1916.

NEW ZEALAND

NATIONAL PROVIDENT FUND:

ACTUARIAL EXAMINATION FOR THE PERIOD ENDED 31ST DECEMBER, 1913.

Laid before Parliament in pursuance of Section 24 (3) of the National Provident Fund Act, 1910.

REPORT BY THE ACTUARY APPOINTED BY HIS EXCELLENCY THE GOVERNOR TO MAKE THE ACTUARIAL EXAMINATION OF THE NATIONAL PROVIDENT FUND.

I HAVE the honour to submit the following report on the National Provident Fund as at the 31st December, 1913, as required by section 24 of the National Provident Fund Act, 1910.

The Act came into operation on the 1st March, 1911, and represents an important step in New Zealand in the direction of social insurance, the basic principle of which is the intervention of the State to induce the wage-earners to make provision for certain of the eventualities of life, the State bearing a share of the cost.

Old age, for instance, is to the individual a distant and vague possibility, specific provision for which he will neglect in deference to present needs. To the State, on the contrary, old age is an ever-present problem always pressing for solution. The ideas of the State and the individual in this connection, therefore, do not run step for step, and if, by means of subsidies, compulsion, or otherwise, the State endeavours to quicken the pace of the individual towards making this provision, we have social insurance as distinct from commercial insurance. This phase of social insurance is equally distinguished from the opposite extreme of free State systems wherein the State does everything and the individual nothing.

Social insurance in this sense is almost a commonplace in Europe, schemes based upon its principles having been adopted in leading European countries, including England, France, Belgium, Germany, and Austria; and the National Provident Fund Act brings New Zealand into line.

The benefits available to contributors under the Act, and the contributions, are set out in the Appendix (Table I), the main benefit being a pension at age 60, with additional benefits such as maternity, incapacity, and orphans' allowances where the contributor has children. The scheme of benefits appears to be based upon the principle that if the contributor provides for a pension at age 60 the State will help him in respect of the family responsibilities he may have.

Under the Act the State bears the cost of the administration expenses, and pays into the fund by way of subsidy year by year a sum equal to one-fourth of the total contributions received in the previous year—that is to say, the contributor pays four parts and the State one part, the regular State subsidy being therefore virtually one-fifth, or 20 per cent., of the total contribution cost. In addition the State is to pay into the fund in each year such further amounts as are deemed necessary in accordance with the Actuary's report. The maternity benefit is provided for by an annual parliamentary grant.

After careful consideration the valuation of the actuarial liabilities has been made on the following bases:—

(1.) Mortality rates of contributors between those of the New Zealand population, 1906–10, and those of the New Zealand Civil Service Superannuation Fund (see graph annexed). The rates are much below, and therefore more stringent than, the Healthy English, with which, however, they agree from age 73 onwards.

(2.) Rates of discontinuance approximating to those of the Second Division of the New Zealand Railways.

(3.) Rates of invalidity as exhibited by New Zealand friendly societies.

(4.) Probabilities of being married, approximately 12½ per cent. above those of the New Zealand population, 1911.

(5.) Probabilities regarding children, as per New Zealand population statistics, 1908–12.
(6.) Mortality rates of widows, as per New Zealand friendly-society rates two years younger, the result being an approximation to the rates of the female population of New Zealand for 1906–10.
(7.) Interest has been taken at 4 per cent., as the fund is State-guaranteed.

At the valuation date, 31st December, 1913, there were 5,791 members, who were enrolled for 6,664 pensions of 10s. per week—that is to say, there were 5,791 pensions of 10s. carrying with them the subsidiary benefits (maternity, incapacity, &c.), and 873 duplicated pensions of 10s. not carrying with them any duplication of the subsidiary benefits, but paying the same rates of contribution despite that fact.*

The valuation balance-sheet is appended :—

VALUATION BALANCE-SHEET OF THE NATIONAL PROVIDENT FUND AS AT 31ST DECEMBER, 1913.

Liabilities.

