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PART VII.—Birthplaces and Period of Residence.  
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- PART XII.—Final Report.

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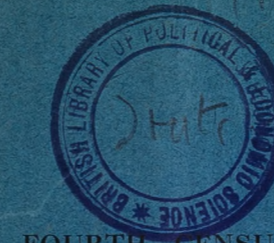
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- DEEL XII.—Eindverslag.



UNION OF SOUTH AFRICA

S.P. 57. (PART XII.)

OFFICE OF CENSUS AND STATISTICS, PRETORIA

FOURTH CENSUS OF THE POPULATION OF THE UNION OF SOUTH AFRICA,  
ENUMERATED 4th MAY, 1926

SOUTH AFRICAN LIFE TABLE No. 2  
(EUROPEANS)



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PREFACE.

South African Life Table, No. 2.

THE contents of this pamphlet are an extract from the Final Report of the Census of the European Population held on 4th May, 1926. The subject matter is of interest to persons who are specially concerned with actuarial work, and to enable ready reference to the figures, it has been thought desirable to extract this portion from the Final Report and publish it in advance without waiting for the completion of other sections.

The mathematical work embodied herein has been performed by Mr. C. W. Pearsall, M.A., Statistician in charge of the Computing Section in this Office.

J. E. HOLLOWAY,  
*Director.*

OFFICE OF CENSUS AND STATISTICS,  
PRETORIA,  
*May, 1930.*

VOORWOORD.

Suid-Afrikaanse Lewenstabel, No. 2.

DIE inhoud van hierdie brosjure is 'n uittreksel van die Finale Verslag van die Sensus van die Europese Bevolking gehou op 4 Mei 1926. Die inhoud hiervan is van spesiale belang vir persone wat hulle besig hou met aktuariële werk, en om verwysing na die syfers te vergemaklik, is dit dus wenslik geag om hierdie deel van die Finale Verslag afsonderlik te publiseer nog voor die ander dele gereed is.

Die matematiëse werk verbonde hieraan, is gedaan deur Mnr. C. W. Pearsall, M.A., Statistikus aan die hoof van die Berekeningsafdeling aan hierdie kantoor.

J. E. HOLLOWAY,  
*Direkteur.*

KANTOOR VAN CENSUS EN STATISTIEK,  
PRETORIA,  
*Mei 1930.*

## SOUTH AFRICAN LIFE TABLE No. 2.

**Previous South African Life Tables.**—The only Life Tables which are known to have been prepared and published in relation to South African conditions are those referred to hereunder.

Mr. C. B. Elliott made an investigation of the mortality experience of the South African Mutual Life Assurance Society for the period 1845 to 1879, but the numbers under observation were small, and Mr. Elliott considered that too much reliance should not be placed upon the results. Mr. Charles Gordon constructed a Life Table for the same Society based on fifty year's experience (1845 to 1895), graduating it by a combination of Woolhouse's and Ackland's methods. A Life Table for the European population of Johannesburg was constructed by the late Dr. G. D. Maynard, based on the 1910 Municipal Census, and two years' records of deaths. Mr. C. W. Kops, lecturer at the University of the Witwatersrand constructed a Life Table for European males based on the 1918 and 1921 Population Censuses and the deaths during the three years 1919-1921. This table was published in the *Transactions of the Royal Society of South Africa*, Vol. XII, Part 4. South African Life Table No. 1 for European males and females was constructed by the Census Office from the Population Census of 1921 and the deaths during the three years 1920-1922, and published in the Final Report of that Census.

Portions of these Tables are shown below compared with S.A. Life Table No. 2. The fact that is immediately evident is the continuous improvement. The South African Mutual Life Table, which may be regarded as representing healthy males for a fifty year period from 1845 onwards, is not as favourable as Dr. Maynard's for Johannesburg for all males for the complete expectation of life, while Mr. Kops' table and the S.A. Life Tables No. 1 and 2 are each progressively somewhat more favourable. This accords generally with the experience of other countries.

Mr. George King made an investigation on behalf of the Southern Life Association of Africa some years ago on their mortality experience between 1891 and 1912, but a mortality table was not constructed.

Mr. D. Spence Fraser, F.F.A., A.I.A., Actuarial Adviser to the Union Government, has been kind enough to furnish the Census Office with the mortality table he constructed from the mortality experience of pensioners of the South African Railways and Harbours for the years 1911-1923. The experience refers to 1,519 pensions granted on attaining the age limit for pension purposes and to 827 pensions granted on account of retrenchment. Pensions granted on account of ill health or accident were not included.

The following information will be of interest if read in connection with the comparative tables given elsewhere:—

Age.	50	60	70
$e_x$	21.79	14.66	9.61
$10p_x$	.8479	.6571	.4322

It will be seen that the expectation of life is slightly lower at the ages of 50 and 60, but slightly higher at the age of 70 than South African Table No. 1, and that the probability of living 10 years is higher at the age of 50, lower at the age of 60 and practically identical at the age of 70.

It must be remembered that the period covered is on the whole earlier than South African Table No. 1. Moreover, Mr. Spence Fraser states that the mortality tended to be lower towards the end than at the beginning of the period, and that further investigations since 1923 tended to show a rather lower mortality.

**South African Life Table No. 2.**—The Life Table published in this section has been constructed throughout by the same methods as those employed in the case of Life Table No. 1 except in the case of very old ages as mentioned below.

As to the period of the table, there were two alternatives. Either it might be based as was Table No. 1 on a three years mortality experience centred on the Population Census of 1926, or on a five years mortality experience based on the mean between the two Censuses of 1921 and 1926. It must be admitted, that whereas a Life Table based on a ten years experience is somewhat out of date by the time it is published, the same criticism is not valid where Life Tables can be constructed for intervals of five years between two Population Censuses. A series of tables constructed as Table No. 1 would utilize three years mortality and omit two in every five years, while the latter would utilize the mortality experience of every year and would represent a period whose mid-point would be only thirty months earlier than the former. The fact, however, that the change in the Population Census questionnaire with regard to age had effected a considerable decrease in the number of misstatements of age in 1926 made it seem advisable to avoid utilizing the figures for 1921; moreover a direct comparison with Life Table No. 1 is obtained more readily by utilizing a similar period and method; so that on the whole it was thought wiser to construct a table centred on 1926 though the question of the advisability of in future constructing tables covering a five years period between two Censuses is one that will no doubt receive due consideration in the future.

With certain differences the methods employed by Mr. George King in preparing Life Tables No. 8 for England and Wales were followed in constructing South African Life Table No. 1. The increasing interest shown in his method of osculatory interpolation, the closeness with which it follows the given data and its general simplicity has justified that choice; so the same method was chosen in constructing Life Table No. 2.

It was assumed that at the date of the Census, the 4th May, 1926, the days of births of persons of each year of age from one year upwards were evenly distributed through that year. With that assumption a calculation from vital and migration statistics was made and adjusted figures for the population living on the 30th June 1926 were obtained. The assumption of a uniform geometrical increase in each age group assumed by Mr. King, was not thought to be suitable for South Africa where there is known to be an uneven distribution of population, and for this reason his method was not followed in obtaining the figures for the mean population, although in this short period it did not involve any great discrepancy.

There is a tendency in every Census for some persons to make incorrect statements of age, and as far as this tendency is confined to an inclination for round numbers (such as figures terminating in 0 and to a less degree in 8, 2 and 5), these inaccuracies can be largely smoothed out by adopting a satisfactory quinquennial grouping and then redistributing the figures in each group in due proportion. The same tendency has been observed in the case of the ages rendered in returns of death. It would seem therefore that the same psychological cause operated both where persons are asked to give their own ages and where persons are required to declare the ages of deceased people. It would appear that these misstatements were on the whole due to ignorance of the exact year of age. A person might say his age was about 50 or about 60 and return it as 50 or 60, or he might say it was between 50 and 60 and return it as 55, or again he might say he was getting on to 60 or was a bit over 60 and might return it as 58 or 62.

Where, however, there are deliberate misstatements of age all tending to be understatements in one period of life and overstatements in another no mathematical formula however ingenious will remove the error, unless, of course, the degree of misstatement is known. All that can be hoped is that greater accuracy will result from the spread of the knowledge that the information is not asked for out of idle curiosity but is utilized for scientific calculations of national interest. It is not known to what extent

deliberate misstatements occur that are likely to give some bias to the calculations but arrangements are being made to test this in the next Population Census.

From a careful examination of the Population and mortality returns it appeared best to group ages into quinquennial groups on the basis either of those whose final digit ended in 4-8 and 9-3 or else in 2-6 and 7-1. There seemed to be little to choose between the two; at certain periods of life one appeared to be slightly better than the other. As, however, the grouping of 4-8, 9-3 was utilized in the construction of Life Table No. 1, it was decided to retain it for Life Table No. 2.

The mean population and the deaths for three years 1925 to 1927 were arranged in quinquennial groups for the age periods 4 to 8, 9 to 13, 14 to 18, etc., as far as 99 to 103. The value for  $m_x$ , the central death rate (i.e. deaths divided by population) or the central age of each group from 11 years to 96 was obtained from the formula  $u_{x+2} - 2u_x - .008 \Delta^2 u_{x-5}$  where  $u_{x+2}$  is the population or deaths at the age  $(x+2)$ , and  $u_x$  is the sum of five values of the population or deaths for ages  $x$  to  $(x+4)$ . The rate of mortality, or the probability of dying in the course

of a year, i.e.  $q_x$ , was calculated by the formula  $q_x = \frac{2m_x}{2+m_x}$  for each sex for the ages 11, 16, 21, up to 96. The intervening values of the rate of mortality were obtained from functions of  $\text{Log}(q_x + .1)$  by Osculatory Interpolation by means of curves of the third order, which had the same first differential coefficient at their points of contact at the ages 16, 21, 26, etc.

The formulae were:—

$$\delta u_1 = .2 \Delta u_0 + .12 \Delta^2 u_0 - .016 \Delta^3 u_0$$

$$\delta^2 u_1 = .04 \Delta^2 u_0 - .016 \Delta^3 u_0$$

$$\delta^3 u_1 = .024 \Delta^3 u_0$$

where the symbol  $\delta$  is used for annual and  $\Delta$  for quinquennial differences.

This gave a complete table for  $q_x$  from 16 to 91.

In preparing Life Table No. 1 various methods were tried for completing the table at the higher ages by means of a fourth constant difference between five values of functions of  $p_x$  and  $q_x$  without success owing to the fact that  $p_x$  tended to increase after a certain age. Finally the curve for  $p_x$  was drawn and graphically completed and the functions for the higher ages read off to three places of decimals. This, however, involved an assumption that  $q_x$  would approximate to unity before the age of 110 for which there is no proof. The same difficulty was experienced in constructing Life Table No. 2. After a considerable amount of examination of the different functions it was discovered that

$$\frac{\log p_{81}}{\log p_{76}} \text{ was approximately equal to } \sqrt[3]{\frac{\log p_{91}}{\log p_{76}}}$$

It was assumed that  $\frac{\log p_{x+1}}{\log p_x} = \left(\frac{\log p_{91}}{\log p_{76}}\right)^{\frac{x-76}{15}}$  for each value of  $x$  from 91 upwards and the table for the higher ages was completed in this manner.

It is extremely difficult in a small community such as South Africa to be certain whether the few persons that attain great age in the first place give their ages correctly, and secondly whether it is merely a fortuitous sample not representing a normal distribution. The end of the table can therefore only be regarded as a reasonable approximation. Arrangements have, however, been made with the Old Age Pensions Office to secure full details of Old Age Pensioners and it is hoped when information has accumulated for a few years to make a detailed examination of the returns and possibly to construct a Life Table for persons over 65. As Old Age Pensioners are approximately one third of the population over 65 it may be possible to fit their probability curve to the next South African Life Table. At any rate it will throw considerable light on the subject.

An examination of the ages of young children was made, comparing the statistics derived from records of births and deaths with the 1926 Census figures brought down to the end of June 1926. The following table gives the results:—

NUMBER OF CHILDREN LIVING ON THE 30TH JUNE, 1926.

AGE.	MALE.			FEMALE.		
	Births Minus Deaths.	Adjusted Census.	Differences.	Births Minus Deaths.	Adjusted Census.	Differences.
Under one year..	21,757	21,067	690	20,548	20,062	486
1-2.....	19,993	20,319	-326	19,070	19,171	-101
2-3.....	19,814	19,725	89	18,851	19,079	-228
3-4.....	19,178	20,035	-857	18,606	19,493	-887
4-5.....	19,757	20,472	-715	19,014	19,707	-693

A very marked improvement took place in the declaration of ages of young children in the 1926 Census as compared with the 1921 Census, the sum of the differences in the above table being less than a quarter of the sum of the differences in a similar table prepared for the 1921 Census. This is due to the great improvement in the statement of ages that occurred on account of date of birth being asked for in addition to age. The net difference amounts to about one per cent, and is difficult to explain. It is not due to immigration as shown by the migration returns. It is possible that some births were not registered or there may be a slight tendency to understate ages of children about 5. This matter will be investigated in the light of the 1931 Census.

The number taken into account at the age exactly 0 was the sum of the births from the second half of 1924 to the end of the first half of 1927; the number taken into account at the age exactly 1 the sum of the births from the second half of 1923 to the end of the first half of 1926 less the sum of the deaths under one year of age in the years 1924 to 1926; the number taken into account at the age exactly 2 the sums of the births from the second half of 1922 to the first half of 1925 less the sum of the deaths under one year of age in the years 1923 to 1925 and the sum of the deaths age 1 and under 2 in the years 1924 to 1926, and so on for the numbers aged exactly 3, 4, and 5 years.

The rates of mortality derived from the records of births and deaths were obtained by dividing the deaths in each year of age 0 to 1, 1 to 2, etc., up to 5 to 6 in the years 1925 to 1927 by the numbers living as found above.

The following table gives the results:—

RATES OF MORTALITY OF CHILDREN.

AGE.	MALE.			FEMALE.		
	Numbers Living.	Deaths.	Rate of Mortality.	Numbers Living.	Deaths.	Rate of Mortality.
0.....	66,848	4,976	.0744375	63,240	3,969	.0627609
1.....	61,649	1,153	.0187027	58,593	1,077	.0183810
2.....	59,101	435	.0073603	56,625	436	.0076908
3.....	58,873	277	.0047050	56,542	234	.0041385
4.....	58,623	203	.0034628	56,481	194	.0034348
5.....	57,886	169	.0029195	55,333	131	.0023675

The column  $q_x$  had then been completed for age 0 to 5 for 11 and for 16 onwards, and the remainder was constructed by interpolation by means of a Lagrange fourth difference formula, the values for the five years 4, 5, 11, 16 and 17 being utilized. While this method produced satisfactory results for the males it did not for the females, owing to the fact that the rates from 3 to 5 are not in the same even progression as in the case of males. It was therefore decided to use a Lagrange third difference formula utilizing the four years 5, 11, 16 and 17 for the females which produced a curve closely fitting the given data.

The Lagrange formula is of the following form:—

$$q_x = q_a \frac{(x-b)(x-c) \dots (x-n)}{(a-b)(a-c) \dots (a-n)} + q_b \frac{(x-a)(x-c) \dots (x-n)}{(b-a)(b-c) \dots (b-n)} + \dots + q_n \frac{(x-a)(x-b)(x-c) \dots}{(n-a)(n-b)(n-c) \dots}$$

Where four orders of differences are taken  $q_x = q_4$ ,  $q_0 = q_5$ ,  $q_c = q_{11}$ ,  $q_a = q_{16}$  and  $q_n = q_{17}$ , and where three orders of differences are taken  $q_a = q_5$ ,  $q'_5 = q_{11}$ ,  $q_c = q_{16}$  and  $q_n = q_{17}$ .

