1922.

NEW ZEALAND.

PUBLIC SERVICE SUPERANNUATION FUND.

ACTUARIAL EXAMINATION FOR THE TRIENNIUM ENDED 31st DECEMBER, 1919.

Laid before Parliament in pursuance of Section 48 (4) of the Public Service Classification and Superannuation Act, 1908.

REPORT

BY THE ACTUARY APPOINTED BY HIS EXCELLENCY THE GOVERNOR-GENERAL TO MAKE THE ACTUARIAL EXAMINATION OF THE PUBLIC SERVICE SUPERANNUATION FUND FOR THE TRIENNIAL PERIOD ENDED 31st DECEMBER, 1919.

1. I HAVE the honour to submit the following report on the Public Service Superannuation Fund as at the 31st December, 1919, as required by section 48 of the Public Service Classification and Superannuation Act, 1908.

2. The scheme, which came into operation on the 1st January, 1908, embraces, with the few exceptions set out in section 52, all permanent public servants outside the Government Railways Superannuation Fund and the Teachers' Superannuation Fund.

3. The contributions and the benefits provided by the Act, together with the statements showing the progress of active membership, discontinuance of membership from various causes, and the progress of pensions for each year, will be found in Tables I to IV of the appendix to this report. The ages of the contributors at the date of the valuation, together with their contributions and other particulars, are shown in Table V, and the pensions granted during the triennium, with the ages at which they were granted, in Table VI.

4. The number of pensioners on the fund at the 31st December, 1919, including widows and children, was 1,685, drawing pensions amounting to £120,460 per annum ; the number of contributors at the same date was 14,216, with aggregate salaries amounting to £3,084,195, and paying contributions at the rate of £184,928 per annum.

5. The income and outgo of the fund during the three years are shown in the Consolidated Revenue Account, which is as follows :—

CONSOLIDATED REVENUE ACCOUNT OF THE PUBLIC SERVICE SUPERANNUATION FUND FROM THE 1ST JANUARY, 1917, TO THE 31ST DECEMBER, 1919.

Income.	£	s.	d.	Outgo.	£	s.	d.
Funds at 1st January, 1917	896,568	0	3	Pensions to members ..	278,633	9	4
Members' contributions	473,651	13	3	Pensions to widows and children	31,315	7	9
Government subsidy ..	182,000	0	0	Contributions returned	108,582	10	1
Transfers from other funds	707	16	2	Compensation	7,189	12	8
Interest	168,929	10	4	Transfers to other funds	599	14	1
Fines	899	7	9	Salaries	2,802	9	1
				Public Trust Office commission	4,223	10	5
				Travelling and office expenses ..	1,212	4	2
				Funds at 31st December, 1919	1,288,197	10	2
	£1,722,756	7	9		£1,722,756	7	9

6. During the triennium the war measure postponing retirements lapsed, and in 1918 (section 26, Appropriation Act) provision was made for an increase of the subsidy from £48,000 to £86,000, the increase commencing in the 1919 accounts.

VALUATION.

7. In making the valuation it has been taken that interest at 4 per cent. per annum will be earned on the fund during the whole future lifetime of members ; that a proportion of members will leave the Service, and a proportion die at each age in accordance with the pre-war experience of the fund, drawing the appropriate benefits and relieving the pension liability ; and that salaries and the corresponding contributions will increase from age to age according to the ratios of increase deduced from the average salaries at the 31st December, 1919, the pensions payable at retirement depending upon the same rates of salary-increase. These and other factors are more specifically set out in the appendix. In regard to the rate of interest, the rates earned during the triennium were as follows : 1917, £5 3s. 3d. per cent. ; 1918, £5 4s. 1d. per cent. ; 1919, £5 5s. 10d. per cent. ; and, while comparatively high rates may continue to be earned for some time, it would not be prudent to anticipate more than 4 per cent. for the long period covered by a pension fund.

8. The result of the valuation, shortly, is as follows :—

		£
Present value of the liability for benefits		7,486,981
Present value of contributions receivable from members	£2,055,794	
Funds in hand	1,288,198	
		3,343,992
Present value of total liability of State		4,142,989
Less present value of existing subsidy of £86,000		2,150,000
Value of future subsidies to be provided for by the State over and above present subsidy of £86,000		£1,992,989

The valuation balance-sheet is given in detail in Table X of the appendix.

9. This shows a total State liability of the value of £4,142,989, as against £3,007,081 on the last occasion. The increase is due partly to accumulation at interest of that part of the State's liability that is unprovided for, partly to the normal expansion of the Service, and partly to the increased salaries.

The pensions current have increased from £88,392 per annum to £120,460 per annum, the number of contributors from 13,313 to 14,216, and the salaries from £2,287,591 to £3,084,195. The average salary has increased from £172 to £217, and, of course, an increase given to a contributor approaching the pension age adds materially to the value of his pension, particularly when there[is considerable back service, while adding little to the value of his contribution.

10. The high salary scale resulting from the war conditions renders it difficult to estimate the liabilities with full confidence, as these depend materially upon the future course of the salary scale. The scale in force at the moment of writing represents a further increase upon that assumed in the valuation, and possibly an addition to the liabilities. Apart from this, the enforced retirements of officers with long service which are now taking place are casting a considerable unanticipated liability upon the fund, which will at once render increased State subsidies necessary. A certain amount of relief of a minor character will, on the other hand, accrue to the fund in those cases of enforced retirement in which the officer is entitled only to a refund of his contributions.

11. The Act (section 48 (2)) requires the report to be so prepared " as to show the state of the " fund at the close of the period, having regard to the prospective liabilities and assets and the probable " annual sums required by the fund to provide the retiring and other allowances falling due in the " ensuing three years without affecting or having recourse to the actuarial reserve appertaining to the " contributors' contributions." This has been taken to mean that the estimated pensions falling due during the three years following the valuation are to be divided into two parts—viz. (a) containing that part of the pensions provided for by the contributions, and (b) the remainder, which includes the pensions for service prior to joining the fund, and (as the contributions are insufficient to purchase full benefits for even future service) such part of the pensions for years of contribution as the contributions are not sufficient to provide for.

