

FORECASTING FOR THE FARMER.

551.586:63

by  
F/O P.B. Lynch.INTRODUCTION.

The fundamental necessity of maintaining and, if possible, increasing food production is now recognised as a major war problem. Agriculture suffers severely under war time restrictions and shortages of labour, machinery, fertiliser and feeding stuffs, and the farmer must look to other sections of the community for assistance in overcoming production problems.

One of the greatest worries of the farmer is the "weather" but this is due in as large a part to his difficulties in predicting it as to his inability to control it. Any timely indication of future weather may be of inestimable value to the farmer, not only in the prevention of waste or damage to his stock and crops but also in the improvement of his management so that he may secure the maximum yields with the minimum of effort.

1. OPTIMUM WEATHER CONDITIONS FOR FARMING OPERATIONS.(a) Haymaking:

Settled conditions for two or three days are required. If such conditions are likely within a day or so the hay can be cut in anticipation, as its nutrients are not seriously leached with light rains until the hay is nearly ripe. Drying winds and low humidity give the best conditions, but too strong winds may cause loss. Advice as to uncertain weather is often valuable.

(b) Grass and Clover Seed:

Seed crops require conditions similar to those for haymaking, but to prevent damage to seed it is even more important to have low humidity after cutting. Early advice of the possibility of strong winds would enable the crop to be cut early to avoid loss of seed by shaking. The length of time improvements in the weather may be expected to last affects the drying operations that will be carried out on the cut material. The crop will not be disturbed - with loss of seed - if the improvement is only temporary.

(c) Harvesting Cereals and Linen Flax:

Early information of the likelihood of unfavourable weather would call for a special effort on the part of the farmer to get the crop in. With the widespread use of the header harvester, necessitating crops being left uncut for longer periods than is the case when cutting with the reaper and binder, strong winds may cause severe loss of grain by shaking unless warnings are received in time. Linen flax is a more delicate crop subject to damage by the weather and the farmer would concentrate on harvesting this crop should he be warned in time of unfavourable weather. Several crop diseases and pests are more widespread and virulent in association with certain weather conditions and spraying and harvesting programmes may be adjusted to prevent serious loss. Lastly, many harvesting and threshing operations are carried out on a contract basis. Knowledge of likely weather conditions makes for smooth co-operation between farmer and contractor.

(d) Cultivations and Sowings generally:

Sowing can be made in anticipation of rain. Should heavy rain be expected cultivations can be speeded up before the ground is waterlogged and rendered unsuitable for implements for some time. The number and type of cultivations given is closely connected with the expected weather. The actual crop sown often depends on the actual and expected weather and frequently less suitable crops are sown because the farmer is "caught by the weather".

(c) General Farming Operations:

Whereas many farming operations have to be carried out whatever the weather, on frequent occasions unnecessary loss is experienced through unexpected changes. A pasture on low lying, heavy ground may, for example, become badly fouled and "pugged" should heavy rain be experienced when stock are concentrated on it.

(f) Sheep Farming:

(i) Lambing: Cold wet weather may cause heavy lamb mortality, some of which at least could be prevented by timely forecasts. Sudden changes may produce serious setbacks to ewes-in-milk with more serious repercussions on the lambs. Even if the sheep cannot always be housed they can generally be moved to more sheltered positions in anticipation of unfavourable weather.

(ii) Shearing: If rain is expected sheep can be put in the woolshed overnight so that the minimum interruption in shearing will result. Sheep such as ewes in milk more liable to be affected by bad weather, will not be shown when unfavourable conditions are expected.

(iii) Dipping: If this is followed by cold wet weather serious mortality may result.

(iv) Lamb Marking: The lambs receive a check which may become fatal if cold wet conditions are experienced after this operation.

(v) Snow: With high country and South Island farmers snow warnings are important, not only in respect of lambing and shearing, but also in order that they may move sheep to safe country in time.

(g) Dairy Farming:

Located in high rainfall districts, dairy farming is less dependent on the weather than most other types of farming. Many general farming operations and, in particular, good pasture management may, however, be more efficiently carried out with a foreknowledge of the weather.

(h) Orchard Management:

(i) Fruit Picking is most dependent on the weather. Early picking will be resorted to if strong winds are expected, and if heavy rain is likely stone fruits will be harvested to avoid loss by dry rot.

(ii) Spraying operations have to be planned according to the weather. Heavy rain after spraying will in most cases nullify the work and conditions of high humidity may result in some sprays doing damage to the trees.

(iii) Cultivations: Remarks made previously apply here.

(iv) Frosts: With frost-tender fruits at certain periods frost warnings are vital in order that the necessary counter-measures may be taken in time.

(i) Market Gardening:

Vegetable production is assuming national importance in New Zealand and cultivations, sowings and harvestings of these crops are most dependent on the weather. Frost warnings are of especial importance with frost-tender varieties.