The closeness with which the life tables are in accord with the data can be seen in the following statement comparing the expected with the actual deaths for different age groups. As the calculations for the ages 0 to 5 were made direct from the vital statistics there are no differences in their cases.

COMPARISON OF ACTUAL WITH EXPECTED DEATHS.

AGE GROUP.	MALE.			FEMALE.		
	Expected Deaths Less Actual Deaths.		Accumulated Deviation.	Expected Deaths Less Actual Deaths.		Accumulated Deviation.
	Positive.	Negative.		Positive.	Negative.	
0-3.....	—	—	—	—	—	
4-8.....	8	—	+ 8	—	—	
9-13.....	—	2	+ 6	—	- 7	
14-18.....	8	—	+14	—	- 7	
19-23.....	—	15	- 1	—	1	
24-28.....	2	—	+ 1	2	- 2	
29-33.....	10	—	+11	—	- 8	
34-38.....	—	11	—	—	1	
39-43.....	—	—	—	2	- 11	
44-48.....	8	—	+ 8	—	- 13	
49-53.....	7	—	+ 7	2	- 11	
54-58.....	—	4	+ 3	—	- 9	
59-63.....	—	—	—	8	- 17	
64-68.....	—	3	+ 3	11	- 6	
69-73.....	5	—	+ 5	—	15	
74-78.....	—	10	- 5	13	- 8	
79-83.....	8	—	+ 3	13	- 16	
84-88.....	—	7	- 4	—	- 11	
89-93.....	3	—	- 1	4	- 17	
94-98.....	9	—	+ 8	12	- 13	
99+.....	—	8	—	4	- 1	
	68	68	—	63	60	
					+ 3	

The total deviation in the case of males is nil and in the case of females 3. The differences are in no case considerable so that the tables may be considered to be satisfactory. It would hardly be possible to obtain a closer agreement with the data.

The function  $q_x$ , the probability of dying within a year after attaining the age  $x$ , having been obtained for every age for both sexes, all the other columns of the Life Table were calculated from it. For general convenience these are explained. The function  $p_x$ , the probability of living one year from age  $x$ , together with  $q_x$  are equal to unity. The column  $p_x$  was, therefore, obtained by subtracting each figure in the column  $q_x$  from unity.

The column  $l_x$  gives the number surviving according to the Life Table to the exact age  $x$ . The first value of the table is called the radix, and for the South African Life Table the radix is 1,000,000 at the age 0. The column is obtained by a continued multiplication by the value of  $p_x$ . The column  $d_x$ , the number dying in the course of a year of those that entered it, is formed from the differences between each pair of figures in the first column. The column  $L_x$  is the number of years lived in the year of age  $x$  to  $(x+1)$ , and, therefore, represents the mean population between ages  $x$  and  $(x+1)$ . It is assumed that except for the year 0 to 1 the

deaths that occur in each year of life are uniformly distributed over the year of age. In the case of the first year of life more deaths occur in the first few months than in the latter part.

In the three years 1925 to 1927, 4,976 male and 3,969 female children died under the age of one year, and of these, 3,642 male and 2,858 female children died under the age of six months, that is 73.191318 per cent, and 72.008062 per cent, respectively. For the construction of the  $L_x$  table it may, therefore, be assumed that out of each million male children born 54,481 die before the age of six months, and, out of each million female children born 45,192 die before the age of six months. The first figures in the column are thus 945,519 and 954,808 respectively, and the other figures are the mid-points between each two consecutive values of the function  $l_x$ .

The column  $T_x$  is the population of the Life Table above the moment of age  $x$ . This is obtained by the continued summation of  $L_x$ .

The column  $e_x$  is the complete expectation of life, or the total future lifetime which on the average will be lived by a person aged exactly  $x$ . It is obtained by dividing each figure in the column  $T_x$  by the corresponding figures in the column  $l_x$ .

Comparative tables are given for all the South African Life Tables and for New Zealand, Australia, England and Wales, and the Irish Free State, showing at certain ages ( $a$ ) the complete expectation of life ( $b$ ) the rate of mortality or the number who may be expected to die within a year of 1,000 attaining a particular age, ( $c$ ) the number of survivors of 1,000,000 born and ( $d$ ) the probability of surviving 10 years.

It will be seen at once that the improvement in the South African tables is very largely due to the marked decrease in the mortality rates of young children which has been a conspicuous feature in recent years. The death rate of children under one year was 17.7 per cent, higher in Life Table No. 1 than in No. 2 and the crude infantile mortality rate in 1910 and 1911 was 38.4 per cent, higher than in 1926 and 1927. The mortality of young children in Mr. Kops' table is the one weak point in an otherwise admirable calculation. He appears to have assumed that the death rates in the first and second six months of life were equal and to have adjusted his crude rates too drastically. His crude mortality rate for males at birth was 93.18 as compared with 87.84 in Life Table No. 1. As the mortality was somewhat higher in 1919 to 1921 than in 1920 to 1922, the unadjusted rate is comparable rather than his adjusted rate of 78.38. The death rate of young children in Johannesburg in 1908 to 1910 was probably higher than for South Africa as a whole at that date, so that comparison cannot readily be made with Dr. Maynard's table for this period of life. The expectation of life at 20 has increased in the five years period from 45.26 to 46.27 in the case of males, and from 48.15 to 49.34 in the case of females, whereas at birth the expectation of life increased during the same period by over two years.

In comparing the South African Life Table with other countries it will be found that it lies between that for Australia and that for England and Wales. At birth the expectation of life is about two years less than Australia and two years more than England and Wales. It follows this intermediate course until about 60 when the expectation of life is slightly more favourable than Australia and continues so for the older ages. New Zealand which has probably the best expectation in the world has an expectation at birth of about five years in the case of males and four years in the case of females greater than that for South Africa.

At the same time when making this comparison with other countries, it must be remembered that one is comparing the European population of the Union with the entire population of England and Wales. It is probable that the South African European population is living on the average at a higher standard than the average population of England and Wales. This factor should therefore be borne in mind.

**Rates of Mortality of Women by Marital Condition.**—An experimental calculation of  $q_x$  for females according to marital condition was made by the same method with which the Life Table for all females was constructed. A close examination of the pivotal values, however, revealed the fact that the data at certain ages was too small to give reliable results. For example an increase of one more death per annum at each year of age of unmarried women between 64 and 68 would have increased the mortality rate by 20 per cent. The rates, therefore, did not always increase step by step as the age increased. A table showing a portion of the calculated rates is given below but even this must be used with caution. A few broad conclusions appear however, to be established. During the period at which women most frequently marry, viz.: 19 to 28, the rate of mortality for married women is considerably higher than that for unmarried. The mortality rate for widows (with whom are included divorced persons) is higher than that for married women. The slightly lower rate at the age of 46 and the disproportionately high rate at 51 (in the case of widows) is probably due to the paucity of the material. The somewhat sudden jump in the rate for unmarried females between 26 and 31 might possibly be due to a tendency for unmarried women belonging to the latter group to understate their ages. There is, however, no available information on this matter. It was not thought advisable to carry the calculations beyond the age of 76, nor worth while to interpolate the intermediate values. It would have been possible by taking 10 year instead of 5 year periods to have produced graduated tables but they would have lost their direct relation to Life Table No. 2. In these circumstances it was decided not to carry the investigation any further, but as calculations of this nature have never hitherto been made the partial results are sufficiently interesting to be made public.

SOUTH AFRICAN LIFE TABLE No. 2.

FEMALE MORTALITY (1,000  $q_x$ ) BY MARITAL CONDITION.

Age.	Never Married.	Married.	Widowed and Divorced.	Total Females.
21.....	2-4696	3-3822	—	2-7366
26.....	2-9553	3-5294	—	3-3884
31.....	4-4197	4-1020	*	4-1328
36.....	4-6001	4-9446	*	4-8967
41.....	*	5-7279	5-7789	5-5853
46.....	*	6-6516	6-1199	6-6165
51.....	*	9-0896	11-1379	9-3029
56.....	*	13-6134	13-9448	13-7380
61.....	*	18-4764	20-8081	18-7350
66.....	*	29-4120	35-2230	31-8075
71.....	*	43-3908	48-9821	46-9407
76.....	*	74-4429	80-4015	78-7101

\* Original data too small.

**Values of Annuities and Single and Annual Premiums.**—Values of an annuity of 1, ( $a_x$ ), the amounts to secure 1 at death, ( $A_x$ ) and the annual payments to secure 1 at death, ( $P_x$ ) based on Life Table No. 2 have been calculated for both sexes for each year of age at the rates 4, 4½ and 5 per cent. The only previous calculation of this description published was contained in the South African Mutual Mortality Tables referred to above. In that publication the value of an annuity of 1 ( $a_x$ ) was calculated for each age from 15 to 96. As was to be expected the figures are somewhat lower all through than those calculated from South African Table No. 2.

The tables are published in their entirety, but the same qualification with regard to figures at extreme old ages referred to earlier in this report necessarily applies to these calculations as well as to the Life Table itself from which they have been derived.

## SUID-AFRIKAANSE LEWENSTABEL No. 2.

**Vorige Suidafrikaanse Lewenstabelle.**—Hieronder word verwys na die enigste bekende lewenstabelle wat in verband met Suidafrikaanse toestande opgemaak is.

Die Heer C. B. Elliott het 'n ondersoek ingestel betreffende die sterfte-ervaring van die Suidafrikaanse Onderlinge Lewensverzekering-maatskappy vir die tydperk 1845 tot 1879, dog die behandelde syfers was klein, en die Heer Elliott het gemeen dat nie te veel waarde aan die resultate kon geheg word nie. Die Heer Charles Gordon het vir dieselfde maatskappy 'n lewenstabel ontwerp, gebaseer op 50 jaar ondervinding, nl. van 1845 tot 1895, gegraeer ooreenkomstig 'n kombinasie van die metodes van Woolhouse en Ackland. Deur wyle Dr. G. D. Maynard is 'n lewenstabel vir die Europese bevolking van Johannesburg ontwerp, gebaseer op die Munisipale Volkstelling vir 1910 en die aantekeninge van sterfgevallen vir twee jaar. Mnr. C. W. Kops, Lektor aan die Universiteit van die Witwatersrand, het 'n lewenstabel van manlike Europeane opgemaak, gebaseer op die 1918 en 1921-Volkstellinge en die sterfgevallen gedurende die drie jaar 1919-21. Laasgenoemde tabel is gepubliseer in die Verhandeling van die Koninklike Vereniging van Suid-Afrika Vol. XII, Deel 4. Suidafrikaanse Lewenstabel No. 1 vir manlike en vroulike Europeane is deur die Sensuskantoor opgemaak van die Volkstelling van 1921 en die sterfgevallen gedurende die drie jaar 1920-22, en gepubliseer in die Finale Rapport van daardie Volkstelling.

Gedeeltes van hierdie tabelle word hieronder afgedruk ter vergelyking met die S.A. Lewenstabel No. 2. Die feit, wat onmiddellik in die oog val, is die aanhoudende verbetering. Die Lewenstabel van die Suidafrikaanse Onderlinge Maatskappy, wat beskou kan word om vir 'n tydperk van 50 jaar vanaf 1845 gesonde manne te verteenwoordig, is nie so gunstig nie as die tabel van Dr. Maynard vir Johannesburg betreffende alle manlike persone vir die volledige leeftydverwachting, terwyl die tabel van Mnr. Kops en die S.A. Lewenstabelle No. 1 en 2 elk progressiewelik iets gunstiger is. Oor die algemeen kom dit ooreen met die ondervinding in ander lande.

Mnr. George King het enige jare gelede 'n ondersoek ingestel namens die Suidelike Lewensverzekering-maatskappy van Afrika in verband met die sterfte-ervaring tussen 1891 en 1912, maar 'n sterfte-tabel is toe nie opgemaak nie.

Mnr. D. Spence Fraser, F.F.A., A.I.A., Aktuariële Adviseur van die Unie-Goewerment, was so vriendelik om die Sensuskantoor te voorsien van die sterfte-tabel wat hy opgemaak het van die sterfte-ervaring betreffende gepensioneerdes van die Suidafrikaanse Spoorweë- en Hawes-administrasie vir die jare 1911-23. Die gegewens loop oor 1519 pensioene, toegestaan by bereiking van die leeftydsgrens vir pensioen-doeleindes, en 827 pensioene toegeken weens staf-vermindering. Pensioene toegeken weens siekte of ongeluk is buite rekening gelaat.

In verband met die vergelykende tabelle wat later gegee word, is die volgende informasie nie van belang ontbloot nie:—

Ouderdom.	50	60	70
$e_x$	21.79	14.66	9.61
$10p_x$	.8479	.6571	.4322

Opgemerk sal word dat die leeftydverwachting bietjie laer is op die ouderdomme van 50 en 60, maar 'n weinig hoër op die leeftyd van 70, as Suidafrikaanse Tabel No. 1 en dat die waarskynlikheid om 10 jaar langer te leef hoër is op die leeftyd van 50, laer op die leeftyd van 60 en nagenoeg gelyk op die leeftyd van 70.

Daar moet opgelet word dat die behandelde tydperk oor die geheel vroeër is as Suidafrikaanse Tabel No. 1. Bowendien het Mnr. Spence Fraser verklaar dat die sterfte teen die end van die tydperk laer was as by die begin en dat verder navorsing sedert 1923 'n neiging tot 'n laer sterftesyfer aan die dag gebring het.

**Suidafrikaanse Lewenstabel No. 2.**—Die Lewenstabel in hierdie afdeling gepubliseer, is volgens dieselfde metodes opgemaak as die wat met betrekking tot Lewenstabel No. 1 toegepas is, behalwe in geval van baie hoë ouderdomme, soos hieronder vermeld.

Met betrekking tot die tydperk waarvoor die tabel loop, was daar twee alternatiewe. Die berekening kon gegrond word soos in die geval van tabel No. 1, op 'n driejarige sterfte-ervaring met die volkstelling van 1926 as middelpunt, of op 'n vyfjarige sterfte-ervaring, gebaseer op die gemiddelde tussen die twee Volkstellinge van 1921 en 1926. Dit kan nie ontken word nie dat terwyl 'n lewenstabel gebaseer op 'n tienjarige ervaring min of meer verouderd is by die tyd dat die gegewens gepubliseer word, dieselfde kritiek nie geld nie waar die lewenstabelle bereken kan word vir tussenposes van 5 jaar tussen twee volkstellinge. 'n Serie tabelle opgemaak soos tabel No. 1, sou oor drie jaar sterfte loop en twee in elke vyf jaar buite rekening laat, terwyl die laasgenoemde van die sterfte-ervaring van elke jaar gebruik sou maak en 'n tydperk sou verteenwoordig wat sy sentrum slegs dertig maande vroeër as die eersgenoemde het. Die feit egter dat die wysiging betreffende leeftyd in die vraelys by die Volkstelling baie noukeuriger opgawe omtrent leeftyd in 1926 tengevolg gehad het, skyn dit raadsaam te maak om die opgawe van 1921 te vermy; bowendien word 'n direkte vergelyking met Lewenstabel No. 1 beter verkry deur gebruik te maak van 'n soortgelyke tydperk en metode; daarom is dit in die algemeen verstandiger geag om 'n Tabel op te maak met 1926 as sentrum, hoewel die vraag om voortaan tabelle te bereken oor die vyfjarige tussenperiode van twee volkstellinge, 'n punt is waaraan ongetwyfeld die nodige aandag geskenk sal word.

