

STATISTICS <sup>S</sup>  
BACK-UP 68 ( )



UNIE VAN SUID-AFRIKA  
BURO VIR  
SENSUS EN STATISTIEK

UNION OF SOUTH AFRICA  
BUREAU OF  
CENSUS AND STATISTICS

BEVOLKINGSSENSUS  
8 MEI 1951

POPULATION CENSUS  
8th MAY, 1951

BOEKDEEL VIII

VOLUME VIII



**SUID-AFRIKAANSE  
LEWENSTABELLE**

**SOUTH AFRICAN  
LIFE TABLES**

VIR

FOR

**BLANKES,  
KLEURLINGE EN  
ASIAAT**

**WHITES,  
COLOURED AND  
ASIATICS**

UITGEGEE OP GESAG

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## VOORWOORD.

### BOEKDEEL VIII—LEWENSTABELLE.

Hierdie boekdeel is die agste van die reeks verslae oor die bevolkingsensus van die Unie van Suid-Afrika wat op 8 Mei 1951 opgeneem is. Die volgende boekdele het reeds verskyn:—

- I Geografiese indeling van die bevolking (alle rasse)—U.G. 42/1955.
- II Huwelikstaat van die Blanke bevolking (tesame met 1946-sensussyfers vir alle rasse)—U.G. 61/1954.
- III Godsdien van die Blanke bevolking (tesame met 1946-sensussyfers vir alle rasse)—U.G. 62/1954.
- IV Geboorteplekke, jaar van aankoms en burgerskap van die Blanke bevolking (tesame met 1946-sensussyfers vir alle rasse)—U.G. 34/1954.
- V Leeftyd (alle rasse)—U.G. 42/1958.
- VI Tale (alle rasse) en geletterdheid (Naturelle)—U.G. 64/1958.
- VII Huwelikstaat, godsdien en geboorteplekke van Kleurlinge, Asië en Naturelle—U.G. 38/1959.

Hierdie verslag bestaan uit drie stelle lewenstabelle. Aparte tabelle is opgestel vir Blankes (Europaeë), Kleurlinge en Asië. Vir statistiese doeleindes word gewoonlik onderskei tussen vier rassegroepe, maar hoofsaaklik omrede die feit dat die registrasie van Bantoe- (Naturelle-) sterfgevallen nog baie onvolledig is, is tot nog toe geen poging aangewend om 'n amptelike lewenstabel vir die Bantoebevolking van die Unie op te stel nie. Die benaming „Kleurling” het betrekking op persone wat nie Blankes, Asië of Bantoes is nie, en behels hoofsaaklik die groep bekend as die Kaapse Kleurlinge, maar die Kaapse Maleiers en klein getalle van gemengde rasse word ook ingesluit.

H. M. STOKER,  
*Direkteur van Sensus en Statistiek.*

Pretoria,  
Mei 1960.

## PREFACE.

### VOLUME VIII—LIFE TABLES.

This volume is the eighth of the series of reports on the census of the population of the Union of South Africa taken on 8th May, 1951, the volumes previously issued being:—

- I Geographical distribution of the population (all races)—U.G. 42/1955.
- II Marital status of the White population (together with 1946 census figures for all races)—U.G. 61/1954.
- III Religions of the White population (together with 1946 census figures for all races)—U.G. 62/1954.
- IV Birthplace, year of arrival and nationality of the White population (together with 1946 census figures for all races)—U.G. 34/1954.
- V Ages (all races)—U.G. 42/1958.
- VI Languages (all races) and literacy (Natives)—U.G. 64/1958.
- VII Marital status, religions and birthplaces of Coloureds, Asiatics and Natives—U.G. 38/1959.

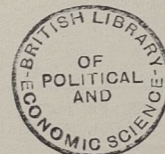
This report consists of three sets of life tables, separate tables having been prepared for Whites (Europeans), Coloureds and Asiatics. For statistical purposes four racial groups are usually distinguished, but chiefly on account of the fact that the registration of Bantu (Native) deaths is still very incomplete, no attempt has yet been made to construct an official life table for the Bantu population of the Union. The term “Coloured” refers to persons who are not Whites, Asiatics or Bantu, and comprises chiefly the group known as the Cape Coloured, but the Cape Malays and small numbers of mixed races are also included.

H. M. STOKER,  
*Director of Census and Statistics.*

Pretoria,  
May, 1960.

STATISTICS  
BACK-UP

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## VERSLAG

oor die  
Negende Sensus van die Bevolking van  
die Unie van Suid-Afrika,  
8 Mei 1951.

### SUID-AFRIKAANSE LEWENSTABELLE.

#### INLEIDING.

Die lewenstabelle in hierdie verslag is die vyfde vir Blankes, die derde vir Kleurlinge (gemengdes en ander Kleurlinge met uitsondering van Asiate en Bantoes) en die tweede vir Asiate opgestel deur die Buro vir Sensus en Statistiek van die Unie van Suid-Afrika.

Die vorige tabelle opgestel deur die Buro vir Sensus en Statistiek is soos volg:—

- No. E. 1 1920—22—Blankes.
- No. E. 2 1925—27—Blankes.
- No. E. 3 1935—37—Blankes.
- No. E. 4 1945—47—Blankes.
- No. C. 1 1935—37—Kleurlinge.
- No. C. 2 1945—47—Kleurlinge.
- No. A. 1 1945—47—Asiate.

#### OPSTELLING VAN SUID-AFRIKAANSE LEWENSTABELLE NOS. E. 5, C. 3 EN A. 2.

Die lewenstabelle is opgestel vir manlik en vroulik afsonderlik ten opsigte van die blanke, die Kleurling- en die Asiatebevolking. Die grondgegewens wat gebruik is, is die aangetekende sterftes vir die jare 1950 tot 1952 en die bevolkingsyfers verkry uit die sensus van 8 Mei 1951, volgens individuele leeftye. Deur gebruikmaking van geboorte-, sterfte- en volkstrektatistiek is die bevolkingsyfers aangesuiwer om die stand by die middel van die jaar aan te toon.

Die grondbeginsels waarvolgens die lewenstabelle opgestel is, is soos volg:—

Die bevolking en die sterftes is opgetel in vyfjaarleeftyds-groepe en die getalle by die middeljare van die groepe bereken deur interpolasie. Uit hierdie syfers is die sterftesyfers met tussenpose van vyf jaar bereken, wat basiese sterftesyfers genoem sal word. Uiteindelik is die jaarsyfers tussen basiese sterftesyfers deur oskulerende interpolasie verkry. Hierdie metode is toegepas om die waardes van leeftye 6 jaar en hoër te verkry vir Blankes, 5 jaar en hoër vir Kleurlinge en 7 jaar en hoër vir Asiate. Vir die laer leeftye is sterftesyfers geraam uit geboortes en sterftes. Die ander funksies van die lewenstabelle is almal afgelei van die sterftesyfers.

Vergelyk met die lewenstabelle vir 1945—47, is daar verskille in die toegepaste tegniek en formules, wat sal blyk uit wat volg.

*Gegewens gebruik.*—Die bevolkingsyfers verkry uit die resultate van die sensus van 8 Mei 1951 is aangesuiwer om die stand volgens afsonderlike leeftye op 30 Junie 1951 aan te dui deur spesiaal getabelleerde geboorte-, sterfte- en volkstrektatistiek vir die twee maande Mei en Junie 1951 te gebruik.

Geboorte- en sterfteregistrasie is verpligtend dwarsdeur die Unie vir Blankes, Kleurlinge en Asiate, en die registers toon sterftes volgens afsonderlike leeftye en geboortes volgens die vier kwartale van die jaar. Verder word sterftes in die eerste lewensjaar volgens leeftyd onder 1 dag, 1 tot 6 dae, 7 tot 13 dae, 14 tot 20 dae, 21 tot 30 dae, 1 tot 2 maande, 3 tot 5 maande, 6 tot 8 maande en 9 tot 11 maande aangedui.

1

## REPORT

on the  
Ninth Census of the Population of the  
Union of South Africa,  
8th May, 1951.

### SOUTH AFRICAN LIFE TABLES.

#### INTRODUCTION.

The life tables in this report are the fifth for Whites, the third for Coloureds (mixed and other Coloured—excluding Asiatics and Bantu) and the second for Asiatics, constructed by the Bureau of Census and Statistics of the Union of South Africa.

The previous tables constructed by the Bureau of Census and Statistics are as follows:

- No. E. 1 1920—22—Whites.
- No. E. 2 1925—27—Whites.
- No. E. 3 1935—37—Whites.
- No. E. 4 1945—47—Whites.
- No. C. 1 1935—37—Coloured.
- No. C. 2 1945—47—Coloured.
- No. A. 1 1945—47—Asiatics.

#### CONSTRUCTION OF SOUTH AFRICAN LIFE TABLES NOS. E. 5, C. 3 AND A. 2.

The life tables have been constructed for males and females separately in respect of the White, Coloured and Asiatic populations. The basic data used were the recorded deaths for the years 1950 to 1952 and the population figures by single ages, obtained from the census of the 8th May, 1951. The population figures were adjusted to bring them to the middle of the year by making use of birth, death and migration statistics.

Basically, the method used for the construction of the tables was as follows:—

The population and deaths were summed in quinquennial age-groups and the numbers at the middle years of the groups calculated by interpolation. From these figures the mortality rates at five-yearly intervals, which will be referred to as pivotal rates of mortality, were calculated; and finally the annual rates between pivotal values were obtained by means of osculatory interpolation. This method was applied to obtain values from age 6 upwards for Whites, from age 5 upwards for Coloureds and from age 7 upwards for Asiatics. For the lower ages the mortality rates were estimated from births and deaths. The other functions of the life table were all derived from the mortality rates.

Compared with the life tables for 1945—47, there are differences in technique and formulae applied which will become plain in what follows.

*Data used.*—The population figures obtained from the results of the census of 8th May, 1951, were adjusted to show the position at the 30th June, 1951, by using specially tabulated birth, death and migration statistics for the two months May and June, 1951.

Birth and death registration is compulsory throughout the Union for Whites, Coloured and Asiatics and the records show deaths in single ages and births according to the four quarters of the year. Furthermore, deaths in the first year of life are shown by age under 1 day, 1 to 6 days, 7 to 13 days, 14 to 20 days, 21 to 30 days, 1 to 2 months, 3 to 5 months, 6 to 8 months and 9 to 11 months.

Die eienskappe van die bevolking en ander statistiek gebruik, is bespreek in die vorige verslag (lewenstabelle vir 1945-47) en die volgende is in 'n groot mate 'n herhaling, afgesien van die datums en leeftye.

Die bevolkingsyfers ten opsigte van Blankes toon 'n ongelyke verdeling by sekere leeftye. Die oorsake van die meeste van hierdie onreëlmatighede kan opgespoor word deur die jare van geboorte van die persone by die leeftye waar die onreëlmatighede merkbaar is, na te slaan. Van leeftyd 48 tot by 55 is daar bv. skynbare tekorte in die getelde getalle manlikes en vroulikes ten tyde van die sensus. As 48 afgetrek word van die sensusjaar, dan is 1903 en vroeëre jare die geboortejare van die persone, nl. die tydperk onmiddellik na en gedurende die Anglo-Boereoorlog van 1899-1902, wat natuurlik die geboortesyfer ernstig versteur het. By leeftyd 35 is daar 'n aanmerklike tekort, wat teruglei tot die Eerste Wêreldoorlog van 1914-18. Op dieselfde manier is die spore van ekonomiese depressie op die bevolking gelaat, soos bv. getoon word deur die tekorte by leeftye 17 tot omtrent 19, wat teruglei tot 1932 en die daaropvolgende jare, wat ooreenstem met die tydperk van 'n ekonomiese depressie in die Unie.