2. Calendar of Farming Operations.

The first map shows the general nature of land utilisation. This is followed by a set of maps which indicate the seasonal farming operations in different districts throughout the year with special reference to operations which are most markedly influenced by the weather. These maps are summarised in the following table :-

<u>Month.</u>	<u>Farming Operations.</u>	<u>Districts affected.</u>
January	Haymaking	All districts
	Grass and Clover Seed	Rangitikei-Manawatu, Hawkes Bay, Poverty Bay, Wairarapa, Marlborough, Canterbury.
	Harvesting cereals and linen flax.	Rangitikei-Manawatu, Marlborough, Canterbury.
	Fruit picking (stone fruits, first apples, small fruits)	Auckland, Poverty Bay, Hastings, Nelson, Central Otago.
	Shearing	Last of high country shearing, especially Otago.
February	Haymaking	All districts, although most of North Island districts completed in January.
	Grass and Clover Seed	Clover especially in Hawkes Bay, Marlborough and Canterbury.
	Harvesting	Canterbury, North Otago, main harvest month in Otago.
	Fruit picking	Main crop apples and pears in Nelson, Hastings.
	Pasture sowing	Commenced if weather suitable mainly North Island.
	(Diseases)	Note especially facial eczema from warm rains and lush growth following on dry spell.
March	Harvesting	Late crops in Canterbury and Otago
	Fruit picking	Apples in Nelson, Hastings
	Pasture sowing	Mainly North Island
	Cultivations	All cropping districts
	Sowing of green feed oats and barley	Cropping districts.
April	Pasture sowing	Mainly North Island, completed in most districts.
	Cultivations	All cropping districts
	Vegetables	Note danger of first frosts
May	Sowing Autumn wheat	Rangitikei-Manawatu, Marlborough, Canterbury, North Otago
	Sheep	First snows of high country - movement of stock.
June	Sowing Autumn wheat	Rangitikei-Manawatu, Marlborough, Canterbury, North Otago.
	Cultivations	All cropping districts.
	Sheep	Snow warnings - high country.
July	Cultivations	All cropping districts.
	Sheep	Snow warnings - high country.
	Lambing	Earliest lambing in Hawkes Bay, Poverty.
August	Cultivations	All cropping districts.
	Spring ploughing	
	Sowing spring wheat, barley	Rangitikei-Manawatu, Marlborough, Canterbury, North Otago.
	Lambing	East coast North Island, earliest districts Auckland Province.
September	Cultivations,	
	Spring ploughing	All cropping districts
	Sowing cereals	Rangitikei-Manawatu, Marlborough, Canterbury, Otago.
	Sowing pastures	All districts
	Sowing root crops	All districts
Lambing	Main month in all but high country.	

<u>Month</u>	<u>Farming Operations</u>	<u>Districts affected.</u>
October	Sowing cereals and linen flax. Sowing root and forage crops Sowing pastures Lambing	Canterbury, Otago. All districts - main month. All districts - late sowings. Later districts - hilly country.
November	Sowing cereals and linen flax. Sowing root and forage crops Lambing Shearing  Haymaking	Canterbury, Otago - Late sowings All districts. High country. North Island districts particularly East Coast and Auckland. First crops cut in earliest districts.
December	Shearing  Lambing Dipping Sowing root and forage crops. Haymaking	All sheep districts North and South Islands. Last month in high country All sheep districts. Especially South Island districts. Main month for both Islands.

### 3. MAIN FARMING DISTRICTS IN NEW ZEALAND.

The following table and accompanying map classify the main farming districts in New Zealand. These, in conjunction with the foregoing material, should indicate the weather elements that are important to the farmer in the various farming districts covered by the forecast, at all times of the year. There will, of course, rarely be uniformity in the types of farming carried on within these districts, but in most cases the distinctions between the subdivisions are quite well marked.





<u>Farming District.</u>	<u>General Types of Farming</u>	<u>Specialised Farming Types.</u>
1. North Auckland	Intensive - dairying (little sheep)	Citrus orchards
2. Central Auckland Thames Hauraki Plains	Intensive - dairying, cropping	Market gardening Fruit(stone, pip, vineyards citrus)
2a. Coromandel	Sheep (breeding)	
3. Waikato	Intensive - dairying, fat lambs.	
4. King Country	Sheep (breeding country)	
5. Bay of Plenty (narrow coastal strip)	Intensive - dairying fat lambs Sheep in foothills.	Fruit(pip, citrus)
6. Rotorua (restricted area)	Dairying and sheep (special pumice management)	
7. East Cape	Sheep (breeding)	
8. Poverty Bay (restricted area)	Intensive - dairying, fat lambs.	Fruit(stone, pip) small fruits, Market gardening, grass seed etc.
9. Northern Hawkes Bay	Sheep (mainly breeding).	
10. Hastings (restricted area)	Intensive - dairying, fat lambs.	Fruit(stone, pip) small fruits, Market gardening, grass seed etc.

