1881.

NEW ZEALAND.

FRIENDLY SOCIETIES

REPORT ON THE SICKNESS, MORTALITY, AND OTHER CONTINGENCIES EXPERIENCED DURING
THE QUINQUENNIUM ENDED 31st DECEMBER, 1877

Presented to both Houses of the General Assembly, pursuant to "The Friendly Societies Act, 1877,"
Section 13, Subsection 1 (e)

THE Registrar of Friendly Societies having instructed the Actuary to prepare abstracts of the returns of sickness and mortality experienced, forwarded by the various Friendly Societies for the quinquennium ended the 31st December, 1877, has now the honor to submit the report of the Actuary thereon.

The report may at first be deemed to be late, considering the period under review, but the difficulties incident to the work have prevented its being submitted earlier. Not only were the returns not due to the office until the middle of 1878, but many of them were long in arrears. Then they had to be carefully and critically examined; numerous inquiries had to be instituted respecting evident errors, discrepancies, and omissions, involving often long delay The names and particulars for the five years required to be tabulated for all the members of the various societies—had to be transcribed on to cards, one card for each member—a work of very considerable magnitude; and, subsequently, the results for each year had to be separately compiled, and then tabulated. This work, moreover, could only be dealt with at intervals, on account of the pressure of other work of more immediate and pressing urgency
WM. R. E. BROWN,
Registrar of Friendly Societies.

The ACTUARY for FRIENDLY SOCIETIES to the REGISTRAR of FRIENDLY SOCIETIES.

SIR,— Registrar-General's Office, Wellington, 29th July, 1881.
I have the honor to submit to you my report on the sickness, mortality, and other contin-gencies experienced by registered friendly societies in this colony, during the quinquennium ended the 31st December, 1877
The number of returns I have been able to utilize for the purposes of this report is 58. The remaining returns furnished to you I found on examination to contain either palpable inaccuracies, or else such suspicious features that I consider the experience of sickness, mortality, &c., would lose more in trustworthiness by including the facts contained in them than it would gain by the increase in the numerical basis that would be thus secured. Besides the check afforded by an examination of the consistency or otherwise of the returns themselves, I was able in most cases to institute a comparison with the ordinary annual returns for the years 1876 and 1877 In a few cases, also, annual returns, though of a very imperfect nature, existed for the years 1874 and 1875, and thus afforded an additional check. In spite of this, it must be evident that the bulk of the data were not susceptible of indepen-dent verification, and that, therefore, the present compilation must be greatly inferior in reliability to future compilations relating to periods subsequent to the passing of "The Friendly Societies Act 1877"

The 58 returns I have utilized include facts relating to 33 "Lodges" of the Manchester Unity Independent Order of Odd Fellows, 16 "Courts," and 1 "Shepherd Sanctuary" of the Ancient Order of Foresters, 2 "Tents" of the Independent Order of Rechabites, 1 "Division" of the Sons and Daughters of Temperance, 3 "Branches" of the Hibernian Australasian Catholic Benefit Society, and 2 isolated local societies.

Each of these bodies, with one exception, to be noted immediately, furnished a return of all persons who were members at any time during the quinquennium (giving, generally,* the date of birth of each person), of all the admissions, withdrawals, and deaths (giving the date of each) which occurred during the quinquennium, and, finally, of the number of days' sickness experienced by each member who received sick-pay during any one or more of the five years. In the case of one body the return did not relate to the whole quinquennium, but only to the last three years of it. There was a corresponding defect also in the case of a very few individual members, giving rise to minute discrepancies in Schedule I. hereto.

* In the case of 55 members, out of a total of 7,918, or 0·69 per cent., the age was not indicated.

After examination of the returns and correspondence with a view to the correction of inaccuracies the facts were first of all transcribed on to cards, one card being allotted to each member. These cards were then sorted according to the years of birth of the members, the cards of each " Lodge " or other body being, however, kept separate. The data contained on the cards were then transferred to sheets, the totals of which form the basis of the experience tables I now submit.