Die sterftes word natuurlik beïnvloed deur die onreëlmatige verdeling van die bevolking, maar boonop word die verskynsel van „ophoping” opgemerk in die sterftes, wat veroorsaak word deurdat voorkeur vir leeftye eindigende op sekere syfers soos 0, 5 en gelyke getalle getoon word deur beriggewers wanneer die sterftes geregistreer word, wat lei tot buitensporige groot getalle by leeftye eindigende op hierdie syfers en tekorte by ander. Die uitwerking kan in grafiek 2 bespeur word, veral by leeftye 40, 50, 60, 65 ensovoorts. Die mate daarvan word aangetoon deur Myers se metode, waarvan die resultate verder aan in hierdie verslag gegee word.

Ophoping is nie baie opmerklik by die blanke bevolking nie. Die feit dat die datum van geboorte sowel as die leeftyd gevra is in die sensusvorm het daartoe gelei dat baie noukeurige opgawes van leeftye verkry is. Die grafiek toon geen groot ophoping by leeftye bo 55 jaar nie, waar die syfers betreklik vry van onreëlmatighede is wat sulke foute kan verberg. Myers se toets toon geen betekenisvolle ophoping by die syfers 0 en 5 nie, alhoewel die onreëlmatige leeftydsverdeling van die bevolking die neiging kan hê om 'n sekere mate van ophoping te verberg.

In die geval van bevolking en sterftes by Kleurlinge en Asië is die verskynsel van ophoping een van die vernaamste faktore wat in aanmerking geneem moet word (grafieke 3 tot 6). Daar sal opgemerk word dat die fout ernstiger is by die sterftes as by die bevolking, aangesien relatief groter konsentrasies by die syfers 0 en 5 getoon word. Dit is te verwag by 'n bevolking waar leeftye minder noukeurig bekend is, aangesien die onsekerheid aangaande die juiste leeftyd groter sal wees in die geval van 'n sterfte, waar 'n tweede party die besonderhede vir die aantekening van die sterfte moet verskaf.

*Groepering van bevolking en sterftes.*—'n Studie van die gegewens is gemaak om vas te stel watter groeperings vir bevolking en sterftes die beste resultate sal lewer. Myers se metode<sup>(1)</sup> is gebruik om die mate van ophoping by verskillende leeftye vas te stel en die doeltreffendheid van verskillende groeperings is getoets<sup>(2)</sup>.

'n Elementêre metode om die ophoping by sekere syfers in die gegewens aan te toon, sou wees om die getalle vir alle leeftye eindigende op 0, alle leeftye eindigende op 1, ens., tot by leeftye eindigende op 9 op te tel en uit te druk as persentasie van die totaal. 'n Mens sou verwag dat elkeen van hierdie somme 10 persent van die totaal sou uitmaak in die geval van gegewens waar geen ophoping of ander steurende element teenwoordig is nie, maar daar is bewys dat dit nie so is nie, want die resultate is gelaai as gevolg van die feit dat die telling by 'n besondere syfer begin, wat lei tot 'n oordrywing van die som vir hierdie syfer, aangesien die bevolking by 'n sekere leeftyd gewoonlik groter is as by die volgende hoër leeftyd.

(1) "Errors and bias in the reporting of census data" deur R. J. Myers, Transactions, Actuarial Society of America, Vol. 41, Deel 2, No. 104, Oktober-November 1940.

(2) United States Life Tables and Actuarial Tables, 1939-41, bladsy 121.

The peculiarities of the population and other statistics used, were discussed in the previous report (life tables for 1945-47), and the following is to a large extent a repetition, except for the dates and ages concerned.

The population figures for Whites show an uneven distribution at certain ages. The causes of these irregularities can be traced by referring to the years of birth of the persons at the ages where irregularities are noticeable. For example, commencing at age 48, there are apparent deficiencies in the numbers of the males and females enumerated. Deducting the age 48 from the census date 1951, the years of birth of these persons are obtained as 1903 and earlier years, which is the period immediately after and during the Anglo-Boer War of 1899-1902, which naturally had a disturbing effect on the birthrate. At age 35, there is a marked deficiency and this leads back to the First World War of 1914-18. Similarly, the marks of economic depressions have also been left on the population, as for instance is shown by the deficiencies at ages 17 to about 19, which lead back to 1932 and succeeding years, concurring with the time of an economic depression in the Union.

The deaths are, of course, affected by the uneven distribution of the population, but, in addition, the phenomenon known as "heaping" is noticed in the deaths, which is caused by a preference for ages ending in certain digits like 0, 5 and even numbers being shown by informants when registering the deaths, leading to unduly large numbers at ages ending in these digits, and deficiencies at others. The effect can be seen in chart 2, especially at ages 40, 50, 60, 65 and so on. The extent of the heaping is shown by Myers' method, the results of which are given further on in this report.

Heaping is not very evident in the white population. The fact that date of birth as well as age was asked for in the census questionnaire resulted in very accurate returns of ages being obtained. The chart shows no great heaping at ages above 55 years, where the figures are relatively free from irregularities which may tend to cover up such errors. Myers' test does not show any significant heaping at digits 0 and 5, although, of course, the irregular age distribution of the population may tend to obscure a certain amount of heaping present in the data.

In the case of the Coloured and Asiatic population and deaths, the heaping phenomenon is one of the main factors that has to be considered (charts 3 to 6). It will be noticed that the error is more serious for the deaths than for the population, as relatively larger concentrations at the digits 0 and 5 are shown. This is to be expected in a population where ages are less perfectly known, as in the case of a death the uncertainty in regard to the exact age would be greater where a second party has to furnish the particulars for the recording of the death.

*Grouping of the population and deaths.*—A study of the data was made in order to determine which groupings for population and deaths would give the best results. Myers' method<sup>(1)</sup> was used to determine whether any heaping was present at certain ages in the population and deaths, and the effectiveness of different groupings was tested<sup>(2)</sup>.

An elementary method of showing heaping at certain digits in the data would be to sum the numbers for all ages ending in 0, all ages ending in 1, etc., up to ages ending in 9, and expressing these sums as percentages of the total. One might expect each of these sums to be 10 per cent of the total in data where no heaping or other disturbing element is present, but it has been shown that this is not so as the results are biased owing to the fact that the count is started at a particular digit, leading to an over-statement of the sum for this digit, since normally the population at a certain age is larger than that at the next higher age.

(1) "Errors and bias in the reporting of census data" by R. J. Myers, Transactions, Actuarial Society of America, Vol. 41, Part 2, No. 104, October-November, 1940.

(2) United States Life Tables and Actuarial Tables, 1939-41, page 121.

Myers se metode skakel hierdie fout uit deur die telling beurteilungen by elkeen van die 10 syfers te laat begin en die gemiddelde van die resultate te neem. "n „ Indeks van voorkeur", wat die som is van die absolute afwykings van 10 persent af en wat die mate van ophoping toon, volg uit die metode.

Die doeltreffendste groepering van die gegewens is vasgestel deur die persentasies vir die tien syfers in vyf vyfjaargroeperings op te tel en op te let watter een die minste afwyk van 50 persent.

Die resultate verkry deur toepassing van die metode op die gegewens vir die bevolking en sterftes word hieronder aangetoon. Die metode is aangewend vir beginleeftye 10 tot 19, en optellings is gemaak tot leeftyd 99. Die syfers in deel (a) van die tabel toon die bevolking en sterftes by die verskillende syfers van leeftyd as persentasie van die betrokke totale, terwyl die syfers in deel (b) dieselfde persentasies opgetel in groepe van vyf is.

TOETSING (a) VAN VOORKEUR VIR SEKERE SYFERS BY LEEFTYD EN (b) VIR DOELTREFFENDSTE GROEPERING DEUR MYERS SE METODE:

Myers' method eliminates this bias by starting the count at each of the ten digits in turn and averaging the results. An "index of preference", which is the sum of the absolute deviations from 10 per cent, and which shows the extent of the heaping present, follows from the method.

The most effective grouping of the data was determined by summing the percentages for the ten digits in the five quinquennial groupings and observing which differed least from 50 per cent.

The results obtained by applying the method to the data for population and deaths are shown below. The method was applied for starting ages 10 to 19 and summations were carried out up to age 99. The figures in part (a) of the table show the population and deaths at the various digits of age as a percentage of the totals concerned, while the figures in section (b) are the same percentages summed in groups of five.

TESTING (a) OF PREFERENCE FOR CERTAIN DIGITS OF AGE AND (b) OF MOST EFFECTIVE GROUPING BY MEANS OF MYERS' METHOD.

Leeftye eindigende op:— Ages ending in:—	(a) Voorkeur.—Preference.		Vroulik.—Female.		Leeftye eindigende op:— Ages ending in:—	(b) Groepering.—Grouping.		Vroulik.—Female.	
	Manlik.—Male.	Sterftes. Deaths.	Bevolking. Population.	Sterftes. Deaths.		Manlik.—Male.	Sterftes. Deaths.	Bevolking. Population.	Sterftes. Deaths.
Blankes.—Whites.									
0.....	10-1	10-2	10-1	10-4	1-5.....	50-1	50-0	50-2	50-1
1.....	10-1	9-4	9-9	9-1	2-6.....	50-1	50-5	50-3	51-3
2.....	10-0	10-2	10-0	10-2	3-7.....	50-1	50-0	50-3	50-8
3.....	10-0	10-1	10-1	9-9	4-8.....	50-0	49-9	50-1	50-8
4.....	10-0	9-9	10-1	10-2	5-9.....	49-8	50-2	49-7	50-2
5.....	10-0	10-3	10-1	10-7					
6.....	10-0	9-9	10-0	10-2					
7.....	10-1	9-8	10-0	9-8					
8.....	9-8	10-0	9-9	9-9					
9.....	9-8	10-2	9-7	9-6					
Indeks van voorkeur.....	0-7	2-0	0-9	3-4					
Index of preference.....									
Kleurlinge.—Coloureds.									
0.....	12-7	19-9	12-4	18-9	1-5.....	48-7	45-8	49-1	46-2
1.....	9-8	7-0	9-7	6-9	2-6.....	49-0	47-4	49-4	48-0
2.....	9-6	9-2	9-7	9-3	3-7.....	48-4	45-9	48-8	46-4
3.....	9-3	7-7	9-5	8-6	4-8.....	49-3	48-5	49-4	47-8
4.....	9-2	7-5	9-4	8-6	5-9.....	49-5	48-6	49-3	47-7
5.....	10-9	14-3	10-8	12-8					
6.....	10-9	8-6	10-0	8-7					
7.....	9-1	7-7	9-1	7-8					
8.....	10-2	10-3	10-1	10-0					
9.....	9-3	7-7	9-3	8-5					
Indeks van voorkeur.....	7-5	29-1	6-6	23-3					
Index of preference.....									
Asiate.—Asiatics.									
0.....	11-2	14-5	11-6	12-7	1-5.....	49-8	47-4	49-5	47-8
1.....	10-4	8-3	10-2	8-2	2-6.....	49-3	49-3	49-4	48-9
2.....	9-9	9-4	9-8	9-4	3-7.....	49-0	49-3	49-1	49-1
3.....	9-8	8-7	9-4	8-9	4-8.....	49-2	50-8	49-8	51-7
4.....	9-4	7-9	9-5	9-6	5-9.....	49-3	51-4	49-6	51-1
5.....	10-4	13-2	10-7	11-6					
6.....	9-9	10-2	10-1	9-3					
7.....	9-6	9-4	9-5	9-6					
8.....	10-0	10-1	10-0	11-5					
9.....	9-6	8-5	9-3	9-1					
Indeks van voorkeur.....	3-8	15-8	5-1	11-7					
Index of preference.....									

