A PRELIMINARY ECONOMIC SURVEY OF THE CITRUS INDUSTRY IN NEW ZEALAND.

Vol. II.

Hamilton

PART VII. CITRUS COSTS.

CHAPTER XXIII. COST OF DEVELOPING A CITRUS ORCHARD.

It was found very difficult to get accurate figures of the cost of developing a citrus orchard and the costs incurred vary considerably according to the procedure adopted in establishment and the subsequent position of the owner. If the owner lives on the land and debits the whole of his time against the developing orchard during the early years, the cost may prove excessive. If, on the other hand, he is able to get cultivation and other orchard operations carried out by satisfactory contract labour, the cost will be considerably lower and the position is further complicated in this case by the fact that in the former instance the grower would require to incur considerable expenditure for the purchase of implements, etc. which would not be necessary if the latter policy is adopted.

It is quite apparent therefore that it is not possible to give a figure which can be truly representative of all conditions, but an attempt will be made to show such figures as were collected in two of the districts visited.

Citrus land varies considerably in price according to locality, its suitability for the purpose, and is also greatly influenced by the reputation of the district for citrus growing. Grass land at Taurange has sold at as high a price as £300 per acre for growing citrus, while equally suitable areas are available in other districts at only a fraction of the cost. Land at Keri Keri is available at £27.10.0 per acre, but prices vary widely, and as was shown on page 26, the question of transport charges must be a serious consideration in deciding the

value of any land for citrus growing, other factors being equal.

The following actual costs were obtained during the survey, -

EXAMPLE (a).

Cost of developing a young grove to one year of age under Tauranga conditions

7 acres of land in grass at £I00 per acre	£700. 0. 0
5 acres ploughed-August	4.I0. 0
5 acres double disced	I.I7. 6
360 trees	65. 0. 0
Planted 22' x 22' on square - average 2.4d per tree. 6 men at 8/- per day.	3.I2. 0
Cultivation September; January at I4/- per day, including team.	5.I2. 0
Cross-ploughed January and cultivated to remove twitch at I4/- per day, including team.	I6 . 0. 0
8 bushels Lupin seed at I5/-	6. 0. 0
Super. ½ ton, including freight.	2.I0. 0
Rates	2. I3. 0
TOTAL	£ 807.I4. 6

Cost per acre planted £202 (approx.)

EXAMPLE (b).

Analysed cost of planting citrus trees by one of the Citrus Companies.

Foreman:			
Setting out	I3¼ hours @ 2/6d.	£I.I3.I½	
Planting	II½ " " "	I. 8. 9	£3. I. I0½
Assistant A:			
Setting out	I3¼ hours @ I/7½	£I. I. 6	
Laying pegs	3 " " I/7½	4.I0½	
Planting	5¼ " " I/7½	8. 6½	I.I4. II
Assistant B:			
Planting	I4 hours @ I/6d.	£I. I. 0	
Tying trees	I½ hours @ I/6d.	2. 3	
Collecting pegs	½ Hr." "	9	~~I.I3. .8¼~~ 1.4. 0.

Assistant C:			
Laying pegs 4½ hours @	I/4½d.	6. 2¼	
Double pegging 8½ " "	I/4½d.	II. 8¼	
Planting II½ hours @	I/4½d.	I5. 9¼	I. I3. 8¼
Diggers:			
Heeling in 4 hours @	I/4½d.	5. 6	
Digging holes 58½" "	I/4½d.	£4.0. 5½	
Planting 36¾ hours "	I/4½d.	2.I0.6½	
Tying trees 3 " "	I/4½d.	4. I½	
Collecting pegs I hour "	I/4½d.	I. 4½	7. 2. 0
			£ I4.I6. 5¾

SUMMARY:

Setting out	£2.I4. 7½	
Laying pegs	II. 0¾	
Double pegging	II. 8¼	
Heeling in	5. 6	
Digging holes	4. 0. 5½	
Planting	6. 4. 7¾	
Tying trees	6. 4½	
Collecting pegs	2. I½	£I4.I6. 5¾

Total cost per tree - 7.II pence.

Over a total of 2,737 trees, the average cost of laying off the orchard in squares and planting the trees was 6.57d. per tree or roughly £2.I0. 0 per acre. This cost appears to the writer to be unduly high, but it is obtained from carefully analysed data and may be taken as being reliable but labour costs at the present time are probably lower than those shewn above.

In order to give an indication of the total cost of development to four years the following figures are submitted as being reasonable averages of the costs under New Zealand conditions, but they will vary widely according to different procedure, to locality and local differences in freight charges, labour costs, etc. It is assumed that the owner of the grove is not debiting his time and labour to the development of the orchard and the cost of cultivation, etc. is shown at ruling contract rates: average citrus soil, no stones to clear: land not fenced but in grass. An area of I0 acres is taken of which 2/3rd. is plantable, the balance being broken and unsuitable for citrus.

It is assumed that 6 acres is ploughable and planted in citrus, including the area in windbreaks and cross shelters: lemons being planted.

Ist. Year:

Land- I6 acres @ £30 per acre.		£300. 0. 0
Fencing - @ £I per chain		40. 0. 0
Temporary shelter		5. 0. 0
Permanent shelter		I6. 0. 0
Initial ploughing - 6 acres		6. 0. 0
Discing and cross-ploughing		7. 0. 0
Double-discing and harrowing		3. 0. 0
500 lemon trees @ £I5 per I00		75. 0. 0
Planting		I0. 0. 0
Manure - I ton		9. 0. 0
Lime - 2 tons per acre		I2. 0. 0
Rates		3. 0. 0
Incidentals		I4. 0. 0
		£ 500. 0. 0

2Nd. Year:

Brought forward:		£ 500. 0. 0
Interest @ 4½ %		22.I0. 0
Manure - I ton		9. 0. 0
Cultivation @ £6 per acre		36. 0. 0
Lupin seed - I0 bushels		7. 0. 0
Sowing		I0. 0
Cross shelter - Hakea saligna-trees at I5/- per I00	£3. 0. 0	
Planting	2. 0. 0	5. 0. 0
Rates		3. 0. 0
		£ 583. 0. 0

3Rd. Year:

Brought Forward:		£ 585. 0. 0
Interest on capital @ 4½%		26. 2. 0
Manure - I½ tons		I2. 0. 0
Cultivation		36. 0. 0
Lupin seed and planting		7.I0. 0
Spraying - Material	£2. 5. 0	
Applying	I. I0. 0	3. I5. 0
Rates		3. 0. 0
		67I. 7. 0
Deduct sale of lemons - I00 bushels betting 5/- per bushel		25. 0. 0
		£ 646. 7. 0

4th. Year:

Brought Forward:	£646. 7. 0
Interest on capital @ 4½%	29. 0. 0
Manure - 2 tons at £8.	16. 0. 0
Cultivation	36. 0. 0
Spraying - material and application	7. 5. 0
Lime - 10 cwt. per acre	3. 0. 0
Lupin seed and sowing	7.10. 0
Labour	50. 0. 0
Rates	3. 0. 0
	£ 798. 2. 0
Deduct sale of lemons - 300 bushels	75. 0. 0
TOTAL	£ 723. 2. 0

Total cost equals £120 per acre planted.

Such a policy of development is, however, not always feasible and in many cases the owner finds it necessary to live on his section during the development period. This increases costs by necessitating the erection of a dwelling house, which is, however, not directly a charge on the development of the area but means increased personal expense and if the owner's time is to be adequately utilised, such a procedure necessitates the purchase of implements and stock or tractor in order to permit the owner to carry out his own cultivation and other operations. The differences in expenditure incurred by such a method are shown in the following example, conditions being as in the preceding case, the only difference being that labour etc. is provided by the owner, his living expenses being debited at the rate of £100 per annum while the increased cost is largely due to capital expenditure on implements etc.

Owner occupying during developmental period.

- - - - - - - - - - - - - - - -

1st. Year:

Land - 10 acres.	£300. 0. 0
Implements - 8 h.p. Rotary Hoe £156.	
Hand tools 5	161. 0. 0
Small shed for manure and hoe	15. 0. 0
Rates	3. 0. 0
Living Expenses	100. 0. 0
Permanent shelter trees - 350 @ 75/-	13. 2. 6
Permanent cross shelters	3. 0. 0
Temporary shelter - seed	2. 0. 0
500 lemon trees @ £15 per 100	75. 0. 0
Manure - 1 ton	9. 0. 0
Lime - 2 tons per acre @ £1 per ton	12. 0. 0
Additional labour at planting	2. 0. 0
Benzine and Oil	2.10. 0
Depreciation on Implements @ 10%-	16. 0. 0
Incidental Expenses	10. 0. 0
	£ 723.12. 6

2nd. Year:

Brought Forward :	723.12. 6
Interest @ 4½% on capital	32.11. 0
Rates	3. 0. 0
Lupin seed	7.10. 0
Manure - 1 ton	9. 0. 0
Benzine and oil	3. 0. 0
Repairs	10. 0
Living expenses	100. 0. 0
Depreciation on implements	16. 0. 0
	£895.13. 6

3rd. Year:

Brought Forward:	£895.13. 6
Interest @ 4½% on capital	40. 5. 9
Rates	3. 0. 0
Manure - 1½ tons	12. 0. 0
Lupin seed	7.10. 0
Benzine and oil	3. 0. 0
Repairs	10. 0
Spray material	2. 5. 0
Spray attachments to Hoe	40. 0. 0
Depreciation on implements	16. 0. 0
Living Expenses	100. 0. 0
	£ 1 ,120. 4. 3
Less 100 Cases Lemons @ 6/-	30. 0. 0
	£ 1 ,090. 4. 3

4th. Year:

Brought Forward:	£I, 090.	4. 3
Interest on capital @ 4½%	49.	I. 0
Rates	3.	0. 0
Manure - 2 tons @ £8	I6.	0. 0
Lime - I0 cwt. per acre	3.	0. 0
Lupin seed	7.	0. 0
Benzine and oil	3.	I0. 0
Repairs		I5. 0
Spray material	4.	5. 0
Depreciation on implements	20.	0. 0
Living expenses	I00.	0. 0
	£ I, 296.	I5. 3
Deduct - sale 300 bushels Lemons @ 6/-	90.	0. 0
TOTAL	£ I,206 .	I5. 3

Total cost £20I per acre planted.

It is interesting to note that this method of development results in a higher per acre cost than where the work is done by contract, but the result is probably more satisfactory since as the old adage says "The eye of the master fattens his stock", while it must be remembered the owner is now in possession of considerable plant and equipment. It is considerably above estimates frequently given and no doubt above the cost of development of many sections under particular circumstances where the grower is able to devote part of his time to other activities, yet supply all the labour required in development, or is running a mixed farm and is able to utilise only such labour as may be required on the citrus area.

The estimated cost at Keri Keri as shown in pamphlet issued by the North Auckland Land Development Corportation is £725 for a 3-acre citrus plantation on a 6-acre block of land maintained to four years of age and interplanted with passion vines. Deducting the cost of the passion fcuit, this would leave a net cost of £605, i.e. approximately £200 per acre of which £I50 per acre is directly due to development expenses.

CHAPTER XXIV. PRODUCTION AND MARKETING COSTS.

A. Introductory.
B. Cash Maintenance Costs. (I) Fertiliser. (II) Spray Material (III) Insurance (IV) Benzene and Power. (v) Rates and Taxes. (VI) Contract Cultivation (VII) Sundry (VIII) Total costs.
C. Labour costs.
D. Depreciation on Building and Plant
E. Total costs of Maintenance, Labour and Depreciation.
F. Marketing Costs. (I) Cases (II) Packing Material (III) Freight (IV) Curing materials (v) Curing charges (VI) Commission (VII) Total Marketing Costs.
G. Total costs of Production and Marketing.
H. Comparison with costs in California.

A. INTRODUCTORY.

During the course of the survey, growers were asked for information regarding their costs of maintenance and marketing on as uniform a basis as possible. Only 22 of the 76 growers visited were able to supply sufficiently accurate information for purposes of analysis, and the results of analysing such data are given here.

In many cases, the costs quoted are probably not accurate as indicated by the large number given in whole numbers of pounds, but by taking an average of the figures they probably serve as a useful guide to probable costs during the 1934 season. The costs collected were separated into:

1. Cash maintenance costs;
2. Labour costs;
   (a) Wages actually paid.
   (b) Allowance for family labour.
3. Depreciation on buildings and equipment.
4. Marketing costs.

As in most cost accounting surveys, numerous difficulties were found in interpretation and application of the figures given and numerous arbitrary decisions had to be made as to the proportion of certain costs that could be charged to the production of citrus fruits on any given

farm. In no cases were accurate labour sheets available, and hence it was not possible to separate labour used in production of maintenance of the grove from labour used in picking or marketing of the produce, hence labour is shown as a separate charge. Also, where more than one line of production was followed, it was found necessary to apportion labour costs on a basis of the gross returns received from each farm enterprise. Similarly with rates, taxes and depreciation. While from the point of view of assessing the relative profitableness of citrus growing as compared with other branches of primary production, it might have been desirable to include interest on capital as a charge, there was no basis on which this could be safely done, unless during the survey and valuation had been made of the property and such a value used as the basis for assessing interest.

In view of the difficulties of making such a basis uniform throughout the industry, it was felt that it was more desirable to show the surplus available for paying interest, rather than to attempt to assess by arbitrary means the interest payable on capital invested. These difficulties will, however, be more fully discussed under their appropriate headings.

B. CASH MAINTENANCE COSTS.

The term "Cash maintenance costs" has been used to cover the cost of fertiliser, sprays, insurance on buildings or labour, benzine and power, repairs, rates and taxes, contract cultivation or spraying and sundry expenses. These are the costs exclusive of labour, necessary to maintain a grove in production, and the costs collected from various citrus growers are shown in Table XXXVII under their respective headings. These costs are analysed on a per case and a per tree basis in Table XXXVIII, while the average over the whole group taken are shown in Table XXXIX, on a

TABLE XXXVII.

CASH MAINTENANCE COSTS OF 22 GROVES VISITED FOR THE YEAR, 1934.

Grove No.	Fertiliser.	Sprays.	Insurance.	Benzine & Power	Repairs.	Rates & Taxes.	Contract cultivation or spraying.	Sundry	Total production costs, exclusive of labour, depreciation and interest on capital.
4	£8.00	£4.00	£0.00	£2.00	£0.00	£12.57	£0.00	£0.00	£26.57
5	50.00	38.00	8.52	5.10	16.00	12.00	0.00	18.50	148.12
7	20.55	7.00	0.00	4.90	0.00	0.75	6.00	4.90	44.10
8	85.00	28.00	0.00	11.00	0.00	2.80	0.00	4.50	131.30
9	45.00	45.00	10.00	75.00	50.00	21.60	0.00	0.00	246.60
10	15.25	25.00	1.50	1.50	2.00	7.00	0.00	0.00	52.25
14	8.00	6.00	3.00	10.00	0.00	15.00	0.00	2.00	44.00
17	9.00	5.85	0.00	23.00	0.00	30.00	12.80	0.00	80.65
19	11.00	4.17	3.37	15.30	2.00	5.00	0.00	0.00	40.94
21	25.82	4.93	3.12	20.85	7.375	16.31	0.00	9.85	88.25
22	28.00	15.00	0.00	0.00	0.00	16.00	0.00	0.00	59.00
24	15.00	0.00	0.50	0.00	0.00	9.00	8.00	0.00	32.50
26	43.00	6.50	1.10	2.50	10.00	14.00	17.00	8.00	102.10
27	7.95	0.80	0.92	7.60	0.15	11.55	2.75	0.00	31.72
36	19.00	0.00	0.00	0.00	0.00	14.50	1.20	0.00	34.70
37	6.00	0.50	0.00	0.00	0.00	2.37	10.00	0.00	18.87
45	30.00	5.00	0.00	1.12	0.00	2.65	60.00	0.00	98.77
48	55.00	8.00	9.60	14.50	0.00	3.50	0.00	10.00	100.60
49	7.50	2.00	0.00	0.00	0.00	2.40	5.00	0.00	16.90
50	16.00	28.00	2.00	2.00	3.00	5.76	0.00	0.00	56.76
51	15.00	00.00	0.50	5.00	0.00	6.00	0.00	0.00	26.50
57	38.85	2.20	3.90	0.00	0.00	0.62	0.00	12.00	57.57
	£558.89	£235.95	£48.93	£201.37	£90.52	£211.38	£122.75	£69.75	£1538.77
	36.3%	15.3%	3.1%	13.0%	5.9%	13.7%	8.0%	4.5%	99.8%

Average cost per case 14.53d.
Average cost per tree 26.25d.

If the young groves Nos.7, 37, 45, 48 and 49 be excluded from the analysis the total costs become £1,259.53 spread over 24,131 c/s and 10,795 trees.

Average cost per case 12.52d.
" " " tree 28.0d.

TABLE. XXXVIII.

GROVE MAINTENANCE COSTS PER CASE and PER TREE (in pence)
for 1934 of 22 citrus groves visited during the Survey;
14,060 trees, 25,407 bushel cases produced.

Grove No.	Fertiliser		Sprays		Insurance		Benzine and Power:		Repairs:		Rates and Taxes:		Contract Cultivation or Spraying		Sundry		Total excl of Depreciation		Production No. Trees:	
	Per		Per		Per		Per		Per		Per		Per		Per		Per		Bushel	
	Case	Tree	Case	Tree	Case	Tree	Case	Tree	Case	Tree	Case	Tree	Case	Tree	Case	Tree	Case	Tree	Cases:	Trees:
4	9.6	7.8	4.8	3.9	-	-	2.4	1.9	-	-	15.0	12.3	-	-	-	-	31.8	25.9	200	244
5	3.6	14.1	2.7	10.7	0.6	2.4	0.4	1.4	1.1	4.5	0.8	3.4	-	-	1.3	5.2	10.5	41.7	3,350	850.
7	37.9	18.6	12.9	6.4	-	-	9.0	4.4	-	-	1.4	0.7	11.0	5.4	9.0	4.4	81.2	39.9	130	264.
8	10.6	16.6	3.5	5.5	-	-	1.4	2.1	-	-	0.3	0.5	-	-	0.5	0.9	16.4	25.6	1,911	1, 225
9	1.9	5.9	1.9	5.9	0.4	1.3	3.2	9.8	2.1	6.6	0.9	2.8	-	-	-	-	10.4	32.3	5,620	1, 820.
10	1.2	6.6	2.0	10.8	0.1	0.6	0.1	0.6	0.2	0.8	0.5	3.0	-	-	-	-	4.1	22.4	2,977	553.
14	2.8	7.0	2.1	5.2	1.1	2.6	3.6	8.8	-	-	5.4	13.2	-	-	0.7	1.7	15.7	38.5	665	272
17	3.2	3.4	2.0	2. 2	-	-	8.2	8.6	-	-	10.7	11.3	4.6	4.8	-	-	28.7	30.3	670	635.
19	3.2	6.7	1.2	2.6	1.0	2.0	4.6	9.6	0.6	1.2	1.5	3.0	-	-	-	-	22.1	25.1	797	389.
21	7.7	17.2	1.3	3.0	0.9	2.1	6.2	14.2	2.2	5.0	4.9	11.1	-	-	2.9	6.7	26.1	59.3	795	351
22	4.9	7.2	2.6	3.9	-	-	-	-	-	-	2.8	4.1	-	-	-	-	10.3	15.2	1,360	923.
24	12.0	10.0	-	-	0.4	0.3	-	-	-	-	7.0	6.1	6.4	5.4	-	-	25.8	21.8	300	352.
26	5.4	11.9	0.8	1.8	0.1	0.3	0.3	0.7	1.2	2. 7	1.7	3.8	2.1	4.7	1.0	2.2	12.6	28.1	1,892	862.
27	9.0	3.3	0.9	0.3	1.0	0.4	8.6	3.1	-	-	13.6	4.9	3.0	1.1	-	-	36.1	13.1	210	576
30	4.1	13.0	-	-	-	-	-	-	-	-	3.1	9.9	0.3	0.8	-	-	7.5	23.7	1,100	350
37	-	2.6	-	0.2									-	4.3				7.1		546
45	17.1	7.9	2.8	1.3	-	-	0.6	0.3	-	-	1.5	0.7	34.2	15.8			56.2	26.0	420	906
48	18.1	19.7	2.6	1.4	3.2	1.7	4.8	2.6	-	-	1.1	0.6	-	-	3.3	1.7	33.1	17.7	726	1,348
49	-	9.0	-	2.4	-	-	-	-	-	-	-	2.8	-	6.0	-	-	-	20.2		201.
50	5.5	6.4	9.6	11.2	0.7	0.8	0.7	0.8	1.0	1.2	0.3	0.3	-	-	-	-	18.5	20.7	700	600
51	5.4	12.0	-	-	0.2	0.4	1.8	4.0	-	-	0.5	1.2	-	-	-	-	7.9	17.6	660	300
57	10.0	18.9	0.6	1.1	1.0	1.9	-	-	-	-	0.2	0.3	-	-	3.1	5.8	14.9	28.0	924	493
Av.	5.27	9.54	2.23	4.02	0.46	0.83	1.90	3.43	0.85	1.54	1.99	3.60	1.15	2.09	0.66	1.19	14.51	26.24	1154	639.

per case, per tree and per acre basis, the "per acre" costs being assessed on an arbitrary basis of I00 trees per acre.

T A B L E XXXIX.

Average cash maintenance costs, exclusive of labour, in 22 citrus Groves visited during the Survey, I934.

Average cost of:	Per case (pence)	Per tree (pence)	Per acre of I00 trees
Fertiliser	5.27	9.54	£3.I9. 6
Spraying material	2.23	4.02	£I.I3. 6
Rates and taxes..	I.99	3.60	£I.I0. 0
Benzine and Power.. ..	I.90	3.43	£I. 8. 7
Contract cultivation and spraying ..	I.I5	2.09	I7. 5
Repairs	0.85	I.54	I2.I0
Sundry expenses	0.66	I.I9	9.II
Insurance (labour & Bldgs.)	0.46	0.83	6.II
Total	I4.5Id.	26.24d.	£I0.I8. 8

Average number of trees in groves listed in above table 639

Average production per grove in bushels in above table I,I54.

(I) Fertiliser is one of the principal costs of maintenance, representing 36.3 per cent of the average total maintenance cost. The amount spent varies widely per grove, when analysed on a per tree or a per case basis. One difficulty, however, in analysing costs on a per tree basis, was that practically all the groves visited consisted of trees of varying ages; in many cases a proportion of the trees being not yet in bearing. It was quite impossible to separate fertiliser costs on these young trees from the cost of applying the fertiliser to the bearing trees, and consequently the fertiliser costs as shown for individual groves represent an average cost over both bearing and non-bearing trees, i.e. in the case of Grove No. 8, there are 375 bearing trees and 848 non-bearing trees. In Grove No. 57 there are 296 bearing trees, I97 non-bearing trees. It was not possible to give costs, only from Groves where the trees were of uniform age, or the number available for analysis

would have been so small as to render the figures of little value. The older the tree, the heavier tends to be the manuring, and hence the costs given per tree cannot always be taken as indicative of the efficiency or otherwise or a growers' manurial policy. A low cost per tree may indicate that a large proportion of the trees are still young and Table XXXVIII should be read in conjunction with Appendix III in order to form a reliable conclusion as to a growers' policy in respect of fertilising.

In respect of per case costs, these again are greatly influenced by the production per tree and this in part by the age of the trees, hence in a young grove per case costs for fertilisation will, on the average, tend to be much higher than in the case of older groves, e.g. Groves No. 7, 45, 48, while in some of the old mature Groves, costs per case for fertiliser are remarkably low, e.g. Grove No. IO.

(II) Spraying material is the second most important item of expenditure under this heading, representing I5.3 per cent of the total expenditure. Here again the same difficulty arises in respect of the admixture of non-bearing and bearing trees and high per tree costs, e.g. Groves Nos. 5 and IO may be merely an indication of mature trees, having a large surface area to be treated with material, or low costs may be due to the fact that groves are being neglected in this respect, or that the area is relatively free of the diseases and pests which ordinarily demand attention in the citrus orchard, hence each individaal case has to be viewed in the light of particular circumstances, also since no growers made an inventory of materials carried over from the preceding year, the costs shown represent cash purchases during the year under review irrespective of whether part of those purchases was not

used during the current season, or whether the amount purchased had been supplemented by material paid for during the preceding year. Since the costs also cover all types of trees, lemons, grape fruit and sweet oranges, the costs are merely an average. Sweet oranges require less spraying than lemon trees, but it was not possible to separate the amounts applied in each case.

(III) The insurance of buildings (exclusive of house) and labour occupy a minor place in the costs of most growers. Where no labour is employed, family labour is frequently not covered by insurance, and in many cases the insurance on buildings was very small - the total average costs representing only 3.I per cent of the total maintenance costs.

(IV) Benzine and power is a more important item of expenditure, representing on the average I3 per cent of the total maintenance costs. Under this heading is included benzine used for driving a tractor for cultivating or hauling in the orchard, benzine used in the engine of a Power Sprayer, for driving machinery in a packing shed, or for pumping water for farm purposes, while "power" covers the supply of electricity to a pumping plant or a packing shed. Benzine used in running a car, or power used in the owner's dwelling are not included as orchard costs. It may be pointed out at this juncture that the owners of tractors are perhaps shown somewhat unfavourably by this analysis, since no charges are included in the table to cover the cost of maintaining or feeding horses used in the orchard. The introduction of such a charge would have presented considerable difficulty. In most cases where horses were in use, the citrus was only one department of a mixed farm and it was difficult to asses what proportion of the cost of maintaining a team should be borne by the citrus department of a farm. In some cases 3 horses were

in use, since these were required for general farm work, but had the venture been a merely citrus one, probably 2 would have sufficed while horses were sometimes grazed as "followers" to a dairy herd and it was only possible to assess the value of their grazing by many arbitrary decisions. It was therefore felt preferable to disregard this cost since its inclusion seemed subject to many errors.

(V) Rates and taxes represent one of the most important charges on the average citrus holding. Since few growers devote the whole of their holding to the growing of citrus, the total rates on the area were divided between the various farm departments, in proportion to the area used for each purpose, since most counties levy rates on the basis of the "unimproved value " of the property. In some cases, however, where growers held a considerable portion of land, part of which was of such a nature that it could not be utilised, the remainder being in citrus, the whole of the rates had to be charged against the orchard. In the case of Groves Nos. I4, I7, 2I and 22, these were within City boundaries; hence their rates are heavier than with most of the other properties.

(VI) Contract cultivation. In some districts considerable reliance is placed on contract cultivation and spraying, contractors undertaking to keep a specified area cultivated throughout the season, for a charge of approximately £6 per acre, or undertake spraying by the hour, supplying the spray rig, horses and labour but not the material. Since the practice is a somewhat local one, no charges are shewn under this heading in many cases.

(VII) Sundry. Under the heading of sundry are given charges such as share of telephone, stationery, correspondence and minor charges not included under the other headings. In many cases growers were not able to give

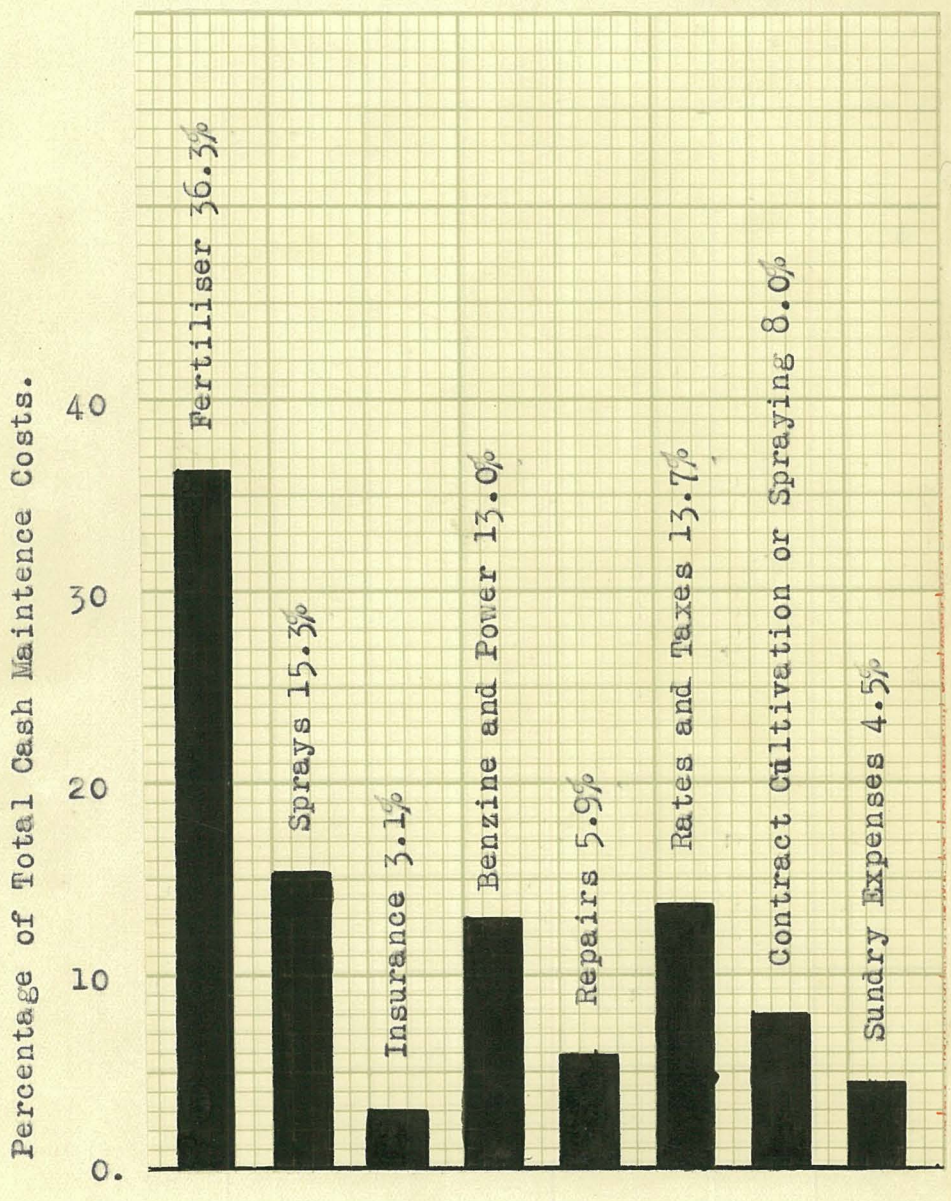
an accurate indication of the total which should have been included under this heading and in such cases the figures are omitted. The average cost under the heading "Sundry" is therefore shown as being lower, than is probably the case in actual fact.

(VIII) The total costs of maintenance show a remarkable variation, both on a per tree and a per case basis. The lowest per tree cost shown in Table XXXVIII is 7.1 pence per tree, this being in a young Grove. The lowest cost shown in a full-bearing Grove is in the vicinity of 20 pence per tree, while the highest cost is 59.3 pence per tree, being a mixed Grove of 12 to 15 years of age. The total average cost of maintenance over the whole group is 14.51 pence per case, 26.24 pence per tree or the equivalent of £10.18.8 per acre of 100 trees; (percentage distribution of costs is shown graphically in Fig. XI; see also Table XXXIX.) The average is taken over a total of 14,016 trees producing 25,417 bushel cases of fruit. This gives am average production per tree of only 1.8 bushel cases per tree, the low average production being due to the admixture of a high proportion of non-bearing trees.

If the young Groves Nos. 7,37,45,48 and 49 are excluded from the analysis, the average production per tree is increased to 2.2 bushels, while the average cost per case becomes 12.52 pence and the average cost per tree 28.0 pence. Were it possible to separate the cost of maintaining mature trees, it is probable that the average cost per case would show a still further reduction and the average cost per tree a still greater increase. The averages as given have, therefore, to be accepted with certain reservations.

F I G U R E XI.

Shewing the Percentage Distribution of Cash Maintenance Costs, Exclusive of Labour, in 22 Groves Visited during the Survey, 1934. Average taken over 14,060 Trees.



C. LABOUR COSTS.

More difficulty was experienced in apportioning labour costs than with any other single factor in the analysis. In the case of wages actually paid (shown in Table XL) where there are other sources of income besides citrus, labour costs have been distributed on the basis of gross returns received from the various farm departments, only the fraction debited to citrus being shown in the Table.

T A B L E XL.

Labour costs in 22 Citrus Groves visited during the Survey.

LABOUR.

	WAGES PAID.		ALLOWANCE FAMILY LABOUR.		TOTAL.	
4	£0.00		£I00		£I00	
5	300.00		200		500	
7	50.00	x	75	x	I25	x
8	80.00		200		280	
9	250.00	x	I50	x	400	x
I0	80.00	x	0		80	
I4	44.00	x	33	x	77	x
I7	0.00		I50	x	I50	x
I9	I20.I2		0		I20	
2I	II.00		I00		III	
22	I50.00	x	75		225	x
24	0.00		I00		I00	
26	40.00	x	60	x	I00	x
27	6.00		50	x	56	x
30	0.00		I00		I00	
37	3I.80		I00		I3I	
45	0.00		I00		I00	
48	I00.00	x	80	x	I80	
49	0.00		I50	x	I50	x
50	0.00		60	x	60	x
5I	23.00		40	x	63	x
57	I.60		I00		I0I	
	£ I287.52		£ 2023		£ 3,309	

x An allowance for family labour is made on the basis of £I00 for a male labour unit and £75 for a female. Where there are other sources of income besides citrus, labour costs have been distributed on the basis of gross returns received from the various farm departments, only the fraction debited to citrus being shewn in the Table.

Division of labour costs on this basis, is certainly open to question and its only defence is that it is a nearer approximation than making no allowance at all. To be accurate it would be necessary for the grower to keep an accurate Labour Sheet, showing the disposal of the farm labour each day as illustrated in Appendix IV. Such is not, however, done and in consequence the arbitrary basis outlined has been followed. No allowance has been made for the keep of employees, since the quality of this varies considerably and part of the labour costs shown may be with casual day labour, in which case no allowance could be made and this Table must therefore be taken as showing actually Cash Labour costs. If allowance were made for "keep" the costs would be higher than those shown.

In the case of family labour, an allowance of £100 per year was made for each male labour unit over 18 years of age employed full-time on the farm, and £75 per year for each female employed full-time. As in the case of hired labour, an allowance was made where family labour was not employed full-time on citrus (see Table XL).

In Table XLI these costs are shown analysed on a per case and a per tree basis and are subject to the same limitations as have been discussed under maintenance costs.

T A B L E XLI.

Labour costs, per case, per tree and per acre (1934) in 22 citrus groves visited during the Survey.

Grove No.	Wages Paid per case	Wages Paid per tree x	Family y per case	Family y per tree	Total. per case	Total. per tree	Total. per acre
4	...	...	10/-	8/2	10/-	8/2	£41
5	1/9	7/1	1/2	4/8	3/-	11/9	£58
7	7/8	3/9	11/6	6/0	19/2	9/9	£48
8	-/10	1/4	2/1	3/3	2/11	4/7	£23
9	-/10	2/9	-/6	1/8	1/4	4/5	£22
10	-/6	2/10	...	...	-/6	2/10	£14
14	1/4	3/2	1/-	2/5	2/4	5/7	£28
17	..	..	2/3	2/4	2/3	2/4	£12
19	3/-	6/2	..	..	3/-	6/2	£31
21	-/3	-/7	2/6	5/8	2/9	6/3	£31
22	2/2	3/3	1/1	1/7	3/3	4/10	£24
24	...	...	6/8	5/8	6/8	5/8	£28
26	-/5	/11	/7	1/5	1/-	2/4	£11
27	6/8	2	4/9	1/8	5/4	1/10	£ 9
30	...	...	1/10	5/8	1/10	5/8	£28
37	...	1/2	...	3/8	...	4/10	£24
45	...	...	4/9	2/2	4/9	2/2	£11
48	2/9	1/5	2/2	1/2	4/11	2/7	£13
49	....	....	...	14/11	...	14/11	£74
50	...	...	1/8	2/-	1/8	2/-	£10
51	-/½	-/½	2/2	4/-	2/3	4/1	£20

x Wages actually paid - no allowance for board or keep employees.

y Family labour allowed on basis of £100 per year for a male labour unit and £75 per year for a female.

In some cases, the citrus orchard is run entirely by family labour, while in other cases, e.g. Grove No. 10 it is run entirely by hired labour. The cost of labour per tree, in what may be considered to be well managed Groves approximates to 4/- per tree, although in one or two outstanding cases, e.g. No. 26 the cost is considerably lower. The average cost of labour per acre of 100 trees is £23.11.1 or 4/8½d. per tree.

In Groves where the costs are higher than those quoted, it is usually due to the uneconomical size of the Grove compared with the size of the labour unit available for working it. Under ordinary methods of management, with suitable equipment etc. for tillage, it should be possible for one man to look after 4 to 5 acres of citrus orchard, although the labour demand would be higher in the case of a lemon grove than in the case of oranges, since picking and pruning demand extra labour in the former case.

The efficient utilisation of labour in citrus groves appears to afford the greatest possibilities of increasing efficiency, and in planting further areas growers should endeavour to approximate to an area which will utilise one whole labour unit or some multiple of labour units. The position is, of course, complicated by the fact that the labour demand will increase with increasing age of the trees and as the trees near maturity it may be necessary to hire casual labour for picking. This is one argument in favour of the Californian practice of having picking gangs employed by the Central Curing Shed, since in this case, groves can be made to more nearly approximate to the most economical size in respect of the utilisation of labour.

Apart from marketing, labour represents the biggest single cost contributing to the cost of production but further studies are required in other years and over a wider group of growers, before the most economical size of grove in relation to the size of available labour unit can be definitely stated.

The suggested size for one labour unit given above must be taken as a purely tentative figure subject to revision by more extended study of the problem.

D. DEPRECIATION OF BUILDINGS AND PLANT.

During visits paid to groves the "replacement value" of buildings and plant was estimated on as uniform a basis as possible, the result being shown in Table XLII.

T A B L E XLII.

Estimated total Replacement value of Buildings and Plant of 22 groves visited during the Survey and depreciation calculated at 3% on buildings and 5% on plant and equipment.

GROVE NO.	ESTIMATED REPLACEMENT VALUE.		DEPRECIATION.		
	Buildings	Plant	3% Buildings	5% Plant	Total.
4	£40	£66.75	£I.2	£3.33	£4.53
5	200	226.75	6.0	II.33	I7.33
7	0	I53.00	0.0	7.65	7.65
8	60	208.25	I.8	I0.4I	I2.2I
9	30	908.00 x	0.9	40.00	40.90 x
I0	20	I25.4I	0.6	I0.26	I0.86
I4	60	205.00 x	I.8	5.00	6.80 x
I7	25	373.00 x	0.75	II.50	I2.25 x
I9	4I6 x	795.00 x	4.2	I3.oo	I7.20 x
2I	40	444.00	I.2	22.20	23.40
22	40	47.75	I.2	2.36	3.56
24	I0	5.00	0.3	0.25	0.55
26	I0	206.00 x	0.3	7.00	7.30 x
27	I50	I6I.00	4.5	8.05	I2.55
30	40	88.75	I.2	4.43	5.63
37	20	5.00	0.6	0.25	0.85
45	20	I65.00	0.6	8.25	8.85
48	200	7I5.00	6.0	35.75	4I.75
49	0	5.00	0.0	0.I5	0.I5
50	I60	20I.00	4.8	I0.05	I4.85
5I	50	3I.75	I.5	I.58	3.08
57	30	II4.00	0.9	5.70	6.60
	£ I6I5	£5249.66	£40.3	£2I8.50	£258.87

x Total estimated replacement value shewn, but since other farm departments also using either buildings or plant only a proportion of depreciation, based on relative gross returns, has been debited to citrus.

The replacement value was adopted rather than the depreciated value since many farmers were unable to give accurate information in respect of the age of the buildings or their initial cost and in forming an indication of the capital invested, it was felt that the new value of buildings

and plant was a better indication of the capital required than was the depreciated value. Where other farm departments were also using either the buildings or the plant, the total replacement value has been shown but only a proportion of depreciation based on the relative gross returns of the various Departments has been debited to citrus. Depreciation has been allowed at low rates of 3% for buildings and 5% for plant. This may be criticised as being too low a value to allow for depreciation, particularly on plant but was adopted because : (a) the average grower continues to use plant after it would ordinarily be written off by straight-line depreciation at the usual rates adopted; (b) none of the growers visited consider depreciation as a cost in their ordinary accounting and some dissatisfaction was expressed at the suggested policy of including such a charge as a cost against the orchard. It was therefore based on a low figure in an attempt to meet both of these possible criticisms.

In Table XLIII the estimated replacement value and depreciation on buildings and plant are shown at a per tree, and a per acre basis for the 22 groves visited during the survey. These show wide variation from grove to grove. In some cases, e.g. No. 7 No. 49, there were no buildings in use in connection with the orchard, all fruit being shipped direct to the Central Curing House. In other cases e.g. No. 5, 19 and 27 the estimated replacement value is as high as £36 per acre, or 7/2d. per tree, although it must be added that in the case of No. 19 this includes the cost of a manager's residence.

In the case of equipment and plant the variation is even wider. The minimum amount of plant, No. 24, being only 3d. per tree or £1.8.0 per acre, while in the case of No. 21 the estimated replacement value of plant is as high as 25/3d. per tree, due to the use of a costly tractor and

equipment on a relatively small area. In all cases where a tractor was in use, the capitalisation per acre was considerably higher than where horses and horse equipment were in use, although this makes no allowance for the value of horses used for cultivation or for other purposes. The comparison is not, therefore, entirely valid. (See pages I82-I83 for discussion).

It would appear on the evidence submitted that there is a grave danger on small areas of over-capitalising in the purchase of plant and equipment with consequent high overhead cost per case and per tree. Where the area under citrus is larger, the adoption of labour saving machinery and equipment may be justified and may through a reduction in labour costs, tend in the long run to lower costs, but considerable care is necessary in order to secure maximum efficiency in the use of up-to-date equipment.

In the case of some groves, therefore, even after making for allowance for the use of plant in other farm departments, depreciation figures as a heavy cost, rising in the case of No. 48 to 25 pence per tree or £I0 per acre, while in other cases, in Nos. I9 and 2I the costs are £4.42 and £6.52 respectively. Such equipment is not necessary for the efficient running of a citrus orchard, and has in these cases not been justified by the saving in labour costs, since many efficient groves such as No. 8 and I0 have costs for depreciation of only £I to £I.5/- per acre. Growers considering the purchase of "up-to-date equipment" should therefore give the matter very serious consideration before embarking upon such a policy.

In certain cases where land is not available for the grazing of animals and the utilisation of horses would entail the purchase of feeding stuffs, it may be preferable or necessary to incur larger overheads by the purchase of a tractor or rotary hoe, but where the area is

available for grazing horses, the purchase of expensive equipment is open to question unless the area under cultivation is considerable, so that the per tree or the per case costs may not become a burden on the enterprise.

The average costs of depreciation per case over the group was 2½d, per tree 4½d, and per acre £I.I6.I0. It is not, therefore, on the average, a heavy charge against production but may become so in individual cases i if a small area is over-capitalised with expensive equipment.

T A B L E XLIII.

Estimated replacement value of buildings and plant per tree, and per acre, and depreciationper case, per tree and per acre on 22 citrus groves visited during the survey.

Grove No.	Est. Replacement Value				Depreciation.		
	Buildings		Plant		Per case	Per tree	Per acre
	Per tree	Per acre	Per tree	Per acre			
4	3/3	£I6	5/5	£27	5.4	4.5	£I.87
5	4/8	£23	5/4	£26	I.2	4.9	2.04
7	..	..	II/7	£58	I4.I	6.9	2.87
8	I/-	£ 5	3/4	£I6	I.5	2.4	I.00
9	-/4	I.6	8/9	£44	I.7	5.4	2.25
I0	-/9	3.6	4/6	£22	0.5	3.0	I.25
I4	4/5	£22	7/5	£37	2.4	6.0	2.50
I7	-/9	3.6	II/9	£58	4.4	4.6	I.9o
I9	7/2	£36	I3/4	£67	5.2	I0.6	4.42
2I	2 /3	£II	25/3	£26	7.0	I6.0	6.65
22	-/I0	4	I/-	5	0.6	0.9	0.37
24	-/6	2.8	-/3	I.4	0.4	0.3	0.I2
26	-/3	I.2	4/9	£24	0.9	2.0	0.83
27	5/2	£26	5/7	£28	50.4	I8.3	7.62
30	2/3	£II	5/I	£25	I.2	3.8	I.60
37	-/9	3.6	5/I0	£29	..	7.4	3.08
45	-/5	2.2	3/9	£I9	5.0	2.3	0.95
48	2/II	£I5	I0/7	£53	46.9	25.I	Io.45
49	..	..	-/6	£2.5	..	0.3	0.I2
50	5/4	£I7	6/8	£33	5.I	5.9	2.45
5I	3/4	£ 6	2/I	£I0	I.I	2.4	I.00
57	I/2		4/7	£23	I.7	3.2	I.35

E. TOTAL COSTS OF MAINTENANCE, LABOUR AND DEPRECIATION PER TREE.

Maintenance, Labour and Depreciation Costs (per tree) on 22 Groves visited during the Survey; Covers 14,060 Trees (mixed bearing and not-bearing). 1934.

	(a)			(b)		
Grove No.	Maintenance Costs.	Wages paid.	Total cash costs.	Depreciation.	Family Labour Allowance.	Total cost per tree, exclusive of interest or allowance for board of employees.
4.	2/2	..	2/2	4.5d.	8/2	10/8½
5.	3/5.7	7/1	10/6.7	4.9	4/8	15/7.6
7.	3/3.9	3/9	7/0.9	6.9	6/-	13/7.8
8.	2/1.6	1/4	3/5.6	2.4	3/3	6/11
9.	2/8.3	2/9	5/5.3	5.4	1/8	7/6.7
10.	1/10.4	2/10	4/8.4	3.0	..	4/11.4
14.	3/2.5	3/2	6/4.5	6.0	2/5	9/3.5
17.	2/6.3	..	2/6.3	4.6	2/4	5/2.6
19.	2/1.1	6/2	8/3.1	10.6	..	9/1.7
21.	4/11.3	7	5/6.3	16.0	5/8	12/6.3
22.	1/3.2	3/3	4/6.2	0.9	1/7	6/2.1
24.	1/9.8	..	1/9.8	0.3	5/8	7/6.1
26.	2/4.1	11d.	3/3.1	2.0	1/5	4/10.1
27.	1/1.1	2d.	1/3.1	18.3	1/8	4/5.1
30.	1/11.7	..	1/11.7	3.8	5/8	7/11.5
37.	7.1d.	1/2	1/9.1	7.4	3/8	6/0.5
45.	2/2	..	2/2	2.3	2/2	4/6.3
48.	1/5.7	1/5	2/10.7	25.1	1/2	6/1.8
49.	1/8.2	..	1/8.2	0.3	14/11	16/7.5
50.	1/8.7	1/6	1/8.7	5.9	2/-	4/2.6
51.	1/5.6	0.5d.	2/11.6	2.4	2/8	5/10
57.	2/4		2/4.5	3.2	4/-	6/7.7
Average cost	2/2¼	1/10	4/0¼	4½	2/10½	7/3¼

In Table XLIV are shown, maintenance, labour and depreciation costs per tree on 22 groves visited during the survey. This covers a total of 14,060 trees, mixed, bearing and non-bearing, for the season 1934. The Table has been made in two sections showing :

(a) the total cash costs of production, as represented by maintenance costs and wages paid and a second section (b) covering allowances for depreciation and family labour.

Considering first the total cash costs :

(a) There is considerable variation in the costs per tree, largely due to variations in labour costs. In some cases where practically all the labour is supplied by the grower or his family, the wages actually paid are negligible, and the cash costs per tree, therefore may be very low e.g. Groves Nos. 49 and 50, while in other cases e.g. Groves No. 5 and I9 costs are high, due to the payment of a large proportion of labour additional to that available on the farm. The total costs shown per tree are exclusive of interest on capital or of any allowance for board of employees or for horse labour used in cultivation, unless such is provided by contract. The factors affecting these costs have been discussed in previous sections, but attention may be drawn here again to the fact that in some cases costs per tree are excessive, largely due to an unsuitable adjustment of the size of grove in relation to the amount of family labour available for working it, e.g. Groves No. 49, No. 4 and No. 7. The figures would suggest that the relation of labour to size of grove is a factor demanding the most careful consideration in planning the laying out of an area in citrus on which the owner is to be entirely dependent for his livelihood.

Where the citrus enterprise is only one department of a mixed farm, the question of the size of the unit may be one of minor importance, but since the task is a specialised one, even in such cases it may be preferable to detail one labour unit (preferably the owner) to undertake most of the work in regard to this department of the farm.

Depreciation does not on the average farm figure largely as a cost, except in certain cases which have been discussed in an earlier section.

The average cost of production is shown by the

figures to be 7/3¼ per tree on the groves visited.

A considerable number of growers are producing at a lower cost per tree than that shown, and the average is considerably increased by a small number of growers who exceed the average by a considerable margin. In considering this average figure, it is as well again to stress the point that these averages cover groves containing both bearing and non-bearing trees, i.e. of mixed ages (see Plate XXI).

It is difficult to estimate the actual effect of this on maintenance and labour costs per tree but costs in a mature grove would probably tend to be higher than those shown, though this does not necessarily follow, since in certain cases in fully matured groves the costs are considerably below those shown e.g. No. IO.

On a per case basis this average cost represents 4/0¼ per case for production costs exclusive of marketing charges. In some cases where growers grade and pack their own fruit, it does of course, include also a proportion of marketing charges, hence the necessity of showing labour as a separate item, not divided into production and marketing labour. The cost of 4/- per case is undoubtedly higher than would be the case in a full-bearing orchard, since the average production for the group of groves visited was only I.8 bushels per tree, while the average for bearing trees is considerably higher than this (see Table XXXV). Also while costs per tree may remain relatively stable from year to year, costs per case will be greatly influenced by the size of crop harvested in any given season fluctuating in inverse proportion to the size of the crop in any given year.

PLATE XXll. A photograph of a citrus grove shewing the varying ages (sizes) of trees in the one orchard. Such a variety of ages in the trees makes the analysis of costing data somewhat unreliable and increases the difficulty of arriving at an accurate estimate of production costs.

The group of groves taken, represent, however, better than average growers, and one assumes, therefore, that costs per case will be lower for these growers than for the general rank and file, so that an average of 4/- per case for costs, exclusive of marketing, may be taken as a not unreasonable basis for the season, 1934.

F. MARKETING COSTS.

In Table XLV (page 224) are given the marketing costs for the year 1934 of 25,407 bushel cases of mixed citrus fruit (Oranges and Lemons) marketed from 22 groves. The marketing costs have been sub-divided into cases, packing material, freight, curing sundries, curing charges, (at a Central Curing Shed), and commission. Considerably more difficulty was found in collecting accurate costs of marketing than was the case in respectof maintenance and labour charges. In many cases growers entered only the net amount received from the Auction Room or Packing House, making no entry of the marketing charges entailed and while in one or two cases it was possible to furnish such returns by making a computation, such a policy detracted from the accuracy of the figures and was not at all generally followed. The Table also suffers from the disadvantage that it includes the total marketing costs of both lemons and grape fruit, the costs of which are not on the same scale, and the average figure paid is not, therefore, applicable to either group of produce.

These costs are shown analysed in Table XLVI on a per case basis.

(I) Cases.

As in the case of maintenance costs, no growers kept inventories of the amount of material on hand at the commencement of the Season and the costs shown represent

T A B L E XLV.

For this year 1934 supplied by 22 growers visited during the Survey.

M A R K E T I N G C O S T S.

Covers 14,060 trees (bearing and not-bearing) producing 25,407 bushel cases.

4	£7.25	£2.25	£0.00	£1.5	£0.00	£12.5	£23.50	
5	92.38	20.00	30.00	9.50	0.00	127.77	279.65	
7	7.95	0.00	7.50	0.00	4.72	3.33	23.50	
8	75.00	11.00	104.00	0.00	0.00	85.90	275.90	
9	210.70	0.00	0.00	0.00	395.74	224.80	831.24	
10	111.63	0.00	40.65	0.00	209.63	119.08	480.99	
14	28.00	0.00	24.00	0.00	0.00	40.00	92.00	
17	7.00	0.00	17.00	0.00	12.80	30.45	67.25	
19	29.15	0.00	0.00	0.00	54.35	39.07	122.57	
21	35.13	0.00	17.83	0.00	36.15	30.57	119.68	
22	37.00	0.00	40.72	0.00	40.60	41.00	159.32	AVERAGE COST
24	10.00	0.00	6.00	0.00	20.62	12.37	48.99	
26	67.50	0.00	229.63	0.00	163.80	101.16	562.09	OF
27	9.88	0.00	5.67	0.00	11.02	11.30	37.87	
30	61.25	0.00	0.00	0.00	41.10	0.00	102.35	MARKETING
37	Not Bearing							
45	15.60	0.00	31.35	0.00	22.40	20.65	90.00	34.06d.
48	14.00	9.00	60.50	0.00	0.00	27.65	111.15	
49	Not Bearing							PER CASE.
50	4.00	0.00	17.50	0.00	0.00	0.00	21.50	
51	20.00	0.00	0.00	0.00	0.00	0.00	20.00	
57	24.50	4.74	56.20	0.00	17.88	43.74	147.06	
	£ 857.92	£46.99	£688.55	£11.00	£1030.81	£971.34	£3,606.61	

T A B L E XLVI.

