1903.

NEW ZEALAND.

EDUCATION:

TEACHERS' SUPERANNUATION:

REPORTS OF THE ACTING-ACTUARY OF THE GOVERNMENT INSURANCE DEPARTMENT ON THE PROPOSED TEACHERS' SUPERANNUATION SCHEME.

Laid on the Table by leave of the House.

The GOVERNMENT INSURANCE COMMISSIONER to the Right Hon. the MINISTER OF EDUCATION.

Government Insurance Department, Wellington, 1st August, 1903.
IN accordance with your instructions the Acting-Actuary of this Department, Mr. Muter, has investigated the contributions and benefits contained in the Teachers' Superannuation Bill, and I beg to hand you herewith his report regarding the matter.

J. H. RICHARDSON,
The Right Hon. the Prime Minister.   Government Insurance Commissioner.

[Enclosure.]
Government Life Insurance Department, Wellington, 31st July, 1903.
(Memorandum No. 1 by the Acting-Actuary, Government Insurance Department, regarding the Teachers' Superannuation Scheme.)
I HAVE valued the proposed contributions and benefits set out in the Teachers' Superannuation Bill, and in doing so have necessarily adopted the particulars supplied by the Education Department as to the ages, length of service, &c., of the male teachers. In regard to females I require some further information before I can report on the cost of the scheme as applied to them ; this information is now being prepared by the Education Department. From the above it will be understood that the remarks which follow apply exclusively to male teachers.

CONTRIBUTIONS.

The contributions provided by the Bill are as follows :—

For ages 30 and under	...	...	...	...	5 per cent. of salary.		
„ over 30 but not exceeding 35	...	...	6	„	„
„ „ 35	„	40	...	...	6½	„	„
„ „ 40	„	45	...	...	8	„	„
„ „ 45	„	50	..	...	9	„	„
„ „ 50	...	...	...	...	10	„	„

Male members who have contributed during a period of thirty-five years are entitled to all the benefits of the fund without further contribution.

BENEFITS.

Male members have the right to retire on a pension after thirty-five years' service, or on attaining age 60, or at any age if medically unfit for further duty.

The pensions for each year's service are to be one eightieth part of the average annual rate of salary received during the ten years preceding retirement, but are not to exceed one-half of such average annual rate of salary.

In addition to the pensions on retirement, there are allowances of £25 per annum to widows during widowhood and 6s. per week for the first child, 5s. per week for the second, 4s. for the third, 3s. for the fourth, and 2s. per week for each child in excess of the fourth. The allowances for children are to be made until such children attain the age of sixteen years. Allowances to widows and children are payable whether the contributor dies in the service or whether he has retired on a pension.

Five years' contributions (or the value of five years' contributions) have to be paid before pensions are allowed. The contributions are returned in full, without interest, on the resignation of a member before he becomes entitled to a retiring-allowance, or on dismissal, or if the contributor dies in the service without leaving a wife or children, or if on retirement he elects to receive a return of his contributions in lieu of a pension.

The Government is to make up the deficiency when the expenditure exceeds the receipts, and in the event of any alteration in the scheme a contributor has the right to have his contributions returned with 3 per cent. interest.

As compared with the scheme provided by "The Police Provident Fund Act, 1899," the principal differences are as follows : Members of the Police Force have to serve fifteen years before being entitled to a pension, even while medically unfit, while a teacher by paying a certain sum (probably about five years' contributions) can in such circumstances secure the right to a pension for himself or for his widow and children at any time. Pensions to the widows and children of members of the Police Force are less, and are only paid when such members die from injuries received in the execution of their duty, while in the case of teachers pensions are secured to all widows and children. The provisions also regarding the return of contributions are more liberal in this scheme.

On the other hand the pensions are less, being one eightieth instead of one sixtieth for each year of service, with a maximum of one-half of salary instead of three fifths. The larger number of members renders this scheme more costly than that in force among the Police.