Die indeks van voorkeur vir die blanke bevolking is laag, maar in ieder geval dui hulle nie die gewone patroon van ophoping aan nie, soos duidelik blyk uit deel (a) van die tabel.

Die saak is anders vir blanke sterftes, waar daar 'n sekere mate van ophoping van die gewone aard geopenbaar word. Syfers 0 en 5 toon die hoogste persentasies, terwyl 1 die laagste toon.

Die indeks van voorkeur vir Kleurlinge en Asië toon 'n veel hoër mate van ophoping, veral in die geval van sterftes, soos verwag kan word. Die fout vir Kleurlinge is ernstiger as vir Asië.

The indices of preference for the white population are low, but in any case do not indicate the usual pattern of heaping, as is evident from part (a) of the table.

The case is different for white deaths, where a certain measure of heaping of the usual nature is revealed. Digits 0 and 5 show the highest percentages, while digit 1 shows the lowest.

The indices of preference for Coloured and Asiatic indicate a much higher degree of heaping, especially in the case of deaths, as might be expected. The error for Coloureds is more serious than that for Asiatics.



Die formule kom die gewone vereiste van 'n matematis-vloeiende aansluiting van die geïnterpoleerde waardes by die vyfjaar-punte na, maar die punte van aansluiting kom nie presies ooreen met die basiswaardes soos die geval is by die gewone oskulerende interpolasieformules nie. Dit lei daartoe dat 'n vloeiender kromme opgelewer word, wat egter die tendens van die gegewens behou.

Vir leeftye tot by 20 jaar, is dit, weens die besondere kenmerke van die jeugbevolking, raadsaam beskou om nie enige wysiging van die basiswaardes toe te laat nie en 'n reproducerende formule is gevolglik gebruik.

#### LEWENSTABELLE.

Nadat die kolom aantoonende  $q_x$ , die waarskynlikheid om binne 'n jaar na die bereiking van leeftyd  $x$  te sterf, voltooi was, is dit gebruik om al die ander kolomme van die lewenstabel af te lei, wat soos volg is:—

$p_x$  dui die waarskynlikheid aan om een jaar van leeftyd  $x$  te lewe en is gevind deur  $q_x$  van 1 af te trek.

$l_x$  is die getal oorblywendes tot by presiese leeftyd  $x$  volgens die lewenstabel. Die eerste waarde word die grondgetal genoem en is geneem as 100,000. Al die daaropvolgende waardes is deur aanhoudende vermenigvuldiging deur  $p_x$  verkry.

$d_x$ , die sterftes in die jaar van lewe  $x$  onder die  $l_x$  persone wat daardie jaar binnegegaan het, is die verskil tussen pare syfers in die kolom  $l_x$ .

$L_x$  verteenwoordig die getal wat lewe in die jaar van leeftyd  $x$ , of die getal jare gelewe in die jaar van leeftyd  $x$  en is verkry deur die gemiddelde van  $l_x$  en  $l_{x+1}$  te neem vir alle leeftye behalwe leeftyd 0. In die geval van die eerste lewensjaar, waar nie aangeneem kan word dat sterftes gelykmatig versprei is oor die jaar van leeftyd nie, is die waarde van  $L_x$  soos volg bepaal:—

Daar is aangeneem dat die kinders wat onder die leeftyd van een dag gesterf het, gemiddeld 'n halwe dag gelewe het. Die getal dae wat gevolglik gelewe is gedurende die eerste lewensdag is die getal oorblywendes aan die end van die eerste lewensdag vermenigvuldig met een plus die getal sterftes by leeftyd onder een dag vermenigvuldig met 'n half.

So voortgaande volg dat die kinders wat gesterf het by leeftyd een tot ses dae gemiddeld drie dae bo die eerste lewensdag geleef het; gevolglik is die getal dae gelewe gedurende die leeftydinterval 1-6 dae die getal oorblywendes aan die end van die sesde lewensdag maal ses plus die getal sterftes by leeftye een tot ses dae maal drie, ens., tot by leeftyd nege tot elf maande.

Die waardes so gevind, uitgedruk in jare, is bymekaargetel om die getal jare gelewe gedurende die eerste jaar van lewe te gee.

$T_x$  stel die bevolking van die lewenstabel by leeftye  $x$  en alle hoër leeftye voor. Die waardes is gevind deur optelling van  $L_x$ .

$e_x$  stel die lewensverwachting voor, of die toekomstige gemiddelde lewensduur van 'n persoon presies  $x$  jaar oud. Dit is verkry deur elke waarde van  $T_x$  deur die ooreenkomstige syfer in die kolom  $l_x$  te deel.

#### BEREKENINGS.

Die lewenstabelle is deur middel van elektroniese masjiene opgestel. Alle rekenkundige werk, soos addisie, vermenigvuldiging en deling, is op 'n rekenpons uitgevoer. Vir die spesiale sortering van die ponskaarte is 'n elektroniese statistiese masjiene gebruik. Alle tabelle is met 'n tabeleerder gelys.

mortality rates. The formula satisfies the usual requirement of securing a mathematically smooth junction of the interpolated values at the five-yearly points, but the points of junction do not exactly correspond with the pivotal values, as is the case with the usual osculatory interpolation formulae. This results in a smoother curve being produced, which, however, preserves the trend of the data.

For ages up to 20 years, it was considered advisable not to allow any modification of the pivotal values, owing to the special characteristics of the juvenile population, and a reproducing formula was, therefore, used.

#### LIFE TABLES.

After the column showing  $q_x$ , the probability of dying within a year after attaining age  $x$ , had been completed for the whole range of ages, it was used to derive all the other columns of the life table, which are as follows:—

$p_x$  denotes the probability of living one year from age  $x$ , and was found by deducting  $q_x$  from 1.

$l_x$  is the number surviving according to the life table to exact age  $x$ . The first value of the column is called the radix and was taken to be 100,000. All the successive values were derived by continued multiplication by  $p_x$ .

$d_x$ , the deaths in the year of age  $x$  among the  $l_x$  persons who entered that year, is the difference between pairs of figures in the  $l_x$  column.

$L_x$  represents the number living in the year of age  $x$ , or the number of years lived in the year of age  $x$ , and was obtained by taking the mean between  $l_x$  and  $l_{x+1}$ , for all ages except age 0. In the case of the first year of life, where it cannot be assumed that deaths are uniformly distributed over the year of age, the value of  $L_x$  was obtained as follows:—

It was assumed that the children that died aged under one day, lived on the average half a day. The number of days lived, then, during the first day of life was the number of survivors at the end of the first day of life multiplied by one plus the number of deaths at age under one day multiplied by a half.

Continuing in this way, we find that the children dying aged one to six days survived on the average three days beyond the first day of life, and accordingly the number of days lived during the age interval 1-6 days was the number of survivors at the end of the sixth day of life times six plus the number of deaths at ages one to six days times three; and so on up to age 9 to 11 months.

The values so obtained, expressed as years, were added to give the number of years lived during the first year of life.

$T_x$  denotes the population of the life table at age  $x$  and all higher ages. The values were obtained by the summation of  $L_x$ .

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

#### COMPUTATIONS.

The life tables were constructed by means of electronic punch-card calculating and tabulating machines.

All arithmetical operations such as addition, multiplication and division, were carried out on an electronic calculating punch. For the special sorting of the punch-cards, an electronic statistical machine was used and tables were listed by means of a tabulator.

#### VERGELYKING VAN VERWAGTE MET WERK-LIKE STERFTES.

In tabel No. 9 word 'n vergelyking getref tussen verwagte sterftes op die grondslag van die berekende sterftesyfers en gemiddelde jaarlikse sterftes vir 1950-52 van leeftyd 6 af vir Blankes, van leeftyd 5 af vir Kleurlinge en van leeftyd 7 af vir Asië.

Ten opsigte van Blankes, is die verskille tussen werklike en verwagte sterftes skynbaar nie oormatig groot nie. Die verskille verander taamlik reëlmatig van teken, en die totale netto verskil is onderskeidelik +19 vir manlikes en +17 vir vroulikes, of +17 persent en +20 persent van die totale. Die betreklike groot verskille by die hoër leeftye is te wyte aan die metode wat die tabel afsluit by leeftye wat nie onrealisties hoog is nie. Die ooreenkoms tussen die berekende en werklike gegewens word dus as bevredigend beskou.

In die geval van Kleurlinge, is die ooreenkoms tussen die werklike en verwagte sterftes nie baie bevredigend nie. Die totale verskille is deurgaans negatief behalwe by die hoër leeftye, waar hulle positief en groot is. Die totale netto verskil is +81 of +1.4 persent vir manlikes en +200 of +4.1 persent vir vroulikes. Die negatiewe verskille kan egter in 'n groot mate daaraan toegeskryf word dat die verwagte sterftes uit die onaangepaste bevolking bereken en vergelyk is met die onaangepaste sterftes, waar ophoping by sekere leeftye in beide gevalle teenwoordig is. As gevolg daarvan dat die ophoping by leeftye eindigende op die syfers 0 en 5 opmerkliker is by die sterftes as by die bevolking (kyk resultate van Myers se toets) is die werklike sterftes heelwat hoër as die verwagte sterftes by hierdie syfers en die oormaat word nie gebalansier deur die tekorte by ander leeftye nie. Die groot positiewe verskille by die hoër leeftye mag daaraan te wyte wees dat leeftye te hoog opgegee is by die bevolking-sensus, maar nie ooreenstemmend te hoog by sterftes nie. Die basiese bevolking- en sterftesyfers toon 'n skynbare wanverhouding by die hoër leeftye. Indien 'n gedeelte van die bevolking by die hoër leeftye by laer leeftye aangetoon is, waar die sterftesyfers aansienlik laer is, sou 'n kleiner oormaat van verwagte bo werklike sterftes in die netto totaal getoon gewees het. Dit skyn dus dat foute in die basiese gegewens gedeeltelik verantwoordelik is vir die onbevredigende vergelyking. Die metode gebruik, sal ook die vergelyking beïnvloed, soos in die geval van Blankes.

Ten opsigte van Asië is die ophoping nie so opmerklik nie en 'n beter vergelyking is verkry by alle leeftye behalwe die hoogstes. By die hoogste leeftye is die verskille taamlik groot en positief om dieselfde redes as in die geval van die ander twee rasse.

#### OORSIG VAN LEWENSTABELLE EN VERGELYKING MET VORIGE LEWENSTABELLE.

In die geval van Blankes toon die jongste lewenstabel 'n laer sterftesyfer by die meeste leeftye, vergeleke met die lewenstabel vir 1945-47. Die uitsondering is die leeftye 26 tot 33 en 58 tot 63 vir manlikes en 79 tot 82 vir vroulikes, waar effens hoër sterftesyfers getoon word deur die jongste tabel. Die verbetering in die sterftesyfer by leeftyd onder 1 is 3.39 per 1,000 vir manlikes en 2.86 per 1,000 vir vroulikes oor die tydperk van vyf jaar tussen die tabelle.

'n Vergelyking van die jongste tabel met die vroegste een (1920-22), toon baie treffend die verbetering oor die tydperk van 30 jaar in die sterftesyfers vir Blankes by alle leeftye, behalwe ongeveer 60 jaar en hoër vir manlikes. By leeftyd 0 het die sterftesyfer vir manlikes gedaal van 87.84 tot 37.89 per 1,000, terwyl die syfer vir vroulikes verminder het van 73.88 tot 30.05. By leeftyd 10 jaar is die syfer vir manlikes 'n derde van wat dit 30 jaar vroeër was en vir vroulikes 0.60 vergeleke met 1.64.