The first is clearly a liability which should be borne by the fund, but the second is not, and it is assumed that the intention of section 49 is that it should be paid for by a subsidy, to be increased from time to time, if necessary, according to the Actuary's report.

12. The estimated pensions falling due during 1920, 1921, and 1922, and the portions provided by the contributions and to be paid by subsidy respectively, are as follows :—

	1920. £	1921. £	1922. £
Required for—			
Current pensions to members	102,232	97,054	91,948 ·
New pensions and family pensions	29,899	48,156	70,930
	132,131	145,210	162,878
Deduct amount of pensions provided by contributions ..	30,785	35,796	42,372
Amount due to be paid by the State in respect of the three years mentioned	£101,346	£109,414	£120,506

These figures would give an average subsidy for the years 1920, 1921, and 1922 of £110,000, or £24,000 more per annum than is at present being paid. The following considerations, however, must be taken into account :—

(a.) The actuarial recommendations made in the past in pursuance of the Act have not been fully carried out, the actual payments into the fund to the 31st December, 1919, being short by £180,000 of the amount recommended. When accumulated at 4 per cent. interest to the middle of next year these arrears amount to £237.264, and, of course, provision must be made in some way to meet this

At the very least £10,000 per annum must be added to the future subsidies on this account. Details of the short payments are set out in the appendix (Table XI).

(b.) The extraordinary retirements which are being effected at the present time will entail a considerable special addition to the Government subsidy to the fund as from the year 1922. Full details of these retirements are not available, but those reported at the date of writing will mean an addition of £15,000 for the year 1922, or, if spread over three years, £5,000 per annum.

13. From the above, I have to report that the subsidy required for the three years 1920-21-22 is as follows :—

	£	s.	d.
Subsidy now being paid	86,000	0	0
Further subsidy required for 1920-21-22—			
£24,000 (as above)			
£10,000 (see 12a above)			
£5,000 (see 12b above)			
£39,000	39,000	0	0
Total annual subsidy required for 1920-21-22 ..	£125,000	0	0

When making provision for this subsidy it is important to see that it is back-dated to 1920, and that interest at 4 per cent. is added to any portion paid late.

14. The subsidies so far paid to the fund have, in reality, been principally old payments in a new guise, taking the place of compensation for loss of office and gratuities. The Government's contribution to the fund to the 31st December, 1919, amounts in all to £482,500, but if the pensioners had not accepted pensions they would have been entitled to compensation amounting to £290,457, reckoning only to the date they joined the fund. To this latter figure must be added the further compensation which would have been payable in respect of service since they joined the fund—say, about £90,000.

In addition to the saving in compensation brought about by the fund, there has also been a saving in gratuities ; for at the rate prevailing during the five years prior to the establishment of the fund (viz., £5,242 per annum), these would have amounted to £62,904 during the ensuing twelve years, whereas the actual amount paid has been only £6,065—a saving of over £56,800. Moreover, the fund has enabled the Government to retire officers of long service with much greater facility than would otherwise have been the case.

GENERAL.

15. The change made in the method of investment has enabled the fund to gain advantage of the higher interest-rates now prevailing, the rates earned in the triennium being approximately 1 per cent. higher than in the preceding triennium, and 1¼ per cent. greater than the valuation rate (4 per cent.). Any interest earned above valuation rates will, of course, form an unanticipated profit of which the fund will get the benefit as it falls in from time to time.

16. As indicated above, the present subsidy system is based upon the idea that the State will make good in each year that portion of the current pensions not provided by the contributions paid therefor. Consequently, under the Act, the subsidy is to be arrived at without looking any further forward than three years. It is a system of deferring the Government's payments till the last possible moment consistent with good faith to the bulk of the contributors ; but, unfortunately, the payments are made even later, owing to various difficulties.

A change is urgently needed which will place the subsidies upon a basis at once more automatic and more in accordance with the actual liabilities. At the very least, it should be possible to say that the accumulations of the younger and greater portion of the members are rigorously set aside and maintained intact to assist in meeting the liabilities appertaining to those members.

In this connection the following extract from the report of a Commission on the Pension Funds of the City of New York is of interest :—

" The Commission has made a broad review of existing pension systems in operation, both in the United States and abroad, on which it was able to secure information. This inquiry has brought out the fact that the development of pension measures as a result of an experience of over a hundred years is in the direction of equal division of cost between the employer and the employed, and that this tendency applies equally to systems for public employees and for industrial workers."

So far, however, the contributions of the Government to the Public Service Superannuation Fund have fallen far short of the standard of an equal division of cost, the Government having contributed only £482,500, as against £1,496,840 contributed by the employees themselves—that is to say, the State has found only one-fourth of the total contributions.

17. The following additional extract from the report of the same committee will help to clear up some prevailing misapprehensions as to the objects of a pension fund :—

" The fundamental objectives of a sound measure are the advantages gained by—(1) Facilitating the discontinuance of the services of those who cannot perform satisfactorily the duties of their positions because of superannuation or other forms of disability ; (2) clearing the lanes of promotion for the young and ambitious ; (3) securing adequate protection for the employee against the major risks of life ; (4) promoting the good will of employees and inducing them to put forth their best efforts ; (5) eliminating appeals for charity and favouritism ; (6) enabling the Government to compete with other public and private employers having pension systems in securing and keeping high-grade men and women in public service."

PERCY MUTER, F.I.A.,
Actuary to the Government Insurance Department.

Wellington, 25th October, 1921.

APPENDIX.

TABLE I.

THE BENEFITS AND CONTRIBUTIONS PROVIDED FOR BY THE ACT.

Contributions ..