By die berekening van die Suidafrikaanse Lewenstabel No. 1 is die metode, met seker wysiging gevolg, wat Mnr. George King toegepas het by die samestelling van Lewenstabelle No. 8 vir Engeland en Wallis. Die toenemende belangstelling wat getoon word in sy metode van oskulatoire interpolasie, die noukeurigheid waarmee dit die gegewens volg en sy algemene eenvoudigheid, het daardie keuse geregtig, sodat dieselfde metode gekies is vir die berekening van Lewenstabel No. 2.

Dit is veronderstel dat op die Sensusdag, 4 Mei 1926, die geboorte-dae van persone op elke lewensjaar, van een jaar af en daarbo, gelyklik oor daardie jaar verdeel was. Dit aannemende, is 'n berekening gebaseer op vitale en volkstrekk-opgawe gemaak en is bygewerkte syfers vir die, op 30 Junie 1926 lewende, bevolking verkry. Die veronderstelling van 'n uniforme geometriese vermeerdering in elke leeftydsgroep, aangeneem deur die Heer King, is nie beskou doeltreffend te wees vir Suidafrika nie waar dit bekend is dat die verdeling van die bevolking ongelyk is, en om hierdie rede is sy metode nie gevolg by die vaststelling van die syfers vir die gemiddelde bevolking nie, ofskoon dit in hierdie kort tydperk tot geen groot afwyking aanleiding gegee het nie.

By elke volkstelling bestaan daar 'n neiging by persone om hulle ouderdom verkeerd op te gee, en sover as hierdie neiging bepaal is tot 'n gewoonte om ronde syfers te verskaf (soos syfers eindigende op 0 of in mindermate op 8, 2 en 5), kan bedoelde onnaukeurighede grotendeels uit die weg geruim word deur 'n bevredigende vyf-jaarige groepering en dan 'n herverdeling van die syfers vir elke groep volgens korrekte verhouding. Dieselfde neiging is opgemerk in geval van ouderdomme wat verklaar word in opgawe van sterfgevallen. Dit skyn dus dat dieselfde psigologiese verskynsel sy invloed laat geld wanneer aan persone gevra word om hulle eie ouderdom op te gee en ook wanneer hulle die ouderdom van oorlede persone moet opgee. Dit skyn dat hierdie onjuiste verklaringe in die algemeen toe te skrywe is aan onbekendheid met die juiste ouderdom. 'n Persoon kan sê dat sy ouderdom omtrent 50 of omtrent 60 is en hy gee dit dan op as 50 of 60; of hy kan sê dat sy ouderdom tussen 50 en 60 is en dit opgee as 55; of hy kan ook sê dat hy na 60 jaar toeloop of 'n bietjie oor 60 jaar oud is en dit dan miskien opgee 58 of 62.

Waar daar egter opsetlike onjuiste verklaringe gemaak word en die ouderdom in een periode te klein en in 'n ander periode te groot opgegee word, bestaan daar geen wiskundige formule om sulke onjuisthede uit die weg te ruim nie, tensy natuurlik die graad van afwyking bekend is. Die wens kan alleen uitgedruk word dat groter noukeurigheid sal ontstaan na mate dit meer bekend word dat die informasie nie uit ydele nuuskierigheid gevra word nie, maar dat daarvan gebruik gemaak word vir wetenskaplike berekeninge in die nasionale belang. Dis onbekend tot op watter graad opsetlike onjuiste verklaringe voorkom, maar reëlins word getref om by die volgende volkstelling 'n proef te neem om te sien in hoever bedoelde onjuisthede die berekeninge nadelig beïnvloed.

Uit 'n sorgvuldige ondersoek van die bevolkings- en sterfte- opgawes skyn die beste metode te wees om die leeftye in vyfjarige groepe te verdeel, gebaser op die met die eind-tyfer 4-8 en 9-3 of anders 2-6 en 7-1. Daar skyn weinig verskil tussen die twee te bestaan; op seker lewensstydperke skyn die een 'n bietjie beter te wees as die ander. Aangesien die groepering van 4-8, 9-3 by die berekening van Lewenstabel No. 1 toegepas is, is besluit om hierdie grondslag ook vir Lewenstabel No. 2 te neem.

Die gemiddelde bevolking en die sterfgevallen vir drie jaar 1925 tot 1927 is in vyfjarige groepe gerangskik vir die leeftyds-groepe 4 tot 8, 9 tot 13, 14 tot 18, ens., sover as 99 tot 103. Die waarde vir  $m_x$  die sentrale sterfteverhouding (d.i. sterfgevallen gedeel deur bevolking) vir die sentrale ouderdom van elke groep vanaf 11 jaar tot 96, is verkry van die formule  $u_{x+2} = .2u_x - .008 \Delta^2 u_x - 5$  waar  $u_{x+2}$  die bevolking of sterfgevallen op die leeftyd  $(x+2)$  is, en  $u_x$  die som van vyf waardes van die bevolking of sterfgevallen vir leeftye  $x$  tot  $(x+4)$  is. Die sterfteverhouding of die waarskynlikheid om in die loop van 'n jaar te sterwe, d.i.  $q_x$ , is bereken van die formule  $q_x = \frac{2m_x}{2+m_x}$  vir elk geslag vir die ouderdomme 11, 16, 21 totop 96. Die tussenliggende waardes van die sterfteverhouding is verkry van funksies van  $\log(q_{x+1})$  deur Oskulatoire Interpolasie deur middel van kurwes van die derde orde, wat dieselfde eerste differensiaal koëffisient gehad het by hulle punte van aanraking op die ouderdomme 16, 21, 26, ens.

Die formules was die volgende:—

$$\begin{aligned} \delta u_1 &= .2 \Delta u_0 + .12 \Delta^2 u_0 - .016 \Delta^3 u_0, \\ \delta^2 u_1 &= .04 \Delta^2 u_0 - .016 \Delta^3 u_0, \\ \delta^3 u_1 &= .024 \Delta^3 u_0. \end{aligned}$$

waar die simbol  $\delta$  gebruik word vir jaarlikse en  $\Delta$  vir vyfjaarlikse afwykinge.

Dit het 'n volledige tabel vir  $q_x$  van 16 tot 91 gegee.

By die samestelling van Lewenstabel No. 1 is sonder sukses verskillende metodes toegepas om die tabel vir die hoër leeftye te voltooi deur middel van 'n vierde konstant-verskil tussen vyf funksie-waardes van  $p_x$  en  $q_x$  te wyte aan die feit dat na 'n seker ouderdom  $p_x$  'n neiging getoon het om te styg. Tenslotte is die kurwe vir  $p_x$  getrek en grafies voltooi en is die funksies vir die hoër leeftye afgelees tot drie desimale. Dit gaan egter uit van die veronderstelling dat  $q_x$  nagenoeg gelyk sou staan met 1 voor die leeftyd van 110, waarvoor geen bewys bestaan nie. Dieselfde moeilikheid is ondervind met die samestelling van Lewenstabel No. 2. Na 'n uitgebreide ondersoek van die verskillende funksies is gevind dat

$$\frac{\log p_{91}}{\log p_{76}} \text{ nagenoeg gelyk was aan } \sqrt[3]{\frac{\log p_{91}}{\log p_{76}}}$$

Dit was aangeneem dat  $\frac{\log p_{x+1}}{\log p_x} = \left(\frac{\log p_{91}}{\log p_{76}}\right)^{1/3}$  vir elke waarde van  $x$  vanaf 91 en daarbo, en die tabel vir die hoër leeftye is op hierdie wyse opgemaak.

Dit is uiters moeilik om in 'n klein gemeenskap soos Suid-Afrika seker te wees of die weinige persone wat 'n hoër leeftyd bereik in die eerste plek hulle ouderdom juis opgee en in die tweede plek of dit nie miskien 'n toevallige uitsondering op die reël uitmaak nie. Die laaste gedeelte van die tabel kan dus alleen beskou word as 'n redelike skatting. 'n Reëling is egter gemaak met die Ouderdomspensioene-kantoor om volle besonderhede te verkry van die

gepensioneertes, en wanneer daaromtrent vir enige jare gegewens voorhande is, sal 'n uitvoerige ondersoek van die opgawe gemaak kan word en sal dit miskien moontlik wees om 'n Lewenstabel vir persone oor 65 saam te stel. Aangesien die weens ouderdom Gepensioneertes nagenoeg een-derde van die bevolking oor 65 uitmaak kan dit moontlik wees om hulle waarskynlikheidskurwe by die volgende Suidafrikaanse Lewenstabel te laat aansluit. In elk geval sal dit belangrike inligting oor die onderwerp verskaf.

'n Ondersoek van die ouderdomme van jong kinders is gemaak deur 'n vergelyking van die gegewens van geboortes en sterfgevallen met die opgawes van die 1926-Volkstelling bygewerk tot aan die end van Junie 1926. Die volgende tabel gee die resultate aan:—

AANTAL KINDERS IN LEWE OP 30 JUNIE 1926.

Ouderdom.	MANLIK.			VROULIK.		
	Geboortes min Sterfgevallen.	By-gewerkte Volkstelling.	Ver-skille.	Geboortes min Sterfgevallen.	By-gewerkte Volkstelling.	Ver-skille.
Onder een jaar..	21,757	21,067	690	20,548	20,062	486
1-2.....	19,993	20,319	- 326	19,070	19,171	- 101
2-3.....	19,814	19,725	89	18,851	19,079	228
3-4.....	19,178	20,035	- 857	18,606	19,493	- 887
4-5.....	19,757	20,472	- 715	19,014	19,707	- 693

By die Volkstelling van 1926 is die verklaringe omtrent die ouderdom van jong kinders baie verbeter in vergelyking met 1921 en die totale verskil in bestaande tabel bedra minder as 'n kwart van die verskil wat in 'n soortgelyke tabel betreffende die 1921-Volkstelling voorgekom het. Die verbeterde opgawe is toe te skrywe aan die versoek om behalwe die ouderdom, ook die datum van geboorte op te gee. Die netto verskil bedra omtrent 1 persent en is moeilik om te verklaar. Soos blyk uit die volkstrekgawes kan dit nie daaraan toegeskrywe word nie. Dis moontlik dat sommige geboortes nie geregistreer is nie of daar kan miskien 'n neiging bestaan om die leeftyd van kinders van omtrent 5 jaar te klein op te gee. Hierdie aangeleentheid sal in verband met die opgawe van die 1931-Volkstelling ondersoek word.

Die aantal waarmee rekening gehou is op die leeftyd van presies 0 was die totaal van die geboortes vanaf die tweede helfte van 1924 tot die end van die eerste helfte van 1927; die aantal waarmee rekening gehou is op die leeftyd van presies 1 was die totaal van die geboortes vanaf die tweede helfte van 1923 tot die end van die eerste helfte van 1926, verminder met die totaal van die sterfgevallen onder die leeftyd van een jaar in die jare 1924 tot 1926; die aantal waarmee rekening gehou is op die leeftyd van presies twee jaar, was die totale van die geboortes vanaf die tweede helfte van 1922 tot die eerste helfte van 1925, verminder met die totaal van die sterfgevallen onder eenjarige leeftyd in die jare 1923 tot 1925 en die totaal van die sterfgevallen op eenjarige leeftyd en onder tweejarige leeftyd in die jare 1924 tot 1926, en so ook vir die aantalle oud presies 3, 4 en 5 jaar.

Die sterfteverhoudinge bereken op die aantekeninge van geboortes en sterfgevallen is verkry deur die sterfgevallen in elke lewensjaar, 0 tot 1, 1 tot 2 ens., tot op 5 tot 6 in die jare 1925 tot 1927, te deel deur die aantalle lewende persone soos hierbo bereken.

Die volgende tabel gee die resultate:—

STERFTEVERHOUDINGE VAN KINDERS.

Ouderdom.	MANLIK.			VROULIK.		
	Aantal in Lewe.	Sterfgevallen.	Sterfteverhouding.	Aantal in Lewe.	Sterfgevallen.	Sterfteverhouding.
0.....	66,848	4,976	0.0744375	63,240	3,969	0.0627609
1.....	61,649	1,153	0.0187027	58,593	1,077	0.0183810
2.....	59,101	435	0.0073603	56,625	436	0.0076995
3.....	58,873	277	0.0047050	56,542	234	0.0041385
4.....	58,623	203	0.0034628	56,481	194	0.0034348
5.....	57,886	169	0.0029195	55,333	131	0.0023475

Die kolom  $q_x$  was toe voltooi vir die leeftye 0 tot 5, vir 11 en vir 16 en daarbo, en die res is bereken deur interpolasie deur middel van 'n Lagrange afwykingsformule van die vierde orde, en van die waardes vir die vyf jaar 4, 5, 11, 16 en 17 is daarby gebruik gemaak. Terwyl hierdie metode bevredigende resultate vir die manlike geslag opgelewer het, was dit nie die geval met die vroulike geslag nie, weens die feit dat die verhouding van drie tot vyf nie in dieselfde gelyke progressie bestaan nie as in die geval van die manlike geslag. Daarom is besluit om 'n afwykingsformule van die derde orde van Lagrange toe te pas vir die vier jaar 5, 11, 16 en 17 vir die vroulike geslag, wat 'n kurwe voortgebring het noukeurig ooreenkomende met die gegewens.

Die formule van Lagrange neem die volgende vorm aan:—

$$q_x = q_a \frac{(x-b)(x-c) \dots (x-n)}{(a-b)(a-c) \dots (a-n)} + q_b \frac{(x-a)(x-c) \dots (x-n)}{(b-a)(b-c) \dots (b-n)} + \dots + q_n \frac{(x-a)(x-b)(x-c) \dots}{(n-a)(n-b)(n-c) \dots}$$

waarin vier grade van afwykinge geneem word:  $q_a = q_4$ ,  $q_b = q_5$ ,  $q_c = q_{11}$ ,  $q_d = q_{16}$  en  $q_n = q_{17}$ , en waarin drie grade van afwykinge geneem word:  $q_a = q_5$ ,  $q_b = q_{11}$ ,  $q_c = q_{16}$  en  $q_n = q_{17}$ .

Die noukeurigheid waarmee die Lewenstabelle ooreenstem met die gegewens blyk uit die volgende tabel waarin die verwagte met die werklike sterfgevallen in verskillende leeftyds-groepe vergelyk word. Aangesien die berekening vir die leeftye 0 tot 5 direk van die vitale statistieke gemaak is, bestaan daar geen afwykinge in hulle gevalle nie.

VERGELYKING VAN WERKLIKE MET VERWAGTE STERFGEVALLE.

Leeftyds-groep.	MANLIK.			VROULIK.		
	Verwagte Sterfgevallen min Werklike Sterfgevallen.		Totale Afwyking.	Verwagte Sterfgevallen min Werklike Sterfgevallen.		Totale Afwyking.
	Positief.	Negatief.		Positief.	Negatief.	
0-3.....	—	—	—	—	—	—
4-8.....	8	—	+ 8	—	7	- 7
9-13.....	—	2	+ 6	—	—	- 7
14-18.....	8	—	+14	—	1	- 8
19-23.....	—	15	- 1	—	2	-10
24-28.....	2	—	+ 1	2	—	- 8
29-33.....	10	—	+11	—	1	- 9
34-38.....	—	11	—	—	2	-11
39-43.....	8	—	+ 8	—	2	-13
44-48.....	—	8	—	2	—	-11
49-53.....	7	—	+ 7	2	—	- 9
54-58.....	—	4	+ 3	—	8	-17
59-63.....	—	—	+ 3	11	—	- 6
64-68.....	—	3	—	—	15	-21
69-73.....	5	—	+ 5	13	—	- 8
74-78.....	—	10	- 5	—	16	-24
79-83.....	8	—	+ 3	13	—	-11
84-88.....	—	7	- 4	—	6	-17
89-93.....	3	—	- 1	4	—	-13
94-98.....	9	—	+ 8	12	—	- 1
99+.....	—	8	—	4	—	+ 3
	65	68	—	63	60	3

Die totale afwyking in die geval van die manlike geslag is nul en in die geval van die vroulike geslag drie. Die verskille is in geen geval groot nie sodat die tabelle as bevredigend kan beskou word. Dit is byna onmoontlik om 'n noukeuriger ooreenkoms met die gegewens te verkry.