Terwyl die sterftesyfer vir vroulikes 'n verbetering toon by alle leeftye vergeleke met 30 jaar vroeër het die syfer vir manlikes skynbaar nie aanmerklik verminder by leeftye van omtrent 60 jaar nie. Die tabelle toon dat die syfer vir manlikes by leeftyd 60 jaar wat 25.96 per duisend was in 1920-22, maar net effens laer was in 1950-52 (25.89 per 1,000). Indien die lewenstabelle vir tussenjare

#### COMPARISON OF EXPECTED WITH ACTUAL DEATHS.

In table No. 9 a comparison is made between expected deaths on the basis of the calculated mortality rates, and average annual deaths for 1950-52, from age 6 upwards for Whites, from age 5 upwards for Coloureds, and from age 7 upwards for Asiatics.

For Whites, the differences between actual and expected deaths do not appear to be excessive. The differences change sign fairly regularly and the total net difference is +19 for males and +17 for females, or +17 and +20 per cent of the totals, respectively. The relatively large differences at the high ages are due to the method used, which brings the tables to a close at ages which are not unrealistically high. The agreement between the calculated and the actual data is, therefore, considered to be satisfactory.

In the case of the Coloureds, the correspondence between actual and expected deaths does not appear to be very satisfactory. The accumulated differences are consistently negative except at the high ages, where they are positive and large. The total net difference is +81 or +1.4 per cent for males and +200 or +4.1 per cent for females. The negative differences can, however, to a large extent be accounted for by the fact that the expected deaths were computed from the unadjusted population and compared with the unadjusted deaths, in both of which "heaping" at certain ages is present. Owing to the heaping at ages ending in the digits 0 and 5 being more pronounced in the deaths than in the population (see results of Myers' test), the actual deaths are considerably in excess of the expected deaths at these digits and the excesses are not balanced by the deficiencies at other ages. The large positive differences at the high ages may be due to overstatement of ages at the population census, with no corresponding overstatement of ages at deaths. The basic population and death figures reveal an apparent disparity at the high ages. If part of the population at the high ages had been shown at lower ages, where the mortality rate is much lower, a smaller excess of expected compared with actual deaths would have been shown in the net total. It would appear, therefore, that errors in the basic data account at least in part for the unsatisfactory comparison revealed by the table. The method used would also affect the comparison at the high ages, as in the case of Whites.

For Asiatics the heaping is not so pronounced as in the case of Coloureds and a better comparison is obtained at all ages excepting the highest. At the highest ages the differences are fairly large and positive for similar reasons as in the case of the other races.

#### REVIEW OF LIFE TABLES AND COMPARISON WITH PREVIOUS LIFE TABLES.

In the case of Whites, the latest life table reveals a lower mortality rate at most ages, compared with the life table for 1945-47. The exceptions are the ages 26 to 33 and 58 to 63 for males, and 79 to 82 for females, where slightly higher mortality rates are exhibited by the latest table. The improvement in the mortality rate at age under 1 year is 3.39 per 1,000 for males and 2.86 per 1,000 for females, over the period of five years between the tables.

A comparison between the latest table and the earliest one (1920-22), reveals very strikingly the improvement over the period of 30 years in the mortality rates for Whites at all ages, except from about 60 years and higher for males. At age 0, the mortality rate for males has decreased from 87.84 to 37.89 per 1,000, while the rate for females has decreased from 73.88 to 30.05. At age 10 years, the rate is a third of what it was 30 years earlier for males, and 0.60 compared with 1.64 for females.

While the mortality rate for females shows an improvement at all ages compared with 30 years earlier, the rate for males appears not to have decreased materially for the ages of about 60 years. The tables reveal that the rate for males at age 60, which was 25.96 per 1,000 in 1920-22, was only slightly lower for 1950-52 (25.89 per 1,000). If the life tables for intermediate years are consulted,

nageslaan word, blyk dit dat die sterftesyfer vir manlikes opmerklik konstant gebly het gedurende die tydperk van 30 jaar. Die verskillende lewenstabelle vir dié tydperk toon die volgende:

Lewenstabel.	Tydperk.	Sterftesyfer by leeftyd 60 jaar.
E. 1.....	1920-22	25.96
E. 2.....	1925-27	24.71
E. 3.....	1935-37	25.56
E. 4.....	1945-47	25.41
E. 5.....	1950-52	25.89

By hoër leeftye toon die 1950-52-tabel 'n verbetering by sekere leeftye vergeleke met die tabel vir 1920-22, maar daar moet op gelet word dat vergelykings by die hoër leeftye bo omtrent 70 jaar miskien nie noukeurig is nie omdat die sterftesyfers verkry is uit berekenings gegronde op klein getalle waarnemings wat onderworpe is aan 'n aansienlike mate van toevallige variasie en waar bowendien die leeftye wat aangegee is verdag voorkom, of verkry is deur ekstrapolering van waardes by laer leeftye (soos die geval is by die 1950-52-tabel), wat miskien nie die ware posisie noukeurig weerspieël nie. As gevolg van die oor die algemeen laer sterftesyfers, is die lewensverwachting van Blankes hoër by feitlik alle leeftye vir die tydperk 1950-52, vergeleke met 1945-47. Die wins by geboorte is 0-80 jaar vir manlikes en 1-77 jaar vir vroulikes oor die tydperk van vyf jaar, wat 'n gemiddelde lewensduur van 64-57 jaar vir manlikes en 70-08 jaar vir vroulikes beteken by die latere datum. By leeftyd een jaar, waar die maksimum lewensverwachting opgemerk word (die hoë sterftesyfer in die eerste jaar van lewe het 'n nadelige uitwerking op die lewensverwachting by geboorte) was die lewensverwachting 66-11 jaar vir manlikes en 71-24 jaar vir vroulikes.

In 30 jaar het die gemiddelde lewensduur, dit wil sê die lewensverwachting by geboorte, met byna 9 jaar vir manlikes en 11 jaar vir vroulikes toegeneem. Die langer-lewende vroulikes het hul voorsprong op die manlikes vermeerder gedurende die tydperk van 30 jaar tussen 1920-22 en 1950-52: Terwyl hulle gemiddeld 3-57 jaar langer as die manlikes geleef het gedurende 1920-22, was hul lewe 5-51 jaar langer as dié van die manlikes gedurende 1950-52.

Die lewensverwachting van manlikes by leeftyd 60 jaar word as 15-53 jaar deur tabel E. 5 getoon, wat nie veel hoër is as wat dit 30 jaar vroeër was nie, naamlik 15-14 jaar (tabel E. 1). Daar moet egter op gelet word dat die getal oorblywendes by hierdie ouderdom heelwat hoër is as 30 jaar tevore, hoofsaaklik as gevolg van die gunstiger sterftesyfers by leeftye onder 60 jaar. Die getal manlike oorblywendes by leeftyd 60 jaar uit 100,000 lewendgeborenes was 70,189 in 1950-52 vergeleke met 56,186 in 1920-22, wat 'n vermeerdering van byna 24 persent verteenwoordig oor die tydperk van 30 jaar. Die ooreenstemmende syfers vir vroulikes toon 'n verhoging in lewensverwachting gedurende hierdie tydperk van 16-56 jaar in 1920-22 tot 18-40 jaar in 1950-52, en 'n vermeerdering in die oorblywendes van 63,734 in 1920-22 tot 79,779 in 1950-52, of meer as 25 persent. Hierdie syfers toon duidelik dat wat Blankes betref, die getal wat in lewe bly tot by leeftyd 60 jaar uit elke 100,000 lewendgeborenes, ongeveer een kwart meer is as die getal wat 30 jaar vroeër by hierdie leeftyd in lewe was.

Vir die Kleurlingbevolking toon 'n vergelyking van die 1950-52-lewenstabel met die 1945-47-lewenstabel 'n daling in die sterftesyfer by alle leeftye, behalwe leeftyd 1, leeftyd 2 vir manlikes en die hoë leeftye. Die laer sterftesyfers by die meeste leeftye het 'n hoër lewensverwachting by alle leeftye tot omtrent 78 jaar veroorsaak. By die hoë leeftye kon soos voorheen opgemerk, geen groot betekenis geheg word aan die verskille wat getoon word nie as gevolg van die moeilikheid om noukeurige waardes by hierdie leeftye te bereken.

it would appear that the mortality rate for males at this age has remained remarkably constant throughout this period of 30 years. The various life tables for this period show the following:

Life table.	Period.	Mortality rate at age 60 years.
E. 1.....	1920-22	25.96
E. 2.....	1925-27	24.71
E. 3.....	1935-37	25.56
E. 4.....	1945-47	25.41
E. 5.....	1950-52	25.89

At higher ages, the 1950-52 table shows an improvement at certain ages, compared with the life table for 1920-22, but it should be noted that comparisons at the higher ages above about 70 years may not be accurate, as the mortality rates are derived either from calculations based on small numbers of cases subject to considerable chance variation, and where, moreover, the age reporting is suspect; or are derived from extrapolation of values at lower ages (as in the case of the 1950-52 table), which may not very accurately reflect the true position.

As a result of the generally lower mortality rates, the expectation of life of Whites is higher at practically all ages for the period 1950-52, compared with 1945-47. The gain at birth is 0-80 years for males and 1-77 years for females over the five years, giving an average duration of life for males of 64-57 years and for females of 70-08 years at the later date. At age one, where the maximum expectation of life is observed (the high mortality rate in the first year of life adversely affects the expectation of life at birth), the expectation of life was 66-11 years for males and 71-24 for females.

In 30 years the average duration of life, that is, the expectation of life at birth, increased by nearly 9 years for males and 11 years for females. The longer-living females have increased their lead over the males during the period of 30 years between 1920-22 and 1950-52: While they lived on the average 3-57 years longer than the males during 1920-22, their life was 5-51 years longer than that of the males during 1950-52.

The life expectation of males at age 60 years is shown as 15-53 years by table E. 5 which is not much higher than it was 30 years earlier, namely 15-14 years (table E. 1). However, it should be noted that the number of survivors at this age is considerably higher than 30 years earlier, owing mainly to the generally more favourable mortality rates at ages below 60 years. The number of male survivors at age 60 out of 100,000 live births was 70,189 in 1950-52, compared with 56,186 in 1920-22, which represents an increase of nearly 24 per cent for the period of 30 years. The corresponding figures for females show an increase in life expectancy during this period, from 16-56 years in 1920-22, to 18-40 years in 1950-52, and an increase in the survivors, from 63,734 in 1920-22 to 79,779 in 1950-52, or more than 25 per cent. It is clear from these figures that, as far as Whites are concerned, the number surviving to age 60 out of every 100,000 born alive, is about one quarter more than the number surviving at this age 30 years earlier.

For the Coloured population a comparison of the 1950-52 life table with the 1945-47 life table, reveals a decrease in the mortality rate at all ages, except age 1, age 2 for males, and the high ages. The lower mortality rates at most ages have resulted in a higher life expectancy at all ages up to about 78 years. At the high ages, no great importance can be attached to the differences revealed owing to the difficulties in calculating accurate values at these ages, as mentioned before.

The average length of life at birth of Coloured males is 44-82 years, and of Coloured females, 47-77 years, according to the latest 1950-52 life table. The maximum expectancy of life occurs at age 3 years, where it is 53-37 years for males and 56-09 for females.

Die gemiddelde lewensduur van manlike Kleurlinge by geboorte is 44-82 jaar en vir vroulike Kleurlinge, 47-77 jaar, volgens die 1950-52-tabel. Die maksimum lewensverwachting word gevind by 3-jarige leeftyd, waar dit 53-37 jaar vir manlikes en 56-09 vir vroulikes is.