<u>Farming District.</u>	<u>General Types of Farming.</u>	<u>Specialised Farming Types.</u>
11. Southern Hawkes Bay (a) Dannovirke-Woodville (b) Coastal	Dairying and sheep (high rainfall) Sheep (breeding) (low rainfall)	
12. Taranaki	Dairying (some high country)	
13. Inland Taranaki (Whangamomona country)	Poor sheep country.	
14. Ohakune-Taihape (restricted area)	Sheep (breeding)	Potatoes, market gardening, cropping.
15. Wanganui (coastal strip)	Dairying, sheep (breeding)	
16. Rangitikei - Manawatu	Dairying - sheep (breeding) (Note: Some dry districts)	Cropping, grass seed, market gardening.
17. Wairarapa	Sheep (breeding)	Limited cropping area.
18. Levin-Otaki	Dairying - Sheep (breeding)	Market gardening.
19. Hutt Valley	Dairying - Sheep (breeding)	Market gardening, cropping.
20. Nelson-including (a) Waimea Valley (b) Hill country	Sheep (breeding) Sheep (some poor country)	Fruit (stone and pip) Intensive cropping, Market gardening, small fruits, tobacco etc.
21. Marlborough (a) Wairau Valley (b) High country (c) Sounds	Sheep (breeding) Arable Poor sheep country Sheep country	Market gardening.
22. Westland	Dairying (only in valleys north of Ross)	
23. North Canterbury	Sheep (breeding) Arable	Market gardening.
24. Christchurch (restricted area)	Sheep (breeding) Arable, dairying	Market gardening, Fruit (stone, pip),
25. Banks Peninsula	Sheep (breeding) Arable.	Grass seed.
26. Foothill Country	Medium and poor sheep country.	
27. Mid-Canterbury	Sheep (breeding) Arable.	
28. South Canterbury	Sheep (breeding) Arable.	Market gardening.
29. Fairlie and Mackenzie Country	Dry sheep	
30. North Otago (restricted area)	Sheep (breeding) Arable	
31. Central Otago	Dry sheep	Note: especially irrigated areas, Fruit (especially stone) Dairying, breeding sheep, arable farming, market gardening.
32. Dunedin	Sheep (breeding) Arable	Market gardening.
33. Balclutha-Gore	Sheep (breeding) Arable	
34. Invercargill	Sheep (breeding) Arable.	

# LAND UTILISATION

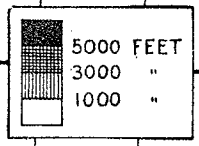
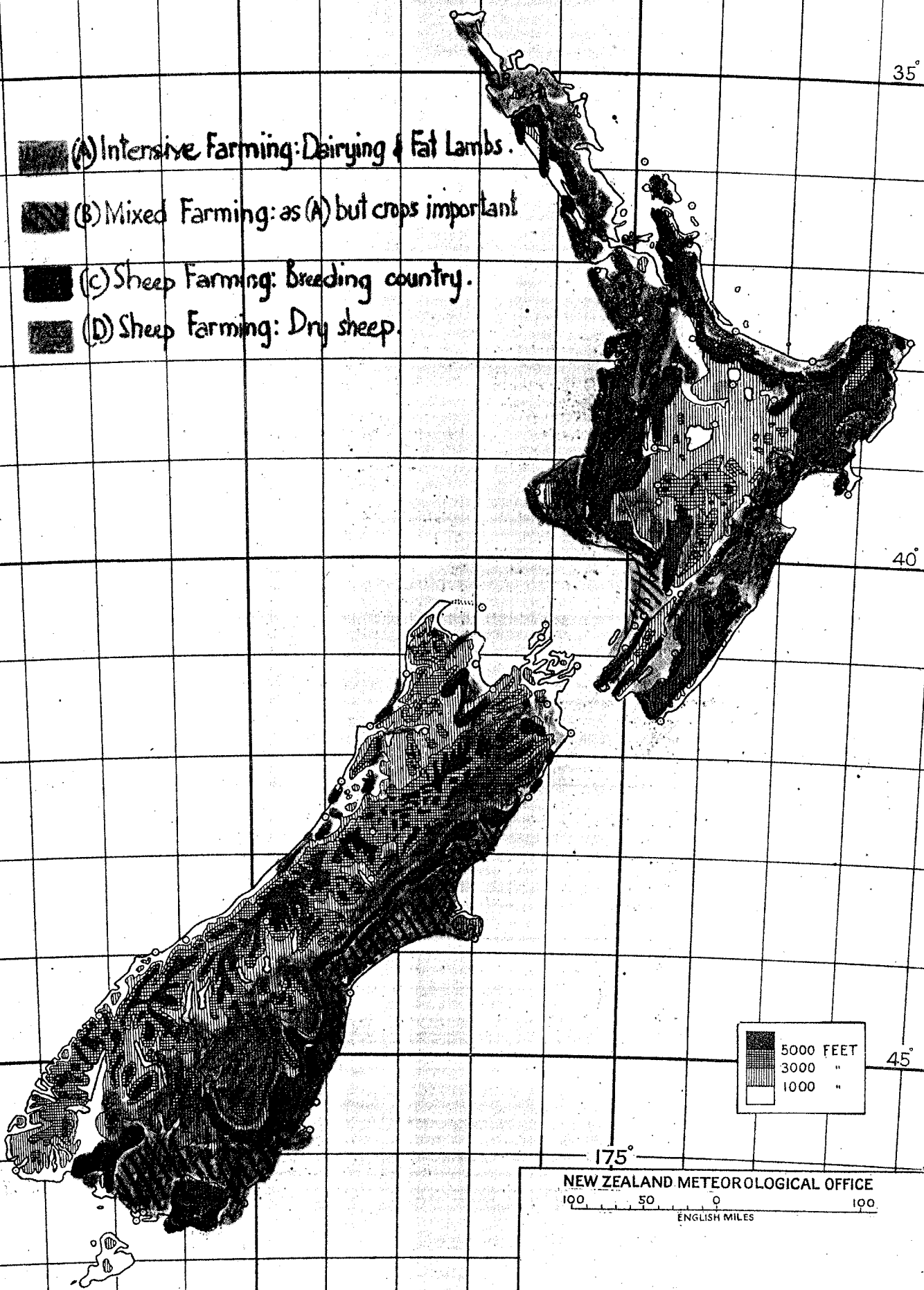
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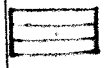
-  (A) Intensive Farming: Dairying & Fat Lambs.
-  (B) Mixed Farming: as (A) but crops important.
-  (C) Sheep Farming: Breeding country.
-  (D) Sheep Farming: Dry sheep.