The total number of members at the commencement of the quinquennium was 4,003; 3,719 new members were admitted during the quinquennium, including a comparatively small number transferred from other lodges, courts, &c.; 2,526 members withdrew, and 174 members died. As already stated, one body furnished a return for the last three years of the quinquennium only ; and, as a consequence of this, the number of members remaining at its close, who enter into this experience, was 5,218. The total number of members under observation during any part of the five years was 7,918, and the number of years of life under observation was approximately 23,946½. The number of years of life has been calculated on the assumption that each member admitted, withdrawing, or dying during the quinquennium was under observation for six months, on an average, of the calendar year during which he was admitted, withdrew, or died. To have made a more accurate calculation would have required more time and clerical assistance than I had at my disposal. I consider the approximation sufficiently close for the purposes of this report.

The number of members admitted, withdrawing, and remaining, and the sickness and mortality experience, classified according to the ages of the members, are given for each of the five years separately in Schedule I. hereto. The ages of members are in all cases the ages at the *commencement* of the calendar year. The summary for the whole quinquennium of admissions, withdrawals, deaths, sickness, and years of life under observation, classified according to age-periods, is as follows :—

Ages of Members.	No. of Years of Life under Observation.	Admissions.	Withdrawals.	Deaths — Of Members.	Deaths — Of Wives.	Sickness Experienced.	
						Weeks.	days.
Under 20 ...	1,197·5	783	126	10	...	701	3
20 and under 25 ...	3,417·0	1,019	513	14	2	1,521	2
25 „ 30 ...	4,120·5	794	590	27	7	2,117	2
30 „ 35 ...	6,016·5	705	682	40	18	4,180	5
35 „ 40 ..	5,108·0	332	416	36	22	4,850	0
40 „ 45 ...	2,668·5	57	127	31	21	3,166	2
45 „ 50 ...	924·5	14	27	6	4	791	1
50 „ 55 ...	205·5		7	4	3	549	6
55 „ 60 ...	63·5	2	2	1	2	172	3
60 „ 65 ...	49·5	...	1	2	...	461	2
65 „ 70 ..	13·5	..		1	..	355	5
70 and upwards ...	8·5	...	1	..	...	333	3
Unspecified ..	153·5	13	34	2	...	41	4
Totals ...	23946·5	3,719	2,526	174	79	19,242	3

The data exhibited in this table require comment under the five heads of age, admissions, withdrawals, mortality, and sickness.

1. *Ages of Members.*—As might have been expected from the fact that all societies in New Zealand are necessarily of recent establishment, and from the ages at which persons become members of friendly societies, the great bulk of the members included in this experience were young and middle-aged. Considerably more than half were born subsequently to the year 1840 ; very few indeed before 1820. The following table shows the percentage of members falling under the various quinquennial groups of age at the five points of time (1st January, 1873, 1874, 1875, 1876, and 1877) for which my sheets furnished data. The percentages for the 31st December, 1880, given in your Fourth Report to Parliament, pages 13 and 14, are added for purposes of comparison :—

Ages of Members.	Percentages of Members on 1st January, — 1873.	1874.	1875.	1876.	1877.	Percentages for 31st December, 1880.
Under 20 ...	2·80	3·92	4·22	4·31	3·26	3·19
20 and under 25 ...	11·39	11·19	12·93	15·47	15·71	15·45
25 „ 30 ...	21·16	18·22	16·92	15·39	15·40	19·98
30 „ 35 ...	29·83	28·68	26·34	23·59	21·64	18·01
35 „ 40 ...	20·81	21·08	22·04	22·66	23·20	18·38
40 „ 45 ...	9·22	11·05	11·84	12·04	13·23	14·25
45 „ 50 ...	2·60	3·73	3·67	4·23	5·30	7·05
50 „ 55 ...	0·57	0·68	0·71	1·12	1·29	2·52
55 „ 60 ...	0·25	0·30	0·27	0·27	0·27	0·78
60 „ 65 ...	0·22	0·26	0·25	0·19	0·17	0·27
65 „ 70 ...	0·05	0·05	0·04	0·08	0·08	0·08
70 and upwards ...	0·05	0·02	0·02	0·04	0·06	0·04
Unspecified. ...	1·05	0·82	0·73	0·62	0·40	..
Totals ...	100·00	100·00	100·00	100·00	100·00	100·00

It will be seen that, as might have been expected, the percentage of members over 35 increased steadily during the quinquennium ; also that the percentages of members at all age-periods between 40 and 65 were greater on the 31st December 1880, than at any time during the quinquennium. It may be said, in general terms, that the proportion of old and elderly members in all New Zealand societies is steadily increasing from year to year, and that it must be expected to increase for many

years to come. Taking into account the very much greater amount of sickness and mortality per 100 members experienced at the advanced ages of life (*vide infra*), the practical inference to be drawn is that the present annual rate of expenditure per member in sick and funeral benefits is very much smaller than that which may be expected in the course of decades.