The contributions vary according to the age at the time when the first contribution becomes payable, and are as follows :—

Age 30 and under	.. ..	5 per cent. of pay.
Over 30 and not exceeding 35	.. ..	6 ,,
,, 35 ,, 40	.. ..	7 ,,
,, 40 ,, 45	.. ..	8 ,,
,, 45 ,, 50	.. ..	9 ,,
,, 50 ..	.. ..	10 ,,

Benefits ..

I. *On Attainment of Pension—Males at Age 65, or after Forty Years' Service ; Females at Age 55, or after Thirty Years' Service.*

(1.) A pension of one-sixtieth of yearly salary for each year's service, with a limit of forty-sixtieths (two-thirds) of salary. Maximum pension for entrants after 24th December, 1909, £300.

(2.) Or the option, in lieu thereof, of a return of total contributions.

(NOTE.—The Minister in charge of a Department may retire contributors on pension in the following cases :—

(a.) Where the age of a male contributor is not less than 60,[or of a female contributor not less than 50.

(b.) Where the age of a male contributor is not less than 55, if his length of service is not less than thirty years.

(c.) Where the length of service of a male contributor is not less than thirty-five years. In any such exceptional cases the Minister may impose upon the retiring contributor such terms and conditions as to payments into the fund or otherwise as he thinks fit.)

II. *On Retirement before Pension Age (on the Grounds of being Medically Unfit for Future Duty).*

(1.) At any time, on the certificate of two doctors approved by the Board, a pension of one-sixtieth of yearly salary for each year's service, limited to forty-sixtieths.

(2.) Or the option, in lieu thereof, of a return of total contributions.

(Where officers of the Police Force are incapacitated by injuries received on duty the Board may increase the pension up to three-fifths of salary.)

III. *On Retirement before Pension Age (on other Grounds than Medical Unfitness).*

(1.) On voluntary retirement or dismissal for misconduct, a return of total contributions.

(2.) On compulsory retirement for any reason other than misconduct, after twenty years' service, a return of total contributions with 3½ per cent. interest.

IV. *At Death, whether before or after becoming entitled to a Retiring-allowance.*

(1.) Leaving no widow or children : A return of total contributions, less any sums received from the fund during lifetime.

(2.) Leaving a widow :—

(a.) £18 yearly during widowhood ; or

(b.) A return of total contributions, together with such compensation (if any) as the contributor would have been entitled to receive from the Consolidated Fund on compulsory retirement, less any sums received from the fund during lifetime. (If death occurs before retirement the compensation is paid from the Consolidated Fund ; if after retirement, from the Superannuation Fund.)

(3.) Leaving children : 5s. weekly to each child until age 14.

(NOTE.—The contributions and pensions are payable monthly, and the pensions are computed on the average salary for the last three years.)

TABLE II.

STATEMENT OF PROGRESS OF ACTIVE MEMBERSHIP.*

Year.	New Members.			Increase by Promotion.		Discontinued.			Total in Force at End of Year.		
	Number.	Salaries.	Annual Contributions.	Salaries.	Annual Contributions.	Number.	Salaries.	Annual Contributions.	Number.	Salaries.	Annual Contributions.
		£	£	£	£		£	£		£	£
1908 ..	7,546	1,112,099	80,526	37,769	2,301	310	42,521	3,463	7,236	1,107,347	79,364
1909 ..	717	77,877	5,290	58,268	3,425	630	103,414	8,575	7,323	1,140,078	79,504
1910 ..	1,520	205,427	12,814	73,936	4,509	472	61,322	4,238	8,371	1,358,119	92,589
1911 ..	1,253	134,065	8,196	81,431	4,906	484	69,174	5,021	9,140	1,504,441	100,670
1912 ..	1,471	145,396	8,980	96,863	5,730	584	80,469	5,540	10,027	1,666,231	109,840
1913 ..	1,428	123,493	7,047	118,571	7,022	646	87,916	5,903	10,809	1,820,379	118,006
1914 ..	1,777	170,471	9,996	135,220	7,990	783	103,170	7,062	11,803	2,022,900	128,930
1915 ..	1,916	163,335	9,248	103,462	5,916	939	121,152	7,870	12,780	2,168,545	136,224
1916 ..	1,593	129,628	7,326	120,532	6,711	1,060	131,114	8,417	13,313	2,287,591	141,844
1917 ..	1,663	121,067	6,763	127,300	7,103	1,192	151,733	9,671	13,784	2,384,225	146,039
1918 ..	1,687	138,743	7,835	176,362	9,782	1,400	177,708	10,864	14,071	2,521,622	152,792
1919 ..	1,642	217,667	12,927	559,178	32,282	1,497	214,272	13,073	14,216	3,084,195	184,928
Totals ..	24,213	2,739,268	176,948	1,688,892	97,677	9,997	1,343,965	89,697	..	..	..

* Compiled from Annual Reports.

TABLE III.