40° 40°

45° 45°



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ENGLISH MILES



Haymaking



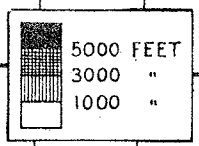
Grass & clover seed.

Harvesting Cereals & Linen-flax



Shearing.

Fruit Picking (mainly stone fruit).



NEW ZEALAND METEOROLOGICAL OFFICE

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ENGLISH MILES




JANUARY

170°

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-  Haymaking (Late)
-  Grass & Clover seed.
- Harvesting Cereals & Linen flax.
-  Fruit picking (Stone & pip)

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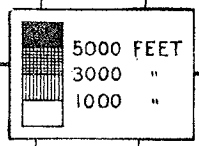
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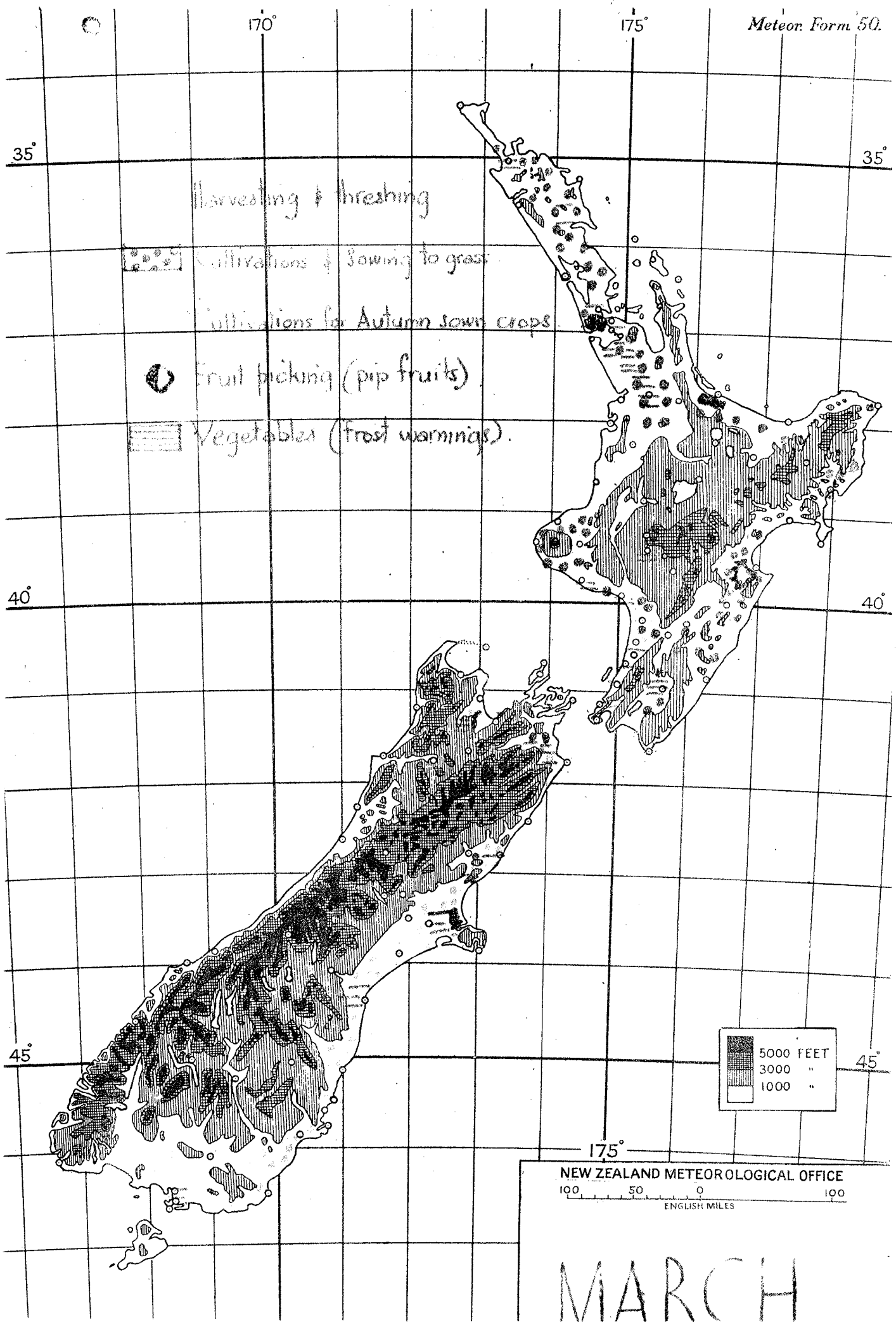
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FEBRUARY





NEW ZEALAND METEOROLOGICAL OFFICE

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MARCH


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 Cultivations for Sowing to grass

 Cultivations for Autumn sown crops

 Picking of late apples

 Vegetables. (Frost warnings)

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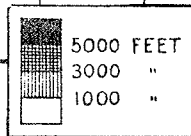
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NEW ZEALAND METEOROLOGICAL OFFICE

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APRIL


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
175°

35°

35°

Sowings of Autumn wheat.  
Cultivations & Ploughing.

 High country sheep (snow warnings).

