, as envisaged, (in 1972 when the first blocks are expected to become available), the Government ⁽¹⁴⁾ will be perpetuating a common fault of the past, and one that continues to affect the present; that of providing farm units which are too small to allow for changing social and economic conditions. In possessing this land of high potential

(12) Lower Wairarapa Valley Development Scheme, Sec. 3, Page 39.

(13) Addinell, 1965, Page 15.

(14) Ibid.

productivity, the Lands Department has a unique opportunity to initiate new principles of farm subdivision aimed at the most effective resource utilization and could possibly introduce co-operative dairying into the area. Certainly, in the light of modern trends, the traditional idea of the one man dairy farm should be rejected in favour of a system which will give an adequate return for capital invested, while reducing hours of work and the physical ties of the dairy to those more nearly approaching the conditions enjoyed by the rest of the community. The purpose should be to increase the effectiveness and efficiency of dairying as a landuse system, not merely to provide an individual with a block of land to farm.

Fragmentation or "Supplementation" of Dairy Farms.

The extent to which dairy farms in the Wairarapa are fragmented (Map 7) is a further feature of dairying which is linked with the inheritance of the past, since it has been found to be basically a response to changing economic conditions consequent on the small size of farms. Therefore the extent of fragmentation of dairy farms (like that of the distribution of dairying) is largely attributable to original small farm subdivisions.

As defined by one Johnson, a farm is "an area of land which is run as a functional unit. It may consist of one or more blocks of land. A fragmented farm is a functional unit which consists of more than one block of land, each detached from the other" (15).

(15) Johnson, 1962, Page 207.

The fragmented farms on the map showing land occupied by dairy factory suppliers include the properties of 99 factory suppliers, or some 23.35% of all properties shown. The percentage of fragmented farms is actually higher than indicated in an area where many runoffs are leased. In cases where the lessee does not pay the rates on the land, the block concerned is not listed under his name in the County rate files. Conversely, the map cannot be interpreted as showing the fragmentation of dairy farms only, since separate blocks belonging to one owner may in reality be farmed as individual units or be characterized by contrasting land use. Yet the map does portray the pattern of distribution of dairying lands as well as showing fragmentation of land belonging to individual factory suppliers.

Fragmentation is further illustrated by the results of the farm survey^{*} in which farmers were asked to designate the number of blocks, excluding runoff areas, that make up their farms. Parts of farms separated by a river were included as separate blocks, since a river often proves a greater barrier than distance to the working of a farm as a functional unit. Portions of a farm separated by a road are included as one block, since the roadway may increase efficiency by acting as an internal race.

On this basis 21 farms were fragmented (exclusive of runoff areas). Seventeen of these farms consist of two blocks and one of three blocks, the remainder having an even greater degree of fragmentation. Seven of the 21 farms have the furthest section less than half a mile from the homestead block, while

* Appendix 2.

five others have their furthest section within one mile of the homestead. In addition, nine farms have more than one mile separating the dispersed portions. The large percentage of farms in the latter category shows the extent to which factors other than physical distance and convenience have influenced fragmentation.

A much greater percentage of farmers replying to the questionnaire own or lease runoff areas at some distance from the main farm. This finding supports one Mason who wrote that it is the custom for dairy farmers in the Wairarapa to either have a runoff, or to run the cows off the farm by purchasing grazing in winter ⁽¹⁶⁾. In the present survey a total of 38 farmers indicated that they either owned or leased a runoff. Of these, 15 farmers had their runoff within two miles of the homestead block and a further 15 held land for this purpose at a greater distance than five miles from the main farm.

By adding the 13 fragmented farms without runoffs, to the total number with runoffs, it is found that 51 farms, or 49% of all those included in the survey return, are fragmented. It might be argued that runoffs are not part of the functional unit which defines a farm and that as such they do not constitute fragmentation as earlier defined. Yet a runoff is often worked as an integral part of a dairy farm, for example by carrying dry stock, in order that a larger producing herd might be maintained on the main farm. It becomes of vital importance to the most

(16) Mason, 1954, Page 21.

efficient utilization of the farm and is therefore functionally integrated within the framework of farm management. Because of this, runoffs have been included under the definition of fragmentation^{*}. This being accepted, the 49% return received shows the extent to which fragmentation of dairy farms has become a feature of the geography of dairying in the Wairarapa.

Varied reasons were given by the farmers to account for the fragmentation of their farms, but in general they coincided with the reasons which Johnson found to apply in Canterbury (17). Among the 21 farmers who have fragmented farms, other than wintering areas, 11 stated that the fragmentation was brought about by a need for more land to build up or maintain an economic unit. "Wherever the piecemeal holdings of small farms occurred early in the occupation of land", wrote Johnson, "it is to be expected that many of the original farms have had to be expanded in size and this has not always been possible without the acquisition of land at some distance from the original holding" (18). This raises a point of terminology, since fragmentation, as one of the cultural features of the New Zealand farming scene, has in general been brought about by aggregation. "Supplementation" would therefore be a more specific term to describe this process.

(17) Johnson, 1962, Pp.203-223.

(18) Johnson, 1962, Page 221.

* Johnson also includes wintering areas or runoffs under the heading of fragmentation, (Johnson, 1962, Page 214).

Although the former quotation refers to Canterbury, a similar process is found in the Wairarapa, where small farm subdivisions were carried out initially from the 1850's, with sections as small as ten acres on the plains and 40 acres in the hill country of Mauriceville. Even if in the years following settlement these farms were sufficient to provide subsistence for the farmer and his family, changing conditions of farm management and national and international economy have altered the basic criteria determining an economically viable farm unit. Under present day conditions "subsistence dairying" necessitates the expenditure of between 25% and 50% of gross income on fixed charges, and possibly a further 40% on running costs (19). The total amount of income expended under these two headings is relatively greater with a small farm, and as costs rise it becomes imperative to acquire additional land if the farm is to continue to yield a reasonable living. As it becomes apparent that a present-day farm is becoming too small to provide a reasonable return, "there arises every incentive to acquire more land, even if it is not adjacent to the original holding" (20).

A contrasting form of fragmentation in the Wairarapa (which is not found in Canterbury), is one which resulted from initial Government subdivision, four farms in the survey having been fragmented in this way. Deliberate fragmentation took place on two Government subdivisions in the Wairarapa, at Tawaha and on the Battersea soldier settlement. The Battersea Block was

(19) Du Faur, 1962, Pp.16, 17.

(20) Johnson, 1962, Page 218.

subdivided with six fragmented farms for the purpose of providing different classes of land, to give the soldier settlers some land capable of being farmed immediately. This was necessary because the larger block of each farm, being basically undrained peat swamp, was largely unable to carry dairy cows without major drainage works.

Following the settlement of this block, a Government Enquiry Board reported that because of the swampy nature of the sections, settlers were having to pay rentals on land from which little or no revenue was forthcoming (21). The Government had to fragment the farms, because it was not possible to subdivide the block in such a way that 19 single unit farms could be established without some being all swamp, and therefore basically non-revenue producing.

The seven fragmented dairy farms of the Tawaha subdivision were located on low-lying alluvial silt lands on the west bank of the Ruamahunga River. A characteristic of this block is the frequency with which floods occur and because the main farms incorporated no higher land, a small block of about 13 acres was provided for each farm as a safety zone to which stock could be shifted in the event of a flood. However, the first area to become flooded was the access between the two sections of the farm and the use of the fragmented section for which it was provided was often effectively prevented (22).

(21) N.Z. A. to J. 1923, Vol.1, A-D, C9A, Pp.12, 13.

(22) Pers. Com.

A further reason for farm fragmentation in the Wairarapa, indicated by four questionnaire returns, was a need for different types of land. In areas where the soils are heavy and slow draining it is sometimes found an advantage to acquire some land which is more free draining, "in order to obtain some compensating balance in land types" (23). The same is true of farmers who possess a large proportion of light free-draining sandy or stony soils. In each case the addition of extra area allows a more balanced utilization of the land according to seasonal conditions, with less fear of permanent damage to waterlogged soils in winter, and a longer production season than could be achieved where only light, quick-draining soils are available. This is "supplementation" as against the deliberate Government policy of true "fragmentation".

The same principles as discussed above also apply with reference to runoffs. Questionnaire results show that economic factors are the most important considerations in the purchase of runoffs in the Wairarapa. Of those replying, 20 farmers stated that they stock their main farms too heavily to carry dry stock. By so doing they make the most efficient use of pasture growth potential for income producing stock without incurring the losses in production which would automatically result from pasturing dry stock on the same area. In addition 14 farmers indicated that the carrying of dry stock on the main farm would result in so much loss of production that in their

(23) Johnson, 1962, Page 210.

opinion the farm would no longer be an economic unit. Therefore these farms are supplemented because of original insufficiency of size. Although these two reasons are similar in effect, and in some cases applied to the same farm, the motives behind runoff purchase are very different. In the first case the runoff increases efficiency, while in the second the runoff results from necessity. Whatever the motive, however, it has been proved that it is economically advantageous to run all non-producing stock away from the main block, unless there is poorer land on the farm which is not suitable for the grazing of revenue-producing stock (24).

Apart from economic considerations, the need for differing types of land is also a significant factor in the purchase of runoff areas. In some parts of the Wairarapa Plain a combination of heavy land and restricted drainage and sometimes high regional water tables cause problems for dairy farmers. "These drainage problems are a big factor in the necessity for Wairarapa farms to be spelled during the winter months to prevent pugging of the soil and pasture damage" (25). In the present survey, 19 farmers gave pugging of their land as a reason for the provision of runoff areas. Runoffs acquired for this reason are generally located on the dry stony land (26) of the shingle deltas, which extend south-eastwards onto the plain from where the main tributaries of the Ruamahunga River emerge from the

(24) Du Faur, 1962, Page 41.

(25) Mason, 1954, Page 9.

(26) Mason, 1954, Page 21.

western mountains. Although such runoffs are common in the Wairarapa, one farmer is known to have been motivated in the opposite direction, since he purchased a runoff on heavy, slow draining land in order to provide summer grazing for his milking cows.

In addition to the reasons already given, 17 farmers feel that it is good practice to rest their land, while two others believe that it "does the cows good to have a break". A further eight farmers agreed that having a runoff enables them to forget about their cows for a while. These replies show the relative importance of personal and often quite unscientific views affecting the purchase of runoff areas as compared with the earlier reasons which are basically economic or physical. Generally speaking, those farmers with runoff areas indicated not one, but a variety of reasons for the provision of the extra fragmented grazing area, showing that often the purchase of a runoff is a response not to one overriding factor, but to a combination of interrelated factors. Yet whatever the reasons, a "supplementary" runoff is aimed at providing for the individual farmer greater economic efficiency, or continuing economic viability.

Two major influences of the past are embodied in this outline. The necessity for fragmentation in the Wairarapa resulted from the inheritance of limited dairying subdivisions in which farms were too small, while the pattern of fragmentation as shown on the map, is also an inheritance of the past; the result of a continuing historical process.

DAIRYING IN THE WAIRARAPA.PART 111.DAIRYING IN THE MODERN PERIOD.Chapter VII. Major Trends and Modern Features of
Wairarapa Dairying. 1940 - 1966.

