SESSION II.
1921.
NEW ZEALAND.

NATIONAL PROVIDENT FUND.

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

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

BY THE ACTUARY APPOINTED BY HIS EXCELLENCY THE GOVERNOR-GENERAL TO MAKE THE ACTUARIAL EXAMINATION OF THE NATIONAL PROVIDENT FUND FOR THE TRIENNIAL PERIOD ENDED 31ST DECEMBER, 1919.

1. I HAVE the honour to submit the following report on the National Provident Fund as at the 31st December, 1919, as required by section 24 of the National Provident Fund Act, 1910.

2. The National Provident Fund falls to be considered under three headings: first, the main scheme; second, the local-authorities scheme; and third, the approved-friendly-societies scheme.

THE MAIN SCHEME.

3. The principal Act, which came into operation on the 1st March, 1911, is an endeavour to solve two of the pressing problems of the times—namely, (1) the making of provision for old age, and (2) the maintenance of some degree of family comfort (the bare necessities of life at the very least) when sickness or death robs the breadwinner of his earning-powers.

4. To the State old age has always been a problem, and old-age pensions have become an important item in the Budgets of almost all civilized countries. Humanitarian as is the idea in the case of unfortunates, it is very poor economics to burden posterity with the cost of providing pensions for the thriftless section of the present generation, and the State should encourage (one feels almost tempted to say "compel") its citizens to provide their own pensions.

5. Premature death or even lengthy sickness of the wage-earner, with the accompanying family hardships, presents a problem even more important than old age, because the provision that could have been made even by the most thrifty is very small. The State, in subsidizing any sound insurance scheme to aid a widow to support and train children too young to fend for themselves, is making a wise investment.

6. The broad principle underlying the National Provident Fund Act of 1910 is that the State undertakes the cost of providing family allowances (proportionate to the size of the family) in the event of the death or prolonged sickness of the father, conditional on the latter contributing sufficient to provide a pension for himself at age 60.

7. The benefits provided by the principal Act and the requisite contributions are fully set out in the Appendix, Table I. The table of contributions shows that very low rates are charged, particularly as a feature of the scheme is that under no circumstances is a member to receive from the Fund less than he has paid in. The member has the option to withdraw the whole of his contributions (less benefits) on giving twelve months' notice, and if, after his death, the allowances that are, or have been previously, paid to his family fall short of his total contributions the balance is handed over to his representatives.

8. The Government subsidy amounts to one-fourth of the contributions received in the previous year—that is to say, the contributor pays 80 per cent. and the State 20 per cent. of the total cost of the various benefits.

LOCAL-AUTHORITIES SCHEME.

9. The amending Act of 1914, No. 1, considerably widened the scope of the principal Act by granting the National Provident Fund Board power to establish pension schemes for the employees of local authorities. A large number of these schemes have been inaugurated, and come up now for the first time for valuation.

10. The purpose is to grant the employees of these bodies a superannuation scheme that will enable them to maintain on retirement a degree of comfort commensurate with that enjoyed during the later years of service, and to secure, in the event of death, an annuity to the widow and allowances to each of the children under age 14.

11. The main benefit is a pension based on "final" salary and the number of years' service. This and subsidiary benefits are specifically set out in Table II of the Appendix.

12. Membership in the fund is optional in respect of the existing staff, but compulsory for all new entrants.

13. The cost of the scheme is borne jointly by the employee, the local authority (employer), and the State. The State bears 20 per cent. of the total cost, the employee contributes a percentage of his salary (the amount of such percentage varying with the age at joining the fund), and the local authority makes up the balance. The ratio of the contribution cost to the employer and employee depends on the incidence of the ages at entry into the fund, and consequently may show fluctuation not only between one local authority and another, but also in the same local authority at various stages of its existence. At the valuation date the proportion of the total cost of the benefits borne by the local authorities and their employees was approximately 50 per cent. and 30 per cent. respectively.