Die 1950-52-lewenstabel ten opsigte van Asië toon aansienlike verlagings in die sterftesyfer en verhogings in die lewensverwachting vergeleke met die tabel vir 1945-47, dit is oor 'n tydperk van slegs vyf jaar. Die bevolkingsensussyfers vir 1946 en 1951 toon 'n vermeerdering van 81,000 Asië, terwyl geboorte- en sterfte-registrasies gedurende hierdie tydperk 'n natuurlike aanwas van 41,000 en netto volkstrekk 'n verdere vermeerdering van 4,000 veroorsaak het, 'n totale toename van slegs 45,000. Die skynbare verskil van 36,000 kan te wyte wees aan verskillende oorsake, waarvan een die moontlikheid is dat die sensus van 1946 onvolledig was (en moontlik vroeëre sensusse ook). Sensuskontroleurs en -opnemers het al dikwels die moeilikheide wat teëgekóm word by die telling van Asië in Natal beklemtoon en het die mening uitgespreek dat die sensussyfers onvolledig is in sekere streke. Die sensus van 1951 het die grondslag van die Bevolkingsregister uitgemaak en dit kon gelei het tot 'n vollediger opname in 1951.

Indien die Asiëse bevolking, soos aangegee deur die 1946 sensus, aanmerklik onvolledig opgeneem was, sou die sterftesyfers soos getoon deur die lewenstabel vir 1945-47 te hoog wees met die resultaat dat die ware lewensverwachtings ietwat hoër sou wees as aangetoon in die lewenstabel.

Die gemiddelde lewensduur van manlike Asië, dit is die lewensverwachting by geboorte, is 55-77 jaar, terwyl die maksimum lewensverwachting, wat by leeftyd 2 jaar gevind word, 59-25 jaar is, volgens die 1950-52-lewenstabel. Die ooreenstemmende syfers vir vroulike Asië is laer as dié vir manlikes, nl. onderskeidelik 54-75 en 57-44. Die 1945-47-lewenstabel het ook laer syfers vir vroulikes as manlikes by hierdie leeftye getoon. Dit is in teenstelling met die posisie wat vir vroulike Blankes en Kleurlinge getoon word, wie se lewensverwachting geblyk het hoër te wees as die vir manlikes in alle tabelle. Die Asiëse bevolkingsgroep bestaan hoofsaaklik uit persone van Indiëse afkoms en 'n lewenstabel vir Indië (1940-51) toon 'n soortgelyke stand van sake soos dié vir die Unie vir vroulikes by leeftyd 0 en 2 jaar in verhouding tot manlikes. Die lewensverwachting by geboorte word aangegee as onderskeidelik 31-66 jaar vir vroulikes teenoor 32-45 jaar vir manlikes, en by leeftyd 2 jaar as 39-52 jaar teenoor 40-50 jaar.

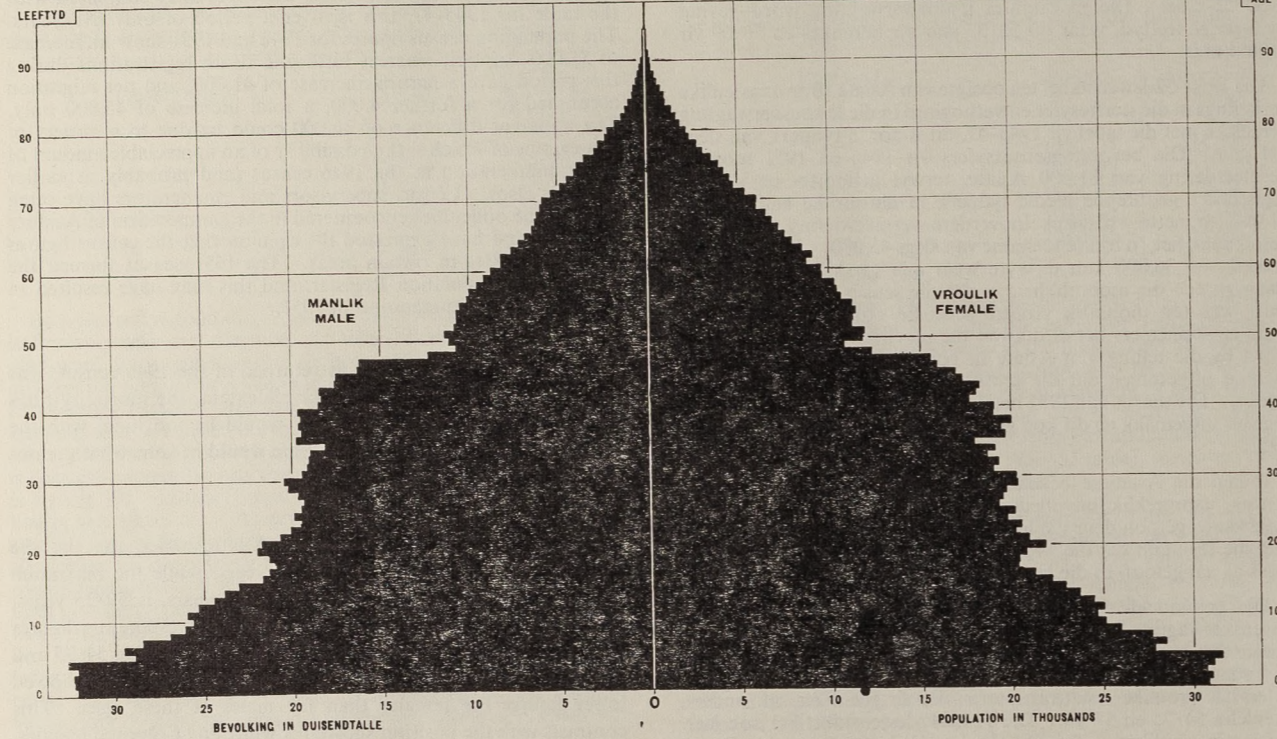
The 1950-52 life table for Asiatics shows substantial decreases in mortality rate and increases in life expectancy compared with the table for 1945-47, this is, over a period of only five years. The population census figures for 1946 and 1951 show an increase of 81,000 Asiatics, whereas birth and death registrations during this period gave a natural increase of 41,000, and net migration accounted for a further 4,000, a total increase of 45,000 only. The apparent difference of 36,000 could be due to a variety of causes, one of which is the possibility of an appreciable amount of under-enumeration at the 1946 census (and probably at earlier censuses also). Census supervisors and enumerators have often stressed the difficulties encountered in the enumeration of Asiatics in Natal, and have expressed the opinion that the census figures were incomplete in certain areas. The 1951 census formed the basis of the Population Register, and this may have resulted in more complete enumeration in 1951.

If the Asiatic population, as returned at the 1946 census, was under-enumerated to any appreciable extent, the mortality rates as shown in life table for 1945-47 would be too high, with the result that the true expectations of life would be somewhat greater than as shown in the life table.

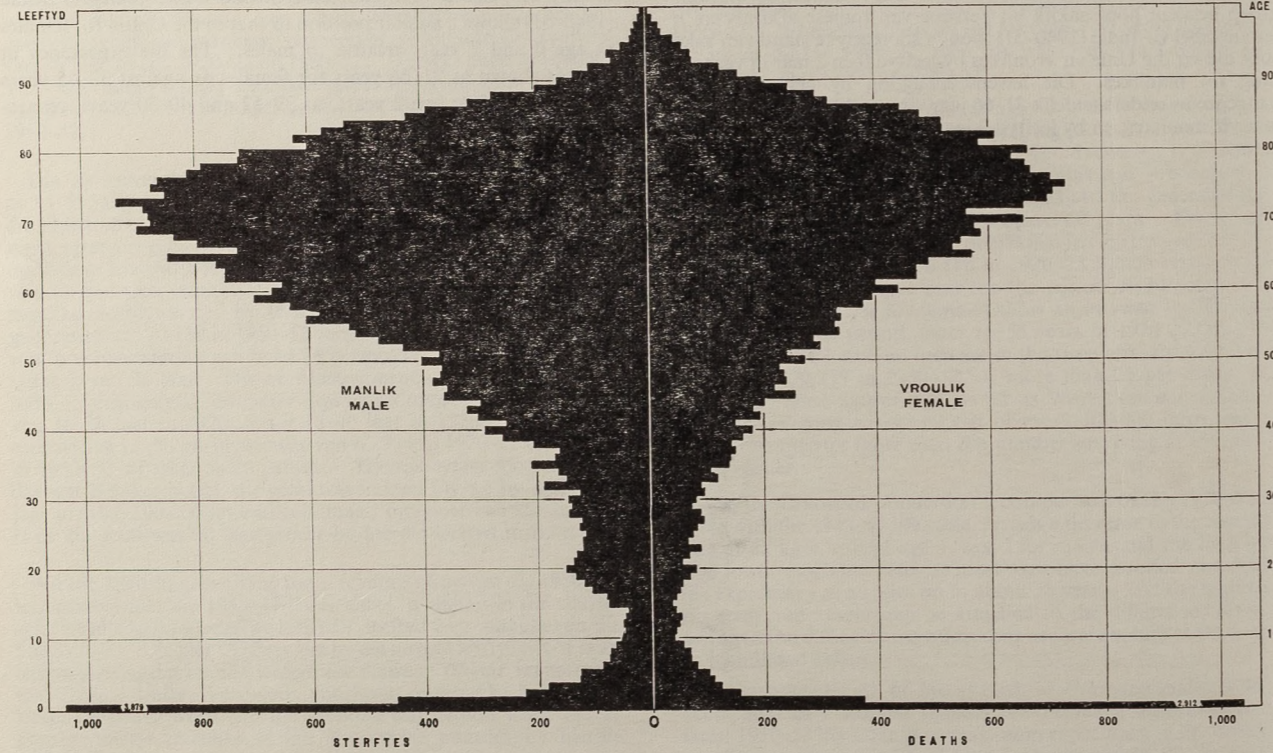
The average duration of life for Asiatic males, that is, the expectancy of life at birth, is 55-77 years, while the maximum expectancy of life, which occurs at age 2 years, is 59-25 years, according to the 1950-52 life table. The corresponding figures for Asiatic females are lower than those for males, being 54-75 and 57-44 years, respectively. The 1945-47 life table also showed lower figures for females than for males at these ages. This contrasts with the position shown for white and Coloured females, whose life expectancies have in all tables been shown to be higher than those of the males. The Asiatic population group consists mainly of persons of Indian descent and a life table for India (1940-51) shows a similar position to that in the Union for females at age 0 and 2 years relative to males. The life expectancy at birth is shown as 31-66 years for females as against 32-45 years for males, and at age 2 years, as 39-52 and 40-50 years, respectively.