Dairying ceases to be typically small farm oriented and evolves into a more efficient system characterized by fewer suppliers, larger farms and higher production.

CHAPTER VII.

MAJOR TRENDS AND MODERN FEATURES OF WAIRARAPA DAIRYING. 1940-1966.

The emphasis of this essay has so far been on the Wairarapa dairy farmer as a small farmer. He became established in small farm settlements, he occupied a small farm and he developed a "small" mind. Dairying was synonymous with small farming. But the dairy farmer of today can no longer be classed as a small farmer. Amalgamation and supplementation of farms has reshaped the characteristic small farm pattern by increasing farm sizes and reducing the number of dairy factory suppliers. The trend towards fewer farms has resulted in larger herds, higher production and greater average incomes for Wairarapa dairy farmers. Reinforced by new agricultural and technological innovations, these advances have initiated a continuing movement towards large scale dairying, which is likely to be accelerated in the future.

Sizes of Wairarapa Dairy Farms.

The first and most important trend to be expected where amalgamation and "supplementation" of farms has occurred within the confines of limited dairying zones, is an increase in farm sizes. This trend has been noted in the results of the questionnaire undertaken.

Of those farmers replying to the questionnaire, 70 or 67.3% rely entirely or almost entirely on dairying (pure), while for the other 34 or 32.7%, dairying provides less than 89% (dual) of their income. It is necessary to differentiate between these two groups in certain sections of the analysis, because of basic contrasts between those farms which are purely dairying and the dual (usually sheep and dairying) units.

One major difference between these two categories is in the size of farms. In general, the dual units are larger than the pure dairy farms, with a tendency to increase in area as the percentage of income accruing from dairying decreases. Nine farms of the dual group exceed 300 acres, while of the purely dairying units only one exceeds 300 acres, and this farm carries a herd of 360 cows (the largest herd known in the Wairarapa). As a result of these differences, the average farm size, of 173.2 acres, is somewhat larger than the 125.6 acre average of pure dairy farms. This figure includes eight small farms ranging from 38 to 60 acres, showing that some of the inherited small farms have not yet been superceded. A further 17 pure dairy farms are between 61 and 100 acres. Results of an earlier farm survey in 1954 showed that the average size of pure dairy farms, excluding runoff areas, was 108 acres.⁽¹⁾ An increase of 17.6 acres in average farm size since 1954 is indicated. The present figure has been reached largely by recent additions to farms, while it is known that smaller

(1) Mason, 1954, Page 23.

dairying units have been incorporated into larger farms, further increasing the overall average farm area. It should be noted that were runoffs included, the average farm sizes quoted would be considerably greater.

Within the last ten years 27% of those designated as purely dairy farms have been increased in area, exclusive of runoffs. Farm economics has been the main factor in increasing farm sizes. For those replying to the questionnaire, the most important reason for additional land being purchased, was that modern technological advances have enabled the handling of larger areas and larger herds by one man, so that larger farms have resulted in higher returns with a lower comparative increase in overhead costs. This is characteristic of the dairy farmer who had sufficient resources to enable him to keep abreast of changing economic circumstances. Furthermore, rising costs in relation to output, had resulted in some farms becoming uneconomic units, thereby necessitating additional productive capacity. Others, who found themselves in this situation and were unable to purchase more land, were forced to sell out.

A desire by farmers simply to extend operations is recorded as being a further important motive for increasing farm size. This motive can be associated with the successful dairy farmer who already possessed a large enough farm, and herd, to maintain an adequate living, but who wished to take advantage of additional opportunities. It is the members of this group who are likely to play a vital part in the future of dairying

in the Wairarapa, since they possess both the resources and the desire to expand their enterprises.

A Dairy Industry Commission report published in 1934 stated: "Small farms and small herds are generally associated with the uneconomic use of labour and with heavy capital charges on account of buildings and improvements in relation to their gross production capacity. Even when prices are at a high level such undertakings usually provide a comparatively low living income for the owners". (2) Because these findings still hold true, it is to be expected that the greatest need for more land is felt among those who at present occupy small farms. Of the 12 farmers whose total farm area is under 74 acres, eight indicated their willingness to purchase more land at present day prices if it became available, while 26 out of 37 farmers with farms between 75 and 149 acres indicated similarly. The proportion of those owning still larger farms who desire more land is comparatively much lower. This is understandable since the small farmer's ability to purchase more land may determine his continuing economic viability. However, the desire to purchase more land need not imply that the small farmers have the means of doing so. Evidence quoted earlier with reference to small farms in special subdivisions, shows the opposite to be true. (See Chapter VI). These farmers are the true heirs of the small farm background of the Wairarapa, but their chances of survival are limited.

(2) Hamilton, Page 120, Quoted from Dairy Industry Commission Report 1934.

From the evidence quoted with regard to recent growth in farm sizes and the stated desire of farmers to increase their farm acreages, the average size of dairy farms in the Wairarapa will continue to increase. Amalgamation and fragmentation of dairy farms are likely to remain features of the characteristic Wairarapa scene. An historical process begun in the small farm settlements soon after initial occupation will thereby be continued and the small dairy farmer will gradually disappear from the Wairarapa scene.

Suppliers to Wairarapa Dairy Factories.

By 1920 suppliers to dairy factories in the Wairarapa were still largely associated with the small farm settlements. This was a consequence of the location of factories within the settlements. At this stage all but two factories were cheese concerns, receiving whole milk and therefore each had its suppliers grouped in close proximity to the factory. The two butter concerns, Masterton and Mauriceville, also received whole milk and separated it at the factory. Because only the more distant of them would have supplied cream, many suppliers to the butter factories were also associated with small farm settlements. However, this correlation was soon to be lost due to a technological innovation.

Both cheese and butter factories showed a marked increase in suppliers during the early 1920's (Fig. 9), although for different reasons. Five new factories (each associated with small farming) opened in these years, adding 79 suppliers to

SUPPLIERS TO WAIRARAPA DAIRY FACTORIES.1905 ----- 1929

SUPPLIERS.

Figures from, "NEW ZEALAND DAIRY DIVISION SERIES TWO DUPLICATES."
 and "ANNUAL LIST OF CREAMERIES ETC." 1913 to 1929.

(3)
cheese factories by 1924 . But it was as a result of the general introduction of home separation in the early 1920's that the most marked increase in dairy factory suppliers occurred with suppliers to the Masterton and Mauriceville factories trebling between 1919 and 1924, and doubling again by 1929. Some of this gain was probably made up through the loss of whole milk suppliers to home separation, although most were new suppliers.

During the period between 1929-40 (for which figures have not been obtained), the number of cream suppliers continued to increase and it is likely that the 1,287 of the 1940-41 season (Fig.10) * was near the maximum for this group. It is unlikely that any major increase in the incidence of dairying took place in the vicinity of the cheese factories, since the size of farms in the settlements had, for many decades, dictated this form of land use and the supply of whole milk was restricted by distance. Those supplying whole milk would generally have been dairy farmers only, depending on their herds for their total income. However, many of those who began home separation during this period were sheep farmers who bought a few cows to milk in order to provide, "regular 'tucker money' during the depression" (4) of the 1930's. Since 1940 it has mainly been members of this group who have brought about the great decrease in the total number of suppliers. (Fig.13, Page 159a)

(3) Annual List of Creameries, etc. as at June 1925.

(4) Pers. Com.

* It should be noted that during the period covered by the graphs (from 1940-41 to 1964-65), the number of operational factories decreased from 16 to 5.

SUPPLIERS TO WAIRARAPA DAIRY FACTORIES.1940 ----- 1965

SUPPLIERS.

Figures taken from Company Balance Sheets.

The spread of home separation destroyed for a time the traditional correlation between dairying and the small farm subdivisions, since it became the practice for sheep farmers, both on the plains and in the hill country, to carry on dairying as a subsidiary activity. However, most of the supply continued to come from the small farm subdivisions where the majority of suppliers were purely dairy farmers. During the last 25 years most of the small subsidiary suppliers have relinquished dairying and the traditional pattern has been resumed.

The Graph (Fig.10) indicates that in the 1942-43 season the Featherston Dairy Factory (a dual factory with both cream and whole milk suppliers) lost suppliers to the other two butter factories (Masterton and Mauriceville), but when the supply areas were zoned in the latter years of the war, Featherston showed a rapid gain of 134 suppliers in one year, while the Mauriceville and Masterton Factories lost almost 200 suppliers in the same season. If cream suppliers to the Featherston Dairy Factory were added to those of the other two butter factories, a much more even reduction in the number of suppliers would be noted.

Why there should have been such a marked increase in the number of whole milk suppliers in 1941-42, followed by an even more rapid drop the following year, is difficult to explain, since if war conditions produced the increase, they also produced the decrease. Because there is no corresponding increase in

total cream suppliers, it shows that almost 100 whole milk suppliers ceased dairying in one year. Between 1943 and 1949 there was little variation in the numbers of milk suppliers, but since 1954 there has been a continuing decline. However, this line is somewhat misleading, because almost all suppliers to the Featherston Dairy Factory since 1957 have been milk suppliers, which, if added to the total for the cheese factories, makes the 1964-65 total 333. Even so, there has been a decline of 174 in the number of whole milk suppliers to Wairarapa dairy factories between 1941 and 1965. This is a further feature linking the inherited zones of dairying and the initial size of farms with the movement towards aggregation and supplementation of farm land by remaining dairy farmers, since fewer farms means fewer suppliers.

Both social and economic conditions have influenced the rapid decline in the number of suppliers to dairy factories in the Wairarapa. It was often the practice on the large sheep farms to employ a cowman-gardener. The milk was mainly for station use but the surplus was separated and sent to the butter factory. Partly because of the difficulty in obtaining, and the expense of maintaining such labour, the cowman-gardener has largely been replaced by the rural delivery van bringing pasteurised milk from the regional milk treatment station.

The greatest loss in suppliers to cheese (whole milk) factories has been occasioned by two major trends; a move towards larger farms and a swing from dairying to sheep farming, again

due to increasing farm sizes. It has long been realized that dairying, with its constant labour demand and drudgery, was a poor choice of livelihood alongside sheep farming. This view would be more generally fostered in the Wairarapa where, in many places, sheep farming and dairying are found in close proximity. Dairying has often been a response to the limited size of holding rather than the personal preference of the farmer, thus emphasizing the initial link with small farm subdivisions. This point is illustrated by the fact that one third of the dairy farmers who replied to the questionnaire, indicated that if they had the means to do so (sufficient land), they would change from dairying to sheep farming.

Changing economic conditions were known to be influencing the incidence of dairying in the Wairarapa in 1907, when the N.Z. Times commented that rather than farmers, "embarking on any industry which necessitates more care and attention... the tendency is to get out of the dairying business and go in for sheep" (5). Similar circumstances to those noted, occurred in the Wairarapa during the wool boom of the early 1950's. Many sheepfarmers relinquished dairying as a sideline, while those dairyfarmers with sufficient land turned to sheep farming. Because of the high returns possible from a larger dairy farm, some farmers had accumulated sufficient land to become sheep farmers, the movement being facilitated by the fact that land values had not climbed to the level of more specialized dairying areas. In such cases both the original dairy farms and the land

(5) N.Z. Times, May 3, 1907, Page 3.

purchased from others has been lost to dairying, causing a further decline in the number of factory suppliers.