14. The scheme is unique in many respects, but two features are specially important, namely,—

(1.) *The Actuarial Basis of the Scheme.*—In calculating contributions for final-salary pension schemes, a salary percentage (varying with the entry age) is usually fixed, based on an estimated average-salary scale at each age. The difficulty of this problem may be gauged by considering what economic changes may take place—and their effect on salaries—during the thirty or forty years before the bulk of the pensions fall in for payment. Even assuming that an average-salary scale could be forecasted in every detail, and that a salary percentage contribution could be fixed to secure that the pension fund should always have a ratio of solvency of exactly 20s. in the pound, there still exists the lack of a definite relation between the benefits and contributions of the individual, and this constitutes the chief defect of most final-salary pension schemes. The local-authorities scheme overcomes this defect by providing that each contributor, with the assistance of the State and his employer, pays in on the average for the benefits that he will receive without any addition to or diminution of the burden of any other contributor. This was effected by basing the contribution for pension on present salary and prospective service to the normal pension age (or prior breakdown) and dealing as they emerge with the additional pensions due to subsequent salary-increases. This method of dealing with actual instead of speculative salary-increases involves a series of adjustments at fairly regular intervals, but the additional labour is more than compensated by the increased stability. In effect it may be said that the sound actuarial framework of the scheme eliminates uncertainty as far as is possible in the light of our present knowledge.

(2.) *The Period over which the Contributions are spread.*—In view of the intention to include in the scheme all employees irrespective of their attained age and to allow back service to count, it was decided that to make contributions cease at retirement would throw too heavy an initial strain on the State and the local authority in respect of old employees. The liability of the State and the local authority was accordingly spread over the lifetime of the employee, the latter's contribution terminating at retirement. I am of the opinion that it would have been preferable to have limited the principle of extending the period for extinguishing the contribution liability to the cases of existing employees over a certain age (say 50), although it must be admitted that, in view of the assured continuity of the local authorities, and the State's guarantee, the fund itself is safeguarded. From an actuarial standpoint the principle has an element of safety by reason of the fact that any improvement in the mortality experienced by pensioners will throw a strain on the fund only in respect of the excess of the pension over the life contribution. In the case of the present contributors over the normal pension age there is obviously no actuarial risk whatever in respect of pensions.

Approved-friendly-societies Scheme.

15. The scope of the main Act was still further extended by the Finance Act, 1916 (Part IX, Social Insurance) which allowed approved friendly societies to become contributors to the fund on behalf of any of their members, to secure for them, on attainment of age 60, a weekly pension of 10s., 20s., 30s., or 40s. on special terms.

16. The tables of contributions are set out in Table I of the Appendix. The low contributions charged to members are due to—(1) The payment into the fund by the friendly society of a sum equivalent to its release from specified sickness benefits after members' attainment of age 60; (2) the increase of the State subsidy under this section to 50 per cent. of the contributions.

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17. In addition to the aforementioned subsidy to each section of contributors, the State bears the whole expenses of administration, provides by an annual parliamentary grant a maternity benefit of £6 on the birth of a contributor's child or children (conditional on the parents' joint annual income not exceeding £300), and guarantees the scheme by agreeing to pay into the fund such further amounts as are deemed necessary in accordance with the Actuary's report.

18. The following statement shows the progress of the fund at the end of each triennium since its inception:—

Year.	Members.	Annual Contribution at 31st December.*	Total Accumulated Fund.
		£	£
1913	5,791	22,719	29,327
1916	9,847	38,624	122,361
1919	16,155	91,374	338,729

* Exclusive of annual premiums commuted by single payment.

At the 31st December, 1919, 14,058 males and 2,097 females were contributing, representing an increase of about 55 per cent. and 180 per cent. respectively in the number of male and female contributors on the books at the beginning of the triennium.

19. The income and outgo during the three years were as follows:—

CONSOLIDATED REVENUE ACCOUNT OF THE NATIONAL PROVIDENT FUND FROM 1ST JANUARY, 1917, TO 31ST DECEMBER, 1919.

Income.	£ s. d.	*Outgo.*	£ s. d.
Amount of fund, 1st January, 1917 ..	122,361 8 7	Maternity allowances	48,762 2 0
Contributions	172,925 17 2	Retirement (sec. 12)	1,162 16 11
State subsidy	43,351 8 9	Death (sec. 14)	2,778 17 6
Interest	26,215 14 11	Incapacity (sec. 16)	488 14 6
Fines	1,036 18 9	Refund of contributions—	
Refund by State of maternity allowances	48,762 2 0	Withdrawals and lapses	21,079 5 7
Benefits refunded on exit	1,578 10 0	Death	6,298 12 6
Refunds unclaimed	3,062 4 11	Amount of fund, 31st December, 1919 ..	338,729 1 2
Miscellaneous receipts	3 13 9		
Contributions overpaid	1 11 4		
	£419,299 10 2		£419,299 10 2