Na die funksie  $q_x$  d.i. die waarskynlikheid om te sterwe binne 'n jaar na bereiking van die ouderdom  $x$ , vir elke ouderdom van beide geslagte verkry is, word al die ander kolomme van die Lewenstabel daarop bereken. Vir algemene toeligting word hulle duidelik gemaak. Die funksie  $p_x$ , d.i. die waarskynlikheid om een jaar te

lewe vanaf die ouderdom  $x$ , maak saam met  $q_x$ , 1 uit. Die kolom  $p_x$  word dus verkry deur elke hoeveelheid in die kolom  $q_x$  van 1 af te trek.

Die kolom  $L_x$  gee volgens die Lewenstabel die aantal oorlewendes aan op die juiste ouderdom  $x$ . Die eerste waarde van die tabel word die radiks geneem en vir die Suidafrikaanse Lewenstabel is die radiks 1,000,000 op die ouderdom 0. Die kolom word verkry deur 'n aanhoudende vermenigvuldiging met die waarde van  $p_x$ . Die kolom  $d_x$ , d.i. die aantal van die, wat die jaar intree, wat sterf in die loop van daardie jaar, is die verskille tussen elke paar hoeveelhede in die eerste kolom. Die kolom  $L_x$  verteenwoordig die aantal jare wat gelewe word in die lewensjaar  $x$  tot  $(x+1)$ , en is dus gelyk aan die gemiddelde bevolking tussen die leeftye  $x$  en  $(x+1)$ . Dit word veronderstel dat, uitgesonder die jaar 0 tot 1, die sterfgevallen wat in elke lewensjaar plaasvind, gelyklik oor die lewensjaar verdeel is. In die geval van die eerste lewensjaar vind in die eerste paar maande meer sterfgevallen plaas as later in die jaar.

In die drie jaar 1925 tot 1927 het 4,976 manlike en 3,969 vroulike kinders gesterwe onder die leeftyd van een jaar, en daaronder het 3,642 manlike en 2,858 vroulike kinders gesterwe binne ses maande na geboorte, d.i. respektiewelik 73.191318 persent en 72.008062 persent. Vir die samestelling van die  $L_x$  tabel kan dus aangeneem word dat uit elke miljoen manlike geboortes 54,481 en uit elke miljoen vroulike geboortes 45,192 sterf voor hulle die ouderdom van ses maande bereik het. Die eerste syfers in die kolom is dus respektiewelik 945,519 en 954,808 en die ander hoeveelhede is die middelpunte tussen elke twee opeenvolgende waardes van die funksie  $L_x$ .

Die kolom  $T_x$  verteenwoordig die bevolking van die Lewens-tabel bo die leeftyd  $x$ . Dit word verkry deur die aanhoudende summasie van  $L_x$ .

Die kolom  $e_x$  is die volledige leeftydverwachting of die totale toekomstige leeftyd wat gemiddeld deur 'n persoon van die juiste ouderdom  $x$  sal deurleef word. Dit word verkry deur elke hoeveelheid in die kolom  $T_x$  deur die ooreenkomstige syfer in die kolom  $L_x$  te deel.

Vergelykende tabelle word gegee in verband met alle Suidafrikaanse Lewenstabelle en vir Nu-Seeland, Australië, Engeland en Wallis, en die Ierse Vrystaat, aantoonende op seker leeftye: (a) die volledige leeftydverwachting, (b) die sterfteverhouding of die aantal uit 1,000, wat 'n bepaalde leeftyd bereik, wat verwag word om te sterwe binne 'n jaar, (c) die aantal oorlewendes op 1,000,000 geboortes en (d) die waarskynlikheid om nog 10 jaar te lewe.

Dit val onmiddellik in die oog dat die verbetering in die Suidafrikaanse tabelle grootliks toe te skrywe is aan die merkbare daling in die sterfteverhouding van jong kinders, wat in die laaste jare opmerklik was. Die sterfteverhouding van kinders onder een jaar was 17.7 persent hoër in Lewenstabel No. 1 as in No. 2 en die werklike kindersterfteverhouding was in 1910 en 1911 38.4 persent hoër as in 1926 en 1927. Die sterfte van jong kinders in die tabel van Mnr. Kops is die enigste swak punt in 'n andersins uitstekende berekening. Dit skyn dat hy veronderstel het dat die sterfteverhouding in die eerste en tweede half-jaar van die lewe gelyk was en dat hy sy werklike verhouding te drasties bygewerk het. Sy werklike sterfteverhouding vir manlike kinders by geboorte was 93.18 in vergelyking met 87.84 in Lewenstabel No. 1. Aangesien die sterfte 'n weinig hoër was in 1919 tot 1921 as in 1920 tot 1922, is sy ongewysigde verhouding beter vergelykbaar as sy gewysigde verhouding van 78.38. Die sterfteverhouding van jong kinders was in 1908 tot 1910 op Johannesburg waarskynlik hoër as vir Suid-Afrika as 'n geheel op daardie datum, sodat geen juiste vergelyking met die tabel van Dr. Maynard vir hierdie leeftydperk gemaak kan word nie. Die leeftydverwachting op 20 het in die vyfjarige tydperk gestyg van 45.26 tot 46.27 in die geval van die manlike geslag en van 48.15 tot 49.34 in die geval van die vroulike geslag, terwyl gedurende dieselfde tydperk die leeftydverwachting by geboorte met ruim twee jaar verhoog is.

By 'n vergelyking van die Suidafrikaanse Lewenstabel met ander lande blyk dat dit tussen die van Australië en die van Engeland en Wallis lê. By geboorte is die leeftydswaarde omtrent twee jaar minder as die van Australië en twee jaar meer as die van Engeland en Wallis. Dit volg hierdie tussengeleë lyn tot ongeveer 60, wanneer die leeftydswaarde 'n bietjie gunstiger is as in Australië en dit bly voortduur vir hoër ouderdomme. Nu-Seeland, wat waarskynlik die beste leeftydswaarde in die wêreld besit, is by geboorte ongeveer vyf jaar gunstiger in die geval van die manlike geslag en vier jaar gunstiger in die geval van die vroulike geslag as Suid-Afrika.

Wanneer 'n dergelike vergelyking met ander lande gemaak word, moet in aanmerking geneem word dat die Europese bevolking van die Unie vergelyk word met die totale bevolking van Engeland en Wallis. Dit is waarskynlik dat die Suidafrikaanse Europese bevolking oor die algemeen op 'n hoër voet leef as die gemiddelde bevolking van Engeland en Wallis. Hierdie omstandigheid moet dus nie uit die oog verloor word nie.

**Sterfteverhoudinge van vroue volgens huwelikstaat.**—'n Proefberekening van  $q_x$  vir vroue volgens huwelikstaat is op dieselfde metode gemaak as die waarop die Lewenstabel vir alle vroue bereken is. 'n Noukeurige ondersoek van die sentrale waardes het egter aan die lig gebring dat die gegewens op seker leeftye te gering was om vertroubare resultate op te lewer. Bevoorbeld 'n vermeerdering van een sterfgeval per jaar op elke lewensjaar van ongetroude vroue tussen 64 en 68 sou die sterfteverhouding met 20 persent verhoog het. Die verhouding het dus nie altyd geleidelik met die leeftyd gestyg nie. 'n Tabel lopende oor 'n gedeelte van die berekende verhouding word hieronder gegee, maar selfs daardie informasie moet baie versigtig gebruik word. 'n Paar algemene konklusies skyn egter daaruit vasgestel te wees. Gedurende die tydperk waarin die meeste huwelike plaasvind, nl. op die leeftyd van vroue van 19 tot 28, is die sterfteverhouding vir getroude vroue aansienlik hoër as die vir ongetroudes. Die sterfteverhouding vir weduwees (waarby geskeie vroue ingesluit is) is hoër as die vir getroude vroue. Die weinig laer verhouding op die leeftyd van 46 en die oneweredige hoër verhouding op 51 (in die geval van weduwees) is waarskynlik toe te skrywe aan die geringe aantalle. Die min of meer plotselinge styging in die verhouding vir ongetroude vroue tussen 26 en 31 kan waarskynlik toegeskrywe word aan 'n neiging van ongetroude vroue in die laaste groep om hulle ouderdomme te klein op te gee. Daar bestaan egter geen beskikbare informasie hieromtrent nie. Dis nie raadsaam geag om

die berekening bo die leeftyd van 76 voort te set nie; ewemin was dit die moeite werd om die tussengeleë waardes te interpoleer. Deur tienjarige in plaas van vyfjarige tydperke te neem, sou dit moontlik gewees het om gegradeerde tabelle te verkry, maar sulke tabelle sou hulle direkte betrekking tot Lewenstabel No. 2 verloor het. Onder hierdie omstandighede is besluit om die ondersoek nie verder in te stel nie, maar aangesien berekeninge van hierdie aard totnogtoe nooit gemaak is nie, word die gedeeltelike resultate van genoegsame belang geag om dit te publiseer.

SUIDAFRIKAANSE LEWENSTABEL No. 2.  
VROULIKE STERFTE (1,000  $q_x$ ) VOLGENS HUWELIKSTAAT.

Ouderdom.	Nooit Getroud.	Getroud.	Wedustaat en Geskeie.	Totale Vroue.
21.....	2-4696	3-3822	—	2-7366
26.....	2-9553	3-5294	—	3-3884
31.....	4-4197	4-1020	*	4-1328
36.....	4-6001	4-9446	*	4-8967
41.....	*	5-7279	5-7789	5-5853
46.....	*	6-6516	6-1199	6-6165
51.....	*	9-0896	11-1379	9-3029
56.....	*	13-6134	13-9448	13-7380
61.....	*	18-4764	20-8081	18-7350
66.....	*	29-4120	35-2230	31-8075
71.....	*	43-3908	48-9821	46-9407
76.....	*	74-4429	80-4015	78-7101

\* Oorspronklike gegewens te gering.

**Waardes van Jaargelde en enkele en jaarlikse premies.**—Waardes van 'n jaargeld van 1, ( $a_x$ ), die bedraë om 1 te verseker by oorlyding ( $P_x$ ) gebaseer op Lewenstabel No. 2, is vir beide geslagte vir elke lewensjaar bereken teen 4, 4½ en 5 persent. Die enigste vorige berekening van hierdie aard, wat gepubliseer is, is vervat in die sterfte-tabelle van die Suidafrikaanse Onderlinge Maatskappy waarvan hierbo melding gemaak is. In daardie publikasie is die waarde van 'n jaargeld van 1 ( $a_x$ ) bereken vir elke lewensjaar van 15 tot 96. Soos te verwag was is die syfers oor die algemeen iets laer as die wat bereken is op die Suidafrikaanse Tabel No. 2.

Die tabelle word in hulle geheel gepubliseer, maar dieselfde voorbehold met betrekking tot die syfers vir hoër ouderdomme, vroeër vermeld in hierdie rapport, is ook van toepassing op hierdie berekeninge sowel as op die Lewenstabel self waarop hulle gegrond is

1. (a) SUID-AFRIKAANSE LEWENSTABELLE No. 2.—1. (a) SOUTH AFRICAN LIFE TABLES No. 2.

MANNE—MALES.

Age. Ouderdom (x)	$l_x$	$d_x$	$P_x$	$q_x$	$L_x$	$T_x$	$e_x$	Ouderdom Age (x)
0	1,000,000	74,437	-9255625	-0744375	945,519	57,776,195	57-78	0
1	925,563	17,311	-9812973	-0187027	916,908	56,830,676	61-40	1
2	908,252	6,685	-9926397	-0073603	904,909	55,913,768	61-56	2
3	901,567	4,242	-9952950	-0047050	899,446	55,008,859	61-01	3
4	897,325	3,107	-9965372	-0034628	895,772	54,109,413	60-30	4
5	894,218	2,611	-9970805	-0029195	892,912	53,213,641	59-51	5
6	891,607	2,238	-9974902	-0025098	890,488	52,320,729	58-68	6
7	889,369	1,966	-9977898	-0022102	888,386	51,430,241	57-83	7
8	887,403	1,775	-9979996	-0020004	886,516	50,541,855	56-95	8
9	885,628	1,650	-9981364	-0018636	884,803	49,655,339	56-07	9
10	883,978	1,579	-9982137	-0017863	883,188	48,770,536	55-17	10
11	882,399	1,552	-9982417	-0017583	881,623	47,887,348	54-27	11
12	880,847	1,562	-9982271	-0017229	880,066	47,005,725	53-36	12
13	879,285	1,606	-9981732	-0016828	878,482	46,125,659	52-46	13
14	877,679	1,685	-9980803	-0016197	876,837	45,247,177	51-55	14
15	875,994	1,800	-9979448	-0020552	875,094	44,370,340	50-65	15
16	874,194	1,958	-9977693	-0029397	873,215	43,495,246	49-75	16
17	872,236	2,166	-9975166	-0043834	871,153	42,622,081	48-87	17
18	870,070	2,436	-9971999	-0062801	868,852	41,750,878	47-99	18
19	867,634	2,723	-9968619	-0081381	866,272	40,882,026	47-12	19
20	864,911	2,980	-9965551	-0034449	863,421	40,015,754	46-27	20
21	861,931	3,161	-9963324	-0036676	860,351	39,152,333	45-42	21
22	858,770	3,247	-9962195	-0037805	857,146	38,291,982	44-59	22
23	855,523	3,267	-9961814	-0038186	853,890	37,434,836	43-76	23
24	852,256	3,255	-9961807	-0038193	850,628	36,580,946	42-92	24
25	849,001	3,243	-9961799	-0038201	847,380	35,730,318	42-09	25
26	845,758	3,264	-9961412	-0038588	844,126	34,882,938	41-24	26
27	842,494	3,299	-9960840	-0039160	840,844	34,038,812	40-40	27
28	839,195	3,329	-9960335	-0039665	837,531	33,197,968	39-56	28
29	835,866	3,376	-9959605	-0040395	834,178	32,360,437	38-71	29
30	832,490	3,467	-9958356	-0041644	830,756	31,526,259	37-87	30
31	829,023	3,623	-9956296	-0043704	827,212	30,695,503	37-03	31
32	825,400	3,879	-9952999	-0047001	823,460	29,868,291	36-19	32
33	821,521	4,219	-9948650	-0051350	819,412	29,044,831	35-35	33
34	817,302	4,587	-9943871	-0056129	815,008	28,225,410	34-53	34
35	812,715	4,934	-9939295	-0060705	810,248	27,410,411	33-73	35
36	807,781	5,265	-9935563	-0064437	805,179	26,600,163	32-93	36
37	802,576	5,588	-9933121	-0066879	799,892	25,794,984	32-14	37
38	797,208	5,457	-9931551	-0068449	794,479	24,995,092	31-35	38
39	791,751	5,526	-9930200	-0069800	788,988	24,200,613	30-57	39
40	786,225	5,629	-9928411	-0071589	783,411	23,411,625	29-78	40
41	780,596	5,813	-9925525	-0074475	777,689	22,628,214	28-99	41
42	774,783	6,098	-9921290	-0078710	771,734	21,850,625	28-20	42
43	768,685	6,447	-9916132	-0083808	765,462	21,078,791	27-42	43
44	762,238	6,829	-9910407	-0089593	758,823	20,313,329	26-65	44
45	755,499	7,216	-9904476	-0095524	751,801	19,554,506	25-89	45
46	748,193	7,579	-9898705	-0101295	744,404	18,802,705	25-13	46
47	740,614	7,889	-9893482	-0106518	736,669	18,058,301	24-38	47
48	732,725	8,165	-9888565	-0111435	728,643	17,321,632	23-64	48
49	724,560	8,450	-9883878	-0116622	720,335	16,592,089	22-90	49
50	716,110	8,784	-9877336	-0122604	711,718	15,872,654	22-17	50
51	707,326	9,207	-9869837	-0130163	702,722	15,160,936	21-43	51
52	698,119	9,724	-9860715	-0139285	693,257	14,458,214	20-71	52
53	688,395	10,303	-9850330	-0149670	683,244	13,764,957	20-00	53
54	678,092	10,927	-9838860	-0161140	672,628	13,081,713	19-29	54
55	667,165	11,576	-9826486	-0173514	661,377	12,409,085	18-60	55
56	655,589	12,233	-9813398	-0186602	649,473	11,747,708	17-92	56
57	643,356	12,889	-9799657	-0200343	636,911	11,098,235	17-25	57
58	630,467	13,459	-9785096	-0214904	623,693	10,461,324	16-59	58
59	616,918	14,216	-9769564	-0230436	609,810	9,837,631	15-95	59
60	602,702	14,893	-9752900	-0247100	595,255	9,227,821	15-31	60
61	587,809	15,581	-9734934	-0265066	580,019	8,632,566	14-69	61
62	572,228	16,243	-9716144	-0283856	564,106	8,052,547	14-07	62
63	555,985	16,869	-9696589	-0303411	547,551	7,488,441	13-47	63
64	539,116	17,498	-9675429	-0324571	530,367	6,940,890	12-87	64
65	521,618	18,165	-9651765	-0348235	512,535	6,410,523	12-29	65
66	503,453	18,898	-9624630	-0375370	494,004	5,897,988	11-72	66
67	484,555	19,656	-9594345	-0405655	474,727	5,403,984	11-15	67
68	464,899	20,394	-9561319	-0438681	454,702	4,929,257	10-60	68
69	444,505	21,133	-9524581	-0475419	433,939	4,474,555	10-07	69