Marketing Expenses (per case) of the Produce from 14,060 Citrus Trees of Mixed Varieties (Oranges and Lemons). Total of 25,407 cases.

Grove No.	Cases.	Packing Material.	Freight.	Curing Materials.	Curing Charges.	Commission.	Total.
4	8.7	2.7	?	1.8	..	15.0	28.2d.
5	6.6	1.4	2.1	0.7	..	9.6	20.4
7	14.6	..	13.8	..	8.7	6.1	43.2
8	9.4	1.3	13.1	..	..	10.7	36.5
9	9.0	..	..	..	16.9	9.6	35.5
10	9.0	...	3.3	..	16.9	9.6	38.8
14	10.1	..	8.6	..	..	14.4	33.1
17	2.5	..	6.1	..	..	10.9	19.5
19	8.7	..	..	..	16.3	11.7	36.7
21	10.5	..	5.4	...	10.9	9.2	36.0
22	6.5	..	7.2	..	7.2	7.2	28.1
24	8.0	..	4.8	..	16.4	9.8	39.0
26	8.6	..	29.1	..	20.7	12.8	71.2
27	10.8	..	6.5	..	12.6	12.9	42.8
30	13.8	..	..	..	8.9	..	22.7
37	Not bearing						
45	8.9	..	17.9	..	12.8	11.8	51.4
48	4.6	3.0	20.0	..	..	9.1	36.7
49	Not bearing						
50	1.4	..	6.0	..	..	..	7.4
51	7.2	..	..	..	..	..	7.2
57	0.4	1.2	14.5	..	4.6	11.3	38.0

AVERAGE TOTAL COST PER CASE 34.06d.

cash purchases during the year under review. Hence although the cost of new cases is approximately 9d. per case, some growers show a figure in excess of this amount, in which case it must be assumed either that the data supplied were inaccurate, or that such growers have purchased more than their requirements for 1934 and carried forward a surplus of stocks into the 1935 season. In other cases, where costs fell below 9d. this may be due to a variety of causes.

(a) The grower may have carried surplus stocks forward from 1933; (b) He may be using second-hand cases;
(c) Some growers have a local trade, in which the cases are supplied by the purchaser or are returned for refilling, so that the cost for cases is less than normal. This is so in the case of Grove No. 50.
(d) The grower may be supplying the bulk of his fruit to the Factory, in which case the containers are returned and the per case cost will be less.

(II) Packing Material.

Packing material covers the cost of woodwool, corrugated straw board, wrapping paper, labels etc. Many growers did not keep a separate account of the amount expended under this heading, grouping it with some other item in the Ledger. Also, in many cases, where fruit was sent to a central organisation for processing and packing, no packing material was used.

(III) Freight.

Freight covers both the cost of shipping to a central packing organisation and the cost of shipping to the point of disposal and shows wide variation, as was pointed out in an earlier paragraph. Many growers kept no accurate account of the costs incurred for freight, commission, etc. merely entering the net amount received after the disposal of a line of fruit, and the freight costs given are, therefore, probably not accurate, tending to be lower than is actually the case.

Also, in some cases, growers own their own lorry, in which case part of the freight charges chargeable under this heading will be shown under Depreciation and Benzine. The freights per case also vary widely, according as to whether a grower markets his fruit locally, or sends a large proportion to more distant markets, e.g. Grower No. 26 markets a large proportion of his fruit in the South Island. His freight costs are therefore exceptionally high.

The question of freight is more fully discussed in a subsequent section.

(IV). Curing Materials.

In some cases where growers cure their own lemons, they keep a separate account of the cost of materials used and these are shown under this heading.

(V) Curing Charges.

Where lemons are sent to a central organisation for processing and packing, the costs represent a large proportion of the cost of marketing, averaging approximately 1/6d. per case, exclusive of the cost of a new case, freight, commission, etc. The variations shown under this heading in Table XLVI are largely due to the proportion of lemons sent to such organisations by the growers concerned,

e.g. Grove No. 22 shows a cost of 7.2 pence per case, due to the fact that while all lemons are consigned to a Central Packing Organisation, approximately half this grower's output consists of oranges and grape fruit, which are prepared for market by the grower himself. Curing charges will be further discussed in a later section.

(VI) Commission.

The commission charged by auctioneers for selling fruit is generally IO per cent of the gross sale price, but in certain cases a rebate of 2½% is made at the end of the season to growers marketing fruit of over a specified value during the year. The commission will therefore vary according to the average gross sale price realised for the fruit from each particular grower, but since some growers market a proportion of their fruit by local sales or by a direct case trade with the consumer, the above figures cannot be accepted as a reliable guide to the average sale price of the fruit from any individual grower during the year.

(VII) Total costs.

The total costs for marketing per case vary widely according to the method adopted by the particular grower. A grower marketing most of his crop on the local market with no charges for freight, commission, or curing and negligible charges for cases, may market his crop at a cost of less than 8d. per case, while a grower such as No. 26 marketing lemons through a Central Curing Organisation and marketing a large proportion of his fruit in the South Island, may have marketing charges as high as 6/- per case. Taking the average cost over all types of marketing and varieties of citrus, the average per case is 2/IO.

A better indication of the cost of marketing by various methods may probably be gained by taking the case of individual growers or organisations, where methods of disposal, type of fruit and destination are accurately known.

In Table XLVII are shown the costs of marketing through the three main curing organisations for lemons, and it will be seen that the cost of curing and packing lemons for Auction varies from 2/I to 3/4 per bushel case, plus the variable charges of commission and freight.

In all cases a charge of ninepence is made for a new case in which to pack the processed fruit, orchard boxes being returned to the growers for refilling. Curing and handling charges vary with the organisation. Organisation "A" charges a various rate according to the grade of fruit, while the two organisations "B" and "C" charge a flat rate over all grades packed. Commission is charged at the usual rate of Io per cent, while freight varies according to the destination of the fruit.

The total costs of marketing of similar fruit (Lemons) through three different methods are shown for Grove No. 57 in the same table, the cost varying from 3/7d. per case, exclusive of labour in curing, on fruit cured by the grower and sent to Auction, to 4/9¾d. per case on fruit marketed through one of the central curing organisations.

T A B L E XLVII.

Cost of Curing and Handling Lemons by various Organisations and Costs of Several Typical Growers.

I 9 3 4.

	Organisation "A"			Org. "B".		Organisation C.		Grower No. 57. Orgn. B.	Grower No. 57. Org. C.	Grower No. 57. Own. curing	Grower No. I9	Grower No. 26.
	Ist & 2nd. Grade.	3rd. grade.	Factory.	Packed Grades.	Factory.	Packed Grades	Factory					
Case	9d.	9d.		9d.		9d.		8¼	6½	9d.	9d.	8.6
Curing and handling	2/-	9d.	I/6d.	I/6d.	6d.	I/3d.	6d.	I/4½	I/0½	.. [y]	I/5.3d.	I/8.7
Marketing charges.	6d.	6d.				6d.			4¼d.	4¼		
Advertising	Id.	Id.				I½d.			Id.			
Commission	I0%	I0%		I0%		I0%		I/2	II½d.	I/3½	I/0.3d.	I/0.8
Freight	Varies	Varies		Varies		Varies		IId. [s]	I/I0⅛	I/2¼	.. [z]	2/5.I
TOTAL CHARGES	3/4 [x]	2/I [x]	I/6	2/3 [x]	6d.	2/7½ [x]	6d.	4/I¼	4/9¾	3/7	3/2.6	5/II.2 [XX]

[x] Plus the variable charges of freight and commission.

[s] Some of freight deducted from sale price - this does not represent total freight.

[y] Cures own fruit - no method of estimating labour costs, etc.

[z] Owns own lorry for conveying fruit to curing shed - marketing freights not available.

[XX] Markets a large proportion in South Island - hence heavy freight rates.

In the case of Organisation "B" the processing and selling cost of 4/I¼ charged to No. 57 is not complete in so far as the proceeds of sale of fruit are pooled and costs of marketing are deducted, a net charge being shown. The freight included in this cost is therefore the cost of freight on orchard cases to the curing organisation and the return of empties.

In the case of grower No. I9, the total costs incurred for curing through one of the Central Sheds is 3/2.6 but this cost is exclusive of freight charges, either subsequent to packing or for conveyance of fruit to the curing house.

In the case of grower No. 26, previously mentioned, the cost of marketing a case of packed fruit is 5/II.2, the high charge being due to the fact that a large proportion of fruit are marketed in the South Island and all freight charges are included in the above figure.

Where fruit sent to a central packing organisation are graded as "Factory", the handling charge of 6d. per case is usually made but in Organisation "A" a deduction of I/6d. per case is made. No other charges are incurred for factory fruit, except freight to the Factory and the cost of returning the empty cases to the grower, though probably there should be a small charge added for depreciation on cases.

New Zealand Grape Fruit.

The cost of marketing New Zealand Grape Fruit and sweet oranges is considerably lower than in the case of lemons since there are no curing charges to be included. The usual charges are 9d. for a case, 6d. for packing, 3d. as a marketing charge, plus the variable costs of commission and freight.

T A B L E XLVIII.

Cost of Handling and Selling New Zealand Grapefruit by Various Organisations and Costs of Several Typical Growers, 1934.

	Curing House. A.	Fruit sent to auction No.57.	Grower No. 50.	Figures from Mr. O'Brien's Survey of the Grapefruit Industry (Auction Sale)	Fruit sent to Factory.
Case	9d.	9d. [v]	I.4d. [v]	9d. [y]	Id.
Packing	6d.	..	..	2d.	..
Marketing	3d.	..	..	..	..
Commission	Varies	9¾	..	8d.	Nil
Freight	"	I/2	6.0	I/5 [x]	Varies.
	I/6	2/8¾	7.4d. [z]	3/-	

v Does own packing - no means of separating labour charges
z Supplies a local trade - no commission, cases returned.
x Includes Pool Charges as well as Freights.
y Made up of packing material Id. and labels Id.

The cost of sending fruit to the factory consists chieflyin the cost of freight to the factory and the freight on the returned empty case. An allowance of Id. is made to cover depreciation on cases.

The typical costs of a grower marketing at Auction is shown in Table XLVIII No. 57. The total cost exclusive of packing charges being 2/8¾ per case. Where, however, a grower such as No. 50 supplies a local market, the charges may be much smaller and in this case amount to only 7½. Since most of the purchasers supply their own cases, and freight charges are low, or the fruit may be collected at the orchard, this means in effect that the Grower No. 50 can supply his local trade at 2/- per bushel case less than grower No. 57 receives at Auction and still show a superior net return per case.

In a Survey of the"Grape Fruit Industry" submitted to the Department of Industries and Commerce, Mr. O'Brien computed the cost of marketing at 3/- per case for fruit sent to Auction. Such a figure is probably slightly higher than that normally incurred by the average grower but would not be excessive were fruit marketed through one of the Central Packing Houses.

On fruit forwarded to a "Factory" charges are low, as in the case of lemons, there being no packing, marketing or commission charges, while freight is usually at a minimum.

The two largest individual items in the cost of marketing most varieties of citrus fruit are therefore freight and commission. Freight charges to the South Island average from 2/- to 2/IO per bushel case from most of the citrus growing districts so that New Zealand has little advantage over Australia in supplying the South Island markets, and prior to the raising of the rate of exchange, the New Zealand grower was at a definite disadvantage.

The freights from the main citrus centres to the main point of disposal in the North and South Island are shown in Table XLIX. The rate of commission charged compares unfavourably with the cost of selling in other countries. Even admitting that the method of per case disposal is slow and laborious, the charge of IO per cent appears to be indicative of considerable wastage and overlapping of facilities in the wholesale disposal of fruit.

As H. G. Wells has pointed out, the modern trend is to eliminate the middle-man and this trend is evident in the fruit-growing industry in the development of the direct trade, grower to consumer or retailer.

T A B L E XLIX.

COST OF SHIPPING CITRUS FRUITS TO MAIN CENTRES IN NEW ZEALAND.

	Costs on a sample shipment.	Approx. cost per bushel c/s.
From Tauranga to Auckland..		I/-
" " Hamilton..		
I0 c/s Rail	6/4	
Cartage	I/8	
R & D	I0	
	8/I0	I0½
" " Palmerston N...		
I2 c/s.Rail	II/2	
Cartage	I/8	
	I2/I0	I/I
" " Hastings..		
6 c/s. Rail	7/-	
R & D	-/6	
	7/6	I/3
" " Wellington..		
6 c/s. Rail	6/6	
Cartage	-/9	
R & D	-/6	
	7/9	I/3
" " Christchurch..		
5 c/s To Lyttleton	I0/I0	
Rail to Christchurch	I/5	
Cartage	8	
Receiving and Delivery	5	
	I3/ 5	2/8
" " Dunedin		
I8 cases to Lyttleton	22/6	
Rail S.I.	I5/II	
Cartage	2/3	
Wharfage	3/8	
R & D	I/6	
	45/I0	2/6½
" " Invercargill..		
I5 c/s.To Lyttleton	I9/6	
Railage S.I.	I9/2	
Cartage	2 /6	
Wharfage	I/6	
	42/8	2/I0

Auckland to Christchurch			
	I22 c/s in II shipments.		
	Freight to Lyttleton	£9.I7.I0	
	Cartage	I5. I	
	Railage to Christchurch	I. 0. 7	
	Receiving and Delivery	Io. 9	
		I2. 4. 3	2/-
" "	Wellington.		
	I00 c/s in I3 shipments		
	Railage	£5.I2. I	
	Cartage	I2. 6	
	Receiving and Delivery	8. 3	
		£6.I2.I0	I/4
" "	New Plymouth		
	26 c/s. in 2 shipments.	£I. 8. 8	I/I to I/3
Gisborne to Lyttleton.			
	Boat freight 32/- per ton of 25 cases.		
	Wharfage 2/6 " " " " "		
	34/6		I/4½
" "	Christchurch		
	Above charges plus rail, cartage etc.		I/9½
" "	Wellington.		
	Boat freight I3/6 per ton		
	Wharfage 2/6 " "		
	Cartage 3/-		
	R & D 2/I		
	2I/I " "		I0d

Also, owing to the high cost of disposal of fruit through the Auction Mart and the big margin of increase made by the retailer over wholesale costs, there has been a growing tendency for citrus fruits to be distributed by Grocers and Chain Stores, and an increasing demand by the consumer, which has shown a reflex in the development of a case trade direct from grower to consumer, eliminating both the Auctioneers' and Retailers' charges.

G. Total Costs of Production and Marketing.

In Table L the costs, per case, of operating and marketing expenses for 22 citrus groves visited during the survey are given for the year 1934. This consists of bringing together all the information given in previous Tables on costs, and indicates that the total average cost of producing and marketing a case of citrus fruit is in the vicinity of 6/10, exclusive of any charge for interest on capital, allowance for board of employees, or for horse labour. Individual costs show wide variations according to the interaction of the factors discussed in the preceding sections of this chapter.

T A B L E L.

Operating and Marketing Expenses per case of 22 Citrus Groves visited During the Survey; 14,060 trees Producing 25,407 cases of Fruit, 1934.

Grove No.	Maintenance costs.	Wages paid.	Marketing expenses.	Total cash costs.	Depreciation	Family labour Allowance	Total costs exclusive of interest on capital or allowance for board of employees.
4	31.8	..	28.2	5/-	5.4	10/-	15/5.4d.
5	10.5	1/9	20.4	4/3.9	1.2	1/2	5/7.1
7	81.2	7/8	43.2	18/0½	14.1	11/6	29/6½
8	16.4	10d.	36.5	5/3	1.5	2/1	7/5½
9	10.4	10d.	35.5	4/8	1.7	6d.	5/3.7
10	4.1	6d.	38.8	4/1	0.5	..	4/1½
14	15.7	1/4	33.1	5/5	2.4	1/-	6/7.4
17	28.7	..	19.5	4/-	4.4	2/3	6/7½
19	22.1	3/-	36.7	7/11	5.2	..	8/4.2
21	26.1	3d.	36.0	5/5	7.0	2/6	8/6
22	10.3	2/2	28.1	5/4	0.6	1/1	6/5.6
24	25.8	..	39.0	5/5	0.4	6/8	11/1.4
26	12.6	5d.	71.2	7/5	0.9	7d.	8/1
27	36.1	6d.	42.8	7/1	50.4	4/9	16/-
30	7.5	..	22.7	2/6	1.2	1/10	4/5
37	Not Bearing						
45	56.2	..	51.4	9/-	5.0	4/9	14/2
48	33.1	2/9	36.7	8/7	46.9	2/2	14/8
49	Not Bearing						
50	18.5	..	7.4	2/2	5.1	1/8	4/3
51	7.9	8d.	7.2	1/11	1.1	1/2	3/2
57	14.9	0½d.	38.0	4/5	1.7	2/2	6/9
Aver.	14.5	1/-	2/10	5/0½	2½	1/7	6/10

In a young grove, i.e. No. 7, where production per tree is low, the total cost of producing a case rises as high as 29/6 per bushel. The most efficient grove, marketing through a curing organisation, No. 10, shows a cost of 4/1½ per bushel of fruit marketed, an exceptionally low figure, which may be compared with the average cost of production of 4/- per case, exclusive of marketing charges. This result is achieved in a mature grove yielding a high average production per tree. Some growers, i.e. No. 27 and No. 48 are severely handicapped by their high charges

In the case of Organisation "B" the processing and selling cost of 4/I¼ charged to No. 57 is not complete in so far as the proceeds of sale of fruit are pooled and costs of marketing are deducted, a net charge being shown. The freight included in this cost is therefore the cost of freight on orchard cases to the curing organisation and the return of empties.

In the case of grower No. I9, the total costs incurred for curing through one of the Central Sheds is 3/2.6 but this cost is exclusive of freight charges, either subsequent to packing or for conveyance of fruit to the curing house.

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Where fruit sent to a central packing organisation are graded as "Factory", the handling charge of 6d. per case is usually made but in Organisation "A" a deduction of I/6d. per case is made. No other charges are incurred for factory fruit, except freight to the Factory and the cost of returning the empty cases to the grower, though probably there should be a small charge added for depreciation on cases.

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	Curing House. A.	Fruit sent to auction No.57.	Grower No. 50.	Figures from Mr. O'Brien's Survey of the Grapefruit Industry (Auction Sale)	Fruit sent to Factory.
Case	9d.	9d. [v]	I.4d. [v]	9d. [y]	Id.
Packing	6d.	..	..	2d.	..
Marketing	3d.	..	..	..	..
Commission	Varies	9¾	..	8d.	Nil
Freight	"	I/2	6.0	I/5 [x]	Varies.
	I/6	2/8¾	7.4d. [z]	3/-	

v Does own packing - no means of separating labour charges
z Supplies a local trade - no commission, cases returned.
x Includes Pool Charges as well as Freights.
y Made up of packing material Id. and labels Id.

The cost of sending fruit to the factory consists chieflyin the cost of freight to the factory and the freight on the returned empty case. An allowance of Id. is made to cover depreciation on cases.

The typical costs of a grower marketing at Auction is shown in Table XLVIII No. 57. The total cost exclusive of packing charges being 2/8¾ per case. Where, however, a grower such as No. 50 supplies a local market, the charges may be much smaller and in this case amount to only 7½. Since most of the purchasers supply their own cases, and freight charges are low, or the fruit may be collected at the orchard, this means in effect that the Grower No. 50 can supply his local trade at 2/- per bushel case less than grower No. 57 receives at Auction and still show a superior net return per case.

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On fruit forwarded to a "Factory" charges are low, as in the case of lemons, there being no packing, marketing or commission charges, while freight is usually at a minimum.

The two largest individual items in the cost of marketing most varieties of citrus fruit are therefore freight and commission. Freight charges to the South Island average from 2/- to 2/IO per bushel case from most of the citrus growing districts so that New Zealand has little advantage over Australia in supplying the South Island markets, and prior to the raising of the rate of exchange, the New Zealand grower was at a definite disadvantage.

The freights from the main citrus centres to the main point of disposal in the North and South Island are shown in Table XLIX. The rate of commission charged compares unfavourably with the cost of selling in other countries. Even admitting that the method of per case disposal is slow and laborious, the charge of IO per cent appears to be indicative of considerable wastage and overlapping of facilities in the wholesale disposal of fruit.

As H. G. Wells has pointed out, the modern trend is to eliminate the middle-man and this trend is evident in the fruit-growing industry in the development of the direct trade, grower to consumer or retailer.

T A B L E XLIX.

COST OF SHIPPING CITRUS FRUITS TO MAIN CENTRES IN NEW ZEALAND.

	Costs on a sample shipment.	Approx. cost per bushel c/s.
From Tauranga to Auckland..		I/-
" " Hamilton..		
I0 c/s Rail	6/4	
Cartage	I/8	
R & D	I0	
	8/I0	I0½
" " Palmerston N...		
I2 c/s.Rail	II/2	
Cartage	I/8	
	I2/I0	I/I
" " Hastings..		
6 c/s. Rail	7/-	
R & D	-/6	
	7/6	I/3
" " Wellington..		
6 c/s. Rail	6/6	
Cartage	-/9	
R & D	-/6	
	7/9	I/3
" " Christchurch..		
5 c/s To Lyttleton	I0/I0	
Rail to Christchurch	I/5	
Cartage	8	
Receiving and Delivery	5	
	I3/ 5	2/8
" " Dunedin		
I8 cases to Lyttleton	22/6	
Rail S.I.	I5/II	
Cartage	2/3	
Wharfage	3/8	
R & D	I/6	
	45/I0	2/6½
" " Invercargill..		
I5 c/s.To Lyttleton	I9/6	
Railage S.I.	I9/2	
Cartage	2 /6	
Wharfage	I/6	
	42/8	2/I0

Auckland to Christchurch			
	I22 c/s in II shipments.		
	Freight to Lyttleton	£9.I7.I0	
	Cartage	I5. I	
	Railage to Christchurch	I. 0. 7	
	Receiving and Delivery	Io. 9	
		I2. 4. 3	2/-
" "	Wellington.		
	I00 c/s in I3 shipments		
	Railage	£5.I2. I	
	Cartage	I2. 6	
	Receiving and Delivery	8. 3	
		£6.I2.I0	I/4
" "	New Plymouth		
	26 c/s. in 2 shipments.	£I. 8. 8	I/I to I/3
Gisborne to Lyttleton.			
	Boat freight 32/- per ton of 25 cases.		
	Wharfage 2/6 " " " " "		
	34/6		I/4½
" "	Christchurch		
	Above charges plus rail, cartage etc.		I/9½
" "	Wellington.		
	Boat freight I3/6 per ton		
	Wharfage 2/6 " "		
	Cartage 3/-		
	R & D 2/I		
	2I/I " "		I0d

Also, owing to the high cost of disposal of fruit through the Auction Mart and the big margin of increase made by the retailer over wholesale costs, there has been a growing tendency for citrus fruits to be distributed by Grocers and Chain Stores, and an increasing demand by the consumer, which has shown a reflex in the development of a case trade direct from grower to consumer, eliminating both the Auctioneers' and Retailers' charges.

G. Total Costs of Production and Marketing.

In Table L the costs, per case, of operating and marketing expenses for 22 citrus groves visited during the survey are given for the year 1934. This consists of bringing together all the information given in previous Tables on costs, and indicates that the total average cost of producing and marketing a case of citrus fruit is in the vicinity of 6/10, exclusive of any charge for interest on capital, allowance for board of employees, or for horse labour. Individual costs show wide variations according to the interaction of the factors discussed in the preceding sections of this chapter.

T A B L E L.

Operating and Marketing Expenses per case of 22 Citrus Groves visited During the Survey; 14,060 trees Producing 25,407 cases of Fruit, 1934.

Grove No.	Maintenance costs.	Wages paid.	Marketing expenses.	Total cash costs.	Depreciation	Family labour Allowance	Total costs exclusive of interest on capital or allowance for board of employees.
4	31.8	..	28.2	5/-	5.4	10/-	15/5.4d.
5	10.5	1/9	20.4	4/3.9	1.2	1/2	5/7.1
7	81.2	7/8	43.2	18/0½	14.1	11/6	29/6½
8	16.4	10d.	36.5	5/3	1.5	2/1	7/5½
9	10.4	10d.	35.5	4/8	1.7	6d.	5/3.7
10	4.1	6d.	38.8	4/1	0.5	..	4/1½
14	15.7	1/4	33.1	5/5	2.4	1/-	6/7.4
17	28.7	..	19.5	4/-	4.4	2/3	6/7½
19	22.1	3/-	36.7	7/11	5.2	..	8/4.2
21	26.1	3d.	36.0	5/5	7.0	2/6	8/6
22	10.3	2/2	28.1	5/4	0.6	1/1	6/5.6
24	25.8	..	39.0	5/5	0.4	6/8	11/1.4
26	12.6	5d.	71.2	7/5	0.9	7d.	8/1
27	36.1	6d.	42.8	7/1	50.4	4/9	16/-
30	7.5	..	22.7	2/6	1.2	1/10	4/5
37	Not Bearing						
45	56.2	..	51.4	9/-	5.0	4/9	14/2
48	33.1	2/9	36.7	8/7	46.9	2/2	14/8
49	Not Bearing						
50	18.5	..	7.4	2/2	5.1	1/8	4/3
51	7.9	8d.	7.2	1/11	1.1	1/2	3/2
57	14.9	0½d.	38.0	4/5	1.7	2/2	6/9
Aver.	14.5	1/-	2/10	5/0½	2½	1/7	6/10

In a young grove, i.e. No. 7, where production per tree is low, the total cost of producing a case rises as high as 29/6 per bushel. The most efficient grove, marketing through a curing organisation, No. 10, shows a cost of 4/1½ per bushel of fruit marketed, an exceptionally low figure, which may be compared with the average cost of production of 4/- per case, exclusive of marketing charges. This result is achieved in a mature grove yielding a high average production per tree. Some growers, i.e. No. 27 and No. 48 are severely handicapped by their high charges

per tree for depreciation on buildings and equipment (principally equipment), while as has been pointed out previously, the labour costs on some groves are excessive owing to an inefficient utilisation of labour, due to the grove not being in proportion to the size of the labour unit.

It must be borne in mind in studying these averages that they will fluctuate in inverse proportion to the crop harvested in any given year, the average production for 1934 being only 1.8 case per tree, such a low figure being due principally to the fact that the groves surveyed include both bearing and not bearing trees. Thus an increase in production to 3.6 bushels per tree might be reasonably expected to reduce the total cost of production, inclusive of marketing to 4/10 per bushel. Since considerable variations in crop occur from season to season in any given grove, the figures given for the year 1934 must be regarded as purely tentative and subject to considerable variation from year to year.

T A B L E LI.

Average Total Costs of Production and Marketing, of Citrus Fruits computed from 22 groves visited during the Survey and covering 14,060 trees producing 25,417 cases of fruit.

	Per case	Per tree	Per acre
Maintenance..	1/2½	2/2¼	£10.18. 8
Wages paid..	1/-	1/10	9. 3. 2
Marketing..	2/10	5/1	25.10. 9½
Total cash costs..	5/0½	9/1¼	£45.12. 7½
Depreciation..	0/2½	0/4½	1.16.10
Family labour..	1/7	2/10½	14.17.4½
TOTAL COSTS.	6/10	12/4¼	£61.17.4½

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Family labour..	1/7	2/10½	14.17.4½
TOTAL COSTS.	6/10	12/4¼	£61.17.4½

In Table LI the average costs of production and marketing are shown per case per tree and per acre, while the distribution is shown graphically on a percentage basis in Fig. XII. On a per acre basis, cash costs of maintenance represent on the average I7.7 per cent of the total costs. Wages paid I4.6 per cent, marketing charges 4I.4 per cent; depreciation 3 per cent; family labour 23.2 per cent; marketing charges, therefore, represent by far the largest single item of expenditure and probably offer the greatest scope for economy in the immediate future.

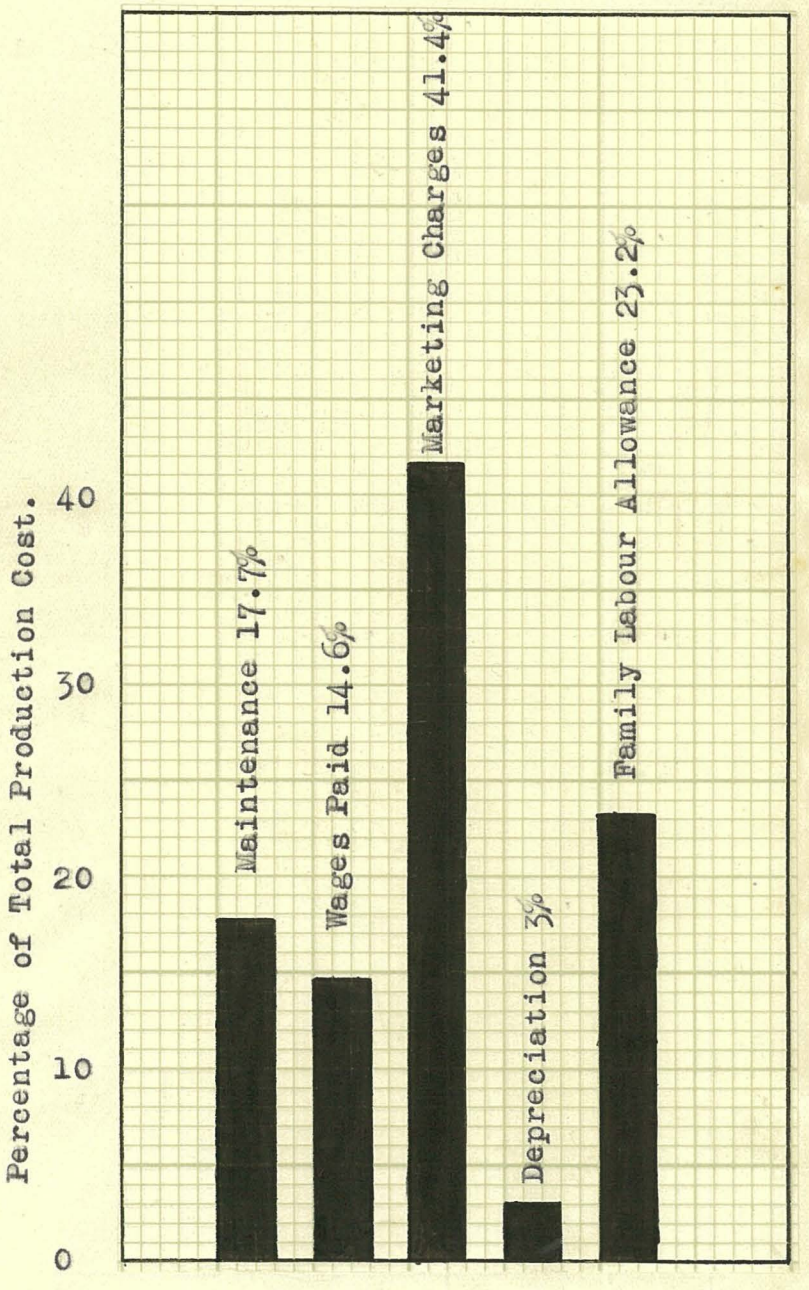
Maintenance costs in many cases and labour costs also are frequently so low that they are probably a limiting factor in production, and could under efficient management increase considerably with a more than corresponding increase in production. The total cost in these 22 groves of producing and marketing the produce from one acre of citrus is shown to be approximately £62 but were all the trees at maturity and bearing at the average rate shown in a Previous Table XXXV the marketing costs alone would approximate to £80 per acre, while the labour employed would have to be correspondingly increased to cover the costs of the increased crop. Such figures as we are given therefore in Table LI must not be regarded as being the costs per acre, which may be anticipated in a full bearing citrus grove but only as the <u>average</u> of I4,060 trees of mixed ages producing 25,4I7 cases of fruit.

H. COMPARISON WITH COSTS IN CALIFORNIA.

The California Citrus League annually collects and tabulates the costs of production and marketing over a big number of orchards in Californian Districts and these are published in the Californian Citograph.

F I G U R E XII.

Analysis of Total Selling Costs, up to and Including Marketing the Fruit. Average taken over 14,060 trees Producing 25,407 Bushels of Fruit for the Season 1934.



These costs cover a total of approximately 19,612 acres of oranges and 9,003 acres of lemons. The average costs have been converted from dollars to pounds, on a basis of 4 dollars to the pound (N. Z. currency) and the summarised costs per acre are shown in Table LII.

T A B L E LII.

Citrus costs of production in California, 1930 and 1933. Adapted from the California Citrus League's figures given in the California Citograph for October, 1931 and 1934 respectively.

Cultural Cost per acre in £'s (N. Z. Currency)	Oranges 1930	Oranges 1933	Lemons 1930	Lemons 1933
Fertiliser and manure	18.45	5.25	13.87	6.20
Irrigating water..	7.63	5.74	9.17	7.28
Spraying and fumigating material and labour...	5.65	3.83	8.66	5.90
Frost protection material..	1.34	0.54	1.88	3.15
Team and tractor expense or hire	3.53	2.01	3.75	1.89
Other materials..	0.14	0.07	0.26	0.10
General expense..	2.32	1.18	3.39	1.67
Taxes..	6.12	4.48	5.80	4.59
Insurance	0.55	0.37	0.46	0.43
Maintenance and repairs	1.25	0.51	2.39	1.12
Depreciation, bldgs. and equipment	3.74	2.79	4.93	2.98
Superintendance..	1.39	1.17	1.42	1.69
Administration	0.51	0.60	1.80	1.71
£	52.62	28.44	57.77	38.71
Labour not included above..	15.69	8.89	19.62	13.10
Grand Total per acre £	68.31	37.33	77.39	51.81
No. of accounts	815	876	432	456
No. of acres	19,612	21839	9,003	9,473
Packed boxes (U.S.) per acre	150.8	214.5	166.5	175. 6
x Equivalent N.Z. bushel cases	258.5	368.0	285.5	301.0
Cost per packed box:				
Cultural cost per bushel..	5/3.4	2/0.5	5/5	3/5.4
Picking and hauling..	5.6	4.2	1/3	11.9
Packing..	1/7.8	1/3	2/5.6	2/1.8
Selling and advertising.. ..	4.5	4.1	6.6	5.9
Total price per case F.O.B.	7/9.3	3/11.8	9/8.2	7/0.8

x U.S. packed box taken as containing 72 lbs. of fruit and converted to the equivalent of New Zealand bushels on a basis of 42 lbs. fruit per bushel.

It is interesting to compare these costs with the figures given above for the cost of production of citrus fruit under New Zealand conditions. Of the 22 groves visited during the survey the average cultural cost per bushel was shown to be in the vicinity of 4/- per case, exclusive of marketing while the average cost (1933) under Californian conditions of a case of packed fruit of similar capacity is 2/0½ for Oranges and 3/5½ for lemons. This low cost is largely due to the considerably higher production per acre under Californian conditions in 1933 and the big reduction in costs which has been achieved since 1930.

The total cost of maintenance, exclusive of marketing in 1933, is slightly higher per acre than is the case in New Zealand, while there are a number of additional charges which do not appear as expenses for the New Zealand grower, e,g. irrigating, fumigating, frost protection. These add materially to the expense of maintenance. The total equivalent costs under New Zealand conditions are given as : Maintenance £10.18/8 per acre, depreciation £1.16.10, Labour £23.11/1, making a grand total of £36/6/7 as against the £37 for oranges and £51 for lemons given in Table LII. Assuming therefore that the New Zealand article is equal in quality to that produced under Californian conditions, the New Zealand grower, protected as he is by a high sea freight and a tariff should have little fear of Californian competition.

The production per acre in terms of New Zealand standard bushels is not exceptionally high and should be well within the reach of the New Zealand grower.

It is not possible to make accurate comparisons between the cost of picking and hauling under New Zealand conditions, but it is interesting to note that the picking charges given for Lemons are three times those for Oranges, while the packing costs are comparable with those charged

under our conditions.

It is not clear just what the item selling and advertising includes, but from the Annual Report of the California Citrus Growers' Exchange, one is lead to believe that this includes commission, and in this respect the selling charges are much below those in New Zealand, a condition largely made possible by the large scale organsiation of the industry.

One of the most interesting features, however, is the great reduction in costs per acre since 1930. There has been a 45% reduction in the case of oranges and a 33% reduction in the case of lemons in the 3-year period while the per case costs shew a more than corresponding decrease owing to the larger crop in 1933. This decrease in costs has been achieved by a heavy reduction in fertiliser and labour and may, in the long run, be reflected in lower per acre yields but such a trend is not yet apparent.

PART VII. SUPPLY AND PRICES.

CHAPTER XXV. SUPPLY.

A. Lemons (I) Local (a) Total Supply (b) Seasonal Nature of Supply; (II) Imports (a) Quantity (b) Port of entry (III) General.
B. Grapefruit (I) Local supply (a) Quantity (b) Seasonal distribution (II) Imports.
C. Oranges (I) Local Supply (II) Imports. (a) Total Imports (b) Sources of Supply (c) Seasonal distribution of Supplies (d) Port of Entry.

A. LEMONS.

(I) LOCAL.

(a) Total Supply.

The total number of lemon trees in the Dominion as at October, 1934, is shown in Table III to be 85,973, of which it may be assumed that 50 per cent are not in bearing, i.e. there are approximately 40,000 bearing lemon trees in the Dominion. If anything this figure is likely to be on the high side in respect of the proportion of bearing trees. In view of the fact that the average production of the groves visited was only 3.89 bushels per tree, it is doubtful whether 3 bushels per tree over all the trees in the Dominion is not assuming too high an average figure. This would give a total production of 120,000 cases, which is probably considerably in excess of the number of lemons marketed through the ordinary channels. The Auckland Citrus Committee (I:1934) estimate the production at 164,000 bushels, but this is probably considerably in excess of actual production.

The three Central Curing and Packing Houses during 1934 marketed a total of 50,728 bushel cases of lemons, including fruit sent to"Factory" plus an estimated 1700 cases of Factory lemons from one shed, which did not

furnish data on this point. In addition to these 52,428 there was probably an additional 10,000 to 12,000 cases marketed by growers in the Tauranga District who cured their own fruit and marketed either by direct sale, or through the Fruit Federation, while probably an additional 3,000 cases, or perhaps more, are cured by growers in the vicinity of Auckland, giving a grand total in view of approximately 67,000 cases, to which must be added an unknown quantity which is marketed direct to the factory for by-product purposes, is sold tree ripe direct, by the grower, or is used in supplying a local market in the smaller country districts. If the original estimated production of 120,000 cases were approximating to actual figures, this would mean that only a little over half of the total production of lemons in the Dominion is being marketed through standard channels, the remainder being placed on the market either "tree ripe" or supplying a local trade. It is probable that the original estimate is considerably in excess of the actual production, since practically all the larger growers are included in the above figures.

(b) Seasonal Nature of Supply.

While lemon trees are "ever bearing", there does tend to be a peak in supply during the months of August, September and October when the main spring crop is usually harvested. Table LIII and Figure XIII illustrat the seasonal fluctuations occurring during 1934, in the two districts. It will be noted that there is a marked divergence in the peak period for the two districts during the 1934 season, the peak for the supply to Organisation "B" occurring during July annd showing a greater range of percentage supplied, than in the case of Organisation "A", where the range is smaller and the peak is not reached until November.

T A B L E LIII.

Shewing Seasonal spread of Lemon Production in New Zealand. Monthly totals of Lemons received by Organisation "B" and Organisation "A" for curing and packing, shewn as a percentage of the total received for the year (1934).

MONTH.	Percentage of Yearly total received during Month.	
	Organisation "B".	Organisation "A".
JANUARY	5.44	7.66
FEBRUARY	4.33	6.34
MARCH	4.19	7.51
APRIL	7.35	6.92
MAY	8.59	9.99
JUNE	9.32	6.14
JULY	18.76	6.67
AUGUST	14.23	6.86
SEPTEMBER	10.85	8.13
OCTOBER	5.88	10.79
NOVEMBER	7.65	12.82
DECEMBER	3.41	10.18

F I G U R E XIII.

Monthly Totals of Lemons Received by Organisations "A" and "B" shewn as a Percentage of the Total Received for the Year, 1934.

Organisation "A".

Organisation "B".

T A B L E LIV.

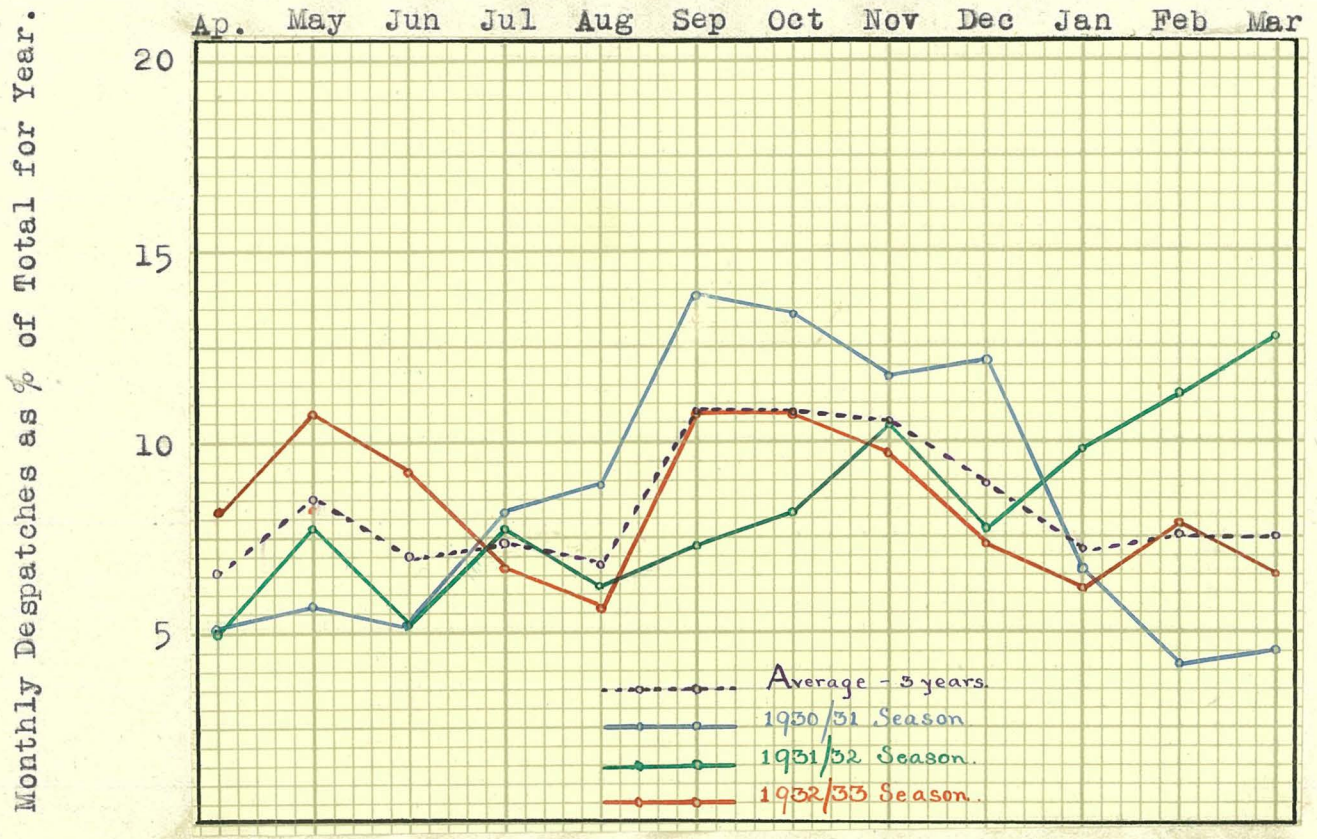
Shewing monthly totals for bushel cases of lemons despatched from Organisation "A" over the three seasons, I930/3I, I93I/32, I932/33. Also percentage of season's total, which each month's despatches represent.

	Total quantity despatched			Percentageof season total.			
Month	I930/3I	3I/32	32/33	30/3I	3I/32	32/33	Average
April	796	72I	I905	5.20	5.I8	8.26	6.54
May	878	I096	2486	5.73	7.87	I0.78	8.52
June	802	753	2I65	5.24	5.26	9.39	7.08
July	I253	I087	I558	8.I9	7.8I	6.76	7.46
August	I377	850	I308	9.00	6.II	5.67	6.76
September	2I24	I020	2464	I3.88	7.33	I0.69	I0.73
October	2055	II3I	2454	I3.43	8.I3	I0.64	I0.79
November	I788	I435	2238	II.68	I0.3I	9.7I	I0.45
December	I864	I08I	I726	I2.I8	7.77	7.48	8.93
January	I020	I373	I408	6.66	9.86	6.I0	7.27
February	647	I592	I832	4.22	II.44	7.94	7.79
March	694	I792	I50i	4.53	I2.88	6.5I	7.63
TOTALS	I5,298	I3,9II	23,045				

Such a condition must be regarded as being distinctly abnormal, and in Table LIV the supplies of lemons despatched from Organisation "A" are shown for the three seasons, I930-3I, I93I-32, I932-33, and also as percentages of the total supply received during the year. These percentages are shown graphically in Fig. XIV. The outstanding feature is the marked divergences between seasons in respect of the peak period of supply, though an average figure shows a fairly uniform peak during the months of September, October and November, which is slightly later than is believed to be the case in some districts. It is just possible that this lag may be due to differences in data supplied, the figures being for cases of lemons despatched, which would mean that most of the lemons shown as being despatched in September, would have been received

F I G U R E XIV.

Lemons Despatched from Organisation "A" shewn as a Percentage of the Total for the Year.



during the month of August, or even during late July. A subsidiary peak appears to occur during May, when the main autumn crop is harvested. Further figures are necessary before a full comparison can be made between the type of supply in the various districts but possibly some districts do lag behind others and the variation between minimum and peak supply appears to be less in some districts though it is unsafe to make generalisation from one season's figures. Such differences may be due in part to climatic differences, or they may be due to a wider planting of the Eureka and Villafranca varieties in the Tauranga district, the older plantings about Auckland tending to be predominantly Lisbon. This peak period in the supply causes considerable difficulties in marketing and it is at this period of the year that the greater proportion of fruit so treated is sent to the by-products Factory since lemons are then at their lowest ebbin regard to price.

Considerable improvement could be effected by growers co-operating in the matter of marketing at this time of the year. Since prices tend to be low during the period of peak supply growers should make every effort to pick all fruit coming to size prior to the peak period, i.e. June - July, so that when prices fall there is no undue surplus of lemons to market. The congestion during the July-August period may be further relieved by growers agreeing to permit a certain proportion of their crop to mature to "Factory" size so that the supply of marketable lemons is not unduly increased, but organised co-operative effort is required before much success can be achieved in this way, individual organisations having no guaranteed support of growers in many cases; and where policies, and possibly prices, differ between various organisations, a certain amount of changing

over in suppliers occurs to the detriment of any well thought out scheme for organising production and marketing There is room here for considerable improvement and research into methods of curing and storing fruit produced during the peak period, so that it may be held over to the period of declining supplies in December-January.

(II) Imports.

(a) Quantity.

The total quantity of lemons imported into New Zealand during the nine year period, 1926-34 is shown on Table LV, analysed according to country of origin and is shown graphically in Figure XV. The quantity imported remained fairly constant over the period 1926-31, with a marked falling off in 1932-33 and considerable recovery in 1934. The Australian supply showed a fairly regular and progressive increase until 1931 season, when it reached a peak of over 1,000,000 lbs. but supplies from Australia have ceased during the last two years owing to the citrus embargo. The greatly increasing supplies of lemons entering New Zealand from Australia led to a progressive diminution in the supply from U.S.A. Most of the importing of fruit from U.S.A. is done by buyers in New Zealand, who purchase the fruit from the California Fruit Growers' Exchange, either f.o.b. or c.i.f. marketing the fruit in New Zealand at their own risk. With continually increasing supplies in view from Australia, the possibility of making a profit by importing lemons from U.S.A. became more uncertain, with the consequence that fewer buyers operated in the American trade. Since the operation of the Australian embargo, however, the American trade has shown a sharp revival, the amount imported increasing by over 300% from 1932-34.

Imports of Lemons 1935.

U.S.A. 751,535 lbs.

Cook Islands 9,502 lbs.

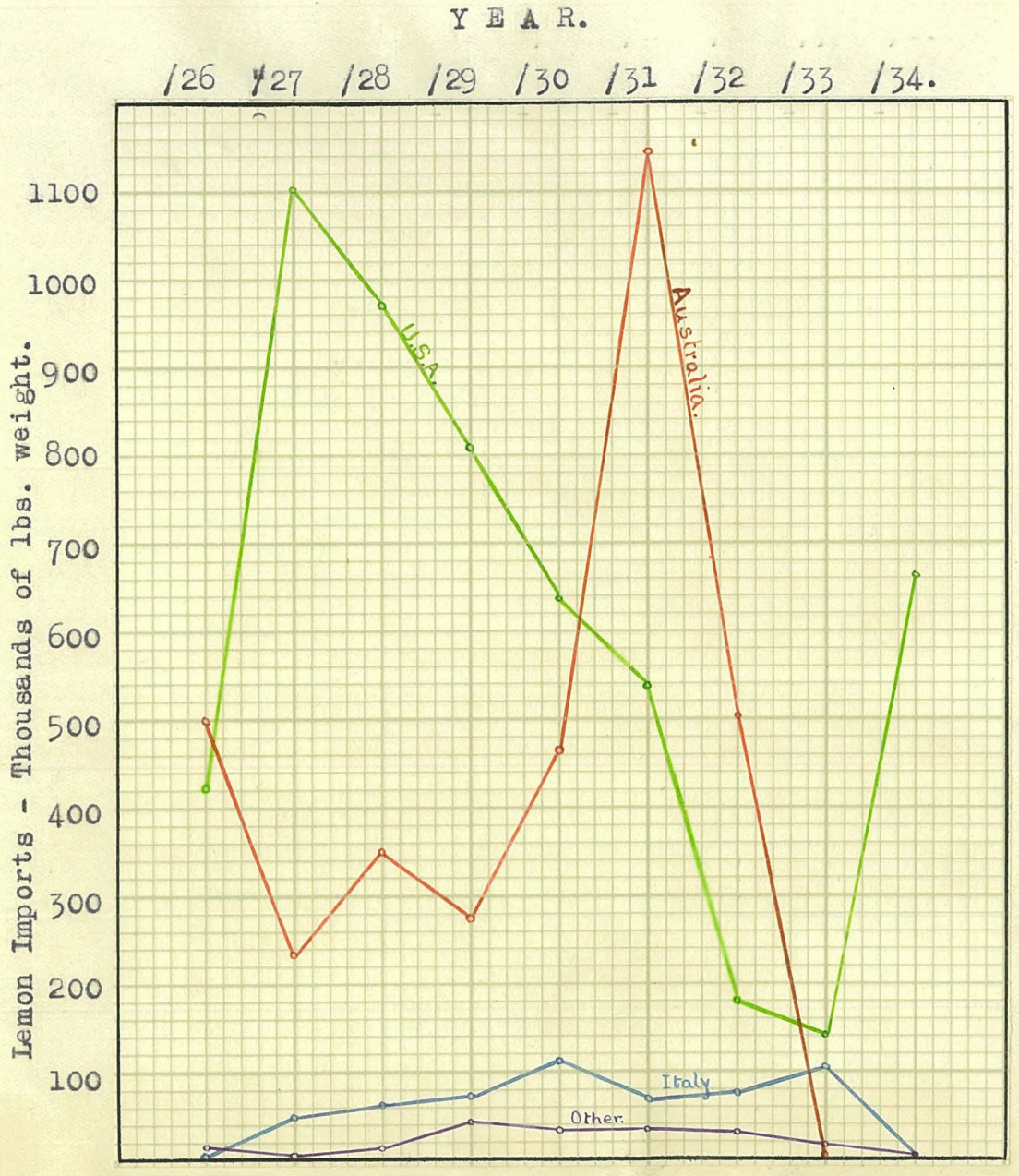
Total 761,037 lbs.

TABLE. LV.

Returns shewing the total quantity (lbs) of Lemons imported into N.Z. from each country of origin during the 9 yr. period, 1926-1934.

Country of Origin	1926	1927	1928	1929	1930	1931	1932	1933	1934.
Australia	502,211	237,280	356,978	275,129	469,854	1,146,537	501,790	-	-
Norfolk Is.	4,290	1,035	2,659	816	1,031	3,737	1,320	730	-
Italy		48,371	67,500	76,743	117,986	69,000	79,489	107,000	87.
U.S.A.	423,384	1, 104,905	976,954	810,722	639,446	540,460	181,581	140,786	664,122
Other				650	23,898	-	680	898	
Total Wt. lbs.	1,441,836	1,391,591	1,404,091	1,164,060	1,252,215	1,759,734	764,860	249,414	664,209
Cook Is. lbs.	6,934	10,610	3,950	13,505	20,150	31,830	37,320	13,292	16,078
Grand Total.	1,448,770	1,402,201	1,408,041	1,177,565	1,272,365	1,791,564	802,180	262,706	680,287

FIGURE XV.



Shewing Lemon Imports in 000's of lbs. weight, over the period 1926-34. Analysed according to country of orig

In the past, U.S.A. and Australia have been the main countries from which imports have been made, although there has been a small but regular supply from Italy. Norfolk Is. was also responsible for a small supply until 1933, when further supplies were prevented by the embargo. The Cook Islands also make a small annual contribution to the New Zealand supply.

(b) Port of Entry of Lemons imported.