20. The triennium under review marked the first outgo of the fund for pensions and allowances, and Table III of the Appendix shows the number and amount of them at the valuation date. The pensions are, and will continue to be for many years, small in comparison with the income. It is essential that in the early years of a pension scheme there shall be a rapid increase in the funds. The purpose of actuarial valuation is to determine whether the accumulated fund, together with future contributions and interest-earnings, is sufficient to meet as they arise the various claims of existing members. In this connection the rate of interest at which the funds are improved is a vital factor. The effective rate of interest (exclusive of fines) earned on the funds during each year of the triennium was as follows: 1917, £4 3s. 7d. per cent.; 1918, £4 4s. 2d. per cent.; 1919, £4 5s. 8d. per cent.* In view of the high interest-rates ruling during the period these results cannot be regarded as satisfactory. The Act vests the fund with the Public Trustee, "who shall invest all moneys belonging thereto." A perusal of the annual reports of the Public Trust Office for the years approximating to the period under review discloses that about 20 per cent. of the interest earned by the National Provident Fund for these years went to increase the profits of the Public Trust Office. I cannot stress too strongly the necessity for the fund to obtain the highest possible rate of interest consistent with safety.

THE VALUATION.

21. Before dealing with the results of the investigation I purpose to briefly explain the valuation bases and how they were arrived at.

The Main Fund.

22. Past valuations of this fund had, through paucity of data and other unavoidable causes, to be made on hypothetical bases. These were on sound lines, but I decided to make a thorough investigation of the fund since its inception and to use the statistics furnished by its working experience (supplemented where necessary by the experience of longer-established schemes of a similar nature) as a guide to the rate of interest, mortality, discontinuance, marriage, issue, and invalidity likely to prevail in the future.

23. Interest was taken at 4 per cent., as the fund is State-guaranteed.

24. The mortality experience was extremely heavy. The abrupt rise of the curve to age 21 (where the rate was about seven times the normal), and the regular decline from this on to 45 (at which age it approximates to the mortality experienced by the New Zealand population), was so unmistakably due to the war that the results had to be discarded. The rates adopted were those used in previous valuations, and lie between those of the New Zealand population, 1906–10, and the New Zealand Civil Service Superannuation Fund junctioned with Farr's Healthy English rates from age 73 on.

25. The discontinuance experience was investigated separately for members lapsing (being eighteen months in arrears with contributions) and members withdrawing (giving twelve months' notice). The lapse-rate was found to be a select function, and in general dependent more on the duration of membership than on the age attained. In view of the short time the fund has been in existence and the preponderance of entrants at the younger ages (73 per cent. of members enter at or under age 25) it was therefore evident that the aggregate rates experienced by the older members was hardly likely to be a true reflex of the future. To give effect to a withdrawal-rate involving the duration of membership by constructing select tables would have involved in the valuation (sufficiently complex and onerous without this refinement) an amount of labour almost prohibitive. It was considered that ultimate rates (omitting the experience of the first three years), suitably modified at the younger ages, would give a better indication of the rates likely to prevail in the future, and produce valuation results sufficiently accurate and financially on the safe side.

The withdrawal-rate (omitting the experience from age 16 to 22, where there was the expected sharp decline) was virtually constant—that is to say, independent of both age and duration of membership. The explanation of this is probably to be found in the fact that the member can, on giving twelve months' notice, withdraw the whole of his money, and this is the only deterrent influence against sacrificing his provision for the future to the needs or desires of the present.

26. The records do not show the conjugal condition of members at the valuation date, and the probability of being married at each age had to be deduced from an investigation of the particulars given at the date of joining the fund. This possibly tends to slightly overstate the rates from age 35 onwards, an error of no great importance and on the safe side financially. The probabilities of being married used in the valuation were approximately 12½ per cent. above those of the New Zealand population, 1911.

27. It was impossible to make a satisfactory investigation of the issue rates in view of the fact that the maternity claims notified do not represent the total births on account of the income limitation. Statistics regarding children left at the death of the father were taken from the New Zealand vital statistics, 1908–12.

* As a matter of technical explanation it may be mentioned that although the annual Government subsidy is included in the accounts of the year to which it relates, it does not fall due until April of the following year, and accordingly in computing these rates the usual method of ascertaining the mean fund for the year had to be suitably modified.

28. The invalidity benefits, which do not vest until the completion of five years' membership, were not sufficiently numerous to provide a reliable basis for the future, and the expected rates of invalidity used in the valuation were those exhibited by the New Zealand friendly societies.

The Approved-friendly-societies and Local-authorities Schemes.