Particulars of Discontinuance of Active Membership.*

Year.	By Death.			By Withdrawal or Dismissal.		By Pensions. Old Age or Length of Service.			By Pensions. Medically Unfit.			By Transfer to other Funds.		Total discontinued.		
	Number.	Amount paid on Retirement.	Family Pension.	Number.	Amount paid on Retirement.	Number.	Amount paid on Retirement.	Pensions entered upon.	Number.	Amount paid on Retirement.	Pensions entered upon.	Number.	Amount paid on Transfer.	Number.	Amount paid on Retirement.	Pensions entered upon.
		£	£		£		£	£		£	£		£		£	£
1908	24	41	437	190	421	74	..	6,658	20	..	1,838	2	22	310	484	8,933
1909	37	148	676	417	3,454	154	21	17,039	19	..	1,958	3	5	630	3,628	19,673
1910	28	768	380	387	4,964	42	..	4,147	13	..	1,101	2	13	472	5,745	5,628
1911	33	1,634	292	354	5,853	73	215	8,631	19	..	1,314	5	10	484	7,712	10,237
1912	45	2,222	784	450	8,388	64	..	6,992	19	61	1,017	6	21	584	10,692	8,793
1913	40	1,149	1,043	516	9,364	73	115	8,716	13	78	591	4	5	646	10,711	10,350
1914	53	2,207	1,015	610	9,659	106	471	11,243	11	..	637	3	37	783	12,374	12,895
1915	99	4,850	1,574	741	12,497	75	974	8,272	21	98	1,345	3	78	939	18,497	11,191
1916	134	5,535	1,260	821	13,920	71	636	11,692	14	..	751	20	742	1,060	20,833	13,703
1917	145	6,187	1,299	940	19,618	85	759	14,371	17	..	1,252	5	175	1,192	26,739	16,922
1918	272	11,733	3,129	1,045	21,051	62	946	10,934	15	..	1,137	6	196	1,400	33,926	15,200
1919	157	9,794	1,189	1,232	34,946	89	1,028	13,496	15	..	828	4	229	1,497	45,997	15,513
Totals	1,067	46,268	13,078	7,703	144,135	968	5,165	122,191	196	237	13,769	63	1,533	9,997	197,338	149,038

* Compiled from Annual Reports.

TABLE IV.

Statement of Progress of Pensions.*

Year.	Attainment of Pension Age or Length of Service. (Section 35.) Granted.		Void by Death.		In Force.		Retired Medically Unfit. (Section 36.) Granted.		Void by Death or Expiry.		In Force.	
	Number.	Pension.	Number.	Pension.	Number.	Pension.	Number.	Pension.	Number.	Pension.	Number.	Pension.
		£		£		£		£		£		£
1908	74	6,658	1	57	73	6,601	20	1,838	..	..	20	1,838
1909	153	17,038	4	324	222	23,315	19	1,959	4	677	35	3,120
1910†	84	8,737	12	945	294	31,107	56	4,706	5	680	86	7,146
1911	72	8,631	23	2,593	343	37,145	19	1,314	10	621	95	7,839
1912	64	6,992	22	2,124	385	42,013	18	1,017	9	526	104	8,330
1913	71	8,716	18	2,003	438	48,726	11	591	14	903	101	8,018
1914	100	11,243	28	2,911	510	57,058	11	637	13	730	99	7,925
1915	68	8,272	24	2,072	554	63,258	20	1,345	5	307	114	8,963
1916	67	11,693	30	3,726	591	71,225	14	751	9	596	119	9,118
1917	81	14,371	32	3,938	640	81,658	17	1,252	11	1,018	125	9,352
1918	55	10,934	32	4,511	663	88,081	15	1,137	8	491	132	9,998
1919	83	13,496	39	4,179	707	97,398	15	828	14	719	133	10,107
Totals	972	126,781	265	29,383	..	..	235	17,375	102	7,268	..	..

Year.	Death of Contributor. Family Pension. (Section 42, &c.) Granted.		Void by Death or Expiry.		In Force.		Total Pensions. Granted.		Void.		In Force.	
	Number.	Pension.	Number.	Pension.	Number.	Pension.	Number.	Pension.	Number.	Pension.	Number.	Pension.
		£		£		£		£		£		£
1908	30	455	1	13	29	442	124	8,951	2	70	122	8,881
1909	47	751	3	39	73	1,154	219	19,748	11	1,040	330	27,589
1910†	40	635	6	98	107	1,691	180	14,078	23	1,723	487	39,944
1911	40	625	11	163	136	2,153	131	10,570	44	3,377	574	47,137
1912	72	1,086	14	197	194	3,042	154	9,095	45	2,847	683	53,385
1913	90	1,355	12	171	272	4,226	172	10,662	44	3,077	811	60,970
1914	90	1,365	12	176	350	5,415	201	13,245	53	3,817	959	70,398
1915	130	1,945	22	311	458	7,049	218	11,562	51	2,690	1,126	79,270
1916	99	1,507	34	507	523	8,049	180	13,951	73	4,829	1,233	88,392
1917	115	1,755	30	425	608	9,379	213	17,378	73	5,381	1,373	100,389
1918	233	3,474	52	766	789	12,087	303	15,545	92	5,768	1,584	110,166
1919	116	1,733	60	865	845	12,955	214	16,057	113	5,763	1,685	120,460
Totals	1,102	16,686	257	3,731	..	..	2,309	160,842	624	40,382	..	..

* Compiled from Annual Reports.　　† Includes pensioners transferred from Police Provident Fund.

TABLE V.