If the scheme is to be independent of Government aid the contributions for entrants (no proportion of pension being allowed for back service) should be as follows :—

Age next Birthday on joining the Scheme.	Assumed Salary on joining.	Contributions required to purchase the Benefits (per Cent. of Salary).	Contributions provided for in the Bill.	Capital Value of the Deficiency.
	£	£ s. d.	£ s. d.	£
20	80	8 7 0	5 0 0	83
25	120	8 11 0	5 0 0	105
30	150	9 0 0	5 0 0	120
35	180	.9 15 0	6 0 0	110
40	200	10 14 0	6 10 0	117
45	200	12 5 0	8 0 0	101
50	200	14 7 0	9 0 0	101

The deficiencies at ages 20, 30, 40, and 50 are made up as follows :—

—	Age 20.	Age 30.	Age 40.	Age 50.
	£	£	£	£
Present value of benefits to children	22	29	25	17
Present value of benefits to widows	69	86	91	92
Present value of pensions	115	155	182	162
	206	270	298	271
Present value of contributions...	123	150	181	170
Deficiencies...	83	120	117	101

The number of male teachers, according to the data supplied, is 1,251, of whom fifty-six are aged 60 and over, and sixteen are under age 60 but have served for thirty-five years, making a total of seventy-two male teachers entitled to retire at once under the scheme on pensions amounting in the aggregate to about £6,600 per annum.

The sum required to be paid at once on behalf of these 1,251 members (in addition to the contributions provided for in the Bill) to render the scheme independent of further Government aid would be about £297,000. This sum, if not paid, would accumulate at compound interest, and every teacher hereafter appointed would add from about £80 to £120 to the deficiency.

In making these calculations, I have assumed that 3½ per cent. compound interest will be earned on the funds in hand, which is a high rate to assume for a scheme of deferred annuities extending far into the future, and nothing has been added for expenses or other contingencies. In a practical scheme some further addition would have to be made to the contributions on this account.

To provide pensions for the older teachers without Government aid is quite impossible, and in regard to new entrants the rate proposed—viz., 5 per cent.—is hardly sufficient to provide a pension to the teacher himself, without the return of contributions or the benefits to widows and children.

I would direct attention to the fact that the Government of New South Wales has abandoned its pension scheme, and the Civil servants of that State are now compelled to insure their lives on joining the service. The Federal Government has also followed this course.

The history of the New South Wales pension scheme is instructive. The contributions, I believe, were calculated by an actuary, but the Government appear to have subsequently extended the benefits without a corresponding increase in the contributions, and so made the scheme insolvent. (I may say, however, that the cost of the New South Wales scheme per man would be considerably less than that proposed for the teachers.) The scheme came into operation on the 1st January, 1885, and I attach a schedule of the receipts and expenditure from that date until the

30th June, 1901. (See page 5.) The funds increased from year to year until on the 30th June, 1896, they amounted to £518,071. From that date they decreased rapidly, and at the 30th June, 1901, had diminished to £180,128, and at the 31st October, 1902, to £75,612. This amount was expected to be exhausted by the 30th June last, leaving an annual deficiency of about £80,000 a year to be paid by the Government. The number of contributors at last valuation—30th June, 1901—was 2,245, and the number entitled to pensions was 903, making a total of 3,148 persons in the scheme. There were also 5,144 persons who had withdrawn from the scheme under "The Public Service Act, 1895," but were entitled to a return of contributions, with 3 per cent. interest at death or retirement. The capital value of the deficiency at the last valuation was £1,761,075 7s. 10d. The failure was to some extent caused by the Government compulsorily retiring Civil servants, and placing them on the pension-list, but the main cause was insufficiency of contributions.

There is also a large deficiency in the scheme in force in Cape Colony.

I might mention that "The New Zealand Civil Service Insurance Act, 1893," provides for a perfectly solvent scheme of pensions and insurances, and that the teachers in Native schools already purchase their own pensions under this system without cost to the Government.