By far the larger proportion of the lemons imported arrive at Wellington, Lyttleton, or Dunedin. Auckland and "Other Ports" accounting for only a very minor part of the imports, since Auckland is well supplied by local production. There is, however, a marked divergence in the year 1934, when a considerable proportion of the imports arrived at the Port of Auckland (See Table LVI).
It is not possible to say where these fruits were consumed since they may merely have arrived at Auckland for transhipment to the southern ports. Figures would suggest, however, that the larger proportion of the lemons are imported to the southern centres, since it is there that buyers are most likely to find the enterprise consistently profitable.

(III) General.

The statement has been quite frequently made that the plantings of lemons in New Zealand at the present time are now sufficient, or will in the near future be sufficient to supply the whole of the Dominion requirements of lemons, and that plantings should be restricted while imports should be practically prohibited by embargoes or high tariffs. In making such a suggestion, however, it is necessary also to consider the consumers' viewpoint on the matter, and this will be more fully discussed under the heading of "Prices", but it may be stated here that

T A B L E LVI.

Returns shewing the Imports of Lemons (lbs.) into New Zealand, according to Port of Entry, during the period I930 - I934.

- -

	AUCKLAND.	WELLINGTON.	LYTTN.	DUNEDIN.	OTHER.	TOTAL.
xI930	34,3I9	624,305	363,544	I86,I48	33,899	I,252,2I5
I93I	I4I,I0I	820,34I	48I,399	265,II6	83,607	I,79I,564
I932	5,244	327,2I9	287,329	I52,622	29,766	802,I80
I933	I4,I45	I22,929	94,756	25,I54	5,722	262,706
I934	I04,060	405,445	I46,462	I5,39I	8,929	680,287

X

Exclusive of Cook Island supply.

the price paid by the consumer is frequently such as to limit consumption and there is no-one in a position to say at the moment what the consumption might be were prices relatively stable, and at a level within the reach of all potential buyers. At present prices lemons are not infrequently a luxury and their use is not as wide spread or as general as it would be, were they lower in price. It must also be remembered that lemon trees are comparatively slow in coming into full bearing (see Fig. IX) and owing to the existence of disease and lack of proper attention on the part of some growers, it is more than probable that many of the groves at present in production will no longer be producing by the time the younger plantings now made reach full bearing capacity.

No accurate data are available as to the total production of lemons in New Zealand for the last few years and it is only possible to guess at the general trend of production, though this is probably on the up grade. The writer is reasonably convinced, however, that with groves of an economic size in respect of labour utilisation and the spreading of overhead costs, the adoption of standardised grade and packing and a system of uniform distribution to all markets on a co-operative basis, that the local supply may be considerably increased with little or no diminution in net profits to the grower. Largely owing to the wide spread adoption of citrus growing as a secondary source of income, the last mentioned aspects of the matter have not received the attention in the hands of growers, that they warrant and have resulted in haphazard, disorganised marketing and a low level of managerial efficiency in many citrus groves, with a consequent poor quality of output and low prices.

In the writer's opinion, therefore, the question of whether further plantings of lemons should be encouraged

or not is still a matter of opinion and must remain such until more data are available.

B. GRAPEFRUIT.

(I) Local Supply.

(a) Quantity.

The only grapefruit grown commercially in the Dominion is the New Zealand Grapefruit or poorman orange, the production being estimated at 25,000 cases for I934 (I:I934) Mr. O'Brien, in his report to the Department of Industries and Commerce, states "no official records of production are kept, but the New Zealand Institute of Horticulture kindly supplied me with the following :-

Estimated number of New Zealand Grapefruit and Poorman Oranges of all ages : 9,000 trees

Estimated number in bearing: 4,500 trees;

Estimated crop bushel cases: 2I,800 cases".

The basis on which this computation is made is not given, nor does the writer know of any basis on which a computation might be made.

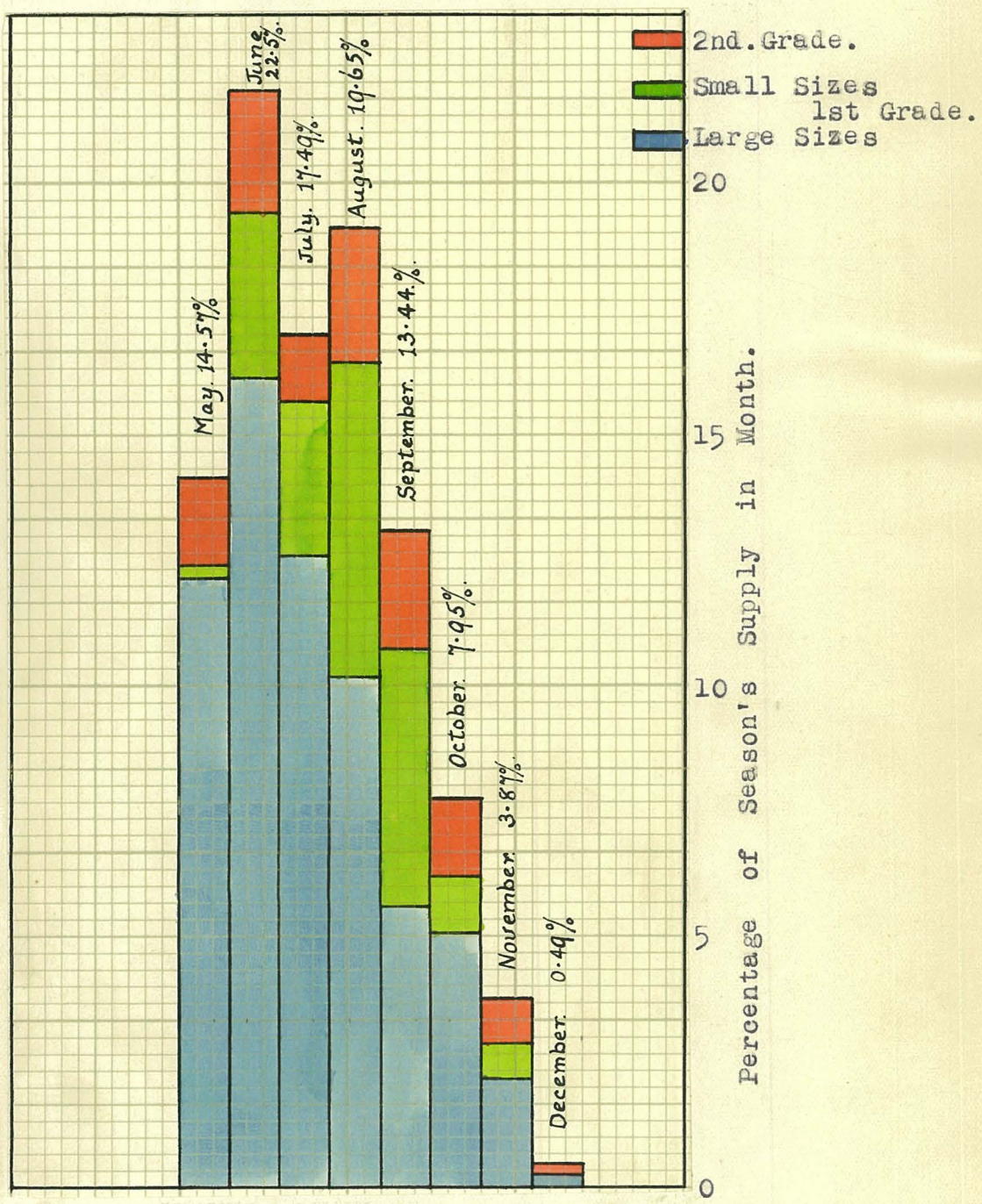
It was not possible to get figures from all the organisations packing New Zealand grapefruit, but two of the major packers between them packed 4,500 cases in I934, while the Dominion Mark Sales handled approximately 5,000 cases during the same period. In the statistics collected by the Government Statistician, New Zealand Grapefruit and oranges are unfortunately grouped together, so that it is not possible to arrive at any accurate figures as to the number of trees planted in the Dominion, or to form any reliable estimate of their production.

(b) Seasonal Distribution of Local Supply.

In Table LVII the supplies of New Zealand grapefruit handled by one organisation are shown and analysed according to grades and sizes, while the same data are presented in Fig. XVI. The season commences in May, reaches a peak in June, and shows a progressive decrease till it finally ends in December. It should be noted that it has not been possible to separate fruit marketed for marmalade as distinct from "well-matured" fruit marketed for dessert purposes, but the hiatus in the Graph, for the month of July, probably represents the point of overlapping of two separate curves, the fruit supplied during May, June and early July being principally for marmalade, while that supplied in the later part of July and during the subsequent period is supplied for dessert purposes. The distribution of grades and sizes shows a rather interesting gradation over the season. It will be noted that during May, June and July, the large sizes of first-grade fruit are markedly predominant over the small sizes and second grade, while in subsequent months the proportion of small sizes and second grades increase considerably. This is due to the fact that for the May picking, only the largest and more mature fruit are picked for an early market, while by August, September, growers will be picking the remainder of their crop and cleaning the trees of all fruit, including the small fruit left on the trees at the earlier pickings.

The rapid decline of supplies subsequent to August and the shortness of the Season present difficulties in building up a large trade in grapefruit in the Dominion. If grapefruit are to be used, as such, by a community, the demand will probably be relatively inelastic and uniform throughout the season. With a sharply graded seasonal

F I G U R E XVI.



Monthly Totals of N.Z.Grapefruit Handled by Organisation "A" in 1934 and the proportions in the Various Grades each Month.

T A B L E LVII.

Shewing Season Distribution of New Zealand Grapefruit handled by the Organisation "A" in 1934, and the proportion in the various grades and sizes.

MONTH.	1ST. GRADE. Large Size 120 & under.	1ST. GRADE. Small size 135 & over.	2ND.GRADE.	Total	%
MAY	364	7	54	425	14.57
JUNE	484	98	74	656	22.50
JULY	378	92	40	510	17.49
AUGUST	305	188	80	573	19.65
SEPTEMBER	168	154	70	392	13.44
OCTOBER	153	34	45	232	7.95
NOVEMBER	67	22	24	113	3.87
DECEMBER	7½	1	6	14½	0.49
TOTALS	1926	596	393	2915	
% of total	66.07%	20.44%	13.48%		

supply, such as occurs with the New Zealand crop, it is going to be extremely difficult to make New Zealand Grapefruit as popular as their quality would warrant, and unless some means can be found of spreading production over a longer season, it appears that there will always be room for the importation of a considerable quantity of grapefruit from Overseas. Research is needed to investigate the possibilities of extending the season of the New Zealand product by the use of different root stocks, or selected strains, or the use of cool storage.

During the Survey a number of growers were visited, who were able to hold New Zealand grapefruit on the trees in excellent condition until October and November, though th loss by wastage from wind-falls etc. is considerably higher when the fruit is held so long, but fruit of excellent quality can be picked from the trees as late as Christmas time and an improvement in orchard practice may extend the season for fresh fruit considerably.

(II) Imports.

The statistics collected in respect of the imports of grapefruit into New Zealand are unfortunately grouped with the import of mandarins and it was not possible to get any accurate data separating the two. The imports from Australia, Fiji, Norfolk Island, Japan and Cook Is. consist principally of Mandarins, though a considerable number of grapefruit were imported from Australia. The imports from U.S.A. and the British West Indies consist almost entirely of grapefruit, but it is not possible to make any separation on an accurate basis. The total quantities imported over the period 1926 - 1934 are shown in Table LVIII and Fig. XVII.

C. ORANGES.

(I) Local Supply.

The total production of sweet oranges in New Zealand is estimated as being in the vicinity of 5,000 cases but this is likely to increase considerably in the future, as the Keri Keri Group Settlement comes into production. The total production atthe present time is so small in comparison with the demand, that its effect on the market at the present time is negligible.

Imports of mandarins & grapefruit 1935.

	Mandarins	Grapefruit.
Fiji.	284,780	
Australia	255,241.	
Japan	2,400	
Norfolk Is.	300.	2,580.
Jamaica.		73,790
U.S.A.		282,723
Total.	545,821.	359,093.
Cook Islands.	19,840	1,020
Grand total.	565,661 lbs.	360,113 lbs

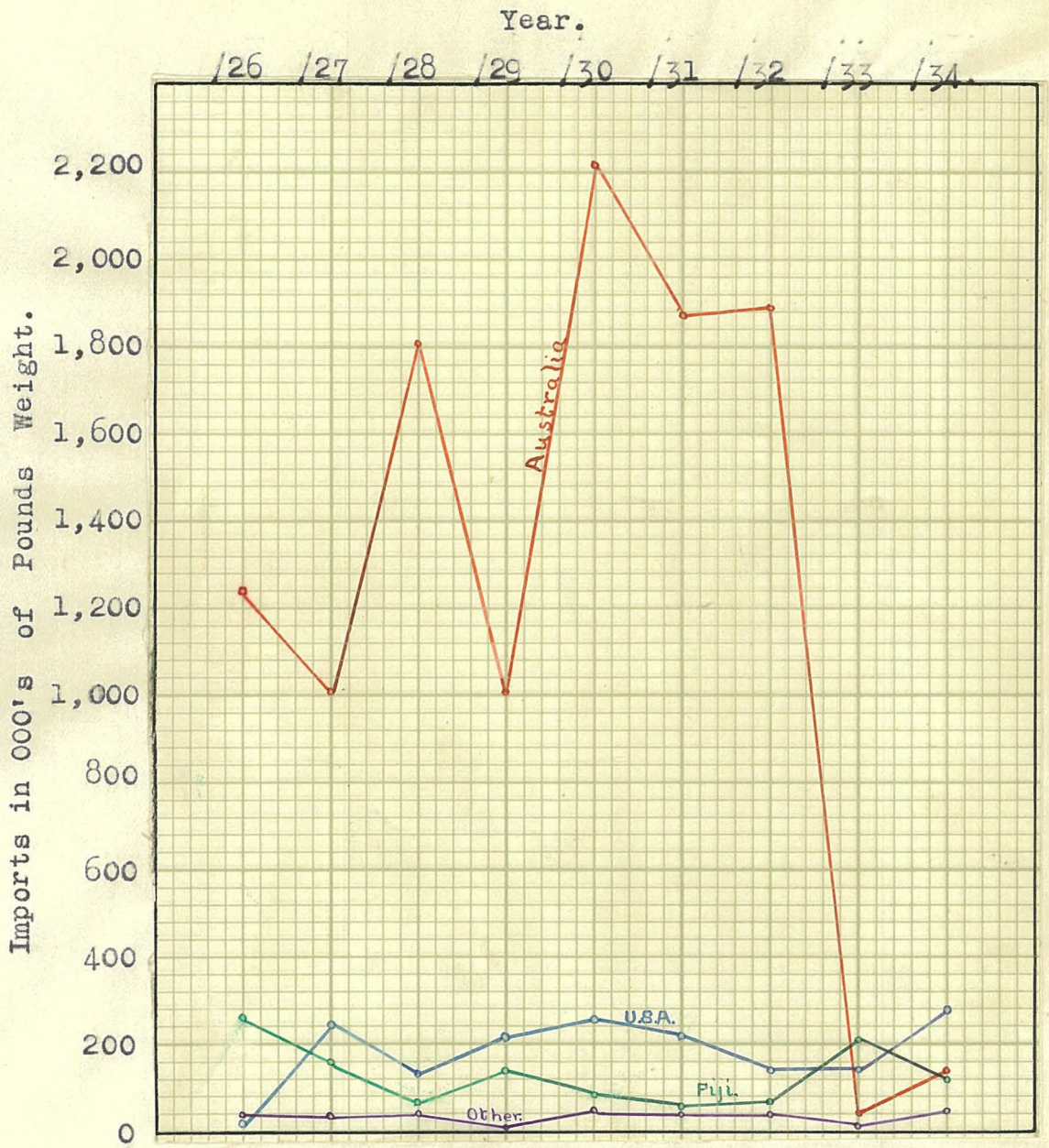
TABLE LVIII.

Returns shewing the total quantity (lbs) of Mandarins & Grapefruit imported into N.Z. from each country of origin during the 9 yr. period, 1926-1934.

Country of Origin	1926	1927	1928	1929	1930	1931	1932	1933	1934.
Australia	1,248,180	1,032,919	1,813,121	1,012,828	2,235,732	1,880,903	1,922,592	37,430	138,965.
Fiji	260,480	172,468	81,250	164,390	97,330	72,560	76,560	212,110	129,560
Norfolk Is.	788	-	-	-	-	500	-	[illegible]	[illegible]
Br. West Indies								210	27,940.
Japan						2,000	7,180	60	13,250
U.S.A.	22,500	241,624	138,456	226,363	265,633	229,636	163,461	164,367	286,981
Total wt. lbs.	1,531,948	1,447,011	2,032,827	1,403,581	2,598,695	2,185,599	2,169,793	414,177	596,696
Cook Is. lbs.	25,234	30,402	38,782	9,250	53,450	41,276	36,476	22,037	10,742
Grand Total	1,557,182	1,477,413	2,071,609	1,412,831	2,652,145	2,226,875	2,206,269	436,214	607,438

F I G U R E XVII.

Imports of Manderins and Grapefruit into New Zealand over the Period 1926-34. Analysed according to Country of Origin.



(II) Imports.

(a) Total Imports.

In Table LIX are shown the returns of the total quantity (lbs.) of oranges imported into New Zealand from each country of origin during the nine year period, I926-I934, while the same data are shown Fig. XVIII.

(b) Sources of Supply.

The principal sources of supply are the Cook Islands, Australia and U.S.A, the total for "other countries" being negligible by comparison. The supply from the Cook Islands has shown a general downward trend in volume over the period. The supply from Australia up till I932 showed a progressive and rapid rate of increase but with the application of the embargo in December I932, there was a rapid decrease in the total imports from Australia, although the total in I933 did not fall so low as imports for I929, under free trade conditions, while the imports for I934 from this source show a recovery to a point mid-way between the totals for I930 and I93I. The very rapid increase in supplies from Australia during the period I929 and I932 was augmented to a certain extent by a rate of exchange favourable to the Australia exporter. Subsequently to the placing of the embargo on Australian fruit in I932, all imports from New South Wales were prohibited, but in I933 regulated shipments of fruit were permitted from South Australia, which is free of the Mediterranean fruit fly. While negotiations have been in progress for the lifting of the embargo in part or in whole, there does not appear to be much present prospect of an agreement being reached and shipments are still being regulated.

Imports of oranges for 1935.
lbs. wt. – same order as table LIX.

Australia	7,341,583
Fiji.	162,656
Norfolk	138,180
Pitcairn	56,742
Palestine	—
Italy	—
British W. Indies.	2,521,315
Japan.	20,600
U. S. A.	2,801,147
Society Islands	83,001.
Other Countries.	—
Total wt. lbs.	13,135,218
Cook Islands	2,975,568
Grand total.	16,110,786

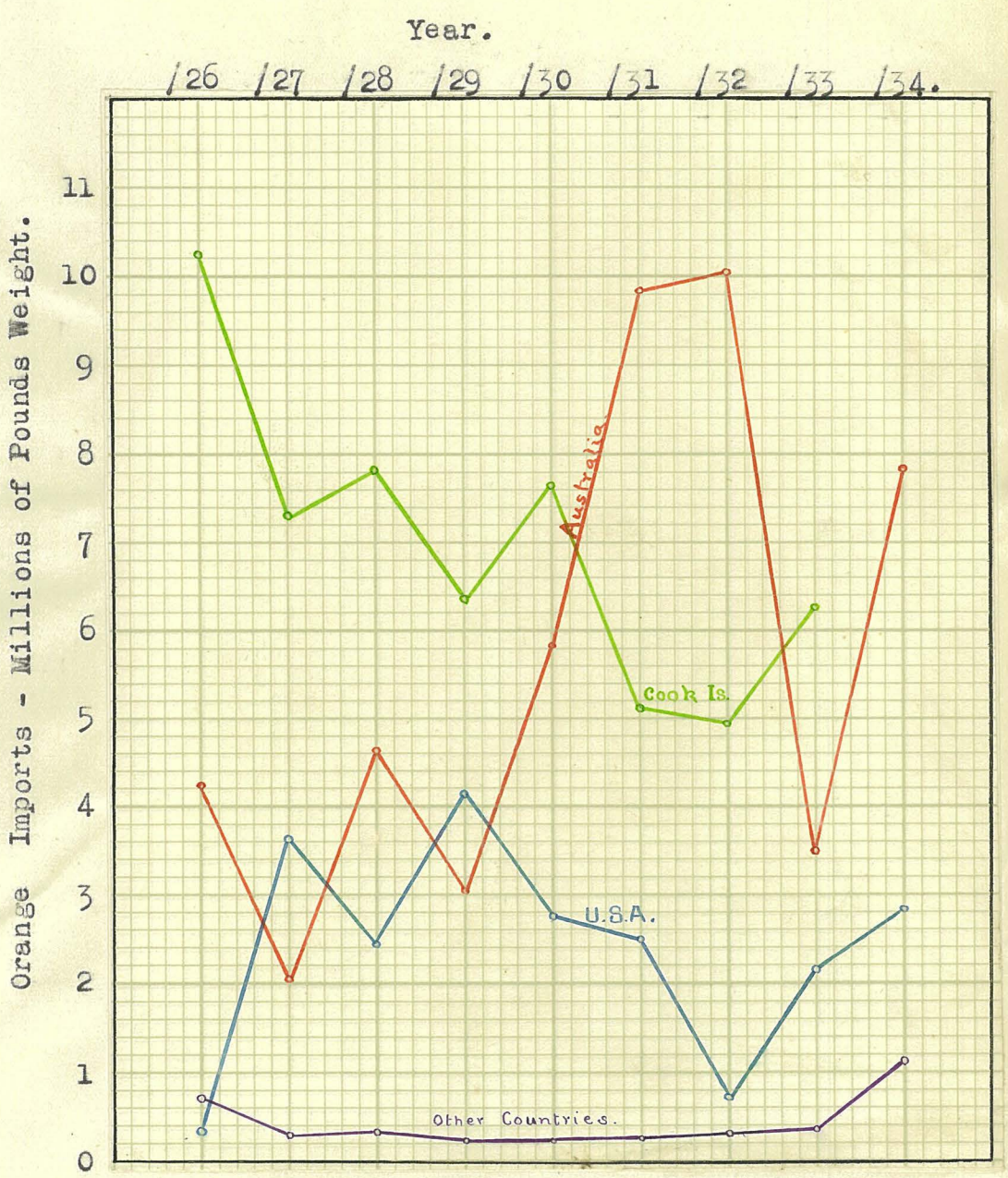
TABLE LIX.

Returns shewing the total quantity (lbs) of Oranges imported into N.Z. from each country of origin during the 9 yr. period, 1926-1934.

Country of Origin	1926	1927	1928	1929	1930	1931	1932	1933	1934.
Australia	4,234,589	2,093,664	4,681,513	3,064,040	5,876,541	9,854,551	10,063,427	3,496,152	7,850,255
Fiji	46,830	127,532	9,690	35,470	35,540	78,690	70,990	174,970	63,580
Norfolk Is.	71,503	50,614	60,750	36,128	57,879	92,995	8,602	700	-
Pitcairn Is.	40	570	520	360	9,712	15,010	18,707	20,570	58,310
Palestine		480	237,102	80,000		-	133,130	75,043	-
Italy	480,477	4,792	-	4,200	18,203	-	-	-	
Br.West Indies	-	-	-	-	-	-	-	210	1,057,550
Japan	-	-	-	-	120	33,983	47,000	-	17,010
U.S.A.	393,070	3,650,169	2,409,666	4,162,990	2,798,658	2,490,466	743,737	2,187,281	2,848,116
Society Is.	177,742	127,700	38,800	110,942	104,599	24,108	32,340	87,632	-
Other countries		160	1,580	-	-	6,120	24,489	-	-
Total wt. lbs.	5,404,251	6,055, 681	7,439,621	7,494,130	8,901,252	12,595,923	11,142,422	6,042,558	11,894,821.
Cook Is.lbs.	10,228,457	7,322, 054	7,877,749	6,362,768	7,675,916	5,141,413	4,964,501	6,227,332	5,012,192
Grand Total	15,632,708	13,377,735	15,317,370	13,856,898	16,577,168	17,737,336	16,106,923	12,269,890	16,907,013

F I G U R E XVIII.

Orange Imports in Millions of Pounds Weight over the Period 1926-34. Analysed According to Country of Origin.



As in the case of lemons, Oranges from U.S.A. are not usually imported on consignment, but are purchased c.i.f. or f.o.b. at the port of shipment in California by importers in New Zealand. The shipments for individual seasons, therefore, show considerable variations according to the importers' estimate of the probable profitableness of the enterprise. It therefore happens that when Australian imports have shown a marked decrease, American imports tend to show an increase and vice versa, so that since the application of the embargo to Australia imports, the supply arriving from America has shown a marked increase, while such a condition is also true of the supplies from "other countries", and noticeably so in respect of the British West Indies. In the last two years larger supplies would have come forward from this source had it been possible to make satisfactory shipping arrangements, and the Jamaican growers are in hopes that during the 1935 season, satisfactory arrangements will be made. Considerably larger quantities may be expected from this source, while present prices for citrus fruits hold in this market.

C. SEASONAL DISTRIBUTION OF SUPPLIES.

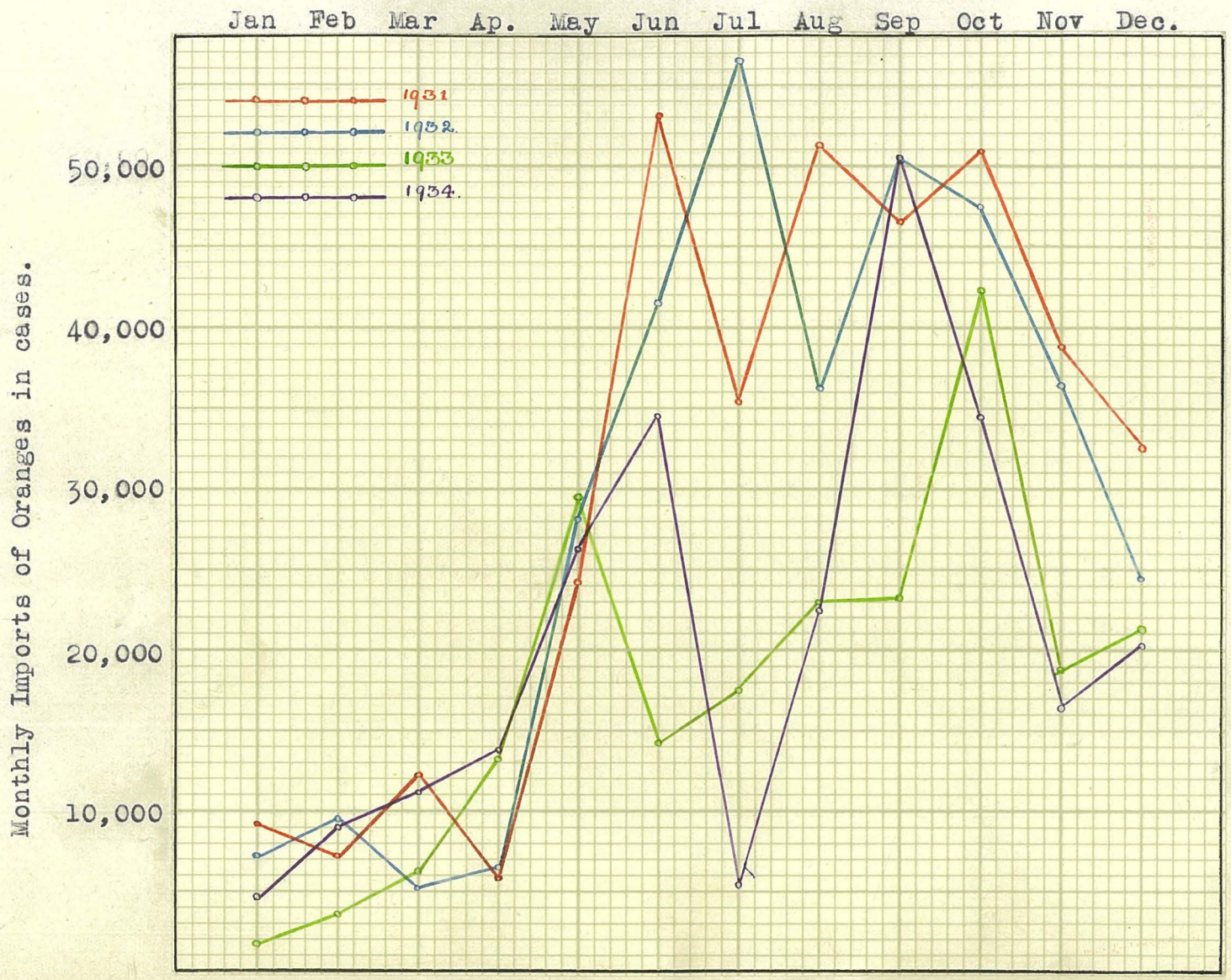
By the courtesy of the Customs Department figures were supplied covering the monthly arrivals of Oranges into the Dominion over the four year period 1931 - 1934. These are shown in Table LX, classified according to country of origin and in Fig. XIX. These figures suffer from the disadvantage that the cases vary in size according to the country of origin, and in some cases, i.e. Australia, the size of package varies according to the packing house or states. The usual weight of fruit in a case of oranges from each country is as follows :

TABLE. EX.

Returns shewing the Monthly Distribution of Orange imports (cases)X into N.Z. and country of Origin, over the 4 yr. Period, 1931.

Country of Origin and yr.		Jan. C/s	Feb. C/s	March C/s	April C/s	May C/s	June C/s	July C/s	Aug. C/s	Sep. C/s	Oct. C/s	Nov. C/s	Dec. C/s	Total C/s.
Australia	1931	3,658	1,246	1,752	117	1,548	23,665	27,604	36,353	33,159	49,318	37,880	28,861	245,161
	1932	4,709	6,091	2,964	2,510	8,004	27,372	40,479	23,649	37,449	35,274	36,411	23,653	248,565
	1933	-	-	-	-	-	-	-	4,457	11,040	33,916	16,995	13,067	79,475.
	1934	-	-	-	-	-	-	-	11.088	47,337	33,444	15,347	-	107,216
U. S. A.	1931	5,516	5,731	10,625	5,163	2,992	2,045	111	200	-	-	285	3,621	36,289
	1932	1,575	925	1,456	2,372	2,378	50	41	-	-	-	-	775	9,572
	1933	1,898	3,336	3,273	3,226	2,678	3,643	3,925	3,850	501	400	1,780	7,941	36,451
	1934	4,910	5,258	4,620	4,824	3,547	2,989	1,765	660	810	770	1,477	5,331	36,961
Cook Is.	1931	1	-	2	18	18,721	26,765	7,128	14,475	13,229	1,582	816	5	82,742.
	1932	-	3	7	18	17,571	13,681	15,837	12,611	12,561	12,450	-	-	84,739
	1933	-	3	2	8,159	26,327	10,675	13,442	14,688	11,561	7,856	-	-	92,713.
	1934	-	-	-	9,010	21,804	31,381	3,439	10,388	2,253	2	-	-	78,277
Other Countries:	1931	1	160	17	696	1,034	548	597	480	206	27	3	2	3,771
	1932	990	2,421	730	1,740	280	168	340	20	-	8	-	1	6,698
	1933	-	417	2,989	2,412	487	75	141	-	6	1	-	-	6,528
	1934	-	3,811	6,489	244	940	61	114	644	155	-	-	14,933	2 7,391
		23,258	29,402	34,926	40,405	108430	143, 197	115, 295	133560	170, 143	175, 155	111, 030	98, 190	1, 182, 549.

X Quantity of fruit per case varies according to country of origin - Table therefore shews only approx. distribution.



F I G U R E XIX.

Monthly Distribution of Orange imports into N.Z. from all Sources. 1931-34.

Australia:	40 lbs. but South Australia largely 73 lbs.
U.S.A.:	72 lbs.
Cook Islands:	63 lbs.
Other Countries:	Varies.

Making allowance for this variation, the figures give an interesting indication of the main season of supply of Oranges on the New Zealand markets.

Imports are at a minimum over the period January, February, March, April with a sharp increase during May, which reaches a peak over the period, June to October, after which the quantity rapidly declines during November and December to the minimal point in January. An interesting feature is the double peak which seems characteristic of the seasons under review, and is due to the graph being a composite one, showing the imports from all sources. The position of the trough varies from season to season according to the time of ripening in the various countries of origin, but appears to centre round August. Under free marketing conditions, therefore, the New Zealand grower has to endeavour to market his fruit at a time when the supply of imported fruit is at a minimu, i.e. either during the slack period in August or subsequent to the arrival of the main shipments in November, December, or later, but this aspect will be further discussed under "Prices".

In Fig. XX the monthly distribution of Orange imports into New Zealand from Australia are shown for the 4 year period, 1931 -34. Supplies are at a minimum over the period, January to May, and show a sharp increase during June-July, which represents one peak of supplies. Supplies are much smaller during August but rise sharply again to a peak in October, which represents the height of the Valencia season, thereafter showing a progressive decline through November and December. (See also Fig. XXIII).

F I G U R E XX.

Monthly Distribution of Orange Imports into New Zealand from Australia. 1931-34.

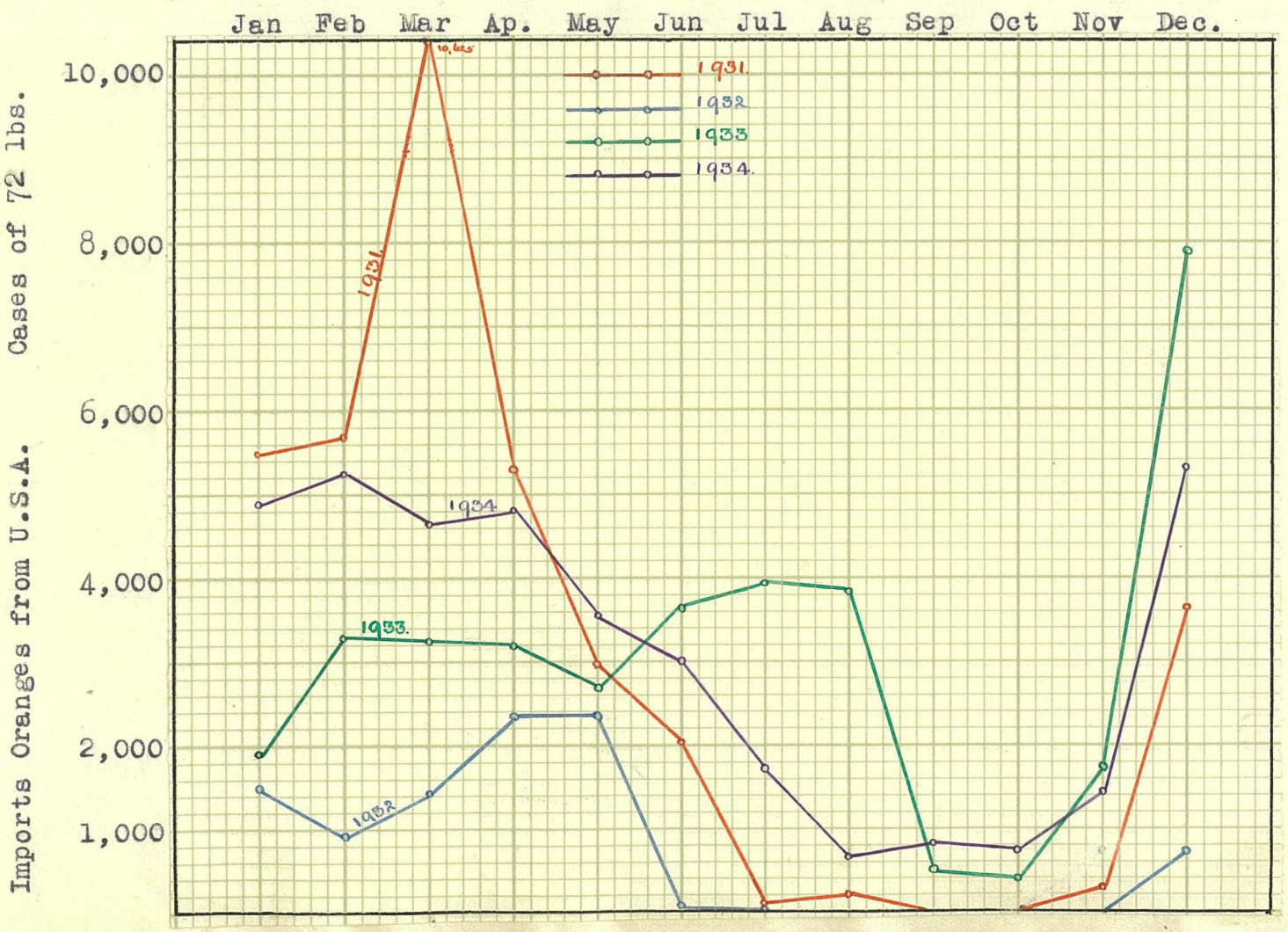
The magnitude of the decline during August has been considerably accentuated in the seasons 1933 - 1934 by the application of regulated shipments and this has accentuated the position as shown in Fig. XXIII. Under normal marketing conditions, the two seasons overlap fairly completely and the drop in imports is not generally very marked.

In Fig. XXI the monthly imports of Oranges from U.S.A. are shown over the 4-year period, 1931-34 and show very clearly the influence of local supplies on the amount of fruit purchased by importers. The American supply reaches its maximum during March and falls off steadily to a minimum in September - October, rising again to a peak in December. This follows naturally from the fact that Californian oranges are not sold here on consignment but are only purchased by importers when a margin of profit is in view.

While Cook Islands are, strictly speaking, a part of New Zealand, they are for the purposes of this Survey, considered as being outside the Dominion and the monthly distribution of their exports to this country is shown in Fig. XXII. The imports usually commence during April and reach a peak during May - June; fall off rapidly to July and more slowly until October, when the supply practically ceases. The supply from other countries is practically negligible, but during the season 1934, a considerable quantity of Oranges wsre imported from the British West Indies (Jamaica), and if suitable shipping arrangements can be made, this quantity may show a considerable increase in the future.

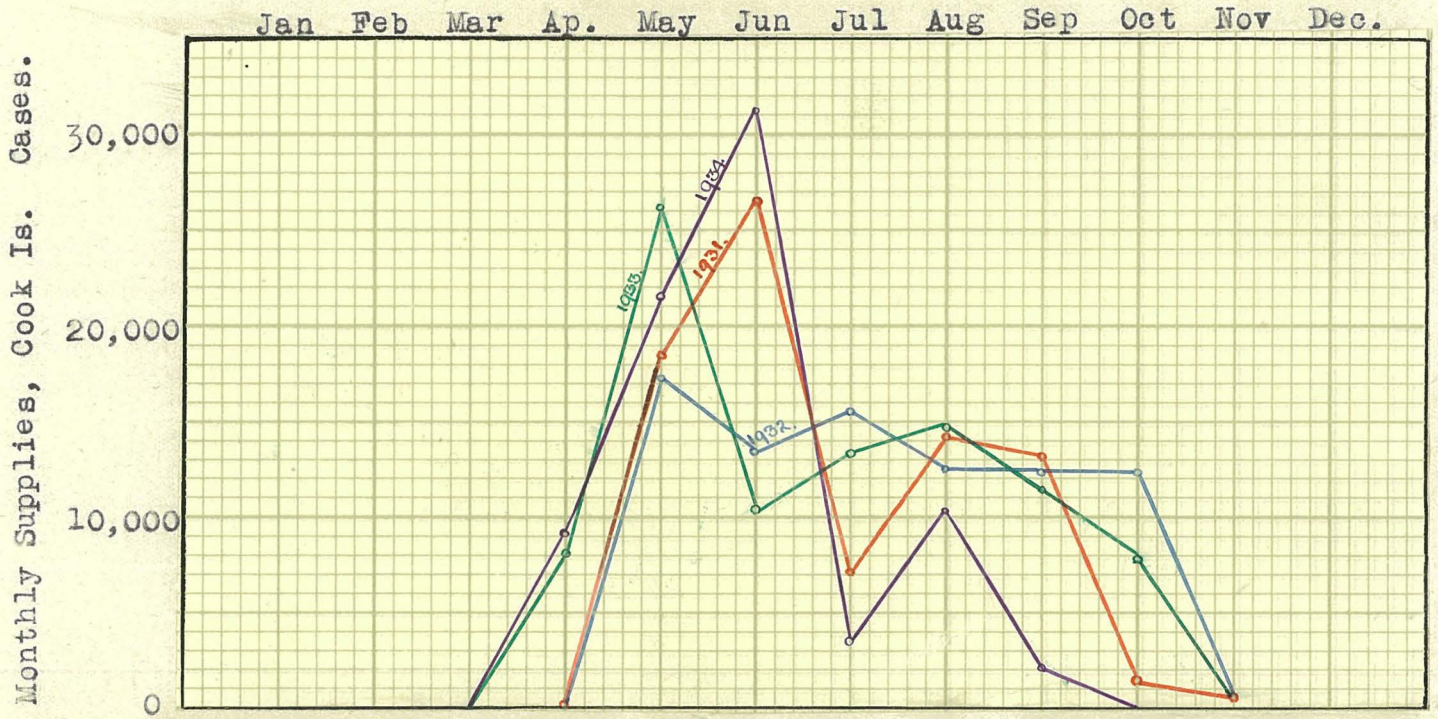
F I G U R E XXl.

Monthly Distribution of Orange Imports into New Zealand from U.S.A. 1931-34.



F I G U R E XXll.

Monthly Distribution of Orange Supplies into New Zealand from the Cook Islands.
1931-34.



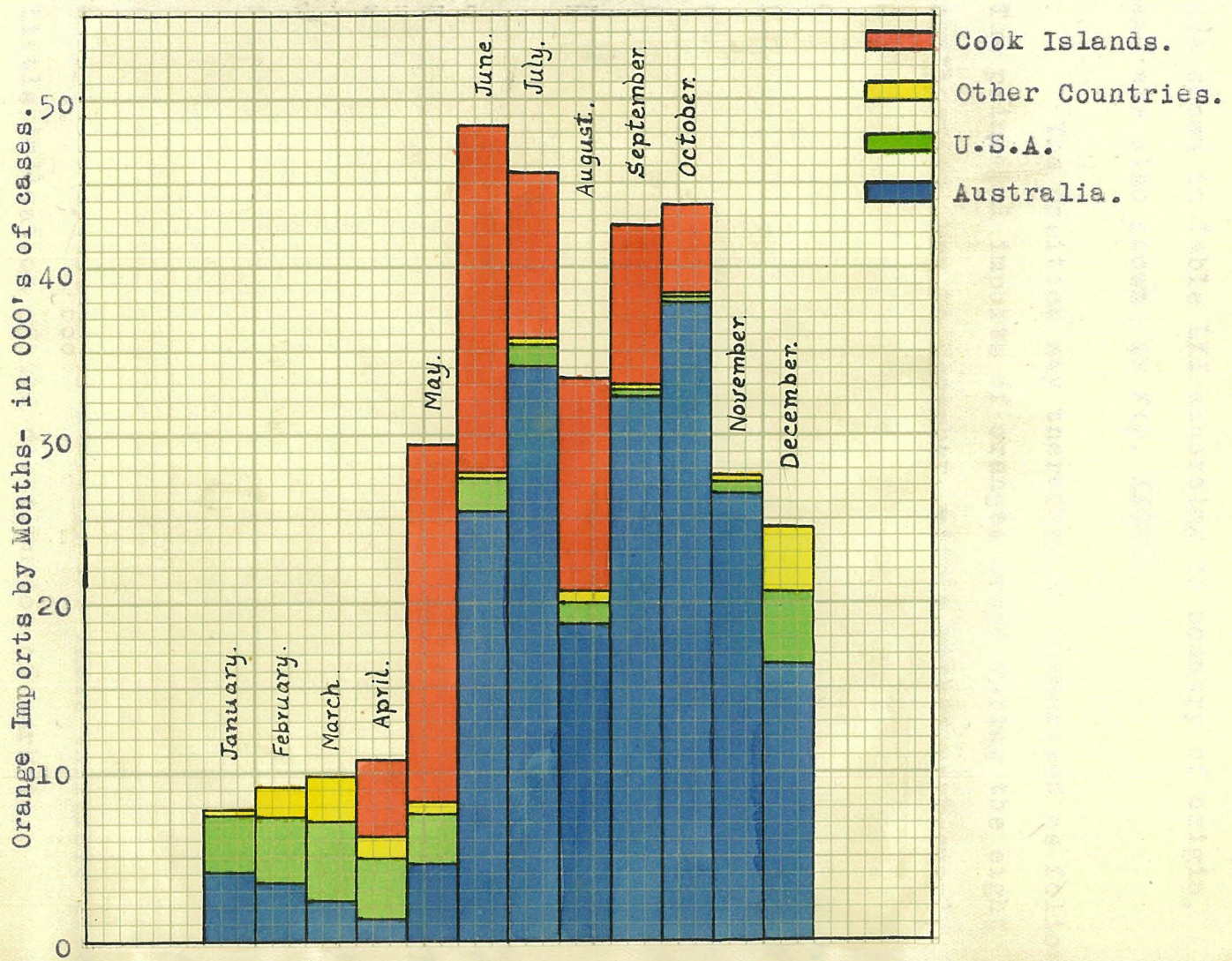
T A B L E L X I.

Shewing Average Monthly Imports of Oranges into New Zealand, according to Country of Origin, for period I93I - I934 (in hundreds of cases).

COUNTRY OF ORIGIN.	January	February	March	April	May	June	July	August	September	October	November	December
AUSTRALIA X	42	37	24	I3	48	255	340	I89	322	380	266	I64
U.SA.	35	38	50	39	29	22	I4	I2	3	4	9	44
COOK IS.	-	-		43	2II	206	I00	I30	99	55	2	
OTHER COUNTRIES	2	I7	25	I3	7	2	3	3	I	-		37
TOTAL	79	92	99	I08	295	485	457	334	425	439	277	245
PERCENTAGE OF TOTAL	2.3	2.7	2.9	3.2	8.8	I4.5	I3.7	I0.0	I2.7	I3.2	8.3	7.3

X During the period January to July inclusive, there were no imports from Australia in the years I933 and I934. The figures shewn are therefore an average of the years I93I and I932.

F I G U R E XXIII.



Shewing Average Monthly Imports of Oranges into New Zealand According to Country of Origin. 1931-34. In 000's of cases.

N.B. Cases vary in size so that the proportions shewn are not strictly accurate - see text.

The average monthly imports for the period, 1931 - 34, are shown in Table LXI according to country of origin, and are also shown in Fig. XXIII.

The position may therefore be summarised as followed: The principal imports of oranges occur during the eight monthperiod, May to December, with a marked peak supply during the period, June to October. Australian supplies occur generally from June to December; American supplies, December to April: Cook Island supplies May to September and other countries December to April. The question of prices in relation to supply will be discussed in a subsequent chapter.

(d) Port of Entry.

In Table LXII are given returns shewing the imports of oranges (lbs.) into New Zealand over the period 1930-34 according to port of entry. Since, however, no data are available with regard to reshipments to other ports the figures convey very little information. Auckland and Wellington together import from 70 - 75% of the total supply but probably a considerable part of this is transhipped to Lyttleton or Dunedin. The Table therefore gives little indication of the distribution of markets.

T A B L E L X II.

Return shewing the Imports of Oranges (lbs.) into New Zealand according to Port of Entry during the period, I930 - I934.

	AUCKLAND.	WELLINGTON.	LYTTON.	DUNEDIN.	OTHER.	TOTALS.
I930 X	I,993,338	3,637,362	I,7I7,0I0	I,222,2I4	33I,438	8,90I,252
I93I	6,4I5,330	6,646,9I4	2,507,826	I,487,369	679,897	I7,737,336
I932	5,I65,22I	6,I72,876	2,538,287	I,726,790	503,749	I6,I06,923
I933	4,II9,68I	5,602,539	I,466,927	840,I50	240,593	I2,369,89o
I934	7,408,824	5,589,509	I,760,985	I,673,570	474,I25	I6,907,0I3

X I930 Exclusive of Cook Island supply.

CHAPTER XXVI. PRICES.

A. General Price Level and Demand Situation. B. Wholesale Prices of Citrus in New Zealand (I) Collecting data, (II) Factors affecting Prices (a) General Price Level (b) Demand (c) General Supply (d) Supply from individual countries (e) Point of disposal (III) Factors affecting Individual Lines (a) Quality (b) Size (c) Uniformity (d) Condition.
C. Wholesale Price Levels on the New Zealand markets over the 5 yr. Period 1930 -34. (I) Lemons (a) Auckland market (b) Christchurch Market (c) Four Main centres. (d) Influence of grade on lemon prices. (e) Relation between supply and lemon prices (II) New Zealand Grapefruit. (III) Oranges (iv) General.
D. Retail prices (I) Lemons (II) Grapefruit (III) Oranges.
E. The Consumer Viewpoint.
F. The Citrus Embargo; a possible alternative.

A. THE GENERAL PRICE LEVEL AND DEMAND SITUATION.

The profitableness of any enterprise is vitally affected by changes in the general price level of all commodities. In respect of citrus growing, it is therefore affected by the movement of citrus prices, as compared with other prices, by changes in domestic demand, as reflected in business activity, and by changes in foreign demand, as reflected in the surplus available for export from other countries to the New Zealand market. Since 1929-1930 there has been a world wide decline in the general price level, the present New Zealand export price index being slightly below the average level, which prevailed during 1910-1914. Once started, this decline tended to initiate conditions leading to further decline. Agriculture generally is in a particularly difficult situation because prices of farm products have fallen much more than have prices of other commodities. It is not possible here to expand upon

the relation of citrus prices to general commodity prices and prices of other farm products, since detailed information is not available regarding the average prices realised for citrus over the last few years, but in common with other agricultural products, citrus prices declined approximately 35 per cent between 1930 and 1932. There has, however, been an upward trend in the market prices since 1932, due to the operation of the embargo on Australian fruit, and the general trend towards a policy of national self-sufficiency on the part of the Dominion.

B. WHOLESALE PRICES OF CITRUS IN NEW ZEALAND.

(I) Collecting data.

When this Survey was originally undertaken, it had been hoped to collect a considerable volume of information on the size of markets available in the Dominion, the relative prices operating on those markets and to obtain some reliable information on the trend of prices over the last few years, but considerable difficulties were experienced in obtaining any information. The statistics collected by the Government Statistician were practically valueless as far as any analysis of market conditions in the Dominion was concerned. Figures were collected by the Government Statistician with the intention of showing the average price of oranges in the main markets, but these average prices relate to prices on the fifteenth day of each month, as reported by marketing firms, the figures quoted being unweighted arithmetical averages of a number of returns received in each city. For instance, Australian and Californian Oranges are grouped together in one average, although the usual difference in price per case is in the vicinity of 2o/-. The averages given, therefore,

represent little information of reliable value. During the months, January to May, they must represent an average composed largely of Californian fruit, while, during the remainder of the season to December, the average must be composed largely of Australian fruit. They are, therefore, practically useless in any analysis of market conditions.

It was hoped that the Auctioneers, who supplied market reports to the Daily Newspapers, might have filed duplicate copies of their reports and that these might be available. Unfortunately this is not done, and the only information it was possible to obtain in respect of wholesale prices of citrus in the Dominion was by reference to market reports in the Daily Newspapers of the main centres. In the case of Auckland, these reports were fairly satisfactory and have afforded a basis for a number of Tables and the Figures given later in this section. The reports from Christchurch were also relatively satisfactory, but those from Dunedin and Wellington could not be used as a suitable basis for any computation of reports over a long period.

Variations also occurred in the type of market reports submitted, no uniform or standard method of reporting being adopted throughout. Certain information was also available from some of the packing and curing establishments, who kindly permitted me to peruse their statements of accounts and payouts for a period of years, and more particularly for the 1934 season. I am particularly indebted in this respect to Messrs. Turners and Growers, and the Tauranga Citrus Association.

Very few growers kept accounts of sales of a type suitable for analysis - many recording only net returns from the Auctioneeer and very few keeping separate accounts of the returns by the various methods of marketing. It was not possible with the time at my disposal during the Survey, to analyse the accounts of individual growers, so as to separate prices received at Auction from those received by direct sales to retailers or private consumers, hence the analysis of gross returns to individual growers was in many cases a relatively futile proceeeding and it has only been possible to give returns from a few of the better-class growers, who kept a careful check on sales. Such data as were collected from these various sources are submitted in the following chapter.

(II) Factors affecting prices.

(a) General price level.

In sympathy with the trend of general prices, prices for citrus fruits tend to fluctuate with other commodities. The fall in the average payout for lemons by the Tauranga Citrus Association over the period I930-I93[illegible] has been 35 per cent (Fig. XXIV), This being comparable with the fall which occurred in the price of dairy produce, although, owing to the operation of other factors, influencing supply, citrus prices have risen during the seasons, I933 - I934.