1. (a) SUID-AFRIKAANSE LEWENSTABELLE No. 2 (vervolg).—1. (a) SOUTH AFRICAN LIFE TABLES No. 2 (continued).  
MANNE—MALES.

Ouderdom Age (x)	$l_x$	$d_x$	$p_x$	$q_x$	$L_x$	$T_x$	$e_x$	Ouderdom Age (x)
70	423,372	21,886	·9483057	·0516943	412,429	4,040,616	9·54	70
71	401,486	22,662	·9485540	·0564460	390,155	3,628,187	9·04	71
72	378,824	23,510	·9379394	·0620606	367,069	3,238,032	8·55	72
73	355,314	24,360	·9314420	·0685580	343,134	2,870,963	8·08	73
74	330,954	25,046	·9243227	·0756773	318,431	2,527,829	7·64	74
75	305,908	25,421	·9169000	·0831000	293,197	2,209,398	7·22	75
76	280,487	25,382	·9095090	·0904910	267,796	1,916,301	6·83	76
77	255,105	24,861	·9025461	·0974539	242,675	1,648,405	6·46	77
78	230,244	23,992	·8957973	·1042027	218,248	1,405,730	6·11	78
79	206,252	22,943	·8887640	·1112360	194,780	1,187,482	5·76	79
80	183,309	21,837	·8808752	·1191248	172,391	992,702	5·42	80
81	161,472	20,754	·8714728	·1285272	151,095	820,311	5·08	81
82	140,718	19,741	·8597996	·1402904	130,847	669,216	4·76	82
83	120,977	18,667	·8456982	·1543018	111,644	538,369	4·45	83
84	102,310	17,365	·8302673	·1697327	93,627	426,725	4·17	84
85	84,945	15,759	·8144745	·1855255	77,066	333,098	3·92	85
86	69,186	13,862	·7996419	·2003581	62,255	256,032	3·70	86
87	55,324	11,839	·7860004	·2139996	49,404	193,777	3·50	87
88	43,485	9,877	·7728529	·2271471	38,547	144,373	3·32	88
89	33,608	8,055	·7603250	·2396750	29,580	105,826	3·15	89
90	25,553	6,425	·7485424	·2514576	22,341	76,246	2·98	90
91	19,128	5,019	·7376392	·2623708	16,618	53,905	2·82	91
92	14,109	3,955	·7197095	·2802905	12,132	37,287	2·64	92
93	10,154	3,038	·7008306	·2991694	8,635	25,155	2·48	93
94	7,116	2,270	·6809825	·3190175	5,981	16,520	2·32	94
95	4,846	1,647	·6601621	·3398379	4,022	10,539	2·17	95
96	3,199	1,157	·6383741	·3616259	2,621	6,517	2·04	96
97	2,042	785	·6156333	·3843667	1,649	3,896	1·91	97
98	1,257	513	·5919645	·4080355	1,001	2,247	1·79	98
99	744	322	·5674052	·4325948	583	1,246	1·67	99
100	422	193	·5420055	·4579945	325	663	1·57	100
101	229	111	·5158301	·4841699	174	338	1·48	101
102	118	60	·4889590	·5110410	88	164	1·38	102
103	58	31	·4614879	·5385121	42	76	1·30	103
104	27	15	·4335295	·5664705	20	34	1·22	104
105	12	7	·4052132	·5947868	8	14	1·14	105
106	5	3	·3766845	·6233155	4	6	1·03	106
107	2	1	·3481045	·6518955	1	2	·87	107
108	1	1	·3196479	·6803521	1	1	·50	108
109	—	—	·2915016	·7084984	—	—	—	109

1. (b) SUID-AFRIKAANSE LEWENSTABELLE No. 2.—1. (b) SOUTH AFRICAN LIFE TABLES No. 2.  
VROU—FEMALES.

Ouderdom Age (x)	$l_x$	$d_x$	$p_x$	$q_x$	$L_x$	$T_x$	$e_x$	Ouderdom Age (x)
0	1,000,000	62,761	·9372391	·0627609	954,808	61,483,787	61·48	0
1	937,239	17,227	·9816190	·0183810	928,626	60,528,979	64·58	1
2	920,012	7,084	·9923002	·0076998	916,470	59,600,353	64·78	2
3	912,928	3,778	·9958615	·0041385	911,039	58,683,883	64·28	3
4	909,150	3,123	·9965652	·0034348	907,588	57,772,844	63·55	4
5	906,027	2,145	·9976325	·0023675	904,955	56,865,256	62·76	5
6	903,882	1,831	·9979742	·0020258	902,966	55,960,301	61·91	6
7	902,051	1,602	·9982238	·0017762	901,250	55,057,335	61·04	7
8	900,449	1,449	·9983913	·0016087	899,725	54,156,085	60·14	8
9	899,000	1,361	·9984804	·0015136	898,319	53,256,360	59·24	9
10	897,639	1,329	·9985191	·0014809	896,975	52,358,041	58·33	10
11	896,310	1,345	·9984991	·0015009	895,637	51,461,066	57·41	11
12	894,965	1,399	·9984363	·0015637	894,266	50,565,429	56·50	12
13	893,566	1,483	·9983405	·0016595	892,824	49,671,163	55·59	13
14	892,083	1,586	·9982216	·0017784	891,290	48,778,339	54·68	14
15	890,497	1,701	·9980894	·0019106	889,647	47,887,049	53·78	15
16	888,796	1,819	·9979537	·0020463	887,886	46,997,402	52·88	16
17	886,977	1,930	·9978244	·0021756	886,012	46,109,516	51·99	17
18	885,047	2,048	·9976863	·0023137	884,023	45,223,504	51·10	18
19	882,999	2,169	·9975438	·0024562	881,915	44,339,481	50·21	19
20	880,830	2,289	·9974014	·0025986	879,685	43,457,566	49·34	20
21	878,541	2,404	·9972634	·0027366	877,339	42,577,881	48·46	21
22	876,137	2,513	·9971320	·0028680	874,881	41,700,542	47·60	22
23	873,624	2,617	·9970043	·0029957	872,315	40,825,661	46·73	23
24	871,007	2,720	·9968771	·0031229	869,647	39,953,346	45·87	24
25	868,287	2,824	·9967472	·0032528	866,875	39,083,699	45·01	25
26	865,463	2,933	·9966116	·0033884	863,997	38,216,824	44·16	26
27	862,530	3,046	·9964690	·0035310	861,007	37,352,827	43·31	27
28	859,484	3,162	·9963215	·0036785	857,903	36,491,820	42·46	28
29	856,322	3,279	·9961708	·0038292	854,682	35,633,917	41·61	29
30	853,043	3,396	·9960188	·0039812	851,345	34,779,235	40·77	30
31	849,647	3,511	·9958672	·0041328	847,892	33,927,890	39·93	31
32	846,136	3,626	·9957145	·0042855	844,323	33,079,998	39·10	32
33	842,510	3,741	·9955595	·0044405	840,639	32,235,675	38·26	33
34	838,769	3,855	·9954044	·0045956	836,842	31,395,036	37·43	34
35	834,914	3,965	·9952516	·0047484	832,931	30,558,194	36·60	35
36	830,949	4,069	·9951033	·0048967	828,915	29,725,263	35·77	36
37	826,880	4,162	·9949602	·0050338	824,799	28,896,348	34·95	37
38	822,718	4,246	·9948336	·0051614	820,595	28,071,549	34·12	38
39	818,472	4,329	·9947109	·0052891	816,307	27,250,954	33·29	39
40	814,143	4,418	·9945929	·0054271	811,934	26,434,647	32·47	40
41	809,725	4,523	·9944747	·0055853	807,484	25,622,713	31·64	41
42	805,202	4,625	·9943564	·0057436	802,889	24,815,249	30·82	42
43	800,577	4,720	·9942381	·0058952	798,217	24,012,360	29·99	43
44	795,857	4,831	·9941198	·0060707	793,442	23,214,143	29·17	44
45	791,026	4,984	·9939992	·0063008	788,534	22,420,701	28·34	45
46	786,042	5,201	·9938835	·0066165	783,441	21,632,167	27·52	46
47	780,841	5,481	·9937681	·0070190	778,101	20,848,726	26·70	47
48	775,360	5,806	·9936513	·0074887	772,457	20,070,625	25·89	48
49	769,554	6,176	·9935343	·0080257	766,466	19,298,168	25·08	49
50	763,378	6,588	·9934169	·0086303	760,084	18,531,702	24·28	50
51	756,790	7,040	·9932997	·0093029	753,270	17,771,618	23·48	51
52	749,750	7,546	·9931848	·0100652	745,977	17,018,348	22·70	52
53	742,204	8,105	·9930680	·0109196	738,151	16,272,371	21·92	53
54	734,099	8,689	·9929513	·0118368	729,755	15,534,220	21·16	54
55	725,410	9,276	·9928333	·0127867	720,772	14,804,465	20·41	55
56	716,134	9,838	·9927150	·0137380	711,215	14,083,693	19·67	56
57	706,296	10,300	·9925964	·0146898	701,146	13,372,478	18·93	57
58	695,996	10,679	·9924775	·0156435	690,656	12,671,332	18·21	58
59	685,317	11,087	·9923582	·0166172	679,774	11,980,676	17·48	59
60	674,230	11,631	·9922385	·0175509	668,414	11,300,902	16·76	60
61	662,599	12,414	·9921184	·0184350	656,392	10,632,488	16·05	61
62	650,185	13,496	·9919978	·0192794	643,437	9,976,096	15·34	62
63	636,689	14,790	·9918767	·0200842	629,294	9,332,659	14·66	63
64	621,899	16,171	·9917551	·0208496	613,814	8,703,365	13·99	64
65	605,728	17,518	·9916330	·0215759	596,969	8,089,551	13·36	65
66	588,210	18,709	·9915114	·0222632	578,855	7,492,582	12·74	66
67	569,501	19,636	·9913903	·0229126	559,683	6,913,727	12·14	67
68	549,865	20,372	·9912697	·0235242	539,670	6,354,044	11·56	68
69	529,493	21,064	·9911496	·0240980	518,961	5,814,365	10·98	69



3.—VERGELYKING VAN SUID-AFRIKAANSE LEWENSTABEL No. 2, MET DIE VAN ANDER LANDE OP SEKER LEEFTYE.  
3.—COMPARISON OF SOUTH AFRICAN LIFE TABLE No. 2, WITH THOSE OF OTHER COUNTRIES AT CERTAIN AGES.

Ouderdom. Age.	Manlik—Male.					Vroulik—Female.				
	S.A. No. 2. 1925-27.	Nu-Seeland. New Zealand. 1921-22.	Australië. Australia. 1920-22.	Engeland en Wallis. England and Wales No. 9. 1920-22.	Ierse Vrystaat. Irish Free State. 1925-27.	S.A. No. 2. 1925-27.	Nu-Seeland. New Zealand. 1921-22.	Australië. Australia. 1920-22.	Engeland en Wallis. England and Wales No. 9. 1920-22.	Ierse Vrystaat. Irish Free State. 1925-27.

(a) VOLLEDIGE LEEFTYDSVERWAGTING ( $e_x$ ).—COMPLETE EXPECTATION OF LIFE ( $e_x$ ).

0	57.78	62.76	59.15	55.62	57.37	61.48	65.43	63.31	59.58	57.93
1	61.40	65.05	62.67	60.07	61.15	64.58	67.03	66.03	62.99	60.83
2	61.56	64.51	62.60	60.50	61.32	64.78	66.44	65.86	63.35	60.97
3	61.01	63.81	61.99	60.14	60.88	64.28	65.72	65.21	62.98	60.54
4	60.30	63.01	61.25	59.53	60.24	63.55	64.90	64.44	62.38	59.90
5	59.51	62.17	60.43	58.81	59.50	62.76	64.05	63.64	61.07	59.17
10	55.17	57.73	56.01	54.64	55.20	58.33	59.50	59.20	57.53	54.92
20	46.27	48.66	46.99	45.78	46.40	49.34	50.36	50.03	48.73	46.36
30	37.87	39.98	38.44	37.40	38.39	40.77	41.76	41.48	40.26	38.60
40	29.78	31.56	30.05	29.19	30.43	32.47	33.23	33.14	31.86	30.83
50	22.17	23.51	22.20	21.36	22.67	24.28	24.91	24.90	23.69	23.19
60	15.81	16.03	15.08	14.36	15.75	16.76	17.29	17.17	16.22	16.36
70	9.54	9.91	9.26	8.75	10.20	10.42	10.57	10.41	9.95	10.72
80	5.42	5.33	5.00	4.93	5.81	5.85	5.78	5.61	5.56	6.47
90	2.98	2.31	2.60	2.82	3.27	3.11	2.52	2.91	3.13	3.74
100	1.57	.75	1.17	—	1.81	1.57	.92	1.24	—	2.08

(b) STERFTEVERHOUDING.—RATE OF MORTALITY ( $1,000q_x$ ).