PRESENT ANNUAL PAY AND CONTRIBUTIONS OF OFFICERS NOW IN SERVICE.*

Age attained.			Number.		Present Annual Pay.		Present Annual Contributions.		Age attained.
			Male.	Female.	Male.	Female.	Male.	Female.	
					£	£	£	£	
14	..	..	1	..	65	..	3	..	14
15	..	..	11	1	706	65	35	3	15
16	..	..	112	6	7,877	433	394	22	16
17	..	..	367	53	28,695	4,005	1,435	200	17
18	..	..	485	106	43,154	9,045	2,158	452	18
19	..	..	484	142	50,873	13,101	2,544	655	19
20	..	..	534	171	64,670	17,410	3,233	870	20
21	..	..	476	183	66,073	19,312	3,304	966	21
22	..	..	432	158	65,472	17,867	3,274	893	22
23	..	..	371	139	61,972	15,937	3,099	797	23
24	..	..	320	103	56,516	12,293	2,826	615	24
25	..	..	275	110	53,036	13,413	2,652	671	25
26	..	..	295	91	60,583	11,453 ·	3,029	573	26
27	..	..	296	106	65,016	14,244	3,251	712	27
28	..	..	320	76	74,267	10,597	3,713	530	28
29	..	..	342	62	83,840	8,592	4,192	430	29
30	..	..	329	58	80,475	8,357	4,037	418	30
31	..	..	278	42	69,351	6,474	3,540	324	31
32	..	..	295	40	76,611	6,067	3,900	311	32
33	..	..	333	48	87,917	7,838	4,471	405	33
34	..	..	333	56	87,534	8,877	4,497	462	34
35	..	..	298	51	78,429	8,779	4,066	452	35
36	..	..	274	43	73,522	7,176	3,907	386	36
37	..	..	281	34	74,940	6,165	4,004	334	37
38	..	..	289	43	82,237	7,614	4,426	427	38
39	..	..	303	26	84,015	4,952	4,672	277	39
40	..	..	273	37	78,117	7,066	4,391	406	40
41	..	..	232	33	64,742	5,972	3,641	374	41
42	..	..	256	26	74,087	4,606	4,449	295	42
43	..	..	261	24	80,636	4,261	5,047	272	43
44	..	..	219	35	66,066	5,696	4,156	387	44
45	..	..	207	25	62,472	4,722	4,017	309	45
46	..	..	196	17	56,211	2,885	3,558	203	46
47	..	..	181	21	57,244	3,448	3,943	253	47
48	..	..	179	13	53,446	2,196	3,774	164	48
49	..	..	162	14	51,828	2,790	3,668	204	49
50	..	..	162	16	52,123	3,002	3,761	221	50
51	..	..	166	11	56,094	1,795	4,086	144	51
52	..	..	151	16	51,066	3,082	3,923	255	52
53	..	..	131	14	42,028	2,664	3,373	220	53
54	..	..	124	8	41,708	1,603	3,364	132	54
55	..	..	104	6	36,733	822	2,995	67	55
56	..	..	99	3	35,438	477	2,932	41	56
57	..	..	96	6	33,235	1,073	2,890	94	57
58	..	..	84	6	29,383	926	2,639	88	58
59	..	..	72	8	27,354	1,290	2,430	118	59
60	..	..	80	5	26,886	903	2,442	84	60
61	..	..	85	1	30,827	182	2,802	18	61
62	..	..	70	3	26,496	457	2,480	46	62
63	..	..	66	..	22,695	..	2,171	..	63
64	..	..	48	..	18,134	..	1,797	..	64
65	..	..	39	..	13,138	..	1,302	..	65
66	..	..	17	1	6,842	195	682	20	66
67	..	..	16	..	7,145	..	712	..	67
68	..	..	2	..	485	..	48	..	68
69	..	..	2	..	295	..	29	..	69
71	..	..	2	..	1,240	..	124	..	71
72	..	..	1	..	187	..	19	..	72
73	..	..	2	..	621	..	62	..	73
Totals	..		11,919	2,297	2,782,848	302,179	168,369	16,600	

* Compiled from cards.

TABLE VI.

CLASSIFICATION OF NEW PENSIONS GRANTED DURING THE PERIOD FROM 1ST JANUARY, 1917, TO 31ST DECEMBER, 1919, SHOWING THE AGES AT WHICH THEY WERE GRANTED.*