I hope to receive the information applied for respecting female teachers shortly, and I will then construct the necessary tables and value the proposed contributions and benefits. There is little chance, however, of the scheme being in a more satisfactory condition as regards females than it is in respect to male teachers, but extensive calculations will have to be made before the actual liability can be ascertained.   P. MUTER, F.I.A., Acting-Actuary.

The GOVERNMENT INSURANCE COMMISSIONER to the Right Hon. the MINISTER OF EDUCATION.

Government Life Insurance Office, 8th September, 1903.

REFERRING to the question of the proposed teachers' superannuation scheme, I now beg to hand you herewith the report of the Acting-Actuary with respect to the proposed benefits and contributions in relation to female teachers.   J. H. RICHARDSON,

The Right Hon. the Prime Minister.   Government Insurance Commissioner.

[Enclosure.]

Government Life Insurance Department, 8th September, 1903.

(Memorandum No. 2 by the Acting-Actuary, Government Insurance Department, regarding the Teachers' Superannuation Scheme.)

I HAVE already dealt with the scheme so far as male teachers are concerned in my report of the 31st July last. In that report I pointed out that the proposed contributions were quite insufficient for new entrants, and that, in order to make the scheme solvent for male teachers now in the service, the sum of at least £297,000 would be required. Or, in other words, the present value of the proposed benefits exceeded the present value of the proposed contributions by that amount.

In regard to female teachers, I have to report as follows:—

CONTRIBUTIONS.

The contributions provided by the Bill are—

For ages 30 and under	...	...	...	...	5	per cent. of salary.
" over 30 but not exceeding 35	...	...	...	6	"	"
" " 35 " 40	...	...	6½	"	"
" " 40 " 45	...	...	8	"	"
" " 45 " 50	...	...	9	"	"
" " 50	...	...	...	...	10	"	"

The minimum contribution is not to be less than £4 per annum.

Female members who have contributed during a period of twenty-five years are entitled to all the benefits of the fund without further contribution.

BENEFITS.

Female members have the right to retire on a pension after twenty-four years' service, or on attaining age 50, or at any age if medically unfit for duty.

For each year of service the pensions are to be one sixtieth part of the average annual rate of salary received during the ten years preceding retirement, but not to exceed one-half of such average annual rate of salary.

At least five years' contributions have to be paid (or such sum as seems equitable to the Board) before members are entitled to a pension. The contributions are returned in full without interest on the death or resignation of a member before becoming entitled to a retiring-allowance, or on dismissal, or if on retirement she elects to receive a return of her contributions in lieu of a pension.

The children of male teachers are entitled to pensions of from 6s. to 2s. a week each, according to the number of children; but as to whether these benefits would extend to the children of married female teachers would, of course, be a legal question.

In the case of both male and female teachers, service is to count for the pension whether continuous or not. Service for which a refund of contributions has been made on retirement should, however, I think, be excluded if the teacher again enters the employment of the Department or of the School Boards.

The contributions required to purchase the benefits (without making any charge for any increase in the pension for service prior to the scheme coming into operation) are as follows:—

Age next Birthday on joining the Scheme.	Assumed Salary on joining.	Contributions required to purchase the Benefits (per Cent. of Salary).	Contributions provided for in the Bill.	Capital Value of the Deficiency.
	£	£ s. d.	£ s. d.	£
20	80	12 10 0	5 0 0	20
25	90	15 2 0	5 0 0	27
30	100	17 14 0	5 0 0	52
35	110	19 13 0	6 0 0	81
40	120	21 7 0	6 10 0	104
45	130	22 18 0	8 0 0	82

From the data supplied by the Education Department it appears that in the case of female teachers entering the service under age twenty-one, about 90 per cent. will withdraw before they are entitled to pensions. In the majority of cases the withdrawals are no doubt caused by marriage, and a pension scheme would not cause these females to remain in the service or materially diminish the rate of withdrawal, as would no doubt be the case as regards male teachers. In the above calculations I have given effect to this high rate of withdrawal, but the early age at which they can commence to draw their pensions, and the fact that the contributions are returned if a pension is not received, renders a high rate of contribution necessary, notwithstanding that comparatively few will remain in the service long enough to entitle them to claim a pension. The small present value of the difference between the contributions which should be paid and those proposed is due to this high rate of withdrawal. In actual practice some further addition would have to be made to these contributions to cover the cost of administration and to provide some margin for contingencies.