	£
Value of liability for—	
Pensions	201,640
Orphans' benefit	37,419
Widows' benefit	17,237
Incapacity allowance	13,766
Return of contributions on death	18,164
Return of contributions on withdrawal	42,195
	£330,421

Assets.

	£
Amount of the fund at 31st December, 1913	29,327
Value of contributions payable (assumed half a year after due date)	242,554
Value of State subsidy of one-fourth (assumed to be received a year later than the above)	58,306
Debit balance	234
	£330,421

From this it will be seen that the assets and liabilities are virtually equal, the debit balance being insignificant.

Section 24 of the Act provides that the report of the Actuary shall show "the probable annual sums required by the fund to provide the pensions and other allowances falling due within the ensuing three years without affecting or having recourse to the actuarial reserve appertaining to the contributors' contributions."

I think the intention of this is that the Actuary should report what sums, if any, are required by the fund to meet current charges without touching the reserves actuarially earmarked against future liabilities. In other words, he should state what further subsidies are, in his opinion, actuarially necessary in the next three years beyond the statutory one-fourth subsidy attaching to the contributions and forming part of the reserve with them. In this connection the next section of the Act—25 (2)—provides that the Minister of Finance shall in each year pay into the fund "a sum equal to one-fourth of the total contributions paid into the fund during the last preceding year *together with such further amount (if any) as is deemed by the Governor in Council, in accordance with the aforesaid report of the Actuary, to be required to meet the charges on the fund during the current financial year.*"

In pursuance of these sections, therefore, I have to report that no such supplementary sums require to be paid into the fund during the three years following the date of this valuation.

As the maternity allowances are annually voted by Parliament I have regarded them as outside the actuarial aspects of the scheme.

A. T. TRAVERSI, A.I.A. (London),
Actuary.

Wellington, 24th December, 1915.

*As a matter of technical explanation it may be mentioned that the full State subsidy of one-fourth has been taken credit for in the valuation irrespective of any extra-sufficiency of the subsidy in cases of duplicated pensions. There would be no practical object in eliminating the over-sufficiency and substituting in its place a differently named subsidy. It is time to do that when (and if) it is found that these particular cases fail to persist in due proportion.

APPENDIX.

TABLE I.

Membership Qualifications.

Any person may become a contributor who—

(*a.*) Is a resident of New Zealand;
(*b.*) Is over sixteen years of age;
(*c.*) Is under forty-five years of age; and
(*d.*) Whose average income during three years prior to joining has not exceeded £250 a year.

Benefits.

The following benefits are payable:—

(1.) After contributing for twelve months or for such period as the Board determines, a payment not exceeding £6 on the birth of a contributor's child or children, provided the parents' joint income does not exceed £200.
(2.) After contributing for five years, an allowance after three months' incapacity to work of 7s. 6d. per week for each child under fourteen years of age; not to exceed pecuniary loss. Ceases at age 60. Extends to age 18 in case of an infirm child.
(3.) After contributing for five years, an allowance, on the death of a contributor, of 7s. 6d. per week for each child until fourteen years of age, and 7s. 6d. per week for the widow so long as any child is under fourteen years of age.
(4.) On reaching age 60, a pension of 10s., 20s., 30s., or 40s. per week, according to the scale of contributions.
(5.) Return of contributions, less benefits, on giving twelve months' notice of cessation of membership. This right is exercisable at any time before drawing the first payment of the pension.
(6.) Return of contributions, less benefits, on death, whether before or after receiving pension.

Contributions.