 Vegetables (Frost warnings)

40°

40°

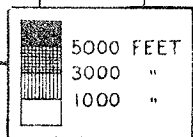
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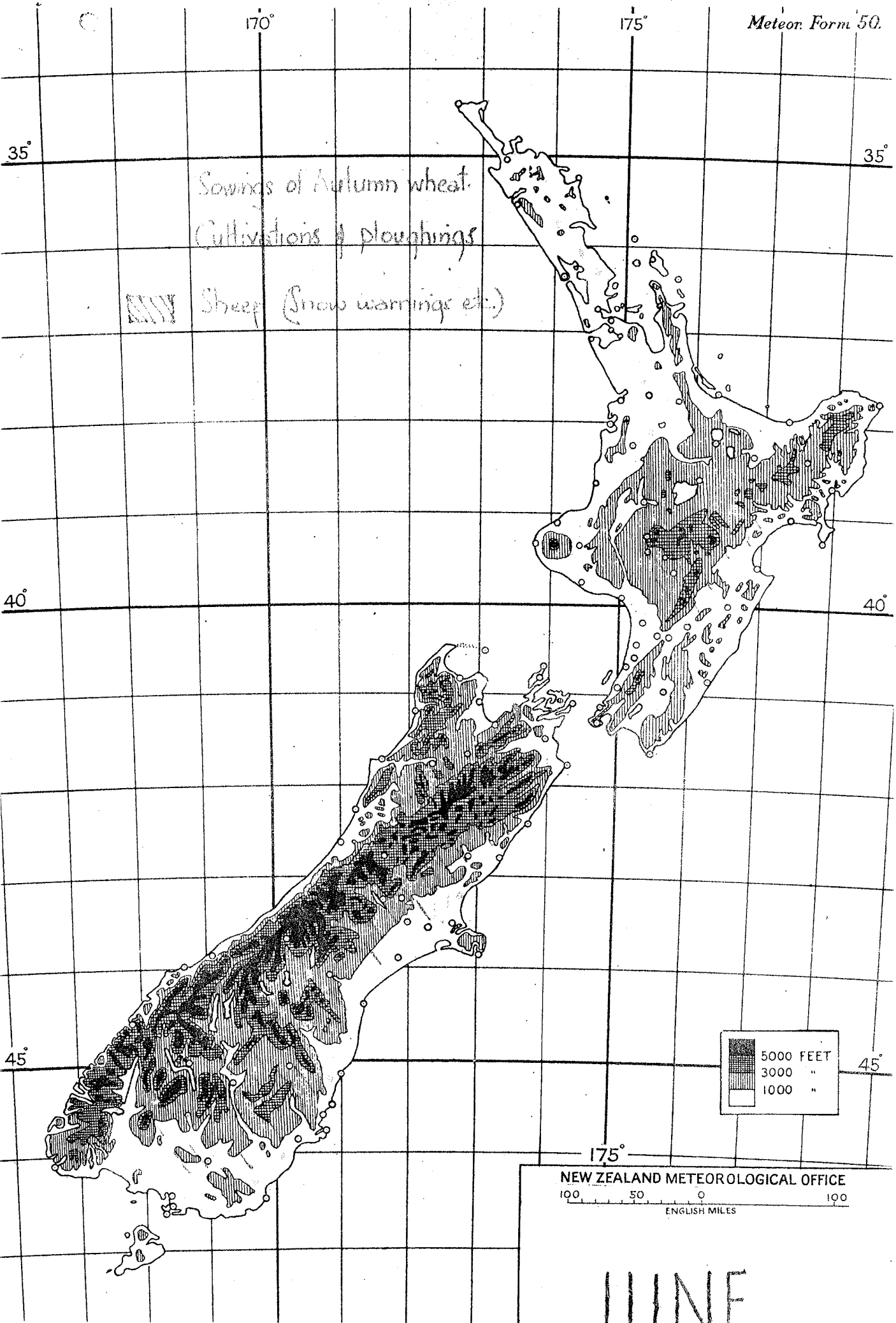
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NEW ZEALAND METEOROLOGICAL OFFICE