0	74.44	50.17	71.32	89.96	77.16	62.76	38.50	55.68	69.42	63.46
1	18.70	7.07	14.60	23.39	18.91	18.38	6.13	12.51	21.37	18.46
2	7.36	4.62	6.25	10.50	9.13	7.70	4.20	5.23	9.91	9.40
3	4.71	3.13	4.23	6.50	5.96	4.14	2.80	3.67	6.30	5.94
4	3.46	2.60	3.00	4.75	4.31	3.43	2.27	2.98	4.65	4.45
5	2.92	2.26	2.52	4.17	3.31	2.37	1.89	2.40	4.24	3.50
10	1.70	1.41	1.56	1.81	1.66	1.48	1.12	1.27	1.80	1.95
20	3.44	2.55	2.84	3.49	4.01	2.60	2.44	2.52	3.06	4.47
30	4.16	3.60	3.90	4.34	5.29	3.98	3.55	3.87	3.92	5.90
40	7.16	5.63	6.17	6.88	7.05	5.43	4.60	5.24	5.32	7.47
50	12.27	9.38	11.58	11.79	11.30	8.63	8.24	8.08	9.15	11.39
60	24.71	20.01	24.07	25.61	24.28	17.25	16.13	15.71	18.97	23.94
70	51.69	48.15	52.90	59.97	49.13	42.97	40.28	40.90	46.46	46.47
80	119.12	113.68	133.40	140.02	113.89	103.09	103.25	112.30	117.66	100.49
90	251.46	306.00	283.00	267.52	226.90	237.95	276.64	251.00	238.52	196.81
100	457.99	706.15	593.00	—	406.21	456.30	683.61	501.00	—	355.39

(c) AANTAL LANGSLEWENDES.—NUMBER OF SURVIVORS ( $l_x$ ).

0	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
1	925,563	949,830	928,680	910,040	922,840	937,239	961,500	944,320	930,580	936,540
2	908,252	943,110	915,120	888,750	905,300	920,012	955,610	932,510	910,690	919,250
3	901,567	938,750	909,400	879,420	897,120	912,928	951,600	927,630	901,670	910,610
4	897,325	935,810	905,550	873,700	891,770	909,150	948,940	924,230	895,990	905,200
5	894,218	933,380	902,880	869,550	887,930	906,027	946,790	921,480	891,820	901,170
10	883,978	924,820	893,800	856,030	877,150	897,639	939,990	913,140	879,090	889,330
20	864,911	908,530	876,970	837,480	856,300	880,830	925,090	890,060	859,380	864,150
30	832,490	881,770	847,430	805,490	816,800	853,043	897,280	870,860	830,190	819,440
40	786,225	843,340	808,130	762,940	769,750	814,143	832,790	793,810	768,270	768,270
50	716,110	784,940	743,300	699,160	706,570	763,378	783,130	742,460	703,240	703,240
60	602,702	688,510	633,860	588,040	599,270	674,230	704,950	652,020	596,660	596,660
70	423,372	503,630	443,320	395,260	425,330	508,429	566,440	547,710	484,010	428,200
80	183,300	236,420	186,140	150,350	249,095	285,810	271,700	222,950	211,890	211,890
90	25,553	29,980	21,410	17,100	33,998	41,231	46,390	42,380	34,470	46,940
100	422	40	170	—	912	780	120	620	—	2,197

(d) WAARSKYNLIKHEID OM 10 JAAR TE OORLEWE.—PROBABILITY OF SURVIVING 10 YEARS ( $_{10}p_x$ ).

0	.88398	.92482	.89359	.85693	.87715	.89764	.93999	.91314	.87909	.88933
10	.97843	.98239	.98107	.97730	.97623	.98127	.98415	.98458	.97758	.97169
20	.96252	.97055	.96632	.96180	.96394	.96845	.96994	.96603	.96226	.95826
30	.94443	.95472	.95362	.94718	.94233	.95440	.96154	.95628	.95618	.93755
40	.91082	.93075	.93078	.91640	.91792	.93765	.94037	.93531	.93531	.91536
50	.84163	.87715	.85276	.84107	.84814	.88322	.89128	.89576	.87819	.84844
60	.70246	.73148	.69940	.67217	.70975	.75409	.78135	.78077	.74232	.71766
70	.43297	.46943	.41988	.38033	.45964	.48993	.50457	.49607	.46063	.49484
80	.13940	.12681	.11502	.11373	.17390	.16552	.16231	.15598	.15461	.22153
90	.01652	.00133	.00794	—	.02683	.01892	.00259	.01463	—	.04680
100	—	—	—	—	—	—	—	—	—	—

4.—STATISTIEK WAAROP SUID-AFRIKAANSE LEWENSTABEL No. 2 GEBASEER IS.  
4.—STATISTICS ON WHICH SOUTH AFRICAN LIFE TABLE No. 2 IS BASED.

Ouderdom. Jare. Age: Years.	1926 : Volkstelling Syfers Bygewerk tot 30/6/26. 1926 : Population Census Figures Adjusted to 30/6/26.	Manne.—Males.				1926 : Volkstelling Syfers Bygewerk tot 30/6/26. 1926 : Population Census Figures Adjusted to 30/6/26.	Vroue.—Females.				Ouderdom : Jare. Age : Years.
		Stergevalle Geregistreer in Elk van 3 Jare : Deaths Registered in Each of 3 Years : 1925, 1926, and/en 1927.					Stergevalle Geregistreer in Elk van 3 Jare : Deaths Registered in Each of 3 Years : 1925, 1926, and/en 1927.				
		1925.	1926.	1927.	Totaal—Total.	1925.	1926.	1927.	Totaal—Total.		
0	21,067	1,692	1,570	1,714	4,976	20,062	1,277	1,274	1,418	3,969	0
1	20,310	387	343	423	1,153	19,171	377	315	385	1,077	1
2	19,725	147	114	174	435	19,079	132	154	150	436	2
3	20,085	89	85	103	277	19,493	86	78	70	234	3
4	20,472	62	80	61	203	19,707	67	67	60	194	4
5	20,431	63	52	54	169	19,810	37	49	45	131	5
6	19,590	44	46	46	133	18,871	26	45	41	112	6
7	19,624	42	54	41	137	19,052	33	38	34	105	7
8	19,724	41	40	37	118	18,505	35	29	32	96	8
9	19,453	34	49	36	119	18,746	31	34	31	96	9
10	18,622	31	33	37	101	18,012	25	21	29	75	10
11	19,560	32	41	37	110	18,816	26	37	30	93	11
12	19,625	35	35	28	98	19,311	29	20	28	77	12
13	19,561	27	46	25	98	19,389	32	31	33	96	13
14	19,118	26	33	39	98	18,658	31	41	38	110	14
15	18,945	32	34	44	110	18,233	32	36	42	110	15
16	18,454	43	37	38	116	17,864	36	32	31	99	16
17	17,952	43	56	47	146	17,688	32	33	29	94	17
18	18,053	57	47	55	159	18,211	45	41	58	144	18
19	17,479	53	68	59	180	17,690	36	41	43	120	19
20	17,184	70	62	75	207	17,104	46	44	47	137	20
21	16,573	47	52	65	164	16,681	41	53	53	147	21
22	16,178	48	50	54	152	16,379	41	41	57	139	22
23	12,978	47	58	65	170	13,462	42	35	45	122	23
24	10,840	42	43	50	135	11,435	35	33	35	103	24
25	11,201	43	40	44	127	12,004	50	34	29	113	25
26	11,946	46	49	49	132	12,969	36	56	46	138	26
27	11,681	40	41	38	125	12,412	32	54	46	132	27
28	11,977	36	50	64	150	12,553	53	46	40	139	28
29	12,031	45	47	50	142	12,587	56	57	40	153	29
30	12,439	40	57	48	145	12,980	58	62	47	167	30
31	11,635	51	47	51	149	11,747	33	32	44	109	31
32	11,983	48	60	68	176	12,069	55	60	44	159	32
33	11,810	62	64	57	183	11,987	59	53	63	175	33
34	11,189	60	65	62	187	11,233	48	57	64	169	34
35	11,409	69	69	74	212	11,305	49	53	59	161	35
36	10,920	71	77	67	215	11,026	59	56	57	172	36
37	11,000	56	76	79	211	10,934	45	61	43	149	37
38	10,631	76	76	84	236	10,816	48	60	55	163	38
39	10,268	63	60	69	192	10,205	56	61	48	165	39
40	10,420	79	75	70	224						

4.—STATISTIEK WAAROP SUID-AFRIKAANSE LEWENSTABEL No. 2 GEBASEER IS (vervolg).  
4.—STATISTICS ON WHICH SOUTH AFRICAN LIFE TABLE No. 2 IS BASED (continued).

Ouderdom : Jare. Age : Years.	1926 : Volkstelling Syfers Bygewerk tot 30/6/26. 1926 : Population Census Figures Adjusted to 30/6/26.	Manne.—Males.				1926 : Volkstelling Syfers Bygewerk tot 30/6/26. 1926 : Population Census Figures Adjusted to 30/6/26.	Vroue.—Females.				Ouderdom : Jare. Age : Years.
		Sterfgevälle Geregistreer in Elk van 3 Jare : Deaths Registered in Each of 3 Years : 1925, 1926, and/en 1927.					Sterfgevälle Geregistreer in Elk van 3 Jare : Deaths Registered in Each of 3 Years : 1925, 1926, and/en 1927.				
		1925.	1926.	1927.	Totaal—Total.		1925.	1926.	1927.	Totaal—Total.	
65	3,669	139	163	143	445	3,270	87	109	101	297	65
66	3,363	100	117	117	334	2,886	67	86	79	232	66
67	2,833	96	111	141	348	2,431	87	84	100	271	67
68	2,709	102	124	135	361	2,307	80	92	101	273	68
69	2,440	109	137	119	365	2,092	76	90	98	264	69
70	2,370	117	125	128	370	2,118	87	94	83	264	70
71	2,124	97	110	110	317	1,755	65	84	78	227	71
72	1,844	118	145	140	403	1,584	88	83	100	271	72
73	1,682	111	123	122	356	1,580	87	91	107	285	73
74	1,420	115	105	115	335	1,345	83	93	87	263	74
75	1,385	106	131	125	362	1,281	111	84	86	281	75
76	1,207	113	100	129	342	1,089	77	110	118	305	76
77	969	90	87	123	300	926	67	84	90	241	77
78	818	90	97	90	277	792	62	92	68	222	78
79	677	83	80	78	241	675	75	76	72	223	79
80	625	77	76	70	223	618	66	81	62	209	80
81	498	66	60	60	186	507	50	56	70	176	81
82	391	57	60	67	184	445	48	38	56	142	82
83	357	69	63	64	196	368	51	52	61	164	83
84	273	64	66	54	184	292	59	65	51	175	84
85	259	34	61	41	136	256	39	39	47	125	85
86	170	21	42	28	91	188	37	52	36	103	86
87	114	27	23	39	89	139	35	33	35	103	87
88	86	31	20	28	79	113	19	20	23	62	88
89	75	20	18	13	51	91	21	27	15	63	89
90	53	18	20	13	51	67	20	13	18	51	90
91	29	7	9	12	28	43	9	15	14	38	91
92	20	7	3	4	14	38	14	12	15	41	92
93	18	10	6	9	25	24	6	10	7	23	93
94	11	4	4	5	13	18	7	2	7	16	94
95	8	3	4	4	11	12	1	6	4	11	95
96	7	—	2	2	4	14	5	3	6	14	96
97	6	2	1	4	7	7	6	3	3	12	97
98	3	1	—	—	1	4	—	1	2	3	98
99	—	2	—	2	4	2	1	—	1	2	99
100	1	1	—	1	2	3	1	—	—	1	100
101	—	2	—	1	3	2	1	—	3	4	101
102	—	—	—	—	—	—	—	—	1	1	102
103	—	—	1	—	1	—	2	—	—	2	103
104	—	—	—	—	—	—	1	—	—	1	104
105	—	—	—	—	—	—	1	—	2	3	105
106	—	—	—	—	—	—	2	—	—	—	106
107	—	—	—	—	—	—	—	2	—	2	107
All ages..... Alle onderdomme.	857,590	8,712	9,118	9,456	27,286	820,084	6,659	6,962	7,170	20,791	All ages. Alle onderdomme.

SUID-AFRIKAANSE LEWENSTABEL No. 2.—SOUTH AFRICAN LIFE TABLE No. 2.