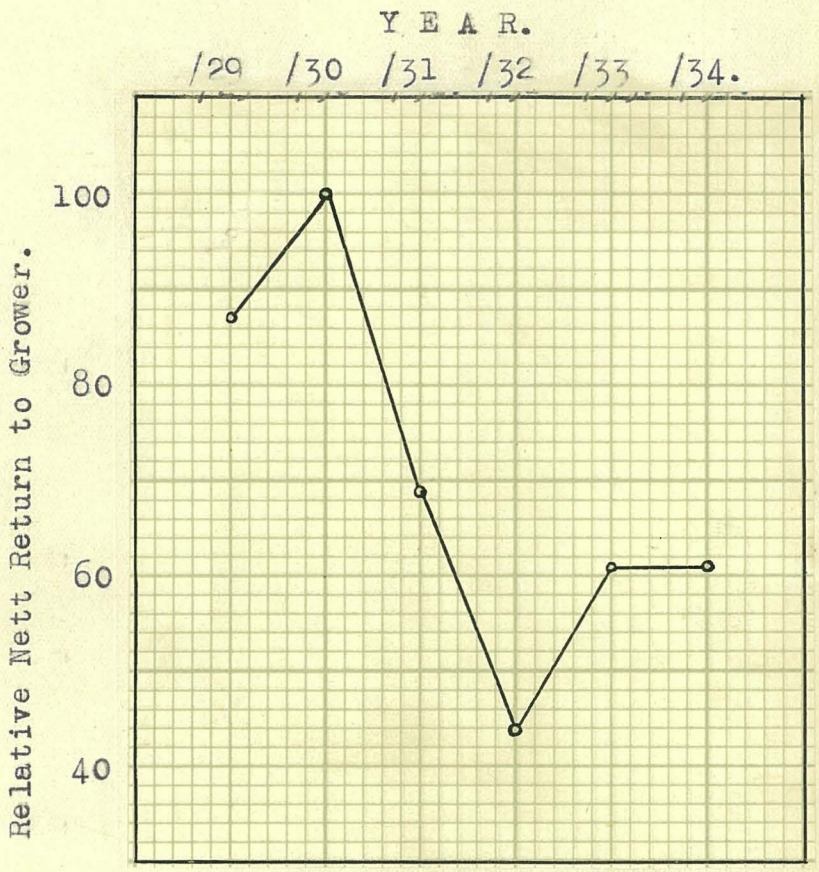
(b) Demand.

It is necessary to consider the demand for citrus fruits separately according to the variety concerned since the demand varies considerably.

In the case of lemons the demand tends to be relatively inelastic, small variations in supply causing considerable variations in price (see Fig. XXXIII). People do not buy many more lemons because of a decline in price nor do they greatly reduce their purchases

F I G U R E XXIV.

Shewing the Relative Nett Return to Growers for Lemons, Paid by the Tauranga Citrus Assn. Ltd. over the Period 1929-34.



because of a rise in price.

The chief reason why the demand for lemons tends to be relatively inelastic is that their cost is often a small part of the cost of the product in which they are used. In the preparation of many foods lemons constitute an important but relatively trifling item in the cost. These foods are seldom prepared without lemons even when the cost is high, but on the other hand no larger quantity is used when the price is low. The cost of the fruit used is so small in comparison with the total cost of the product that a material change in the price of lemons has little influence on whether the product will be made or not.

This inelasticity of demand is of considerable importance in the consideration of marketing problems and the effect of an oversupply on the market prices realised. With a given demand situation a large decline in price is necessary to dispose of a small surplus because consumption does not increase readily with a reduction in price. On the other hand a comparatively small shortage will cause prices to rise rapidly because such a rise does not greatly retard consumption.

The question of regulated marketing is therefore of paramount importance in the case of lemons since a small glut results in a disproportionate fall in prices.

Normally the heaviest demand for lemons is during the summer months when supplies are lowest with the result that prices tend to be highest at that time of the year. During the winter months the demand tends to slacken and prices fall, the principal factor causing changes in the winter demand being the prevalence of sickness such as influenza and colds. Lemons are widely used as a remedy for these complaints and consequently a serious outbreak greatly increases the demand and raises prices.

In the case of oranges the demand tends to be more elastic and a fall in prices usually has an immediate effect in stimulating consumption. This effect is retarded somewhat by the lag in retail prices which do not fluctuate to the same extent as wholesale prices. Retail friction may therefore be an important item in accentuating the effect of a temporary glut on the markets.

Oranges are less used in the preparation of food than are lemons, being chiefly consumed for dessert. Hence when prices are high the demand is transferred to other fresh fruits which may be relatively lower in price. They are, however, at all times a popular article of diet and with low prices stimulate a ready demand.

Where grapefruit is used as a breakfast appetiser the demand becomes relatively inelastic unless prices rise to very high levels. In the case of New Zealand Grapefruit, of course, the position is complicated by the fact that the fruit is also used in the making of marmalade and has a definite seasonal use, the demand being highly elastic. Housewives delay their marmalade making until the price of fruit drops when supplies are purchased for jam-making purposes.

(c) General Supply.

As has been shown in the previous section, the supply of citrus fruits arriving in the Dominion had shown a progressive increase over the period preceding 1933 and reached a peak in the years 1931-1932. The arrival of increasing supplies on a market with lowered purchasing power led to a considerable depression in the price being realised for citrus fruits, but with the application of the embargo in 1932 and the arrival of only regulated shipments from Australia, the price situation has recovered considerably. This has been assisted in part, also, by the operation of protective

tariffs favouring the New Zealand industry. The general trend, therefore, has in the last two seasons shown a rise, in spite of little or no increase in the purchasing power of the community. It is difficult to estimate just how much one kind of citrus fruit may replace another, i.e. whether grapefruit when low im price offers serious competition to the sale of sweet oranges and vice versa, but the general trend of prices shows a certain relation between the prices for all groups of citrus fruits. This may be merely coincidence, due to their all being influenced by the same set of factors, and little information is available as to the inelasticity of demand for the various varieties of citrus. The general price level for all groups of citrus is therefore governed very largely by the general purchasing power of the community and the total supplies available but the fluctuations for individual lines of fruit tend to operate an individual commodites within certain limits.

(d) Supply from individual countries.

While oranges may be treated as a general commodity on the market, there appears to be a marked influence on prices for individual lines according to the supply available from the particular country of origin. Thus by reference to the chart of wholesale prices of oranges or grapefruit, it will be seen that as supply dwindled at the end of the season for any particular type of fruit, prices tend to rise more or less irrespective of the general citrus price level. This is particularly marked in the 1930 1931-32 seasons. Though prices tend toshow a very strong rising market as supplies from individual countries diminish in amount, in certain cases the peak is reached a fortnight or three weeks prior to the final quotation probably due to the fact that the last fruit arriving or taken out of store, and placed on the market are in a poor or wasty

(e) Point of disposal.

Particularly with lemons produced in New Zealand, prices tend to be lower near the point of production and to increase as one reaches more distant markets. In Table LXII and Fig. XXV are shown the monthly arithmetical means of the weekly top quotations for local lemons on the four main markets ih the Dominion in I934.

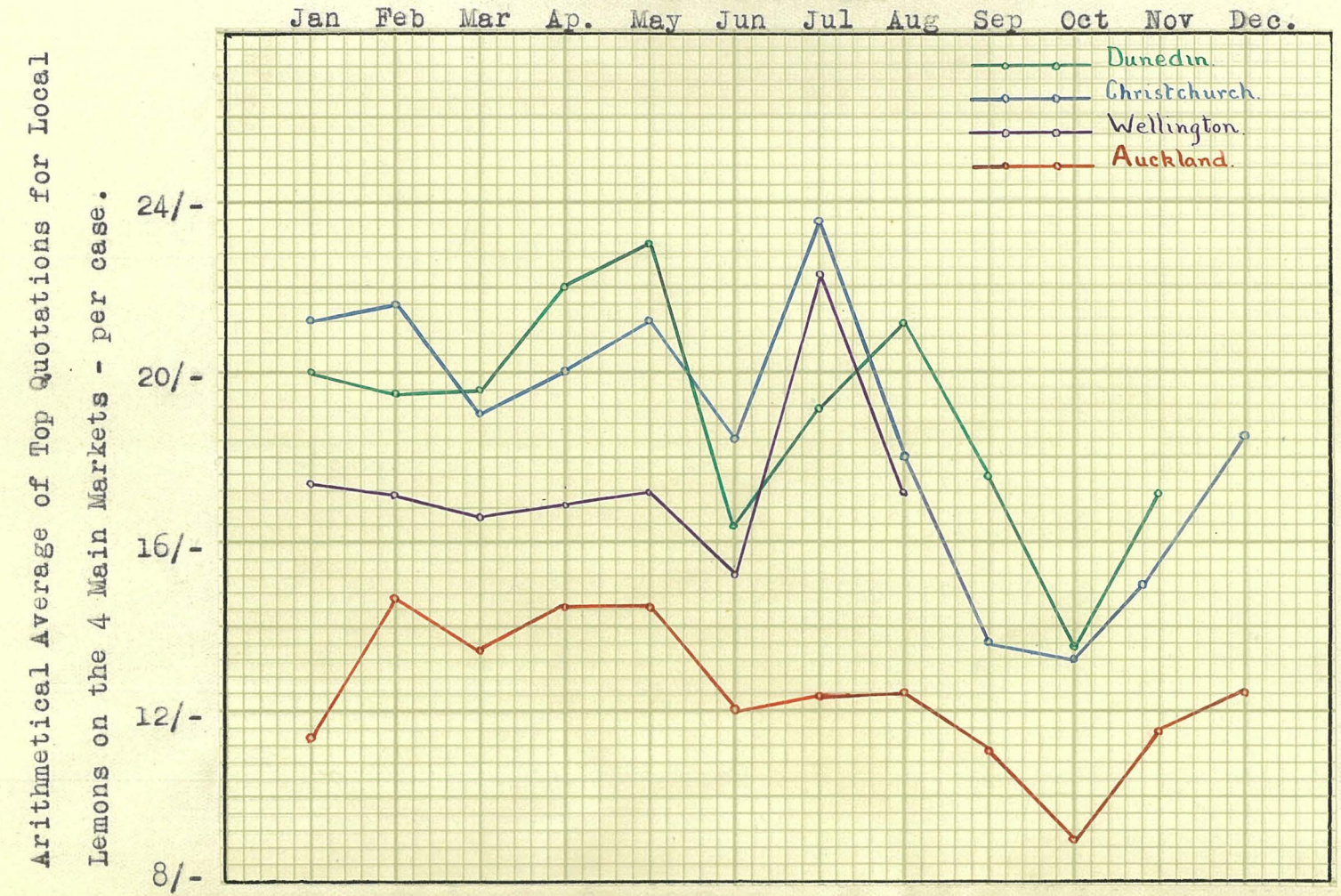
T A B L E L X I I.

Monthly Arithmetical average top quotation on the 4 main New Zealand markets for local lemons for the year I934.

M O N T H.	AUCK-LAND.	WELLING-TON.	CHRISTCHURCH.	DUNEDIN.
JANUARY	II/6	I7/5	2I/3	20/-
FEBRUARY	I4/9	I7/3	2I/8	I8/6
MARCH	I3/7	I6/9	I9/-	I8/7
APRIL	I4/6	I6/I0½	20/-	22/-
MAY	I4/6	I7/2	2I/3	23/-
JUNE	I2/-	I5/3	I8/5	I6/7
JULY	I2/4½	22/4	23/8	I9/3
AUGUST	I2/6	I7/2	I8/-	2I/3
SEPTEMBER	II/2		I3/I0	I7/7
OCTOBER	9/-	No data	I3/4	I3/6
NOVEMBER	II/9		I5/-	I7/3
DECEMBER.	I2/5		I8/6	

Prices tend to be relatively lower in Auckland and to increase as one proceeds further south, although there is a curious discrepancy in some months as between Christchurch and Deundin, Christchurch prices tending to be considerably higher than Dunedin prices. It is

F I G U R E XXV.



Shewing the Arithmetical Mean of the Top Quotations for Local Lemons on the Four Main Markets in the Dominion. (1934).

possible that this discrepancy may be more apparent than real, since the reports from various markets are not on any uniform basis, and the average price given is an unweighted average, so that the mean figure given for Christchurch may have been unduly influenced by small lines of relatively high price fruit. However, the general trend is for prices to increase progressively according to the distance of the market from the producing centres of the Dominion. Unfortunately neither Wellington nor Dunedin prices were complete for the whole twelve month period.

The relative freight rates to the main centres south of Auckland have been given in a previous Section (Table XLIX) and the price differences between the main centres tend on the whole to accentuate the differences in freight rates, since growers or brokers will not ship fruit south unless assured of more than the difference necessary to cover freight charges. In other words, there must be a margin of profitableness to cover the risk of consigning, before fruit are shipped to the Southern markets. In the case of Oranges this difference is not so marked since practically the whole of the supply is imported and the greater part required by the southern markets is shipped direct from the country of origin. Prices for sweet oranges, therefore, tend to be more nearly equal throughout the Dominion, although in the case of Dunedin, where most of the fruit is transhipped from either Wellington or Lyttleton, prices are probably higher (no data available).

(III) Factors affecting individual lines.

(a) Quality (Grade).

Within the usual price level as affected by the factors discussed above, individual lines fluctuate in price according to a variety of factors affecting the

quality and condition of the individual line. One of the chief factors affecting prices is the grade of the fruit. It is difficult to get any information so far as imported fruit are concerned but by courtesy of two of the packing houses fairly complete data were secured in respect of lemons, and this will be presented in a further section. The margin between the price of the lower grades and the top lines on the markets tends to fluctuate according to the supply on the market. When the total supply of fruit is limited, the margin between the price for the lowest and the top lines tends to diminish while when ample supplies are available, the lowest grades become difficult of disposal and the relative margin between their price and that of "extra fancy" grade considerably increases. Growers can considerably increase their average prices by paying more attention to growing only "extra fancy" and "fancy" grade fruit, with a minimum of third and fourth grade. These lower grades of fruit tend to have a depressing effect on the market, lowering the price of all lines and weakening the market, particularly at critical periods of the year when there is an over supply of fruit available.

(b) Size (Count).

The size of the fruit i.e. the "count", has an important bearing on the price realised. Most of the fruit sold at auction is purchased by retailers, to be sold over the counter to the consumer, and there is a definite preference for certain sizes of fruit, which tend to show a greater margin of profit, and tend to sell better on the retail market owing to the lower price which needs to be charged per dozen. Thus there is a definite preference for lemons of approximately 200's count, since these, while a reasonable size from the point of view of the consumer,

permit the price per dozen to be lower than if the case had a count of only say I40. The consumer, on the whole, usually prefers a large fruit, but at the same time his desire in this respect is curbed by the depth of his pocket and the best selling size of fruit on the market at any one time will depend in part, at least,on the general purchasing power of the community. Thus in times of depression like the present, there is a tendency for smaller sizes to be in greater demand than is normal during times of higher average purchasing power. Thus differences due to count, may become almost as important as differences in grade, since in some cases it means a difference of 30 per cent on the price of the top line.

The following quotations were given for Australian oranges on the Dunedin market for September the 8th, I934:

Count	80s	I9s.	II2s.	I26s.	I50's.	I76's	Smaller
Price	I6/-	I7/-	I7/6	I8/6	I9/6	22/-	23/-

These illustrate the present demand for a small size fruit, which can be disposed of at a low price per dozen by the retailer, so bringing the fruit within the reach of the average consumer.

(c) Uniformity.

The modern market demands a uniform standardised product of reliable equality so that confidence may be maintained in the type of fruit which is being purchased and the margin of profit that may be made on it by the retailer. It is unfortunate that in the past much of the New Zealand production has been marketed in a hapahzard fashion with no uniform grades or standards, the three main packing houses having set up their own grades which are not uniform from organisation to organisation. It is not therefore possible to make comparisons between the prices secured

by each organisation since the grades of fruit under consideration differ in each case. The value of a standardised product on the modern market is well shown by the big margin between the price realised for Californian oranges (Sunkist) and that realised for island oranges; while other factors undoubtedly operate in assisting to maintain the price discrepancy which exists between Californian and Island oranges, one of the major factors is the standardised packing and uniform quality of the Californian product.

(d) Condition.

Much fruit imported arrives in a very wasty condition and is either sold in its original pack or may be repacked by the importers, and only sound fruit placed on the market. This considerably increases the cost of handling, and destroys the retailers' confidence in the keeping quality of the line. Where wastage is excessive, the prices realised are lower by a sufficient margin to insure the retailer for the risk he takes in purchasing a line in poor condition. Island oranges arrive in notoriously wasty condition, in some cases, 50% or over of the line having to be discarded; the returns to growers must be correspondingly low.

The keeping quality of New Zealand lemons also appears to vary considerably from orchard to orchard and from district to district, according to the care taken in picking and curing, while there appears to be a residuum quite favourable of certain orchards, which must be explained on a basis of soil or climatic differences, being more favourable to the production of fruit of good keeping quality.

In the southern markets New Zealand lemons are generally stated to be of inferior keeping quality to Californian, and this position must be rectified if the local product is to secure a price compatible with its quality in respect of juice and acid content. In making such comparisons between local and imported products, however, it must be constantly borne in mimd that the fruit imported to this country consists of only the "extra fancy" and "fancy" grade produce of the exporting countries; carefully selected and cured to enhance its keeping quality and such fruit, is frequently compared with low grade local production. If the comparison is to be a fair one, "extra fancy" New Zealand grade should be compared with the imported article.

C. WHOLESALE PRICE LEVELS ON THE NEW ZEALAND MARKETS OVER THE 5 YEAR PERIOD? I930 - I934.

(I) Lemons.

In appendix VII the weekly quotations are given from the market reports of the "New Zealand Herald" and "Christchurch Times" for the period I930-I934 inclusive, and from the "Otago Daily Times" for I934, showing the market prices of New Zealand and imported lemons on their respective markets over the period. These are also shown in Fig. XXVI (Auckland) and Fig. XXVII (Christchurch).

(a) Auckland Market.

In Fig. XXVI the upper and lower quotations for the prices of "cured" New Zealand lemons on the Auckland markets are shown over the five year period, ending December, I934. The general trend of prices is downwards over the period I930-I931-I932, reaching its lowest ebb in June of the latter year. The market recovered considerably in I933 but fell slightly again in I934, although prices were fairly well maintained.

There tends to be a uniform seasonal fluctuation in prices, reaching a peak during April - May, and a low level during the period August-October, though this is liable to considerable variations in different years.

It is not possible from the figures given in the market quotations to form any accurate estimate of average prices, since an unweighted average based on the figures quoted is of little value. The figures given in market report represent "average values". Individual lines may sell considerably above quoted prices, while lines of "tree ripe" fruit or fruit of poor quality may sell at considerably lower levels than those shown in the graph. An interesting feature of the figures over the latter part of I933-34 is the relative stability of the market over fairly long periods. It is not possible to say whether this stability actually existed or whether the apparent flatness of the price trend is merely due to the fact that the quotations given are averages.

Imported lemons are rarely quoted on the Auckland market and have not been shown graphically owing to the discontinuous nature of the quotations.

Super-imposed on the wholesale market prices are shown the quotations for retail prices over the period I93I-I934 (see also appendix VII). These will be discussed in a later section.

(b) Christchurch Market.

In appendix VII and Fig. XXVII are shown the marked reports for all lemons on the Christchurch market over the period I930-I934. In considering these quotations it is necessary to again draw attention to the fact that the size of case varies according to the country of origin, and that prices, being quoted on a per case basis do not necessarily, therefore, give any indication of the price per lb. or per dozen, which the wholesale quotation

represents. As in the case of the Auckland market, New Zealand lemons tend to show a period of minimum price at the time of greatest supply, i.e. August, October, and a period of maximum price during the autumn months.

The prices for Australian lemons appear to fluctuate in sympathy with prices for New Zealand fruit but have minor variations according to their own supply on the market. Since the application of the embargo in December, 1932, there have been no further importations of Australian lemons.

The price for Californian lemons maintains a wide margin of superiority to other lines offering on the market. They commend such a margin of superiority due to: (1) their standardised grading and packing, which gives them the confidence of the buying public (2) their excellent quality: (3) the price is considerably influenced by the fact that they are handled by importers who purchase c.i.f. or f.o.b. California, and they are therefore a regulated commodity on an unregulated market. The supply is carefully regulated to avoid gluts, since at glut periods profits dwindle and unless a profit emerges, importers will not operate. Hence supplies are largest during the period of minimum supply of local lemons, since at this period, the importer can operate with greater confidence in the success of the venture. At other periods of the year, the supply is extremely limited and is only such as will supply a small critical market, which demands the highest quality and (4) the high cost of importing such fruit makes it necessary that the resale price should also be high in order to ensure a margin of profit to the importer.

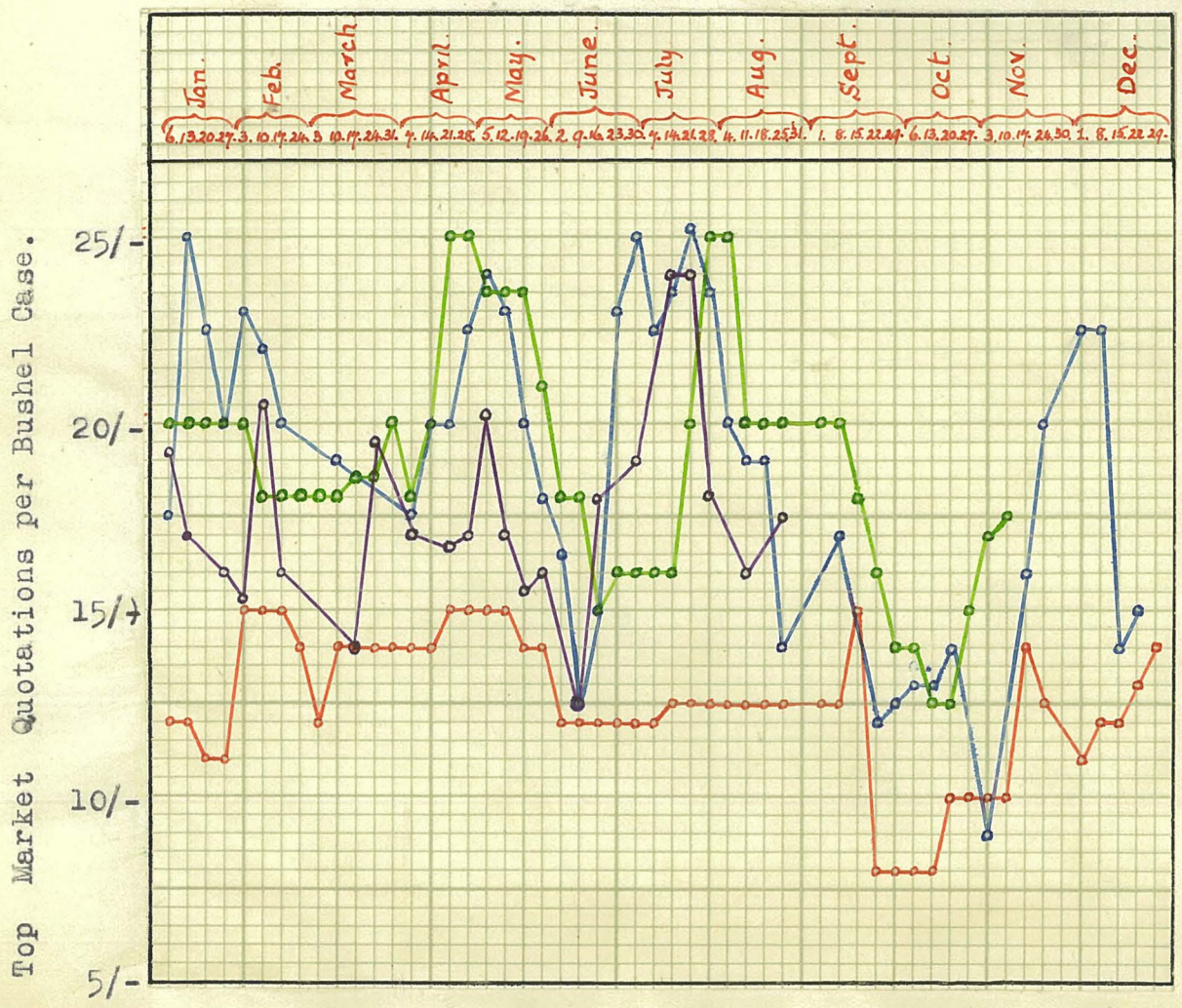
(c) Four Main Centres 1934.

In Fig. XXVIII are shown the top weekly quotations for New Zealand lemons on the four main markets in the Dominion. These have been discussed already under the heading of "location of market". The general trend of prices for the 1934 season roughly coincides for the main four markets, but there is frequently a lag of a week in prices realised on the southern markets, though this is by no means always the case. An interesting feature is the relatively high prices realised during July on the southern markets. There is a definite peak of prices at this point in spite of relatively low prices ruling on the Auckland market. It is difficult to account for such a discrepancy and points to the haphazard nature of the general marketing of lemons in the Dominion. Under a central control in charge of the distribution of lemons throughout the Dominion, such a position should not arise, since supplies could be taken from those markets, where prices were low and shipped to those where prices were high; nor should such a condition exist as is shown for November 3rd. where Christchurch prices are 1/- a case below the Auckland quotation. Since the cost of shipping to Christchurch is in the vicinity of 3/6 per case, this means that growers shipping to Christchurch and selling on this date were losing 4/6 as against selling on the Auckland market.

The position of a peak on the southern markets during late July, must be interpreted as due to lack of confidence on the part of Auckland shippers, who, anticipating the usual seasonal fall in prices, were reluctant to ship to southern markets owing to the heavy freight charges involved and the low prices which had been realised during early June. Such wide variations in a small country like New Zealand show the folly of relying on individual

F I G U R E XXVIII.

Shewing the Top Quotations given Weekly for N.Z. Lemons on the Four Main Markets, 1934.



Top Quotations given Weekly for N.Z. Lemons on the following Markets:-

- Auckland.
- Christchurch.
- Dunedin.
- Wellington.

marketing. It should be possible to maintain the various markets at a more or less uniform price, with just sufficient margin to cover the cost of shipping, but this can only be done when the whole of the citrus fruit produced in the Dominion is sold under one control by an organisation possessed of the fullest possible information in respect of the amount of fruit available; the various grades, etc., and information in respect of the amount of importations taking place.

(d) The influence of Grade on lemon prices.

Through the courtesy of two of the curing organisations, it has been possible to analyse the effect of grades on the relative sale price of lemons sold during the 1934 season and these figures are given in Table LXIII and LXIV and are shown graphically in Fig. XXIX and Fig.XXX. Whenthe price of the "extra fancy" grade in each case is taken as 100 in each month, the prices of the other grades are expressed as percentages of the price of extra fancy grades giving an indication of the variations in price of the various grades.

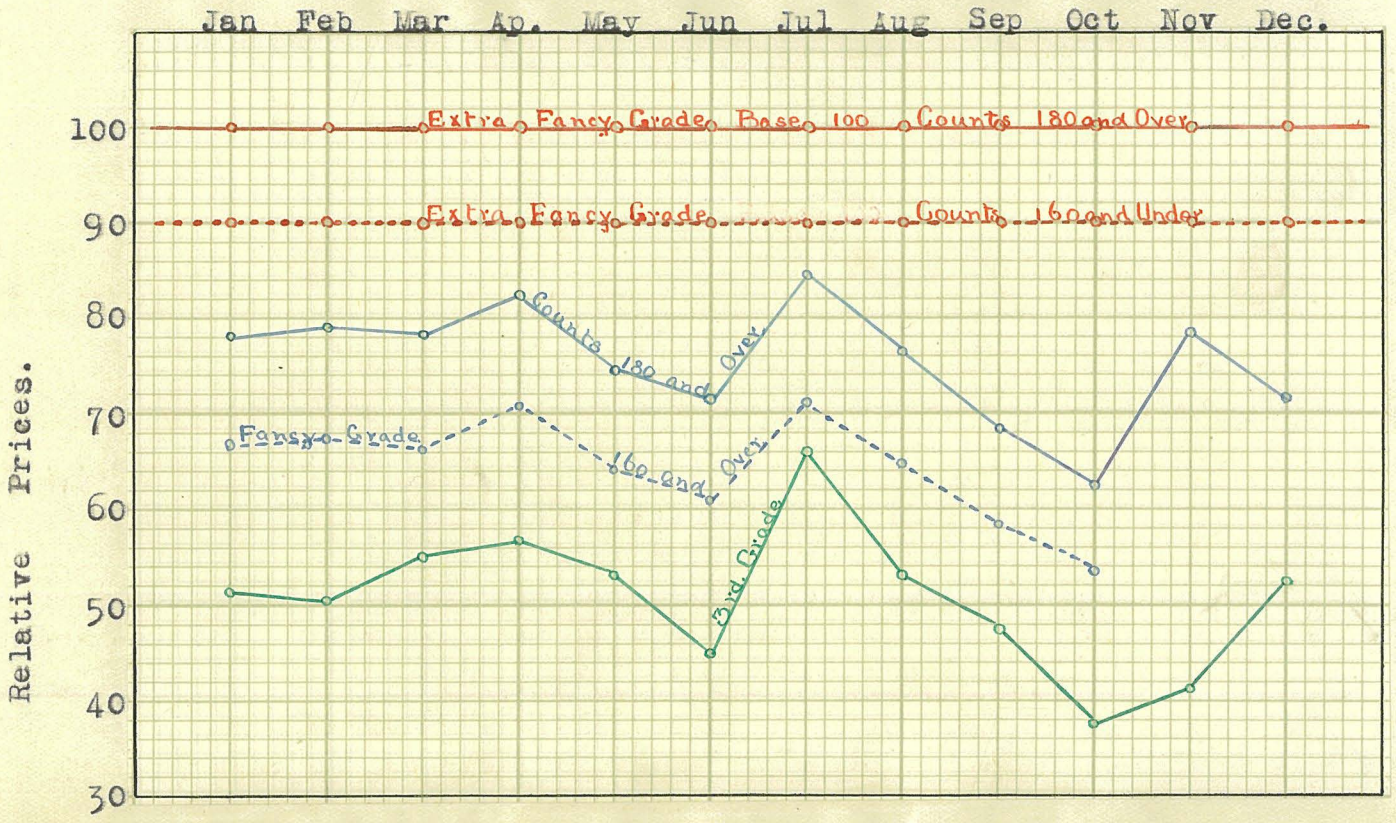
T A B L E LXIII

Relative Pool Prices of Organisation "A" for the various Grades of Lemons sold during 1934, when the price for Extra Fancy Grade each month is taken as base 100.

	Extra Fancy		Fancy		3rd. Grade
	Counts 180 & over	Counts 160 & under	Counts 180 & over	Counts 160 & under	
Jan.	100	90.3	77.8	67.0	51.9
Feb.	100	90.5	79.3	67.4	50.9
March	100	90.0	78.3	66.8	55.2
April	100	90.6	82.7	70.9	57.0
May	100	90.2	74.6	64.0	53.4
June	100	89.7	71.5	61.7	45.3
July	100	90.1	84.2	71.5	66.1
August	100	90.0	76.5	64.9	53.5
September	100	90.2	68.4	58.1	47.2
October	100	90.1	62.9	-	37.9
November	100	90.0	78.5	-	41.3
December	100	90.5	71.4	-	52.5

F I G U R E XXIX.

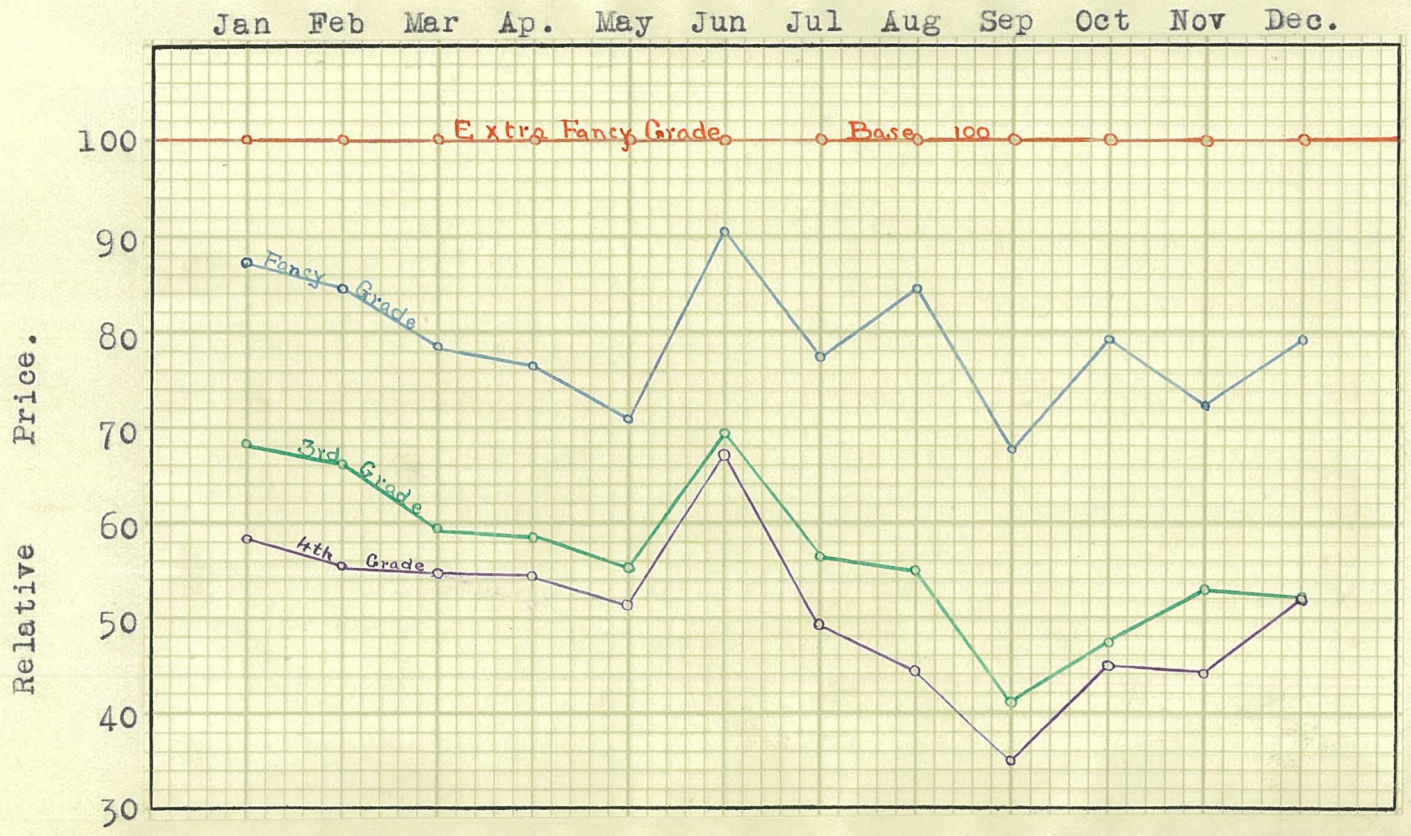
Relative Pool Prices of Organisation "A" for the Various Grades of Lemons Sold During 1934 When the Price of "Extra Fancy" Grade each Month is Taken as Base 100.



F I G U R E XXX.

Relative Pool Prices of Organisation "B" for the Various Grades of Lemons Sold During 1934

When the Price of "Extra Fancy" Grade each Month is Taken as Base 100.



It will be noticed in the case of Organisation "A" that both the "extra fancy" and the "fancy" grade are paid at two different rates according to the size of the fruit, since count influences sale price. In the case of "extra fancy" grade, it would appear that the whole of the sales for "extra fancy" fruit are pooled and then a uniform reduction (IO per cent) made in the case of the larger sizes, since the difference in relative price is too uniform to be coincidence. The price margin (on a percentage basis) between "extra fancy" and the lower grades tends to be widest when supplies are at a maximum, and to diminish when supplies are at a minimum.

T A B L E L X I V.

Relative Pool Prices of Organisation "B" for the various grades of lemons sold during I934, when the price of extra Fancy Grade; each month is taken as Base, I00.

JANUARY	I00	87.5	68.3	58.3
FEBRUARY	I00	85	66.2	55.4
MARCH	I00	78.9	59.6	54.8
APRIL	I00	76.6	59.2	54.8
MAY	I00	7I.2	55.4	5I.6
JUNE	I00	90.3	69.4	68.5
JULY	I00	77.8	56.5	49.5
AUGUST	I00	84.4	55.0	44.4
SEPTEMBER	I00	67.4	4I.I	35.0
OCTOBER	I00	79.4	47.8	45.5
NOVEMBER	I00	72.2	53.0	43.9
DECEMBER	I00	79.5	52.4	52.4

In the case of Organisation "B" the fluctuation in the relative values of the grades is less uniform than in case of Organisation "A", although the percentage difference in the case of the lowest grade fruit, covers a very similar range, falling at the point of maximum supply to only 35 per cent of the price of extra fancy in that month.

In Table LXV and Table LXVI are shown the fluctuations in the price of each grade for the two packing houses over the twelve month period of I934, when the January price on each grade is taken as base I00 and prices realised in subsequent months are expressed as percentages of the price realised for that particular grade for the month of January. These relative prices are also shown graphically in Fig. XXXI and Fig. XXXII.

T A B L E L X V.

Relative Pool Prices of Organisation "A" for the various Grades of lemons sold during I934, when the January price is taken as Base I00 for each grade.

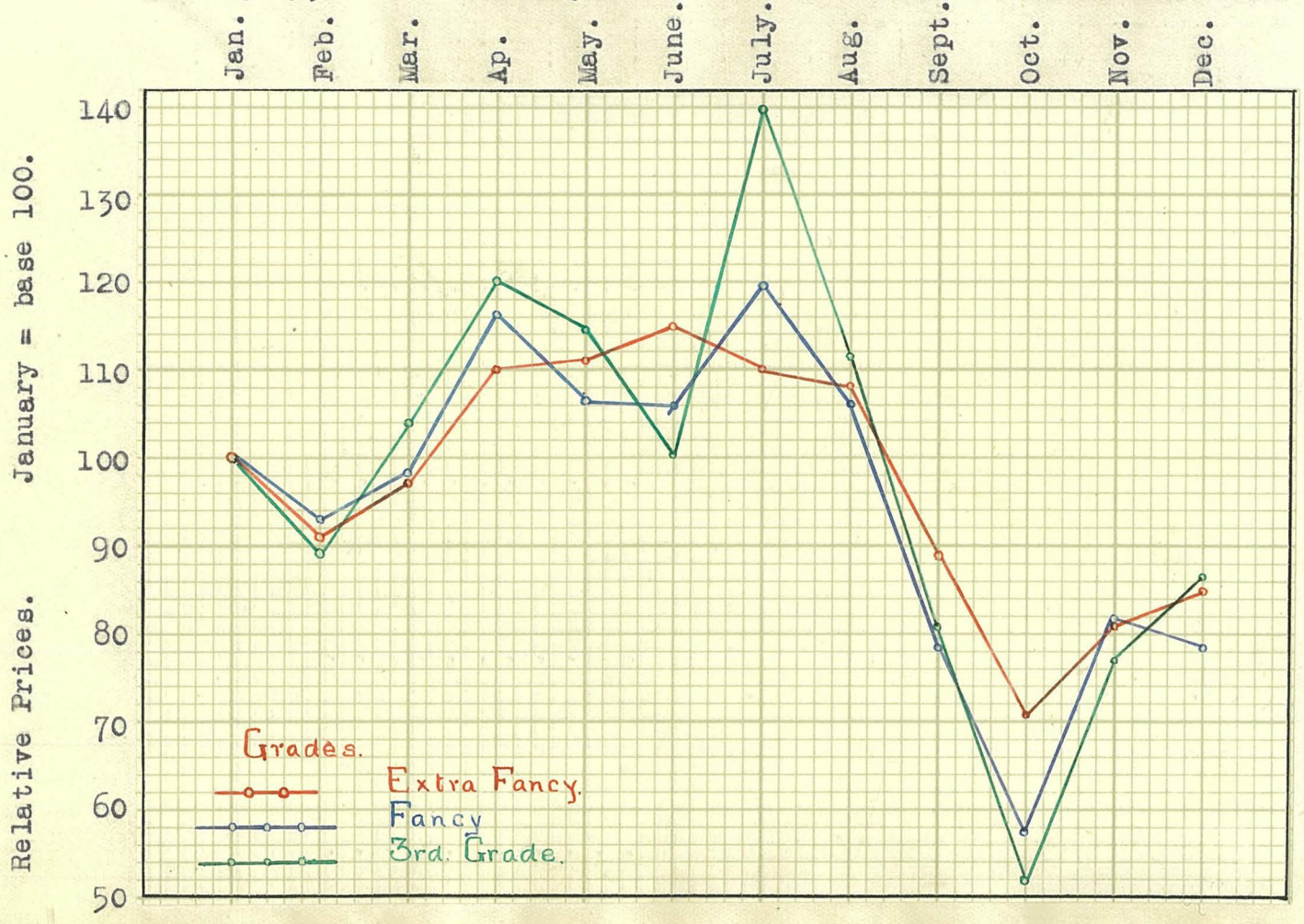
	Extra Fancy Counts I80 & over.	Counts I60 & lower	Fancy Counts I80 & over.	3rd. Grade All Counts.
JANUARY	I00	I00	I00	I00
FEBRUARY	9I.4	9I.6	93.I	89.6
MARCH	97.8	97.5	98.5	I04.I
APRIL	I09.7	II0.I	II6.6	I20.7
MAY	III.4	III.3	I06.8	II4.6
JUNE	II5.6	II4.9	I06.2	I0I
JULY	II0.3	II0.I	II9.4	I40.6
AUGUST	I08.I	I07.7	I06.2	III.5
SEPTEMBER	89.2	89.I	78.4	8I.2
OCTOBER	7I.4	7I.2	57.6	52.I
NOVEMBER	8I.I	80.8	8I.8	77.I
DECEMBER	85.4	85.6	78.4	86.5

In the case of Organisation"A" the extra fancy fruit shows less variation in price than the other two grades, while the third grade fruit shows the maximum variation covering a range from I40 to 52 per cent of its January price, while the "extra fancy" grade only covers the range II5 to 7I per cent of its January price. In the case of Organisation "B" the lower grades tend to fall fairly uniformly from their January price with a slight rise in March-April and again in June, to reach their lowest level in September.

FIGURE XXXI.

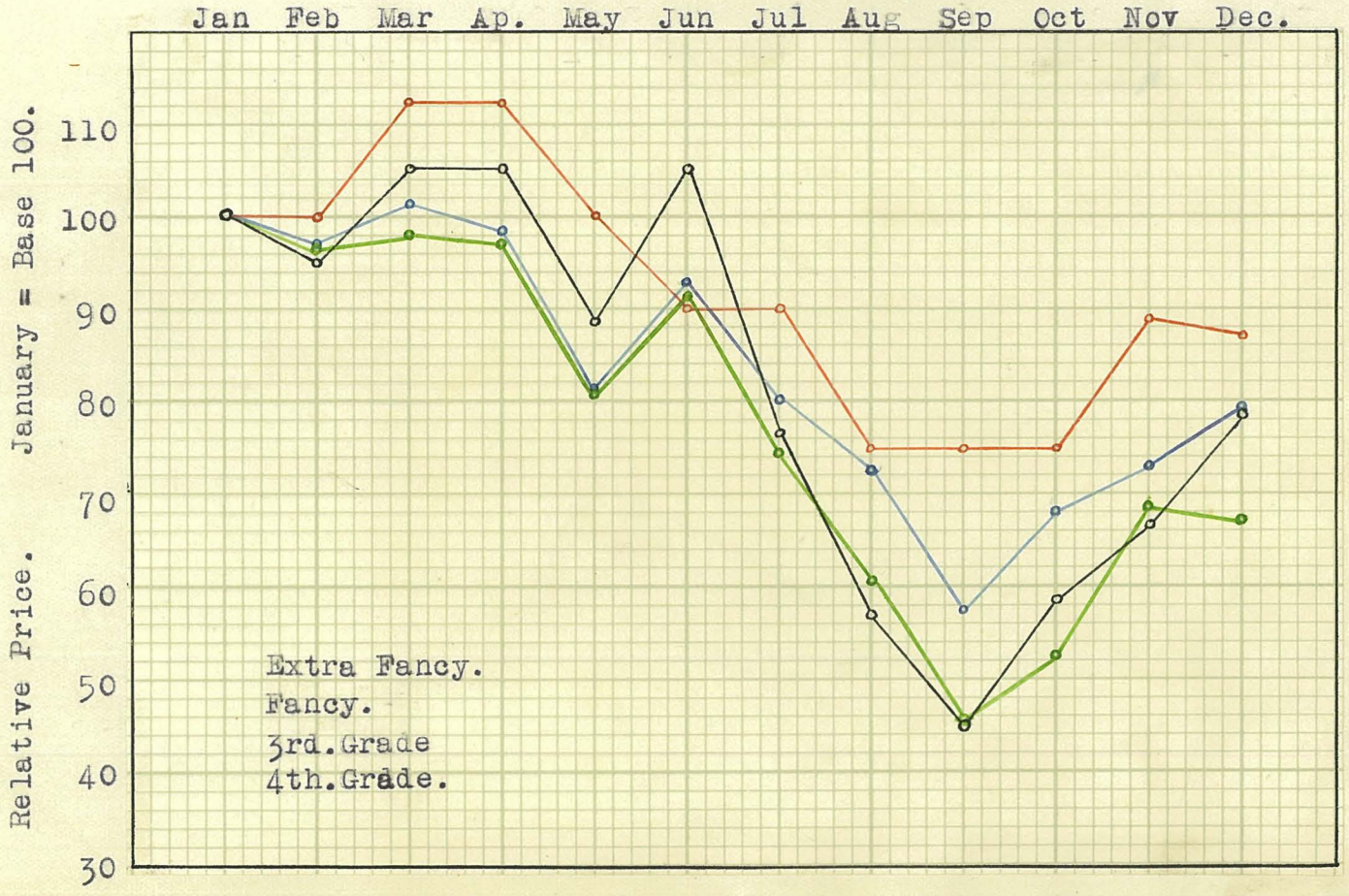
Relative Pool Prices of Organisation "A" for the Various Grades of Lemons Sold

During 1934. January Price for each Grade taken as Base 100.



F I G U R E XXXII.

Relative Pool Prices of Organisation "B" for the Various Grades of Lemons Sold During 1934 when January Price for Each Grade is Taken as Base 100 for that Grade.



T A B L E L X V I.

Relative Pool Prices of Organisation "B" for the various grades of lemons sold during 1934, when the January price is taken as Base 100 for each Grade.

	Extra Fancy.	Fancy.	3rd. Grade.	4th. Grade.
January	100	100	100	100
February	100	97	96.9	94.9
March	112.5	101.4	98.1	105.6
April	112.5	98.6	97.5	105.6
May	100	81.4	81.0	88.5
June	90	92.8	91.4	105.6
July	90	80	74.4	76.4
August	75	72.3	60.3	57
September	75	57.8	45.1	45
October	75	68.0	52.4	58.4
November	89	73.1	68.8	66.6
December	87	79.4	67.1	78.6

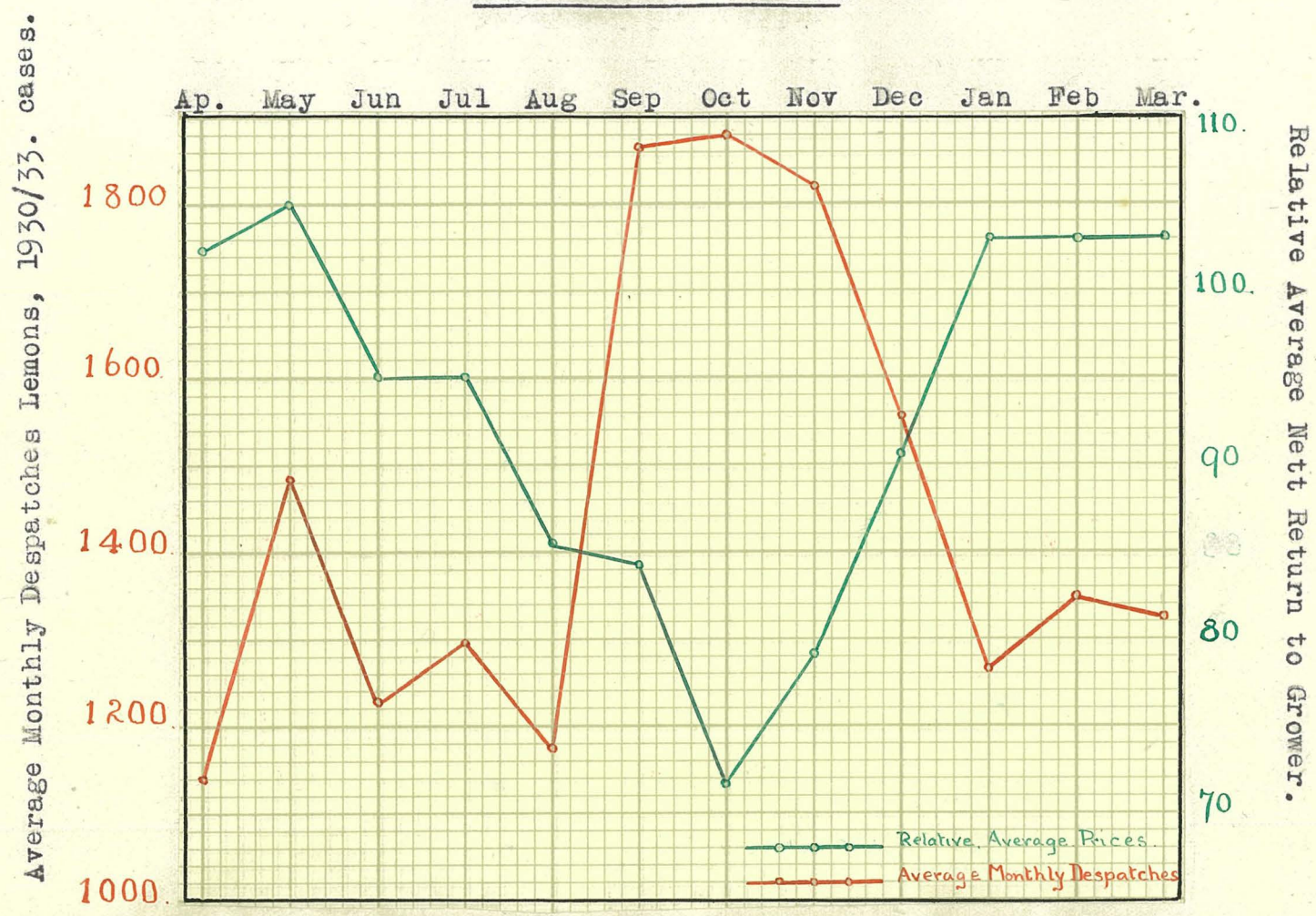
The difference in shape of the graphs of Organisation "B" would also suggest that the two concerns market their fruit on different markets, and this is probably the case, since Organisation "A" sends largely to southern markets, while organisation "B" markets quite a proportion of its product on the Auckland market. The fact that in both cases, the minimum prices realised coincide with the point of maximum supply to the individual concern, also suggest that the prices realised for their individual trends are largely governed by their own supply, i.e. their general prices are governed by the supply and demand situation, minor fluctuations occur according to the supply of the particular organisation.

T A B L E L X V I I.

Average Monthly Despatches of Lemons from Organisation "A" and Relative Average Monthly Nett Return to Growers for 1st.Grade fruit. Average over the 3yr. Period 1930/31, 1931/32, 1932/33, shewing Relation between Supply and Price.

MONTH.	AVERAGE MONTHLY DESPATCHES	RELATIVE AVERAGE NETT RETURN.
APRIL	1140	102
MAY	1486	105
JUNE	1233	95
JULY	1299	95
AUGUST	1378	85
SEPTEMBER	1869	84
OCTOBER	1880	71
NOVEMBER	1820	79
DECEMBER	1557	91
JANUARY	1267	103
FEBRUARY	1357	103
MARCH	1329	104

FIGURE XXXIII.



Monthly Despatches of Lemons and Relative Average Nett Return to Growers for 1st. Grade fruit averaged over the 3yr. Period 1930-33. Shews the Relationship between Supply and Prices. Organisation "A".

(e) Relation between Supply and lemon prices.

In Table LXVII are shown the average monthly despatches of lemons from one of the curing houses over the three year period, I930-I933, and the relative average net return to growers each month for first grade fruit averaged over the period, these being shown in Fig. XXXIII.

T A B L E L X V I I I.

Monthly Totals of Lemons received by Organisation "A" and relative average net return to Growers (all grades) for year I934.

MONTH.	NO. PACKED BUSHELS RECEIVED.	RELATIVE AVERAGE NET PRICES.
JANUARY	I508	I00
FEBRUARY	I234	89.6
MARCH	I546	96.9
APRIL	I503	II0.2
MAY	2295	99.0
JUNE	I472	89.0
JULY	I448	I24.0
AUGUST	I438	I07.2
SEPTEMBER	I649	7I.9
OCTOBER	2005	46.2
NOVEMBER	2369	77.3
DECEMBER	I882	78.6

It will be noted that prices tend to be inversely proportional to supply, ie. when supply is at a minimum, prices are at a maximum and vice versa indicating an inelastic demand.

In Table LXVIII and Fig. XXXIV data are given for the I934 season on the same Organisation. While the agreement between price and supply is not quite so perfect as when taken over a three year period, the general trend is still for price to be in inverse ratio to supply.