Age last Birthday of Contributor when First Contribution is made.	Weekly Contribution required to secure a Pension of 10s. a Week at Sixty Years of Age.	Weekly Contribution required to secure a Pension of 20s. a Week at Sixty Years of Age.	Weekly Contribution required to secure a Pension of 30s. a Week at Sixty Years of Age.	Weekly Contribution required to secure a Pension of 40s. a Week at Sixty Years of Age.
	s. d.	s. d.	s. d.	s. d.
16	0 9	1 6	2 3	3 0
17	0 10	1 8	2 6	3 4
18	0 10	1 8	2 6	3 4
19	0 11	1 10	2 9	3 8
20	1 0	2 0	3 0	4 0
21	1 0	2 0	3 0	4 0
22	1 1	2 2	3 3	4 4
23	1 2	2 4	3 6	4 8
24	1 3	2 6	3 9	5 0
25	1 4	2 8	4 0	5 4
26	1 5	2 10	4 3	5 8
27	1 6	3 0	4 6	6 0
28	1 7	3 2	4 9	6 4
29	1 8	3 4	5 0	6 8
30	1 9	3 6	5 3	7 0
31	1 10	3 8	5 6	7 4
32	2 0	4 0	6 0	8 0
33	2 2	4 4	6 6	8 8
34	2 3	4 6	6 9	9 0
35	2 5	4 10	7 3	9 8
36	2 7	5 2	7 9	10 4
37	2 10	5 8	8 6	11 4
38	3 0	6 0	9 0	12 0
39	3 3	6 6	9 9	13 0
40	3 6	7 0	10 6	14 0
41	3 10	7 8	11 6	15 4
42	4 2	8 4	12 6	16 8
43	4 6	9 0	13 6	18 0
44	4 11	9 10	14 9	19 8

TABLE II.

Consolidated Revenue Account of the National Provident Fund from Establishment on 1st March, 1911, to 31st December, 1913.

	£ s. d.		£ s. d.
Fund at 1st March, 1911	Nil.	Maternity claims (section 18)	869 8 0
Contributions	24,493 4 5	Refund of contributions on lapse, reduction, and withdrawal (sections 10, 11, 12, and 13)	1,228 11 3
Interest	730 2 11	Death: Refund of contributions (section 15)	79 14 7
Fines	496 6 2	Refund of contributions overpaid ..	18 17 2
Benefits refunded by deduction	6 0 0	Amount of fund at 31st December, 1913 ..	29,327 7 6
Government contribution under section 25	4,907 16 3		
Refund of maternity claims by State ..	869 8 0		
Contributions overpaid	19 7 1		
Refunds unclaimed	1 11 10		
Miscellaneous receipts	0 1 10		
	£31,523 18 6		£31,523 18 6

Numerical Progress to 31st December, 1913.

Numbers.

	Class 1. Pension Rate, 10s.			Class 2. Pension Rate, 20s.			Class 3. Pension Rate, 30s.			Class 4. Pension Rate, 40s.			Aggregate.			Annual Contributions.
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	£ s. d.
Total entered	5445	373	5818	530	90	620	72	11	83	97	7	104	6144	481	6625	..
Total transferred from other classes	76	1	77	11	4	15	2	2	4	3	1	4	92	8	100	..
	5521	374	5895	541	94	635	74	13	87	100	8	108	6236	489	6725	26,401 18 4
Total discontinued ..	686	55	741	57	11	68	11	3	14	11	..	11	765	69	834	..
Total transferred to other classes	10	3	13	58	2	60	8	2	10	16	1	17	92	8	100	..
	696	58	754	115	13	128	19	5	24	27	1	28	857	77	934	3,682 18 0
Total contributors on books at 31st December, 1913	4825	316	5141	426	81	507	55	8	63	73	7	80	5379	412	5791	22,719 0 4

TABLE III.

Particulars of Membership, Pensions, and Contributions.