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MAY

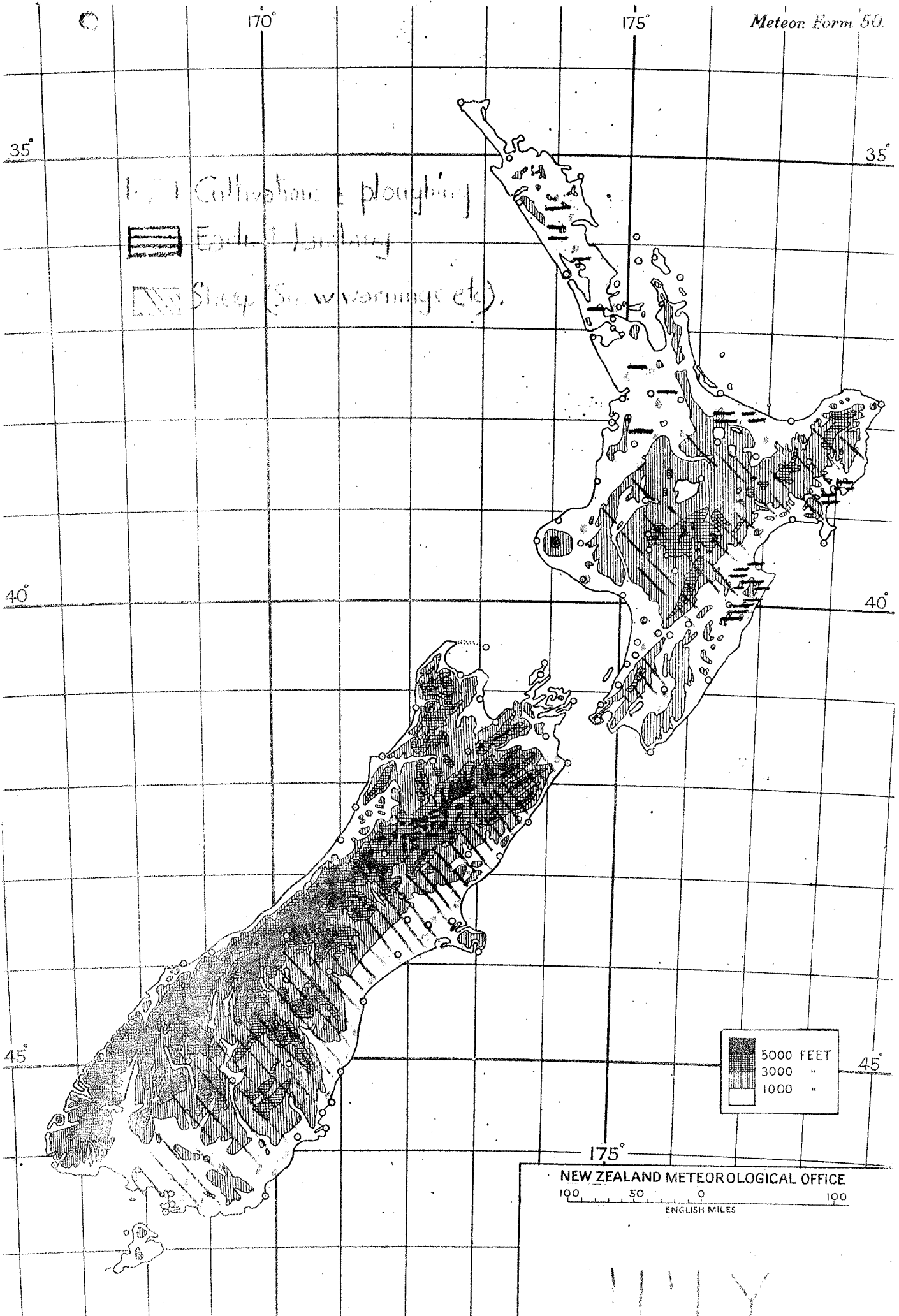


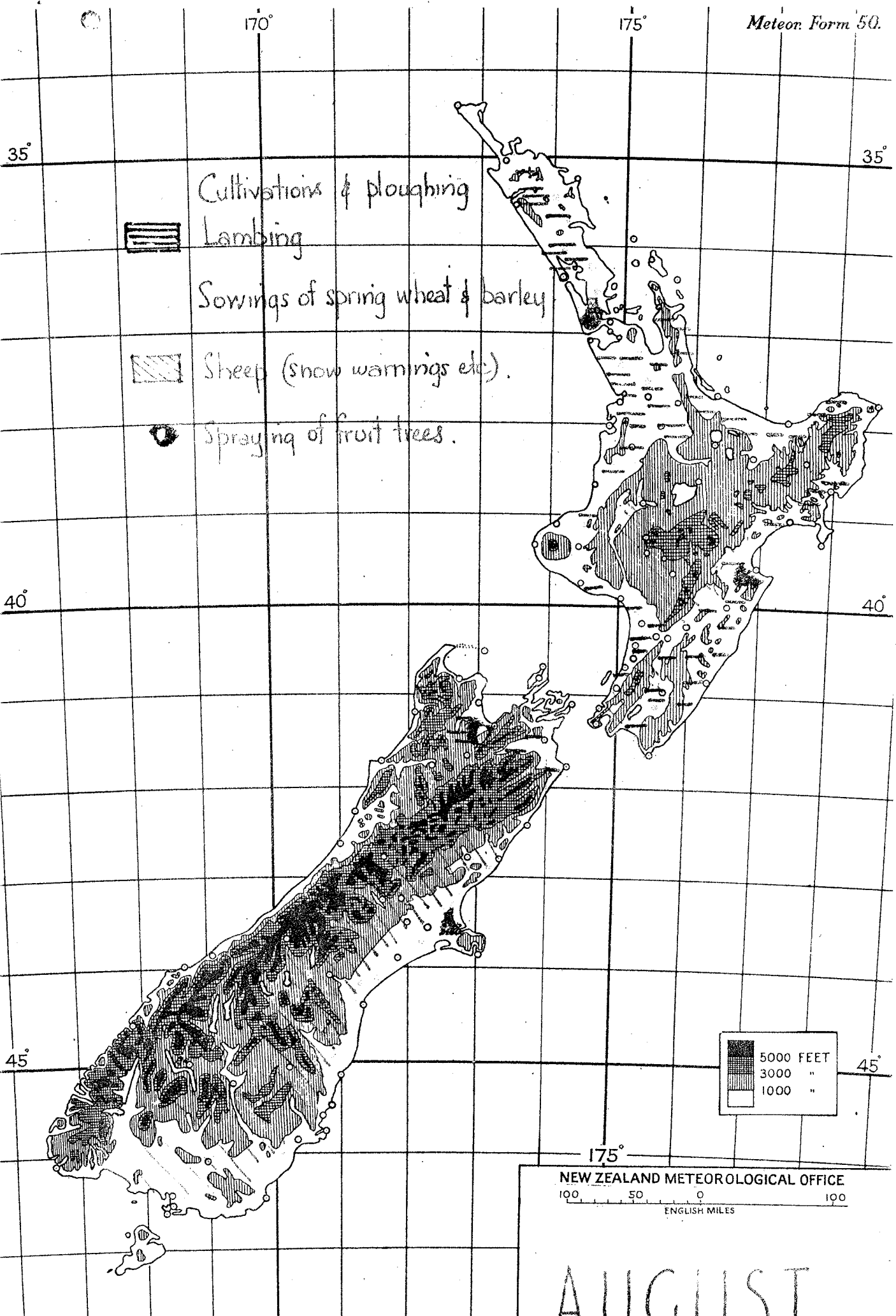
Sowings of Autumn wheat.  
 Cultivations & ploughings  
 Sheep (Snow warnings etc.)