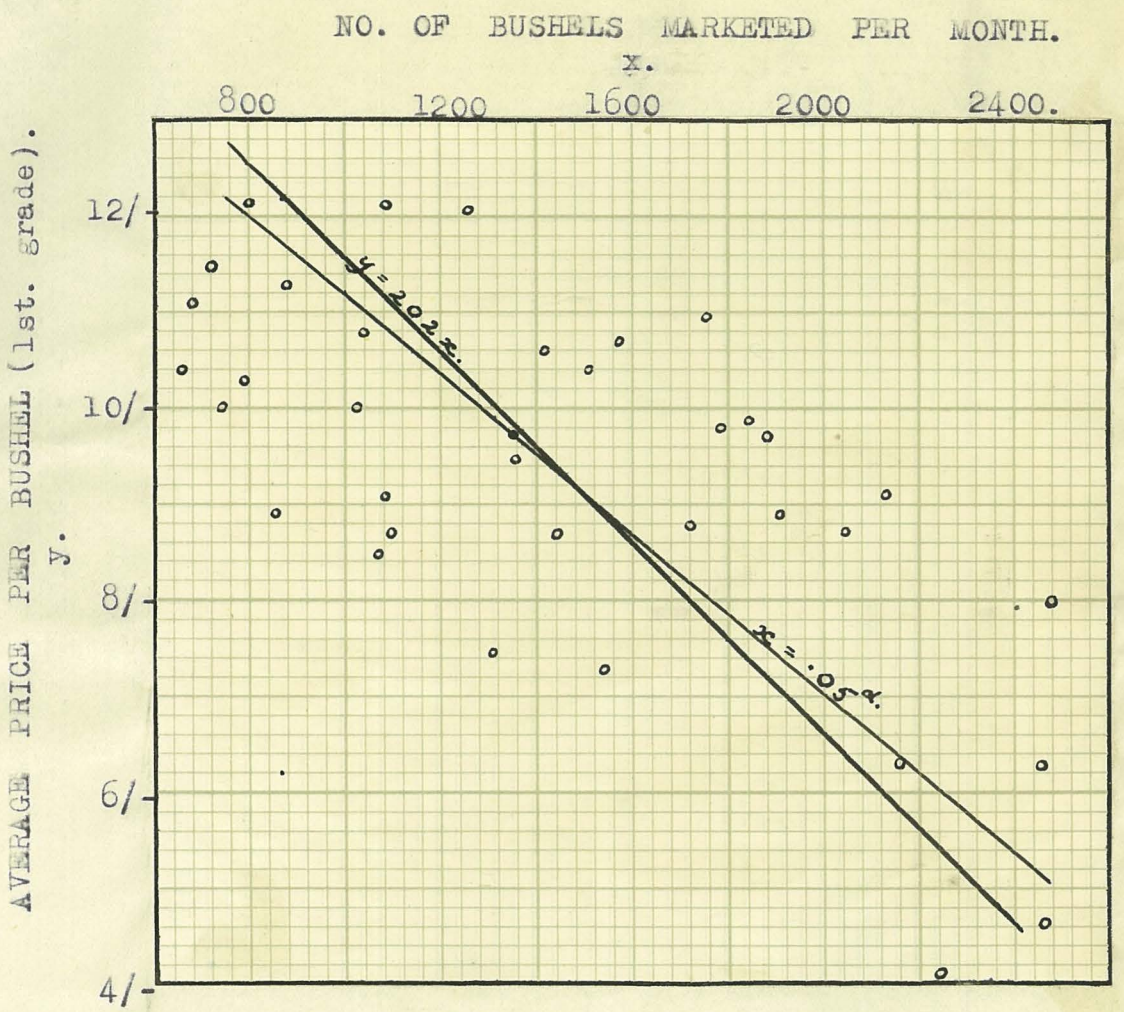
The price position in regard to lemons is therefore largely one of supply and demand. Under free trading conditions the maximum price that can be obtained in New Zealand is approximately world parity, plus the

F I G U R E XXXIV.

Monthly Despatches of Lemons and Relative Average Nett Price Paid to Growers, 1934, by Organisation "A". Shews the Relation Between Supply and Prices for 1934.

Since the section on the relation of price to supply was written a correlation coefficient has been worked out from the full data from which the averages shewn in Table LXVII were derived and these are shewn in the form of a "scatter diagram" below. Price and supply in the case of lemons sold by "Organisation A" shew a negative correlation of -0.616 ±0.1 while the regression coefficients shew that each shilling variation in price (±) is indicative of 202 Bushels of lemons (inversely ±) on the market while each bushel of lemons (±) extra or less on the market tend to cause a corresponding variation (inverse ±) of 0.05 pence per bushel in the price realised.

A "scatter diagram" with regression lines plotted is shewn below.



"Scatter Diagram" shewing relation between monthly supply and average price.

cost of freight from the country of export and an additional margin to cover the risk of loss by the importer. New Zealand, however, is not a free market, since duties are imposed on the importation of foreign lemons, and there is am embargo against the importation of fruit from Australia. The main sources of supply at the moment are local production, plus importations from California and Italy. The Californian importations are a regulated commodity and are therefore not so subject to the operation of the factors ordinarily controlling the price of a "free" commodity. The demand is relatively inelastic and prices therefore tend to fluctuate rather violently in inverse proportion to the supply. Demand is also considerably influenced by factors over which the grower has no control, such as epidemics of influenza; periods of excessively hot weather, etc. and these occasionally have a marked influence on the prices realised.

(II) New Zealand Grapefruit.

The wholesale prices of New Zealand grapefruit on the Auckland and Christchurch markets are given in Appendix VII and are shown graphically in Fig. XXXV and Fig. XXVII. The supply of fruit to the market is a seasonal one, - extending from May to December while the demand probably tends to be more elastic than in the case of lemons. Prices fell steadily during 1930-31 and were still low in the early part of 1932 but have shown considerable recovery subsequently, with a marked upward tendency subsequent to August in each year. Three quotations are shown on Fig. XXXV representing upper and lower quotations for the large sizes, and also the lowest quotation for the small sizes.

When grapefruit is used for dessert, there is a decided preference for a fruit ranging in size from $2\frac{3}{4}$"

to 3½" in diameter and this is reflected in the price which retailers are willing to pay on the market. As in the case of lemons, however, there is an equilibrium between the size of fruit which the customer desires, and the size of fruit which can be purchased at a reasonable price per dozen, the most profitable size varying with changes in the purchasing power of the consuming public. It was difficult to get accurate information on this point but one grower who kept accurate returns was able to give an indication of the relation between size and price realised on the Auckland market as follows : -

Count per bushel case	55	62	75	80	90	I08	I26	I50
Average price received	5/6	7/3	7/6	8/3	8/5	8/9	9/5	8/5

These figures were derived from a season's crop placed on the Auckland market at various times throughout the year I934. It is not improbable that a careful analysis might show that the sizes in demand vary also according to the season. The most popular size, as judged by price from this grower's returns were those packing I26 to the bushel case, there being a progressive diminution in price as the fruit became larger or smaller in size. It is probable also that various markets throughout the Dominion may have preference for certain sizes. Some growers informed the writer that they had found by experience that certain markets would, at certain times of the year, pay excellent prices for small sized fruit, and a careful survey of markets, with a view to meeting their requirements more exactly, could probably be profitably undertaken by a central co-operative selling organisation.

(III) Oranges.

In Appendix VII and Fig. XXXVI and Fig. XXXVII are shown the wholesale market prices of oranges per case on the Auckland and Christchurch markets over the period I930 -I934. The supply from each country of origin is a discontinuous one and as has been previously discussed, prices fluctuate both in regard to the general level and in respect to the supply from individual countries. At the close of the season for any exporting country, there seems, on the Auckland market, to be a general tendency for prices to rise fairly rapidly although, as has been previously noted, the peak price is frequently reached two to three weeks before the end of the season, this probably being due to wasty condition of the last lines of fruit offered for sale.

As in the case of Lemons, the Californian supply is a regulated one, the same causes operating to keep prices at a premium with respect to Australian and Cook Island supplies. The cost of importing Californian fruit into New Zealand at the present time is very heavy, the costs on an imaginary shipment of I00 cases being shown in tabular form below :

Cost of Importing Citrus Fruit from U.S.A, I934 - 35.

Imaginary shipment of I00 cases Oranges purchased at contract price of $ 4.90 per case, c.i.f. American currency.

C.I.F. cost	Varies	£I00 sterling
Exchange	"	24.I0. 0
Interest	Depends on above	I.I3. 4
L/C charges	½%	I2. 6
Wharfage	I½d. per c/s	I2. 6
Cartage	2d. per c/s	I6. 8
Inspection	¼d. per c/s	2. I
Duty	Id. per lb.	30. 0. 0
Surtax	22½%	6.I5. 0
Cables	Varies	I 5. 0

B/f. TOTAL £I65.I7. I

Average 33/2 per case.

Current conversion rate $ 4.90 on London.

Customs weight, say 72 lbs. per case.

From the above it will be seen that fruit which costs £I (English currency) c.i.f. New Zealand Ports costs I3/2 to land in New Zealand, the chief factors in the cost being exchange, duty and surtax. Average loss on Californiar oranges runs about 7% to 8% but occasionally it may be as high as 20 per cent, in which case the cost of the sound fruit landed on the New Zealand market becomes very high. The importer, therefore, in order to make a profit has to sell his fruit at no less than 35/- per case, and if repacked, at a considerably higher figure. He is not, therefore, willing to import unless the market prices are such that he anticipates to be able to make a profit, and the quantity imported is only such as he considers will maintain the market at a payable price. When other supplies are off the market, larger quantities can be safely imported with little risk of weakening the market but during other periods of the year, the supply is limited to meet a small but regular demand for a high quality article.

During I933 the price for Australia fruit reached very low levels owing to the enormous supplies coming forward, but since the application of the embargo at the end of that season, prices have advanced very considerably. The prices realised during the I932 season could scarcely have been profitable to the exporters. Most of the fruit was sold on consignment and the costs per case were approximately as as shewn in Table LXIX.

T A B L E L X I X.

Charges on Oranges shipped to New Zealand from New South Wales in I932 before the application of the embargo.

- - - - - - - - - - - - - - - - -

	BUSHEL CASES WELLINGTON.	AUCKLAND.
Freight	2/- per case	2/- per case
Cartage and wharfage	7/9 per ton)	
Inspection	3d. per 20 cases Min.)	
	I/-)	
Customs Entry	I/6	5d. per case
Primage	3%	3%
Receiving and Delivery	Id. per case	Id. per case
Selling Commission	I0%	I0%

The margin on many of the fruit sold must therefore have been very small. During I934 Jamaica has exported a considerable quantity of fruit to New Zealand and this quantity will probably increase in the future if satisfactory shipping arrangements can be concluded. The Jamaican Citrus Association Ltd., under date IIth. April, I935, writes as follows :

> "The coming citrus crop in Jamaica promises to be a very good one, and provided shipping arrangements are satisfactory we anticipate no difficulty in supplying the requirements which we anticipate to be in the vicinity of 50,000 boxes of oranges, during the months when our crop is available. Our orange crop lasts from October to March. During the months of November to February, the bulk of the crop is available. The usual refrigerated freight rates from Kingston to New Zealand is 4/6 per shipping box".

There is every likelihood, therefore, that Jamaica may in the future occupy a prominent place as an exporting country to New Zealand.

The supply of local fruit is so small, that it has not been possible to draw up in Tables of prices for locally grown fruit.

(IV) General.

As has been mentioned earlier, the general trend of prices over the 1933-34 seasons has shown a recovery from the low prices of 1932, not so much because of any increase in purchasing power of the consuming public, but through the intervention of legislative measures to assist in restoring prices to a level payable to the local producer. The supplies available from Overseas countries are so overwhelmingly in excess of our requirements, and such supplies are available at prices which must scarcely recoup the exporter for the cost of marketing that it is doubtful whether present prices can be maintained without legislative aid. If the purpose of such measures is to assist the New Zealand Industry to become established, then some guarantee of their permanence is required before growers will be induced to plant large areas, for the production from which there may be no payable market by the time the trees reach bearing age.

Under normal conditions, the New Zealand grower is probably in a position to meet overseas competition on a fair footing, but he cannot successfully compete against dumping by countries which have planted greatly in excess of their present requirements and are looking elsewhere for markets in which to sell their surplus production.

(g) Retail prices.

Any record of the retail prices charged for citrus fruits over a period of years proved even more elusive than market prices, and it was only by

reference to the columns of the "New Zealand Herald" that any intimation of retail prices could be obtained.

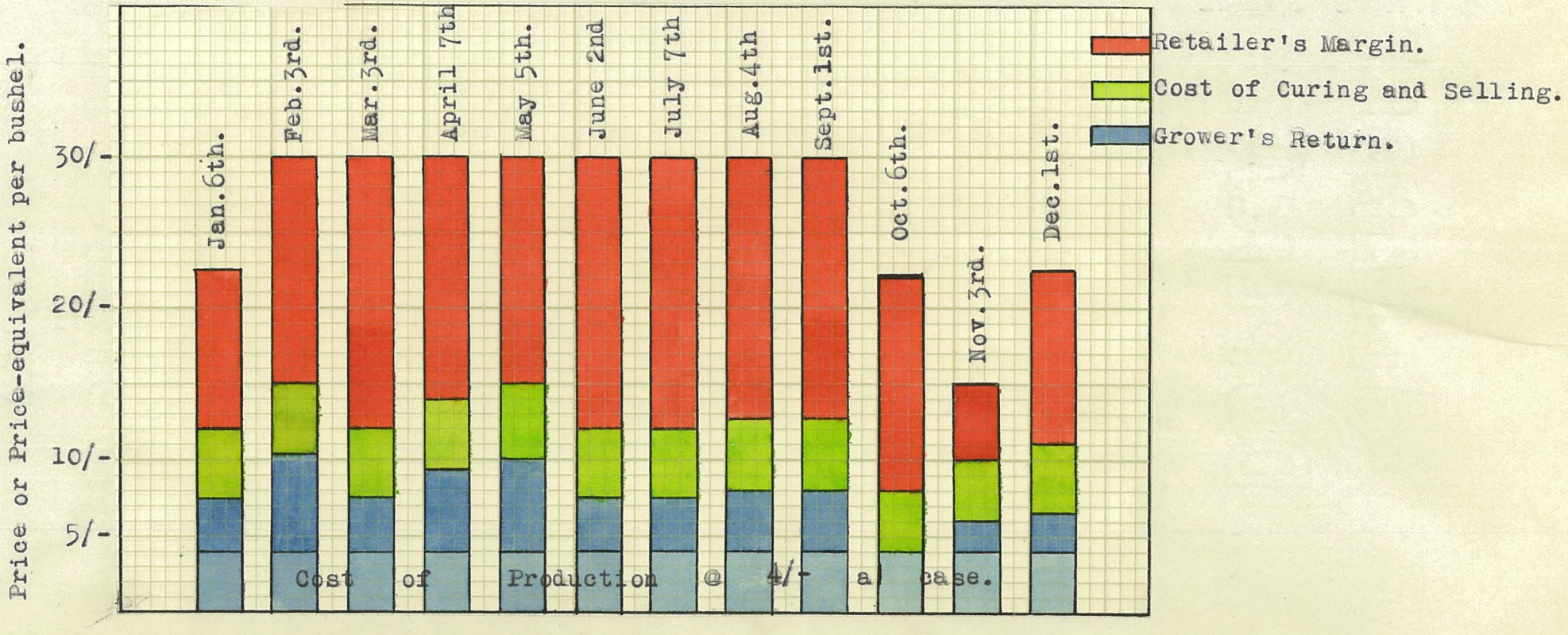
(I) Lemons.

In the case of lemons, retail prices over the period, 1931 -1934 are shown in Appendix VIIand in Fig. XXVI. These show prices per dozen for locally grown lemons on the Auckland retail market, and have been shown on the same scale as wholesale prices for the same period after conversion from dozen to case prices, on a basis of 15 dozen lemons per bushel case. This is an arbitrary assessment, since the number per case varies considerably, but serves as a scale by which retail and wholesale prices may be compared. There is a definite correlation between wholesale and retail prices, the rise or fall of retail prices tending to lag behind corresponding fluctuations in the wholesale rates, such fluctuating tending to be greatly accentuated in retail prices. The retailers' average margin on the best grade of lemons is shown in Fig. XXXVIII and shows a big increase in price due to the retailing methods adopted.

The writer does not consider that retailers are making undue profits but considers very definitely that the system of retail distribution is expensive and wasteful, due to the large number of small retailers having high overhead costs and the necessity for their keeping a full range of all types of fruit in stock, irrespective of the size of their turnover. Customers demand a full range of lines from which to select their purchases, with the consequence that the retailer has, at all times, to have in stock fruit of all varieties and sources of origin, even though his sales may be relatively small in many of the lines; this is necessary if he is to retain his clientelle, and leads to excessive losses through storage

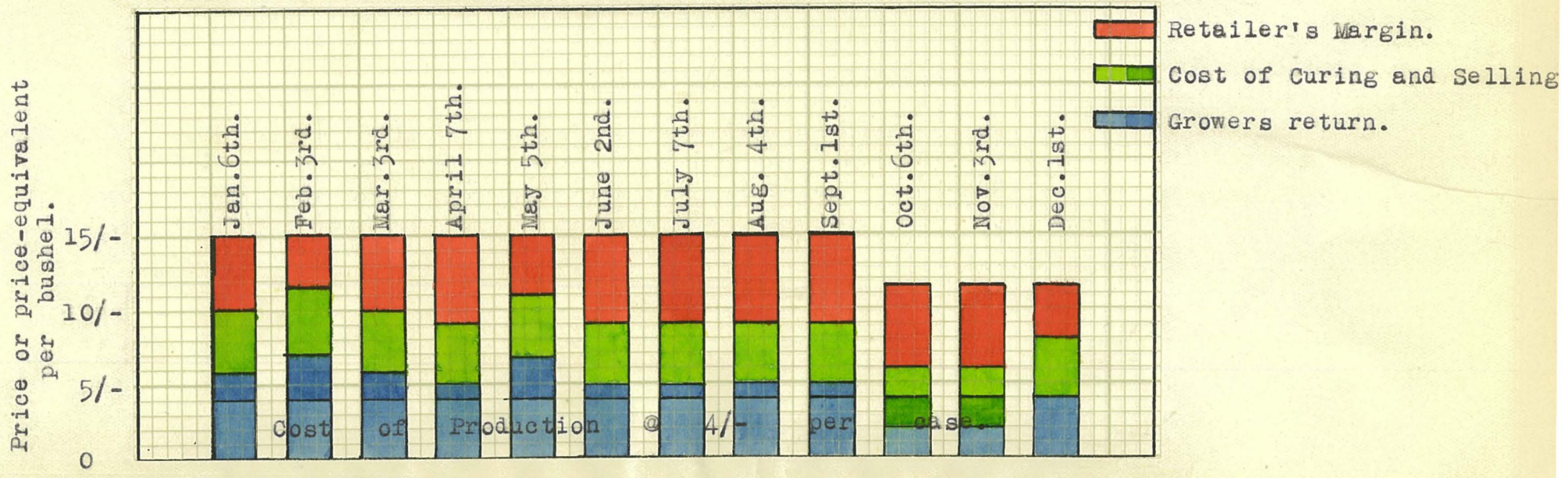
F I G U R E XXXVIII.

Top Quotations for Cured N.Z. Lemons on the Auckland Market Compared with the Top Quotation for Retail Prices on the Same Date when Retail Prices are Converted to Case Equivalents on a basis of 15 doz. per case. 1934



F I G U R E XXXIX.

Lowest Retail Quotations for N.Z.Lemons on the Auckland Market, 1934, Compared with the lowest Quotations for Cured Lemons (Wholesale) on the same Date, When retail Prices are Converted to Case-equivalents of 15doz. per case.



and subsequent deterioration and wastage. The total marketing costs, by the time the fruit reaches the consumer are, therefore, greatly in excess of the price returned to the grower. This has probably been one of the larger factors leading to the development of the trade direct from grower to consumer in case lots, and has led to the selling of citrus fruits by "Self Help" and "Chain Stores" throughout the country. Also, since citrus fruits keep fairly well and are not perishable in the ordinary sense of the term, they are particularly suitable for this type of trade, while being fairly standard lines and rather bulky to handle, it frequently suits the housewife to have such fruit delivered with the grocery order.

Figure XXXVIII shews the retailer's margin as at the first quotation for each calendar month of 1934 in the Auckland market when the top quotation is taken for both wholesale and retail rates. Only in January and November does the retail price fall lowerthan a 100 percent increase over wholesale rates. The cost of curing and selling is shewn on a basis of minimum costs; in most cases the cost of selling would considerably exceed that shewn in the Figure since curing costs are assessed on a basis of 2/3 per case, freight at 1/- per case and commission at the standard rate of 10% on the gross realisation.

Data are not available for a fuller analysis of the relation between wholesale and retail prices of lemons; the lower values shewn for retail prices may have little relation to the quotations for the lower-priced "cured" lemons quoted in the wholesale prices since they may be "tree ripe" or small sizes selling at lower rates per dozen. In Figure XXXIX the retail prices of the lower quotations for New Zealand cured lemons on the Auckland Market are shewn for 1934

together with proportion represented by curing and selling costs and growers margin on the same basis as in Fig. XXXVIII. The retailer's margin is apparently smaller than in the case of the higher grades but this may be illusory since the fruit may be of smaller size so that the arbitrary assessment of case value on a basis of I5 dozen lemons to the case may be low. More accurate data are required before a definite conclusion can be reached.

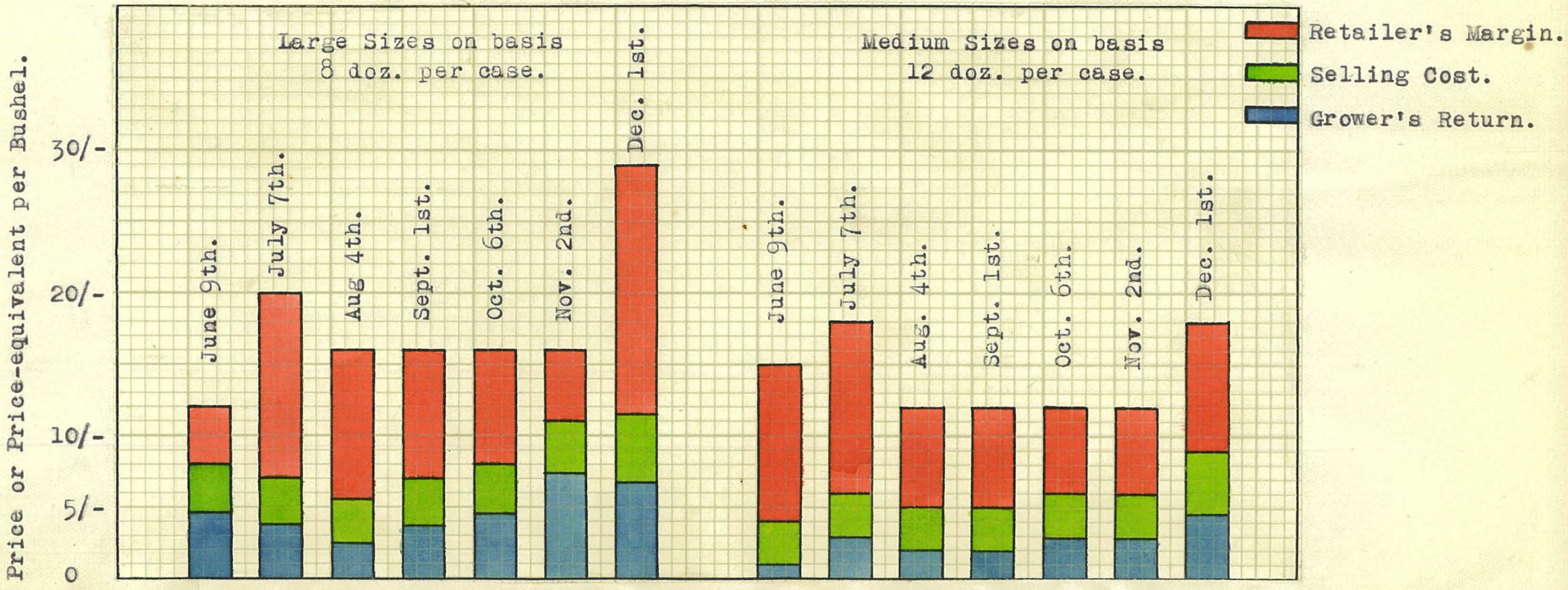
(II) Grapefruit. The retail prices of New Zealand Grapefruit for the seasons I93I - I934 are shewn in Figure XXXV for the Auckland market, these quotations being culled from the "Market Basket" section of the "New Zealand Herald". Both the top and the lowest quotation are shewn and in Fig. XL these are shewn in relation to the current wholesale price on the same date, making allowance for the cost of marketing at current rates and allowing costs as follows:- case 9d., packing 6d., marketing 3d., freight I/-., Total 2/6d. a case plus commission I0% on gross realisation (see page 202).

In Figure XL the contents of a bushel case of "large" New Zealand grapefruit have been assessed on the basis of 8 dozen fruit and for the "medium" sizes on a basis of I2 dozen fruit per case. These are arbitrary assessments but serve to shew the relation between wholesale and retail prices although the agreement may not be exact. As in the case of lemons the margin added by the retailer is a large one.

More accurate data are needed on this point and these can only be secured by an observer actually in the markets who is collecting data to this specific end. Such collection should be included in the programme of a co-operative marketing concern in order to ascertain whether the benefits of lower marketing costs were being passed on to the consumer.

F I G U R E XL.

Wholesale Quotations for N.Z. Grapefruit on the Auckland Market Compared with Retail Quotations on the same Date, Shewing Proportion of Retail Cost due to Retailer, Selling Costs and Returns to Grower. 1934.



(III) Oranges.

In the case of oranges it is not possible to make arbitrary decisions as to the contents of a case, since these vary considerably more than in the case of lemons and grapefruit. Such information is necessary, however, to a full consideration of the problem and should be collected in an endeavour to shorten the gap between the growerand the consumer.

Such information as could be collected in regard to retail prices of oranges on the Auckland market is shewn in Appendix VII and in Fig. XXXVI but it is not possible to relate these to wholesale prices on account of the reasons outlined above.

E. THE CONSUMER VIEWPOINT.

The application of the embargo on the importation of citrus fruit from Australia in December 1932 caused a considerable rise in the prices realised for citrus fruits on the local markets during the ensuing year and this was reflected in a more than corresponding rise in the retail price, the consumer, as usual in such cases, paying considerably more than was received by the grower, by way of increased price. In 1934 prices have tended to ease slightly, although still well in advance of 1932 quotations. It is difficult to estimate to what extent this falling off in price has been the result of decreased demand owing to the high prices charged for fruit, or to what extent it has been the result of increased supplies available on the market. In any case the retail price of oranges has in many cases been excessive and has placed them definitely in the class of luxuries for many would-be- consumers.

In the case of oranges, the retail price of Australian fruit on the Auckland market has approximate ly doubled since the imposition of the embargo, while the

price of Island oranges has advanced by 50%. There has, however, been little advance in the retail price of Californian fruit, which have remained consistently dear throughout.

The cost of production does not necessitate citrus fruits being in the luxury class and every endeavour should be made to bring this important item of diet within the reach of any would-be-consumer of moderate purchasing power.

The average consumption of citrus fruits per head in the Dominion is given in Table LXX for the two years I930 and I934 and the average consumption for a number of other countries is also given for comparison. It is not possible to obtain reliable information on the consumption

T A B L E L X X.

Shewing the average consumption of citrus fruits in New Zealand in I930 and also the average consumption in a number of other countries for purposes of comparison.

COUNTRY.	CONSUMPTION PER HEAD OF POPULATION LBS. Oranges	Lemons	Grapefruit. and Manderins.
New Zealand I930	Io.87	3.97	2.26
" I934	II.I5	3.59	0.92
X U.S.A.	23		
X AUSTRALIA	20		
X UNITED KINGDOM	I9		
X CANADA	I9		

X Data from Empire Marketing Board Publication No. I5 "Oranges, World Production and Trade", I929.

of lemons and grapefruit in the other countries cited since American literature quotes consumption on a basis of number of fruit consumed and not on weight. However, the American consumption of I6 lemons per head roughly approximates to the New Zealand average.

The New Zealand averages were computed on a basis of a consumption of 120,000 cases of locally produced lemons plus imports, an allowance of 40 lbs. per case being made. This is probably a too liberal estimate of local production.

In the case of sweet oranges only imports were considered since the local production is negligible in amount, while in the case of grapefruit a local production of 20,000 cases was assumed and was added to the total imports of mandarins and grapefruit. Owing to the fact that separate figures are not available for the imports of grapefruit and the fact that a considerable proportion of the New Zealand grapefruit produced goes into consumption as marmalade the above figures must be accepted with reservations and more accurate data are required before the true position can be stated.

New Zealand falls farbehind most of the other English speaking countries in the consumption of oranges, not because of the lack of demand for the product, but, in the writer's opinion, chiefly on account of the high prices charged for oranges on the New Zealand markets. Thereis a large undeveloped market for sweet oranges in this country which can be tapped by the production of a type of fruit desirable to the consumer and within his reach in respect of price.

As has been shewn in a previous section the demand for lemons is relatively inelastic and the consumption per head probably not so readily increased as in the case of oranges. In the U.S.A., however, demand has been increased by the operation of the following factors: - "(I) Workers in nutrition have constantly advocated the wider use of lemons because of the value of this fruit in the diet. (2) The California Fruit Growers' Exchange has consistently advertised lemons for many years. (3) Improvements in grading and packing have contributed to the development of a quality

product. (4) The widening of the market areas has gone far towards making lemons available throughout the entire country.

The experience of the past twenty years indicates that it is very difficult to increasethe demand for lemons. In view of the difficulties involved, however, real progress has been made, and much of this progress can be attributed to the activities of the California Fruit Growers' Exchange".

If, as many people believe, New Zealand is faced in the not far distant future with an over-supply of lemons of local production we would do well to heed the experience of countries overseas and get our grading and packing standardised, our distribution methods rationalised and make some unified attempt to increase demand through advertising. These things can be achieved only by a co-operative organisation which has the whole-hearted support of all growers.

The wider use of New Zealand grapefruit for dessert purposes appears to offer a wide scope for development and many people are coming to appreciate the excellent qualities of this fruit, but standardisation and unified marketing of the product are required collaterally with a well-planned advertising campaign. There is a wide untapped market here which is only commencing to be exploited by growers. The chief difficulty at the moment in creating a demand for grapefruit as a breakfast fruit is that the New Zealand product is only available over a comparatively short season; every effort should be made to increase thelength of season by a vigorous search for strains or varieties having different times of ripening or by experimentation to find types grown in other countries which may fill our needs in this respect; possibly some other stionic combination than has yet been tried out in New Zealand may have possibilities.

On the consumer rests the ultimate profitableness or otherwise of growing citrus fruits since it is the consumer demand that the grower set s out to satisfy, and in any measures taken by the industry the consumer must always be the final judge of the suitability of the product or otherwise, although the consumer's ideas about his requirements can be altered to a limited extent by suitable advertising. Any industry is, however, in the long run a consumer service and in asking for tariffs or embargoes the consumer viewpoint is an important one and must receive due consideration.

F. THE CITRUS EMBARGO: A POSSIBLE ALTERNATIVE

If the citrus Embargo on the importation of oranges, lemons, etc. from Australia was designed as a protective measure for the growing local industry it has secured protection at a heavy cost to the consumer without a corresponding benefit to the producer. It is also doubtful whether the retailers and wholesale dealers have benefited as much as might be supposed, since with a decreased turnover a larger margin has been necessary to cover overhead expenses. The Mediterranean Fruit Fly bogey may be of some importance when it comes to considering exports to U.S.A of our pip fruits, but unless this trade grows to considerable proportions it is being fostered at a heavy expense to the local consumer of citrus fruits.

Assuming that the protection of the local citrus industry is the object of the embargo (now partly lifted) it appears that the same result might be obtained at much less expense to the consumer by the adoption of a sliding scale duty of say 2/6d. per case (i.e. approx. ¾d. per lb). when the price of Australian oranges on the New Zealand market, would, without the imposition of the duty be IO/- per case; this duty to be reduced by I/- for each shilling

rise in the sale value of Australian oranges over I0/- per case and vice versa. This would tend to stabilise the minimum value of Australian oranges at I2/6 a case, a considerable reduction on present values and hence would place oranges again within the reach of the purchaser of moderate means. The income from such a sliding scale is estimated on a basis of the I93I/ 32 seasons at from £I0,000 to £I5,000 and it is suggested that the funds collected by such a levy should be used as a subsidy for the local industry, partly as a direct subsidy per case of oranges sold through the Federation, partly as an advertising fund and partly as a research fund to permit of investigation being pursued into marketing, production and the many other problems which await solution in the industry.

From the limited data available it is somewhat difficult to estimate the revenue which would be derived from such a sliding scale duty. During the three years I93I, I932, I933 the declared value of Australian oranges at port of shipment as shewn in the "Trade and Shipping" Statistics was 8/0½, 7/0¾ and 9/5 respectively taking an average value over the whole year on a case which varied slightly in average weight from year to year being 40.0, 40.5 and 43.99 lbs. in the respective years. Wholesale prices in New Zealand have, however, shewn a much wider variation than these figures suggest and in order to protect the consuming public it is felt that any levy made should be in respect of the average selling value in New Zealand rather than the declared value at port of shipment.

It is felt that such a scheme would be a much more direct method of assisting the local producer than the present one which does so only at the expense of the consumer and tends to raise a prejudice against New Zealand grown fruit. Such a scheme of a sliding scale levy has

a counterpart in some of Major Eliot's schemes in England and has the advantage of being flexible, achieving its object of protection without unduly penalising the consumer; if the funds so collected are earmarked for the development along sound lines, of the industry it is designed to protect, it may be a much more powerful weapon for good than an embargo while it protects the consumer as do neither a fixed tariff nor an embargo.

The embargo on lemons and grapefruit can probably be left as at present without unduly penalising the local consumer.

PART IX. PROFIT AND LOSS.

CHAPTER XXVII. GROWERS' ACCOUNTS.

In the preceding sections average costs have been discussed; in the last section some mention has been made of the broad outlines of the supply and price situation. It only remains therefore to see how these interact in the case of individual growers in their profit and loss accounts. Costs have been given for individual growers in preceding Tables in Chapter XXIV and sample Profit and Loss Accounts for 1934 are given here for a representative group of growers. Costs are taken from the data given in Tables in Chapter XXIV.

GROWER (a).

Dr.		Cr.	
Maintenance	£148.12	Sales Lemons and Grapefruit	£1080
Labour (incl.family)	500	Sweet oranges	70
Marketing	279.65		
Depreciation	17.33		
Interest surplus	204.90		
	£1150		£1150

Interest surplus = £24 per 100 trees (all bearing).

GROWER (b)

Maintenance	£40.94	Sales Lemons	£381. 5. 7
Labour	120	Grapefruit	21.16.11
Marketing	122.57		
Depreciation	17.20		
Interest Surplus	102.41		&
	£403.12		£ 403. 2.6

Interest surplus = £25 per 100 trees (total)
" = £34 " " " (bearing)

GROWER (c)

Maintenance	£59.00	Sales lemons	£357. 8. 2
Labour	225.00	Grapefruit	189.16.10
Marketing	159.32		
Depreciation	3.56		
Interest Surplus	100.37		
	£547. 25		£547.5. 0

Interest surplus = £10 per 100 trees (total)
" = £14 " " " (bearing)

GROWER (d). A young grove.

Maintenance	£I00. 60	Sales lemons	£298. 6. 6
Labour	I80	Sweet oranges	23. 0. 0
Marketing	III.I5		
Depreciation	4I.75	Loss on years working	II2. 3. 6
	£ 433. 50		£433.I0. 0

Loss on years working = £8 per I00 trees.

GROWER (e)

Maintenance	£57.57	Sales lemons	£325. 0. 2
Labour	I0I	Grapefruit	75. o.I0
Marketing	I47.06	Oranges	99. 4.II
Depreciation	6.60		
Interest surplus	I87.07		
	£ 499.29		£ 499. 5.II

Interest surplus = £38 per I00 trees (total)
" = £62 " " " (bearing)

GROWER (f)

Maintenance	£52.25	Sales lemons	£I4I4.7I
Labour	80	Grapefruit	34. 5
Marketing	480		
Depreciation	I0.86		
Interest surplus	825.II		
	£I449.2I		£I449.2I

Interest surplus = £I49 per I00 trees (total)
" = £I60 " " " (bearing)

Average values taken from Chapter XXIV. (per acre)

Maintenance	£I0.I8. 8	Sales I80 bushels @ 6/6	
Wages paid	9. 3. 2		£58.I0. 0
Family labour	I4. 7.II		
Depreciation	I.I6.I0		
Interest surplus	22. 3. 5		
	£58.I0. 0		£58.I0. 0

Interest surplus = £22. 3. 5. per I00 trees (total)

If production is based on the average lemon production shewn in Table XXXV, however i.e. 389 bushels per acre the interest surplus becomes £90. 8. 5 per I00 bearing trees.

From the above sample it will be seen that the average interest surplus varies widely, as between groves, according to the interactionof environmental, climatic and management factors to which must be added the age of the trees and the relative sale values secured. Some growers

are losing considerable amounts through faulty selling and a low interest surplus may be the result, not of poor management in respect of production, but in respect of selling.

Grower (f) shews, however, what can be done with a mature grove of lemons. Capitalised at 5% his interest surplus represents a productive value of £2,980 per acre while even in the case of Grower (e) with a large proportion of non-bearing trees the productive value of the whole block is £760 per acre. Taking the average values given, the productive value is in the vicinity of £443 per acre. Where, as in many cases, the grove has attached to it an area of unproductive land the value which could be paid for the orchard would, of course, be correspondingly reduced on a per acre basis.

It must be remembered in studying these figures that the wages of the owner or other family labour is allowed as a cost against the orchard and is not included in the interest surplus shewn. Even in an average orchard of relatively low average production per tree the productive value is high and compares very favourably with returns from other forms of primary production, while under good management it has been shewn that the returns may be very high at present prices.

It is not possible in the space available, or with the data to hand to analyse the factors affecting interest surplus in groves. This must await fuller investigation and a more elaborate compilation of returns than has been possible in the present survey.

P A R T X.

CHAPTER XXVII. ORGANISATION, RESEARCH AND INSTRUCTION INTHE CITRUS INDUSTRY.

A. Introductory.
B. Grower Organisations: (I) Keri Keri Settlers' Assen., (II) Auckland Citrus Growers' Assen. (III) Tauranga Citrus Growers' Assen., (IV) Tauranga Fruitgrowers' Society. (V) N.Z. Fruitgrowers' Federation.
C. Rsearch.
D. Instruction.
E. Suggested changes in Organisation.
F. Summary of Suggested Lines of Research or reorganisation.

A. INTRODUCTORY.

In the preceding chapters the size and distribution of the citrus industry in the Dominion, the main factors in outline which affect the growing, marketing and selling of citrus fruits have been passed briefly in review and it remains now only to make enquiry into the organisation of the industry, the methods by which it is represented when common interests are affected, the methods of controlling research and of imparting knowledge in regard to improved practices in the industry.

B. GROWERS ORGANISATION.

(I) Keri Keri Settlers' Association.

Chairman: Captain Voelcker.

Hon. Secretary: Mr. R. Waters.

The Keri Keri Settlers' Association while not essentially concerned with citrus problems is necessarily interested in matters pertaining to citrus since most of its members are citrus growers. The Association, however, covers a wider field of activities and is concerned with

general matters affecting the welfare of the settlers as a whole; at the same time it does tackle problems concerned with the citrus industry as it affects the Keri Keri Settlement and has been instrumental in holding meetings to discuss citrus matters and in forwarding the project of establishing a central co-operative packing and curing shed for the benefit of members.

(II) Auckland Citrus Growers' Association, Ltd.,

The objects of the Association are "To promote, foster and assist the New Zealand Citrus Industry".

President: S. W. House.

Vice-President: Captain Lambden.

Hon. Secretary: Mr. Geo. A. Green.

Committee: Messrs. F. Firth, E. H. Becroft, F. L. Shaw, A. B. Congden, C. H. Scott, H. S. Izard, Von Schramm and A. L. Aicken.

The Association has a wide but not always enthusiastic membership although the Executive Committee make up, in large measure, for any enthusiasm which may be lacking in the general members. The Association has included in its activities the holding of field days for growers where topics of common interest are discussed, the making of representations to the Government on questions of tariffs, etc., to assist and protect the industry, the carrying out of comprehensive exhibits of citrus fruits at the National Flower Show each year has attempted to get freight rates to the South Island reduced, given support to bud selection and survey work, investigated the colouring of N. Z. Grapefruit by the use of ethylene gas, attempted to co-ordinate interests in the utilisation of citrus by-products, and generally have tried to foster co-operation and mutual understanding between the various citrus interests.

The wider usefulness of the Association has been hampered by the small proportion of growers in the vicinity of Auckland who are solely dependent on citrus as a means of livelihood; this has proved to be one of the major sources of weakness in attempting to co-ordinate citrus interests in the vicinity of Auckland.

(III) Tauranga Citrus Growers' Association, Ltd.,

Chairman: H. S. Benjamin.

Secretary: H. B. Mountfort.

Committee of Management: Messrs. T. R. Hunt,
H. P. Bryan,
E. S. Bartlett,
G. Mayfield,
A. M. Poole and
N. T. Pattie.

The Association was set up primarily to control the orderly co-operative curing and packing of members' fruit in the Association's Shed.

Shareholders are required to take up a share per acre with a minimum of five shares. Five shillings a share have been called up there being about 80 shareholders in all, holding 830 shares. In addition to share capital a levy of 3d. a case is deducted for four years from the date of a grower becoming a shareholder; this levy accumulates and at the end of the four year period is transferred to the shareholder as debenture share capital.

The Association is in a sound financial position and has assets totalling nearly £5,000 while the production from the shed has continued to expand since its inception. The adoption of standardised grading and marking of all fruit sold has done much to bring the Tauranga district before the public as a citrus district and has assisted greatly in placing the industry on a sound footing there.

(IV) Tauranga Fruitgrowers' Society.

Chairman: Mr. G. Tebbs.

Hon. Secretary: Mr. P. Starkey

Committee: Messrs. E. P. Mountfort,
H. S. Benjamin, A.E.W. Bradmore.

Owing to the fact that the Tauranga Citrus Association has become almost entirely a body responsible for the control and management of the curing shed and the sale of the fruit it was felt that some organisation was required to deal with other matters of interest to growers and recently this Society has been formed distinct from the Association to cater for the production side of the growers' interests. It is yet too early to judge of its value in the community or what sphere it may fill in the future.

(V) The New Zealand Fruitgrowers' Federation.

The objects of the Federation have been stated in the section on "Organised Selling" in Chapter XXII and need not be repeated here.

The constitution of the Federation is as follows:

(a) The Federation shall consist of registered societies, companies or other registered bodies consisting of at least seventy-five percent of bona fide fruitgrowers holding not less than sixty percent of the shares or capital of the Society willing to join the Federation, sign an application form, take up one or more shares in the Federation, and which shall be approved by a majority of the Directors.

(b) The capital of the Federation shall be raised in shares of £1 each. Societies desirous of joining the Federation shall take up one share for every fifty members or fraction thereof on its register. The liability of all affiliated societies shall be limited to the number of shares it holds in the Federation.

(c) The shares of the Federation shall not be transferable.

(d) A Provincial Conference shall be held in each separate fruit Area not more than twenty-eight days prior to the date of the Dominion Conference for the purpose of electing delegates to the Dominion Conference and transacting any other business connected with their own provincial district.

(e) The Provincial Conference shall consist of delegates from the various Societies in such Provincial district affiliated with the Federation in proportion to the membership of each Society, one to every twenty-five members or fraction thereof.

(f) Delegates to Provincial Conferences shall be bona fide fruitgrowers belonging to an affiliated Society.

(g) An Annual Conference shall be held in May of each year at Wellington or at such other time or place as may be designated.

(h) The management and control of the Federation shall be vested in a Directorate consisting of seven directors, one of whom will be appointed president and one vice-president and they shall continue in office until the close of the subsequent Annual Conference.

(I) A director shall be a bone fide fruitgrower, belonging to an affiliated Society in the Provincial District which he represents and is the registered holder of an orchard of an area of not less than five acres.

(2) Each of the Provincial Districts as defined shall be entitled to be represented on the Board of Directors by one Director.

(3) Each Provincial Conference shall elect the Director to represent the Provincial District in which such Provincial Conference is held.

The Dominion and Provincial Conferences are largely concerned with the export trade in pip fruits and related matters and since the majority of members are not concerned with the growing of citrus these Conferences are of little value to the citrus industry.

The chief point of contact between the citrus industry and the Federation has been in the extension of the "Dominion Mark" Scheme for the orderly marketing of fruit on the local markets, in the supply of growers requisites and through the advertising work which has been undertaken by the Federation in connection with the Dominion Mark Scheme. Last year some £400 was expended in advertising New Zealand grown citrus fruits by means of "screen" advertising, display advertisements in tramcars, pamphlets, newspaper advertising and by special displays in Christchurch and Wellington.

The Federation is conceived on co-operative lines but whether it can successfully serve both the citrus grower and the exporter of pip-fruits remains an open question; it almost certainly can, as far as marketing is concerned, and it can probably be adapted to the other needs of the citrus industry as the need is felt, by the formation of a sub-committee for citrus matters or some other slight alteration of its internal organisation.

C. RESEARCH.

In New Zealand citrus research is carried on by the Department of Agriculture, The Plant Research Station at Palmerston North and the Citrus Committee of the Auckland District Council of the Institute of Horticulture. These activities are co-ordinated and supplemented by the Department of Scientific and Industrial Research.

The research in citrus conducted by the Department of Agriculture has been spasmodic and frequently faulty in planning as in the case of the "Tauranga Citrus Root-stock and Variety" trials mentioned in an earlier part of this survey. Recently a well-planned manurial experiment has been completed at Tauranga, but the work has lacked continuity or aim, and even the present size of future possibilities of the industry are still largely a matter of opinion. Until near the end of 1934 no one person had been detailed to take an active interest in the industry and collect and collate such information as was available.

The Plant Research Station has given some attention to diseases of citrus and has added to our knowledge on this all-important subject but no sustained attempt has been made to collect information on these subjects which are of such major importance to the industry.

The Citrus Committee was set up by the Auckland District Council of the Institute of Horticulture to administer such funds as might be available from time to time through the Department of Scientific and Industrial Research for the purposes of research and survey in the citrus industry along lines suggested to and approved by the Department. The Citrus Committee shared its functions with a series of other committees as follows :-

(I) Committee A. The controlling committee consisting of a representative of the Department of Scientific and Industrial Research, one from the Department of Agriculture, one from the Institute of Horticulture and one from the New Zealand Nurserymens' Association. This Committee controls expenditure and has power to veto proposed expenditure by the Citrus Committee, while it also receives and checks the reports onwork in progress,

"D"

so that the work does not extend beyond the scope originally intended.

(2) Committee B being the Executive Committee of the Institute of Horticulture. This Committee takes an active part only when occasion arises, but takes an active interest in the work in progress and after receiving reports from the Citrus Committee passes them on to Committee A. This Committee, however, remains responsible to Committee A for the actions of other Committees or persons to whom it may delegate its functions, such as Committee C.

(3) Committee C the Nomenclature Committee of the Institute are responsible for revising or approving all matters relative to the development of the investigation in hand.

(4) Committee D. The Citrus Committee previously mentioned, set up to co-operate with Committees, C, B and A in respect of any work carried out in the Auckland District.

This elaborate mechanism of committees co-operated in expending the sum of about £100 a year. It is small wonder that Committee D at times tired or referring every suggestion to three committees and dealt direct with Committee A.

However, to return to the research work in hand. The Citrus Committee has been responsible for supervising the bud-selection work which has been done to date and distributing propagating material from selected orchards at minimum cost (25/- to 30/- a 1000 buds), importing selected strains of the main citrus varieties from overseas and getting these propagated in the Dominion, setting out and planting the Mt Albert Citrus Test Area, distributing selected trees for trial in growers' orchards and collecting material for

a general survey of the citrus industry, a progress report being published in I934.

While the "Report" (I:I934) may be more illuminating than accurate in some of its detail as to number of trees etc. and while the layout adopted for the Mt. Albert Test Area has been criticised in a previous section (Chapter VIII) the Auckland Citrus Committee has been one of the few bodies actively interested in citrus research and at least attempting to get something done.

They deserve every credit for the progress they have made in the face of continued lassitude and inaction on the part of those who should have co-operated in the carrying out of research in the industry, and in carrying on, in spite of lack of adequate financial assistance.

Such research as has been done in respect of citrus has been largely spasmodic, irregular and with little evidence of considered plan or any well conceived long range programme. Sir H. Frank Heath[x] in his Report said:- "But though the statement of work being done in the Department, or proposed to be done, covers a very wide field, I find it difficult to trace the evidence of a considered plan;- Their official programme is to do the things 'sent down by the office' and for the rest the direction in which they work, the time in which it is done, and the means of publishing it seem largely a matter of hazard".

D. INSTRUCTION.

Instruction in citrus growing is undertaken by the officers of the Horticulture Division of the Department of Agriculture. Officers are stationed at Auckland, Tauranga and Gisborne and are expected to give advice to growers needing instruction, not only in matters appertaining to citrus but in respect of any horticultural undertaking

x Sir H. Frank Heath, Report on the "Organisation of Scientific and Industrial Research in N.Z." I926.

including nursery work; they are also inspectors charged with ensuring the carrying out of the various regulations in respect of plant diseases, etc. Owing to the importance of the export trade in pip fruits a large part of their time is taken up by attending to the needs of these growers and no individual officer has been speciliased in the cultivation of citrus fruits. Not only so but changes in the staff, have, in the past frequently resulted in an officer coming to a citrus district from a southern district where citrus are not grown; after a period he may obtain a working knowledge of citrus culture when, as likely as not, he receives promotion and is shifted to a fresh district remote from the citrus areas. An added disadvantage of the system is that such instructors are never in a position to bring anything "fresh" to the industry; they are rarely instructors in the truer sense of the word but mainly serve to disseminate over a wider field a knowledge of the practices adopted by the better growers in the area, while few of them are prepared by previous training for the work they have to undertake.

More direction has been given to the instruction in citrus by the appointment to the Department of Agriculture of a citriculturist whose duty it is to collate and unify efforts to assist the industry.

E. SUGGESTED CHANGES IN ORGANISATION.

Sir H. Frank Heath summed up the position as he saw it, in the following paragraph: "...the advances of knowledge will remain partial and sporadic in the absence of a body whose duty it is to envisage the whole field without the limitations necessarily imposed on local organisations, or the embarrassments, both administrative

and political, which must beset an executive Department of State. The respective spheres of an agricultural College of the first rank and of a State Department of Agriculture are admirably defined in a report of the Special Legislative Commission appointed by the State of California in 1921 (pp. 60, 61). The passage was drafted by the Director of Agriculture and the Dean of the College.

"The Commission found no better working arrangement in any State than the agreement between Director Hecke and Dean Hunt, which is set forth below:-

"The State Department of Agriculture should exercise executive and regulatory powers. The College of Agriculture should devote its energies to research and education, both resident and non-resident. It is quite certain that it is not in the interests of the public welfare that it should be charged with police duties. It is the function of the executive branch of the State, whose head is the Governor, to enforce the laws relating to agricultue through the Director of Agriculture and his subordinates, and those relating to forestry through the Commission of Forestry. & <u>The functions of the University, and hence of the College of Agriculture, are investigation and teaching</u>. The College should not seek to control the action of any person. Its primary function is to determine the truth and state it accurately. The College should not have placed upon it any commercial, executive or police duties,& <u>nor should it be the policy of the State to appropriate money to the State Department of Agriculture for education or investigation</u>, nor should it be the policy of the State to appropriate money to the College of Agriculture for regulatory purposes".

& The underlining is mine.

"This differentiation of function the Commission found to be general throughout the United States of America, except in Indiana, where opinion favoured the transference of regulatory functions to the College of Agriculture. It is also the practice in Great Britain, where research is left to the University colleges and endowed institutions such as the Lawes Agricultural Institute at Rothamsted and the John Innes Institute at Merton.

"While it seems to me obvious that the college must be the central research organ, it appears to me both convenient and desirable that a Department of Agriculture should possess a scientific staff competent to undertake investigations into problems of immediate urgency with which the Government may have to deal administratively. Administrative Departments of State which are the engines placed at the disposal of Ministers must in the main be directed by the policy of their political superiors, and Ministers are restricted in their policy by many forces over which they have at the best but limited control. What is needed is a scientific organisation free from these limitations - aided and supervised by the State, but trusted because it is competent".

It is therefore suggested that the work of research and instruction in citrus culture should be handed over to the University acting with the control and guidance of a representative citrus council or committee and that such sums as are at the present time spent in citrus instruction or research should be transferred to the University for this purpose. The function of the Department of Agriculture would become solely that of administration of the Acts and Regulations governing the industry.

What is wanted is sound sympathetic leadership, inthe industry; not an elaborate programme of research, but a steady tackling of the problems facing the industry together with sound instructional work based, not on opinion, but on experimental findings. Up to the present, without design or guidance or systematic protection, large sums have been and are still being invested by settlers, who, for the most part have not been trained as sub-tropical orchardists, nor as a rule have they set out to make citrus culture their main source of income while they have also been largely without the advantage of well-trained instructors.

It is therefore tentatively suggested that :-

(a) Research and Instruction should be the function of the University.

(b) The instructors appointed should be whole-time on citrus work. The field is too wide for any one man to give sound advice in detail on all branches of Horticulture.