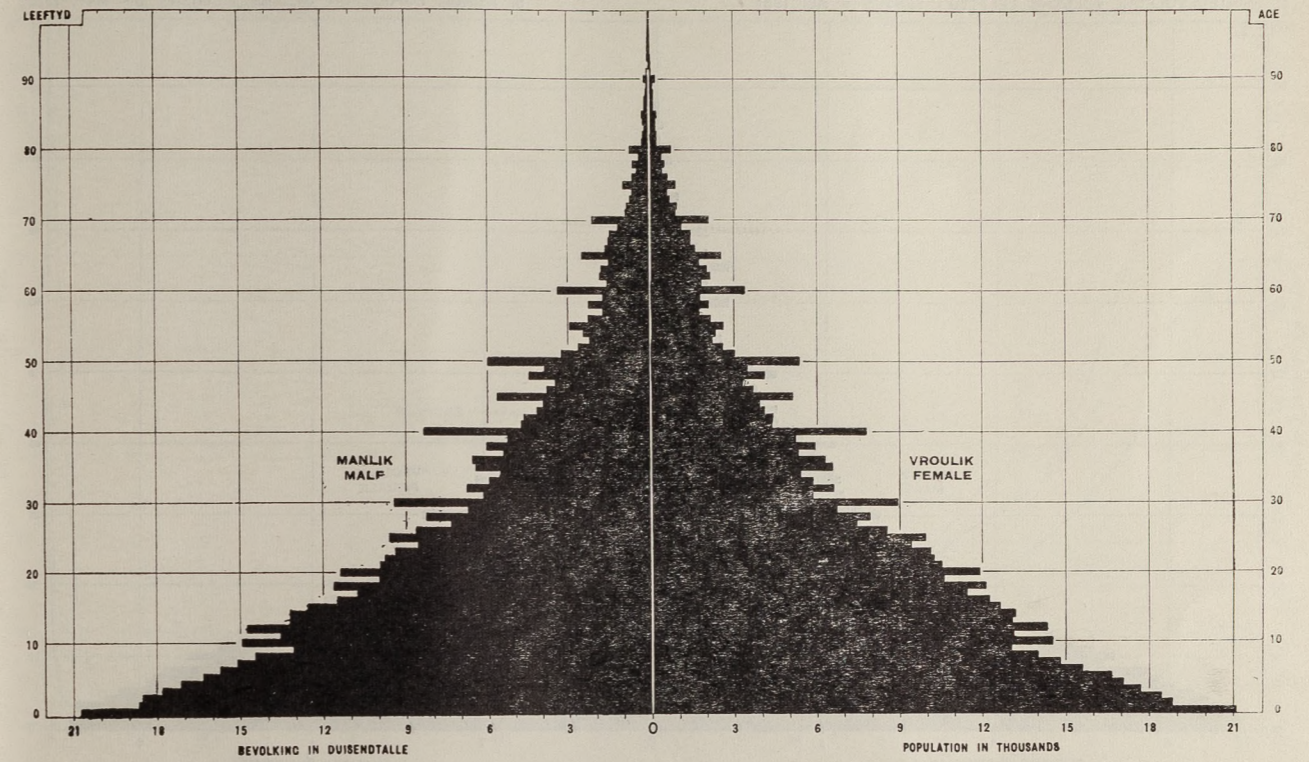
1. BLANKE BEVOLKING VOLGENS LEEFTYD : SENSUS 8 MEI 1951 1. WHITE POPULATION BY AGE : CENSUS, 8th MAY, 1951



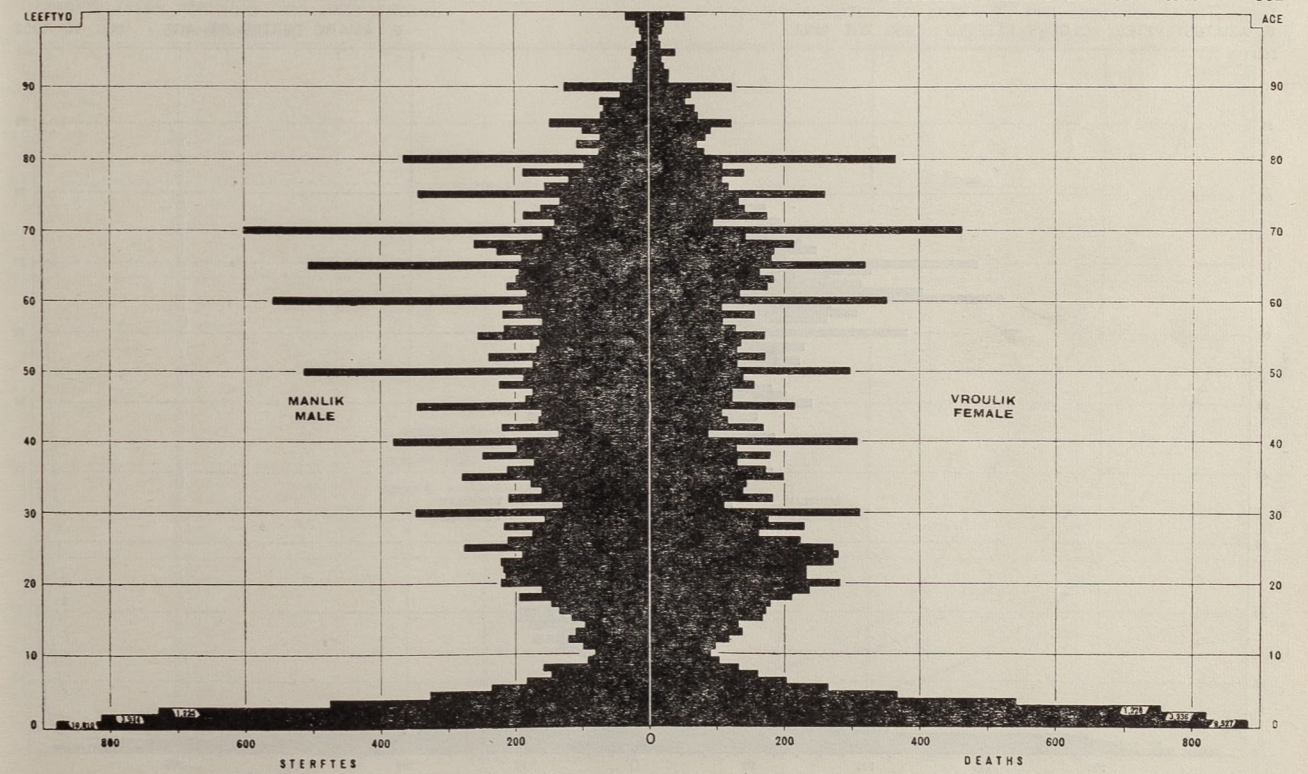
2. BLANKE STERFTES VOLGENS LEEFTYD : 1950 TOT 1952 2. WHITE DEATHS BY AGE : 1950 TO 1952