Age at which Pension granted.	Attainment of Pension Age or Length of Service. (Section 35.)				Retired medically unfit. (Section 36.)				Widows and Children. (Sec. 42, &c.)		Total.				Age at which Pension granted.
	Number.			Amount of Pension.	Number.			Amount of Pension.	Number.	Amount of Pension.	Number.			Amount of Pension.	
	M.	F.	Total.		M.	F.	Total.				M.	F.	Total.		
				£ s. d.				£ s. d.		£				£ s. d.	
80	..	..	..	..	..	..	..	..	1	18	..	1	1	18 0 0	80
75	..	..	..	..	..	..	..	..	3	54	..	3	3	54 0 0	75
74	..	..	..	..	..	..	..	..	1	18	..	1	1	18 0 0	74
73	..	..	..	..	..	..	..	..	3	54	..	3	3	54 0 0	73
72	..	..	..	..	..	..	..	..	1	18	..	1	1	18 0 0	72
71	1	2	3	373 15 0	..	..	..	..	1	18	1	3	4	391 15 0	71
70	1	..	1	271 14 0	..	..	..	..	2	36	1	2	3	307 14 0	70
69	1	..	1	38 0 0	..	..	..	..	4	72	1	4	5	110 0 0	69
68	5	..	5	1,227 18 0	..	..	..	..	2	36	5	2	7	1,263 18 0	68
67	16	..	16	2,208 15 0	..	..	..	..	3	54	16	3	19	2,262 15 0	67
66	16	..	16	2,638 16 0	..	..	..	..	1	18	16	1	17	2,656 16 0	66
65	47	..	47	6,776 15 0	..	..	..	..	3	54	47	3	50	6,830 15 0	65
64	14	..	14	2,275 13 0	..	..	..	..	1	18	14	1	15	2,293 13 0	64
63	5	..	5	1,181 12 0	1	..	1	57 9 0	..	..	6	..	6	1,239 1 0	63
62	10	1	11	2,237 2 0	..	..	..	..	4	72	10	5	15	2,309 2 0	62
61	10	1	11	2,039 4 0	1	..	1	65 15 0	3	54	11	4	15	2,158 19 0	61
60	18	5	23	3,677 4 0	..	..	..	..	4	72	18	9	27	3,749 4 0	60
59	11	2	13	2,729 4 0	3	..	3	335 4 0	2	36	14	4	18	3,100 8 0	59
58	11	..	11	2,562 11 0	..	..	..	..	6	108	11	6	17	2,670 11 0	58
57	10	1	11	2,352 13 0	2	..	2	302 7 0	3	54	12	4	16	2,709 0 0	57
56	12	..	12	2,394 4 0	1	..	1	49 3 0	2	36	13	2	15	2,479 7 0	56
55	6	1	7	1,263 7 0	2	..	2	142 19 0	1	18	8	2	10	1,424 6 0	55
54	3	..	3	637 4 0	1	..	1	77 19 0	1	18	4	1	5	733 3 0	54
53	3	..	3	722 1 0	2	..	2	197 14 0	1	18	5	1	6	937 15 0	53
52	2	..	2	519 16 0	..	..	..	..	2	36	2	2	4	555 16 0	52
51	1	..	1	194 11 0	1	..	1	68 3 0	2	36	2	2	4	298 14 0	51
50	2	..	2	415 4 0	3	..	3	481 3 0	4	72	5	4	9	968 7 0	50
49	..	..	..	..	1	..	1	164 12 0	3	54	1	3	4	218 12 0	49
48	..	..	..	..	1	..	1	103 12 0	4	72	1	4	5	175 12 0	48
47	..	..	..	..	2	..	2	165 2 0	3	54	2	3	5	219 2 0	47
46	..	1	1	63 4 0	2	..	2	215 8 0	3	54	2	4	6	332 12 0	46
45	..	..	..	..	1	..	1	105 9 0	1	18	1	1	2	123 9 0	45
44	..	..	..	..	1	..	1	10 4 0	3	54	1	3	4	64 4 0	44
43	..	..	..	..	3	..	3	216 17 0	5	90	3	5	8	306 17 0	43
42	..	..	..	..	..	..	..	..	6	108	..	6	6	108 0 0	42
41	..	..	..	..	..	1	1	29 4 0	6	108	..	7	7	137 4 0	41
40	..	..	..	..	2	1	3	44 3 0	8	144	2	9	11	188 3 0	40
39	..	..	..	..	..	..	..	..	9	162	..	9	9	162 0 0	39
38	..	..	..	..	..	..	..	..	7	126	..	7	7	126 0 0	38
37	..	..	..	..	..	1	1	52 15 0	5	90	..	6	6	142 15 0	37
36	..	..	..	..	..	..	..	..	4	72	..	4	4	72 0 0	36
35	..	..	..	..	1	..	1	34 10 0	4	72	1	4	5	106 10 0	35
34	..	..	..	..	..	..	..	..	3	54	..	3	3	54 0 0	34
33	..	..	..	..	1	..	1	12 10 0	6	108	1	6	7	120 10 0	33
32	..	..	..	..	1	..	1	63 14 0	3	54	1	3	4	117 14 0	32
31	..	..	..	..	1	..	1	84 4 0	6	108	1	6	7	192 4 0	31
30	..	..	..	..	..	..	..	..	2	36	..	2	2	36 0 0	30
29	..	..	..	..	1	..	1	8 13 0	7	126	1	7	8	134 13 0	29
28	..	..	..	..	1	..	1	38 14 0	4	72	1	4	5	110 14 0	28
27	..	..	..	..	..	..	..	..	5	90	..	5	5	90 0 0	27
26	..	..	..	..	..	..	..	..	3	54	..	3	3	54 0 0	26
25	..	..	..	..	1	..	1	27 13 0	3	54	1	3	4	81 13 0	25
24	..	..	..	..	3	..	3	30 15 0	4	72	3	4	7	102 15 0	24
23	..	..	..	..	2	..	2	22 5 0	5	90	2	5	7	112 5 0	23
22	..	..	..	..	..	..	..	..	1	18	..	1	1	18 0 0	22
21	..	..	..	..	..	1	1	5 19 0	1	18	..	2	2	23 19 0	21
20	..	..	..	..	..	..	..	..	1	18	..	1	1	18 0 0	20
19	..	..	..	..	1	..	1	3 5 0	..	..	1	..	1	3 5 0	19
14	..	..	..	..	..	..	..	..	9	117				117 0 0	14
13	..	..	..	..	..	..	..	..	20	260				260 0 0	13
12	..	..	..	..	..	..	..	..	16	208				208 0 0	12
11	..	..	..	..	..	..	..	..	21	273				273 0 0	11
10	..	..	..	..	..	..	..	..	19	247				247 0 0	10
9	..	..	..	..	..	..	..	..	21	273				273 0 0	9
8	..	..	..	..	..	..	..	..	29	377				377 0 0	8
7	..	..	..	..	..	..	..	..	20	260	}136	142	278	260 0 0	7
6	..	..	..	..	..	..	..	..	20	260				260 0 0	6
5	..	..	..	..	..	..	..	..	14	182				182 0 0	5
4	..	..	..	..	..	..	..	..	22	286				286 0 0	4
3	..	..	..	..	..	..	..	..	19	247				247 0 0	3
2	..	..	..	..	..	..	..	..	15	195				195 0 0	2
1	..	..	..	..	..	..	..	..	22	286				286 0 0	1
0	..	..	..	..	..	..	..	..	11	143				143 0 0	0
Totals	205	14	219	38,800 7 0	43	4	47	3,217 4 0	464	6,962	384	346	730	48,979 11 0	

* Compiled from cards.

TABLE VII.

STATEMENT OF THE STATISTICAL BASIS UPON WHICH THE VALUATION HAS BEEN MADE.

1. The proportions of contributors dying, withdrawing, and retiring at each age were as far as possible got from the experience of the fund itself up to 1913, the death-rates among males embracing also the experience of the Government Railways Salaried Division (1903–12), and the rate of retirement among females the experience of female teachers in the Teachers' Fund. The death-rates of female contributors were adopted from the experience of female teachers in Britain (Mr. George King), after comparison with the somewhat meagre data of the fund itself. Owing to the disturbing influence of the war, little use could be made of the statistics of the fund subsequent to 1913. The resultant Experience Table is appended (Table VIII) ; also the Life and Service Table deduced therefrom (Table IX).

2. A scale of average salaries was constructed from current data of the fund, for the purpose of deducing ratios of increase to be applied to the actual salaries of contributors as at 31st December, 1919.

3. The mortality of pensioners was taken according to the experience of the Public Service, Teachers', and Railways Superannuation Funds combined up to 1919, whilst for the female pensioners the table used on the last occasion was employed—viz., a table constructed with the guidance of the limited experience available, giving rates somewhat below those of the New Zealand population.