(c) If suitable instructors are not available, with the requisite basis of scientific knowledge,then some suitable person with a sound knowledge of all branches of the industry should be selected and sent overseas for one to two years to study the most approved methods abroad. Such study should be on the broadest possible basis and should include a search for varieties likely to be useful under New Zealand conditions, marketing and instructional systems, etc. as well as methods of production and advanced knowledge on bud selection work etc. in progress abroad.

Such a person should, on his return, be in a position to assist the industry and help to guide it along sound lines.

F. SUMMARY OF SUGGESTED LINES OF RESEARCH OR ORGANISATION.

While the present survey has been only of a tentative and preliminary nature and any conclusions drawn must therefore also be tentative in nature, the following lines of investigation have suggested themselves during the course of the work. It is not suggested that the list is by any means exhaustive, or that all the subjects suggested are of urgent importance, and no attempt is here made to place them in order of relative importance. One point, however, that does stand out is the relative lack of general knowledge about the industry and the lack of accurate data even in respect of such important matters as the number of citrus trees in the Dominion, the production of the various varieties from year to year, the price obtained on disposal and the profitableness of the industry when compared with other branches of primary production. All this information is basic to the formulation of any constructive policy in regard to the industry, yet prior to the undertaking of this survey the sum total of the published information on the industry consisted of a book written in I884, a bulletin published by the Department of Agriculture on "Lemon Culture", two articles on the Tauranga Trials, a short "Survey of the Citrus Industry" (I:I934) published by the Auckland Citrus Committee and the "Cultural Notes" appearing in the Journal of Agriculture. Such statistics as were available in respect of tree numbers and production (now discontinued as an economy measure) were of doubtful significance and production is still mainly a matter of estimate.

A systematic stocktaking of the industry over several years is required to give a basis for a sound constructive policy.

The following lines of investigation are therefore tentatively suggested. With a more comprehensive survey, no doubt other problems would present themselves; nor is it suggested that this list covers all the questions not answered in the present survey:-

(a) A reconnaisance survey of the soils in the citrus districts with analyses of the main types; to be undertaken in conjunction with the soil survey Branch of the Department of Scientific and Industrial Research.

(b) A more careful compilation of weather data in the citrus districts; particularly in regard to the incidence of frosts, lapse rates, etc. in different districts. The setting up of a small weather station at Keri Keri to provide accurate information.

(c) Investigation into the lapse rate at Tauranga, air movements on frosty nights etc. and possible methods of minimising damage to citrus orchards.

(d) Grower education on the most suitable type of tree to plant and the gradual elimination of poor type nursery stock. Possibly some scheme of "certification" or grading might be instituted so that the grower could be assured of getting trees true to name and propagated from selected budwood.

(e) A study of variability in stock varieties in use in New Zealand.

(f) Small scale experiments in manuring citrus nursery stock.

(g) The inauguration of individual tree records as a basis for bud selection and general orchard improvement; the continuation of the present "bud selection" work until a better basis is available.

(h) Carefully planned citrus rootstock trials to include the principal stionic combinations in use, a trial of double-worked stocks and their effect on fruitfulness of the

resulting tree, growth and quality of the fruit produced.

(i). Collection of data on the susceptibility of the various stocks to root diseases and the economic importance of these diseases in New Zealand.

(j) Variety trials of sweet oranges, in conjunction with the stock trials suggested above (h). These investigations are imperative before settlers can confidently be advised to plant sweet oranges.

(k) The possibilities of lengthening the season for N. Z. Grapefruit should be investigated.

(l) Experiments on pruning of lemons and oranges.

(m) Fertiliser experiments continued and extended to include soil types other than that at Tauranga.

(n) The downward movement of fertiliser in the soil and the rooting habits of citrus investigated.

(o) Experiments conducted in the use of inarching as a means of reducing losses from bark diseases.

(p) Investigations continued into the causes of heavy decay in some lines of New Zealand lemons.

(q) Juice content of lemons, grapefruit etc. investigated with respect to seasonal variations and influence of root-stock, locality etc. with a view to improving the general quality of the New Zealand product in this respect.

(r) The utilisation of citrus by-products given attention. Can this demand be supplied wholly by New Zealand production ?

(s) The question of large scale processing of locally grown fruit considered.

(t) Marketing placed on a sounder basis by the wider adoption of the Dominion Mark Scheme; some co-operation is required with proprietary companies outside the scheme in determining the destination of fruit. Some assistance should if necessary be given the scheme to enable the

systematic collection of marketing information, prices realised, etc. in the various markets supplied.

(u) Regulations Gazetted as soon as possible covering the compulsory standardisatiom of all grades and packs used for citrus.

(v) It is suggested that as a guide to the buying public, retailers when exposing fruit for sale should shew in conspicuous lettering the grade and type of the fruit (i.e. whether 'cured' or 'fresh', etc.)

(w) Instructors in citrus should, as a routine part of their duties, collect information as to the number of trees, ages, production, costs, realisation on sale, etc. of all growers in their respective districts and these should be tabulated and used as a basis for advisory work.

(x) It is suggested that the embargo on the importation of oranges from Australia should be replaced by a sliding scale duty, the revenue from such to be utilised in assisting the local industry while at the same time protecting the consumers' interests.

(y) It is suggested that research and instruction in the industry should become the function of the University as in U.S.A. and Great Britain and that the sums at present spent for this purpose should be transferred to the University, acting with the advice of a Citrus Council or Committee,

(z) If suitable instructors are not available it is suggested that some suitable person should be sent to California or Florida for a period of one to two years to secure first-hand information of methods abroad.

PART XI.

CHAPTER XXVIIII. THE FUTURE OF THE INDUSTRY.

In the preceding chapters the citrus industry in New Zealand has been reviewed in outline in regard to its scope, geographical distribution, methods of production and marketing and the relative profitableness of the industry when compared with other branches of primary production and the question which now logically presents itself is : "What is the future of the industry in this country"? and in this concluding chapter it is proposed to briefly review the evidence for believing that the industry can be greatly expanded and the reasons why the writer believes that such an expansion is not economically justified (except in the case of New Zealand Grapefruit) though it may be politically

New Zealand's Potentialities as a Producer of Citrus.

In the first instance let us briefly review the facts set out in the previous chapters : -

(I) New Zealand is able to produce a lemon of good commercial type which compares favourable with overseas production; that is comparing fruit of similar grade.

(2) We are able to produce a type of grapefruit which meets with popular demand over a season extending from July to December and this season may be capable of extension.

(3) The sweet oranges produced in New Zealand while probably not equal in quality to the best grades of imported fruit are still of a sufficiently high quality to meet with consumer approval provided that they are carefully graded and marketed. These can be supplied over a season extending from July to December. Varieties have also been introduced which may permit us to extend this season considerably.

(4) There are ample areas available for the extension of plantings; probably sufficient to meet the needs of a popul-

ation considerably in excess of that likely to be reached for very many years to come.

(5) In well-managed groves our production per acre compares favourably with production overseas.

(6) Our production costs compare very favourably with Californian figures and are probably capable of a considerable reduction by the adoption of larger scale plantings and more efficient management methods.

(7) At the prices ruling for citrus fruits during I934 citrus growing appears to offer a high interest surplus per acre and per labour unit employed; probably higher than any other branchesof primary production.

The following factors, however, cause one to reconsider the opinion which might be formed after a perusal of the above points in favour of expansion :-

(a)) New Zealand is a relatively small market and at the present rate of consumption considerably less than 2,000 acres of oranges in bearing (average 2 bushels per tree) would supply the whole of the Dominion requirements.

(b) There are other couhtries in close proximity to New Zealand with the requisite area already in bearing to more than supply our orange requirements over the major part of the season and it seems an unjustifiable economic duplication of capital expenditure to close the doors to imports from these sources and plant to meet our own requirements in this country.

(c) Orange prices on the world's markets are likely to remain at a low level during the next few years owing to the rapid increase in production in the main exporting countries. The Empire Marketing Board, in a bulletin published in I929 says"Within the past few years the world's commercial production of oranges has made very rapid strides and the problem of disposing of the crop at a price remunerative to the grower is becoming increasingly difficult"

Australia has large areas coming into bearing and has over-produced for her own internal market; large supplies are available from this source at cheap rates and if the New Zealand industry is to be fostered it can probably only be done by the imposition of tariffs or embargoes, which in the long run mean that the consumer is paying dearly for the establishment of the industry in New Zealand.

We cannot compete successfully with Australian fruit in the early stages of establishment of the industry here, since production costs per case are heaviest when the trees are young and tend to become less as the trees attain greater bearing capacity. The protection offerdd by freight is more apparent than real, in the case of Australia, since the freight to New Zealand is little more than the cost of freight from North to South Island in New Zealand.

In considering the question of the expansion of the New Zealand sweet orange industry it is also necessary to remember that the Cook Islands are Dependencies of New Zealand and already supply a considerable proportion of our orange requirements although the amount has been on the decline for a number of years. No data have been collected in respect of the orange industry there, but the total supply which it would be necessary to provide from local sources would be reduced by the amount received from the Cook Islands.

(d) Citrus trees are relatively slow in coming into bearing and the conditions which at the moment appear to make a diversification of production desirable may have changed completely before trees planted now come into bearing.

(e) Citrus culture is a specialised business and, if it is to be successful, demands considerable attention; it is not therefore considered to be ideal as a complimentary source of income to dairying, an added dis-advantage in this case

being that peaks of labour demand coincide in the two cases.

(f) The cost of establishing a producing citrus orchards is heavy when compared with the cost of establishing unit in other branches of primary production and once planted the orchard is a considerable time before it returns an interest surplus. It, therefore, demands a considerable capital reserve to cover living expenses during the first few years of establishment unless some subsidiary line of production such as passion fruit can be followed until the grove comes into bearing. The cost of establishing orange orchards to meet the domestic demand would probably be not less than half a million pounds. In view of points (b) and (d) above is this outlay warranted ? From the purely economic standpoint the writer is inclined to answer in the negative.

However, many projects are undertaken which do not measure up to purely economic standards and from a political standpoint the expansion of the industry may be justified. Should the available markets for our other primary products be restricted by quotas or tariffs it might be essential to resort to diversification of production or else accept a lower standard of living. A discussion on the general policy of economic self-sufficiency is, however, outside the scope of this review and whether it may be unsound or not it is impossible to prophesy how long such a policy may continue to dictate the tariff policy of one country to another. That is a matter of opinion and on one's answer to that major question depends the answer which must be given to the question we set out to answer in the early part of this chapter.

The question of the expansion or otherwise of the local citrus industry is therefore a political rather than an economic one. We can produce oranges here of a type suitable for the market, at a price and in sufficient quantity to meet local requirements, but in the early years of estab-

lishment protection would be necessary or the industry would be swamped by competition from the Australian producer who, with older groves, is, at the moment, able to undersell the local producer with a young grove. Such protection must almost necessarily be at the expense of the consumer though with a sliding scale of duty the consumer would be less heavily penalised than under the present system. By the time groves planted now come into full-bearing the forces at present leading to economic nationalism may have waned and the way might be paved for reciprocal dealing with Australia in which case an economic waste would have occurred in the duplicating of production units.

Even on a "free"market there will probably always be a payable return for oranges ripening from December to April if suitable varieties can be found with such a season and until the intensification of competition by heavy Australian imports a number of growers were marketing profitably on an open market during the spring months but at the prices ruling in 1932 selling at this period of the year became unprofitable and prices can probably only be sustained at a level payable to the local producer by the use of tariffs or regulation of shipments. As has been suggested in an earlier section the use of a sliding scale duty is suggested as providing adequate protection to the local grower with a minimum of cost to the consumer, but if such a policy is to stimulate the extensive planting of sweet oranges in New Zealand it must have some semblance of permancy in order to give confidence to intending planters. So far as the expansion of sweet orange plantings is concerned, therefore, the question is mainly political and depends on numerous factors outside the scope of this survey.

In respect of lemons, some observers are of the opinion that sufficient plantings have already been made to more than satisfy the local requirements when they shall have come into bearing. Data are insufficient on this point to pass a definite opinion and in any case saturation point depends largely on the general purchasing power of the community and the efforts that are made by growers or marketing agencies to foster demand. While not attempting to be dogmatic on the point one feels that plantings may in the near future at any rate outstrip prospective demand for lemons and as has been shewn the demand for lemons is relatively inelastic and difficult to increase but no serious attempt has been made to increase consumption in New Zealand and it is difficult to forecast the position with any degree of certainty, but caution would suggest that plantings of lemons in the future should not be greater than will keep the area relatively stationary since it is estimated that half the trees planted at the present time are not yet in bearing and a small surplus in supply tends to unduly depress prices owing to the inelastic nature of the demand.

The demand for New Zealand Grapefruit appears to be increasing rapidly while plantings are relatively small and could probably be considerably increased without danger of oversupplying the local market. Concerted action is required for a Dominion-wide advertising campaign, at such time as the supply is available to fill the increased demand which might be anticipated.

It has been suggested that a market might be found for New Zealand Grapefruit juice on the world's markets but the general world situation in respect of grapefruit supplies does not make one hopeful of this outlet for any over-production which may occur. [X] "Florida has now about

X The 1933 Agricultural Outlook for California. Ca. Agr. Extension Service, Circular 71.

95,000 acres of grapefruit, of which less than 40% is in full-bearing. Of the 86,000 acres of grapefruit in Texas only 24% is in bearing and practically none is in full production" while of the California acreage less than 40% is in full bearing. With heavy over-production likely in U.S.A. it is probable that these States will turn to juicing as one outlet for their surplus and the total supply of New Zealand on the market would be so small that the prospects are not encouraging for this as a prospective outlet.

To sum up, therefore, the position in respect of lemons and New Zealand Grapefruit is fairly sound and little protection is required other than from dumping. In the case of sweet oranges the position is more complex and becomes a political rather than an economic question; we can meet the demand with a satisfactory quality local product but in the writer's opinion this requires legislative protection during the early years of establishment. Apart from other factors protective duties once applied are difficult to remove and the development of a permanently sheltered industry is viewed askance unless forced on us by the action of other countries in refusing to admit our staple primary products or placing high tariff barriers against their admittance.

Apart from these considerations the future of the industry lies in the hands of the growers to make it what they will, but sound constructive leadership is required to assist in guiding the development of the industry along sound lines.

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The writer wishes to express his indebtedness to the growers who by their co-operation gave a basis for this Survey by placing at his disposal confidential information regarding their returns and expenditure and gave freely of their time in answering interminable questions; also, to the managers of the several packing houses and by-product plants visited, the officers of the Horticulture Division with whom he came in contact, the various members of Government Departments and Growers' Organisations who gave freely of the information they had and spared no time or trouble to facilitate his investigations; without their ready co-operation this Survey would not have been possible.

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APPENDICES.

APPENDIX I. Survey Form Used During the Survey

APPENDIX 1.

SURVEY FORM EMPLOYED IN COLLECTING DATA.

1. Name and address
2. County
3. Data for year ending.
4. Size of farm (total area)
5. Area devoted to citrus.
6. What use made of remainder
7. Brief description of farm.
8. Frosts - intensity and damage
9. Winds - how violent.
10. Railfall
11. Soil type.
12. Brief description of profile.
13. Gov't unimproved value
14. " improved value
15. Rates per annum.
16. Stock carried.
    a. Dairy cows
    b. Other cattle
    c. Pigs
    d. Horses
    e. Sheep
17. Orchard equipment and value.
18. Orchard buildings and value
19. Date of taking up farm
20. Size of orchard.
21. No. of trees bearing n.b. Total.
    Lemons. Lisbon
    Eureka
    Other
    N.Z. Grapefruit
    Sweet Oranges
    Others (specify)
22. Varieties grown and notes.
23. Other fruit grown
24. Method planting (triang. or square).
25. Distance apart.
26. Shelter belts.
27. Distance of belts from trees.
28. Pruning methods adopted.
29. Irrigation.
30. Drainage - extent and type
31. Cultivation - times.
    depths.
    implements used.
32. Fertilisation - kinds.
    amounts.
    times of application
33. Green manuring
34. Fungous diseases - what troublesome.
    spray programme.
35. Insect pests - what troublesome.
    spray programme.
36. Total number of family on farm.
    Helping on farm - children Adults m. f.
37. What other labour besides family.
38. What rate wages paid.
39. What labour found in food.
40. Casual labour. No. Weeks Wages How employed
41. Taxes.
42. Main items of revenue Quantity Value
    Lemons - to pool
    auction
    private sale.

42. Contd.

Grapefruit - to pool
auction
private sale.

Sweet oranges - to pool
auction
private sale.

Other fruit (specify)
Butterfat.
Pigs.
Sale dairy stock.
Sheep and fat lambs.
Wool.
Other items (specify).
Contract work done.

Total.

43. Main items of expenditure.

Purchase of young trees.
Fertiliser - orchard.
other.
Cases
Packing material
Sprays.
Commission
Freight and cartage on fruit.
Other freights.
Insurances (not on house).
Benzine or power (not for car).
New machinery
Repairs (to bldgs)
(to machinery)
Purchase of stock
Wages paid.
Work done on contract.

Total.

44. Picking methods - times
do fruit tend to dry out.

45. Grades made and sizes,

46. Curing and colouring.

47. Packing methods
any fruit sold under D. M.

48. Method of transport to market.

49. Where sell bulk of produce.

50. Monthly sales

	Lemons	Grapefruit	Sweet Oranges
Jan.			
Feb.			
Mar.			
Apr.			
May.			
June.			
July.			
Aug.			
Sept.			
Oct.			
Nov.			
Dec.			

APPENDIX II.

Description of Citrus Varieties Grown in New Zealand.

(Adapted from "Hume". 18:1926)

APPENDIX 11

Description of Citrus Varieties.

(adapted from "Hume" 18: 1926).

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Poncirus trifoliata: Raf. (Citrus trifoliata, Linn.)

A small densely branched tree of rather upright habit, 12-15 ft. in height; younger branches smooth, dark green, angled, older ones rounded, thorny, the thorns, stout, stiff, sharp, 1-1½ ins. long, flattened at the base; leaves deciduous, trifoliate; leaflets, thin, more or less elliptical, crenate, borne singly or in tufts; flowers produced singly or in pairs, axillary, usually appearing before the leaves; nearly sessile; sepals 5, light greenish yellow, small, oval, pointed, about ¼" long; corolla large, white, 1½-1¾" across when expanded - polypetalous; stamens 21-23, filaments separate, anthers adnate, oval, 2 celled; fruit light orange, rough; oil of the rind aromatic, sticky, pulp rather sparse, acid; seeds numerous, oval, rounded at the ends, plump, cotyledons 2, embryo 1.

Sour of Seville Orange: (Citrus Aurantium, Linn.).

Form rounded-oblate; size large, 2¾" by 3¼", color yellow or orange-yellow, sometimes reddish-orange when fully matured; apex flattened; base somewhat roughened, slightly depressed; the calyx set in the depression; rind smooth or slightly rough; with many of the oil cells depressed, 3/16" thick; oil cells small, slightly compressed, flesh dark yellow, sections 10-12; juice sacs spindle-shaped and of medium size; juice plentiful, slightly coloured; pulp melting; flavour sour, when thoroughly ripened rather agreeable, peculiar and distinct; pith ¾" across; seeds numerous, many abortive, wedge-shaped, slightly ridged. Season July to September.

The fruit is imported from Australia for mixing with poorman oranges in marmalade making and the tree has been extensively used as a stock for citrus trees in the United States of America.

Sweet Oranges: (Citrus sinensis, Osbeck).

Hamlin: Form rather oblate; size medium; color deep golden yellow early in season, changing to orange-red with full maturity; apex rounded and very slightly scarred; base smooth, rounded; calyx small; rind very smooth, bright and satiny, ⅛" thick; oil cells small, flush with the surface; sections 11-12, uneven in size; flesh deep orange yellow; juice abundant, deep orange; acidity and sweetness well blended; flavour excellent; seeds usually 1-5, but many fruits are seedless. Season October and November and later. It is an early orange of remarkably fine quality and has the smoothest rind of any of the sweet varieties. This, added to its excellent quality, makes it a very attractive early orange.

Jaffa: Form rounded-oblate or occasionally very slightly rounded-oblong; size medium to large, 2¾" by 3 3/16", 3" by 3"; color orange-yellow to orange-red; apex rounded smooth; base rounded; calyx small, pointed; rind smooth,

leathery, $\frac{1}{8}$" thick; oil cells of medium size, flattened; sections 11, well defined, fairly regular; flesh yellow, fine grained; juice abundant, colored; pulp melting; acidity and sweetness normal and well blended; flavour rich; quality excellent; pith small; seeds about 9. Season July to October.

Joppa: Somewhat similar to and frequently mistaken for Jaffa, but is a somewhat larger fruit, much rougher in the rind and the fruit is oblong being largest below the median line and tapering towards the calyx. Season August to October.

Lue Gim Gong: Form oblong, carrying the size well out to the rounded ends; size large, 3" by $3\frac{1}{4}$"; color deep orange-red; skin thin, smooth on current crop, becoming rougher on two- and three-year-old fruit; sections 10-11, well defined; flesh deep orange; juice sacs large; juice abundant even in old specimens; flavour a rich blending of sweet and sub-acid; quality best; pith medium; seeds 4 to 8. Season December to March. A fine shipping fruit and a good keeper.

According to Mr. A. D. Shamel this variety is identical with Hart's Tardiff strain of Valencia Late.

Paper Rind St. Michael: Form oblong; size medium to large, $2\frac{3}{4}$" by $2\frac{3}{4}$", 3" by $2\frac{15}{16}$"; color orange; apex rounded; base rounded, shouldered; calyx small; rind slightly pitted, $\frac{1}{8}$-$\frac{3}{16}$" thick; oil cells depressed; sections 10, partitions thin; flesh coarse-grained, orange; juice sacs small; juice plentiful, colored; pulp melting; acidity and sweetness well blended; flavour rich, vinous, quality excellent; pith small, $\frac{1}{4}$-$\frac{1}{2}$" across; seeds six. Season August and September.

Pineapple: Form somewhat variable, varying from nearly round to slightly oblate, occasional specimens being quite compressed; size medium to large, $2\frac{1}{2}$" by $2\frac{3}{4}$", $2\frac{15}{16}$" by $3\frac{1}{4}$"; color deep orange, full ripe well colored specimens show a reddish tinge; apex rounded or very slightly depressed and scarred; base rounded, very smooth; calyx small; rind smooth, bright, glossy and satiny, $\frac{1}{8}$" thick; oil cells small, quite conspicuous, flush with the surface or slightly elevated; sections 11, slightly irregular; flesh of medium grain, orange-yellow; juice sacs small; juice abundant, yellowish in color; pulp melting; acidity and sweetness well blended; flavour excellent, rich, vinous, sprightly; pith solid $\frac{1}{4}$"-$\frac{1}{2}$"; seeds 13-23. Season July and August, although it may sometimes be held later.

Because of its peculiarly fine flavour and its fancied resemblence in flavour to a pineapple it was so named. It soon established a reputation as a high-quality, highly colored fruit, and it remains today Florida's most important mid-season sweet orange.

Valencia: Form round or sometimes slightly oval; size medium to large, $3\frac{1}{8}$" by $3\frac{1}{8}$"; color deep golden orange; apex rounded, slightly flattened, scarred, base smooth, rounded; calyx small, sharp pointed; rind thin, smooth, tough; sections clearly marked, nine or more in number; flesh orange in color, of medium grain; juice sacs of medium size; juice abundant, colored; acidity and sweetness well combined; pulp melting; flavour rich, sprightly and vinous; quality excellent; seeds few, about six. Season September to December.

Ruby Blood: Form round or slightly oblong; small to large; 2¾" by 3¼", 2½" by 2¾"; color deep yellow or orange, reddish when fully matured; apex rounded, scarred, sometimes navel marked; base rounded, smooth; calyx small lobes short and blunt; rind smooth, shiny, ⅛" thick; oil cells small, almost globular; sections 12, small regular; flesh fine grained, yellow early in the season, blood-red when fully ripe; juice sacs small; juice plentiful, colored; pulp melting; acidity and sweetness well blended; flavour rich vinous; quality excellent; pith small, compact 5/16" across; seeds 11. Season September and October. It has no superior and few equals in quality.

Washington Navel: Form rounded, somewhat tapering towards the apex; size large, 3¼" by 3¼", 3⅝" by 3½"; color orange or orange-yellow; apex terminating in an umbilicus, tapering slightly outward, flattened on the tip; base rounded or somewhat flattened and frequently creased; calyx small; rind smooth, tough, leathery, ⅛"-¼" thick; oil cells large, almost globose; sections 9-11, well defined; flesh rather coarse, deep orange yellow; juice sacs rather large, spindle shaped; juice plentiful, but in poor specimens inclined to run slack in the stem end; pulp melting; acidity and sweetness well blended; flavor rich, vinous; quality excellent; seeds absent. Season June to August and later.

Mandarins: (Citrus nobilis, var. deliciosa Swingle):

Essentially a fancy fruit and as such commands a fancy price in its season.

Cleopatra: Tree thornless, forming a dense top, upright but inclined to be willowy; leaves small; fruit produced singly or in bunches. The fruit is small and the trees not sufficiently prolific to make up for the deficiency in size by an abundance of fruit. Now being used as a stock for some varieties in Florida.

King: Form oblate; size large; color deep orange; base somewhat roughened and creased, rind rough, pitted ⅛"-¼" thick, separating easily from the flesh; flesh orange, rather coarse-grained; juice abundant, colored; pulp melting; acidity and sweetness well blended; flavor agreeable, sprightly; quality very good; seeds 18-20. Season September and October. Tree stiff and upright in growth, generally thorny; wood brittle and frequently breaks with the weight of fruit.

(C. nobilis, var Unshiu)

Satsuma: (Oonshiu). Owari Satsuma -- Form oblate, sections frequently shewing through the rind; size variable, 1⅞" by 2⅝" and 2⅝" by 3 7/16" representing the variation in size; color orange-yellow; base usually slightly creased; calyx small; rind ⅛" thick, inclined to be rough; oil-cells large, conspicuous, frequently depressed though sometimes flush with the surface; flesh deep orange, coarse-grained; juice abundant, yellowish-orange, pulp melting; acidity and sweetness well balanced; flavour sprightly, agreeable; quality excellent; pith open with the sections frequently separated at the inner edges; generally seedless though occasionally 1-4 seeds are found. Season April, May. Tree thornless and of spreading dwarf habit, branches re-

clinate, branchlets angled; leaves broad, tapering abruptly towards the apex. The fruit frequently remain green or greenish for a considerable time after the juice has acquired its best flavour.

Temple: Form oblate, tapering slightly to the stem; size medium to large, about 2½" by 3⅛"; color deep orange-red; apex broad, shallow depression sometimes navel marked; stem end of fruit tapering and usually creased; calyx small; stem slender; skin smooth or pebbled, leathery, thin, separating easily from the pulp; sections 10-12, with very thin partitions; flesh orange, melting, free from rag, very juicy; acidity and sweetness well blended; flavour spicy, rich, vinous and very characteristic; seeds about 20. Season July to October.

Grapefruit: (Citrus paradisi. Macf).

Marsh's Seedless: Form oblate-roundish; size 3⅛" by 4⅞", 3½" by 4½", stem small; color light yellow; rind ⅛ inch thick, smooth; oil-cells small, scarcely or not at all indented; sections 13, regular, partitions thin; juice sacs small; flesh grayish green; bitter principle not strongly marked; acidity and sweetness medium; pith ⅝" in diameter, open; seeds 2-6 or none. Season August, September. This pomelo has not the distinct pronounced flavour of the typical fruit, but the quality is good, and the fact that it is so nearly seedless is a very desirable feature. The absence of seeds makes it possible to hold the fruit on the trees very late.

Lemons: (Citrus Limonia, Osbeck).

Eureka: Form oblong; size medium; color lemon-yellow; apex nippled, the nipple small and abrupt; base slightly tapered, frequently oblique; calyx of medium size, 4-5 pointed, points blunt; rind smooth, ¼ inch thick uncured, ⅛" thick when cured, sweet; oil-cells quite large, depressed; sections 10, well defined and regular; flesh fine-grained, pale grayish-yellow in color; juice sacs small, spindle-shaped, elongated; juice abundant, clear; pulp melting; acid pure and strong; flavour excellent; pith small, ¼" across; seeds present, but mostly abortive.

Genoa: Form oblong, pointed at both ends; size medium; color bright lemon-yellow; apex nippled, nipple small and rather sharp-pointed; base necked; calyx large, 4-5 pointed, points rounded; rind smooth, sweet, ¼" thick or slightly more uncured, ⅛" thick cured; oil cells small, fairly conspicuous, sections 7-10, regular; flesh fine-grained, grayish-yellow; juice sacs fairly large, spindle-shaped; juice abundant clear; acid clear and strong; flavour excellent; pith very small, ⅛" or less; seeds few, abortive.

Lisbon: Form oblong; size medium, color lemon-yellow; apex nippled; base somewhat necked; calyx quite large and prominent; rind fairly smooth, sweet to the taste, ⅛" thick in cured specimens, ¼" thick in uncured; oil-cells small and prominent; sections 10-11, small, regular in size; flesh fine-grained, grayish-yellow; juice sacs elongated, narrow, spindle-shaped; juice abundant; pulp melting;

acid clear, pure, strong; flavour excellent; pith small, ¼" or less; seeds 1-5, usually abortive.

Ponderosa: Form necked, oblong, obovate pyriform; size large, 4⅜" by 4⅛"; color lemon-yellow; apex flat or roundish with a very slight indication of a nipple; base necked, rather rough, elevated about the calyx which is quite depressed; rind rough, ½" thick; oil cells large, balloon-shaped or oblong; sections 12, distinct, separating tissues thick; flesh grayish, coarse-grained; juice sacs large; juice plentiful, colorless; pulp melting; acid quite strong; flavour agreeable, not exactly like a lemon; pith small; seeds 25. Season Winter.

Rough Lemon: Form variable, slightly obovate or round-ovate; size medium to large; color lemon-yellow, sometimes shaded with a reddish tinge; apex rough, with a slightly depressed ring in which is set a roughened elevation having 3 or 4 ridges; base rough and elevated so as to surround the calyx; rind decidedly rough and warty, ¼" thick; oil cells large, balloon shaped or globular, frequently extending entirely through the rind; sections 9-12, well-defined, separating freely from each other and from the rind; flesh coarse-grained, greenish yellow; juice sacs large; juice abundant, clear; pulp melting; acid quite strong; flavour agreeable; pith open, ½"-1" across, filled with white strings of tissue; seeds 23, small. Season Winter. It is somewhat useful for home consumption, but as a commercial variety it is worthless. When growing apart it reaches a height of twenty-five feet and upward, the bark of the tree being brownish gray and smooth.

Villafranca: Form oval-oblong; size medium to large; color bright lemon-yellow; apex pointed, blunt, abrupt, about ½" long; base rounded; calyx of medium size, segments not distinctly marked; rind smooth, ⅛" thick when cured; oil-cells depressed or flush with the surface; sections 11, well defined and regular; flesh fine-grained, light grayish-yellow; juice sacs slender, pointed; juice colorless, abundant; pulp melting; acid clear, pure, strong; flavour good; pith small, ¼" across or less; seeds 30.

APPENDIX 111

Details of Groves visited during the Survey and whose Data was used in the Analysis shewn in the text.

Grove No.	LEMONS. Bearing:	Not-Bearing.	Total:	N.Z. GRAPEFRUIT: Bearing:	Not-Bearing:	Total:	SWEET ORANGES: Bearing:	Not-Bearing:	Total:	Other Varieties Total.	Total:	PRODUCTION IN BUSHEL CASES. Lemons:	Average:	Corrected Production:	Corrected Average:	N.Z. Grapefruit.	Average	Sweet Oranges:	Average:
1	500	100	600	24	50	74	8	....	8	....	682	3,000	6.0	4,380	8.76	....	....	....	....
2	300	300	600	12		12		3	3		615	1,900	6.3	1,900	6.33	30	2.5		
3	200	200	400		30	30					430	63	.3	664	3.32	4			
4	144	100	244								244	200	1.6	498	3.45				
5	750	-	750	24	-	24	76	-	76		850	3,000	4.0	4,380	5.84	150	6.2	200	2.6
6	193	28	221		28	28		5	5		254	700	3.6	1,743	9.03	18			
7		155	155		100	100		9	9		264	54		570	3.67	73	0.7	2½	
8	320	648	968	55	100	155		100	100		1223	1,511	4.7	2,213	6.91	400	7.3		
9	1300	200	1500	120	-	120				200	1820	5,040	3.9	7,381	5.67	588	4.9		
10	440	20	460	70	20	90	3	-	3		553	2,873	6.5	2,873	6.52	104	1.4		
12	400	180	580	140	-	140					720	1,200	3.0	2,988	7.47	700	5.0		
13	50	450	500								500	252	5.0	369	7.38				
14	56	81	137	74	-	74	3	-	3	58	272	202	3.6	296	5.28	463	6.2		
15	200	-	200	135	65	200					400	500	2.5	1,245	6.22	280	2.0		
17	175	200	375	195	55	250		10	10		635	500	2.8	730	4.17	170	0.9		
18	176	-	176	35	75	110					286	1,225	6.9	1,225	6.96				
19	267	-	267	26	60	86	3	33	36		389	731	2.7	1,071	4.01	66	2.5		
20				187	30	217					217					1200	6.4		
21	55	25	80	120	100	220	51	-	51		351	126	2.2	184	3.34	669	5.5	146	
22	476	200	676	234	-	234	7	-	7	6	923	784	1.6	1,952	4.10	576	2.4		
24	150	60	210		30	30	105	-	105	7	352	250	1.6	622	4.14			50	0.4
25	200	333	533		50	50					583	1,500	7.5	1,500	7.5				
26	350	450	800	8	4	12	12	38	50		862	1,872	5.3	2,742	7.83	20	2.5		
27	300	276	576								576	210	0.7	2,214	7.38				
30	150	50	200	100	50	150					350	700	4.6	700	4.66	400	4.0		
34		50	50					300	300	25	375	50	1.0						
35		130	130								130	115	0.9						
36		130	130					394	394	4	498	117	0.9						
37		116	116		3	3		411	411	16	546	7							
40		400	400					70	70	40	510	300	0.7						
41		129	129		3	3		98	98		230	60	0.5						
44		243	243					261	261		504	70							
45		462	462					392	392	52	906	400	0.8						
46		475	475					308	308		783								
48	178	870	1048				300		300		1348	716	0.7						
49		201	201								201								
50				200	400	600					600					700	3.5		
51	100	-	100	200	-	200					300	210	2.1	523	5.23	450	2.2		
52	117		117	51	-	51		12	12		180	196	1.6	488	4.17	68	1.3		
57	130	113	243	36	57	93	130	27	157		493	551	4.2	807	6.20	173	4.8	200	1.5
58	26	-	26				200	-	200		226	30	1.1					400	2.0
59	250	230	480	10	20	30	70	-	70		580	540	2.1			30	3.0	200	2.8

Averages based on total No. of lemon trees.

25.
25
15.
6
3
20.

Grove NO.	Age[1]	Soil[2]	Pruning[3] Lemons:	Drainage[4]	Cultivation[5]	Fertiliser lbs. per Tree: N	P_2O_5	K_2O	Organic	Green[6] Manuring:	Foot Rot:	Lime:
1	-	S	L	N	R.H. 3"-4" - clean	1.6	1.3	-	Heavy cow	B.L.	Bad	-
2	17.6	S	L	N	R.H. 3"-4" - clean	0.5	2.5	0.7	" "	-	Fair	-
3	5	S	L	N	Kinkade - poor	-	-	.7	Fowls	-	Bad	5 lbs.
4	9	S	L	N	Discs 3"-4"- clean	0.12	0.55	1.68	-	B.L.	Good	Occ.
5	V.	S	S	N	" 3"-4"- dirty	1.90	0.32	-	-	-	Bad	-
6	9	S	S	Open	" - clean	0.58	1.03	-	-	B.L.		7 lbs.
7	4	S	S	N	Grassed except circle	0.43	1.21	0.96	Mulch	-	Nil	-
8	15	S	L	Low spots	Disc- clean	2.14	2.01	2.1	Carts soil	W.W.	Good	22 lbs.
9	V	S	N	N	Disc - weedy	.52	.92	-	-	-	Bad	7 lbs.
10	19	S	L	N	Plow 4"-5" - clean	.63	2.5	0.5	-	B.L.	Bad	-
12	V.	S	L	Yes	" 6"-disc & harrow clean.	1.13	.62	1.44	-	B.L.	Good	-
13	V.	S	N	N	R.H.- clean				-	-	Good	-
14	V.	L	L	N	Plow 6" - clean	0.8	.60	-	-	B.L.	"	-
15	V.	L	M	N	Gravelly-clean	1.5	1.4	3.5	-	-	"	-
17	V	L	P	N	R.H. 4"- clean	0.72	1.9	-	-	Erratic	Fair	Occ.
18	20	C.L.	L.	Yes	Discs - clean	2.53	3.87	-	-	-	Good	-
19	15?	L.	M.	"	Plow 5" - clean	1.12	1.02	-	-	Occas.	"	5/7 lbs.
20	12	C.L.	-	?	Plow 3"-4" - clean	0.93	2.2	0.48	-	B. L.	"	-
21	15?	L.	P	Low spots	Plow - clean	0.82	0.6	1.44	-	-	Fair	-
22	V	L.	M	N	" "				-	-	-	-
24	-	L	M	N	Disc - fair	.65	1.75	-	-	B.L.	Fair	-
25	20	L	P	Yes	R.H. - excellent						Good	Occ.
26	V.	L/c	P	"	R.H. - weedy	2.04	2.54	.28	Some fowl	Lotus his	Good	-
27	5	C	P	"	R.H. - Excellent	1.2	4.1	-	-	B.L.	Good	
30	20	L	M	N	Plow or R.H.	2.19	1.42	-	-	B.L.	Bad	-
50	12	V	-	N	Plow - clean	0.56	3.3	-	-	B.L.	Good	-
51	9	V	S	N	Surface cult.	0.76	1.44	-	-	B.L.	Good	-
52	9	V	S	N	None -neg.	0.63	-	-	-	-	-	-
57	V	L	P	N	Plow - fair	1.4	2.06	0.06	-	-	Fair	-
58	V	L	L	N	" "				-	-	"	-
59	V	L	L	N	" "	0.39	0.69	-	-	-	"	-
34	5	K	N	N	Intercrop - weedy				-	-	"	-
35	3	K	S	N	Plow - clean	0.37	0.23	0.56	-	-	-	-
36	5	M	N	N	R.H.4" every 6/8 weeks	0.24	0.5	-	-	-	-	-
37	5	K	L	N	Plow6" - clean	0.58	0.82	0.61	-	-	-	3 lbs.
40	3/4	K	L	N	½ in passions:plow fair	0.21	0.38	-	-	-	-	2½ lbs.
41	4	K	N	N	Plow - clean	0.40	0.34	-	-	Cereal		15 lbs.
44	6	K	L	N	Plow - fair							
45	6.	K	L	N	Plow 4"-6" - clean	0.71	0.62	0.72	(oranges)	B.L.		
46	V	K	L	N	Plow - clean	0.16	0.16	0.21				
48	V.	K	L	N	Discs -clean	0.58	1.23	0.96		B.L.		
49	V	K	N	N	Plow - dirty	0.55	0.48	-				

1. V= Age Variable.
2. Soil:
   - S = Sandy loam
   - L = Loam.
   - CL = Clay loam
   - L/C = Loam & clay mixed.
   - V = Later basic volcanic.
   - K = Keri Keri Type.
3. Pruning:
   - N = Not pruning)
   - S = Slight ")
   - L = Light ") See Table XXVI
   - M = Medium ") in test.
   - P = Severe ")
4. Drainage:
   - N = None
5. R. H.=Rotary Hoe.
6. B. L.=Blue Lupins.
   W. W = White Lupins.

Grove No.	Age[1]	Soil[2]	Pruning[3] Lemons:	Drainage[4]:	Cultivation[5]:	Fertiliser lbs. per Tree: N	P_2O_5	K_2O	Organic	Green Manuring[6]:	Foot Rot:	Lime:
1	-	S	L	N	R.H. 3"-4" - clean	1.6	1.3	-	Heavy cow	B.L.	Bad	-
2	17.6	S	L	N	R.H. 3"-4" - clean	0.5	2.5	0.7	" "	-	Fair	-
3	5	S	L	N	Kinkade - poor	-	-	.7	Fowls	-	Bad	5 lbs.
4	9	S	L	N	Discs 3"-4"- clean	0.12	0.55	1.68	-	B.L.	Good	Occ.
5	V.	S	S	N	" 3"-4"- dirty	1.90	0.32	-	-	-	Bad	-
6	9	S	S	Open	" - clean	0.58	1.03	-	-	B.L.		7 lbs.
7	4	S	S	N	Grassed except circle	0.43	1.21	0.96	Mulch	-	Nil	-
8	15	S	L	Low spots	Disc- clean	2.14	2.01	2.1	Carts soil	W.W.	Good	22 lbs.
9	V	S	N	N	Disc - weedy	.52	.92	-	-	-	Bad	7 lbs.
10	19	S	L	N	Plow 4"-5" - clean	.63	2.5	0.5	-	B.L.	Bad	-
12	V.	S	L	Yes	" 6"-disc & harrow clean.	1.13	.62	1.44	-	B.L.	Good	-
13	V.	S	N	N	R.H.- clean				-	-	Good	-
14	V.	L	L	N	Plow 6" - clean	0.8	.60	-	-	B.L.	"	-
15	V.	L	M	N	Gravelly-clean	1.5	1.4	3.5	-	-	"	-
17	V	L	P	N	R.H. 4"- clean	0.72	1.9	-	-	Erratic	Fair	Occ.
18	20	C.L.	L.	Yes	Discs - clean	2.53	3.87	-	-	-	Good	-
19	15?	L.	M.	"	Plow 5" - clean	1.12	1.02	-	-	Occas.	"	5/7 lbs.
20	12	C.L.	-	?	Plow 3"-4" - clean	0.93	2.2	0.48	-	B. L.	"	-
21	15?	L.	P	Low spots	Plow - clean	0.82	0.6	1.44	-	-	Fair	-
22	V	L.	M	N	" "				-	-	-	-
24	-	L	M	N	Disc - fair	.65	1.75	-	-	B.L.	Fair	-
25	20	L	P	Yes	R.H. - excellent						Good	Occ.
26	V.	L/c	P	"	R.H. - weedy	2.04	2.54	.28	Some fowl	Lotus his	Good	-
27	5	C	P	"	R.H. - Excellent	1.2	4.1	-	-	B.L.	Good	
30	20	L	M	N	Plow or R.H.	2.19	1.42	-	-	B.L.	Bad	-
50	12	V	-	N	Plow - clean	0.56	3.3	-	-	B.L.	Good	-
51	9	V	S	N	Surface cult.	0.76	1.44	-	-	B.L.	Good	-
52	9	V	S	N	None -neg.	0.63	-	-	-	-	-	-
57	V	L	P	N	Plow - fair	1.4	2.06	0.06	-	-	Fair	-
58	V	L	L	N	" "				-	-	"	-
59	V	L	L	N	" "	0.39	0.69	-	-	-	"	-
34	5	K	N	N	Intercrop - weedy				-	-	-	-
35	3	K	S	N	Plow - clean	0.37	0.23	0.56	-	-	-	-
36	5	M	N	N	R.H.4" every 6/8 weeks	0.24	0.5	-	-	-	-	3 lbs.
37	5	K	L	N	Plow6" - clean	0.58	0.82	0.61	-	-	-	2½ lbs.
40	3/4	K	L	N	½ in passions:plow fair	0.21	0.38	-	-	Cereal		15 lbs.
41	4	K	N	N	Plow - clean	0.40	0.34	-				
44	6	K	L	N	Plow - fair							
45	6	K	L	N	Plow 4"-6" - clean	0.71	0.62	0.72	(oranges)	B.L.		
46	V	K	L	N	Plow - clean	0.16	0.16	0.21				
48	V.	K	L	N	Discs -clean	0.58	1.23	0.96		B.L.		
49	V	K	N	N	Plow - dirty	0.55	0.48	-				

1. V= Age Variable.
2. Soil:
   - S = Sandy loam
   - L = Loam.
   - CL = Clay loam
   - L/C = Loam & clay mixed.
   - V = Later basic volcanic.
   - K = Keri Keri Type.
3. Pruning:
   - N = Not pruning)
   - S = Slight ")
   - L = Light ") See Table XXVI
   - M = Medium ") in test.
   - P = Severe ")
4. Drainage:
   - N = None
5. R. H.=Rotary Hoe.
6. B. L.=Blue Lupins.
   W. W = White Lupins.

APPENDIX IV.

Sample of Suggested Type of Orchard Records and Account Forms.

APPENDIX IV.

ORCHARD RECORD BOOK.

Name: .....

Registered No.: .....

County: .....

History of the Area Prior to Planting.

On purchase the area was in low Tea tree and Rewa-Rewa. These were cleared and burnt and the area was ploughed in August, 1924, with Fordson tractor and double furrow plough to a depth of 6 inches. A double row of Pinus radiata (two-year-old transplants) planted round the edge of block in early September, 1924, and Albizzia lopantha seed drilled in furrow and covered by hand at same time at a distance of 22 ft. inside the row. The area was permitted to fallow over the Summer months; double disced in February and harrowed. A dressing of 2 tons per acre of ground carbonate of lime was applied and harrowed in with two bushels of Blue Lupin seed in March, 1925. . . . . .

400 Eureka lemon trees secured from _____ (Davidson's buds) on Citronelle stock two years from bud. The trees were in good order and well headed with a nice leg of 15 inches. The trees were planted on the square on the 2nd and 3rd September, 1925, 1 lb. of blood and bone and ½ lb. of super. being well incorporated in the soil around each tree. Trees staked and tied 4th and 5th September . . . . .

Orchard Operations - Year 1934.

January:

10th	All trees sprayed with white oil (name) at strength 1: 40 for control of red scale which was rather severe on a number of trees. Day fine and cloudless.
12th	Area surface cultivated to depth 2 inches with rotary hoe.
13/20th	Trees hand cultivated with spades.
20/30th	Lemons picked - 100 cases.

February: . . . . . .
. . . . . .

March:

5th	Surface broadcast 4 lbs. per tree of blood and bone and 3 lbs. superphosphate. 5 bushels Blue Lupin seed hand broadcasted over area and covered with rotary hoe.

March

12th — Trees carefully gone round for any signs of Bark disease. Infections carefully scraped and treated with cold tar. Trees found affected were B7, B26, L4, L7, P15, P16, Q3, Q12.

20th/25th — Picking 65 cases.

Similarly for other months.

MONTHLY LABOUR SHEET -- JANUARY, 1934.

Name:		Date: 1	2	3	4	5	6	7	8	9	10	etc.	etc.	TOTAL Hrs.:
Owner	Citrus	-	8	8	12	10	3	-	-					70
	General farm	-	-	-	-	-	4	7	6					40
	Milking	4	4	4	-	2	4	4	4					120
	Pigs	½	-	-	-	-	½	½	½					14
Employee A	Citrus	-	7	7	7	7	-	-	-					60
	General farm	-	-	-	-	-	6½	7	6					50
	Milking	4½	4	4	4	4	4	4	5					129
	Pigs	-	-½	½	½	½	-	-	-					16

A separate horizontal column is kept for each farm employee, and his time during each day approximately analysed. Totals at the end of each month can then be transferred to a yearly labour sheet and finally totalled for the twelve months period and wages charged to the various farm departments accordingly. Horse hours should be similarly analysed and the cost of horse labour charged to the various departments.

Horse hours														
	Citrus	-	-	-	20	20	6	-	-					80
	General farm	½	½	½	½	½	8½	15	13					60
	Pigs	-	-	-	-	-	-	-	-					4

Capital A/c. - 1934.

Land:		
27 acres 1 rood 0.9 poles - Government Valuation		£1,400
Cost Developing 13 acres of orchard		1,300
Manager's House		350
Orchard Buildings		120
Value of Implements (Depreciated value)		450
Other Improvements - Fencing, etc.		150
Stock:		
2 Horses @ £30 each	£60	
5 Cows @ £5 ea.	25	85
		£3,855

Inventory Farm Implements, 1934.

Name:	New Value:	Depreciation 5%:
-- Tractor	£215	£10.15. 0
2-furrow Tractor Plough	35	1.15. 0
28-blade Double Discs	45	2. 5. 0
3-leaf Tyne Harrows	10	10. 0
-- Power Sprayer	150	7.10. 0
1-ton -- Lorry	250	12.10. 0
Tractor Trailer	10	10. 0
Hand Tools	5	5. 0
	£720	£36. 0. 0

FREIGHT A/c. -- 1934.

(Including, Freight, Cartage, Wharfage, Receiving and Delivering).

- - - - - - - - - - - - - - - -

			£	s.	d.
To	Lemon Auction A/c.	£12. 2. 5			
	" Curing A/c.	9.12. 8	21	15	1
	Sweet Orange A/c.		5	16	5
	N.Z. Grapefruit Auction A/c.	£6.16.11			
	" " Private Sales A/c.	3.12. 6	10	9	5
	General Purchase A/c.		4	3	4
			£42	4	3

ORCHARD GENERAL PURCHASE A/c.

Date:	From whom Purchased:	Description:	Quantity:	Fertiliser:	Sprays:	Benzine or Power:	Cases:	Packing Material:	Sundry:	Freights:
h March	Co-op. Dairy Co.	Superphosphate	4 tons	£16.10. 0						£1.15. 0
h May	Fruit Co.	Bordeaux Powder	½ cwt.		£1.15. 0					3. 6
h May	Box Co.	Bushel C/s in shook	200				£7. 5. 0			7. 5
h June	Co-op. Dairy Co.	Benzine	45 gals.			£4. 6. 6				1. 6
d June	Farm Supply Co.	Borax	20 lbs.						3/4d.	
h June	Fruit Supply Co.	Woodwool	1 cwt.					£1. 8. 0		4. 5
h August	Fruit Supply Co.	Blood & Bone	2 tons	13.15. 0						
		Sulphate Ammonia	1 ton	10. 2. 6						1.11. 6
		Sulphate Potash	½ ton	7.10. 0						
				£47.17. 6	£1.15. 0	£4. 6. 6	£7. 5. 0	£1. 8. 0	3/4d.	£4. 3. 4

RATES, INSURANCE, INTEREST A/c, YEAR 1934.

Date.	Name.	Rates. £ S. D.	Insurance £ S D.	Interest. £ S. D.
May.20	-- County.	10 - 5 - 6.		
Jun. 1.	B.N.Z.			25 - 0 - 0.
Jun.30.	Insur. Co. Labour,		3 -17 - 9.	
Dec. 1.	B.N.Z.			24 -10 - 0.
Dec.10.	Insur. Co. Buildings.		17 - 6.	
		£10 - 5 -6.	£4-15-3.	£49 - 10 -0.

From Labour analysis sheet) :- £1-6-0 transferred to citrus.
Labour insurance analysis.) £2-11-9 " to milking A/c.
On basis area used: Rates transferred £1 to citrus; 5/6 to pigs and £9 to milk A/c.

LABOUR A/c YEAR 1934.

Date.	Name	Particulars.	£	S	D.
Jan.30.	J.Smith.	4wks. @ 25/- per wk.	5	- 0	- 0.
Jan.30	L.Jones	4wks. @ 15/- " "	3	- 0	-0.
		etc. - - - - -			
		Allowance for keep @ 10/- wk.	75	- 0	-0.
Dec.31.	Owner.	Labour allowance - one year.	100	- 0	-0.
			£335	- 0	-0.

From Labour Sheet :- analysis. Transferred to Citrus P.& L. A/c. £111-0-0.

" to Pigs A/c. £ 24-0-0.

" to Milk A/c. £200-0-0.

LEMON A/c. -- YEAR 1934.

Supplied to ..... Curing House.

Date:	No. Loose:	Factory:	Repacked:	Gross:	Commission:	Curing:	New Cases:	Freight:	Nett:
January	33	5½	20	£17. 1. 8	£1.11. 1	£1.12. 9	15. 7d	£1. 4. 9	£11. 17. 6
March	35	4½	22½	20.16. 7	1.18.11	1.16. 0	17. 1d	1. 6. 3	15. 18. 4
April	18	1⅛	9⅞	7.12. 7	14. 7	15. 5	7. 5d	10. 8	5. 4. 6
May	19	1¼	9¼	6. 2. 5	11. 5	14. 7	7. 0d	11. 9	3. 17. 8
June	61	7¾	40¼	30.15. 3	2.16. 1	3. 4. 2	£1.11. 0	2. 6. 7	20. 17. 5
July	37	⅝	29¼	16.15. 4	1.13. 2	2. 4. 2	1. 2. 1	1. 8. 5	10. 5. 6
August	26	1¼	18¾	10.16.11	1. 1. 0	1. 8. 9	14.11	19. 6	6. 12. 9
September	44	2	33½	13. 0.11	1. 5. 2	2.11. 3	1. 7. 6	1. 4. 9	6. 12. 3
TOTALS	273	24	183⅜	£123. 1. 8	£12. 1. 5	£14. 7. 1	£7. 2. 7	£9.12. 8	£81. 5. 11

Total: 207⅜

Average per orchard box: Repacked 75.93% 9. 0½d 10½d 1. 0½d 8½d 5. 11d.

Average per packed box: 11.10½d 1. 2d 1. 4½d 8¼d 11d 7. 10¼d

Average shrinkage from orchard boxes to repacked cases - 24%:

LEMON A/c. -- YEAR 1934.