29. I did not consider it advisable to make any use of the scanty data available in connection with the approved-friendly-societies and local-authorities schemes, particularly in view of the short time they have been in force.

30. The approved-friendly-societies scheme was valued on the same assumptions as the main scheme.

31. The local-authorities scheme was valued on a hypothetical basis. It is impossible to give in detail the whole of the processes followed, on account of the number of variations in the schemes, one departing sufficiently from the standard to require the preparation of a separate life and service table. The fundamental principle was the construction of a service table from the safest decremental rates of any of the New Zealand superannuation schemes. For example, the rates of mortality and discontinuance followed the First Division of the New Zealand Railways, the rates of retirement were a blend of the Railways' and Teachers' rates, while the values of the widows' and orphans' benefits were based on the Civil Service Superannuation Fund. Until the fund can be valued on its own experience, it was considered advisable to adopt a method which would secure a greater number of survivors than any other New Zealand fund, so that the valuation would be as stringent as possible with the data at present available.

32. The elementary probabilities of death, withdrawal, and retirement used for the standard local-authorities scheme will be found in Table V of the Appendix.

33. The valuation assumes that the interest earned will not be less than 4 per cent.

34. The ages of the contributors at the date of valuation, together with their contributions and other particulars, are shown in Table IV of the Appendix.

35. Section 24 (2) of the Act requires the Actuary's report to show "*the state of the fund at the close of the period, having regard to the prospective liabilities and assets.*" Technically these liabilities and assets should each include the present value of future maternity benefits, but as these are annually voted by Parliament and no amount of variation can affect the stability of the fund, I have omitted them. The valuation balance-sheet is given in detail in Table VI of the Appendix, a summary being as follows:—

Valuation Balance-sheet of the National Provident Fund as at 31st December, 1919.

Liabilities.	£	*Assets.*	£
Value of liability for—		Amount of the fund at 31st December, 1919	338,729
Pensions	1,078,550	Value of future contributions	1,013,439
Orphans' benefits	132,280	Value of future State subsidies of one-fourth (assumed to be received a year later than above)	248,389
Widows' benefits	108,523	Balance (deficiency)	5,934
Incapacity allowances	41,403		
Return of contributions on death ..	59,123		
Return of contributions on withdrawal ..	172,287		
Sundry benefits	14,325		
	£1,606,491		£1,606,491

From this it will be seen that the fund has a ratio of solvency of 19s 11d. in the pound. There has been no retrogression in the fund since the last valuation, the deficiency being due solely to a more stringent valuation basis, provision having been made, *inter alia*, for a separate fund containing the deductions made from the refund to discontinuants in respect of maternity benefits.

36. Section 24 (2) further requires the report to 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 contributor's contributions.*" I have taken this to mean that the Actuary is to report what proportion of the estimated claims during the triennium succeeding the valuation are unprovided-for by the contributions; in other words, he is to state the further subsidies per annum necessary during the period specified, beyond the statutory one-fourth subsidy, to meet the current charges on the fund, and section 25 (2) of the Act makes "such further amounts (if any)" an additional charge on the State.

37. I have to report, under the provisions of these sections, that beyond the present annual subsidy, no "such further amounts" require to be paid during the three years following the date of this valuation.

General Remarks.

38. I have endeavoured to make the valuation as searching as possible, and have made provision for a mortality-rate among pensioners lighter than that shown by the latest available statistics of New Zealand superannuation funds, but probably not more stringent than present indications justify. A study of the tables of mortality compiled at successive censuses here and elsewhere reveals a steady and persistent drop in the death-rate, and it is to be expected that as the result of medical and sociological research longevity will continue to increase. It is only possible to estimate the extent of such improvement, and it will be necessary, unless the State is to contribute more than was originally intended, to take immediate steps to counteract this almost certain future strain on the fund. The most important of these steps is to secure an improved yield on the invested funds. Subject to the maintenance of an adequate margin between the experience and valuation rates of interest, the National Provident Fund, with good management, should at no time fear any actuarial test.

C. Gostelow, A.I.A. (London), Actuary.

6th October, 1921.

APPENDIX.

TABLE I.

THE MAIN-FUND AND APPROVED-FRIENDLY-SOCIETIES SECTIONS.

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 fifty years of age ; and

(*d*.) Whose average income during three years prior to joining has not exceeded £300 a year.

Benefits.

The following benefits are payable :—

(1.) After contributing for twelve months or for such period as the Board determines, a payment of £6 on the birth of a contributor's child or children, provided the parents' joint annual income does not exceed £300.

*(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.