4. Widows' and children's benefits were valued on the same basis as before—viz., the statistics of the fund combined with death-rates of widows and children from Dr. Farr's "Healthy English Tables," and rates of remarriage of widows from the statistics of the general population (widows and spinsters).

TABLE VIII.

EXPERIENCE TABLE.

RATES PER CENT. PER ANNUM OF WITHDRAWAL, MORTALITY, AND RETIREMENT.

	Contributing Members : Males.			Contributing Members : Females.			
Age.	Rate of Withdrawal (Public Service Superannuation Fund).	Rate of Mortality (Combined New Zealand Superannuation Funds).	Rate of Retirement (Public Service Superannuation Fund).	Rate of Withdrawal (Public Service Superannuation Fund).	Rate of Mortality (Assumed).	Rate of Retirement (Combined New Zealand Superannuation Funds).	Age.
15	6·50	0·20	..	3·00	0·22	..	15
16	6·40	0·20	..	3·15	0·23	..	16
17	6·28	0·20	..	3·40	0·24	..	17
18	6·16	0·20	..	3·90	0·25	..	18
19	6·03	0·20	..	5·50	0·26	..	19
20	5·90	0·21	..	7·40	0·27	..	20
21	5·75	0·21	..	9·30	0·29	..	21
22	5·61	0·22	..	11·10	0·30	..	22
23	5·46	0·23	0·10	12·80	0·31	..	23
24	5·30	0·24	0·10	13·70	0·31	..	24
25	5·13	0·25	0·10	13·90	0·32	..	25
26	4·95	0·26	0·10	13·90	0·32	..	26
27	4·76	0·27	0·10	13·70	0·32	..	27
28	4·55	0·28	0·10	13·30	0·32	..	28
29	4·30	0·29	0·10	12·80	0·32	..	29
30	4·10	0·30	0·10	12·00	0·32	..	30
31	3·90	0·32	0·12	11·00	0·32	..	31
32	3·73	0·34	0·14	10·00	0·32	..	32
33	3·57	0·36	0·16	9·20	0·32	0·25	33
34	3·43	0·38	0·18	8·60	0·32	0·25	34
35	3·32	0·40	0·20	8·10	0·33	0·25	35
36	3·22	0·42	0·20	7·75	0·33	0·25	36
37	3·12	0·44	0·20	7·40	0·33	0·25	37
38	3·02	0·46	0·21	7·10	0·33	0·30	38
39	2·92	0·49	0·22	6·90	0·34	0·40	39
40	2·82	0·52	0·23	6·70	0·34	0·50	40
41	2·72	0·53	0·24	6·50	0·36	0·60	41
42	2·62	0·54	0·25	6·20	0·38	0·70	42
43	2·52	0·55	0·26	5·90	0·40	0·88	43
44	2·42	0·57	0·27	5·50	0·44	1·08	44
45	2·32	0·59	0·28	5·10	0·48	1·38	45
46	2·22	0·60	0·29	4·55	0·52	1·83	46
47	2·12	0·63	0·30	3·85	0·57	2·58	47
48	2·01	0·67	0·41	..	0·63	3·63	48
49	1·91	0·70	0·53	..	0·69	4·63	49
50	1·81	0·73	0·68	..	0·76	5·90	50
51	1·70	0·78	0·88	..	0·83	7·43	51
52	1·60	0·82	1·12	..	0·90	9·25	52
53	1·50	0·86	1·37	..	0·98	11·88	53
54	1·40	0·92	1·69	..	1·07	14·63	54
55	1·30	0·98	2·07	..	1·15	17·38	55
56	1·20	1·05	2·52	..	1·25	19·88	56
57	1·09	1·15	3·05	..	1·34	21·30	57
58	0·98	1·25	3·74	..	1·45	22·50	58
59	0·88	1·37	4·57	..	1·56	25·00	59
60	0·73	1·52	5·81	..	..	..	60
61	0·52	1·69	7·91	..	..	..	61
62	..	1·88	13·00	..	..	..	62
63	..	2·12	21·20	..	..	..	63
64	..	2·40	29·50	..	..	..	64

TABLE IX.

LIFE AND SERVICE TABLE.

BASED UPON THE RATES PER CENT. PER ANNUM OF WITHDRAWAL, MORTALITY, AND RETIREMENT GIVEN IN TABLE VIII APPLIED TO 100,000 ENTRANTS AT AGE 15.