2. *Admissions.*—The maximum age at which new members can be admitted is in most New Zea-and friendly societies either 40 or 45, while the minimum age, except in juvenile branches, is 18 ;* no society in the colony, so far as I am aware, having availed itself of the statutory permission to enrol members at 16 years of age.

Out of the 3,719 members admitted during the quinquennium,—

21·05 per cent. were under 20 years of age.	1·53 per cent. were 40 and under 45.
27·40 „ 20 and under 25.	0·38 „ 45 „ 50.
21·35 „ 25 „ 30.	0·05 „ 55 „ 60.
18·96 „ 30 „ 35.	0·35 „ of unspecified age.
8·93 „ 35 „ 40.	

It will thus be seen that the proportion of members admitted over 40 years of age was exceedingly small.

The above table possesses great practical interest in relation to those societies and branches which charge a uniform contribution of 6d. per week to the sick and funeral fund, as it shows that little more than 20 per cent. of the members are paying a contribution which can afford reasonable hope of proving adequate to the ultimate liabilities.

3. *Withdrawals.*—The data collected enable me to exhibit the average rate of secession at each quinquennial period of age. In order to obtain this, it is necessary to deduct from the total with-drawals those which were merely transfers (technically termed "clearances") from one lodge to another. On making this deduction, the following results are obtained:—

Age.	No. of Years of Life under Observation.	No. of Secessions.	Annual Rate of Secession per cent.
Under 20	1,197·5	113	9·44
20 and under 25	3,417·0	449	13·14
25 „ 30	4,120·5	517	12·55
30 „ 35	6,016·5	581	9·66
35 „ 40	5,108·0	351	6·87
40 „ 45	2,668·5	109	4·08
45 „ 50	924·5	25	2·70
50 „ 55	205·5	7	[3·41]
55 „ 60	63·5	2	[3·15]
60 „ 65	49·5	1	[2·02]
65 „ 70	13·5	...	[...]
70 and upwards	8·5	1	[11·77]
Unspecified	153·5	21	[13·68]
Totals	23,946·5	2,177	9·09

The percentages derived from a numerical basis too small to be of value are, in this and in subsequent tables, enclosed in square brackets. Excluding these, it will be seen that the percentage of secessions decreases steadily from age-period 20–25 onwards. This is quite in accordance with the general experience on the subject. In the latest experience of the Manchester Unity of Odd Fellows in England the maximum secession-rate (5·397 per cent., very much smaller than the maximum in the above table) is attained at age 23, and from that point it decreases continuously to the end of life.

It would have been very interesting to investigate the connection between the secession-rate and the duration of membership, but to have done so would have required more time than I had at my disposal. It can hardly be doubted that the result would have shown a steady diminution in the rate of secession after the first year or two of membership. It is partly on this account that the profits which societies derive from the secession of their members are not so great as is commonly imagined. Indeed, in a society which possesses a safe scale of contributions—*i.e.*, a scale which is considerably more than adequate to meet the society's *most probable* liabilities—it is obvious that the secession of a recently-admitted member will entail a probable loss. So decidedly is this the case, that actuaries have to observe special precautions in valuing societies lest the possible loss through the secession of recent members should not be allowed for. These precautions are embodied in the rule that no insurance contract shall be taken credit for as an asset.