Lemons Auctioned

Date:	Place:	No.:	Gross:	Commission:	Freight:	Cartage:	Receiving & Delivering:	Wharfage:	Nett:
10th January	Wellington	33	£19.13. 6	£1.19. 4	£1.14. 6d	4. 2d	2. 9d		£15. 12. 9
26th March	Wellington	14	7. 9. 0	14.11d	14. 3d	1. 9d	1. 2d		5. 16. 11
11th June	Auckland	3	1.14. 6	3. 6d	2. 6d		3d		1. 8. 3
July	Wellington	16	13. 2. 0	1. 6. 3	17. 9d	2. 0d	1. 4d		10. 14. 8
26th July	Wellington	20	16. 0. 0	1.12. 0	19. 3d	2. 6d	1. 8d		13. 4. 7
2nd August	Wellington	12	9. 8. 0	18.10	12. 1d	1. 6d	1. 0d		7. 14. 7
6th August	Wellington	15	10.18. 0	1. 1.10	16. 6d	1.11d	1. 3d		8. 16. 6
15th September	Wellington	37	23.17. 0	2. 7. 9	1.10.10	4.8d	3. 1d		19. 10. 8
20th September	Wellington	29	18. 6. 3	1.16. 7	1. 6. 0	3. 3d	2. 5d		14. 18. 0
24th September	Wellington	13	5. 3. 6	10. 4	11. 2	1. 8d	1. 1d		3. 19. 3
9th November	Wellington	9½	4.14. 0	11. 9	11. 2	1. 3d	10d		3. 9. 0
29th November	Wellington	2	1. 3. 6	2. 4	4. 6	3d	2d		. 16. 3
	TOTALS:	203½	£131. 9. 3	£13. 5. 5	£10. 0. 6	£1..4.11	17. 0d		£106. 1. 5
Average per case:			12.11d	1. 3½d	1. 1¼d		1d		10. 5¼

SWEET ORANGE AUCTION A/c. - YEAR 1934.

Date:	Place:	No.:	Gross:	Commission:	Freight:	Cartage:	Receiving & Delivering:	Nett:
18th June	Auckland	11	£4. 7. 6	8/9d.	5/6d.		11d.	£3. 12. 4
h August	New Plymouth	11	6.12. 0	13/2d	10/2d			5. 8. 8
h "	New Plymouth	15	7. 5. 0	14/6d	18/6d			5. 12. 0
h "	Wellington	13	5. 2. 0	10/3d	13/3d	1/8d	1/1d	3. 15. 9
t "	Auckland	42	21.15. 9	£2. 3.7	£1. 1.0		3/6d	18. 7. 8
h September	Auckland	30	13.11. 0	1. 7.1	15/-		2/6d	12. 6. 5
h "	Auckland	40	22.13. 2	2. 5.4	1. 0.0		3/4d	19. 4. 6
	TOTALS:	162	£81. 6. 5	£7.12.8	£5. 3.5	1/8d.	11/4d	£68. 7. 4
	Per case:		10/ 0½d	11/⅓d	8d		.84d	8/5.2d.

N.Z. GRAPEFRUIT AUCTION A/c. - YEAR 1934.

Date:	Place:	No.:	Gross:	Commission:	Freight:	Cartage:	Receiving & Delivering:	Nett:
18th June	Auckland	7	£2.10. 7	5. 1d	3. 6d		7d	£2. 1. 5
27th August	Auckland	15	5.13. 6	11. 4d	1. 7d		1/3d	4. 9. 4
24th "	Wellington	7	2.16. 0	5. 7d	6. 8d	10d.	7d	2. 2. 4
10th "	New Plymouth	6	2. 9. 0	5. 0d	12. 0d			1. 12. 0
		4	1. 7. 6	2. 9d				1. 4. 9
28th "	New Plymouth	7	2. 9. 6	5. 0d	8. 0d	1/4d		1. 15. 2
September	Wellington	9	3.10. 0	7. 0d	13. 0d	1/7d	9d	2. 7. 8
29th November	Wellington	8	2.18. 6	5. 9d	£1. 0. 0	1/-	8d	1. 11. 1
19th September	Christchurch	25	11. 5. 0	£1. 2. 6	1. 7. 2	3/2d		8. 12. 2
5th November	Auckland	14	7. 5. 0	14. 6	10. 8		1/2d	5. 18. 8
16th November	Auckland	15	5.17. 9	11. 9	10. 2		1/3d	4. 14. 7
	TOTALS:	117	£48. 2. 4	£4.16. 3	£6. 2. 9	7/11d	6/3d	£35. 18. 2
	Per case:		8. 2¾d	9¾d.	1. 1¼d		.64d	6. 1.66d

N.Z. GRAPEFRUIT.

Private Sales A/c.

1934.

Date:	Name:	Address:	No. C/s.	Gross:	Freight:	Nett:
6th August	J. Smith	Hawera	1	10.6d	1.2d	9. 4
6th "	W. Jones	Taihape	2	17.0	1.4	15. 8
10th "	P. William	Wanganui	1	10.6	1.2	9. 4
10th "	A. Elliott	Wanganui	2	1. 1.0	1.10	19. 2
. .	. . . . .					
			56	£26.18.6	£3.12.6	£23. 6. 0

PROFIT AND LOSS ACCOUNT OF CITRUS DEPARTMENT 1934.

Dr.			£. S. d.	Cr.		£ S. d.
General Purchase:	Fertiliser	£47-17-6		By Sales:-	Lemons to curing house.	123- 1- 8
	Sprays	1-15-0			Lemons to auction.	131- 9- 3.
	Benzine	4- 6-6			Oranges to auction.	81- 6- 5.
	Cases	7- 5-0			Grapefruit to auction.	48- 2- 4.
	Packing material.	1- 8-0			" private sale.	26-18- 6
	Sundry.	3-4.	62- 15- 7.			
Commission:-	Lemons cured.	£12- 1- 5				
	" auctioned	13- 5- 5				
	Oranges auction.	7-12- 8				
	Grapefruit "	4-16- 3.	37-15- 9.			
Freight:-	Lemons cured.	9-12- 8				
	" auction.	12- 2- 5				
	Oranges "	5-15- 6				
	Grapefruit "	6-16-11				
	" Ptv.sales	3-12- 6				
	Gen. Purchase A/c.	4- 3- 4	42- 4- 3.			
Curing lemons.			14- 7- 1.			
New cases supplied by curing house.			7- 2- 7.			
Rates - share to citrus.			1- 0- 0			
Labour insurance - share to citrus.			1- 6- 0			
Building insurance - share to citrus.			7- 6.			
Wages - share to citrus.			111- 09 0			
Depreciation on buildings and plant			36- 0- 0			
Horse labour from labour sheet - 900hrs. @ 6d.			22-10- 0			
Balance gross profit for year.			73-11- 5			
			£410 -18- 2			£410-18-2

APPENDIX V.

Sample of Account Sales Forms, etc. in Use.

APPENDIX V.

ACCOUNT SALES No 323 P.O. BOX 439

Sold by

Turners & Growers Ltd.

AUCKLAND, N.Z.

By Order, and on account and Risk of: Mr. W. Hamilton

WARKWORTH

5th March 1935 193

LEMON POOL No. 1 B FOR 1935

Result of Gradings	GRADES	Sales Average	Shrinkage by Natural Causes	Payout on Original Grading			
1 1/2	HUIA (Extra Fancy)	20/-	nil per cent	20/-	1	10	-
10 1/4	CANTAB (Fancy)	13/8	3% " "	13/4	6	16	8
5 1/2	MEDIUM (Good)	12/6	nil " "	12/6	3	8	9
9 7/8	U-NEED (Small Size-Good Grade)	12/-	5% " "	11/6	5	13	7
					17	9	-
			Commission on the above		1	14	10
					15	14	2
1 3/8	"A" FACTORY (Peel)	6/3				10	2
1 1/2	"B" FACTORY (Juice)	3/-				4	6
30 1/4	Total				16	8	10
	Labour and Curing 27 1/3 @ 1/6				2	-	8
	Labour on Factory 3 1/3 @ 6d.					1	7
New Cases	17 1/3 @ 9 £ : 12: 11				1	2	10
" 1/2 " (U-need)	19 3/4 @ 6 £ : 9: 11						
~~Freight~~, Wharfage & Cartage						6	8
					3	11	9
					£ 12	17	1

CHEQUE HEREWITH

THE LEADER PRESS

Sample Account Sales form used by Messrs. Turners and Growers Ltd. for lemons sent tp their lemon pool. The most satisfactory type of Account Sales form seen in use for this purpose.

Phone 47-352
Telegrams: "LEMONS"

A.C.D.

Nº 598

CURERS AND DISTRIBUTORS OF CITRUS FRUIT

12 DAY STREET, NEWTON, AUCKLAND, C.2.

_____ 193

We beg to acknowledge receipt of _____

Orange Benzine bushel mixed cases of _____

per _____

Cases arrived in _____ *order.*

Contents appear to be full medium slack packed.

Reference: _____ *Advance of* _____ *per case*

Further Supplies Appreciated,

AUCKLAND CITRUS DISTRIBUTORS,

p.p. _____

NOTE — Consult us on your orchard problems. . . . We are Stockists of Spray Material, Fertilisers, and Orchard Requisites.

APPENDIX V.

Sample advice note sent to growers on receipt of fruit at the curing depot.

APPENDIX V.

FACTORY DOCKET

No._____ **No. of Cases**_____

Received_____ **Type**_____

Graded_____ **By**_____

CASES	NAILED FULL MEDIUM SLACK
	YELLOW FANCY
	,, A
	,, M
	,, R.L.
	,, FACTORY
	GREEN FANCY
	,, A
	,, M
	,, R.L.
	,, FACTORY
	JUICE
	REJECTS
	RE-CLIPPED
	BROWN ROT
	VERRUCOSIS
	SCALE
	DECAYS
	DIRTY

*Foreman's O.K.*_____

Factory docket in use by Organisation "C". Such a docket is not sent to the grower but is used for record purposes in the curing department.

APPENDIX V.

PHONE 12-774

Account Sales

Nº 35

BOX 420.

Dunedin, Jan. 22nd 1935

THE NEW ZEALAND FRUITGROWERS' FEDERATION LTD.

DOMINION MARK SALES.

On Account of W. Hamilton, Warkworth.

Reg. No. 1153

PARTICULARS OF CONSIGNMENT		SIZE	NO. OF C/S.	RATE	AMOUNT		
Duncan 29.1.35	5⅔ "A" Grade		3	12/-	1	16	-
			1	11/-		11	-
			1	10/-		10	-
Ref. H3/6	5⅔ Blue Label		3	9/-	1	1	-
			1	8/-		8	-
Polaflore			1	6/6		6	6
					4	18	6

ent

CHARGES.

Commission	12-3	*Cool Storage*	—	12	3	
Freight	10-3.	*Railage*	7-0	17	3	
Cartage	1-3	*R. & D. Charge*	—	1	3	
Wharfage	2-0	*Advt. Levy*	—	2	0	1 12 9
						3 5 9
		Exchange				
			£			

Sample Account Sales form as used by the N.Z. Fruitgrowers' Federation.

APPENDIX VI.

Copies of the Proposed Lemon, Grapefruit and Orange Grading Regulations for use in New Zealand and excerpts from the Californian Regulations giving the salient points.

(a). Prpposed Lemon Grading Regulations.

(b) Excerpts from the Californian Regulations.

(c) Proposed Grapefruit Regulations.

(e). Proposed Grading Regulations for Oranges.

APPENDIX Vl a.

DRAFT.

REGULATIONS under the Orchard and Garden Diseases Act, 1928, relating to the sale for Consumption within the Dominion of New Zealand-grown Citrus Fruit. - (Notice No. Ag. .)

Governor-General
ORDER IN COUNCIL

At the Government at Wellington, this day of 193 .

in Council.

In pursuance and exercise of the powers and authorities conferred upon him by the Orchard and Garden Diseases Act, 1928, (hereinafter referred to as "the said Act"), His Excellency, The Governor-General of the Dominion of New Zealand, acting by and with the advice and consent of the Executive Council of the said Dominion, doth hereby make the following regulations governing the sale for consumption within the said Dominion, of New Zealand-grown Citrus-fruits of the kinds mentioned therein, and doth declare that the regulations hereby made shall come into force on the date of the publication of this Order in Council in the Gazette.

REGULATIONS.

In these regulations, if not consistent with the context :-

"Blemish" includes branch-rubs, scratches, insect bites, unnatural russeting, bruises, excrescences, sun-scalds, hail-marks, or any other injury detrimental to the appearance of fruit, but does not include spray injury.

"Spray Injury" means the russeting of, or other injury to, fruit as a result of spraying.

"Clean" means free from dirt, insect stains, and spray-stains and spray residue.

"Green" means any variety of well grown lemon of an approved size cut from the tree while the whole of the surface is green in appearance.

"Silver" means any variety of lemon of an approved size cut from the tree while silver green in appearance.

"Coloured" means any variety of lemon of an approved size cut from the tree while partially yellow or yellow in appearance, but not ripened on the tree.

"Tree Ripened" means any variety of lemon cut from the tree "coloured" in appearance and ripened on the tree.

"Cured" means any variety of lemon of approved size cut from the tree when mature, green, silver, or coloured in appearances, coloured in an approved manner and conditioned until an appropriate refinement in thinness of skin shall be obtained.

"Director" means the Director of the Horticulture Division, of the Department of Agriculture.

"Owner" means any owner, shipper, or consignor of fruit, and includes the agent or servant of any such owner, shipper or consignor, and also includes, in the case of a company, the managing director, manager, director, secretary or other principal officer of the company in New Zealand.

"Brand" means to stencil or imprint clearly and legibly.

"Pack" means to regularly and compactly arrange fruit in a package.

"Package" means any form of container having a capacity of not less than 555½ cubic inches or one-fourth of an Imperial bushel.

"Sell" means to exchange for money or barter, and includes offering or exposing for sale, or sending or delivering for sale, or allowing to be sold or offered or exposed for sale.

"Size" when used as a noun means the diameter of fruit measured from cheek to cheek at the widest part, and when used as a verb means to sort according to size.

"Count" means the number of fruit contained in the package.

PACKAGES FOR FRUIT.

(2) This part of these regulations shall apply only to lemons, oranges, mandarins, and grapefruit.

(3) No fruit of any of the kinds enumerated in Regulation 2 above shall be sold in packages except such packages conform to one or other of the types of packages hereinafter prescribed for the several kinds of fruit.

Provided that nothing in this part of these regulations shall apply to fruit of the above-mentioned kinds which is sold direct to a factory or works for the purpose of being utilized in the manufacture of any product, or is sold direct to a packing establishment to be there packed.

(4) The packages in which lemons, oranges, mandarins or grape-fruit may be sold shall be constructed of timber in accordance with such one or other of the respective types of packages set out in the schedule below :-

Provided that, if the Director is satisfied that any person on the coming into operation of this Order in Council, has on hand any packages of a type prescribed by Regulations dated the twenty-first day of November, one thousand nine hundred and thirty-two, and published in the Gazette on the twenty-fourth day of the same month at page 2448, since revoked or stocks of timber specially sawn or prepared for making such packages, he may authorize such person to use packages of such type in lieu of packages of the type prescribed in this regulation, but no such authority shall authorize the use of such first-mentioned packages after the 31st day of October, 1935.

SCHEDULE

Specifications of Standard Packages for Citrus Fruits.

Package No.	Kinds of fruit which may be packed separately in the several packages.	Type of Package. Dimensions (Inside measurements in Inches)	Approximate thickness of timber. Ends	Sides	Tops	Bottoms
			In.	In.	In.	In.
1.	Lemons, oranges, mandarins or grapefruit.	10½ x 11½ x 18	⅝ or ¾"	5/16	3/16	3/16
2.	" " "	5¼ x 11½ x 18	"	5/16	5/16	5/16
3.	" " "	7 x 8½ x 18	"	5/16	5/16	5/16

MARKING OF PACKAGES WITH REGISTERED NUMBER.

(5) This part of these regulations shall apply only to lemons, oranges, mandarins and grapefruit.

(6) Every package of fruit of any of the kinds mentioned in the preceding regulations sold or offered for sale shall be branded with the registered number of the owner of such fruit, allotted as hereinafter prescribed.

(7) Every owner of fruit of the kinds set out in this part of these regulations who sells such fruit in packages shall apply to the Director for registration:

Provided that every occupier of an orchard from which fruit is sold or intended to be sold, to whom, at the coming into operation of these regulations, a certificate of registration of such orchard has been issued in terms of the regulation dated the 3rd September, 1917, and published in the Gazette of 6th idem, shall be deemed to have applied for registration under these regulations, and a certificate of registration and a registered number shall be issued to him as hereinafter prescribed.

(8) The Director on receipt of such application shall without fee register such owner of fruit, allotting to him a registered number, and shall issue to such owner a certificate of registration accordingly.

(9) Such registered number may consist of any combination of letters and numerals.

(10) No registered number shall be transferred without the consent in writing of the Director.

(11) If a registered number has not been used for a period of two years the Director may, after giving one month's notice in writing, cancel the registration of the owner of such registered number, which will then be available for reallotment.

(12) The owner of fruit for sale shall brand his registered number in characters of 1 inch block type on one end of each package of such fruit if such package is a fruit-case, or if not, in some prominent position thereon.

(13) No auctioneer or other selling agent shall sell or offer for sale any fruit of the kinds set out in this part of these regulations contained in packages which are not branded with a registered number.

(14) No owner shall sell fruit of any of the kind set out in this part of these regulations in packages which bear any other than his own registered number, and he shall erase or obliterate any other registered number on such packages: Provided that in the event of the purchaser of any fruit selling the same without removing such fruit or any portion of it from the packages for any purpose, including the repacking of it in the same packages, he shall sell such fruit under the registered number already branded on the packages, without alteration thereof or addition thereto.

(15) Nothing in these regulations shall prevent the holder of a registered number using any other design or mark in combination with such registered number for the purpose of marking his packages of fruit, provided the requirements of these regulations in regard to the use of such registered numbers are complied with.

SALE OF LEMONS UNDER OFFICIAL GRADE-MARKS.

(16) The following are the official grades in which lemons may be classed;-

Extra Fancy, Fancy, Good, Small Grade, "X" Grade,

and the words "Extra Fancy", "Fancy", "Good", "Small Grade" and "X" Grade shall be deemed to be and shall be known as official grade marks.

(17) 1. No lemons shall be sold in packages bearing thereon any of the above official grade-marks unless such lemons conform to the standards hereinafter set out for the corresponding grades, and unless all the requirements of this part of these regulations are complied with; Provided that lemons sold in packages bearing the words "cured" shall be graded in accordance with the official grades hereinafter set out for the corresponding grades.

2. The official grade-marks shall not be applied to citrus fruit other than lemons, unless and until such fruit is brought within the scope of this part of these regulations.

LEMONS.

(18) The following are the standards by which the grade of lemons shall be determined:-

(a) "EXTRA FANCY" GRADE.

Lemons of this grade shall include fruit ranging in size from 150 to 252 counts (both inclusive) to the standard case. The lemons shall be of a bright uniform yellow colour, well-grown, of normal form, hand picked from the tree, with stalks trimmed level with the button, sound, thin skinned, of good texture, even in size, clean, free from disease, spray injury, frost injury, skin puncture and other defects that cause fruit to decay or likely to make the fruit unattractive to the customer. Very slightly blemished lemons may be included in this grade provided that no individual lemon shall have more than 5 per cent of its surface affected thereby. They shall have a minimum juice content of 20 per cent by weight.

The following classes of fruit shall be excluded from this grade:-

Fruits of sizes which pack less than 150 or more than 252 to the standard case. Fruits from lots showing a heavy decay out of storage, fruits with abnormally long necks, rough, coarse fruit, misshapen fruit, fruit more than very slightly sun-burned, fruit more than slightly spongy or with more than slightly hollow core, fruit affected with internal decline, fruits affected by frost, dirty fruit unattractive to the consumer, fruits affected with disease, fruits which cut dry for any reason, very immature fruit, or fruit deficient in juice content, and shrivelled or aged fruit for its class or colour.

(b) "FANCY" GRADE:

Lemons of this grade shall include fruit ranging in size from 150 to 252 counts (both inclusive) to the standard case. The lemons shall be of good fairly uniform yellow colour, well grown, of normal form, hand picked from the tree, with stalks trimmed level with the button, sound, fairly thin skinned, of fair texture, even in size, free from disease, spray injury, frost injury, skin puncture and other defects that cause fruit to decay or likely to make the fruit unattractive to the consumer. Slightly blemished lemons may be included in this grade, provided that no individual lemon shall have more than 10 per cent of its surface affected thereby. They shall have a minimum juice content of 20 per cent by weight.

The following classes of fruit shall be excluded from this grade:-

Fruits of sizes which pack less than 150 or more than 252 to

storage, fruits with abnormally long necks, rough, coarse fruit, misshapen fruit, fruit more than slightly sunburned, fruit more than slightly spongy, or with more than slightly hollow core, fruit affected with internal decline, fruits affected by frost, dirty fruit unattractive to the consumer, fruits affected with disease, fruits which cut dry for any reason, very immature fruit, or fruit deficient in juice content, and shrivelled or aged fruit for its class or colour.

(c) "GOOD" GRADE:

Lemons of this grade shall include fruit ranging in size from 125 to 252 counts (both inclusive) to the standard case. The lemons shall be of good fairly uniform yellow colour, well grown, of normal form, hand picked from the tree, with stalks trimmed level with the button, sound, of fair texture, even in size, clean, free from disease, severe spray injury, frost injury, skin puncture and other defects that cause fruit to decay. Blemished lemons may be included in this grade provided that no individual lemon shall have more than 15 per cent of its surface affected thereby. They shall have a minimum juice content of 20 per cent by weight.

The following classes of fruit shall be excluded from this grade: Fruits of sizes which pack less than 125 or more than 252 to the standard case. Fruits from lots showing a heavy decay out of storage, fruits with abnormally long necks, rough coarse fruit, badly sunburned, fruit more than slightly spongy or with more than slightly hollow core, fruit affected with internal decline, fruits affected by frost, dirty fruit unattractive to the consumer, fruits affected with disease, fruits which cut dry for any reason, immature fruit, fruit deficient in juice content, and aged fruit for its class or colour.

(d) "SMALL" GRADE:

Lemons of this grade shall include fruit ranging in size from 275 to 350 counts (both inclusive) and in all other respects shall not contain lemons of a lower standard than that set out above for "Fancy" grade.

(e) "X" GRADE:

Lemons of this grade shall include fruit ranging in size to not more than 368 counts to the standard case. The lemons shall be of a yellow colour in appearance, well grown, of fair form, hand picked from the tree, with stalks trimmed level with the button, sound, even in size, moderately clean, free from disease, frost injury, severe spray injury, skin puncture, and other defects that cause fruit to decay. Blemished lemons may be included in this grade, provided that no individual lemon shall have more than 20 per cent of its surface affected thereby. They shall have a minimum juice content of 20 per cent by volume.

The following classes of fruit shall be excluded from this grade: Fruits of sizes which pack more than 368 to the standard case. Fruits badly sunburned or very poor in colour, very rough, very coarse, badly scarred, very spongy, or badly hollow core fruit, fruit affected with internal decline, fruit showing effects of frost or for any reason cuts dry, very dirty fruit, fruit affected with disease, very immature fruit or fruit deficient in juice content and shrivelled or aged fruit for its class or colour.

PACKING OF GRADED FRUIT.

(19) Prior to being placed in packages the graded lemons shall be sized, and only fruit of as nearly as possible the same size shall be packed together in a package.

(20) In sizing lemons in any particular size for the purposes of packing a variation of not more than $\frac{1}{4}$ in. above the size in question will be allowed, but no lemon shall be included in a package which is of less size than that represented by the count hereinafter required to be branded on such package.

(21) Lemons of one grade only shall be packed in each package; Provided that lemons of different grades may be contained in the same package if the official grade-mark to be placed on the package as hereinafter prescribed is that of the lowest grade of lemons contained in such package. Provided further that nothing in this regulation shall be construed to authorize the packing of different varieties of lemons together in the one package.

22) Lemons of Extra Fancy, Fancy, Good, Small and "X" grades may be wrapped, but if wrapped, new paper of the size hereinafter pres-

WRAPPING PAPER.

Lemons of the various sizes as set out below if wrapped shall be
apped in paper of the size indicated opposite each respectively :-
unts 125 to 138 (both inclusive), paper 10 in. by 10 in.
unts 150 to 180 (both inclusive), paper 10 in. by 10 in. or (9" x 9").
unts 198 to 216 (both inclusive), paper 9 in. by 9 in.
unts 234 to 252 (both inclusive), paper 9 in. by 9 in. or 8" x 8".
unts 270 to 288 (both inclusive), paper 8 in. by 8 in.

In the event of the size of the paper used being smaller than
at specified above for any respective size of such lemons shall be double-
apped by overlapping two papers.

BRANDING PACKAGES OF GRADED FRUIT.

3) The following particulars shall be branded in characters of not less than ½ in. and not more than 1 in. block type, provided the words "Cured" and "Not Cured" when used shall be in characters of 1 in. block type on each package of lemons sold under any of the official grade-marks.
(a) The grade of the fruit as determined by the standards hereinbefore set out.
(b) The words "Cured" or "Not Cured" as determined by the respective standards hereinbefore set out.
(c) The words "New Zealand-grown Lemons".
(d) The number of fruits contained in the package.

4) The particulars set out in the preceding regulation shall be branded on the same end of the package as the owner's registered number hereinbefore required by these regulations to be placed on one end of packages of fruit, and no other particulars shall be placed on that end except a design or mark used in conjunction with the registered number as hereinbefore authorized.

5) 1. The particulars required by the last two preceding regulations to be branded on packages of fruit shall accurately describe the contents of such packages, provided that a variation of not more than five in the count per package shall be allowed in the number of fruit stated to be in such package.
2. If the contents of such packages are noticeably and to the detriment of a purchaser at variance with the particulars branded on such packages, the owner of such fruit shall be deemed to have committed a breach of these regulations.

GENERAL PROVISIONS RELATING TO GRADED FRUIT.

) An Inspector may at any time examine any package of lemons bearing an official grade-mark for the purpose of checking the grading of the contents thereof as indicated by the grade-mark on the package, and the correctness of the other particulars branded on the packages in accordance with the requirements of Regulation 20 above.

') If on examination the Inspector is of the opinion that the contents of any package of lemons are of a lower grade than that indicated by the grade-marks thereon, he shall erase such grade-mark, and shall place on the package a grade-mark indicating the grade which he allots to the contents of the package.

) If such package is one of a line of lemons of the same variety and grade and belonging to the same owner, the grade allotted by the Inspector to the contents of such package shall be allotted to the whole line, and the grade-mark on the remaining packages of the line shall be altered accordingly: Provided that before altering the grade of a line of lemons as aforesaid the Inspector shall examine the contents of at least 5 per cent. of the packages in the line.

) If on examination the Inspector is of the opinion that the contents of any package of lemons are of a lower standard than that prescribed for "X" Grade, he shall erase the grade-mark branded on the package, and no grade-mark shall be allowed thereon.

30) If the grade is altered by an Inspector as aforesaid, all work in connection with the examination of the packages of lemons for the purpose of determining the grade, and with the remarking of packages shall be done at the expense of the owner in all things, of such lemons.

SALE OF LEMONS UNDER OFFICIAL GRADE-MARKS OTHER THAN IN PACKAGES.

31) It shall not be lawful for the official grade-marks to be used to describe any lemons sold or offered for sale unless such lemons conform to the standards hereinbefore set out for the official grades.

32) Any lemons exposed in premises or places where fruit or produce is customarily sold which bear a label or other method of description in which any of the official grade-marks are employed shall be deemed to be offered for sale under the description of such official grade-mark.

PENALTIES.

33) Every person who commits a breach of any of these regulations shall be liable on conviction to a penalty not exceeding £20. 0. 0..

APPENDIX V1 b.

RULES AND REGULATIONS GOVERNING FRUIT PACKED UNDER THE SUNKIST AND RED BALL TRADE-MARKS.

GRADE SPECIFICATIONS.

ORANGES.

(1) SUNKIST. Oranges packed under the Sunkist trade-mark shall be mature; of one variety; of good eating quality and flavour; of good juice content; well grown specimens of normal form, picked from the tree; of good colour for the variety; of good texture; practically free from scale or other insect pests, fungus diseases, splits, or defects of any kind that cause fruit to decay. The following classes of fruit shall be excluded: rough, coarse, more than slightly puffed, more than slightly scarred, more than slightly sunburned; misshaped fruit; dirty fruit unattractive to the consumer; fruit shewing effects of frost or which cuts dry for any reason; immature fruit; fruit insipid in flavour; fruit deficient in juice content; and fruit green or very pale in colour. Soft fruit or fruit shewing marked evidence of ageing or shrivelling shall be excluded. Fruit of extra good texture and colour may properly carry more scars than fruit possessing only the minimum of colour and texture required under Sunkist. Oranges packed under the Sunkist trade-mark shall not vary more than 5% below foregoing specifications except as to decay, in which case the maximum tolerance shall be 2%.

(2) RED BALL:- Oranges packed under the Red Ball trade-mark shall be mature; of one variety; of good eating quality and flavour; of good juice content; well grown specimens of fair form, picked from the tree; of fair colour for the variety; of fair texture; practically free from insect pests (other than scale), fungus diseases, splits, or defects of any kind that cause fruit to decay. The following classes of fruit shall be excluded: very rough, very coarse, badly sunburned, badly scarred, badly puffed; very scaly or very dirty fruit; fruit shewing effects of frost or which cuts dry for any reason; immature fruit; fruit insipid in flavour; fruit deficient in juice; and fruit very green in colour. Soft fruit or fruit shewing marked evidence of ageing or shrivelling shall be excluded. Fruit of extra good texture and colour may properly carry more scars than fruit possessing only the minimum of texture and colour required under Red Ball. Oranges packed under the Red Ball trade-mark shall not vary more than 5% below foregoing specifications except as to decay, in which case the maximum tolerance shall be 2%.

LEMONS.

(5) SUNKIST:- Lemons paked under the Sunkist trademark shall be well grown specimens of normal form, picked from the tree; of good juice content; of good uniform colour; of good texture;practically free from scale, other insect pests, red blotch, membraneous stain, peteca, or defects of any kind that cause fruit to decay. The following classes of fruit shall be excluded: fruit with abnormally long necks; fruit more than slightly sunburned, or more than slightly green in colour; rough, coarse fruit; fruit with deep or dark scars; fr dirty fruit unattractive to the consumer; fruit more than slightly spongy or with more than slightly hollow core;fruit affected with internal decline; fruit shewing effects of frost or which cuts dry for any

reason; very immature fruit, or fruit deficient in juice content; aged fruit for its class or colour; and fruit from lots shewing heavy decay out of storage. Lemons packed under the Sunkist trade-mark shall not vary more than 5% below foregoing specifications, except as to Alternaria and other decay, in which case the maximum tolerance shall be 2%. Provided further that lemons for export, other than to Canada, may be packed under the Sunkist trade-mark while still green in colour.

(6) RED BALL:- Lemons packed under the Red Ball trade-mark shall be well grown specimens of fair form, picked from the tree; of good juice content; of fairly uniform colour; of fair texture; practically free from insect pests (other than scale) and fungus diseases, or defects of any kind that cause fruit to decay. The following classes of fruit shall be excluded; fruit badly sunburned or very green in colour; very rough, very coarse, badly scarred, very dirty and very scaly fruit; very spongy or badly hollow core fruit; fruit affected with internal decline; fruit shewing effects of frost, or which for any reason cuts dry; very immature fruit or fruit shewing heavy decay out of storage; fruit deficient in juice content; aged fruit for its class or colour. Lemons packed under the Red Ball trade-mark shall not vary more than 5% below the foregoing specifications, except as to Alternaria and other decay, in which case the maximum tolerance shall be 2%. Provided further that lemons for export, other than to Canada, may be packed under the Red Ball trade-mark while still green in colour.

(7) SPECIAL RULE RELATING TO ORANGES THAT HAVE BEEN HELD IN STORAGE.

Oranges, subject to all other regulations as to inspection, etc., shall not be shipped under the advertised trade-marks if they have been off the trees more than 28 days except, that 30 days after the start of the season for the variety and the district, oranges that have been sweated shall be limited to 21 days; also that in case of unforeseen reduction in prorate the Sales and Field Departments be granted authority to make equitable adjustments.

(8) SPECIAL RULE RELATING TO MATURITY OF ORANGES.

Navel and Valencia oranges, and all other varieties of oranges except Bloods, tangerines, and maderins, shall be considered immature if the juice does not contain soluble solids equal to or in excess of 8 parts to every part of acid contained in the juice; the acidity of the juice to be calculated as citric acid without water of crystallisation.

(10) SPECIAL RULE RELATING TO LEMONS THAT HAVE BEEN IN STORAGE LONGER THAN SIX AND ONE-HALF MONTHS.

No lemons shall be eligible for shipment under the Sunkist and Red Ball trade-marks that have been in storage longer than six and one-half months.

(12) SPECIAL RULE RELATING TO JUICE CONTENT OF LEMONS SHIPPED UNDER THE ADVERTISED TRADE MARKS.

Lemons shipped under the advertised trade-marks shall have a minimum juice content of 25% by volume, which is approximately the equivalent of 2.75 gallons per packed standard

lemon box. The determination is made as follows; the volume of a representative sample of at least twelve lemons from the packing bin to be measured by water displacement into a graduate. The juice is then extracted by reaming, screened by pressing through cheesecloth and its volume measured in the graduate. The per cent of juice by volume is found simply by dividing the juice volume by the fruit volume and mutiplying by 100.

(13) SPECIAL RULE RELATING TO LINERS IN SUNKIST AND RED BALL (ALL VARIETIES).

Liners are the minimum for the grade after the tolerance has been removed, whether Sunkist or Red Ball. There shall be permitted only 15% of liners in a grade that carries the full 5% tolerance for errors; 20% of liners in a grade that carries not to exceed 2½% tolerance for errors and a miximum of 25% of liners in a grade that carries that carries no tolerance of arrors; in the latter case any tolerance for errors in grading must come within the 25% and not in addition thereto.

(15) SPECIAL RULE RELATING TO TOLERANCE FOR SUNKIST AND RED BALL ON DEFECTS THAT DEVELOP IN TRANSIT(ALL VARIETIES).

The tolerance for Sunkist and Red Ball on arrival in the markets on defects that develop in transit, such as pronounced scalding, pitting, or ageing, granulation, Alternaria or other interior decays, shall be 10%. (Note: Blue and Green mould or brown rot developing in transit does not come under this regulation.).

(16). POLICY RELATIVE TO KEEPING QUALITY AND CONDITION OF FRUIT PACKED UNDER THE SUNKIST AND RED BALL TRADE MARKS (ALL VARIETIES).

It is implied in the above grade specifications that fruit packed under the Sunkist and Red Ball trade-marks shall have reasonable keeping quality and be in such condition as to give satisfaction under normal conditions of handling and distribution.

(17). SPECIAL RULE RELATING TO FROSTED AND DRY FRUIT.

No oranges, lemons, or grapefruit shall be shipped under the advertised trade-marks if the shipment contains fruit in excess of 5% shewing effects of frost or which cuts dry for any reason.

(18). SPECIAL RULE RELATING TO WRAPPING.

All oranges, lemons, and grapefruit, with the exception of Tangerines and Manderins, packed under the advertised trade-marks must be wrapped in paper wraps.

(22). ENFORCMENT OF GRADE REGULATIONS.

The enforcement of grade regulations is lodged with the Field Department of the California Fruitgrowers Exchange. The Field Department shall determine whether the fruit being packed for shipment complies with the grade specifications and, furthermore, shall be charged with the authority to compel repacking or reconditioning of the fruit in case it is not up to grade specifications.

NEW ZEALAND GRAPE FRUIT
(Poorman Orange).

DRAFT.

AMENDING REGULATIONS UNDER THE ORCHARD AND GARDEN DISEASES ACT, 1928, RELATING TO THE SALE FOR CONSUMPTION WITHIN THE DOMINION OF NEW ZEALAND-GROWN CITRUS FRUIT: (NOTICE NO. AG. .)

REGULATIONS.

(1) In these regulations, if not consistent with the context.-

lemish" includes branch-rubs, scratches, insect bites, unnatural russeting, bruises, excrescences, sun-scalds, hail-marks, or any other injury detrimental to the appearance of fruit, but does not include spray injury.

lean" means free from dirt, insect stains, spray stains and spray residue.

ew Zealand means any of the variety of orange formerly known as rapefruit" "Poorman" orange.

ature" means fully developed and the degree of ripeness fit for picking for marmalade of any "New Zealand Grapefruit" cut from the tree, not earlier than the first day of May in each season.

ell atured" means fully developed and the degree of ripeness fit for picking for dessert of any "New Zealand Grapefruit" cut from the tree, tree ripened, and containing a ratio of not less than parts of soluble solids (sugar) to one of acid.

irector" means the Director of the Horticulture Division, of the Department of Agriculture.

wner" means any owner, shipper, or consignor of citrus fruit, and includes the agent or servant of any such owner, shipper, or consignor, and also includes, in the case of a company, the managing director, manager, director, secretary, or other principal officer of the company in New Zealand.

tand" means to stencil or imprint clearly and legibly.

ack" means to regularly and compactly arrange citrus fruit in a package.

ckage" means any form of container having a capacity of not less than 555½ cubic inches or one-fourth of an Imperial bushel.

ell" means to exchange for money or barter, and includes offering or exposing for sale, or sending or delivering for sale, or allowing to be sold or offered or exposed for sale.

ize" when used as a noun means the diameter of citrus fruit measured from cheek to cheek at the widest part, and when used as a verb means to sort according to size.

unt" means the number of citrus fruit contained in the package.

pray njury" means the russeting of, or other injury to citrus fruit as a result of spraying.

PACKAGES FOR CITRUS FRUIT.

Similar provisions to those set out in the proposed Lemon Grading Regulations.

SALE OF NEW ZEALAND GRAPEFRUIT UNDER OFFICIAL GRADE-MARKS.

The following are the official grades in which "New Zealand Grapefruit" may be classed :-

Extra Fancy (Dessert); Fancy, (Dessert); Good,(Dessert);
Extra Fancy (Marmalade); Fancy (Marmalade); Good (Marmalade).

and the words "Extra Fancy" (Dessert), "Fancy" (Dessert), "Good" (Dessert, "Extra Fancy" (Marmalade), "Fancy" (Marmalade), "Good" (Marmalade) shall be deemed to be and shall be known as official grade marks.

(a) No "New Zealand Grapefruit" shall be sold in packages bearing thereon any of the above official grade-marks unless such "New Zealand Grapefruit" conform the standards herinafter set out for the corresponding grades, and unless all the requirements of this part of these regulations are complied with.

(b) The official grademarks shall not be applied to citrus fruit other than "New Zealand Grapefruit" unless and until such fruit is brought within the scope of this part of these regulations.

"NEW ZEALAND GRAPE-FRUIT"

The following are the standards by which the grade of New Zealand Grapefruit shall be determined:-

(a) "EXTRA FANCY (DESSERT)"GRADE:

"New Zealand Grapefruit" of this grade shall include fruit ranging in size of not more than 125 count to the standard case. The "New Zealand Grapefruit" shall be well grown, of normal form, of good juice content, of good eating quality and flavour, of good texture, well matured, of bright uniform colour for variety, sound, clean, rind of medium thickness, even in size, with stalks trimmed level with button. They shall be picked from the tree, true to name and free from disease, spray injury, frost injury, skin puncture, and other defects of any kind that cause fruit to decay. Very slightly blemished "New Zealand Grapefruit" may be included in this grade provided that no individual "New Zealand Grapefruit" shall have more than 5 per cent of its surface affected thereby.

(b) "FANCY (DESSERT" GRADE:

"New Zealand Grapefruit" of this grade shall include fruit ranging in size of not more than 180 count to the standard case. The "New Zealand Grapefruit" shall be well grown, of fair form, of good juice content, of good eating quality and flavour, of good texture, well matured, of fair uniform colour for variety, sound, clean, rind of medium thickness, even in size with stalks trimmed level with button. They shall be picked from the tree, true to name, and free from disease, spray injury, frost injury, skin punctures, and other defects of any kind that cause fruit to decay. Slightly blemished "New Zealand Grapefruit" may be included in this grade, provided that no individual "New Zealand Grapefruit" shall have more than 15 per cent of its surface affected thereby.

The following classes of fruit shall be excluded from "Extra Fancy (Dessert)" and "Fancy (Dessert)" Grades: Fruits of a size of more than 125 count in "Extra Fancy (Dessert)" and 180 count in "Fancy (Dessert)" grade to the standard case; rough, coarse, more than slightly scarred, more than slightly sunburned, misshapen fruit, off coloured, soft, spongy fruit, dirty fruit unattractive to the consumer, fruit off flavour, very seedy fruit, fruit showing effects of frost, fruit deficient in juice content, immature fruit, or fruit having rind of more than medium thickness.

) "GOOD (DESSERT)" GRADE:

"New Zealand Grapefruit" of this grade shall include fruit
nging in size of not more than 215 count to the standard case. The
ew Zealand Grapefruit" shall be well grown, of fair form, of good juice
ntent, of good eating quality and flavour, of fair texture, well matured,
fair colour for the variety, sound, clean, well formed, even in size,
th stalks trimmed level with button. They shall be picked from the
ee, true to name, and free from disease, spray injury, frost injury, skin
ncture and other defects of any kind that cause fruit to decay. Blemished
ew Zealand Grapefruit" may be included in this grade provided that no
lividual "New Zealand Grapefruit" shall have more than 25 per cent of
s surface affected thereby.

The following classes of fruit shall be excluded from this
ade: Fruits of a size of more than 215 count to the standard case; very
ugh, very coarse, badly scarred, badly sunburned, badly misshapen fruit,
coloured fruit, very soft, and soft spongy fruit, dirty fruit unattract-
e to the consumer, fruit off flavour, fruit showing effects of frost or
ich cuts dry for any reason, or immature fruit, fruit which is deficient
juice content, or fruit having rind more than medium thickness.

"EXTRA FANCY (MARMALADE)" GRADE:

"New Zealand Grapefruit" of this grade shall include fruit
ging in size of not more than 125 count to the standard case. "New
and Grapefruit" shall be well grown, of normal form, of bright uniform
our for variety, mature, sound, clean, even in size, with stalks trimmed
el with button. They shall be picked from the tree, true to name,
e from disease, spray injury, frost injury, skin puncture, and other
ects of any kind that cause fruit to decay. Slightly blemished "New
land Grapefruit" may be included in this grade provided that no
ividual "New Zealand Grapefruit" shall have more than 5 per cent of
surface affected thereby.

"FANCY (MARMALADE)" GRADE:

"New Zealand Grapefruit" of this grade shall include fruit
ging in size of not more than 180 count to the standard case. The "New
land Grapefruit" shall be well grown, of fair form, of fair uniform
our for variety, mature, sound, clean, even in size, with stalks trimmed
el with button. They shall be picked from the tree, true to name, free
m disease, spray injury, frost injury, skin puncture, and other defects
any kind that cause fruits to decay. Slightly blemished "New Zealand
pefruit" may be included in this grade provided that no individual "New
land Grapefruit" shall have more than 15 per cent of its surface affected
reby.

The following classes of fruit shall be excluded from "Extra
cy (Marmalade)" and "Fancy (Marmalade)" Grades: Fruits of a size of
e than 125 count in "Extra Fancy (Marmalade)" grade and 180 count in
ncy (Marmalade)" grade, to the standard case; rough, coarse, more than
ghtly scarred, more than slightly sunburned, misshapen fruit, off
oured, soft, spongy fruit, dirty fruit unattractive to the consumer,
it off flavour, very seedy fruit, fruit showing effects of frost, fruit
icient in juice content, immature fruit, or fruit having rind of more
n medium thickness.

"GOOD (MARMALADE)" GRADE:

"New Zealand Grapefruit" of this grade shall include fruit ranging
size of not more than 215 count to the standard case. They shall be well
wn, of fair form, of fair colour, for variety, sound, and clean, well-
med, even in size with stalks trimmed level with button. They shall be
ure, picked from the tree, true to name, and free from disease, spray
ury, frost injury, skin puncture, and other defects of any kind that
se fruit to decay. Blemished "New Zealand Grapefruit" may be included
this grade provided that no individual "New Zealand Grapefruit" shall
e more than 20 per cent of its surface affected thereby.

The following classes of fruit shall be excluded from this grade:
its of a size of more than 215 count to the standard case); very

ugh, very coarse, badly scarred, badly sunburned, badly misshapen fruit, f coloured fruit, very soft, soft, spongy fruit, dirty fruit unattractive the consumer, fruit off flavour, fruit showing effects of frost or which ts dry for any reason, or immature fruit.

PACKING OF GRADED FRUIT.

) Prior to being placed in packages the graded "New Zealand Grapefruit" shall be sized, and only fruit of as nearly as possible the same size shall be packed together in a package.

) In sizing "New Zealand Grapefruit" in any particular size for the purposes of packing a variation of not more than ¼ in. above the size in question will be allowed, but no "New Zealand Grapefruit" shall be included in a package which is of less size than that hereinafter required to be branded on such package.

"New Zealand Grapefruit" remaining on the trees after the first day of September of each season shall be deemed "well matured" irrespective of the analysis of the juice.

"New Zealand Grapefruit" of one grade only shall be packed in each package. Provided that "New Zealand Grapefruit" of different grades may be contained in the same package if the official grade-mark to be placed on the package as hereinafter prescribed is that of the lowest grade of "New Zealand Grapefruit" contained in such package: Provided further that nothing in this regulation shall be construed to authorize the packing of different varieties of grapefruit together in the one package.

)"New Zealand Grapefruit" of "Extra Fancy (Dessert)", "Fancy (Dessert)", "Good (Dessert", and "Extra Fancy (Marmalade)", "Fancy (Marmalade)", and "Good (Marmalade)" grades may be wrapped, but if wrapped, new paper having one or both surfaces glazed or some other paper approved by the Director shall be used.

WRAPPING PAPER.

"New Zealand Grapefruit" of the various sizes set out below , if wrapped, shall be wrapped in paper of the size indicated opposite each respectively;

Sizes 96 and larger, paper 11" x 11", or double wrap 10" x 10".
Sizes 100 to 138, (both inclusive), paper 10" x 10".
Sizes 150 to 180 (both inclusive), paper 10" x 10" or 9" x 9",
Sizes 195 to 215, (both inclusive), paper 9" x 9".

In the event of the size of the paper used being smaller than that specified above for any respective size of "New Zealand Grapefruit" such "New Zealand Grapefruit" shall be double-wrapped by overlapping two papers.

BRANDING PACKAGES OF GRADED FRUIT.

) The following particulars shall be branded in characters of not less than ½ in. and not more than 1 in. block type on each package of "New Zealand Grapefruit" sold under any of the official grademarks:
(a) The grade of the fruit as determined by the standards hereinbefore set out.
(b) The name .. "New Zealand Grapefruit".
(c) The number of fruit contained in the package.

) The particulars set out in the preceding regulation shall be branded on the same end of the package as the owner's registered number hereinbefore required by these regulations to be placed on one end of packages of fruit, and no other particulars shall be placed on that end except a design or mark used in conjunction with the registered number as hereinbefore authorized.

) 1. The particulars required by the last two preceding regulations to be branded on packages of fruit shall accurately describe the contents of such packages, provided that a variation of not more than five per packages shall be allowed in the number of fruit stated to be in such package.

2. If the contents of such packages are noticeably and to the detriment of a purchaser at variance with the particulars branded on such packages, the owner of such fruit shall be deemed to have committed a breach of these regulations.

GENERAL PROVISIONS RELATING TO GRADED FRUIT.

Similar provisions to those set out in proposed Lemon Grading Regulations.

DRAFT.

AMENDING REGULATIONS UNDER THE ORCHARD AND GARDEN DISEASES ACT, 1928, RELATING TO THE SALE FOR CONSUMPTION WITHIN THE DOMINION OF NEW ZEALAND-GROWN CITRUS FRUIT: (NOTICE NO. AG. .)

REGULATIONS.

(1) In these regulations, if not consistent with the context.-

"Blemish" includes branch-rubs, scratches, insect bites, unnatural russeting, bruises, excrescences, sun-scalds, hail-marks, or any other injury detrimental to the appearance of fruit, but does not include spray injury.

"Clean" means free from dirt, insect stains, spray stains and spray residue.

"Mature" means fully developed and the degree of ripeness fit for picking of any orange, cut from the tree.

"Director" means the Director of the Horticulture Division, of the Department of Agriculture.

"Owner" means any owner, shipper, or consignor of citrus fruit, and includes the agent or servant of any such owner, shipper, or consignor, and also includes, in the case of a company, the managing director, manager, director, secretary, or other principal officer of the company in New Zealand.

"Brand" means to stencil or imprint clearly and legibly.

"Pack" means to regularly and compactly arrange citrus fruit in a package.

"Package" means any form of container having a capacity of not less than 555½ cubic inches or one-fourth of an Imperial bushel.

"Sell" means to exchange for money or barter, and includes offering or exposing for sale, or sending or delivering for sale, or allowing to be sold or offered or exposed for sale.

"Size" when used as a noun means the diameter of citrus fruit measured from cheek to cheek at the widest part, and when used as a verb means to sort according to size.

"Count" means the number of citrus fruit contained in the package.

"Spray injury" means the russeting of, or other injury to citrus fruit as a result of spraying.

PACKAGES FOR CITRUS FRUIT.

(2) Similar provisions to those set out in the proposed Lemon Grading Regulations.

SALE OF ORANGES UNDER OFFICIAL GRADE-MARKS.

(3) The following are the official grades in which oranges may be classed:

Extra Fancy, Fancy, Good,

and the words "Extra Fancy", "Fancy", and "Good" shall be deemed to be and shall be known as official grade marks.

(4) 1. No oranges shall be sold in packages bearing thereon any of the above official grade-marks unless such orange conform to the

standards hereinafter set out for the corresponding grades, and unless all the requirements of this part of these regulations are complied with.

2. The official grademarks shall not be applied to citrus fruit other than oranges unless and until such fruit is brought within the scope of this part of these regulations.

ORANGES.

5) The following are the standards by which the grade of oranges shall be determined.

(a) "EXTRA FANCY" GRADE:

Oranges of this grade shall include fruit ranging in size as indicated in the appended general list (Schedule No.1) with respect to each variety. The oranges shall be of good colour for the variety, mature, sound, of one variety, of good juice content, of good texture, well-grown, fruits of normal form even in size with stalks trimmed level with button. Provided that sweet oranges shall contain a ratio of not less than parts of soluble solids (sugar) to one of acid and shall be of good eating quality and flavour. They shall be well formed, picked from the tree, true to name and free from disease, spray injury, frost injury, skin puncture, and other defects of any kind that cause fruits to decay. Very slightly blemished oranges to the extent of 5 per cent. of the surface of the fruit may be included in this grade.

(b) "FANCY" GRADE:

Oranges of this grade shall include fruit ranging in size as indicated in the appended general list (Schedule No.1) with respect to each variety. The oranges shall be of good colour for the variety, mature, sound, of one variety, of normal form, of good juice content, of good texture, well grown fruits, clean, even in size with stalks trimmed level with button. Provided that sweet oranges shall contain a ratio of not less than parts of soluble solids (sugar) to one of acid and shall be of good eating quality and flavour. They shall be well formed, picked from the tree, true to name and free from disease, spray injury, frost injury, skin puncture, and other defects of any kind that cause fruits to decay. Slightly blemished oranges to the extent of 10 per cent of the surface of the fruit may be included in this grade.

The following classes of fruit shall be excluded from "Extra Fancy" and "Fancy" grades:

Fruit of a size more than count to the standard case, rough, coarse, more than slightly scarred more than slightly puffed, more than slightly sunburned, misshapen fruit, dirty fruit unattractive to the consumer, fruits showing effects of frost or which cuts dry for any reason, immature fruit, fruit deficient in juice content, fruit insipid in flavour, and fruit green or very pale in colour, and soft fruit showing marked evidence of ageing or shrivelling.

(c) "GOOD" GRADE:

Oranges of this grade shall include fruit ranging in size as indicated in the appended general list (Schedule No. 1) with respect to each variety. The oranges shall be of fair colour for the variety, mature, sound, of one variety of good juice content, of fair texture, well grown fruits, of fair form, clean, even in size, with stalks trimmed level with button. Provided that sweet oranges contain a ratio of not less than parts of soluble solids (sugar) to one of acid and shall be of good eating quality and flavour. They shall be picked from the tree, true to name, and free from disease, spray injury, frost injury, skin puncture, splits and other defects of any kind that cause fruit to decay. Blemished oranges may be included in this grade provided that no individual oranges shall have more than 15 per cent. of its surface affected thereby.

The following classes of fruit shall be excluded: Fruit of a size more than count to the standard case, very rough, very coarse, badly scarred, badly puffed, badly sunburned, badly misshapen fruits, dirty fruit unattractive to the consumer, fruits showing effects of frost or which cuts dry for any reason, immature fruit, fruit deficient in juice content, fruit insipid in flavour, fruit very green in colour, and soft fruit or fruit showing marked evidence of ageing or shrivelling.

PACKING OF GRADED FRUIT.

(6) Prior to being placed in packages the graded oranges shall be sized, and only fruit of as nearly as possible the same size shall be packed together in a package.

(7) In sizing oranges in any particular size for the purposes of packing a variation of not more than ¼in. above the size in question will be allowed, but no orange shall be included in a package which is of less size than that hereinafter required to be branded on such package.