* These benefits (2 and 3) apply only to the main-fund section.

Contributions.

Age last Birthday of Contributor when first Contribution is made.	Main-fund Section. Weekly Contribution required to secure *each* Pension of 10s. a Week at Age 60. (i.)	Approved-friendly-societies Section. Weekly Contribution required to secure *a* Pension of 10s. a Week at Age 60.† (ii.)	Approved-friendly-societies Section. Weekly Contribution required to secure *each additional* Pension of 10s. a Week at Age 60. (iii.)
	s. d.	s. d.	s. d.
16	0 9	0 4	0 6
17	0 10	0 5	0 7
18	0 10	0 5	0 7
19	0 11	0 5	0 8
20	1 0	0 6	0 8
21	1 0	0 6	0 8
22	1 1	0 7	0 9
23	1 2	0 7	0 9
24	1 3	0 7	0 10
25	1 4	0 8	0 11
26	1 5	0 8	1 0
27	1 6	0 9	1 1
28	1 7	0 10	1 2
29	1 8	0 10	1 2
30	1 9	0 11	1 3
31	1 10	0 11	1 3
32	2 0	1 0	1 4
33	2 2	1 1	1 6
34	2 3	1 2	1 7

Age last Birthday of Contributor when first Contribution is made.	Main-fund Section. Weekly Contribution required to secure *each* Pension of 10s. a Week at Age 60. (i.)	Approved-friendly-societies Section. Weekly Contribution required to secure *a* Pension of 10s. a Week at Age 60.† (ii.)	Approved-friendly-societies Section. Weekly Contribution required to secure *each additional* Pension of 10s. a Week at Age 60. (iii.)
	s. d.	s. d.	s. d.
35	2 5	1 3	1 9
36	2 7	1 4	1 10
37	2 10	1 5	1 11
38	3 0	1 6	2 1
39	3 3	1 7	2 3
40	3 6	1 9	2 5
41	3 10	1 11	2 8
42	4 2	2 1	2 10
43	4 6	2 3	3 1
44	4 11	2 6	3 5
45	5 7	2 11	3 9
46	6 6	3 3	4 2
47	7 5	3 9	4 8
48	8 4	4 3	5 4
49	9 4	4 10	6 2

† Note.—In respect of each member contributing at these rates (column ii) the friendly society to which he belongs has the option of supplementing the said contribution by the difference between the rates shown in columns (ii) and (iii), or of making to the fund on the member's attainment of age 60 the following single payment, viz. : £55 12s. in respect of members joining the fund at ages under 50 ; £45 in respect of members joining the fund at ages 50 or over.

TABLE II.

LOCAL-AUTHORITIES SECTION.

Standard Benefits and Contributions.

Benefits.

I. *On attainment of normal pension age—viz., (1) males at age 65, females at age 60 ; or (2) after forty years' service and fifteen year's membership in the fund—*

(*a*.) A pension of one-sixtieth of final‡ salary for each year's service, and a proportionate part of one-sixtieth of such salary for every fraction of a year of service, with a limit of forty-sixtieths (two-thirds) of salary, but in no case to exceed £300 per annum ;

(*b*.) Or the option in lieu thereof of a return of total contributions (less benefits).

‡ Final salary is subject to the limitation that no salary increases during the three years prior to retirement shall count.

II. *On retirement before normal pension age (on the grounds of being medically unfit for future duty)*—

At any time (not being earlier than one year after the inauguration of the scheme) on the production of satisfactory medical evidence to the Board, a pension calculated in the same manner and with the same limitations as in I (above), or the option in lieu thereof of a return of total contributions (less benefits).

III. *On voluntary retirement or dismissal*—

A return of total contributions (less any benefits received).

IV. *At death, whether before or after becoming entitled to a retiring-allowance,*—

(*a*.) Leaving no widow or children: A return of the total contributions paid to the fund on the contributor's behalf, less any moneys received by the contributor out of the fund during his lifetime.

(*b*.) Leaving a widow: An allowance of £18 per annum during widowhood, or in lieu thereof a return of contributions as in (*a*) above.

(*c*.) Leaving children: An allowance of 5s. per week on account of each child so long as that child is under the age of fourteen years: Provided that in any case where the contributor leaves children but no widow, if when the youngest child attains the age of fourteen years the aggregate payments made to the children are not equal to the contributions paid to the fund on the contributor's behalf (less any moneys received by him out of the fund in his lifetime) the difference between these two amounts shall be equally divided between the children.