	Males.					Females.					
Age.	Existing in Service.	With-drawals.	Deaths.	Retire-ments.	Average Salary.*	Existing in Service.	With-drawals.	Deaths.	Retire-ments.	Average Salary.*	Age.
					£					£	
15 ..	100,000	6,500	200	..	65·9	100,000	3,000	219	..	68·9	15
16 ..	93,300	5,971	186	..	71·4	96,781	3,049	222	..	71·7	16
17 ..	87,143	5,473	175	..	80·1	93,510	3,179	224	..	77·1	17
18 ..	81,495	5,020	163	..	91·6	90,107	3,515	225	..	84·3	18
19 ..	76,312	4,602	153	..	105·2	86,367	4,749	224	..	91·5	19
20 ..	71,557	4,222	150	..	119·9	81,394	6,024	220	..	98·9	20
21 ..	67,185	3,864	141	..	135·5	75,150	6,989	217	..	105·2	21
22 ..	63,180	3,545	139	..	150·5	67.944	7,542	204	..	110·9	22
23 ..	59,496	3,248	137	59	165·5	60,198	7,705	186	..	115·4	23
24 ..	56,052	2,970	135	56	179·7	52,307	7,166	163	..	119·5	24
25 ..	52,891	2,714	132	53	193·6	44,978	6,252	142	..	123·7	25
26 ..	49,992	2,475	130	50	206·6	38,584	5,363	122	..	128·0	26
27 ..	47,337	2,253	128	47	219·4	33,099	4,534	105	..	132·2	27
28 ..	44,909	2,044	126	45	230·2	28,460	3,785	91	..	136·6	28
29 ..	42,694	1,835	124	43	239·4	24,584	3,147	79	..	141·7	29
30 ..	40,692	1,668	122	41	245·8	21,358	2,563	68	..	145·7	30
31 ..	38,861	1,516	124	47	251·4	18,727	2,060	60	..	150·4	31
32 ..	37,174	1,387	126	52	256·0	16,607	1,661	53	..	154·5	32
33 ..	35,609	1,272	128	57	260·0	14,893	1,370	48	37	159·4	33
34 ..	34,152	1,171	130	61	263·3	13,438	1,156	43	34	163·7	34
35 ..	32,790	1,089	131	66	266·6	12,205	989	40	30	168·0	35
36 ..	31,504	1,015	132	63	269·8	11,146	864	36	28	171·8	36
37 ..	30,294	945	133	61	273·0	10,218	756	33	26	174·3	37
38 ..	29,155	880	134	61	276·2	9,403	668	31	28	175·7	38
39 ..	28,080	820	138	62	279·5	8,676	598	29	35	176·6	39
40 ..	27,060	763	141	62	283·2	8,014	537	28	40	177·3	40
41 ..	26,094	710	138	63	287·0	7,409	482	26	44	177·6	41
42 ..	25,183	660	136	63	290·7	6,857	425	26	48	177·8	42
43 ..	24,324	613	134	63	294·4	6,358	375	26	56	178·0	43
44 ..	23,514	569	134	63	297·6	5,901	324	26	64	178·1	44
45 ..	22,748	528	134	64	300·6	5,487	280	26	75	178·1	45
46 ..	22,022	489	132	64	304·0	5,106	233	27	93	178·1	46
47 ..	21,337	452	134 .	64	307·5	4,753	183	27	123	178·1	47
48 ..	20,687	416	139	85	311·6	4,420	..	28	160	178·1	48
49 ..	20,047	383	140	106	316·8	4,232	..	29	196	178·1	49
50 ..	19,418	351	142	132	322·0	4,007	..	30	237	178·1	50
51 ..	18,793	320	147	165	327·0	3,740	..	31	278	178·1	51
52 ..	18,161	290	149	203	332·0	3,431	..	31	317	178·1	52
53 ..	17,519	263	151	240	337·0	3,083	..	30	367	178·1	53
54 ..	16,865	236	155	285	341·4	2,686	..	28	393	178·1	54
55 ..	16,189	210	159	335	345·5	2,265	..	26	394	178·1	55
56 ..	15,485	186	163	390	349·6	1,845	..	23	367	178·1	56
57 ..	14,746	160	170	450	353·2	1,455	..	19	310	178·1	57
58 ..	13,966	136	175	522	355·4	1,126	..	16	254	178·1	58
59 ..	13,133	116	180	600	357·0	856	..	13	214	178·1	59
60 ..	12,237	90	186	711	358·2	629	..	..	629	178·1	60
61 ..	11,250	58	190	890	359·0	..	..	..	..	..	61
62 ..	10,112	..	190	1,315	359·6	..	..	..	..	..	62
63 ..	8,607	..	182	1,825	360·0	..	..	..	..	..	63
64 ..	6,600	..	158	1,947	360·0	..	..	..	..	..	64
65 ..	4,495	..	..	4,495	360·0	..	..	..	..	..	65

* These salary scales are not in themselves assumed in making the valuation, but rather the ratios of increase derived herefrom are applied to the actual present salary of each contributor.

TABLE X.

SUMMARY OF PUBLIC SERVICE SUPERANNUATION RESULTS.

VALUATION BALANCE-SHEET AS AT 31ST DECEMBER, 1919.

Liabilities.

MALES—

	£	£
Value of 789 pensions for £105,699 19s. 9d. per annum already granted	926,463	
„ 394 pensions for £7,092 per annum granted to widows of contributors or pensioners..	78,002	
„ 451 pensions for £5,863 per annum granted to children of deceased contributors or pensioners	27,331	
„ prospective pensions for back service ..	2,860,043	
„ „ for future service	2,166,240	
„ „ to widows	384,126	
„ „ to children	73,887	
„ return of contributions on death	35,034	
„ „ on withdrawal	518,319	
		7,069,445

FEMALES—

	£	£
Value of 51 pensions for £1,804 12s. 1d. per annum already granted	20,314	
„ prospective pensions for back service ..	158,677	
„ „ for future service	162,388	
„ return of contributions on death or withdrawal	76,157	
		417,536
		£7,486,981

Assets.

	£
Accumulated funds	1,288,198
Value of future contributions from males	1,934,577
„ „ from females	121,217
„ subsidy of £86,000 per annum	2,150,000
„ future increases in subsidy to be provided	1,992,989
	£7,486,981

TABLE XI.

STATEMENT SHOWING SUBSIDIES PAID AS COMPARED WITH SUBSIDIES REQUIRED UNDER THE SYSTEM INDICATED IN THE ACT.

Year.	Subsidy required.	Subsidy paid.	Shortage.	Shortage accumulated at 4 per Cent. to 1922.
	£	£	£	£
1908	(Say) 20,000	20,000	..	..
1909	(Say) 20,000	20,000	..	..
1910	(Say) 22,500	22,500	..	..
1911	48,000	23,000	25,000	38,483
1912	48,000	23,000	25,000	37,003
1913	48,000	48,000	..	..
1914	66,000	48,000	18,000	24,633
1915	66,000	48,000	18,000	23,686
1916	66,000	48,000	18,000	22,775
1917	86,000	48,000	38,000	46,231
1918	86,000	48,000	38,000	44,453
1919	86,000	86,000	..	..
Totals	662,500	482,500	180,000	237,264