A further trend towards sheep farming has been noted among those with medium sized dairying properties. Where the units are too small to maintain a sharemilker, the aging owner has two choices; he can either sell and retire into town, or with the capital he has been able to save, retire on his farm by putting on sheep. Although the return is not as great as that from dairying, he is able to retain his land. The Chairman of one cheese company indicated that of suppliers to his factory alone, as many as 15 dairy farms had been lost to sheep in the 15 years to 1965 ⁽⁶⁾. Records of two other factories indicate that between them they have lost a total of 24 farms to sheep and one to beef in the five years to 1965 ⁽⁷⁾.

A further decline in factory suppliers has been caused by the increase in the size of herd necessary to make a paying concern of a farm. This has led to the sale of small uneconomic units (inherited from the small farm era) to neighbouring farmers. Inflationary trends in the last 15 years have increased farm overheads considerably and the very small farm of 40 or 50 acres has in many cases been found insufficient to maintain an acceptable living. As noted earlier, a farmer in this position, because of his small income, is often unable to purchase the extra land he needs, while he is generally not able to sell at a high enough price to purchase a larger unit. Yet

(6) Pers. Com.

(7) Factory Records of the Featherston Co-op Dairy Co. Ltd., and the Central Wairarapa Co-op Dairy Co. Ltd.

this is the only means of raising the venture beyond what must be a poorly paying occupation for the small farmer. His difficulty can be gauged by the fact that of 12 dairy farmers (included in the questionnaire returns) with herds of 55 cows or less in the 1965-66 season, the average herd size was 44.3. In each case the individual herds were well below the figure each farmer believed necessary to achieve an economic herd size* under prevailing economic conditions. The individual estimates of economic herd sizes given by these 12 farmers show an average of 62.5 head, or some 40% above the average herd size actually achieved.

In summing up such a situation one commentator wrote; "Sooner or later we must recognise that small farms are a luxury. They may be excellent hobbies for those that can afford them, and they may have great sociological value, but they can hardly be expected to pay for themselves any more than fishing with hook and line pays for itself" (8). The small farmer had two options. He could sell out and retire or move to another occupation, or he could continue to farm his land and maintain a standard of living which would have been unacceptable to most of the community. Many faced with such a decision sold out, the land generally being added to existing units. With this trend smaller units have become amalgamated and land, although not being lost to dairying, carries fewer but larger herds. This is an expected consequence of increasing farm sizes within

(8) Hamilton, 1944, Page 149.

* Sufficient to maintain a satisfactory income level for a family.

limited dairying zones.

There have also been increasing instances where dairy farms, carrying herds as large as 150 head, have been bought by sheep farmers who want land on the wetter western side of the valley on which to run sheep and fat cattle during the summer, while their main farms are affected by dry conditions. In this way first class dairy land has become runoff areas for sheep and cattle (9).

There has been some reversal of the usual trend in recent times, since it has been noted that some sheep farmers have changed to dairying because of labour problems. As long as the farm is large enough to support two families under more intensive farming (as a sheep farm generally is), the farmer can employ the best manpower in the form of a sharemilker (10). With the much higher net return per acre from dairying, the farmer often maintains his former economic position, while at the same time retaining his land, solving his labour problems and making retirement possible.

Thus, there has been a parallel movement in the reduction of dairy factory suppliers in the Wairarapa during the last 25 years. The first is associated with those who were not dairy farmers but dual farmers. When dairying was no longer necessary to this group as an economic palliative it was rejected. Constituting only a transitional phase in the evolution of dairying, this group was of little ultimate consequence

(9) Pers. Com.

(10) Pers. Com.

either to the distribution of dairying or the dairy factory industry in the Wairarapa. The second movement was much more important because it sprang from the economic evolution of the traditional small farm zones. The inability of the small farmer to survive and the economic strength of the larger dairy farmer (allowing larger dairy farms or facilitating a change to sheep farming) have produced not only a loss of suppliers but also a reduction in the incidence of dairying within the traditional dairying localities.

Dairy Herd Sizes in the Wairarapa.

Increasing herd sizes is a predictable phenomenon consequential on the historical processes towards fewer suppliers and larger farms discussed previously. To a dairy farmer, land is the means of maintaining the cows which provide his income. His intention in purchasing more land must be to increase his monetary return. An increase in herd size automatically follows. But although this is of major importance, the purchase of more land is not the only reason for the marked trend towards larger dairy herd sizes in the Wairarapa. By adopting new techniques and utilizing modern technological innovations, dairy farmers have actively increased their herds at a much faster rate than could normally be accounted for by increasing farm sizes. The motives are again economic. Either a farmer builds up his dairy herd in order to survive, or he simply takes advantage of available opportunities to increase his income.

Indications are that with the success of the factory system, the herds of those farmers who supplied milk increased,

and by the first decade of the 20th century an average herd size of 20 to 25 was general (11). But with the introduction of home separation and the spread of subsidiary dairying into the sheep farming zones, the size of herds belonging to suppliers of the Masterton and Mauriceville butter factories dropped considerably and only averaged 12 by 1940-41 (Fig.11) *. Herds of suppliers to all other factories continued to increase and averaged 46 by 1940-41.

Little cognizance can be taken of the graph line showing farm separation herds, since the apparent doubling of herd sizes in 1948-49 resulted from a change in official recording policy. From that date herds smaller than ten were not included in official calculations made by the Dairy Board. Although this makes the graph invalid as far as it concerns the Masterton and Mauriceville factories and total Wairarapa averages, it does emphasize the large number of very small suppliers to these two factories until recent times. These suppliers, generally located outside the traditional small farm zones, depended on some other form of economic activity for their livelihood and cannot be referred to as dairy farmers. (As has already been noted, most of these have ceased supplying). The absence of a similar upsurge in herds associated with all other factories, illustrates the greater dependence on dairying

(11) N.Z.Dairyman, June 1905, Vol.9, No.9, Page 43.
 N.Z.Times, May 3, 1907, Page 3.
 N.Z.Dairyman, Vol.6, No.2, Nov.1901, Page 25.

* Because much smaller herds have been typical of the two farm separation factories of Masterton and Mauriceville, they have been graphed separately from all the other factories.

AVERAGE DAIRY HERD SIZES IN THE WAIRARAPA.

FIG. 11

1940 ----- 1965

Figures From The New Zealand Dairy Production And Marketing Board.

COWS.

Averages are affected by the failure of some factories to submit returns.

in the small farm zones. For this group the graph is valid.

For the first three years following 1940, the average herd size of suppliers to whole milk or dual factories (without farm separation)* increased, but a drop occurred in 1943-44. Since the herd size for all factories showed an increase in that year, the implication seems to be that the big gain in suppliers experienced by the Featherston Dairy Factory at that time, as a result of wartime zoning, consisted mainly of cream suppliers with small herds. Over the next seven years steady gains were made until the upward trend was broken in the early 1950's. Being the years of the "wool boom", a greater proportion of those ceasing to supply turned to sheep farming. It is likely that many of those who did so were owners of larger dairy farms and consequently of larger than average herds, so that their loss caused a decrease in average herd sizes.

It has been between 1953-54 and 1965-66 that the most marked increase in herd size has occurred, a rise from an average of 58 to one of 83 having been shown up to 1964-65. This is the equivalent of a 43% improvement over 11 seasons. A further 20% gain was made in the five seasons from 1960-61. Such increases have taken place over the period when the greatest number of suppliers to these factories has been lost.

General trends in herd sizes as outlined on the graph are reinforced by reference to the questionnaire returns received. Between the 1964-65 season and that of 1965-66, the trend towards

* All factories except Masterton and Mauriceville - The Featherston Factory received both cream and whole milk for a time but is basically a whole milk factory.

larger herds has been greatly accelerated, with average herd sizes increasing 10%. From 81.4 in 1964-65, the average herd size has risen to 89.5, showing that large herds are becoming a feature of the Wairarapa. Thirty-seven farms included in the survey have herds of 100 cows or more, while 16 of these exceed 130. Two very large herds, one of 250 and another of 360 are also included in the sample.

The dual farmers generally possess smaller herds than those relying entirely on dairying, and the rate of increase is not so marked among these herds. Whereas herds on dual farms have increased by an average of 3.3 (from 76.5 to 79.8) between 1964-65 and 1965-66, the herds on pure dairy farms have increased by an average of 9.44 (from 84.8 to 94.24). There is also a contrast between the increase in herd sizes on small farms and those herds on larger farms. The average small herd has increased by two (from 44 to 46) in the same period, while the average size of herd on the 26 pure dairying units which exceed 150 acres, has increased by 13 (from 110 to 123). Thus the prevailing tendency in the Wairarapa is for the large herds to increase more rapidly than the small herds both relatively and comparatively. As a result, the gap between the total incomes of small dairy farmers and those with larger farms and herds will continue to widen. In addition the net profit of the larger farms will increase more rapidly in relation to overhead charges than that of the small farms with a slow rate of herd expansion.

"The combination of high labour and working costs and high capitalisation places the owners of small herds in a very

difficult position, even where per acre production is relatively high" (12). This greater degree of capital involvement of a small farm running a small herd, prevents the accumulation of excess capital which can be invested in more land and this necessarily limits the degree of herd expansion which can be accomplished where the total farm area is severely limited. When intensification of land use in dairying occurs on larger farms, the gross profit increases, and the cost of production decreases (13). This means increased net profits which then become available for the financing of further land purchases and more intensive development, which in turn allows the accommodation of still larger herds. The historical process of amalgamation and fragmentation is therefore further facilitated as small farmers are forced to give up their land.

One of the features of dairying in the Wairarapa associated with the size of herds is the extent to which herds have grown with very little actual increase in employed labour. Of all farms included in the survey returns 75% are one-man farms, while 25% (26 farms) employ full time labour. If it is assumed that the 26 farms in the survey with the largest herds employ full time labour, there are still 11 farmers who are milking herds of 100 cows or more and a further 16 farmers who milk herds of between 80 and 99 without paid assistance. Therefore, much of the marked increase in average herd size has been

(12) Hamilton, 1944, Page 120, Quoted from Dairy Industry Commission Report 1934.

(13) Du Faur, 1962, Page 17.

achieved through the advances of modern technology rather than by the employment of extra labour.

Possibly the greatest individual advance in recent years enabling one man to milk much larger herds than formerly is the herringbone milking shed. Although herringbone sheds are not as yet common in the Wairarapa, they are becoming more widely introduced, with several new sheds, including one with 18 machines and another with 50 machines, being built for the 1966-67 season.

The findings of this survey show that 74% of milking sheds are still the walk-through type, while 18% are herringbone sheds, and 8% are other types. Of the 18 herringbone sheds reported, 17 are located on pure dairy farms and only one on a dual farm. This is possibly a result of the higher number of large herds on pure dairy farms, as herringbone sheds are generally found on farms with large herds. It might also reflect the smaller number of sharemilkers on pure dairy farms,* since an owner-milker is more likely to provide a herringbone shed for himself, than for a sharemilker. The average herd size for all farms with herringbone sheds is 116, while for the six farms exceeding 150 acres which possess the new shed, the average herd numbers 136.