V. A maternity allowance of £6 on the birth of an employee's child or children (provided the parents' joint income for the twelve months preceding the birth does not exceed £300).

Contributions.

The contributions for the various benefits are based upon the present salary and prospective total service, and adjustments made for each salary-increase. The local authority pays in respect of each employee what is not covered by the State subsidy, and the following percentage of salary contributed by the employee:—

Age at Time of joining the Fund.	Per Cent.
30 and under	4
Over 30 and not exceeding 35	5
,, 35 ,, 40	6
,, 40 ,, 45	7
,, 45 ,, 50	8
,, 50	9

TABLE III.

MAIN FUND.

STATEMENT OF RETIRING AND OTHER ALLOWANCES FOR THE TRIENNIUM ENDED 31ST DECEMBER, 1919.

—	On Death.			On Incapacity.			On Attainment of Age 60.			Total Retiring and Other Allowances.		
	Number.		Annual Amount.	Number.		Annual Amount.	Number.		Annual Amount.	Number.		Annual Amount.
	M.	F.	£ s. d.	M.	F.	£ s. d.	M.	F.	£ s. d.	M.	F.	£ s. d.
Allowances existing 1/1/1917	..	..	..	..	..	..	..	..	..	..	..	..
Granted during triennium ..	28	..	1,872 0 0	11	..	604 10 0	..	..	..	39	..	2,476 10 0
Total	28	..	1,872 0 0	11	..	604 10 0	..	..	..	39	..	2,476 10 0
Discontinued during triennium (as per statement below)	..	..	19 10 0	8	..	390 0 0	..	..	..	8	..	409 10 0
Existing at 31/12/1919 ..	28	..	1,852 10 0	3	..	214 10 0	..	..	..	31	..	2,067 0 0

Particulars of Retiring and Other Allowances discontinued during the Triennium.

Discontinued by death ..	..	..	19 10 0	2	..	97 10 0	..	..	..	2	..	117 0 0
Expiry	..	..	..	6	..	292 10 0	..	..	..	6	..	292 10 0
Total	..	..	19 10 0	8	..	390 0 0	..	..	..	8	..	409 10 0

LOCAL-AUTHORITIES SECTION.

STATEMENT OF RETIRING AND OTHER ALLOWANCES FOR THE TRIENNIUM ENDED 31ST DECEMBER, 1919.

—	On Death.			On Medical Unfitness.			On Attainment of Retiring-age.			Total Retiring and Other Allowances.		
	Number.		Annual Amount.	Number.		Annual Amount.	Number.		Annual Amount.	Number.		Annual Amount.
	M.	F.	£ s. d.	M.	F.	£ s. d.	M.	F.	£ s. d.	M.	F.	£ s. d.
Allowances existing 1/1/1917	..	..	..	..	..	..	..	..	..	..	..	..
Granted during triennium ..	15	..	660 0 0	3	..	231 12 0	11	..	939 6 0	29	..	1,830 18 0
Total	15	..	660 0 0	3	..	231 12 0	11	..	939 6 0	29	..	1,830 18 0
Discontinued during triennium (as per statement below)	..	..	26 0 0	..	..	..	..	..	..	..	..	26 0 0
Existing at 31/12/1919 ..	15	..	634 0 0	3	..	231 12 0	11	..	939 6 0	29	..	1,804 18 0

Particulars of Retiring and Other Allowances discontinued during the Triennium.

	M.	F.	£ s. d.	M.	F.	£ s. d.	M.	F.	£ s. d.	M.	F.	£ s. d.
Discontinued by death ..	..	..	..	..	..	..	..	..	..	..	..	..
Expiry	..	..	26 0 0	..	..	..	..	..	..	..	..	26 0 0
Total	..	..	26 0 0	..	..	..	..	..	..	..	..	26 0 0

Progress of Retiring and other Allowances since the Establishment of the Fund to 31st December, 1919.

	M.	F.	£ s. d.	M.	F.	£ s. d.	M.	F.	£ s. d.	M.	F.	£ s. d.
Total granted	43	..	2,532 0 0	14	..	836 2 0	11	..	939 6 0	68	..	4,307 8 0
Total discontinued.. ..	..	..	45 10 0	8	..	390 0 0	..	..	..	8	..	435 10 0
Total existing at 31/12/1919	43	..	2,486 10 0	6	..	446 2 0	11	..	939 6 0	60	..	3,871 18 0

TABLE IV.

PARTICULARS OF MEMBERSHIP (PENSIONERS EXCLUDED).