Rates of secession are observed to vary very much from one society to another. On this and on other grounds, I considered it advisable to classify the societies and branches whose returns I have utilized into four distinct groups, according to the character of the localities in which they are situated. The first group comprises societies and branches situated in one or other of the four large towns of the colony having more than 10,000 inhabitants, viz., Auckland, Wellington, Christchurch, and Dunedin. The second comprises those situated in boroughs having, at the census of 1878, a population of between 2,000 and 10,000 souls. The third comprises lodges, &c., situated in what may be termed " country districts," *i.e.*, in smaller centres of population; while the fourth group includes lodges which are established in gold-mining districts, and which have a consider-able proportion of members engaged in gold-mining. The raw facts relating to each of these four groups for the quinquennium under consideration will be found in Schedule II. hereto. As regards the rate of secession, it will be seen that this is very much heavier in the mining districts than in any

* In rare cases it is 17   (*See* newly-registered rules of the Nelson District, I.O.O.F., M.U.)

of the other three groups. In the " large towns " it is 7·48 per cent., in the " small towns " 6·83 per cent., in the " country districts " 7·99 per cent., and in the " mining districts " 12·11 per cent. As the experience includes, through fortuitous circumstances, an exceptionally-large proportion of facts (8,833·5 out of 23,946·5 years of life), relating to "mining districts," the value of this induction is greater than it would otherwise be.

4. *Mortality*.—In regard to mortality the data are too scanty to be of value for ages higher than 45. Such as they are, they lead to the following death-rates per 1,000 members. The numbers of years of life under observation in the various age-periods are prefixed to indicate the width of the numerical basis on which each result is founded, and the death-rates in the Manchester Unity of Odd Fellows in England, in the whole male population of England and Wales (Dr Farr's " English Life Table, No. 3, Males "), and in the life assurance companies forming the basis of the Hm table, in the middle year of each quinquennial age-period, are also given for purposes of comparison.

Ages.	No. of Years of Life under Observation.	No. of Deaths during Quinquennium.	Death-rate per 1,000.	Death-rate, Manchester Unity, England.	Death-rate, Farr's Life Table.	Death-rate, Hм Table.
Under 20	1,197·5	10	[8·4]	...		..
20 and under 25	3,417·0	14	4·1	6·5	8·7	6·8
25 „ 30	4,120·5	27	6·6	7·5	9·6	6·9
30 „ 35	6,016·5	40	6·6	8·3	10·6	8·1
35 „ 40	5,108·0	36	7·0	10·1	11·9	9·5
40 „ 45	2,668·5	31	11·6	12·1	13·9	10·7
45 „ 50	924·5	6	[6·5]	14·6	16·8	13·7
50 „ 55	205·5	4	[19·5]	19·2	21·5	17·5
55 „ 60	63·5	1	[15·7]	25·6	27·6	24·0
60 „ 65	49·5	2	[40·4]	37·2	37·8	34·6
65 „ 70	13·5	1	[74·1]	51·5	54·8	49·9
70 and upwards	8·5	...	[Nil]	...	...	...
Unspecified	153·5	2	[13·0]	...	..	...
Totals	23,946·5	174	7·3	...	..	...

It will be seen that from age 20 to age 50 the mortality is very much lower than that amongst English friendly societies. I believe the main cause of this to be the recency of admission of the members. A comparison of the admission-rate and secession-rate in New Zealand with those which obtain in England will show that the members of our friendly societies constitute, to a much greater extent than those of English societies, what has been characterized as " a shifting population, which is subject to observation but for a very brief space of time." To explain the influence of such a state of things on the observed death-rate, I cannot do better than quote an extreme illustration given by Mr. A. G. Finlaison, the Actuary to the English National Debt Office, from whom the above phrase is borrowed : " Of all the multitude of persons who, in the course of a year, travel on the great railway line from London to Liverpool, how few, if any, are recorded as dying in the course of transit. Yet they are of all ages, and are a vast body of people. And were we even to club with the travellers the whole corps of railway servants employed on the same line, how very light would still be the mortality observed to take place. The infinitesimal number of deaths recorded would represent neither the mortality of the travellers, nor of the railway servants, nor of the whole mass correctly; and it would appear to be incredibly small if ascribed to the general body Yet nobody will believe that fewer railway travellers die than are buried of the same number of persons who stay at home. Nor will any reasonable person suppose that, because the facts are recorded with the most scrupulous accuracy in regard to the immense mass—and but few or no deaths are registered as having occurred while it fell under observation—that therefore the people composing that mass do not die in much the same numbers, and with the same regularity, as the rest of the world."[*]

The explanation is, of course, that persons do not usually set out on railway journeys when on the point of death, and must therefore—for the purposes of the few hours or minutes that the journey lasts—be regarded as extremely select lives. In the same manner, persons cannot join friendly societies when they are ill, and, when the medical examination is strict, they cannot even join if of unsound constitution. Hence a constant infusion of new members in large numbers must tend to lower the mortality at all the ages of life at which members are admitted.