With the continuing increase in dairy farm sizes, improvements in stocking rates and the ability to handle large

* 32.3% of dual farms, as against 14.3% of pure dairy farms, have sharemilkers. The discrepancy would arise from the practice of setting up dairy blocks on sheep farms and employing sharemilkers.

herds quickly and easily through the new sheds, it is possible that there will be an increase in the number of full-time employees on dairy farms. Except for sharemilkers, hired labour has always been difficult to obtain on dairy farms, "owing to the competition of town jobs which offer higher wages and more congenial conditions of employment" (14). With the modified conditions of modern large scale dairy management and the utilization of such sophisticated equipment as the herringbone shed, it is likely that not only will dairy farm work become more attractive to labour, but it will also be able to pay well as long as the farm area is sufficient to maintain the required herd. If a farmer does not wish to employ labour, the new-type shed enables him to milk large herds on his own. One farmer who was interviewed indicated that before he built his present shed he milked 74 cows in 150 minutes in the flush, but with a ten machine herringbone shed he now milks over 130 cows in one and one half hours with little of the former effort (15).

Other farmers are realizing that they have been too conservative in the construction of their sheds and that eight and even ten machines are not sufficient. One Wairarapa dairy farmer has recently built a 14 machine shed with the intention of handling all the cups himself (16). It is not surprising therefore that the questionnaire return shows that herds as large as 140 cows are being milked through the new sheds on one-man farms. A

(14) Hamilton, 1944, Page 106.

(15) Pers. Com.

(16) N.Z. Dairy Exporter, Nov. 1965, Page 11.

11. The Old: " --- much of the marked increase in average herd size has been achieved through the advances of modern technology." (Pp. 148, 149).

12. The New: " --- herds as large as 140 cows are being milked through the new sheds on one-man farms." (Page 150).

further acceleration of the trend away from small farms will result, since dairy farmers are enabled to handle much larger farms than was once considered possible. Dairying land will become concentrated in the hands of fewer, but more efficient farmers, while the small dairy farms, the relics of an earlier era, will cease to survive.

Once the advantages of the new sheds have become more widely recognized, climatic factors are likely to influence the installation of many more in the Wairarapa. Although most Wairarapa dairy farmers believe the land to be first-class dairying country, they have reservations concerning the Wairarapa as a dairying area ⁽¹⁷⁾, as in general farm practices must be adjusted to a more adverse climate than other dairying districts such as the Waikato, Bay of Plenty and Taranaki ⁽¹⁸⁾. An average season is very favourable to dairying, but a combination of cold wet winter conditions, and marked dry spells in late summer and autumn, make the season a limited one ⁽¹⁹⁾. In order to be sure of maintaining a good return, larger herds are required to produce a given income over a shorter period. In this way a large herd, as long as it can be handled by one man, becomes the farmer's insurance against the worst effects of a limited production season.

It is possibly partly for this reason that farmers' views vary so greatly as to what constitutes an economic herd

(17) Questionnaire results, 1965.

(18) Mason, 1954, Page 22.

(19) Ibid.

size in the Wairarapa, with 12 farmers in the survey indicating that a herd of less than 59 was large enough, while nine put their estimate at over 90 cows. Thirty farmers put the minimum economic herd size at between 60 and 69, and a further 51 farmers believe that a herd size of 70 cows or more is necessary. The wide variations in these estimates are likely to have been influenced by knowledge of local micro-climates and by former personal experiences of droughts and floods, as well as other factors such as differing levels of farm expenditure and the varied standards of living to which the farmers have become accustomed. One significant fact these estimates emphasize, is that 90% of those farmers replying to the questionnaire have given an economic herd size below the present Wairarapa herd average. Therefore dairying in the Wairarapa is no longer just a matter of making a living, it has become a well paying business enterprise.

Trends in Butterfat Production Per Cow.

Not only is the movement towards larger herds a characteristic of dairying in the Wairarapa, but the average production per cow has also increased. At the same time, the small farmer has lost the advantage he once had of maintaining a higher per cow production (under intensive small farm methods) than was achieved on larger farms with larger herds. This has helped put the small farmer at a further disadvantage as compared with those on larger farms.

Because there has been a relatively steady increase in the average size of herds over the last 25 years, any study

of the production of butterfat per supplier, or of total Wairarapa production, must be made in the light of changes in fat production per cow. (Fig.12) Although the graph* showing this production indicates a general increasing tendency, the most outstanding feature is the marked fluctuation in production from season to season.

Steadily rising average herd sizes and declining numbers of dairy factory suppliers in the Wairarapa, mean that fluctuations in butterfat production per cow have been brought about by other influencing factors, by far the most important of which are climatic conditions. Although the Wairarapa has been successful in introducing intensive dairy farming, the location of the area puts it at a major disadvantage when compared with other dairying areas in the North Island. The Tararua and Rimutaka Ranges which rise steeply from the western boundary of the plain, are not only a barrier to communications; they also have a profound effect on the climate of the region. Being enclosed between dissected hill country in the east and the mountain ranges on the west, the Wairarapa lowland (where most dairy farming is today concentrated), is a rain shadow area. The main airflow across the region, being N.W. or tending S.W., brings ample rainfall to the mountains and the westernmost parts of the plain in most seasons, but shows a marked decline in

* The three lines on the graph indicate total per cow production for the Wairarapa, production for the two farm separation butter factories of Masterton and Mauriceville, and production for all other factories.

precipitation towards the east. (Map 5) Featherston on the western edge of the plain benefits considerably from N.W. rain and has an annual average of 51 inches. Greytown with 42 inches, and Martinborough (reputed to have the lowest rainfall in the North Island) with 29 inches, show the eastward decline. Not only does the plain receive a relatively low rainfall, most areas receiving 30 to 40 inches, but it is also irregular, with a winter maximum and a marked decline in summer (20). As a result the heavy slow draining soils, on which most dairying is carried out become very wet in winter, while the hot dry summer, with warm drying N.W. winds, may bring drought conditions which adversely affect dairying (21). Low soil temperatures and water-logged soils reduce pasture growth in June and July (22) and drought conditions bring growth to a standstill in summer. Torrential rainstorms bring floods to important dairying areas and may occur at any period of the year. Yet Wairarapa dairy farmers continue dairying under climatic conditions which make their occupation rather hazardous.

Good seasons at the beginning of the 1940's were followed by two poor production years in succession. (Fig.12) They were probably due entirely to climatic conditions and not to production problems brought on by the war, since the 1944-45 season showed a marked rise at a time when war conditions still prevailed. From 1944-45 good and bad seasons followed in succession with a marked rise between 1949-50 and 1950-51. The

(20) Mason, 1954, Pp.13, 14.

(21) Mason, 1954, Pp.13, 16, 17.

(22) Mason, 1954, Page 14.

1940 ----- 1965

Figures From New Zealand Dairy Production And Marketing Board.

POUNDS.

- ALL FACTORIES.
- FARM SEPARATION FACTORIES. (MASTERTON AND MAURICEVILLE)
- .-.-.- ALL OTHER FACTORIES.

NOTE: GRAPH DOES NOT START AT ZERO:

1947-48 season was the poorest season experienced, with the average for six factories dropping below 200 lbs. butterfat per cow, while 14 of the 16 factories recorded their lowest per cow production for the 25 years (23). This season followed the most disastrous flood recorded this century (24), and the resultant damage was responsible for the very poor results.

From 1953-54 there was a continuing rising trend with a less severe drop in 1959-60, following which was a record year of butterfat production per cow when the average for the Wairarapa reached just on 290 lbs. In this season, seven factories recorded their highest per cow production for the 25 years, and three exceeded an average of 300 lbs. per cow for the first time (25). Although three poorer years followed, average overall production was maintained above 269 lbs. with a final increase to 283 lbs. of butterfat in the 1964-65 season.

Despite the fluctuations, it is clearly shown that there has been an increase in the effective average butterfat per cow in the Wairarapa. If the figures are averaged on the basis of five, five-yearly periods, production of butterfat per cow is shown to have increased by 49 lbs. or 21.5% over the 25 year period:-

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- (23) Dairy Board Analysis of Butterfat Per Cow by Individual Factories.
 - (24) Lower Wairarapa Valley Development Scheme, Page 5.
 - (25) Dairy Board Analysis of Butterfat Per Cow by Individual Factories.

TABLE 1.

Effective Butterfat per cow* - All factories.
Averages for five, five-yearly periods.

	<u>Pounds.</u>
1940-41 - 1944-45	228.4
1945-46 - 1949-50	230
1950-51 - 1954-55	249
1955-56 - 1959-60	268.9
1960-61 - 1964-65	276.8

One of the outstanding features of the graph (Fig.12) is the marked difference in butterfat output per cow between the two farm separation butter factories of Masterton and Mauriceville and all other factories, the difference in most years being between 30 and 40 lbs. The 1943-44 season shows a variation of 70 lbs. per cow. Such contrasts are largely explained in terms of similar climatic problems affecting the whole region, while many of the cows from which cream was supplied to the two butter factories, were run on marginal land and hill country. In this situation, the butterfat production potential was significantly lower than that of the dairy lands of the plain. It is also likely that suppliers to these factories paid less attention to the quality of their stock, since dairying was often only a subsidiary economic activity.

Further aspects of per cow production are introduced by an analysis of the questionnaire returns. Butterfat production per cow as given by individual suppliers tends to be somewhat

* Effective Butterfat Per Cow:- After excluding all herds under 25, butterfat figures are corrected to the actual butterfat content of the milk at the "pail".

higher than the effective average butterfat production as calculated by the Dairy Board, from which source the earlier figures were obtained. The individual farmer's results may be either calculated by the factory as the basis of payout, or the result of herd testing. On the basis of these results, the average butterfat production per cow stood at 321.7 lbs. in 1964-65. According to the questionnaire returns only 18 farms out of 87 did not have a per cow output exceeding 300 lbs. butterfat, while 23 farms exceeded 350 lbs. butterfat per cow. Of these 23 farms, 11 returns came from 47 farms of less than 150 acres in area, while the other 12 returns were among 40 farms of 150 acres or more. It would normally be expected that the small farms, because of their intensive methods and small herds, would have a higher butterfat production per cow than the larger farms, but these results show that high production is achieved on both large and small farms:-

TABLE 11.

Showing average Butterfat production per cow, according to farm size.

<u>Farm Size - Acres.</u>	<u>Lbs. Butterfat.</u>
0 - 74	336
75 - 149	312
150 - 224	333
225 and over	311

(From questionnaire returns).

There is apparently no physical explanation for the marked drop in average production (shown in Table 11) between the small farms and those of 75 to 149 acres, nor of the great

improvement in production achieved by the farmers with farms of 150 acres and more, since, although the farm sizes increase with each category, so do the herd sizes. Yet the analysis does show that neither the size of farm, nor the size of herd, seems to bear any direct relationship to the output of butterfat per cow. That heavy stocking on larger farms does not reduce per cow production is illustrated by one of the farms in the survey return which is stated to have produced 420 lbs. butterfat per cow in the 1964-65 season. An important feature of this achievement was that the herd concerned numbered 130, on a farm of 179 acres. This is equivalent to a stocking rate of 0.73 cows per acre, which is 0.04 higher than the average maximum stocking rate shown by four pure dairy farms of under 75 acres*. As a result, total production on this farm exceeded 300 lbs. butterfat per acre.