5000 FEET  
 3000 "  
 1000 "

NEW ZEALAND METEOROLOGICAL OFFICE  
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Cultivations & ploughing



Lambing

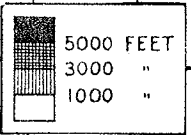
Sowings of spring wheat & barley



Sheep (snow warnings etc).



Spraying of fruit trees.



NEW ZEALAND METEOROLOGICAL OFFICE

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ENGLISH MILES

AUGUST

170°

175°

35°

35°

Cultivating & ploughing.

Lambing

Sowing spring cereals.

Sheep (now weanings etc).

Sowing for root & forage crops & spring grass.

Pruning of fruit trees.

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40°

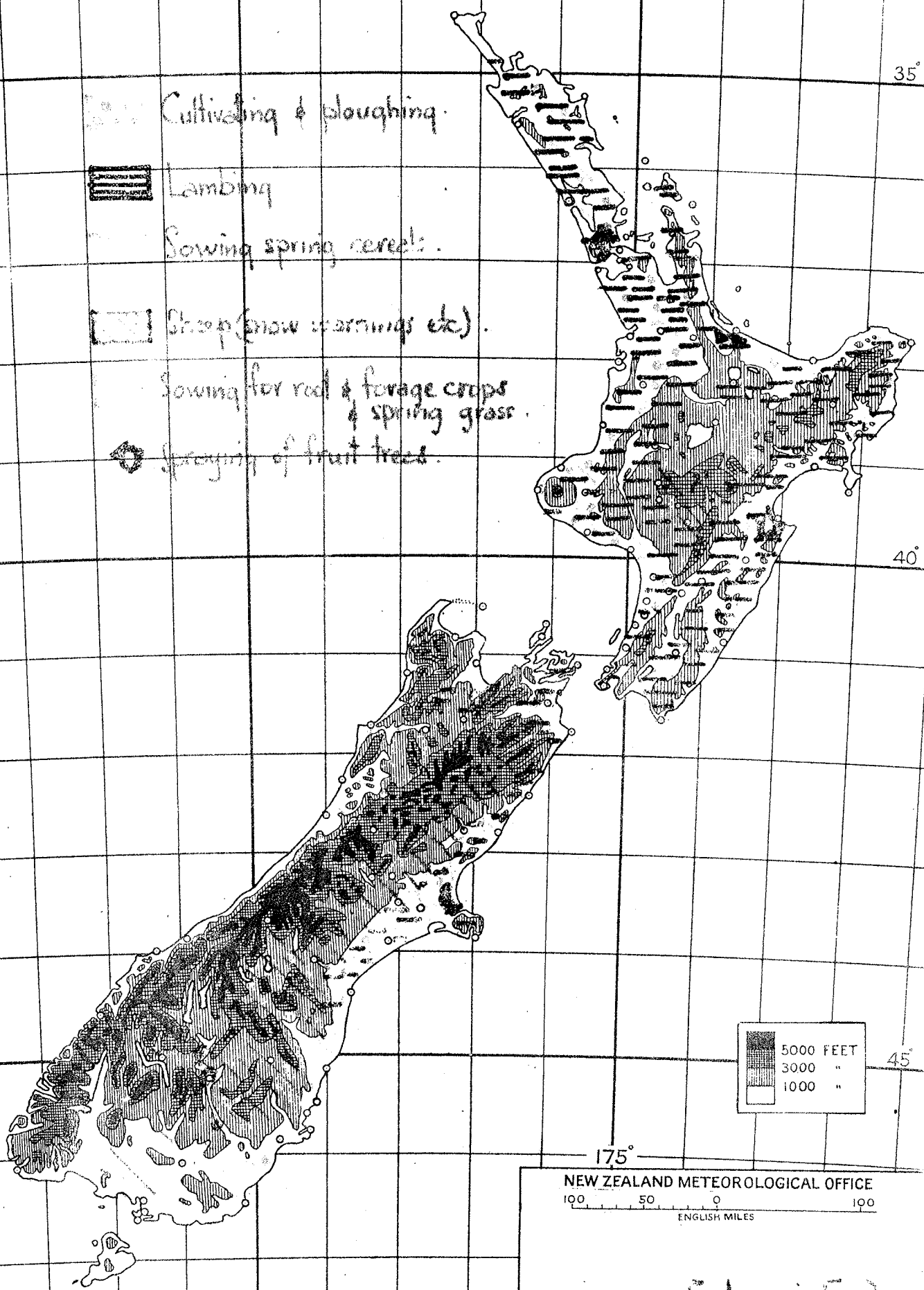
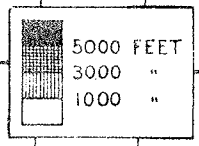
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NEW ZEALAND METEOROLOGICAL OFFICE

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Lambing

Sowing spring cereals & linen flax.