But apart from this, there is a circumstance which throws serious doubt on any conclusions which may be based on the favourable mortality exhibited. From Schedule I. to this report it will be seen that the 174 deaths of members observed during the quinquennium were thus distributed during the five separate years : 10 in 1873, 36 in 1874, 46 in 1875, 37 in 1876, 45 in 1877 Now, although the number of members under observation is not very large, and considerable fluctuations from year to year may be expected in the death-rate, yet the low mortality in 1873 constitutes a divergence from the mean much greater than that which the " law of error " would lead us to expect in a period of five years. Coupling this with the facts that I have no means whatever of checking the death returns for 1873, and that, owing to changes of secretaries, gradual improvement in the keeping of books, &c., the information for 1873 may be expected to be the least accurate of all, and that in the matter of mortality records sins of omission are more frequent than sins of commission, I am constrained to think it only too probable that the mortality for this earliest year of the quinquennium may have been understated. The death-rates for the various age-periods, derived from the remaining four years, will of course be considerably higher than those given in the above table. Thus the death-rate in age-period 30–35 will be 7·5 instead of 6·6, and that in age-period 35–40 will be 8·4 instead of 7·0.

* Walford's " Insurance Cyclopædia," vol. v., p. 86.

Nevertheless, although I consider that the experience of the quinquennium under consideration entirely fails to prove it, I am strongly inclined to think, on independent grounds, that the true vitality of the members of New Zealand friendly societies will ultimately be found to be somewhat greater than that of their English brethren.

The death-rates of the members' wives at the various ages of life I have not been able to determine, owing to the extreme unwillingness of secretaries to furnish the requisite information as to age. I am, however, able to give what has a more direct value from the friendly-society point of view—namely, the mortality of the wives per 1,000 *members* living at the various age-periods. It is exhibited in the following table:—

Ages of *Members*.	No. of Years of Life (of *Members*) under Observation.	No. of Deaths of Members' Wives.	Death-rate per 1,000 *Members*.
Under 20	1,197·5	Nil	[Nil]
20 and under 25	3,417·0	2	[0·59]
25 „ 30	4,120·5	7	[1·70]
30 „ 35	6,016·5	18	2·99
35 „ 40	5,108·0	22	4·31
40 „ 45	2,668·5	21	7·87
45 „ 50	924·5	4	[4·33]
50 „ 55	205·5	3	[14·60]
55 „ 60	63·5	2	[31·50]
60 and upwards	71·5	Nil	[Nil]
Unspecified	153·5	Nil	[Nil]
Totals	23,946·5	79	3·30

The data are not, in my opinion, sufficiently extensive to warrant any important deductions from this table. Indeed, all but the three middle death-rates must be regarded as almost absolutely valueless. The extremely low death-rates at the earliest ages are of course due to the large proportion of unmarried members.

5. *Sickness.*—The data under this head are the most important in the compilation. Although chronic infirmity and incapacity require a very large number of members at risk in order that average results may be attained, yet acute attacks of sickness—say, sickness not lasting longer than three or six months—will approximate to average totals with much smaller numbers of members than are required for the formation of reliable mortality tables; and, were it not for the fact, alluded to in several of your annual reports, that considerable forbearance has been exercised in past years by well-to-do members in declaring on the funds, I should regard the part of the experience embodied in the following table as affording some real guidance—though only for the younger ages of life—to what may be expected in future:—