With this trend the small farmer is losing still more ground as compared with a farmer working greater acreage. The advantage that the small farmer once held was that by expending much labour, he was able to produce a higher per acre return with his small herd than was achieved on larger farms. Although this may still be the case in some instances, with modern management techniques high per acre production is being achieved on larger farms with larger herds, resulting in an even greater relative discrepancy in net income between small farmers and those with larger farms.

* Stocking rates are calculated from maximum stated carrying capacity.

Total Wairarapa Butterfat Production.

Although there has been a 70% drop in dairy factory suppliers in the Wairarapa, total butterfat production has shown a general increase over the period between 1940-41 and 1964-65. This derives from the steady increases shown in farm sizes, herd sizes and butterfat production per cow over the same period.

When Figures 12 and 13 are compared, a strong correlation between the fluctuations shown on the two graphs may be noted. In almost every year there is a decided link between the two, meaning that in general the increasing herd size is cancelled out by the reduction in suppliers, leaving the average butterfat production per cow as the major deciding factor in the total output. However, several points may be noted where other influences have become dominant and total fat production has altered accordingly.

The 1943-44 season was a poor year for per cow production, having followed a similarly bad season, yet total fat production rose 420,000 lbs. This can be explained by the general increase in herd sizes noted in that year. Increasing herd sizes from 1945-46 to 1950-51 coincided with an increase in average butterfat produced by each cow. These trends together brought about a much larger comparative increase in total butterfat production, which rose to 9,652,899 lbs., an increase of 2,396,418 lbs. in three years. This is the largest upward movement occurring in total butterfat production since 1940.

WAIRARAPA TOTAL BUTTERFAT PRODUCTION AND TOTAL SUPPLIERSTO DAIRY FACTORIES.1940 ----- 1965TOTAL BUTTERFAT.
'000 POUNDS.TOTAL
SUPPLIERS.

- · - · - BUTTERFAT.

— SUPPLIERS.

NOTE: GRAPH DOES NOT START AT ZERO.

Figures Taken From Company Balance Sheets.

The highest total butterfat production achieved was in 1957-58 when a total of 10,261,013 lbs. was received by the factories. Yet this was not the year of highest butterfat production per cow. While butterfat production per cow continued to rise the following year, total Wairarapa butterfat production began a marked downward movement. This occurred because in 1958-59 the average herd size did not increase, while at the same time there was a noticeable drop in the number of milk suppliers. A reduction of 44 suppliers, or almost 15% of those supplying whole milk factories, was too large a change to be masked by higher per cow production.

The downward trend was reversed again in 1960-61 when an exceptionally good season for dairying was experienced. However, this, the best season yet experienced, only produced the fifth highest recorded butterfat total, indicating that the loss of suppliers had overtaken expansion of herd sizes and improvements in output per cow. While the present rapid upsurge in herd numbers is continued, total fat production may show a rising tendency, but as long as farms continue to be lost to dairying, as at present in the Wairarapa, total butterfat production, and thus factory output, must resume this downward trend.

Although this may be true of total Wairarapa production, it is not true of the individual supplier who has gradually been providing a greater share of the total output. By comparing the 1940-41 season with that of 1964-65 a rise of one million

lbs. of butterfat may be noted, while the income from this increased production has been distributed among 70% fewer suppliers. This improvement has arisen from the increased productive capacity of individual Wairarapa dairy herds and shows the increasing dominance of the larger dairy farmer on the present dairying scene.

Butterfat Production of Wairarapa Dairy Herds.

In order to discover the number of surviving small dairy farms in the Wairarapa, and the extent to which the area has become characterized by larger dairy farms, an analysis has been made of the production achieved by individual Wairarapa dairy herds.

As would be expected from the influence of increasing herd sizes and rising butterfat yields per cow, there has been a change in the total butterfat produced per herd. In order to show this tendency, herd production statistics for the five seasons 1960-61 to 1964-65 were obtained from the five factories operating in 1965* and broken down into the various total fat categories shown on the graphs. (Figs.14 and 15) Because the surviving farm separation butter factory (Masterton) still had a large number of very small suppliers, the figures have been graphed twice, the second graph showing the four factories other than Masterton. This gives a much clearer picture of the dense grouping of herds within the middle production range and the upward movement of herds into higher categories over the period.

* Factory returns of individual suppliers. Town milk supply herds have been computed from daily milk guarantees at 3.5% B.F.

It should be noted that the figures for 1960-61 are from the best season experienced, and that although 1964-65 was a good year, it did not equal the forementioned season either in total butterfat output or the production of butterfat per cow. Therefore, any major gains over the period can be accepted as genuine increases and can not be attributed to seasonal fluctuations.

The first graph showing all factories, (Fig. 14) indicates a large number of herds in the 1,000 lb. to 5,000 lb. category which, although experiencing minor fluctuations from year to year, have not shown a permanent tendency to move into the higher bracket, having remained at about 13% of the total herds*. These small suppliers would consist largely of sheep or dual farmers, or those with other means of livelihood.

Although showing upward fluctuations in the intervening years, the second category gives a 3% drop, while those herds in the 10,000 lb. to 15,000 lb. group show a reduction of 6.54%. These reductions brought comparative gains to the higher butterfat categories. A gain of more than $2\frac{1}{2}\%$ was made in the 15,000 lb. to 20,000 lb. group while a slight reduction in the next highest group gave the greatest gain of 3.24% to those herds producing 25,000 lbs. to 30,000 lbs. butterfat. Further gains have been shown by all groups in the higher brackets, with the number of herds in the two highest categories more than doubling over the period.

Changes within each group have been summarized in the small graph which shows the percentage change in larger

* All percentages quoted are in relation to total suppliers.

FIG. 14

PERCENTAGE DISTRIBUTION OF HERDS IN TOTAL BUTTERFAT PRODUCTION

CATEGORIES OF 5000 POUNDS. 1960-61 to 1964-65. ALL DAIRY FACTORIES.

butterfat groupings for all factories. (Fig.16) A reduction of 10.28% in those herds producing less than 15,000 lbs. butterfat has been translated into gains in the higher production categories, the greatest overall gain being shown by those in the 25,000 lb. to 35,000 lb. butterfat group. However, a significant gain of 2.4% has also been made in herds exceeding 45,000 lbs. butterfat.

By omitting the Masterton Factory from the calculations, the resultant picture is somewhat altered. (Fig.15) The number of very small herds in this group has remained fairly static with a 2.8% downward trend in the 5,000 lb. to 10,000 lb. butterfat group. But it is from the 10,000 lb. to 15,000 lb. butterfat group that the largest upward shift has occurred, with the number of herds in this category being reduced from 25.9% to 15.2% of all herds over the five years. Since there has been little overall change in the 20,000 lb. to 25,000 lb. group, most of this major reduction has brought about an almost equivalent movement into the higher categories, with the largest increase of 3.95% being shown in the 25,000 lb. to 30,000 lb. butterfat bracket. Steady increases in the number of herds occupying the higher categories have also taken place, with the second largest increase being shown in the highest production group.

All these changes have again been summarized in a separate graph, (Fig.16) which indicates that a marked reduction of 13.53% has been shown in herds producing less than 15,000 lbs.

PERCENTAGE DISTRIBUTION OF HERDS IN TOTAL BUTTERFAT PRODUCTION

CATEGORIES OF 5000 POUNDS. 1960-61 to 1964-65. WHOLE MILK FACTORIES.

FIG. 16

PERCENTAGE CHANGE IN BUTTERFAT PRODUCTION CATEGORIES OFDAIRY HERDS BETWEEN 1960-61 and 1964-65.

butterfat. These losses have been translated into gains in all the higher groups. The greatest percentage changes have been shown in the 25,000 lb. to 35,000 lb. group and those herds yielding over 45,000 lbs. butterfat.

Probably the most outstanding feature of these statistics, is that almost 80% of all whole milk suppliers to factories in the Wairarapa maintain herds which produce more than 15,000 lbs. butterfat*. Most of those farmers with herds within the 1,000 lb. to 10,000 lb. butterfat bracket would have additional means of livelihood and cannot be classed as dairy farmers. Of the 17% of Wairarapa dairy farmers with herds producing between 10,000 lbs. and 15,000 lbs. butterfat, most rely on their herds for almost all their income. In the farm survey undertaken, the questionnaires returned included ten farmers with 30 to 48 cows, one herd providing 80% of all income, while the other farmers indicated almost total dependence on their herds. According to the butterfat yields given by these farmers, only one farm would have exceeded an equivalent of 15,000 lbs. butterfat in the 1964-65 season. Calculated on the payout achieved by the Featherston Dairy Factory for the 1964-65 season, this gives a maximum gross income from butterfat of £2,656 or some £1,550 below the average paid out to all suppliers of whole milk in the Wairarapa in that season (26). On the basis of the 1962-63 New Zealand average, expenses of dairy farmers

(26) Company Balance Sheets.

* The Lands and Survey Dept. indicated 12,000 lbs. B.F. was a reasonable economic minimum in 1959. (Lower Wairarapa Valley Development Scheme, Section 3, Page 18.) Although a higher economic minimum would apply in 1965, it would probably fall between 12,000 lbs. and 15,000 lbs. B.F.

accounted for 60.2% of gross income (27) *. The net income of a farmer producing 15,000 lbs. butterfat would therefore be £1,060.

One farmer who was interviewed, stated that in the 1964-65 season, he achieved his highest production to date; 12,000 lbs. butterfat. His net income for that season was approximately £850. This figure indicates that there are still small dairy farmers in the Wairarapa who are continuing to work what many would class as sub-economic farms. In comparison with larger dairy farmers they are receiving neither a fair return for hours worked, nor for capital invested. Continued dairying must therefore be dictated by other than economic considerations, the most basic of which are the maintenance of the freedom and independence of country life (28).

Although the small dairy farmer continues to exist, he is no longer a significant feature of the Wairarapa dairying scene, since the trend away from small farming towards large scale dairying is clearly illustrated by the statistics given. In 1964-65, 34% of all Wairarapa whole milk suppliers produced more than double the economic minimum quoted for 1959 (12,000 lbs. butterfat), while it is within the categories above 25,000 lbs. butterfat that the most significant gains have been made. An example of this movement is seen in the herds exceeding 45,000 lbs. butterfat, the number having doubled over the five

(27) "Survey of Dairy Farmers' Incomes", 1962-63, Dept. of Statistics, 1965, Page 3.

(28) Hamilton, 1944, Page 121.

* It should be noted that farm expenses include repairs, maintenance and depreciation on dwellings and private vehicles.

year period. Of the 22 farms in this category 14 had a total production exceeding 50,000 lbs. butterfat. If the average production per cow for these herds is put at 300 lbs. butterfat, herd sizes in the vicinity of 170 or greater are indicated. The trend shows a movement away from the principle of the one man farm towards the employment of labour and the practice of modern management techniques and business principles in dairying. This further illustrates the modern rejection of dairying as a small farm occupation. A more rational appraisal of the dairying potential of the Wairarapa for large scale farming is becoming apparent.

Recent Trends in Butterfat Output Per Supplier.

