

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.

<i>Income.</i>		£	s.	d.	<i>Outgo.</i>		£	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					
		<u>£419,299</u>	<u>10</u>	<u>2</u>			<u>£419,299</u>	<u>10</u>	<u>2</u>

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.