M. 4.

M. 4. V. 4.

F. 4.

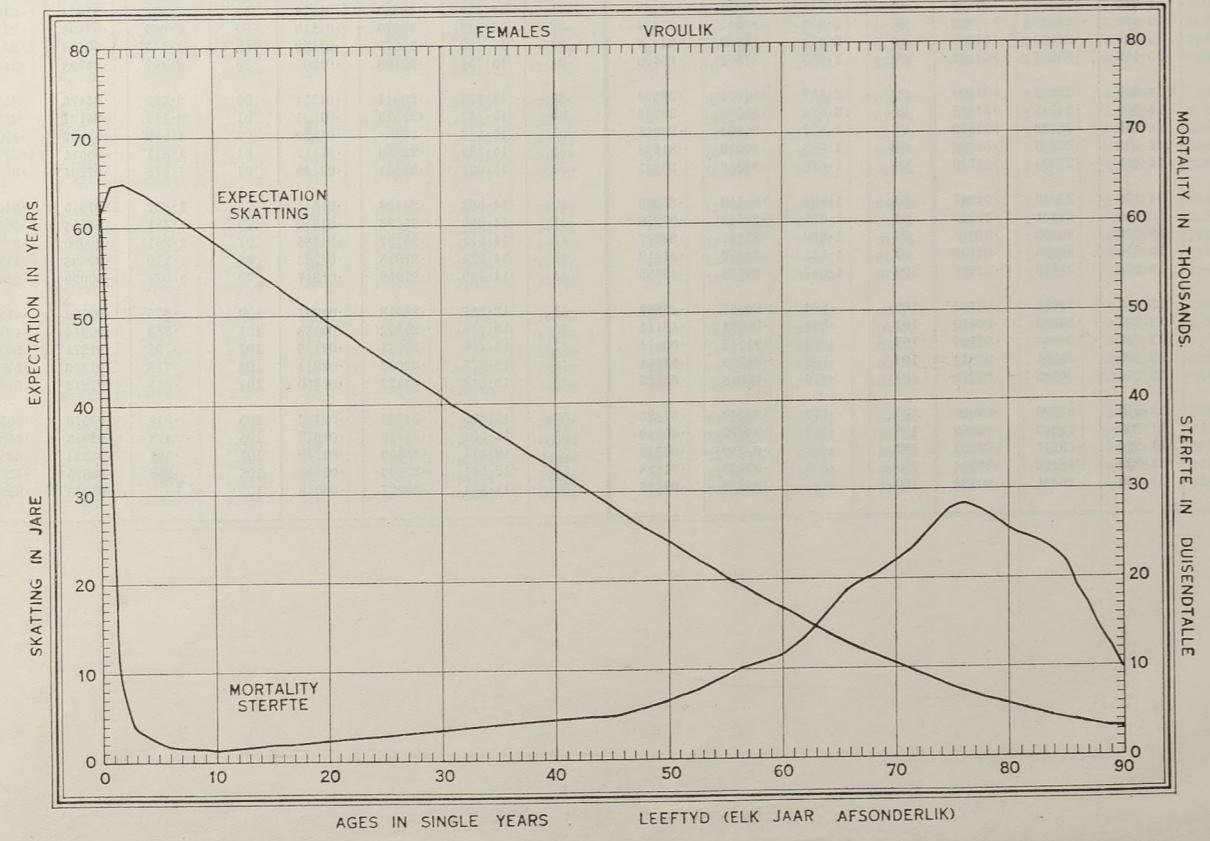
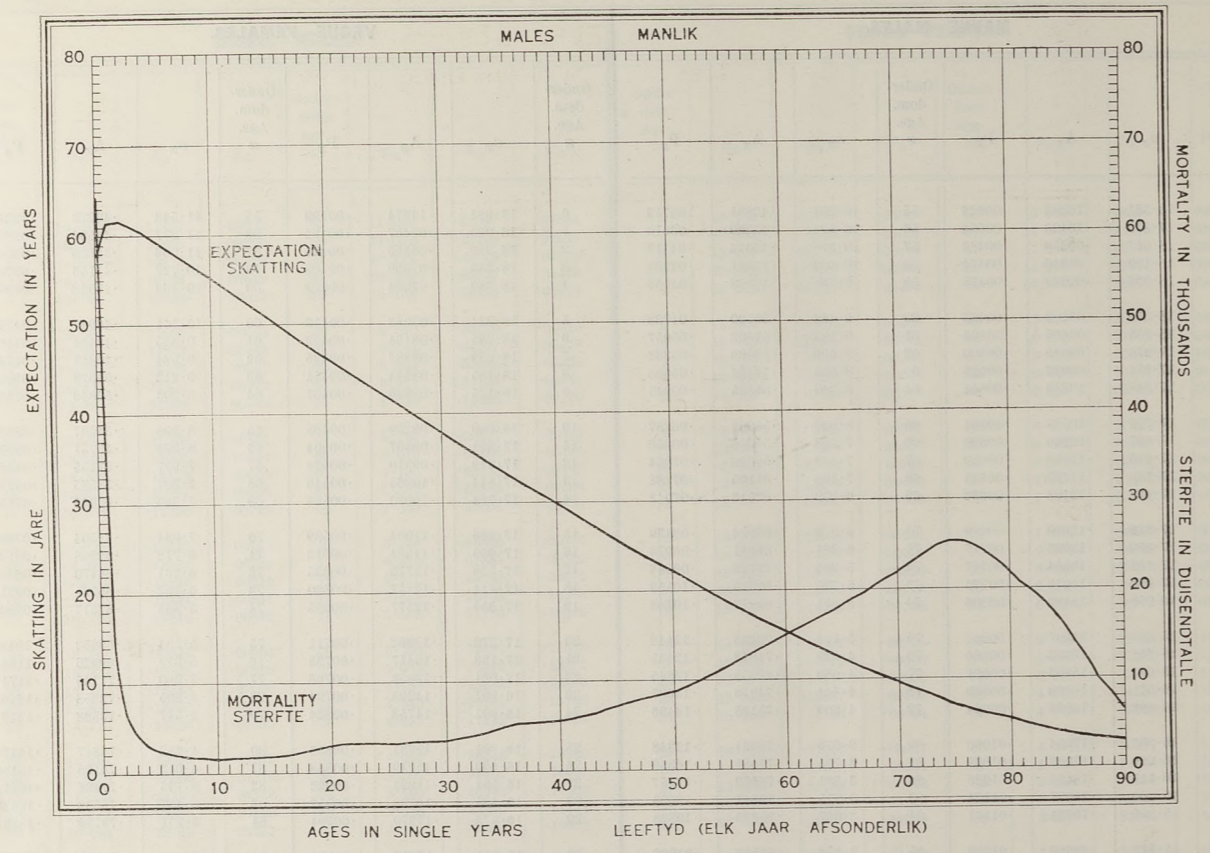
Ouderdom. Age. x	MANNE—MALES.				VROU—FEMALES.										
	$a_x$	$A_x$	$P_x$	$Q_x$	$a_x$	$A_x$	$P_x$	$Q_x$							
0	19.859	.19771	-.00948	55	11.818	.50701	-.03955	0	20.416	-.17630	-.00823	55	12.690	-.47311	-.03454
1	21.315	.14174	-.00635	56	11.508	.51894	-.04149	1	21.655	-.12867	-.00568	56	12.378	-.48546	-.03629
2	21.590	.13116	-.00581	57	11.195	.53095	-.04354	2	21.943	-.11759	-.00513	57	12.053	-.49798	-.03815
3	21.620	.13000	-.00575	58	10.881	.54303	-.04570	3	21.997	-.11549	-.00502	58	11.720	-.51076	-.04015
4	21.591	.13111	-.00580	59	10.565	.55519	-.04801	4	21.972	-.11645	-.00507	59	11.379	-.52389	-.04232
5	21.533	.13335	-.00592	60	10.247	.56743	-.05045	5	21.930	-.11808	-.00515	60	11.029	-.53736	-.04467
6	21.460	.13616	-.00606	61	9.927	.57974	-.05306	6	21.861	-.12072	-.00528	61	10.671	-.55111	-.04722
7	21.374	.13945	-.00623	62	9.605	.59212	-.05583	7	21.782	-.12377	-.00543	62	10.310	-.56500	-.04996
8	21.278	.14314	-.00642	63	9.281	.60458	-.05881	8	21.693	-.12717	-.00560	63	9.950	-.57886	-.05287
9	21.174	.14715	-.00664	64	8.954	.61715	-.06200	9	21.598	-.13086	-.00579	64	9.594	-.59255	-.05593
10	21.062	.15146	-.00687	65	8.625	.62982	-.06544	10	21.496	-.13479	-.00599	65	9.244	-.60601	-.05916
11	20.944	.15601	-.00711	66	8.293	.64266	-.06911	11	21.389	-.13890	-.00620	66	8.900	-.61924	-.06255
12	20.820	.16078	-.00737	67	7.961	.65533	-.07313	12	21.277	-.14317	-.00643	67	8.560	-.63231	-.06614
13	20.691	.16573	-.00764	68	7.630	.66808	-.07741	13	21.163	-.14757	-.00666	68	8.220	-.64538	-.07000
14	20.558	.17084	-.00792	69	7.299	.68080	-.08203	14	21.046	-.15206	-.00690	69	7.878	-.65854	-.07418
15	20.422	.17609	-.00822	70	6.970	.69346	-.08701	15	20.927	-.15665	-.00714	70	7.532	-.67183	-.07874
16	20.282	.18146	-.00853	71	6.644	.70600	-.09236	16	20.806	-.16131	-.00740	71	7.185	-.68517	-.08371
17	20.141	.18689	-.00884	72	6.323	.71834	-.09800	17	20.683	-.16606	-.00766	72	6.841	-.69842	-.08907
18	19.999	.19236	-.00916	73	6.011	.73034	-.10417	18	20.557	-.17089	-.00793	73	6.505	-.71135	-.09478
19	19.857	.19781	-.00948	74	5.712	.74185	-.11053	19	20.429	-.17582	-.00821	74	6.183	-.72375	-.10076
20	19.716	.20322	-.00981	75	5.427	.75282	-.11714	20	20.298	-.18084	-.00849	75	5.876	-.73554	-.10697
21	19.576	.20863	-.01014	76	5.155	.76326	-.12400	21	20.165	-.18596	-.00879	76	5.584	-.74676	-.11342
22	19.434	.21409	-.01048	77	4.895	.77327	-.13118	22	20.029	-.19119	-.00909	77	5.304	-.75755	-.12017
23	19.288	.21970	-.01083	78	4.640	.78306	-.13883	23	19.890	-.19653	-.00941	78	5.027	-.76819	-.12746
24	19.136	.22553	-.01120	79	4.387	.79279	-.14716	24	19.748	-.20200	-.00974	79	4.748	-.77893	-.13552
25	18.978	.23162	-.01159	80	4.134	.80254	-.15632	25	19.602	-.20761	-.01008	80	4.463	-.78987	-.14457
26	18.813	.23797	-.01201	81	3.881	.81228	-.16642	26	19.453	-.21335	-.01043	81	4.176	-.80094	-.15475
27	18.641	.24458	-.01245	82	3.631	.82187	-.17746	27	19.300	-.21924	-.01080	82	3.890	-.81193	-.16605
28	18.463	.25143	-.01292	83	3.383	.83104	-.18918	28	19.143	-.22528	-.01118	83	3.617	-.82243	-.17814
29	18.278	.25854	-.01341	84	3.172	.83952	-.20121	29	18.982	-.23146	-.01158	84	3.366	-.83266	-.19056
30	18.086	.26592	-.01393	85	2.974	.84716	-.21319	30	18.817	-.23780	-.01200	85	3.144	-.84061	-.20284
31	17.888	.27353	-.01448	86	2.797	.85396	-.22490	31	18.648	-.24430	-.01243	86	2.951	-.84805	-.21465
32	17.685	.28133	-.01506	87	2.638	.86008	-.23643	32	18.475	-.25098	-.01289	87	2.780	-.85462	-.22610
33	17.480	.28925	-.01565	88	2.490	.86576	-.24805	33	18.296	-.25784	-.01336	88	2.622	-.86068	-.23760
34	17.273	.29721	-.01627	89	2.351	.87111	-.25966	34	18.113	-.26489	-.01386	89	2.472	-.86645	-.24954
35	17.065	.30519	-.01689	90	2.216	.87631	-.27251	35	17.924	-.27214	-.01438	90	2.324	-.87217	-.26242
36	16.856	.31323	-.01754	91	2.078	.88159	-.28633	36	17.730	-.27960	-.01493	91	2.171	-.87803	-.27639
37	16.644	.32139	-.01822	92	1.930	.88728	-.30078	37	17.530	-.28730	-.01550	92	2.009	-.88425	-.29086
38	16.426	.32976	-.01892	93	1.790	.89298	-.32000	38	17.324	-.29524	-.01611	93	1.855	-.89017	-.31177
39	16.201	.33842	-.01967	94	1.656	.89872	-.33905	39	17.110	-.30345	-.01676	94	1.709	-.89577	-.33004
40	15.967	.34741	-.02047	95	1.529	.90269	-.35696	40	16.889	-.31195	-.01744	95	1.571	-.90108	-.35046
41	15.726	.35670	-.02133	96	1.409	.90729	-.37670	41	16.661	-.32075	-.01816	96	1.441	-.90607	-.37123
42	15.478	.36625	-.02223	97	1.295	.91162	-.39724	42	16.424	-.32983	-.01893	97	1.317	-.91078	-.39301
43	15.224	.37598	-.02317	98	1.188	.91566	-.41855	43	16.180	-.33923	-.01975	98	1.202	-.91516	-.41563
44	14.967	.38587	-.02417	99	1.087	.91939	-.44054	44	15.927	-.34896	-.02062	99	1.094		

MANNE—MALES.						VROU—FEMALES.									
Onderdom. Age. x	a <sub>x</sub>	A <sub>x</sub>	P <sub>x</sub>	Onderdom. Age. x	a <sub>x</sub>	A <sub>x</sub>	P <sub>x</sub>	Onderdom. Age. x	a <sub>x</sub>	A <sub>x</sub>	P <sub>x</sub>				
0	18-089	-17797	-00932	55	11-285	-47097	-03884	0	18-558	-15778	-00807	55	12-098	-43596	-03328
1	19-424	-12052	-00590	56	11-001	-48320	-04026	1	19-692	-10895	-00527	56	11-806	-44853	-03502
2	19-684	-10928	-00528	57	10-715	-49553	-04230	2	19-964	-09726	-00464	57	11-510	-46131	-03688
3	19-723	-10763	-00519	58	10-426	-50797	-04446	3	20-024	-09467	-00450	58	11-205	-47441	-03887
4	19-708	-10828	-00523	59	10-134	-52053	-04675	4	20-012	-09518	-00453	59	10-892	-48790	-04103
5	19-666	-11007	-00533	60	9-840	-53320	-04919	5	19-984	-09636	-00459	60	10-569	-50179	-04337
6	19-611	-11243	-00545	61	9-544	-54597	-05178	6	19-933	-09857	-00471	61	10-239	-51603	-04591
7	19-545	-11527	-00561	62	9-245	-55885	-05455	7	19-873	-10118	-00485	62	9-904	-53045	-04855
8	19-470	-11851	-00579	63	8-943	-57184	-05751	8	19-804	-10414	-00501	63	9-569	-54487	-05155
9	19-387	-12208	-00599	64	8-638	-58498	-06070	9	19-728	-10739	-00518	64	9-237	-55915	-05462
10	19-297	-12595	-00621	65	8-329	-59827	-06413	10	19-647	-11088	-00537	65	8-911	-57322	-05784
11	19-202	-13006	-00644	66	8-018	-61166	-06763	11	19-562	-11456	-00557	66	8-580	-58709	-06122
12	19-101	-13439	-00669	67	7-706	-62512	-07181	12	19-473	-11839	-00578	67	8-271	-60079	-06481
13	18-996	-13891	-00695	68	7-393	-63850	-07609	13	19-381	-12234	-00600	68	7-951	-61453	-06855
14	18-887	-14360	-00722	69	7-080	-65206	-08070	14	19-287	-12640	-00623	69	7-629	-62842	-07283
15	18-775	-14843	-00751	70	6-768	-66550	-08567	15	19-191	-13054	-00647	70	7-302	-64248	-07738
16	18-661	-15337	-00780	71	6-458	-67885	-09102	16	19-093	-13476	-00671	71	6-974	-65663	-08235
17	18-544	-15839	-00810	72	6-152	-69201	-09675	17	18-993	-13907	-00696	72	6-646	-67073	-08772
18	18-427	-16344	-00841	73	5-854	-70483	-10283	18	18-891	-14346	-00721	73	6-327	-68450	-09342
19	18-310	-16846	-00872	74	5-568	-71716	-10919	19	18-787	-14795	-00748	74	6-019	-69773	-09940
20	18-194	-17345	-00904	75	5-285	-72991	-11579	20	18-680	-15252	-00775	75	5-726	-71034	-10560
21	18-079	-17842	-00935	76	5-035	-74301	-12264	21	18-572	-15719	-00803	76	5-448	-72235	-11203
22	17-962	-18346	-00968	77	4-785	-75688	-12980	22	18-461	-16198	-00832	77	5-179	-73391	-11877
23	17-841	-18865	-01001	78	4-540	-77142	-13743	23	18-347	-16687	-00863	78	4-914	-74534	-12604
24	17-716	-19406	-01037	79	4-297	-78674	-14574	24	18-230	-17190	-00894	79	4-645	-75690	-13408
25	17-584	-19973	-01075	80	4-052	-80246	-15488	25	18-110	-17707	-00927	80	4-371	-76871	-14312
26	17-446	-20569	-01115	81	3-807	-81901	-16497	26	17-987	-18238	-00961	81	4-093	-78069	-15329
27	17-301	-21190	-01158	82	3-565	-83643	-17600	27	17-860	-18783	-00996	82	3-816	-79261	-16458
28	17-151	-21838	-01203	83	3-333	-85480	-18722	28	17-730	-19344	-01033	83	3-551	-80403	-17667
29	16-994	-22513	-01251	84	3-119	-87426	-19973	29	17-596	-19919	-01071	84	3-308	-81451	-18900
30	16-831	-23216	-01302	85	2-925	-89497	-21170	30	17-459	-20511	-01111	85	3-091	-82382	-20135
31	16-662	-23944	-01356	86	2-753	-91698	-22338	31	17-318	-21120	-01153	86	2-903	-83192	-21315
32	16-488	-24692	-01412	87	2-598	-94066	-23487	32	17-172	-21748	-01197	87	2-737	-83909	-22456
33	16-311	-25453	-01470	88	2-454	-96512	-24646	33	17-022	-22394	-01243	88	2-583	-84570	-23602
34	16-133	-26219	-01530	89	2-318	-99111	-25832	34	16-867	-23060	-01291	89	2-437	-85200	-24791
35	15-955	-26990	-01592	90	2-186	-10180	-27081	35	16-708	-23747	-01341	90	2-292	-85825	-26073
36	15-774	-27766	-01655	91	2-052	-10468	-28462	36	16-543	-24457	-01394	91	2-143	-86467	-27514
37	15-591	-28555	-01721	92	1-907	-10768	-29907	37	16-372	-25191	-01450	92	1-984	-87119	-29006
38	15-403	-29367	-01790	93	1-769	-11080	-31413	38	16-196	-25952	-01509	93	1-833	-87799	-30991
39	15-207	-30211	-01864	94	1-637	-11404	-32912	39	16-012	-26742	-01572	94	1-690	-88415	-32871
40	15-003	-31090	-01943	95	1-512	-11744	-35497	40	15-822	-27562	-01638	95	1-554	-89099	-34847
41	14-791	-32002	-02027	96	1-394	-12100	-37463	41	15-624	-28414	-01709	96	1-426	-89549	-36916
42	14-572	-32942	-02115	97	1-282	-12472	-39509	42	15-419	-29297	-01784	97	1-304	-90068	-39087
43	14-349	-33905	-02209	98	1-176	-12860	-41632	43	15-206	-30215	-01864	98	1-190	-90553	-41340
44	14-121	-34884	-02307	99	1-077	-13264	-43824	44	14-984	-31169	-01950	99	1-084	-91001	-43673
45	13-890	-35880	-02410	100	0-984	-13694	-46059	45	14-754	-32160	-02041	100	0-983	-91413	-46093
46	13-655	-36891	-02517	101	0-895	-14148	-48390	46	14-516	-33186	-02139	101	0-890	-91770	-48551
47	13-416	-37923	-02631	102	0-816	-14628	-50630	47	14-270	-34244	-02243	102	0-801	-92614	-51116
48	13-170	-38979	-02751	103	0-744	-15144	-52946	48	14-018	-35331	-02353	103	0-729	-93593	-53834
49	12-918	-40065	-02879	104	0-675	-15706	-55399	49	13-759	-36445	-02469	104	0-640	-94638	-56675
50	12-659	-41182	-03015	105	0-613	-16314	-57991	50	13-494	-37584	-02593	105	0-563	-95720	-59675
51	12-393	-42328	-03161	106	0-542	-16968	-60554	51	13-224	-38747	-02724	106	0-479	-96833	-63322
52	12-121	-43497	-03315	107	0-462	-17668	-63406	52	12-949	-39932	-02863	107	0-423	-98071	-66951
53	11-846	-44684	-03470	108	0-387	-18414	-66228	53	12-669	-41136	-03009	108	0-388	-99366	-70860
54	11-567	-45885	-03651	109	0-311	-19214	-69194	54	12-386	-42358	-03164	109	0-311	-100814	-74994