3. KLEURLINGBEVOLKING VOLGENS LEEFTYD : SENSUS 8 MEI 1951 3. COLOURED POPULATION BY AGE : CENSUS, 8th MAY, 1951

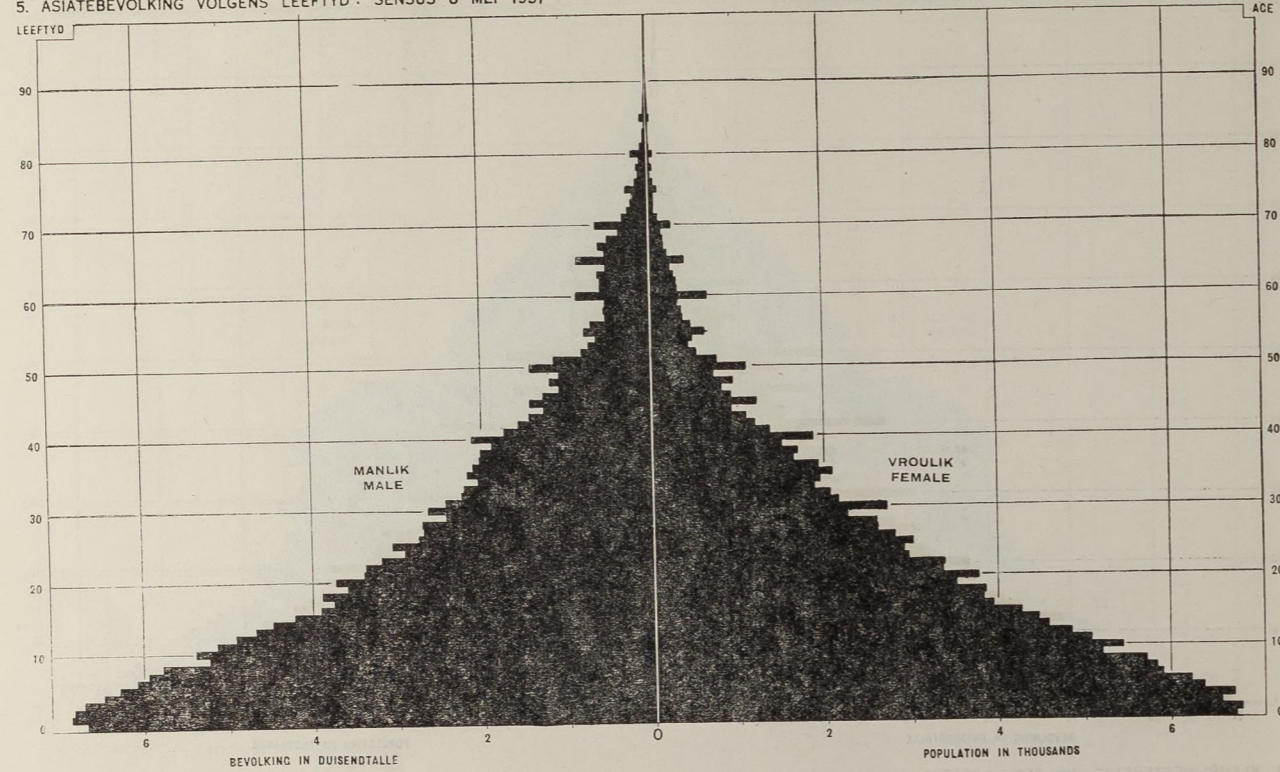


4. KLEURLINGSTERFTES VOLGENS LEEFTYD : 1950 TOT 1952 4. COLOURED DEATHS BY AGE : 1950 TO 1952



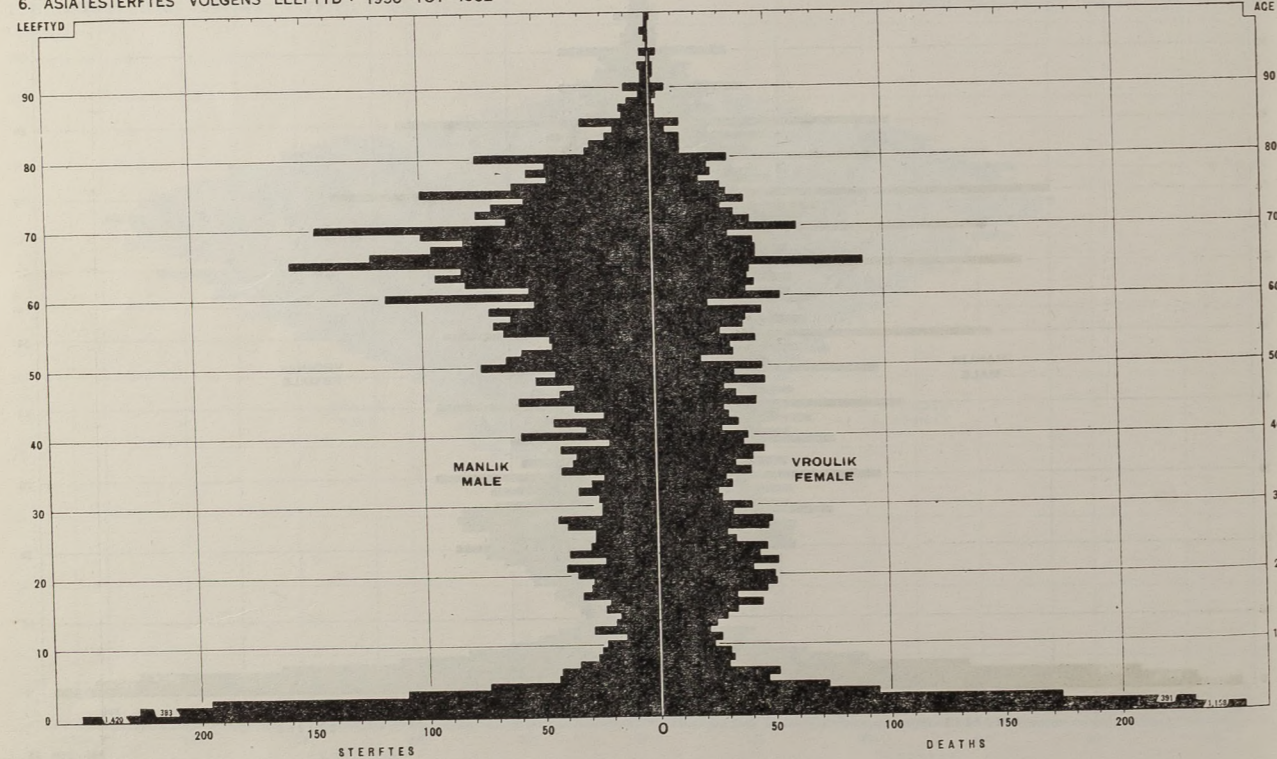
5. ASIATEBEVOLKING VOLGENS LEEFTYD : SENSUS 8 MEI 1951

5. ASIATIC POPULATION BY AGE : CENSUS, 8th MAY, 1951



6. ASIATESTERFTES VOLGENS LEEFTYD : 1950 TOT 1952

6. ASIATIC DEATHS BY AGE : 1950 TO 1952

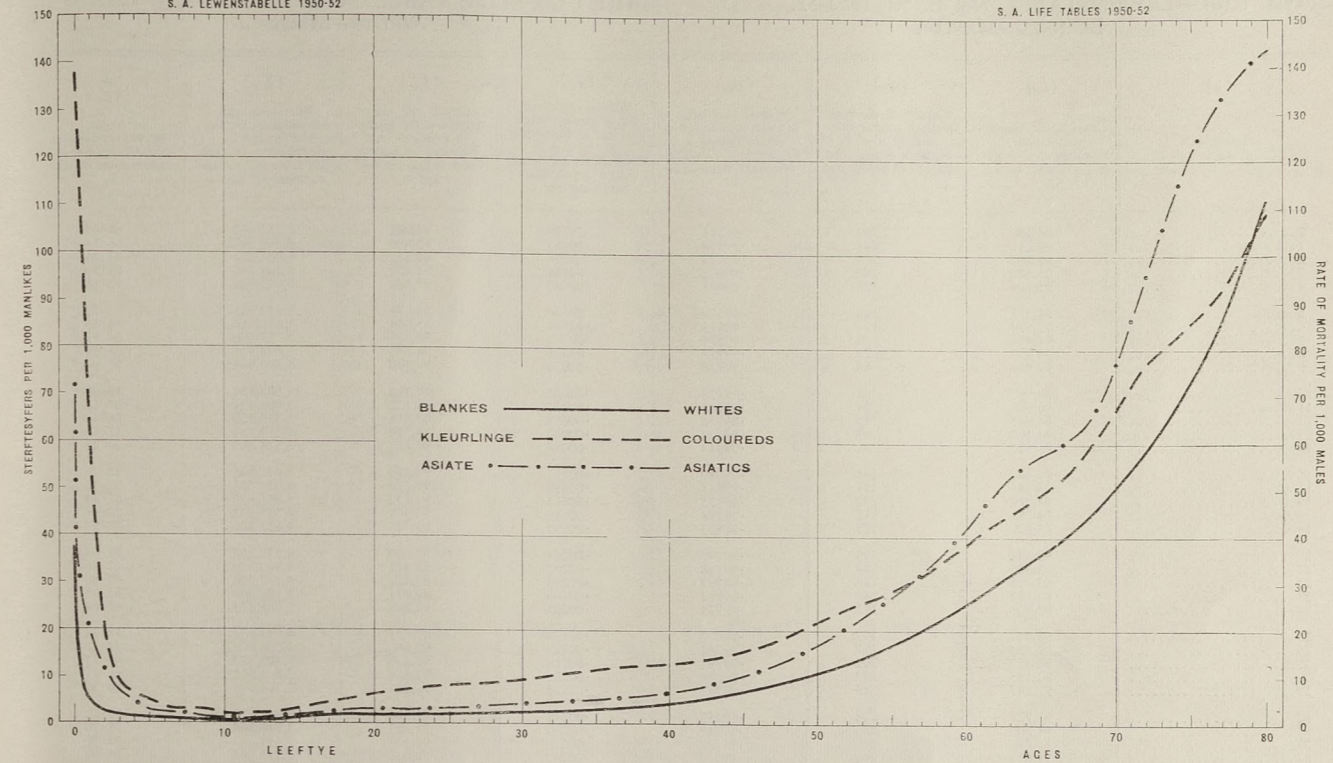


7. STERFTESYFERS PER 1,000 MANLIKES (1,000qx)

S. A. LEWENSTABELLE 1950-52

7. RATES OF MORTALITY PER 1,000 MALES (1,000qx)

S. A. LIFE TABLES 1950-52

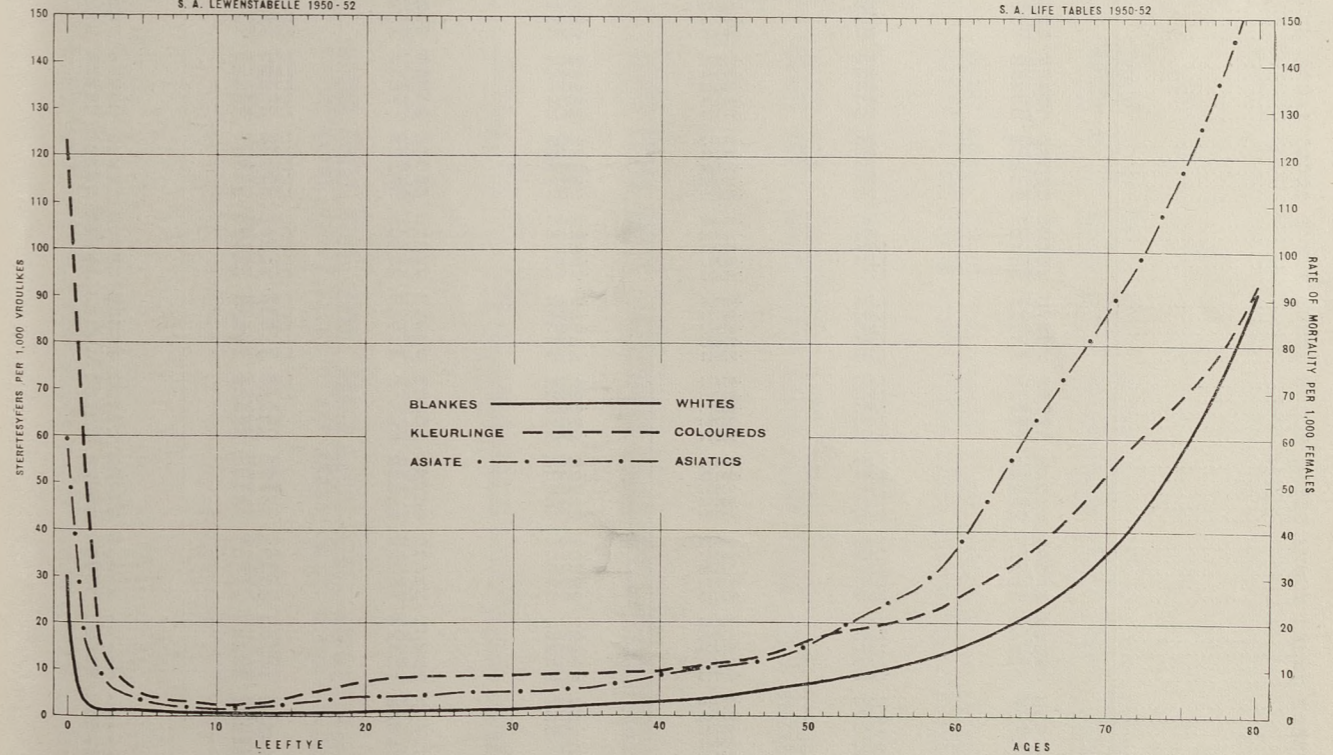


8. STERFTESYFERS PER 1,000 VROULIKES (1,000qx)

S. A. LEWENSTABELLE 1950-52

8. RATES OF MORTALITY PER 1,000 FEMALES (1,000qx)

S. A. LIFE TABLES 1950-52



TABEL 1 (a).—LEWENSTABEL No. E. 5. 1950-52. BLANKES—MANLIK.

Table with 8 columns: (x), (lx), (dx), (px), (qx), (Lx), (Tx), (ex). Rows represent ages from 0 to 84 for males.

TABEL 1 (a).—LIFE TABLE No. E. 5. 1950-52. WHITES—MALE.

Table with 8 columns: (x), (lx), (dx), (px), (qx), (Lx), (Tx), (ex). Rows represent ages from 0 to 84 for white males.

TABEL 1 (a).—LEWENSTABEL NO. E. 5. 1950-52 (vervolg). BLANKES—MANLIK (vervolg).

Table with 8 columns: (x), (lx), (dx), (px), (qx), (Lx), (Tx), (ex). Rows represent ages from 85 to 104 for males.

TABEL 1 (a).—LIFE TABLE No. E. 5. 1950-52 (continued). WHITES—MALE (continued).

Table with 8 columns: (x), (lx), (dx), (px), (qx), (Lx), (Tx), (ex). Rows represent ages from 85 to 104 for white males.

TABEL 1 (b).—LEWENSTABEL No. E. 5. 1950-52. BLANKES—VROULIK.

Table with 8 columns: (x), (lx), (dx), (px), (qx), (Lx), (Tx), (ex). Rows represent ages from 0 to 44 for females.

TABEL 1 (b).—LIFE TABLE No. E. 5. 1950-52. WHITES—FEMALE.

Table with 8 columns: (x), (lx), (dx), (px), (qx), (Lx), (Tx), (ex). Rows represent ages from 0 to 44 for white females.





TABEL 3 (a).—LEWENSTABEL No. A. 2. 1950-52 (vervolg). ASIATE—MANLIK (vervolg).

Table with columns (x), (lx), (dx), (px), (qx), (Lx), (Tx), (ex) and rows for ages 15-103. Includes descriptions for each column such as 'Getal oorblywendes by leeftyd x', 'Getal wat sterf na leeftyd x', etc.

TABLE 3 (a).—LIFE TABLE No. A. 2. 1950-52 (continued). ASIATIC—MALE (continued).

TABEL 3 (b).—LEWENSTABEL No. A. 2. 1950-52. ASIATE—VROULIK.

Table with columns (x), (lx), (dx), (px), (qx), (Lx), (Tx), (ex) and rows for ages 0-84. Includes descriptions for each column such as 'Getal oorblywendes by leeftyd x', 'Getal wat sterf na leeftyd x', etc.

TABLE 3 (b).—LIFE TABLE No. A. 2. 1950-52. ASIATIC—FEMALE.

TABEL 3 (b).—LEWENSTABEL No. A. 2. 1950-52 (vervolg). ASIATE—VROULIK (vervolg). TABLE 3 (b).—LIFE TABLE No. A. 2. 1950-52 (continued). ASIATICS—FEMALE (continued).