(8) Oranges of one grade only shall be packed in each package. Provided that Oranges of different grades may be contained in the same package if the official grade-mark to be placed on the package as hereinafter prescribed is that of the lowest grade of oranges contained in such package: Provided further that nothing in this regulation shall be construed to authorize the packing of different varieties of Oranges together in the one package.

9) Oranges of "Extra Fancy," "Fancy", and "Good" grades may be wrapped but if wrapped, new paper having one or both surfaces glazed or some other paper approved by the Director shall be used.

WRAPPING PAPER.

Oranges of the various sizes set out below, if wrapped, shall be wrapped in paper of the size indicated opposite each respectively:

Sizes 96 and larger, paper 11" x 11" or double wrap 10" x 10".
Sizes 100 to 138, (both inclusive), paper 10" by 10".
Sizes 150 to 180, (both inclusive), paper 10" by 10" or 9" x 9".
Sizes 198 to 216, (both inclusive), paper 9" by 9".

In the event of the size of the paper used being smaller than that specified above for any respective size of oranges such oranges shall be double-wrapped by overlapping two papers.

BRANDING PACKAGES OF GRADED FRUIT.

10) The following particulars shall be branded in characters of not less than ½ in. and not more than 1 in. block type on each packages of oranges sold under any of the official grade-marks:-
(a) The grade of the fruit as determined by the standards hereinbefore set out.
(b) The name of the variety contained in the package. In the event of the variety not being known by the owner the words "Variety Unknown" shall be branded on the package.
(c) The number of fruit contained in the package.

11) The particulars set out in the preceding regulation shall be branded on the same end of the package as the owner's registered number hereinbefore required by these regulations to be placed on one end of packages of ffruit, and no other particulars shall be placed on that end except a design or mark used in conjunction with the registered number as hereinbefore authorized.

12) 1. The particulars required by the last two preceding regulations to be branded on packages of fruit shall accurately describe the con-

five per package shall be allowed in the number of fruit stated to be in such package.

2. If the contents of such package are noticeably and to the detriment of a purchaser at variance with the particulars branded on such packages, the owner of such fruit shall be deemed to have committed a breach of these regulations.

GENERAL PROVISIONS RELATING TO GRADED FRUIT.

Similar provisions to those set out in proposed Lemon Grading Regulations.

SCHEDULE NO.1

Maximum and Minimum sizes of Oranges of the undermentioned Varieties which may be packed in the respective grades.

Variety.	SIZES APPROVED FOR RESPECTIVE GRADES.					
	"Extra Fancy"		"Fancy"		"Good"	
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
Sweet:						
Best's Seedless.....						
Golden Nugget Navel....						
Groverley Navel.....						
Jaffa.....						
Lavelencia.....						
Pineapple.....						
Rue Gim Gong.....						
Ruby Blood.....						
St. Michael.....						
Valencia (Late).....						
Washington Navel.....						
Sour:						
Seville.....						

APPENDIX VII.

Market Quotations for Lemons, Oranges and Grapefruit on the Auckland and Christchurch Markets over the Period 1930-34 and on the Wellington and Dunedin Markets for 1934. Also Retail Quotations for citrus fruits on the Auckland Market over the Period 1931-34.

APPENDIX V11.

WHOLESALE & RETAIL PRICES OF ORANGES ON THE AUCKLAND MARKETS, JAN.,1930-DEC., 1934.

	Wholesale (per c/s)			Retail (per doz).		
Date	Calif	Aust.	Other	Calif.	Aust.	Other.
Jan.4 to May24	No quotes.		Cook Is.			
24			10/-:15/-			
31			10/-:14/-			
Jne 7			10/-:14/-			
14			12/6:18/-			
21			11/-:15/-			
" 28			11/-:15/-			
Jly 5		9/6:13/-	11/-:14/-			
12		10/-:13/-	11/-:15/-			
19		" "	12/-:15/-			
26		9/6:13/-	11/-:14/-			
Aug.2		9/6:13/-	10/-:14/-			
9		9/6:13/-	14/-:18/-			
16		10/-:13/-	11/-:14/-			
23		10/-:14/-	13/-:16/-			
30		10/-:13/-	14/-:16/-			
Sep.6		11/6:14/-	13/-:18/-			
13		11/-:14/6	13/-:19/-			
20		11/-:13/6	15/-:19/-			
27		12/-:14/-	16/-:22/6			
Oct.4		15/-:18/-	25/-:27/6.			
11		12/-:17/-	19/-:25/-			
18			24/-:26/-			
25		10/-:14/-	19/-:25/-			
Nov.1		10/6:14/6	" "			
8		10/-:15/-				
15		11/-:15/-				
22		10/-:15/-				
29		10/-:14/-				
Dec.6		11/-:15/-				
13		11/-:15/-				
20		11/-:15/6				
24		12/-:18/-				
1931.						
Jan.10	39/-:41/-	20/-:25/-		2/6:3/6	2/-:2/6.	
17	34/-:36/-			2/6:3/6	" "	
24	37/6:39/-			2/6:3/6	" "	
31	33/-:35/-				" "	
Feb. 7	"				" "	
14	34/-				" "	
21	31/-:34/-				" "	
28	36/-:38/-				" "	
Mar. 7	27/-:30/-					
14	26/-:29/-					
21	25/-:27/-					
28	28/-:29/-			2/-:2/6.		
Apl. 1	28/-:29/-			" "		
11	27/-:30/-			" "		
18	27/-:30/-			" "		
24						

Date	Wholesale (per c/s) Calif.	Other Cook Is.	Aust.	Retail (per doz) Calif.	Aust.	Other. Cook Is.
May 2	30/-:32/6	- -		2/-:2/6		
9	36/-:37/-	15/-:21/-		" "		
16	40/-:42/6			2/6:3/-		1/9:2/6.
23		11/-:14/-		" "		1/6:1/9
30		10/-12/-	9/-:11/-	" "	1/6:2/-	1/6:2/-
Jne 6		11/-:15/-	9/6:11/6	" "	" "	1/3:2/-
13		10/-:14/-	9/-:11/-	" "	" "	1/-:2/-
20		9/-:11/-	8/6:10/6	" "	1/3:1/6	1/3:2/-
27		11/-:15/-	8/-:11/-	" "	" "	" "
Jly 4		11/-:13/-	9/-:12/-	" "	" "	" "
11		10/-:15/-	9/-:13/-	" "	" "	" "
18		12/-:18/-	8/-:12/6	" "	1/3:2/-	1/3: 2/-
24		12/6:18/-	8/-:11/-	" "	" "	1/6: 2/-
Aug 1		11/-:16/-	8/-:11/-	" "	" "	" "
7		15/-:17/6	8/-:11/-	" "	" "	" "
14		11/-:14/-	8/-:10/-	" "	" "	1/3: 2/-
22		11/-:13/-	7/6:10/-	" "	" "	" "
29		12/-:14/-	7/6:10/-	" "	" "	" "
Sep 5		13/-:15/-	9/-:10/6	" "	" "	" "
12		14/-:16/-	10/-:11/-	1/6:2/-	1/6:2/-	1/6:2/-
19		14/-:18/-	8/-:16/-	" "	" "	" "
26		13/-:18/6	9/-:12/6	" "	" "	" "
Oct 3		15/-:21/-	10/-:13/-	1/3:2/6	1/9:2/6.	
10		18/-:22/-	9/6:16/-	1/6:2/6	2/-	
17		21/-:24/-	9/6:12/6	" "	"	
24		21/-:23/-	8/6:12/-	" "	"	
31		26/-	9/-:11/-	" "		
Nov. 7			8/-:12/-	1/-:2/-		
14			9/-:11/-	" "		
21			8/-:12/-	" "		
29			10/-:13/-	" "		
Dec. 5			8/-:11/6	" "		
12			8/-:11/-	" "		
19			7/6:11/-	" "		
23			9/-:13/-	" "		
			1932.			
Jan. 2			9/-:13/-			
9			9/-: 12/-	" "		
16			14/-:19/-	1/6:3/-		
23						
30			14/-:18/-	2/-:3/-		
Feb. 6			16/-:18/-			
13			13/-:18/-	2/6	1/-:2/-	
20		Jaffa.	12/6:16/-	"		
27			12/-:16/-	"	1/6:3/-	
Mar. 2		32/6	12/-:14/-			
5		30/-	12/-:17/6	2/6:3/-		
9			12/-:20/-			
12			12/-:20/-	3/-:4/-		
19	40/-	Fiji.	12/-:20/-	" "		
26	"	15/-:21/-	13/-:16/-			
Apl. 2		Cook Is.		4/-		
23		14/-:20/-		"	2/-:3/-	4/-
30	36/-:40/-			"	1/6:3/-	

1932 (contd)

Date	Wholesale (per c/s) Calif.	Wholesale (per c/s) Other (Cook Is)	Wholesale (per c/s) Aust.	Retail (per doz) Calif.	Retail (per doz) Aust.	Retail (per doz) Other (Cook Is)
May 7	38/-	15/-:20/-		4/-	1/6:2/6	2/-:4/-
14	"	" "		"	" 2/6	" "
21		15/-:21/-		3/-	1/6:3/-	2/-: 3/-
28		16/-:21/-		"	" "	" "
Jne 3		14/-:18/-	10/-:13/-			
11		13/-:16/-	9/-:12/-	"	1/-:2/6	" "
18		12/-:15/-	8/-:10/-	2/6	" "	" "
25		10/-:15/6	12/6:14/-	2/-	1/-:2/6	1/6:2/6.
Jly 2		10/-:14/-	7/-: 9/-	2/-	1/-:2/-	1/6:2/-
9		10/-:15/-	" "	"	" "	" "
16		11/-:15/-	" "	"	" "	" "
23		11/-:14/6	7/6:10/-	"	" "	" "
30		" "	" "	"	" "	" "
Aug.6		12/-:15/-	8/-:11/-	"	" "	" "
13		14/-:15/-	8/-:10/6	"	" "	" "
20		14/-:16/-	6/-:10/6	"	" "	" "
27		14/-:16/-	11/-:12/6		1/3: 2/-	1/4:2/-
Sep. 3		14/6:16/6	11/-:12/6		" "	" "
10		15/-:17/-	6/-:12/-		1/-:2/-	1/6:2/-
17		" "	9/-:12/6		" "	" "
24		" "	9/-:12/-		" "	" "
Oct.1		" "	8/-:12/6		" "	1/6: 2/-
8		15/-:18/-	6/-:12/6		" "	" "
15		15/-:18/6	5/-:12/6		" "	2/-
22		15/-:20/-	8/-:11/-		" "	"
29		23/-:25/-	8/-:11/6		" "	"
Nov.5		15/-:20/-	8/-:10/-		" "	"
12		20/-:23/-	7/6:10/6		" "	"
19		18/-:21/-	8/-:10/-		" "	"
26			9/-:12/-		2/-	2/-
Dec.3			9/-:11/-		1/-: 2/-	1/-:1/6.
10			7/6:9 /6		1/-: 2/-	
17			14/-:15/-	3/-:4/-	1/-: 2/-	
24			10/-:17/-	" "	1/6: 2/-	
31			12/6:17/6	" "	" "	

1933.

Jan 7			13/-:17/-	3/-: 4/-	1/6: 2/-	
14	40/-		14/-:15/-	" "	2/-	
21			14/-:15/-	" "	"	
28				" "	"	
Feb. 4	39/6		15/-:17/6	" "	"	
11	35/-:39/-		14/-:18/-	" "	"	Jaffa -
18	32/6:40/-		15/-:17/-	2/-: 4/-	"	-
25	32/6:40/-			" "	"	3/-
Mar.4	35/-:41/-			" "		"
11	38/-:42/-			" "		
18	42/6			2/-: 4/-		
25	-	(Cook Is)				Jaffa
Apl.1	35/-:37/-			2/-: 3/-		2/-:3/-
8	35/-:40/-	18/-:22/-				
15	38/-:40/-	20/-:25/-				
22	36/-:40/-	20/-:23/-		3/-:4/-		
29	32/6:37/6	12- :16/-		" "		
May 6	34/-:40/-	14/-:15/-		" "		Cook Is.
13	34/-	12/-:15/-		" "		2/- 5/-
20	40/-	12/6:17/6		" "		" "
27	35/6:40/-	13/-:18/-		" "		" "
Jne 3	" "	13/-:19/-		" "		" "
10	" "	16/6:24/-		" "		" "
17	35/-	17/-:24/-		" "		" "
24	32/6:36/-	18/-:24/-		" "		" "

Date	Wholesale (per c/s) Calif	Other (Cook Is)	Aust.	Retail (per doz) Calif.	Aust.	Other (Cook Is)
July 1	32/6:36/-	18/-:24/-		3/-:4/-		2/-:3/-
8	31/-:36/-	18/-:26/-		3/-:4/-		2/-:3/-
15	31/-:32/-	15/-:18/-		" "		" "
22	29/-:32/-	18/-:24/-		" "		" "
29	29/-:32/6	18/6:26/-		" "		" "
Aug. 5	28/-:32/-	18/6:26/-		" "		" "
12	26/-:28/-	17/-:26/-		" "		" "
19	22/-:26/-	16/6:24/-		" "		" "
26	20/-:27/6	16/-:23/-		1/6:2/-		" "
Sep. 2	20/-:24/-	16/-:23/-		" "		" "
9	24/-	17/6:23/-		" "		" "
16	"	16/6:23/-		" "		" "
23	"	" "	15/-:17/-	2/-:3/-		" "
30	28/-	" "	16/-:24/-	" "	2/-:5/-	" "
Oct. 7	"	19/-:26/-	16/-:24/-	2/-:3/-	" "	" "
14		20/-:26/-	15/-:24/-			
21			15/-:25/-	" "	" "	3/-:4/-
28		17/6:24/-	15/-:25/-	" "	2/-:4/-	" "
Nov. 4		17/6:24/-	15/-:24/-	- -	" "	2/-:3/-
11		16/6:21/-	17/6:26/-		" "	" "
18		" "	" "		2/6:4/-	" "
25		" "	" "		3/-:4/-	" "
Dec. 2		16/6:21/-	17/6:26/-	2/6:3/-	" "	" "
9			" "	" "	" "	" "
16			17/6:27/-	" "	" "	
23			17/6:27/-	" "	" "	
30	33/-:37/6		19/-:30/-	" "	" "	

1934.

Jan.6	30/-:33/-		19/-:28/-	2/-:3/-		
13	32/-:35/-			" "		
20	35/-:37/6			" "		
27	29/-:33/-			" "		
Feb.3	29/-:32/-			" "		
10	29/-:32/-			" "		
17	30/-:32/-	Jamaican		" "		Jamaican
24	35/-			" "		2/-:3/-
Mar.3	30/-:34/-	20/-:28/-		" "		" "
10	" "	-		" "		" "
17	" "	25/-:30/-		" "		" "
24	" "	" "		" "		" "
31	27/6:37/6	22/6:28/6		" "		" "
Apl 7	27/6:33/6	25/-:30/-		" "		" "
14	32/6:35/-	25/-:32/6		" "		" "
21	33/-:38/-	38/-:43/-		" "		Cook Is.
28	38/-:43/-	Cook Is.		" "		2/6:3/-
May 5	40/-:45/-	14/-:22/-		" "		2/-:3/-
12	40/-:47/6	13/6:19/6		2/6:4/-		" "
19	30/-:36/-	12/6:18/-		" "		" "
26	30/-:36/-	13/6:19/-		" "		" "
Jne 2	30/-:40/-	13/6:19/6		" "		" "
9	" "	14/6:20/6		" "		" "
16	" "	14/6:20/6		" "		" "
23	" "	14/6:22/6		" "		" "
30	34/-:37/6	8/6:15/-		" "		1/-:1/6.
Jly 7	" "	13/6:18/6		2/-:3/-		1/3:2/-
14	30/-:37/6	12/6:18/6		" "		1/6:2/6
21	30/-:37/6	14/6:20/6		" "		" "
28	25/-:35/-	19/-:25/-		" "		2/-:3/-
Aug.4	25/-:35/-	12/-:18/-		" "		1/3:2/6.
11		14/-:23/6		" "		1/6:2/6

Date.	Wholesale (per c/s).				Retail (per doz)			
	Calif.	Cook Is. Other	Aust.		Calif	Aust.	Cook Is. Other	
Aug. 18		14/-:23/6	16/-:25/-		2/-:3/-	-	1/6:2/6	
18								
25		17/-:30/-				2/-:4/-	" "	
Sep. 1		22/-:26/-				2/6:4/6	2/6:3/6	
8		22/-:26/-				3/6:5/-		
15			16/-:24/-			2/-:4/-		
22			" "			" "		
29		Cook Is.	16/-:27/6			" "		
Oct. 6		17/6	16/-:27/6			2/6:4/-		
13		17/6	" "			2/-:4/-		
20			" "			" "		
27			16/-:26/-			" "		
Nov. 3			17/-:24/-			" "		
10			19/-:25/-			2/-:4/-		
17			19/-:26/-			" "		
24			19/-:26/6			2/-:5/-		
Dec. 1		Jamaican	19/-:26/-			2/-:4/-	Jamaican	
8	32/6:37/6	30/-37/6	16/-:26/-		3/-:4/-	2/-:3/-	2/-:3/-	
15	35/-:37/6	30/-:37/-	22/-:26/-		" "		" "	
22	40/-:44/-	30/-:34/-			" "		" "	

WHOLESALE & RETAIL PRICES OF LEMONS ON

AUCKLAND MARKET.

Jan.1930 - Dec.1934.

	Wholesale (per c/s)		Retail (per doz)	
Date	N.Z.Lemons	Other	N.Z.Grown	Other
	Cured	Tree ripe		
Jan 4	14/-:17/-	6/-:10/-		
11	12/-:16/-	7/-:10/-		
18	12/-:14/-	6/-: 9/-		
25	10/-:15/-	5/-: 8/-		
Feb.1	10/-:15/-	5/-: 8/-		
8	7/-:14/-			
15	6/-:14/-			
22	6/-:12/-		Ital 20/-:23/-	
Mar.1	8/-:14/-			
8	7/-:15/-			
15	7/-:15/6			
22	9/-:16/-			
29	8/-:14/-			
Apl.5	8/-:16/-			
12	8/-:14/-			
19	9/-:14/-			
26	10/-:14/-			
May 3	9/-:16/-			
10	20/-	6/-:14/-		
17	20/-	6/-:14/-		
24		6/-:11/-		
31	-	-		
Jn. 7	14/-:22/-	-		
14	15/-	8/-		
21	16/-:20/-	8/-:12/-		
28	12/-:18/-	6/-:10/-		
Jly 5	12/-:17/-	4/-: 9/-		
12	12/-:16/-	6/-:10/-		
19	12/-:16/-	6/-:10/-		
26	10/-:14/-	6/-: 9/-		
Aug.2	9/-:12/-	5/-: 8/-		
9	9/-:11/-	5/-: 7/-		
16	7/-:10/-	4/-: 6/-		
23	7/-: 9/-	4/-: 6/-		
30	7/-: 9/-	5/-: 6/-		
Sep.6	9/-:12/-	4/-: 7/-		
13	10/-:12/-	4/-: 7/6		
20	7/-:10/-	4/-: 6/-		
27	7/-: 9/-	4/-: 6/-		
Oct.4	7/-: 9/-	4/-: 6/-		
11	7/-:10/-	4/-: 6/6		
18	7/6: 8/6	5/-: 6/-		
25	7/-: 8/6	3/-: 5/-		
Nov.1	7/-: 8/6	4/-: 6/-		
8	6/-: 8/-	5/-: 4/-		
15	7/-:10/-	4/-: 6/-		
22	8/-:12/-	5/-: 7/-		
29	9/-:13/-	6/-: 8/-		

Dec. 6	7/6: 9/-	5/-			
13	7/6:10/-	5/-: 6/-			
20	9/-:11/-	5/-: 7/-			
24	9/-:12/-	5/-: 7/-			
			1931		
Jan.10	12/-:16/-	8/-: 11/-		1/-:1/6:	
17	10/-:12/6	6/-: 8/-		1/-:1/6	
24	9/-:12/-	5/-: 7/-		1/-:1/6	
31	9/-:12/-	5/-: 7/-			
Feb. 7	12/-:14/-	6/-: 8/-		1/-:1/6	
14	12/-:14/-	6/-: 8/-		1/-:1/6	
21	10/-:15/-	5/-: 8/6		1/-:1/6	
28				1/-:1/6	
Mar. 7	10/-:16/-	5/6: 9/-		1/-:1/6.	
14	10/-:16/-	5/6: 9/-		1/-:1/6	
21	12/-:18/-			1/-:1/6	
28	12/-:16/-	7/6: 10/-		1/6:2/-	
Apr. 1	10/-:15/-	7/6: 10/-		1/6:2/-	
11	14/-:18/-	7/-: 10/-		1/6:2/-	
18	14/-:17/6	7/6: 10/-		1/6:2/-	
24				1/6:2/-	
May 2	14/-:17/-	7/-: 10/-		1/6:2/-	
9	14/-:16/-	7/-: 10/-		1/6:2/-	
16	12/-:14/-	7/-: 10/-		1/6:2/-	
23	12/-:16/-	4/-: 8/-		1/6:2/-	
30	10/-:12/-	5/-: 9/-		1/6:2/-	
Jn. 6	9/-:12/-	5/-: 7/-		1/6:2/-	
13				1/6:2/-	
20	5/-: 9/-			1/-:1/6	
27	5/-: 8/-			1/-:1/6	
Jly 4	5/-: 9/-			1/-:1/6	
11	5/-: 9/-			1/-:1/6	
18	8/-:12/-	5/-: 8/-		1/6	
25	6/-: 8/-			1/-:1/6	
31				1/-:1/6	
Aug. 1	5/-: 9/-			1/-:1/6	
8	5/-: 9/-			1/-:1/6	
15	5/-: 8/-			1/-:1/6	
22	5/-: 7/-			1/-:1/6	
29	4/-: 7/-			1/-:1/6.	
Sep. 5	6/-: 8/-		Aust.	1/-:1/6	
" 12	5/-: 9/-		10/-:13/-	1/-:2/-	
19	5/-: 9/-			1/-:1/6.	
26	4/-: 7/6		8/-:10/-	1/6.	
Oct. 3				1/-:1/6.	
10	4/-: 8/-			1/-:1/6.	
17	4/-: 8/-			1/-:1/6.	
24	3/-: 8/-			1/-:1/6.	
31	4/-: 9/-			1/-:1/6	
Nov. 7	5/-: 8/-			1/-:1/6.	
14	5/-: 9/-			1/-:1/6	
21	4/-: 8/-			1/-:1/6.	
28	5/-: 9/-			1/-:1/6	
Dec. 5	6/-:10/-			1/-:1/6	
12	6/-:10 /-			1/-:1/6	
19	6/-:13/-			1/-:1/6.	
23	6/-:11/-				

1932.

Jan. 2		8/-:12/-		1/-:1/6.	
9		5/-: 8/-		1/-:1/6.	
16		5/-: 8/-		1/-:1/6	
23		6/-: 9/-		1/-:1/6	
29		6/-:10/6		1/-:2/-	
Feb. 6		6/-:10/6		1/-:2/-	
13		6/-: 9/-		1/-:1/6	
20		6/-: 9/-		1/-:1/6	
27		6/-:10/-		1/-:1/6	
Mar. 5	8/-:12/6	5/-: 8/-		" "	
12	8/-:12/6	5/-: 8/-		" "	
19		5/-: 9/-		" "	
26		5/-: 9/-		" "	
Aprl 2		5/-: 9/-		" "	
9		6/-: 9/-		" "	
16		4/-: 9/-		" "	
23		5/-: 9/-		" "	
30		5/-: 9/-		" "	
May 7		4/-: 7/-		" "	
14		4/-: 8/-		" "	
21		5/-: 8/-		" "	
28		4/-: 6/-		" "	
June 3		3/-: 6/-		" "	
11		2/6: 5/-		" "	
18		3/-: 5/-		" "	
25		3/-: 7/-		" "	
Jly 2		3/-: 6/-		1/-: 1/6.	
9		3/-: 6/-		" "	
16		4/-: 7/6		1/- : 1/3	
23		4/-: 7/6		" "	
30		4/-: 8/-		" "	
Aug. 6		4/-: 9/-		" "	
13		4/-: 8/-		" "	
20	5/-: 6/-	3/-:4/-		9d: 1/-	
27	5/-: 6/-	3/-:4/-		1/3: 2/-	
Sep. 2	6/-: 8/-	3/-:5/-		10d: 1/-	
10		3/-: 6/-		6d: 1/-	
17		3/-: 6/-		" "	
24		3/-: 6/-		6d: 1/-	
30				" "	
Oct. 1		4/-:6/-			
8		4/-:8/-		" "	
15		4/-:6/-		" "	
22		4/-:7/-		8d: 1/-	
29		3/-:7/-		" "	
Nov. 5		3/-:6/-		" "	
12				" "	
19		4/-:6/-		" "	
26		4/-:6/-		" "	
Dec. 3		4/-:6/-		" "	
10		4/-:8/6		" "	
17		5/-:8/-		" "	
24	6/-:10/-	3/-: 6/-		" "	
31		4/-:8/-		" "	

Imported.
1/6.
1/3.
Aust.
1/-; 1/6.
1/-
"

1933.

Jan. 7		6/-:12/-		" "	
14		6/-: 9/-		" "	
21		6/-:12/-		" "	
28		6/-:12/-		1/-.	
Feb. 4		6/-:14/-		1/3: 1/9	
11		9/-:15/-		" "	Ital.
18		6/-: 11/-		" "	2/-
25		6/-: 12/-		" "	"
Mar. 4	10/-:12/-	6/-:9/-		" "	"
11		5/-: 12/-		" "	"
18		9/-: 14/-		" "	"

				Ital
Mar. 25	12/-:14/-	6/-:11/-	1/3:1/9	2/-
31			1/6:2/-	"
Apl 1	12/-:14/-	6/-: 9/-		
8	6/-:14/-		1/6:2/6.	
15	8/-:15/-			
22	14/-:17/-	6/-:13/-	" "	
29	6/-:14/-		" "	
May 6	13/-:16/-	6/-:10/-	" "	
13	9/-:17/-		" "	
20	13/-:18/-	10/-:17/-	" "	
27	13/-:18/-	7/-:12/-	" "	
Jne 3	12/-:15/-	6/-:10/-	1/6: 2/-	
10	12/-:15/-	6/-:10/-	" "	
17	13/-:15/-	8/-:10/-	" "	
24	12/-:15/-	8/-: 9/-	" "	
30				
Jly 1	12/-:15/-	8/-: 9/-		
8			" "	
15	11/-:14/-	5/-: 9/-	" "	
22	11/-:14/-	" "	" "	
29	11/-:14/-	" "	" "	
Aug. 5	11/-:14/-	4/-: 6/-	" "	
12	6/6: 8/-	3/-: 5/-	" "	
19	6/-: 7/-	3/-: 4/-	1/-: 1/6.	
26	6/-: 9/-	3/-: 5/-	" "	
Sept. 2	6/-: 9/-	3/-: 5/-	6d: 1/-	
9	6/-: 9/-	3/-: 5/-	" "	
16	6/-: 8/-	3/-: 4/-	1/-: 1/6	
23	6/-: 8/-	2/6: 4/-	" "	
30	6/-: 8/-	" "	" "	
Oct. 7	6/-: 8/-	2/6: 4/-	1/-: 1/6.	
14	6/-: 8/-	2/6: 4/-	" "	
21	6/-: 8/-	2/6: 4/-	9d: 1/3.	
28	6/-: 8/-	2/6: 6/6	" "	
Nov. 4	" "	" "	1/-: [illegible]	
11	" "	" "	1/-	
18	6/-: 8/-	2/6: 6/6	" "	
25	" "	" "	" "	
Dec. 2	8/-:12/-	4/-: 8/-	" "	
9	" "	" "	" "	
16	10/-:12/-	6/-: 9/-	" "	
23	" "	" "	" "	
30	" "	" "	" "	

1934.

Jan. 6	10/-:12/-	6/-: 9/-	1/-: 1/6.	
13	" "	" "	" "	
20	9/-:11/-	4/-: 6/6	" "	
27	" "	" "	" "	Calif.
Feb. 3	12/-:15/-	4/-: 9/-	1/: 2/-	
10	12/-	4/-:10/-	" "	
17	12/-:15/-	" "	" "	
24	12/-:14/-	" "	" "	
Mar. 3	10/-:12/-	4/-: 8/-	" "	
10	9/-:14/-	4/-: 8/-	" "	2/6.
17	" "	" "	" "	"
24	" "	" "	" "	"
31	" "	" "	" "	"
Apl. 7	11/-:14/-	4/-: 9/-	" "	"
14	" "	" "	" "	"
21	11/-:15/-	" "	" "	"
28	" "	" "	" "	"
May 5	11/-:15/-	4/-: 9/-	1/-: 2/-	
12	11/-:15/-	4/-: 9/-	" "	
19	7/-:14/-	" "	" "	
26	9/-:14/-	" "	" "	

Jne 2	9/-:12/-	4/-: 7/-	1/-: 2/-	
9	" "	" "	" "	
16	" "	" "	" "	
23	" "	" "	" "	
30	" "	" "	" "	
Jly 7	" "	" "	" "	
14	" 12/6	4/-: 8/-	" "	
21	" "	" "	" "	
28	" "	" "	" "	
Aug.4	9/-:12/6.	" "	" "	
11	9/-:12/6	" : 8/-	1/-: 2/-	
18	9/-:12/6	" "	" "	
25	9/-:12/6	4/-: 8/-	" "	Calif. 2/6.
31				
Sep.1	9/-:12/6	4/-: 8/-	" "	"
8	9/-:12/6	4/-: 8/-	" "	"
15	7/-:15/-	3/-: 6/6	" "	"
22	5/-: 8/-	2/-: 4/6	" "	"
29	6/-: 8/-	3/6: 4/6	" "	"
Oct.6	6/-: 8/-	2/6: 4/6	9d.: 1/6	"
13	" "	" "	8d : 1/-	"
20	6/-:10/-	2/6: 5/-	8d : 1/-	2/-
27	" "	" "	8d : 1/-	"
Nov.3	" "	" "	" "	"
10	" "	4/-: 6/-	9d: 1/6	"
17	7/-:14/-	9d: 1/6	"	"
24	9/-:12/6	5/-: 8/-	" "	"
30				
Dec.1	8/-:11/-	5/-: 8/-	" "	"
8	8/-:12/-	6/-: 9/-	" "	"
15	9/-:12/-	6/-: 8/-	" "	"
22	9/-:13/-	5/-: 8/-	" "	"
29	9/-:14/-	5/-: 8/6.	" "	"

WHOLESALE & RETAIL PRICES OF GRAPEFRUIT ON AUCKLAND MARKET.

Jan.,1930 - Dec., 1934.

	Wholesale (per c/s)				Retail.	
	New Zealand Grapefruit			Calif.	Local (doz)	Calif(ea)
Date.	Large	Med.	Small.			
Jan. to My 31	No quotes.			40/-:44/-		
Jn. 7		6/-:9/-				
14		7/-:9/-				
21	7/-:9/-		4/-:5/-			
28	10/-	6/-:7/6	3/6:5/6			
Jly 5	9/6:10/6	6/-:8/-	3/6:5/6			
12	9/-:10/-	6/-:7/-	4/-:5/-			
19	9/-:10/6	6/-:7/-	3/-:6/-			
26	9/-:10/6	6/-:7/-	3/-:4/-			
Aug. 2	9/-:10/-		2/6:5/-			
9	" "		" "			
16	6/-: 9/-		" "			
23	6/-: 8/-		" "			
30	9/-:10/6		" "	44/-:45/-		
Sep.6	9/-:10/-		" "			
13	" "		2/-: 6/-			
20	6/-		3/-: 4/-			
X Oct.4	5/-: 8/-		2/6: 4/-			
11		5/-:8/-		40/-42/-		
18		5/-:8/-				
25		4/-:8/-				
Nov.1		6/-:8/-		35/-:40/-		
8		4/-:7/-		42/6.		
22		4/-:7/-				
29				27/6		
Dec 13		4/-:5/-				
20		4/-:6/-				
24		4/-:5/-				
		1931				
Jan.10 to My24		No quotes.				
May 30		7/-: 9/-		48/-:50/-		
Jne 6		6/-:10/-				
Jne 13 to Jly 11	No quotes.					
18	5/6		2/6			
25	5/6		2/6		8d:1/-	
Aug. 1	5/-:5/6		3/-:4/-		8d:1/-	
8	5/-:6/6		2/6:4/-		"	
15	5/-:6/-		2/-:3/-		"	
22	5/-:5/6		2/-:3/-		"	
29	5/-:6/-		2/-:3/-		"	
Sep. 5	4/-:5/-		2/-:3/-		"	
12	4/6:5/6		2/-:2/6		"	
19	" "		" "		"	
Sep.26 to Oct.24	No quotes.					
31		2/-:3/6				
Nov. 7		2/6:5/-				5d. ea.
14		3/-:6/-				

			N.Z.	Calif.
Nov. 21		3/-:5/-		3d ea.
28		3/-: 6/-		6d:10d "
Dec. 5		4/-:6/-		5d. "
12		4/-:5/-		" "
19		3/-:4/-		" "
23		2/-:3/-		" "

1932.

Jan. 2 to Jne 11		No quotes		37/-:40/-		
18		2/-:4/-			1/-:2/-	6d:8d.
25		2/6:5/6			6d:1/6	5d:7d
Jly 2		2/6:4/-			" "	" "
9		3/-:4/-			" "	" "
16		2/6:4/-			6d: 1/-	" "
23		2/-:4/-			" "	" 6d.
30		3/-:4/6			" "	5d:6d.
Aug. 6		3/-:4/-			" "	" "
13		2/6:			6d: 1/-	" "
20	4/-	2/6:3/-			" "	6d:8d ea.
27	4/-	2/6:3/-			4d: 1/-	5d:6d ea.
Sep. 3	4/-:6/-		2/6:4/-		" "	" " "
10	4/-:6/-		2/-:3/-		" "	" " "
17	4/6:6/6		2/6:3/6		" "	" " "
24	4/6:6/-		2/-:3/-		" "	" " "
Oct. 1	4/6:5/-		3/-:4/-		" "	" " "
8	4/6:6/-		3/-:4/-		" "	" " "
15	3/6:5/-		2/-:2/6		6d:2/-	" " "
22	5/-:6/-		2/6:4/-		" "	" " "
29	5/-:7/-		3/-:4/-		1/-:2/-	" " "
Nov. 5	5/-:7/-		3/-:4/-		" "	" " "
12	5/-:6/-		3/-:4/-	38/-	" "	" " "
19		4/-:5/-			" "	" " "
26	5/-:6/-		4/-:5/-		" "	" " "
Dec. 3 to 31	No quotes.	8/6				

1933.

Jan. 7 to May 20	No quote N.Z.			40/-		
27		5/-:8/-		42/-	1/6:2/-	6d:8d "
June 3		5/-:6/6		"	" "	" " "
10	4/-:5/6		2/6:3/-	40/-	" "	8d ea.
17		5/-:6/-	3/-:4/-	37/-	" "	" "
24	4/6:5/-		2/6:3/6	"	" "	" "
Jly 1	4/6:5/-		2/6:3/6	"	" "	" "
8	4/-:5/6		2/6:3/6		" "	6d:8d ea
15	4/-:5/-		2/6:3/6	32/6	" "	" " "
22	4/-:5/-		2/6:3/6	32/6	" "	" " "
29	4/-:5/-		2/6:3/6	"	" "	" " "
Aug. 5	4/-:4/6		2/6: 3/6	"	" "	" " "
12	4/-:4/6		2/6: 3/-	"	1/-: 3/-	" " "
19	4/-:4/6		2/6:3/-	"	" "	4d: 6d "
26	[illegible]	6/-:7/-	[illegible]	"	" "	" " "
Sep. 1				"	" "	" "

				N.Z.	Calif.
Sep. 9		6/-:7/-	32/6	1/-:3/-	4d:6d. ea.
16		5/-:7/-	"	" "	" " "
23	5/-:7/-	4/6:5/-	"	" "	" " "
30	6/-:7/-	4/-:5/-		" "	" " "
Oct. 7	6/-:7/-	4/-:5/-	35/-	" "	" " "
14		8/-:10/-	41/-		
21		9/-:11/-	"	" "	" " "
28		9/-:12/-	45/-	" "	" " "
Nov. 4		9/-:12/-	45/-	1/-:3/-	5d:6d. "
11		9/-:12/-	40/-	1/6:3/-	" " "
18		9/-:12/-	40/-	1/9:3/-	" " "
25		9/-:12/-	40/-	2/-:3/-	5d: 6d. "
Dec. 2		16/-	"	" "	" " "
9		14/-	"	" "	" " "
16		12/-:14/-	30/-	" "	" " "
23		12/-:14/-	30/-	" "	" " "
30			31/-	" "	" " "

1934.

Jan to June	No quote for New Zealand.				
	Jamacian quoted		18/-:30/- and		
	Californian		28/-:35/-		
Jne 9	4/-: 8/-		30/-		5d. 6d. ea.
16	3/-: 6/6		"	1/3:1/6	" " "
23	6/-:7/-	3/-:4/-	"		5d. 6d. "
29	6/-:7/-	3/-:4/-	"		" " "
July 7	6/-:7/-	4/6:5/-3/-:4/-	"	1/6:2/6	" " "
14	5/6:6/6	4/-:5/- 2/6:3/-	28/-:34/-	" 2/-	" " "
21	5/-:5/6	3/-:4/- 2/6:3/-	"	1/-:2/-	" " "
28	5/-:5/6	3/-:4/- 2/6:3/-	"	" "	" " "
Aug. 4	5/-:5/6	3/-:4/- 2/6:3/-	"	" "	" " "
11	5/-:7/6	3/-:5/- 2/6:3/-	30/-:		
			32/6	" "	" " "
18	5/-:7/6	3/-:5/- 2/6:3/-	30/-	" "	" " "
25	5/-:7/-	3/-:5/- 2/6:3/-	30/-	" "	" " "
Sep. 1	5/-:7/-	3/-:5/- 2/6:3/-		" "	" " "
8	5/-:8/-	3/-:5/- 2/6:3/-		" "	" " "
15	5/-:8/-	2/6:3/-		" "	" " "
22	6/6:7/6	3/-:5/-	32/6	" "	" " "
29	6/-:7/-	4/-:5/-	35/-	" "	" " "
Oct. 6	6/-:8/-	4/-:5/-;	28/-:		
			30/-	" "	" " "
13	6/-:8/-	4/-:5/-	28/-:		
20	6/-:8/-	4/-:6/-	30/-	" "	" " "
			28/-	" "	" " "
27	6/-:11/-	5/-:7/6	"	" "	" " "
Nov. 2	6/-:11/-	5/-:7/-	"	" "	" " "
10	6/-:11/-	5/-:7/6	"	1/6: 3/-	" " "
17	8/-:11/-	6/-:8/-	30/-	" "	" " "
24	9/-:11/6	7/-:9/-	26/-	" "	" " "
Dec. 1	9/-:11/6	7/6:8/6	"	" "	" " "
8	9/-:12/6	7/-:9/-	32/6	" "	" " "
15	10/-:13/-		34/-:		
			37/-	" "	" " "
22	10/-:13/-				" " "
28					6d Each.

WHOLESALE PRICES OF N. Z. LEMONS AND GRAPEFRUIT ON THE WELLINGTON MARKET FOR THE PERIOD, JANUARY TO AUGUST, 1934.

	LEMONS. N.Z.	LEMONS. Cal.	GRAPEFRUIT. N.Z.
Jan. 9.	11/6:19/3		
16.	5/-:17/-		
30	3/-:16/-		
Feb. 6	12/-:15/3		
13	12/-:20/6.		
20	10/-:16/-		
Mar. 20	7/-:14/-		
27	7/-:19/6.		
Apl. 10	6/6:17/-		
24	15/-:16/9.		
May. 1	11/9:17/-		
8	9/-:20/3		
15	6/9:17/-		
22	9/-:15/6.		
29	11/-:16/-		8/-:8/6.
June 12	8/-:12/6		
19	12/-:18/-		7/6:10/9
Jly 3	16/-:19/-		6/-: 8/-
18	18/-:24/-		6/-: 7/-
25	" "		6/-: 7/-
Aug. 1	16/-:18/-		6/-: 7/-
15	8/-:16/-		7/6: 8/6.
29	8/-:17/6.		6/-: 9/-.

WHOLESALE PRICES OF CITRUS FRUIT ON THE CHRISTCHURCH MARKETS FOR THE PERIOD, 1930-1934.

Date	Lemons N. Z.	Lemons Cal.	Lemons Other	Oranges Cal.	Oranges Aust.	Oranges Other	Grapefruit N.Z.
1930							
Jan.4	20/-			42/6			
18		60/-		45/-			
25		57/6		43/6			
Feb.1		57/6					
15		45/-		36/-:50/-			
22		45/-		42/6:47/6			
Mar.1		"		45/-			
8		40/-		"		(Cook Is)	
15		42/6		36/-:48/-		25/-	
29		40/-	Ital.				
Apl12		40/-	35/-	47/6			
26		"		40/-:45/-		(Cook Is)	
My 17		45/-	Aust	47/6:50/-		18/-:21/-	
24		45/-	22/6			15/-:17/6	
31			"		16/6	12/-	
Jne 7		55/-		45/-	17/6	12/6	
14	21/-	"		"	9/-:12/-	10/-:12/-	
21					17/6		15/-
28	23/-		31/-		21/-		"
Jly 5	21/-	57/6	25/-		18/-	17/6	16/-
12	20/-	"	22/6:25/-		15/-:18/-		14/-:15/
19	20/-		25/-		16/6		13/6
Aug.2	12/6:14/-		20/-		15/-	18/-	11/+:12/-
9	"	50/-	17/6:20/-		13/-:15/-		12/-
16	10/-	55/-			15/-	15/-	10/-:12/6
23	10/-:12/6	50/-	22/6		17/6		10/-
30	10/-	"	"		12/-:15/-	18/6	"
Sep13	"		10/-:30/-		17/6		
20	10/-:12/-		20/-		"	20/-	"
27	10/-		21/-		12/-:14/-		16/-
Oct.4	12/6		"		13/-:16/-		15/-
11	10/-				14/-:16/-		12/-
18	"						"
25	14/-	40/-			12/-:14/-		12/6
Nov.1	21/6			29/-:30/-	14/-:17/6		
8	16/-:18/-						10/-
29	12/6:15/-	50/-			16/6		
Dec.6	12/6	47/6			15/-		
13					14/-		
20		40/-		40/-	17/6		
1931							
Jan10					17/-:21/-		
17		37/6		35/-			
Feb.4		"		32/6			
21		"		"			
28		"			10/-:15/-		
Mar.7		"					
14		38/6		"	12/6:18/-		
21		37/6		32/6:37/6			
28		"		"			
Apl 4				35/-	17/-:20/-		
11		40/-		"			
18		"					
May 9		42/6		"		17/6	

Date	Lemons N.Z.	Lemons Calif.	Lemons Other	Oranges Calif.	Oranges Aust.	Oranges Other	Grapefruit N.Z.
1931							
			Aust.				
May 16	17/6	42/6	22/6	35/-	22/6	17/6	
23		"	"	34/-		"	
30			"	"			
Jne 6		47/6	21/-	32/6	17/6	13/-:16/-	-
20		45/-	18/-	30/-	12/6		
27			17/6		13/-		12/6
Jly 4			17/-		"	16/-	"
11			15/-:16/-		"		11/6
18			15/-		"		10/-
25			"		13/6		10/6
Aug. 1			"		14/6	10/-:13/6	9/6
8			16/6				9/-
15.					15/-		9/6.
22			18/6			17/6	
29			17/6		16/-	17/6:20/-	8/-
Sep. 5			20/-		15/-		7/6
19			17/6		12/6	20/-	7/-
26			17/6		14/-		7/-
Oct. 3			20/-		13/6		
17			16/-		"		
24	12/-		17/-		15/-		
31	5/-:10/-		17/6		15/-		
Nov. 7			16/6		"		
28	7/6				14/-:16/6		
Dec. 5			15/-		15/-		
12			17/6		14/-:17/6		
19	10/-	47/6	18/-	40/-:42/-	10/-:15/-		
			1932.				

Jan. 9		45/-			35/-		
16		42/6			17/6		
23					18/-		
30	14/-				17/6		
Feb. 6	15/-:20/-				15/-		
13	20/-				16/-		
20	20/-						
27	16/-:20/-						
Mar. 5					17/6		
12	10/-:14/-	45/-		43/-			
19	" "	"		42/6			
Apl. 2		"		43/6			
9	17/6	50/-		53/-			
16	12/6:16/-		Ital.		25/-		
23	12/6		42/6				
30	12/-:15/-		38/-				
May 7		45/-		40/-		8/-:16/-	
14	15/-	"	Aust.		17/6		
21	12/6	40/-	15/-				
28	10/-		17/6		18/-		
Jne 11			17/-		13/-		8/6
18	11/-		16/6		11/6:13/6		9/-
25	12/-		15/-		10/-:13/6	Is.	8/-:9/-
Jly 2	12/-:14/-		16/-		10/-:12/-	10/6	6/-:16/-
9	9/-:10/-		17/-		" "		7/6:8/-
16					8/-: 11/6		
23	10/-:13/-		14/-:16/-		7/-11/6		
30			14/-:18/-		8/-:12/6		
Aug. 6			12/-:16/6		8/-:11/-		
13			12/-:16/-		" "		
20			" "		12/-:14/-		
27			10/-:12/-		10/-:12/-	11/6:14/-	
Sep. 3	8/-:10/-				10/-:14/6		
17					16/-		
24			16/-:19/-		12/-:18/-		

1932.

Date	Lemons N.Z.	Lemons Calif.	Lemons Other	Oranges Calif.	Oranges Aust.	Oranges Other	Grapefruit N.Z.
			Aust.				
Oct. 8			17/-:19/-		12/-:17/6		
15	11/-:13/-				14/6:16/6	5/-:11/-	
22	10/-:12/-				10/-:16/-	6/-:8/-	
29	11/-:13/-		15/-:18/-		10/-:12/-		
Nov. 5			12/6:17/6		14/-:16/-		
12	11/-:12/6		17/6		9/-:15/-		
19	9/-:12/-		15/-:16/-		10/-:15/-		
26	8/-:10/-		12/-:14/-		10/-:14/-		
Dec. 3					10/-:16/-		
17				42/6			
24			20/-:22/6	"	17/-:18/6		
31				"			

1933.

Jan. 7				44/-	24/-		
28					22/6		
Feb. 11	12/6:20/-			40/-:42/6			
18	15/-: 8/-; 12/-						
			Ital.			Jaffa	
25	4/-:10/-		40/-			40/-	
Mar. 4			"				
11			"	43/-			
18	17/6		"	42/6			
25	18/-:20/-		36/-:40/-			34/-:37/6.	
Apl. 8	16/-:20/-			43/-		Island.	
29	17/9:23/-					16/6:20/6.	
May 6	25/6		40/-:42/6			12/-:20/-	
13	23/-:30/-		42/6				
20	20/-:30/-						
27	18/-:25/6						
June 3	15/-:23/-	55/-		37/6		10/-:14/6	8/-
10	8/-:17/6			36/-			7/-:7/6
17	17/-			"			
24	"			"			10/-
Jly 1	26/-			35/-		9/-:14/-	10/-:12/6
8	24/-:29/6			"			9/-:9/6
15	23/-:25/-			30/-:35/-			8/-:9/-
22	22/6			32/6:34/-			8/-:8/6
29	17/-:10/-: 14/-			33/-:34/-		19/-:23/9	6/-:7/-
Aug. 5	10/-:14/-			33/-		19/-:25/-	5/-:6/-
12	8/-:10/6						4/6:6/-
19	" "					22/6	
26	7/6:10/-			32/6		16/-:20/-	
Sep. 2	7/-:13/-			30/-	Aust.		
9	" "				12/-:18/6		
16	" "				11/-:19/-	18/-:22/6	9/-
23	7/-:14/-						8/6
30	" "				18/-:25/-		
Oct. 7	9/-:12/-						
14	8/-:15/-						
21	9/-:15/-				18/-:26/6.		
28	8/-:14/-						

1933.

Date	Lemons. N.Z.	Lemons. Calif	Lemons. Other	Oranges Calif.	Oranges Aust.	Oranges Other	Grapefruit. N.Z.
Nov.4	7/-:14/-						
11	10/-:13/-						
18	15/-:17/6				18/-:26/-		
25	13/-:17/6						
Dec.2	12/6:17/6						
9	13/-:17/6				21/-:26/-		
16	10/-:16/-	45/-		36/-			
23	12/-:17/6	"		34/-			

1934.

Jan.6	17/6			40/-	22/6		
13	25/-	50/-		33/6			
20	15/-:22/6			"			
27	15/-:20/-						
Feb.3	16/-:23/-			37/6			
10	14/-:22/-	47/6:50/-		39/-			
17	14/-:20/-	47/6		37/6		Jmaican	
24		45/-				25/-:31/6	
Mar.3		42/6				25/-:30/-	
10	14/-:19/-	"				25/-:28/-	
17		"				26/-	
24						21/-:26/-	
Apl 7	17/6	45/-		34/-		28/-	
14	14/-:20/-					30/-	
21	15/-:20/-					25/-:32/6	
28	14/-:22/6	55/-		40/-		Island	
May 5	24/-	50/-		"		15/-:21/-	
12	14/-:23/-					14/-:22/6	
19	14/-:20/-					17/6:20/-	
26	12/-:18/-	48/-		38/-			
Jne 2	12/-:16/6	47/6		"			13/6
9	11/-:12/6	"		42/6	20/-		10/-:12/-
16	13/-:15/-						10/-:11/-
23	20/-:23/-	49/-		45/-			8/-:10/-
30	17/6:25/-			"			7/6:10/-
Jly 7	16/-:22/6				21/6:22/6		6/6:10/-
14	23/6				16/-:25/-		8/-:8/6
21	25/3				20/-:22/-		6/-:8/6
28	18/-:23/6				19/-:20/-		5/-:8/-
Aug.4	16/-:20/-				" "		
11	14/-:19/-				5/-:13/-		
18	13/-:19/-				Aust. 22/6:25/-		15/3.
25	11/-:14/-	68/-			18/-:28/-		
Sep.8	16/-:17/-				18/-:23/-		13/9
22	10/-12/-	57/-			16/-:23/-		12/6
29	12/6	56/-			16/:23/-		8/6:10/-
Oct.6	12/-:13/-	55/-			" "		9/-
13	12/-:13/-	"					7/-
20	10/-:14/-	50/-:52/6			17/6:23/-		
Nov.3	7/-:9/-	50/-			20/-:23/6		
17	12/-:16/-				17/-:24/-		
24	20/-				17/-:23/-		
Dec.1	22/6				23/-:30/-	Jamaican	
8	"				30/-	27/6:34/-	
15	8/-:14/-	44/-	40/-			" "	
22	10/-:15/-	42/6	42/6				

AVI.

WHOLESALE PRICES OF CITRUS FRUIT IN DUNEDIN

DURING 1934

	Lemons			Oranges			Grapefruit	
	N.Z.	Cal.	Other	Cal.	Aus.	Other	N.Z.	Cal.
Jn.6	20/-							
13	"	52/6		37/6				37/6
20	"	"		"				"
27	"	50/-		"				
Fb.3	10/-:20/-			40/-				
10	10/-:18/-			"				
17	" "			"				
24	" "			"				
Mr.3	" "			38/6				
10	10/-:18/-			36/-				
17	16/-:18/6			"				
24	" "			35/-		Jam		
31	18/-:20/-			"		30/-		
Ap.7	16/6:18/-			40/-				
14	18/-:20/-			"				
21	20/-:25/-			"				
28	22/-:25/-			"		Island.		
My 5	20/-:23/6	55/-		"		18/6		
12	" "	"				17/-:18/6		
19	19/-:23/6					17/-:20/-		
26	18/-:21/-	50/-		"		" "		
Je 2	15/-:18/-	"		"		15/-:18/-	N.Z.	
9	" "	"		"		" "	9/-:10/-	
16	15/-	"		"		" "	9/-:11/-	
23	16/-	"		45/-		16/-:20/-	" "	
30	"	"		"		16/-:18/6	" "	
Jy7	"	"				15/-:16/-	" "	
14	"	"				15/-:16/6	" "	
21	20/-					18/-:22/6	7/6:9/6	
28	20/-:25/-					" "	7/-:8/6	
Ag.4	" "					" "	7/-:8/6	
11	16/-:20/-					22/6	" "	
18	" "				16/-:23/-		" "	
23	" "			"	"		8/-:10/-	
Sp.1	16/-:20/-			"	"		10/-:12/-	
8	" "			"	"		" "	
15	14/-:18/-	65/-					8/-:10/-	
22	12/-:16/-	60/-:65/-					6/-: 9/-	
29	12/-:14/-	" "			Aust.		5/-: 7/-	
Oc.6	10/-:14/-	" "			16/-:23/-		" "	
13	8/-:12/6	60/-			" "			
20	" "	57/6			21/-		4/-:5/-	
27	12/-:15/-	"			21/-:24/-			
No.3	15/-:17/-	"			" "			
10	15/-:17/6	60/-			" "			
17								
24								
De.1								
8			Cal.		20/-:24/-	Jam		
15			40/-:42/6		" "	30/-:35/-		
22			" "					
29			42/6:45/-			34/-:36/-		