Sowing root & forage crops & spring grass.



Sheep (snow warnings etc)



Spraying & thinning fruit trees.

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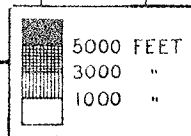
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NEW ZEALAND METEOROLOGICAL OFFICE

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ENGLISH MILES



OCTOBER



170°

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Lambing

Sowing spring cereals & linen flax

Sowing root & forage crops.



Shearing



Haymaking starts.



Spraying & thinning fruit.



Sheep (snow warnings etc).



Vegetables (late frost).

40°

40°

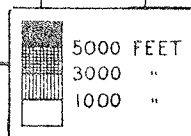
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NEW ZEALAND METEOROLOGICAL OFFICE

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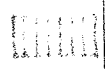
NOVEMBER

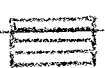
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 Shearing

 Haymaking

 Late lambing

Sowing root & forage crops.

 Vegetables (late frosts)

 Spraying: picking stone fruits

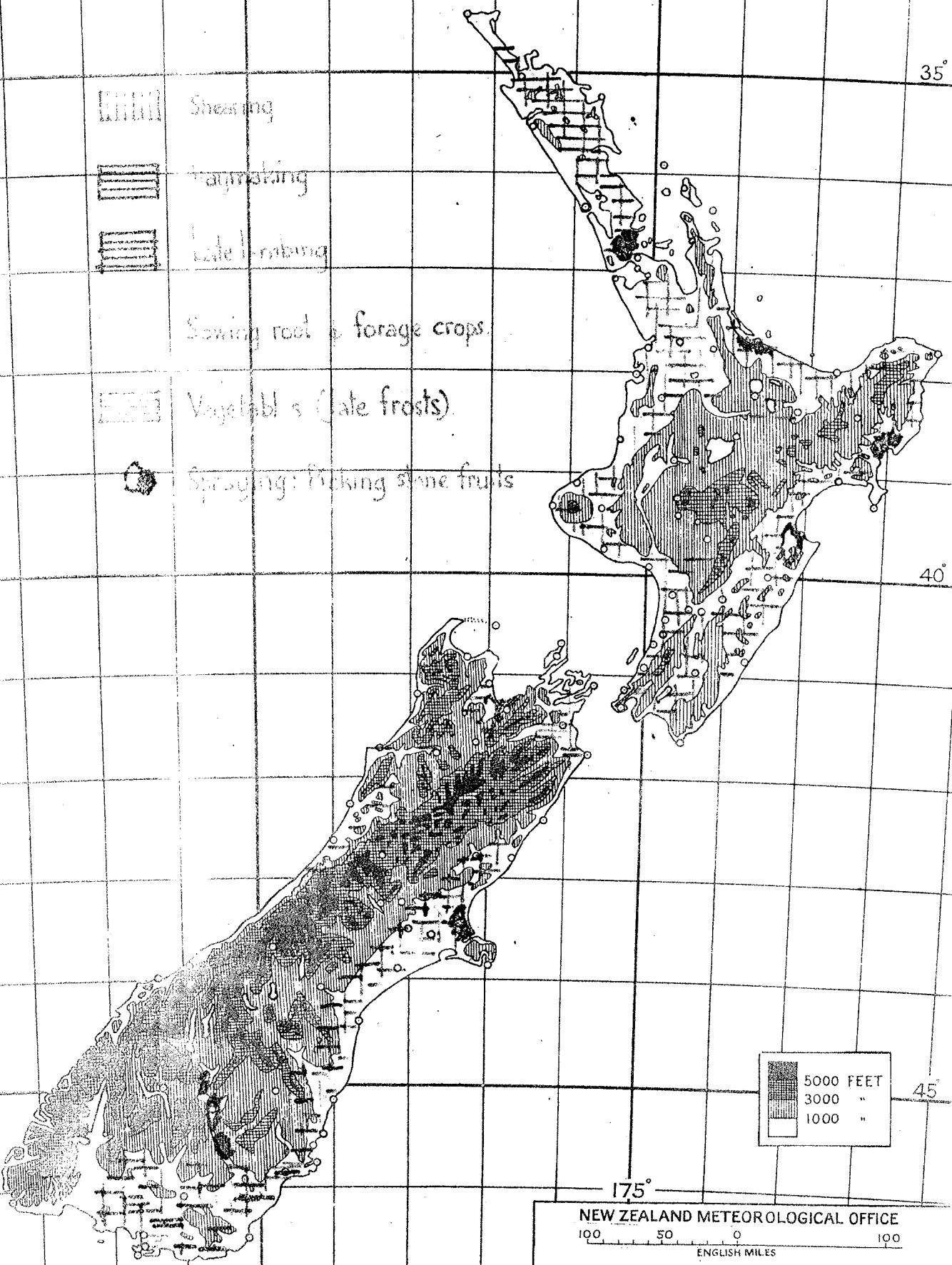
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NEW ZEALAND METEOROLOGICAL OFFICE

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ENGLISH MILES

# DECEMBER

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Meteor. Form 50.

# FARMING DISTRICTS

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NEW ZEALAND METEOROLOGICAL OFFICE

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ENGLISH MILES