MANNE—MALES.						VROU—FEMALES.									
Onderdom. Age. x	a <sub>x</sub>	A <sub>x</sub>	P <sub>x</sub>	Onderdom. Age. x	a <sub>x</sub>	A <sub>x</sub>	P <sub>x</sub>	Onderdom. Age. x	a <sub>x</sub>	A <sub>x</sub>	P <sub>x</sub>				
0	16-581	-10282	-00920	55	10-791	-43851	-03719	0	16-981	-14374	-00799	55	11-543	-40272	-03211
1	17-810	-10428	-00554	56	10-531	-45090	-03910	1	18-025	-09407	-00494	56	11-277	-41538	-03383
2	18-057	-09253	-00486	57	10-268	-46344	-04113	2	18-280	-08190	-00425	57	11-006	-42829	-03567
3	18-100	-09046	-00474	58	10-002	-47611	-04328	3	18-343	-07890	-00408	58	10-727	-44156	-03765
4	18-095	-09070	-00475	59	9-732	-48894	-04556	4	18-340	-07904	-00409	59	10-439	-45528	-03980
5	18-066	-09209	-00483	60	9-460	-50190	-04798	5	18-324	-07983	-00413	60	10-141	-46947	-04214
6	18-025	-09405	-00494	61	9-185	-51502	-05057	6	18-285	-08164	-00423	61	9-835	-48404	-04467
7	17-974	-09649	-00509	62	8-906	-52826	-05332	7	18-239	-08387	-00436	62	9-524	-49885	-04740
8	17-914	-09932	-00525	63	8-625	-54167	-05628	8	18-185	-08644	-00451	63	9-212	-51370	-05030
9	17-848	-10249	-00544	64	8-340	-55525	-05945	9	18-125	-08930	-00467	64	8-903	-52843	-05336
10	17-775	-10595	-00564	65	8-050	-56903	-06287	10	18-060	-09239	-00485	65	8-598	-54297	-05657
11	17-697	-10966	-00586	66	7-758	-58296	-06656	11	17-991	-09567	-00504	66	8-296	-55731	-05995
12	17-615	-11358	-00610	67	7-463	-59698	-07054	12	17-919	-09910	-00524	67	7-997	-57155	-06352
13	17-528	-11770	-00635	68	7-168	-61105	-07481	13	17-844	-10265	-00545	68	7-697	-58585	-06736
14	17-438	-12198	-00662	69	6-872	-62516	-07942	14	17-768	-10630	-00566	69	7-393	-60033	-07153
15	17-346	-12640	-00689	70	6-575	-63926	-08439	15	17-689	-11004	-00589	70	7-084	-61504	-07608
16	17-250	-13093	-00717	71	6-281	-65331	-08943	16	17-609	-11384	-00612	71	6-772	-62988	-08104
17	17-154	-13554	-00747	72	5-989	-66719	-09456	17	17-528	-11773	-00635	72	6-461	-64470	-08641
18	17-056	-14019	-00776	73	5-705	-68073	-1								

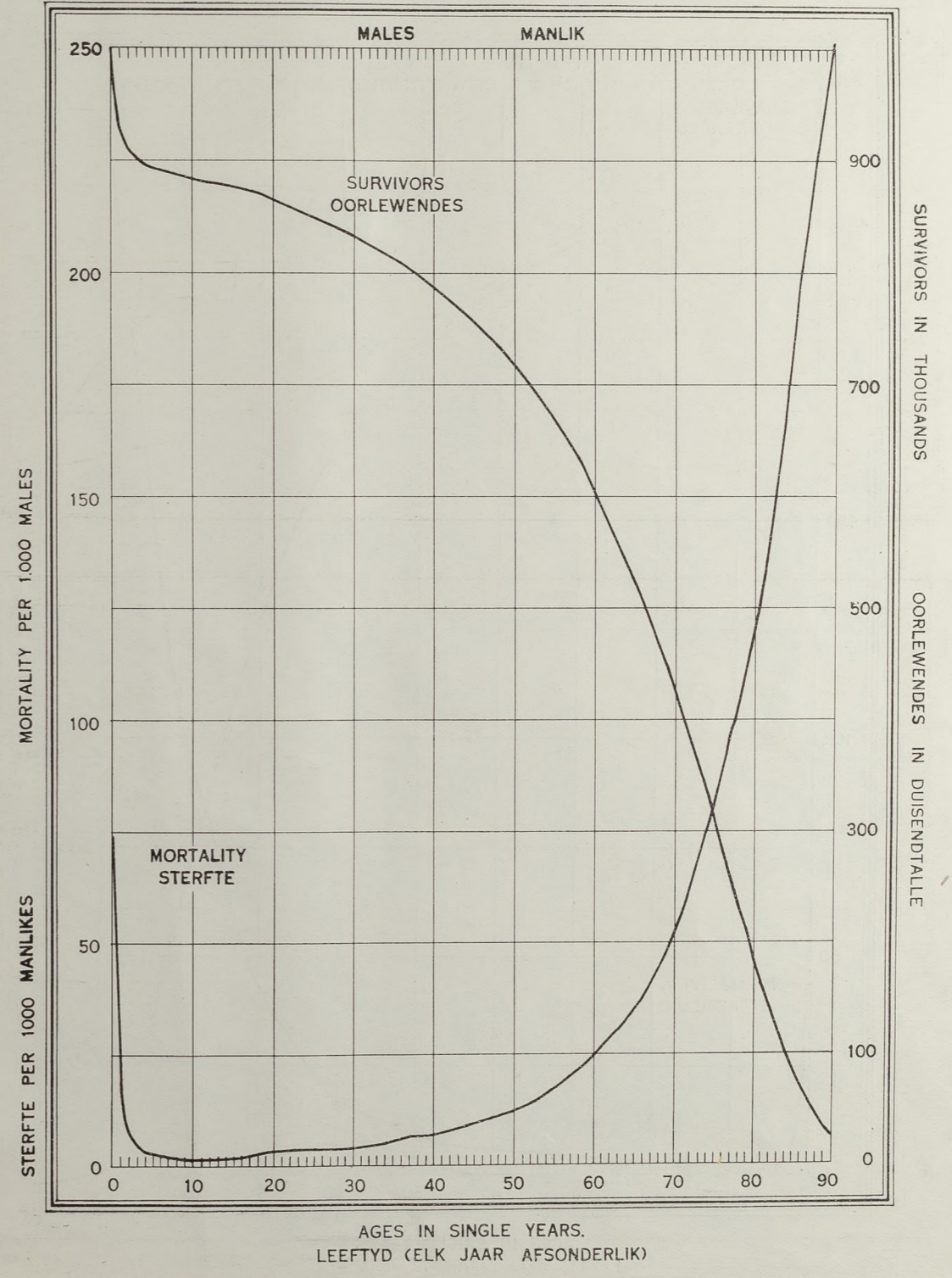
EXPECTATION OF LIFE ( $e_x$ ), AND MORTALITY ( $d_x$ ) OF EUROPEAN MALES AND FEMALES AT EACH YEAR OF AGE.  
SOUTH AFRICAN LIFE TABLES 1926 (No. 2)

SKATTING VAN LEWE ( $e_x$ ) EN STERFTE ( $d_x$ ) VAN MANLIKE EN VROULIKE EUROPEANE OP ELK LEWENJAAR.  
SUIDAFRIKAANSE LEWENSTABEL, 1926 (No. 2)



PROBABILITY OF DEATH PER 1000 MALES ( $1000 q_x$ ), AND SURVIVORS OF 1,000,000 MALES BORN ( $l_x$ ) AT EACH YEAR OF AGE.  
SOUTH AFRICAN LIFE TABLES, 1926 (No. 2)

WAARSKYNNLIKE STERFGEVALLE PER 1000 MANLIK ( $1000 q_x$ ), EN OORLEWENDES VAN 1,000,000 MANLIKE GEBOORTES ( $l_x$ ) OP ELK LEWENSJAAR.  
SUIDAFRIKAANSE LEWENSTABEL, 1926 (No. 2)

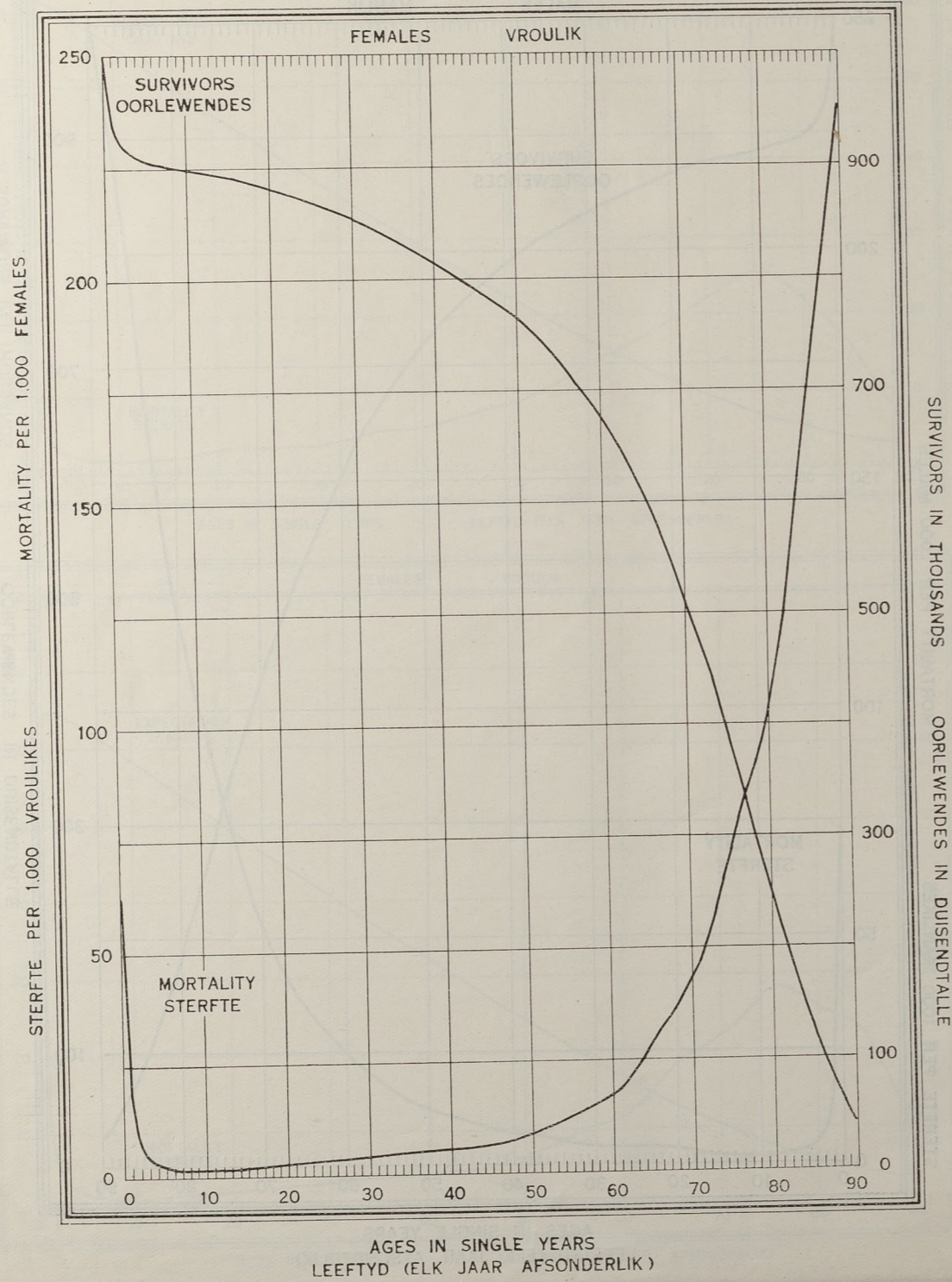


PROBABILITY OF DEATH PER 1000 FEMALES ( $1000q_x$ ), AND SURVIVORS OF 1,000,000 FEMALES BORN ( $l_x$ ) AT EACH YEAR OF AGE.

SOUTH AFRICAN LIFE TABLES 1926 (No. 2)

WAASKYNNLIKE STERFGEVALLE PER 1000 VROULIK ( $1000q_x$ ) EN OORLEWENDES VAN 1,000,000 VROULIKE GEBOORTES ( $l_x$ ) OP ELK LEWENSJAAR.

SUIDAFRIKAANSE LEWENSTABEL 1926 (No. 2)



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