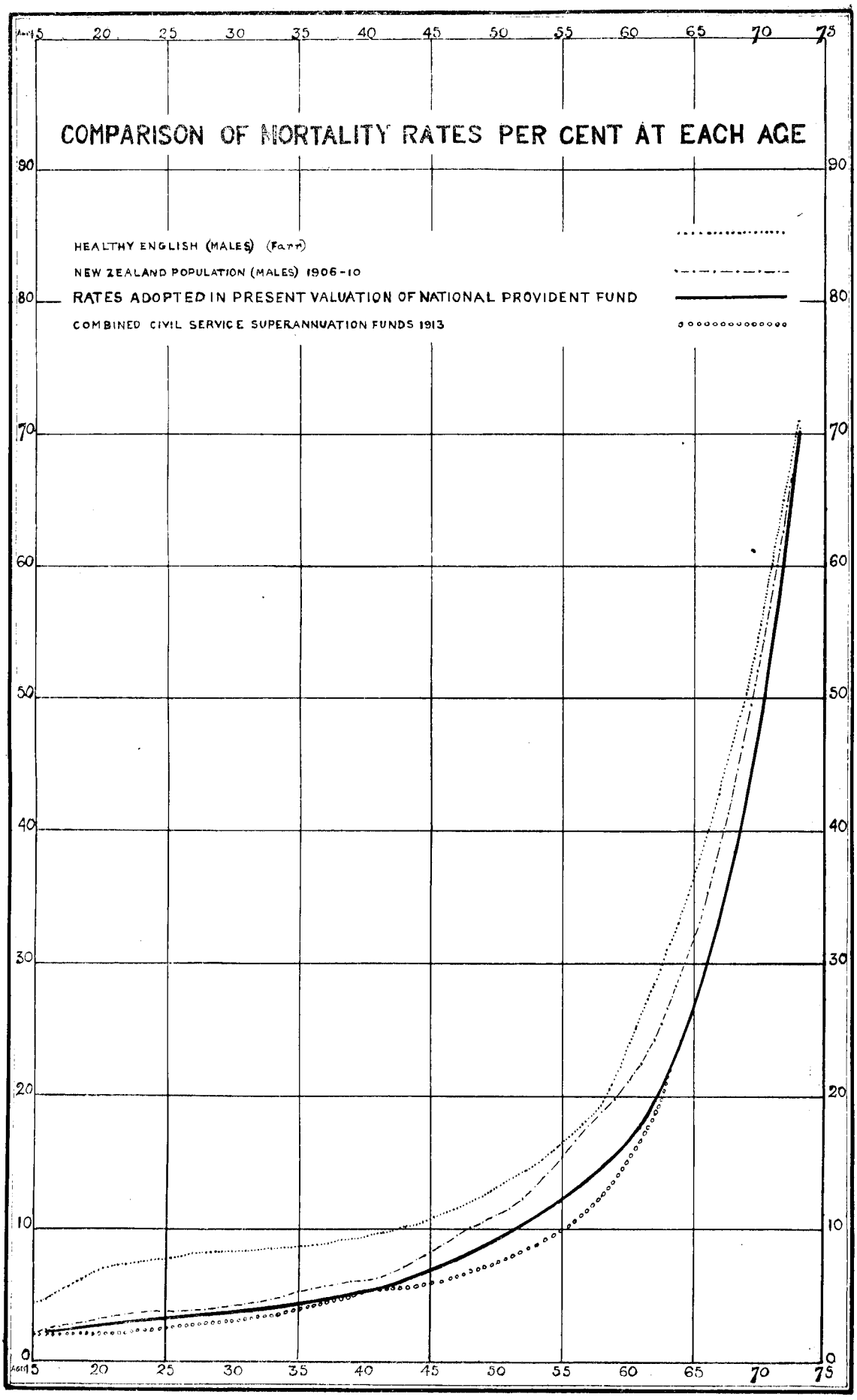
According to Age at Entry.		According to Age attained.			
Age at Entry (Nearest).	Number of Members.	Age attained (Nearest).	Number of Members.	Number of 10s. Pensions.	Weekly Contribution payable.
					£ s. d.
16	166	16	46	46	1 14 4
17	370	17	243	261	9 18 1
18	409	18	349	372	15 1 11
19	456	19	425	469	19 11 8
20	480	20	437	488	21 17 10
21	443	21	441	490	23 13 4
22	458	22	443	534	26 10 2
23	380	23	468	558	29 5 4
24	360	24	344	430	24 3 3
25	301	25	339	388	23 4 10
26	266	26	294	348	22 8 6
27	243	27	262	302	20 11 0
28	222	28	226	256	18 10 0
29	232	29	244	263	20 0 3
30	197	30	232	264	21 4 9
31	133	31	150	171	14 8 0
32	137	32	154	179	15 16 1
33	98	33	141	169	15 16 11
34	73	34	97	109	10 17 7
35	66	35	78	89	9 15 8
36	71	36	77	91	10 8 11
37	43	37	48	60	7 3 8
38	41	38	51	61	7 15 10
39	37	39	44	54	7 10 7
40	27	40	40	53	8 0 1
41	17	41	23	30	4 16 8
42	15	42	17	20	3 5 10
43	13	43	23	33	6 1 0
44	9	44	14	21	4 9 0
45	28	45	12	20	4 7 8
		46	15	18	4 6 7
Total ..	5,791	47	11	13	3 3 4
		48	3	4	0 19 5
		Total ..	5,791	6,664	436 18 1