The return received from the Education Department contains the ages and approximate length of service entitled to count for the proposed pensions of 1,388 female teachers. The amount required to be paid at once on behalf of these teachers, in addition to the contributions provided for in the Bill, would be about £182,000, allowing for the probabilities of death and retirement, and not taking into account any benefits their children might be entitled to under the scheme.

The deficiency in the case of male teachers was £297,000, making a total deficiency of £479,000 at least for teachers now entitled to join the scheme. As the present values of the contributions for new entrants, both male and female, are less than the present values of the proposed benefits, every teacher hereafter appointed will add to this deficiency and increase the amount the Government will ultimately have to contribute to finance the scheme.

P. MUTER, F.I.A., Acting-Actuary.

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RECEIPTS AND EXPENDITURE OF THE NEW SOUTH WALES CIVIL SERVICE SUPERANNUATION FUND.

Year.	Government Grants. £ s. d.	Contributions and other Receipts. £ s. d.	Total Income. £ s. d.	Pensions, Gratuities, &c. £ s. d.	Excess of Income over Expenditure. £ s. d.	Excess of Expenditure over Income. £ s. d.	Funds in Hand at Close of Period. £ s. d.	Year.
1885	23,500 0 0	51,285 18 1	74,785 18 1	4,330 7 5	70,455 10 8		70,455 10 8	1885
1886	23,500 0 0	66,995 10 7	90,495 10 7	11,186 13 7	79,308 17 0		149,764 7 8	1886
1887	39,914 6 7	71,025 4 11	110,939 11 6	29,717 16 3	81,221 15 3		230,986 2 11	1887
1888	26,733 3 10	74,234 15 1	100,967 18 11	38,136 4 2	62,831 14 9		293,817 17 8	1888
1889	51,367 4 8	76,632 1 2	127,999 5 10	59,697 19 3	68,301 6 7		362,119 4 3	1889
1890	18,310 2 3	79,744 1 6	98,054 3 9	61,524 5 9	36,529 18 0		398,649 2 3	1890
1891	19,710 15 8	84,591 15 5	104,302 11 1	69,692 9 8	34,610 1 5		433,259 3 8	1891
1892	17,163 1 6	86,948 14 10	104,111 16 4	72,994 4 8	31,117 11 8		464,376 15 4	1892
1893	7,792 1 10	86,010 3 4	93,802 5 2	79,188 4 10	14,614 0 4		478,990 15 8	1893
1894	16,230 1 8	85,054 17 3	101,284 18 11	85,701 5 11	15,583 13 0		494,574 8 8	1894
1895 (half-year)	15,709 9 2	42,560 6 5	58,269 15 7	42,471 16 7	15,797 18 10		510,372 7 6	1895 (half-year)
1895–96	9,881 12 5	87,573 7 5	97,454 19 0	89,756 9 1	7,698 10 3		518,070 17 9	1895–96
1896–97	3,581 11 0	52,579 5 7	56,160 16 7	124,033 3 2		67,872 6 6	450,198 11 3	1896–97
1897–98	3,500 0 0	43,364 10 4	46,864 10 4	110,151 7 8		63,286 16 10	386,911 14 5	1897–98
1898–99	4,466 18 0	41,775 0 4	46,241 18 4	104,236 10 8		57,994 12 4	328,917 2 1	1898–99
1899–00	3,500 0 0	38,429 7 0	41,929 7 0	117,977 14 7		76,048 7 7	252,868 14 6	1899–00
1900–01	7,399 10 6	33,686 17 10	41,086 8 4	113,827 4 1		72,740 15 9	180,127 18 9	1900–01
Total	292,259 19 1	1,102,491 17 1	1,394,751 16 2	1,214,623 17 5	518,070 17 9	337,942 19 0	...	...