Attained Age at Valuation Date.	Main and Approved-friendly-societies Schemes. Number of Members.	Number of 10s. Pensions.	Weekly Contribution payable.	Local-authorities-superannuation Scheme. Number of Members.	Present Salaries.	Prospective Normal Pensions in respect of Present Salaries.	Annual Contribution payable.
			£ s. d.		£	£	£
14	..	..	..	2	98	65	4
15	..	..	..	1	52	35	2
16	75	79	2 19 3	7	316	211	16
17	453	488	18 10 7	9	611	407	30
18	796	878	34 18 9	9	739	492	36
19	1,012	1,171	47 15 2	11	1,223	804	57
20	1,132	1,321	56 9 3	13	1,433	952	72
21	1,071	1,239	55 6 10	11	1,307	869	68
22	979	1,149	52 15 0	10	1,435	948	77
23	862	994	47 0 1	13	1,872	1,235	104
24	852	1,026	50 18 11	10	1,561	1,026	86
25	804	986	51 7 1	15	2,559	1,670	148
26	739	903	49 8 3	11	1,756	1,131	110
27	750	918	52 19 1	15	2,646	1,732	166
28	605	726	43 8 1	23	3,622	2,264	251
29	641	755	47 10 7	17	3,291	2,082	226
30	530	621	41 10 10	32	5,770	3,605	437
31	468	544	38 10 0	25	4,808	3,004	374
32	454	541	40 12 0	37	7,367	4,438	580
33	401	474	37 12 4	24	4,572	2,752	387
34	377	438	36 9 5	31	6,161	3,382	520
35	304	347	30 5 6	28	5,508	3,369	500
36	290	347	32 5 11	31	5,809	3,397	526
37	243	298	28 15 4	27	6,014	3,408	572
38	221	267	28 5 4	39	7,883	4,387	801
39	191	241	26 8 2	36	8,189	4,515	845
40	145	177	20 7 2	40	8,673	5,022	994
41	116	142	17 19 1	35	8,041	4,150	927
42	103	123	15 17 8	42	9,295	4,959	1,158
43	78	113	16 3 11	38	9,050	4,784	1,151
44	70	98	14 14 11	28	6,225	3,216	833
45	60	88	14 12 0	38	9,268	4,369	1,235
46	54	89	14 19 8	35	8,045	4,152	1,148
47	35	52	10 0 11	24	5,905	2,824	894
48	32	48	9 1 3	31	7,208	3,377	1,176
49	19	27	4 18 4	27	6,373	2,885	1,071
50	17	27	5 15 3	28	6,864	3,019	1,205
51	8	15	3 2 4	25	5,643	2,176	994
52	14	21	5 9 6	30	6,369	2,870	1,242
53	10	16	4 11 6	19	5,037	1,727	893
54	4	7	2 1 7	23	5,058	2,009	1,028
55	3	10	4 7 4	18	4,917	1,602	889
56	2	5	2 11 5	22	4,961	1,709	984
57	..	..	..	14	3,437	1,460	816
58	1	4	2 12 8	15	3,345	1,066	739
59	1	1	0 13 9	23	5,064	1,483	1,071
60	..	..	..	20	4,206	1,520	1,098
61	..	..	..	18	3,768	1,179	969
62	..	..	..	8	1,375	486	413
63	..	..	..	8	1,851	703	644
64	..	..	..	5	1,258	520	444
65	..	..	..	8	2,041	644	708
66	..	..	..	4	195	130	157
67	..	..	..	4*	..	..	37
68	..	..	..	2*	..	..	19
69	..	..	..	1*	..	..	10
70	..	..	..	1*	..	..	10
71	..	..	..	5*	..	..	50
72	..	..	..	1*	..	..	10
73	..	..	..	2*	..	..	21
74	..	..	..	1*	..	..	11
75	..	..	..	1*	..	..	11
76	..	..	..	1*	..	..	11
78	..	..	..	1*	..	..	10
	15,022	17,814	1,122 2 0	1,133	230,074	116,221	32,076

* These members (and also two at age 66) are at present contributing only in respect of widows' and children's benefits. Pensions and contributions will be determined on retirement.

TABLE V.

EXPERIENCE TABLE.

PROBABILITIES PER CENT. PER ANNUM OF DEATH, WITHDRAWAL, AND RETIREMENT USED IN THE CALCULATION OF VALUATION FACTORS FOR THE STANDARD LOCAL-AUTHORITIES SCHEME.

Contributing Members: Males.