TABLE IV.

RATES OF WITHDRAWAL, MORTALITY, MARRIAGE, SICKNESS, ETC.

Age.	Rate of Withdrawal, per Cent.	Rate of Mortality, per Cent.	Percentage who are married (including Wid.).	Percentage of Married who have Children living under 14.	Number of Children under 14 per Family with Children under 14.	Percentage of Married who have a Wife living.	Number of Weeks' Sickness per Member per Annum, excluding First Three Months' Sickness (to Age 60 only).
16	10·00	0·23					
17	10·00	0·24					
18	10·00	0·26	0·9	49·8	1·00	100·0	0·150
19	9·50	0·27					
20	9·00	0·28					
21	8·50	0·29					
22	8·00	0·30	10·7	54·0	1·32	98·9	0·197
23	7·60	0·31					
24	7·20	0·32					
25	6·80	0·32					
26	6·40	0·33					
27	6·00	0·34	40·2	65·2	1·60	98·6	0·237
28	5·60	0·35					
29	5·30	0·36					
30	5·00	0·37					
31	4·70	0·38					
32	4·50	0·39	67·3	75·6	2·25	98·0	0·241
33	4·20	0·41					
34	3·90	0·43					
35	3·60	0·44					
36	3·30	0·46					
37	3·10	0·48	80·2	75·5	2·76	97·1	0·321
38	2·80	0·50					
39	2·50	0·51					
40	2·30	0·53					
41	2·00	0·55					
42	1·80	0·58	87·4	71·2	2·83	96·1	0·504
43	1·50	0·61					
44	1·30	0·65					
45	1·10	0·70					
46	0·90	0·74					
47	0·70	0·79	90·5	59·9	2·76	94·8	0·935
48	0·50	0·83					
49	0·30	0·88					
50	0·20	0·92					
51	0·10	0·96					
52	0·00	1·03	91·8	48·4	2·47	92·4	1·491
53	..	1·10					
54	..	1·16					
55	..	1·24					
56	..	1·30					
57	..	1·38	93·0	32·0	2·18	89·3	2·449
58	..	1·46					
59	..	1·55					
60	..	1·65					
61	..	1·75					
62	..	1·94	93·0	18·2	2·02	85·3	3·200
63	..	2·17					
64	..	2·42					
65	..	2·70					
66	..	3·00					
67	..	3·40	93·0	9·5	1·90	78·5	..
68	..	3·85					
69	..	4·30					
70	..	4·80					
71	..	5·53					
72	..	6·30	93·0	4·5	1·71	70·7	..
73	..	7·13*					
77	..	..	93·0	2·0	1·71	60·4	..
82	..	..	93·0	0·6	1·67	47·1	..
87	..	..	93·0	0·6	1·00	37·0	..
92	..	..	93·0	0·5	1·00	32·0	..
97	..	..	93·0	0·1	..	30·0	..

*73 and upwards, as per Farr's "Healthy English."



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