The movement towards higher butterfat production and fewer suppliers during the past 25 years, has produced a further important characteristic of Wairarapa dairying.

Increasing herd sizes and changes in butterfat output per cow have been reflected in improving butterfat output from each supplier. (Fig.17) Because of climatic influences, direct correlations between increasing herd sizes and increasing butterfat production per supplier cannot be made on a year to year basis. However, the major trends over the whole period show a marked similarity between the two. This trend is expected, since a falling butterfat production with increasing herd size could only be precipitated by a reduction in butterfat production per cow, while in fact there has been a general increase in per cow output over the same period.

WAIRARAPA AVERAGE BUTTERFAT PRODUCTION PER SUPPLIER.1940-41 ----- 1964-65

POUNDS.

— ALL SUPPLIERS.

-.-.- SUPPLIERS TO WHOLE MILK FACTORIES.

NOTE: GRAPH DOES NOT START AT ZERO.

Figures From Company Balance Sheets.

The whole milk factories show one period where the phenomenon of rising herd sizes has been accompanied by falling output per cow. Between 1943-44 and 1947-48 this group of factories recorded a steadily rising average herd size, while the five year period to 1949-50 showed an actual decrease of 3.3 lbs. in average butterfat output per cow over the previous five year period to 1944-45:-

TABLE 111.

Effective Butterfat Per Cow - Whole Milk
Factories - Averages for five, five-yearly
periods.

	<u>Pounds.</u>
1940-41 to 1944-45	239.6
1945-46 to 1949-50	236.3
1950-51 to 1954-55	255.8
1955-56 to 1959-60	276.6
1960-61 to 1964-65	280.6

(Calculated from Dairy Board
figures for individual
factories.)

This general tendency towards lower production per supplier would have been occasioned by difficulties of the war period. Probably the most important problem to the dairy farmer was the reduction in the availability of fertilizers because of war conditions. The shortage would have hindered general improvements in fertility and pasture growth, as well as leading to slower recovery of pastures in spring and after dry spells. Labour shortages could also have affected production in these years, by reducing both the amount of work done on the farm, and the care and attention given to herds generally and during milking. Such problems brought about a decline in output per

supplier which could not be masked by increases in herd size.

The reduction is much more evident among those supplying whole milk factories, since a marked increase in the size of herds supplying farm separator factories occurred in 1944-45, enabling them to record an actual increase in production per supplier over the period. In the period from 1940-41 to 1947-48 there was a general reduction in butterfat output per supplier to the whole milk factories, while the average for all factories in the Wairarapa, although showing increases in several years, ended the period with per supplier output similar to that of 1940-41.

The post-war recovery and the resumption of shipments of fertilizer, in conjunction with several good seasons, brought about a general increase in butterfat per cow and this trend, linked with increasing herd sizes, initiated a rise in output per supplier. The greatest improvement is seen in the output of suppliers to whole milk factories, but overall improvement was noted in the same period. The early 1950's, having shown no continuing increase in herd sizes, due largely to the loss of herds during the wool boom, brought fluctuations in the average butterfat per supplier which were linked closely with variations in the output of butterfat per cow. Between 1953-54 and 1957-58 an upward surge occurred in output per supplier brought about by a combination of good butterfat yields and a resumed increase in herd sizes. A levelling off in the average size of herds broke this upward movement after 1957-58, where again the output per

supplier varied according to seasonal fluctuations in butterfat production per cow. The rapid increase in herd sizes after 1961-62, coupled with a very good season in 1964-65, has produced a further rise in output.

Butterfat per supplier for all factories in the Wairarapa has increased 350% from 4,793 lbs. to 17,074 lbs. over the period from 1940 to 1965. The most rapid gains have been made in the five year period from 1960-61 when the output rose 54.7% from 11,037 lbs. to a total of 17,074 lbs. butterfat per supplier. The greater part of this improvement has been brought about by suppliers to whole milk factories, where the output per supplier has risen from its lowest level of 8,617 lbs. in 1947-48 to 22,506 lbs. in 1964-65,* a gain of 260% over that period. In addition this group of factories showed an increase of 31.3% or 5,614 lbs. butterfat per supplier over the five year period from 1960-61.

One of the important features of this analysis is that average production per supplier has been increasing more rapidly than necessary to maintain economic viability, thereby underlining the trend away from small farming. Payout for butterfat has increased accordingly. In 1960-61 whole milk factories in the Wairarapa paid out an average of £3,156 to milk suppliers

* This compares favourably with other estimates of average butterfat production by milk suppliers in 1962-63:-
 Waikato - 22,350 lbs. B.F.
 Taranaki - 22,300 lbs. B.F.
 (Survey of Dairy Farmers' Incomes 1962-63, Dept. of Statistics, 1965, Page 6.)

for butterfat. The 1964-65 payout to these suppliers averaged £4,206*, showing an increase of £1,050 over five seasons (29). Because of the many small cream suppliers (mainly dual farms) to the Masterton Factory, the Wairarapa average was somewhat lower, but again there was an average increase of more than £1,000 over the five seasons. These results show that dairying is no longer the province of Wairarapa small farmers.

Wairarapa Stocking Rates and Modern Dairying Innovations.

Many advances have been made over the past 25 years and dairying has become concentrated in the hands of fewer, but larger and more efficient dairy farmers. Not all the possibilities inherent in the Wairarapa have been exhausted, and further major changes and improvements can be expected in the future.

Greatly improved profits from dairy farming have resulted from recently formulated farm practices. Very high stocking rates, associated with liberal dressings of fertilizers in quantities of four to five cwt. per acre, have become the basic features of up-to-date dairy management. With increased stocking rates higher profits per acre have been realised. One farmer who gave access to his personal accounts showed a net profit per acre of £24 in 1962, which had risen to £27 per acre

(29) Company Balance Sheets 1960-61 and 1964-65.

* 1962-63 comparative payout to milk suppliers elsewhere:-
 Taranaki - £3,393
 Waikato - £3,375.
 (Survey of Dairy Farmers' Incomes 1962-63, Dept. of
 Statistics, 1965, Page 6.)

in 1963. By 1964, with average butterfat production per cow slightly lower than the previous year and the total income per cow exactly the same, the net profit per acre had risen to £31. A steady increase in the stocking rate over the three seasons was the basic factor effecting this improvement. An overall increase of .24 cows per acre was responsible for a 29% improvement in net profit per acre. Much of this increase accrued as a result of a relative decrease in butterfat production costs due to higher butterfat production per acre. Actual production costs per pound of butterfat decreased from 15.4d. to 12.2d. over the three year period. A district average computed by a public accountant who handles farm accounts, shows that in 1964 the cost of butterfat production was 16.7d. per pound, or 37% higher than that given for the individual farm. Further comparisons show that although income per cow was higher in the district average, net profit from a stocking rate of 0.70 cows per acre was only £17 per acre, or 55% that of the individual farm. The difference was gained with a similar butterfat production per cow, but whereas the district average was 196 lbs. butterfat per acre, the single farm produced 334 lbs. butterfat per acre. Even this result does not appear to approach the maximum possible productivity of Wairarapa dairying land. One local farmer wrote as a personal comment on the questionnaire; "I firmly believe that we farmers and our advisors do not know what our land can really carry. Increased production on many farms both in the Wairarapa and other parts of New Zealand has

been fantastic and yet the men involved feel they can do even better." He continues by writing that a local farmer last season (1964-65) exceeded 550 lbs. butterfat per acre. Although such production cannot reasonably be expected as a general rule, there seems to be tremendous potential for increased production by substantially increasing herd numbers on existing farms in the Wairarapa.

Not only is intensive stocking possible on dairy farms in the Wairarapa, but if maximum fertility build up of a farm is to be accomplished, very heavy stocking is essential, otherwise much of the value of liberal fertilizer applications is lost. An advantage of this system is that pasture growth is greater, and is maintained for a longer period, than under less intensive stocking systems. A given area of land will provide better feed for more cows over a longer period, therefore actually reducing the quantity of hay or silage to be set aside for each cow during the periods of restricted growth.

If such a system were to become general practice on existing farms in the Wairarapa, the average herd size would show an even greater upward swing. Total butterfat production would rise significantly, pastures and fertility would be improved and less cultivation and re-establishment of worn out pastures would be necessary. The resulting higher income per acre would significantly increase each farmer's net profit and greater leisure would follow from reduced land work requirements.

There is one difficulty to be faced before such a

13. " --- several new sheds (are) being built for the 1966-67 season." (Page 149).

14. "By adopting new techniques and utilizing modern technological innovations dairy farmers have actively increased their herds --- " (Page 144).

forecast can become a reality: The farmers differ widely in their opinions as to the maximum carrying capacity of their own farms. Of those farmers answering the questionnaire, 27 indicated that they had either reached maximum carrying capacity, or were within four head of doing so. Of the other 70 farms, additional carrying capacity was said to range from five head to several hundred. According to the farmers' own estimates, average herd sizes on dual farms could be increased as much as 50% under existing conditions. By analyzing the figures returned from pure dairy farms, the average possible increase in herd size indicated was 21 head, which would raise the average herd size for this group from 94 to 115. Although such increases are possible they may be unfeasible on some farms, since the increased herd might be too large for one man to handle, thus necessitating the employment of extra labour, the expense of which would nullify the expansion.

It is logical to assume that small farms would have the highest carrying capacity because of the necessity to achieve the greatest possible production from a limited area. On the evidence available this does not hold true. (See Table 1V, Page 174). The overall average for the six farms under 75 acres is 0.78, or 0.01 cows per acre less than the average maximum stocking rate of ten farms ranging from 75 to 149 acres. Within the latter group two farms have a present stocking rate exceeding one cow per acre.

TABLE 1V.

Showing Stocking Rates on Farms which have reached the quoted maximum carrying capacity.

<u>Farm Size.</u>	<u>0 - 74 acres.</u>	<u>75 - 149 acres.</u>	<u>150-224 acres.</u>
	.55	.51	.49
	.60	.53	.5
	.61	.59	.64
	.68	.66	.75
Cows per	1.17	.78	.8
acre.	1.6	.83	
		.83	
		.94	
		1.00	
		1.33	
Overall			
Average	.78	.79	.63

(Compiled from questionnaire returns).

Although there are known to be marked variations in the soil qualities used for dairying within the Wairarapa, it is believed the farmers' own estimates are somewhat below the actual potential of their farms. One farmer who was interviewed works a farm of 106 acres which includes 30 acres of sand hills. Yet the land carries over one cow to the acre. If one cow to the acre can be achieved on such land, it is likely that the same stocking rate could be achieved on much of the land used for dairying at present. However, the overall average carrying capacity for those dairy farms which have reached the quoted maximum is only 0.69. Even among these farms therefore, there is possibly additional potential sufficient to increase the stocking rate by as much as 0.31 cows per acre, thereby raising average herd numbers 24% from the present maximum.

Not only are such further gains possible in the traditional one-man farm system of the Wairarapa, but a completely new concept with far-reaching implications is to be

pioneered in the district.