Age.	Probabilities of Death, Withdrawal, or Retirement within a Year (expressed as a Percentage of the Number existing in Service at the beginning of the Year).			Age.	Probabilities of Death, Withdrawal, or Retirement within a Year (expressed as a Percentage of the Number existing in Service at the beginning of the Year).		
	Death.	Withdrawal.	Retirement.		Death.	Withdrawal.	Retirement.
	Per Cent.	Per Cent.	Per Cent.		Per Cent.	Per Cent.	Per Cent.
15	0·24	6·40	..	40	0·46	0·85	0·10
16	0·25	6·45	..	41	0·48	0·85	0·10
17	0·25	6·43	..	42	0·50	0·85	0·10
18	0·26	6·30	..	43	0·52	0·85	0·10
19	0·27	6·00	..	44	0·54	0·83	0·10
20	0·28	5·50	..	45	0·57	0·74	0·13
21	0·28	4·80	..	46	0·60	0·64	0·20
22	0·28	4·00	..	47	0·63	0·50	0·30
23	0·29	3·30	..	48	0·66	0·35	0·35
24	0·29	2·70	..	49	0·70	0·30	0·39
25	0·30	2·30	..	50	0·75	0·30	0·40
26	0·30	2·20	..	51	0·80	0·30	0·40
27	0·31	2·20	..	52	0·85	0·30	0·40
28	0·32	2·30	..	53	0·90	0·30	0·40
29	0·32	2·34	..	54	0·96	0·30	0·44
30	0·33	2·34	..	55	1·04	0·30	0·80
31	0·34	2·25	..	56	1·11	0·30	1·40
32	0·35	2·10	..	57	1·20	0·30	2·40
33	0·36	1·90	..	58	1·30	0·30	2·60
34	0·37	1·65	..	59	1·40	0·23	3·50
35	0·38	1·50	0·10	60	1·50	..	5·70
36	0·39	1·35	0·10	61	1·62	..	12·30
37	0·40	1·20	0·10	62	1·77	..	19·70
38	0·42	1·05	0·10	63	1·94	..	32·70
39	0·44	0·95	0·10	64	2·14	..	45·10

TABLE VI.

SUMMARY OF NATIONAL PROVIDENT FUND VALUATION.

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

Liabilities.

MAIN-FUND AND APPROVED-FRIENDLY-SOCIETIES SECTION.

	£	£
Value of allowances already granted to 28 widows of contributors, totalling £546 per annum	4,865	
Value of allowances already granted to 67 children of deceased contributors, totalling £1,306 per annum	9,833	
Value of deferred pensions to survivors of existing contributors	648,471	
Value of return of contributions (less benefits) on withdrawal in respect of past contributions	53,360	
Value of return of contributions (less benefits) on withdrawal in respect of future contributions	102,668	
Value of return of contributions (less benefits) on death: In the main scheme this is limited to death (i) without children, or (ii) with children, and death taking place within five years from entry—		
(*a.*) In respect of past contributions	10,737	
(*b.*) In respect of future contributions	41,883	
Value of allowance benefits (immediate to 4,672 members, and vesting five years after entry in the case of 10,220 members)—		
(*a.*) Widows' benefits	52,385	
(*b.*) Children's benefits	113,289	
(*c.*) Incapacity allowances	41,403	
Value of return of balance of contributions where allowances or pensions fall short of the total contributions paid, and of sundry minor benefits	3,850	
		1,082,744

LOCAL-AUTHORITIES SECTION.

	£	£
Value of 14 pensions for £1,165 19s. per annum already granted	9,903	
Value of 15 pensions for £270 per annum granted to widows of contributors or pensioners	3,370	
Value of 28 allowances for £364 per annum granted to children of deceased contributors	1,630	
Value of prospective pensions (based on present salary scale) in respect of past service	193,339	
Value of prospective pensions (based on present salary scale) in respect of future service	226,837	
Value of prospective pensions to widows	47,903	
Value of prospective allowances to children	7,528	
Value of return of contributions on withdrawal (including widow's option in lieu of pension)	16,259	
Value of return of contributions on death prior to retirement (leaving no widow or children)	6,503	
Value of return of balance of contributions where allowances or pensions fall short of the total contributions paid, and of sundry minor benefits ..	10,475	
		523,747
		£1,606,491

Assets.

Accumulated funds	338,729
Value of future contributions	1,013,439
Value of future State subsidies (assumed to be received a year later than contributions) ..	248,389
Balance (deficiency)	5,934
	£1,606,491

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