(x)	( $l_x$ )	( $d_x$ )	( $p_x$ )	( $q_x$ )	( $L_x$ )	( $T_x$ )	( $e_x^0$ )
Leeftyd. Age.	Getal oorblywendes by leeftyd x. Number of survivors at age x.	Getal wat sterf na leeftyd x maar voor leeftyd x + 1. Number dying after age x but before age x + 1.	Waarskynlikheid om een jaar te lewe vanaf leeftyd x. Probability of living one year from age x.	Waarskynlikheid om te sterwe binne een jaar na bereiking van leeftyd x. Probability of dying within a year after attaining age x.	Getal jare wat gelewe word in die lewejaar x. Number of years lived in the year of age x.	Bevolking van lewenstabel bo die leeftyd x. Population of the life table above the moment of age x.	Volle lewensverwagting. Complete expectation of life.
85	3,083	711	-76925	-23075	2,728	9,699	3.15
86	2,372	588	-75219	-24781	2,078	6,971	2.94
87	1,784	475	-73384	-26616	1,547	4,893	2.73
88	1,309	374	-71413	-28387	1,122	3,346	2.56
89	935	287	-69300	-30700	792	2,224	2.38
90	648	214	-67039	-32961	541	1,432	2.21
91	434	154	-64622	-35378	357	891	2.05
92	280	106	-62044	-37956	227	534	1.91
93	174	71	-59298	-40702	139	307	1.76
94	103	45	-56378	-43622	81	168	1.63
95	58	27	-53278	-46722	45	87	1.50
96	31	16	-49990	-50010	23	42	1.36
97	15	8	-46509	-53491	11	19	1.27
98	7	4	-42827	-57173	5	8	1.14
99	3	2	-38940	-61060	2	3	1.10
100	1	1	-34840	-65160	1	1	1.00

TABEL 4 (a).—LEWENSTABELLE—BLANKES: VERGE- TABLE 4 (a).—LIFE TABLES—WHITES: COMPARISON  
LYKING MET VORIGE TYDPERKE. WITH PREVIOUS PERIODS.

Leeftyd. Age.	Manlik.—Male.					Vroulik.—Female.				
	No. E. 1. 1920-22.	No. E. 2. 1925-27.	No. E. 3. 1935-37.	No. E. 4. 1945-47.	No. E. 5. 1950-52.	No. E. 1. 1920-22.	No. E. 2. 1925-27.	No. E. 3. 1935-37.	No. E. 4. 1945-47.	No. E. 5. 1950-52.
	(a) Lewensverwagting.—Expectation of life ( $e_x^0$ )									
0	55.61	57.78	58.95	63.77	64.57	59.18	61.48	63.06	68.31	70.08
1	59.94	61.40	62.12	65.51	66.11	62.88	64.58	65.60	69.63	71.24
2	60.26	61.56	62.04	64.90	65.41	63.20	64.78	65.53	68.97	70.52
3	59.79	61.01	61.42	64.08	64.56	62.78	64.28	64.89	68.16	69.64
4	59.14	60.30	60.69	63.21	63.68	62.12	63.55	64.12	67.31	68.73
5	58.34	59.51	59.86	62.32	62.77	61.38	62.76	63.30	66.40	67.81
10	54.02	55.17	55.43	57.71	58.08	57.00	58.33	58.87	61.73	63.09
20	45.26	46.27	46.43	45.35	48.67	48.15	49.34	49.72	52.27	53.51
30	37.08	37.87	37.93	39.29	39.50	39.93	40.77	40.98	43.06	44.10
40	29.16	29.78	29.45	30.38	30.68	31.89	32.47	32.44	34.07	34.93
50	21.86	22.17	21.70	22.21	22.44	23.97	24.28	24.30	25.66	26.27
60	15.14	15.31	14.97	15.34	15.53	16.56	16.76	16.82	18.04	18.40
70	9.53	9.54	9.34	9.79	10.05	10.35	10.42	10.50	11.39	11.59
80	5.56	5.42	5.20	5.51	5.73	5.78	5.85	5.75	6.43	6.54
90	3.11	2.98	2.40	2.78	2.89	3.17	3.11	2.93	3.16	3.41
100	1.33	1.57	1.11	1.35	1.24	1.53	1.57	1.43	1.42	1.62

TABEL 4(a).—LEWENSTABELLE—BLANKES: VERGELYKING TABLE 4(a). LIFE TABLES—WHITES: COMPARISON  
MET VORIGE TYDPERKE (vervolg). WITH PREVIOUS PERIOD (continued).

Leeftyd. Age.	Manlik.—Male.					Vroulik.—Female.				
	No. E. 1. 1920-22.	No. E. 2. 1925-27.	No. E. 3. 1935-37.	No. E. 4. 1945-47.	No. E. 5. 1950-52.	No. E. 1. 1920-22.	No. E. 2. 1925-27.	No. E. 3. 1935-37.	No. E. 4. 1945-47.	No. E. 5. 1950-52.
	(b) Sterftesifer.—Rate of mortality (1,000 $q_x$ ).									
0	87.84	74.44	66.41	41.28	37.89	73.88	62.76	53.48	32.91	30.05
1	21.64	18.70	14.64	5.99	4.61	20.76	18.38	14.02	4.83	3.97
2	8.91	7.36	6.20	2.80	2.28	9.15	7.70	5.55	2.81	1.64
3	5.73	4.71	4.36	2.09	1.88	5.35	4.14	3.52	2.25	1.28
4	3.44	3.46	2.84	1.65	1.42	4.25	3.43	2.92	1.34	1.18
5	2.94	2.92	2.38	1.57	1.30	3.04	2.37	2.19	1.25	1.13
10	2.00	1.79	1.54	0.93	0.67	1.64	1.48	1.47	0.76	0.60
20	3.94	3.44	3.46	2.02	1.97	3.34	2.60	2.33	1.25	1.01
30	4.98	4.16	3.52	2.41	2.47	5.06	3.98	3.17	2.04	1.56
40	8.17	7.16	6.00	4.56	4.27	6.20	5.43	4.98	3.73	2.97
50	13.45	12.27	13.08	11.52	10.92	9.45	8.63	9.24	8.05	6.93
60	25.96	24.71	25.56	25.41	25.89	18.66	17.25	17.98	15.68	14.38
70	56.33	51.69	53.87	51.74	50.63	45.64	42.97	42.41	36.63	35.18
80	119.90	119.12	120.95	114.30	111.90	119.99	103.09	108.29	90.28	91.42
90	235.02	251.46	300.71	261.49	243.04	238.34	237.95	248.43	223.65	209.08
100	499.00	457.99	599.60	517.27	563.08	443.00	456.30	488.51	492.61	442.10

(c) Getal oorblywendes.—Number of survivors ( $l_x$ )

0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	91,216	92,556	93,359	95,873	96,211	92,612	93,724	94,652	96,709	96,995
2	89,242	90,825	91,992	95,298	95,767	90,689	92,001	93,325	96,242	96,610
3	88,447	90,157	91,422	95,031	95,548	89,860	91,293	92,807	95,972	96,452
4	87,940	89,733	91,023	84,832	95,368	89,379	90,915	92,480	95,756	96,328
5	87,637	89,422	90,765	94,676	95,232	88,999	90,603	92,210	95,628	96,214
10	86,590	88,398	89,879	94,059	94,744	88,084	89,764	91,355	95,136	95,798
20	84,415	86,491	88,106	92,911	93,682	86,146	88,083	89,939	94,235	95,016
30	80,756	83,249	85,029	90,942	91,726	82,718	85,304	87,456	92,672	93,960
40	75,784	78,623	81,223	88,098	88,919	78,303	81,414	84,005	90,243	91,974
50	68,081	71,611	74,226	82,010	83,058	72,634	76,338	78,605	85,485	87,964
60	56,773	60,270	61,763	69,087	70,186	63,734	67,423	69,342	76,476	79,779
70	39,205	42,337	42,516	47,872	48,739	47,430	50,843	52,314	60,325	63,877
80	16,949	18,331	18,043	21,730	22,848	23,055	24,910	26,193	33,057	35,690
90	2,653	2,553	2,177	3,196	3,868	4,147	4,123	4,311	7,105	8,024
100	48	42	7	31	33	102	78	58	119	213











TABEL 9.—VERGELYKING VAN VERWAGTE MET WERK-  
LIKE STERFGEVALLE (vervolg).TABLE 9.—COMPARISON OF EXPECTED WITH ACTUAL  
DEATHS (continued).

Leeftydsgroep. Age-group.	Manlik.—Male.					Vroulik.—Female.				
	Verwagte sterfgevälle. Expected deaths.	Werklike sterfgevälle. Actual deaths.	Verwagte sterfgevälle min werklike sterfgevälle. Expected deaths minus actual deaths.		Totale afwyking. Accumulated deviation.	Verwagte sterfgevälle. Expected deaths.	Werklike sterfgevälle. Actual deaths.	Verwagte sterfgevälle min werklike sterfgevälle. Expected deaths minus actual deaths.		Totale afwyking. Accumulated deviation.
			Positief. Positive.	Negatief. Negative.				Positief. Positive.	Negatief. Negative.	
KLEURLINGE.—COLOUREDS.										
5-9.....	273	273	—	0	—	284	285	—	1	-1
10-14.....	155	171	—	16	-16	178	190	—	12	-13
15-19.....	249	252	—	3	-19	319	319	—	—	-13
20-24.....	348	355	—	7	-26	423	431	—	8	-21
25-29.....	347	344	3	—	-23	355	353	2	—	-19
30-34.....	342	342	—	—	-23	292	295	—	3	-22
35-39.....	363	370	—	7	-30	271	268	3	—	-19
40-44.....	354	353	1	—	-29	256	261	—	5	-24
45-49.....	376	372	4	—	-25	258	251	7	—	-17
50-54.....	402	419	—	17	-42	276	287	—	11	-28
55-59.....	350	345	5	—	-37	227	223	4	—	-24
60-64.....	433	448	—	15	-52	328	336	—	8	-32
65-69.....	452	447	5	—	-47	346	346	—	—	-45
70-74.....	395	408	—	13	-60	323	336	—	13	-48
75-79.....	297	299	—	2	-62	241	244	—	3	-83
80-84.....	206	240	—	34	-96	196	231	—	35	-20
85-89.....	169	131	38	—	-58	188	125	63	—	+53
90-94.....	109	69	40	—	-18	147	74	73	—	+136
95-99.....	78	26	52	—	+34	119	36	83	—	+200
100+.....	61	14	47	—	+81	87	23	64	—	
Totaal/Total.....	5,759	5,678	195	144	+81	5,114	4,914	299	99	+200

## ASIATE.—ASIATICS.

7-11.....	42	42	0	—	0	48	48	—	—	0
12-16.....	35	36	—	1	-1	50	51	—	1	-1
17-21.....	53	55	—	2	-3	73	75	—	2	-3
22-26.....	49	49	—	—	-3	70	69	1	—	-2
27-31.....	52	51	1	—	-2	65	67	—	2	-4
32-36.....	53	54	—	1	-3	56	56	—	—	-4
37-41.....	62	62	—	—	-3	65	66	—	1	-5
42-46.....	68	68	—	—	-3	57	60	—	3	-8
47-51.....	92	89	3	—	0	63	61	2	—	-6
52-56.....	93	94	—	1	-1	58	60	—	2	-8
57-61.....	122	119	3	—	+2	72	68	4	—	-4
62-66.....	171	179	—	8	-6	87	88	—	1	-5
67-71.....	173	162	11	—	+5	77	76	1	—	-4
72-76.....	119	119	—	—	+5	47	56	—	9	-13
77-81.....	84	82	2	—	+7	41	39	2	—	-11
82-86.....	38	34	4	—	+11	27	15	12	—	+1
87-91.....	22	12	10	—	+21	23	5	18	—	+19
92-96.....	17	3	14	—	+35	15	3	12	—	+31
97+.....	15	1	14	—	+49	20	0	20	—	+51
Totaal-Total.....	1,360	1,311	62	13	+49	1,014	963	72	21	+51

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