Plans to commence large scale "co-operative" dairying in the 1966-67 season are at present being put into operation by two local farmers. A herd of 500 cows is to be introduced on to a 750 acre farm near Kahutara in the Lower Wairarapa Valley. In 1967-68 it is expected that as many as 700 cows will be pastured all year on the 750 acres. The projected labour force will include four hands who will milk in one shed. Such great advances have been made feasible by recent technological innovations and new agricultural concepts.

The success of the venture will revolve around the working out in practice of the premise that with sufficient machines the herd can be milked through one shed. Because of the need to employ so much extra labour, such an attempt could never have been successful with the old type of walk-through shed without it becoming economically impracticable. But, with the sophisticated herringbone type, which is in theory infinitely extendable, it is believed that almost any size herd can be handled. The theory has been proved at least in part by the success of 24 machine sheds elsewhere ⁽³⁰⁾, and it is believed that in this case 50 machines will be just as successful. Furthermore, it is estimated that the 500 cow herd will be milked in approximately one and a half hours. This estimate is based on the knowledge that one man can milk 130 cows in that time in a ten-machine shed, where the employment of extra labour could cut milking time by only a few minutes. A logical progression is that by utilizing four times as many machines, a herd four times

(30) Pers. Com.

as large can be milked in the same time.

The reason for forming such a partnership is that the farmers feel the most economic dairy farms of the future will be the ones carrying very large herds. Because the capital involvement is so great, being beyond the scope of one farmer, the co-operative principle is being applied as the best means of achieving their aims. This is a logical extension of co-operation which could possibly revolutionize the whole concept of dairy farming, especially as it applies to the one-man family farm.

Not only is the small farm becoming a more uneconomic unit under today's heavy cost structure, but the traditionally small one-man dairy farm, as a form of "voluntary hard labour", is out of touch with modern trends towards higher income, shorter hours and more leisure. Because of this, the general unattractiveness of dairying to labour perpetuates the established system.

On the other hand, the farmers concerned expect that the large co-operative farm will overcome these problems. The basis of their contention is that the large unit will produce such a high relative income surplus over and above fixed costs, that it will give the leisure of other occupations to the owners, while providing good wages and possibly even a five day week for paid labour. This will be the automatic outcome of their intention to use full time labour almost exclusively for stock work and milking, with all other major work, including harvesting, fencing and spreading of fertilizer, being done by contract.

The success of the experiment may open a new dairying era in the Wairarapa. Rather than remaining one-man enterprises, the dairy farms of the future could become co-operative companies. With large profits and the disappearance of much of the drudgery formerly associated with dairying, it can be expected that in the future the trend towards sheep farming will be reversed. Traditional prejudices against dairying will disappear, and present day sheep farms may become the 500 cow dairy farms of the future.

C O N C L U S I O N .

Dairying in the Wairarapa is a product of historical evolutionary processes within the framework of a dual physical environment. Although modified by a century of changing economic and social circumstances, the historical influences are still observable in the present dairying landscape. Without a knowledge of these processes (which have been described in detail in this essay) the present could not be interpreted, nor could the uniqueness of the Wairarapa as a dairying area be expressed.

Dairying in the Wairarapa developed as a particular response to small farm settlement within a bush environment, under circumstances which made dependence on the cow imperative. The individual character of dairying in the Wairarapa arose from this development, since small farming became synonymous with dairying and the small farm settlements became core dairying zones. Being limited to those bushlands which had not been occupied by the pastoralists, the areas available for small farm settlement had been confined both locationally and areally. Each of the small farm subdivisions was established in isolation and future dairying expansion did not occur through peripheral extension into the pastoral zones. The initial locational relationship between pioneer small farm settlement and the present distribution of dairying was thus established.

This development had its corollary in the initiation and propagation of the Wairarapa Dairy Factory Industry. Where small farm settlement was inaugurated at an early date, there the factory system was fostered. But factories were established neither as soon as, nor as successfully as the promoters would have wished, as the dairy farmers' small farm mentality hindered progress and prevented the consummation of some schemes. Dairy factories were established in spite of the dairy farmers.

The success of the pioneer subdivisions in settling the Wairarapa bush and developing its agricultural resources, made them prototypes for further small farm settlement. Future subdivisions were undertaken as part of a continuing official policy towards creating a prosperous small farm community and a well settled countryside. In the new settlements established this century through the implementation of this policy, dairy farms were provided as representing the most efficient form of land use. This resulted in the implanting of dairying "oases" in the extensive pastoral zones, where more intensive agricultural development had been inhibited by the presence of few landholders occupying extensive acreages. Again, the new subdivisions were often isolated from one another by the sheep-lands between. One of the most important features of this historical evolution is, that as in the case of the pioneer settlements, there has been little encroachment of dairying into the traditional pastoral zones, except in the form of the special subdivisions referred to. Thus the original duality of settle-

ment types and land utilization has been preserved. This leads to the conclusion that dairying would not have been established in many areas of the Wairarapa had it not been artificially promoted. Conversely, many areas where dairying could be carried on profitably are still given over to more extensive forms of agriculture, because of the failure to establish small farm settlements within those zones.

As the Government's small farm policy was implemented, the development of the dairy factory industry paralleled it and new factories arose in the subdivisions almost simultaneously with settlement. Because the new dairying blocks made provision for few farms, the small co-operative cheese factory became the typical Wairarapa processing unit. The resultant pattern of co-operative factory distribution in the Wairarapa was so closely correlated with small farm subdivisions and special settlements, that only one factory cannot be attributed to these. Co-operative dairy factory distribution was therefore a result of the historical evolution of small farm subdivisions both in location and time.

Limited areas devoted to dairying, combined with the initial close subdivision of small farms within them, meant that as economic conditions altered and inflationary pressures developed, the original small farms no longer remained viable units. This initiated a movement towards the amalgamation of farms within the settlements. The necessity to purchase land forced farmers to go beyond adjacent properties for their

supplementary acreage, thus fostering a further feature of Wairarapa dairying: fragmentation.

The progressive movement towards amalgamation of farms has fostered further developments in the present dairying scene. The addition of small farms to existing units has brought a steady reduction in the number of dairy factory suppliers, by the simultaneous loss of small suppliers and the ability of some larger dairy farmers to accumulate sufficient land to turn to sheep farming. Furthermore, through the accumulation of more land there has been a marked increase in average farm sizes. This has precipitated a rapid increase in herd build-up and hence in butterfat output per supplier and this in turn has produced a rapid rise in farm income. All these trends combined with technological innovations, new agricultural concepts, and more efficient management, have given dairying in the Wairarapa its present character within the framework of the established historical pattern of distribution.

Amalgamations of farms, the loss of farms within the settlements to sheep farming, and the failure of dairying to extend into the surrounding sheep-lands, led to fewer suppliers. This combined with the economic problems factories were already beginning to face as a result of rising costs coupled with stable realization for cheese, was sufficient to promote a movement towards amalgamation of factories by the pioneering of tanker transport. The movement was to be joined with reluctance by those in the pioneering zones where traditional independence

and conservatism had been translated into group isolationism. But the lack of a small farm tradition and long factory association, helped to foster the movement at an earlier stage in the newer subdivisions.

By early 1966, opposition to amalgamation has largely disappeared and a combination of amalgamations and liquidations has reduced the number of co-operative dairy factories in the Wairarapa, to four Companies operating five processing units. All the more recently established factories have ceased to function and their isolated whole milk supply areas are now linked by tanker with a more distant processing plant. The five remaining factories are each associated with the original areas of pioneer bush settlement, which are still the more extensive dairying zones. Thus both the derivation and the unification of the Wairarapa Dairy Factory Industry, may be directly linked with the evolution of historical small farm settlement.

Just as the amalgamation of factories has initiated a movement towards a more efficient regional industry, so the trends of the past 25 years have been towards a more efficient system of dairy farming. Although dairying is limited in area and there are relatively few dairy farmers, productivity per supplier has increased markedly in conjunction with the scale of operations. The concept of dairying as a small farm occupation no longer applies in the Wairarapa, and the surviving small farms, the relics of an earlier era, have ceased to play a significant role.

The large co-operative dairy farm, as proposed by the two local farmers, could well be the answer to the future of dairying in the Wairarapa. With difficulties being experienced in the sale of butter to Britain, New Zealand may lose its former market security. If such an eventuality occurred, dairy farmers would be forced to accept lower prices for butterfat and only the most efficient form of dairy-land utilization would survive. One commentator, in writing of the "Colorado High Plains", envisaged a similar future situation. His comments could well apply to the future of dairying in the Wairarapa:- "The future lies in the hands of a few individuals. In the competition to come, there will be few winners and many losers as the transition to corporate agriculture is made. Only the shrewd, well financed, enlightened resource manager will be able to survive under the complexities of corporated, unsubsidized, competitive agriculture. And only the ingenious will do it on a long term basis. However, in terms of future national and world benefits, we need this type of ingenuity to feed the world's expanding urban population" (1).

(1) Bowden, 1965, Page 138.

APPENDIX 1.

The budget of Joseph Masters as quoted in BAGNALL, 1954, Page 21.

"Suppose a man to have five or six acres of cleared land to begin with, as most of them will have and some of them nearly all clear, now suppose they crop as follows - one acre of wheat for his own use, one acre of barley, or two acres of red clover, one acre of potatoes, one acre for gardening, house, pig-styes, etc. one acre will produce 300 bushels of potatoes, and one acre of barley 40 bushels; with these and the clover he may rear and feed 20 pigs per annum, and send to market after the first year 4,000 lbs. of good bacon pork worth 6d. - £83.6.8d., besides the offal for his family; and I think 8 good milking cows will produce 2,000 lbs. of butter - £83.6.8d. every small farmer may send to market 300 doz. of eggs per annum - £10; 20 geese at 3/6d., £3.10.0; 10 turkeys at 4/- - £2; 20 couple of fowls at 3/- - £3. This makes £185.3.4d. besides the increase of stock. The whole of his cattle can run upon the unsold land for some time to come"

APPENDIX 11.

This appendix is a copy of the Questionnaire circulated to Wairarapa dairy farmers in October 1965. A total of 410 questionnaires was distributed, one going to each dairy factory and town milk supplier in the Wairarapa, except for suppliers to the Masterton Butter Factory, whose supply in the 1964-65 season was less than 2,000 lbs. butterfat. The results given are a summary of the 104 replies returned.

NOTE: Some farmers did not reply to all questions. Nos. 2, 3, 23, 24, 25 are averages.

QUESTIONNAIRE ON DAIRYING IN THE WAIRARAPA.STRICTLY CONFIDENTIAL.

1. Where the questions require a yes/no answer please put a tick in the appropriate box.
11. Please answer questions as accurately as possible.
111. If you do not wish to answer certain questions please do not disregard the whole thing.

		<u>Yes</u>	<u>No</u>
1.	Do you rely entirely or almost entirely on dairying for your income.	70	34
2.	If not, about what percentage comes from dairying.	Ave. of 34 = 55%	
3.	What is the area of your farm.		
	All farms	Ave. = 173.2 acres	
	Pure dairy farms	Ave. = 125.6 acres	
4.	Is your property part of a -		
	(a) Small farm settlement	17	
	(b) Settlement made under the Lands for Settlement Act, e.g. Tawaha, Carrington, Dyer.	15	
	(c) Soldier Settlement	23	
	(d) Private Farms Subdivision	24	

	<u>Yes</u>	<u>No</u>
5. If so, has the original section been added to	21	58
6. Is your farm, not including runoff, in one block, (including adjacent parts cut by a road, but not those cut by a river).	85	21
7. If not, how many blocks are there.		
1, 85; 2, 17; 3, 1; More, 3.		
8. How far is the furthest block from the homestead block.		
Under $\frac{1}{4}$ mile, 3; $\frac{1}{4}$ to $\frac{1}{2}$ mile, 4; $\frac{1}{2}$ to 1 mile, 5; Over 1 mile, 9.		
	<u>Yes</u>	<u>No</u>
9. Is this fragmentation due to -		
(a) A need for different types of land.	4	
(b) The result of initial subdivision.	4	
(c) Need for more land to build up an economic unit.	11	
10. Have you added to the area of your farm, not including runoff, in the last 10 years.	23	
11. If so, was this because:-		
(a) The original block was uneconomic	10	
(b) Labour, became easier to obtain	1	
(c) With more land your farm would give higher returns with little increase in overheads	18	
(d) You just desired to extend operations	8	
(e) Any other reasons.	4	
	<u>Yes</u>	<u>No</u>
12. If you have added to your farm in the last 10 years was the addition adjacent to your original block	19	4
13. If your farm is mainly dairying -		
(a) Is it a one-man dairy unit	59	
(b) Is there a sharemilker on the property.	21	
(c) Do you employ full time labour	26	
14. If you had a son of working age, would you be able to employ him on your farm	67	37
15. Any comments about this		
16. Do you (a) Own a runoff	20	
(b) Lease a runoff	18	
17. If so, how far is it from the homestead block-		
(a) Under 2 miles	15	
(b) 2 to 5 miles	8	
(c) Over 5 miles	15	
18. Do you have a runoff because -		
(a) Your land gets pugged in winter	19	
(b) You stock too heavily to carry dry stock	20	
(c) You feel that it is good practice to rest your land.	17	
(d) Your farm isn't large enough to be economic if you carried dry stock as well	14	
(e) You like to "forget" about your cows for a while	8	
(f) Any other reason	12	

19. When did you first take up dairy farming on your present property. year:
20. What was the area of your farm then. acres:
21. How many cows were you milking then. number:
22. What was the average production per cow then. lbs. butterfat.
23. What is it now. Ave.= 321.7lbs.B.F.
24. How many cows are you milking -
- (a) This year Ave.= 89.5
- (b) Last year Ave.= 81.4
25. What do you consider to be the maximum number of cows that could be carried on your present property Ave.= 112
- Yes No
26. Would you purchase more land at present day prices if it became available 56 46
27. What do you consider to be the minimum economic herd size under today's conditions. Number:
- Under 49 = 2; 50-59 = 10; 60-69 = 30; 70-79 = 20;
- 80-89 = 22; 90 and over = 9.
28. How much land do you feel would be necessary to run a herd of this size. acres.
- Yes No.
29. Do you raise your own replacements. 103 1
30. Is your farm -
- (a) Freehold. 75
- (b) Leasehold 28
31. Do you consider that because of climatic conditions in the Wairarapa, herds should be housed in winter. 6 50
32. Would such a step be an economic proposition. 8 48
33. If Taranaki is a first class dairying area, how do you regard the Wairarapa as a dairying area. 1st. Class: 27
- 2nd. Class: 39
- 3rd. Class: 24
- Poor: 3
- Yes No
34. What type of milking shed do you use -
- (a) Walk-through 74
- (b) Herringbone 18
- (c) Other 8
35. Would you be interested in supplying town milk to Wellington if the opportunity arose 47 49
36. Do you consider that the South Wairarapa (i.e. Mount Bruce south) could be better served by one major -
- (a) Factory 21 74
- (b) Company 75 20
37. If one factory, from an economic point of view, where should it be situated.

		<u>Yes</u>	<u>No</u>
38.	Do you feel that small local factories are still the best proposition from the farmers' point of view.	12	80
	<u>REASONS:</u>		
39.	What are the future prospects for dairying in the Wairarapa?		
40.	Any pet grouches or hobby-horses regarding the industry.		
41.	If you had the means to do it, would you change from dairying to sheep farming? .	29	58

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November 15, 1886, page 3;
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May 3, 1907, page 3;	June 17, 1907.

The Wairarapa Daily, 1887, 1889, 1890. Masterton. Lodged at the

Wairarapa Times Age, Masterton.

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September 5, 1887, page 2;	October 24, 1887, page 2;
October 31, 1887;	November 7, 1887, page 2;
November 10, 1887;	August 6, 1890, pages 2 and 3;
	August 7, 1890, page 2.

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July 30, 1895;	October 24, 1895;
March 5, 1896;	July 15, 1896;
May 11, 1900;	December 11, 1900, page 2;
January 15, 1901, page 2;	January 17, 1901, page 2;
March 11, 1901;	July 27, 1901, page 3;
February 7, 1902;	February 3, 1906;
March 23, 1906, page 6;	December 24, 1907.

The Wairarapa Star, 1897. Masterton. Lodged at the Wairarapa

Times Age, Masterton.

Specific References:-

January 9, 1897;	May 26, 1897;
July 8, 1897.	

The Wairarapa Age, various copies 1907, 1916, 1920-1923. Masterton

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Specific References:-

July 5, 1916, page 3;	January 8, 1920, page 4;
May 8, 1920, page 4;	August 19, 1920;
November 24, 1920;	August 20, 1921, page 6;
August 31, 1922;	

The Evening Post, December 1921. Wellington. Lodged at the General Assembly Library, Wellington.

Specific References:-

December 17, 1921, page 9; December 20, 1921, page 9;
December 29, 1921, page 7.

(h) Notes on other sources:

No information is available from any single source covering all dairy factories in the Wairarapa. All material included has been accumulated from sources covering individual factories. Dairy Company balance sheets, 1940-41 to 1964-65, filed at the New Zealand Dairy Production and Marketing Board, Wellington, provided data covering total suppliers, butterfat per supplier, total butterfat and payout per supplier.

The Herd Improvement Branch of the Dairy Board has a file showing average effective butterfat per cow for each factory, from 1940-41 to 1964-65. Total production for each dairy factory had to be re-calculated before Wairarapa averages could be assessed.

Two volumes - New Zealand Dairy Division, Series 2, Duplicates, 1898-1912, and Annual List of Creameries etc., 1913-1929, lodged in the General Assembly Library, Wellington - include annual lists of creameries, factories, private dairies and packing houses. From these was taken dates of establishment and disestablishment of factories, production statistics and data on factory suppliers.

Access was given to Dairy Company files showing butterfat returns for individual suppliers from 1960-61 to 1964-65. This material was used in the section dealing with trends in butterfat production per herd.

Basic data for the map showing the distribution and fragmentation of land occupied by suppliers to dairy factories, was obtained from the rate files of the Featherston, Wairarapa South and Masterton Counties.

(i) Verbal Information:

The writer was fortunate in being able to interview farmers who had been original selectors in many of the special sub-

divisions settled this century.

Messrs.:

H.C. Mortensen Mauriceville;	C. Jensen Taumata;
C. Griffin Te Ore Ore Settlement;	E.K. Ticehurst Matarawa;
A.E. MacDonald " " " " ;	J. Parker Ahikouka Settlement;
M. McKie Kahikatea Settlement;	B. Haigh Greytown;
M.R. Morley " " ;	J.B. Barr Battersea Settlement;
H.W. Dagg Kaituna;	R. Dyson " " ;
J. Stempa Kaituna Settlement;	J.W. Herod " " ;
J. Taylforth " " ;	H. Maidment " " ;
W. Bradley Te Whiti Settlement;	L.J. Thompson Morisons Bush;
T. Anderson Carrington Settlement;	L.H. George Tawaha Settlement;
G.J. Evans " " ;	G. Farrier Featherston;
I. Thompson " " ;	L.N. Hodder " ;
W.J. Percy Booth Settlement;	T.G. Sargent Purakau Settlement;
M. Cochrane " " ;	C. Bargh Pihautea Settlement;
A.S. Clarke Ahiaruhe Settlement;	R. Ness " " ;
R. Allomes Ruamahunga Settlement;	G.F. Aldridge Dyer Settlement;
J. Conwell Dalefield;	J. McGillicuddy " " ;
L. Fairbrother Dalefield;	V. Bargh Kahutara.

(j) Maps:

District Maps.

Masterton Small Farm Settlement.

Plan S.O. 10998, B57, Sheets 1 and 2.

Lands and Survey Department, Wellington.

Taratahi Plain Subdivision 1856 Plan No. 10545,
also Roll Plan 10585; 353.

Lands and Survey Department, Wellington.

Featherston Subdivision Plan S.O. 11073, No. 354.

Lands and Survey Department, Wellington.

Moroa Subdivision Plan S.O. 10862 and
S.O. 10765.

Lands and Survey Department, Wellington.

Matarawa and Small Farm Subdivision West of Carterton.
Group W.
No. P.W.D. 5753,
Date Pre 1877.
National Archives.

Miki Miki and Waiohine Subdivisions 1878-1886, Showing
Extension of Small Farm Subdivisions West of Carterton.

Group L.S. - W.
No. 26/1, Map 4.
Date 1878-1886.
National Archives.

Wairarapa Provisional Soil Map, 1952.

Soil Bureau, D.S.I.R., Taita.

Mean Annual Rainfall of the Wairarapa - 1921-1950.

N.Z. Meteorological Service, Wellington.

Map and Notice of Auction of Ahiaruhe Property, 1920.

Lands and Survey Department, Masterton.

Maps of Special Settlements.

Sale Plans, Including Regulations and Selection
Information.

Carrington Settlement	-	Sale Plan No. 546.
Dyer Settlement	-	Sale Plan No. 455.
Falloon Settlement	-	Sale Plan No. 688.
Pihautea Settlement	-	Sale Plan No. 747.
Purekau Settlement	-	Sale Plan No. 880.
Tawaha Settlement	-	Sale Plan No. 447.

Two complete volumes of Sale Plans were apparently
destroyed by fire. Wairarapa settlement maps which are
missing include:- Ahiaruhe, Marama-a-mau, Moroa, Olliver,
Te Whiti, Longbush and Mahupuka.

Lands and Survey Department, Wellington.

Cadastral Maps of the Lands and Survey Department.

Masterton N.Z.M.S. 177A Sheet N.158.

Wairarapa N.Z.M.S. 177A Sheet N.162 - March 1965.

Wellington (WN.) 78 Tiffin Survey District, 2nd Edition
1930, Reprinted 1956.

Wellington (WN.) 77 Waiohine Survey District.

Wairarapa - Wellington (WN.) 84. May 1960.

Huangularua - Wellington (WN.) 85. June 1959.

Onoke. (Photostat copy of Revised Map, November 1965 -
Unpublished).

These formed base maps for the Map showing land
occupied by dairy factory suppliers.

LAND OCCUPIED BY DAIRY FACTORY SUPPLIERS

1965

REFERENCE

- LAND HELD IN SINGLE UNITS
- LAND HELD IN FRAGMENTED BLOCKS
- BOROUGHES
- GENERALIZED BOUNDARY OF LOWLAND

SCALE
0 1 2 3 4 5 6 miles