(Col. 1.) Ages of Members.	(Col. 2.) No. of Years of Life under Observation.	(Col. 3.) Percentage of Sick Members per Annum.	(Col. 4.) Amount of Sickness experienced during the Quinquennium.	(Col. 5.) Average No. of Weeks' Sickness experienced per Annum per Member.	(Col. 6.) Average No. of Weeks' Sickness experienced per Annum per Member Sick.	(Col. 7.) Average No. of Weeks' Sickness to each Death.
			Weeks. days.			
Under 20 ...	806·0	[19·1]*	701 3	[0·87]*	[4·55]	[70·14]
20 to 25 ..	2907·5	12·2	1,521 2	0·52	4·29	108·66
25 „ 30 ...	3723·5	12·0	2,117 2	0·57	4·74	78·42
30 „ 35 ...	5664·0	13·8	4,180 5	0·74	5·35	104·52
35 „ 40 ...	4942·0	14·7	4,850 0	0·98	6·68	134·72
40 „ 45 ...	2640·0	15·3	3,166 2	1·20	7·82	102·14
45 „ 50 ...	917·5	[14·1]	791 1	[0·86]	[6·13]	[131·86]
50 „ 55 ...	205·5	[21·4]	549 6	[2·68]	[12·50]	[137·46]
55 „ 60 ...	62·5	[28·8]	172 3	[2·76]	[9·58]	[172·43]
60 „ 65 ..	49·5	[38·4]	461 2	[9·32]	[24·28]	[230·64]
65 „ 70 ...	13·5	[74·1]	355 5	[26·35]	[35·57]	[355·71]
70 and upwards	8·5	[94·1]	333 3	[39·23]	[41·68]	No deaths.
Unspecified ...	147·0	[6·1]	41 4	[0·28]	[4·62]	[20·79]
Totals ..	22087·0	14·1	19,242 3	0·87	6·20	110·59

It will be seen that the numbers of years of life under observation in this table are smaller than the corresponding numbers in the former tables. This arises from the circumstance that members are not entitled to sick benefits until after the expiration of six months from the date of their admission, and that consequently the first six months of membership have to be excluded from this table.

The percentage of members sick per annum (Column 3) is lower, for all ages under 60, than the corresponding percentage derived by Mr. Neison from observation of upwards of a million years of life in English friendly societies. For ages higher than 60 the percentages are higher than Mr.

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* I think it probable that the comparatively high percentage of sick members under 20 years of age, and also the comparatively high mortality at this age-period (*vide* p. 4) are partly due to the methods I have employed of approximating to the number of years of life under observation. I did not consider the results for this age-period of sufficient importance to justify the extra labour which would have been involved in the application of a more accurate method.

Neison's; but it is precisely here that mine are deduced from far too small a number of facts to be of any value for purposes of comparison. The average sickness per annum to each member (Column 5) is in my table higher than the corresponding English average for ages under 20, between 50 and 55, and over 60; but lower for ages between 20 and 50—*i.e.*, throughout the most valuable part of the table—and between 55 and 60. The average sickness per annum to each member actually sick (Column 6) is higher in New Zealand than in England for all ages under 45, between 50 and 55, and over 60; but lower between 45 and 50, and between 55 and 60. Lastly, the number of weeks' sickness to each death is smaller here than in England for all ages under 50, except the age period 35–40, and larger for all the higher ages.

These comparisons between the New Zealand results and those obtained in England are elucidated in the following table :

Ages.	Percentage of Members Sick during a Year.		Average No. of Weeks' Sickness per Annum to each Person.			Average No. of Weeks' Sickness per Annum to each Person actually Sick.		Average No. of Weeks' Sickness to each Death.	
	New Zealand.	England (Neison).*	New Zealand.	England.		New Zealand.	England (Neison).*	New Zealand.	England (Neison).*
				(Neison.)	(Ratcliffe.)				
Under 20 ...	[19·1]	22·1	[0·87]	0·83	0·67	[4·55]	3·59	[70·14]	125·60
20 to 25 ...	12·2	22·0	0·52	0·85	0·74	4·29	3·85	108·66	126·13
25 „ 30 ...	12·0	21·7	0·57	0·89	0·81	4·74	4·19	78·42	126·00
30 „ 35 ...	13·8	21·0	0·74	0·95	0·93	5·35	4·36	104·52	115·94
35 „ 40 ...	14·7	21 5	0·98	1·50	1·06	6·68	4·95	134·72	121·57
40 „ 45 ...	15·3	23·0	1·20	1·45	1·28	7·82	5·94	102·14	131·15
45 „ 50 ...	[14·1]	24·6	[0·86]	1·65	1·67	[6·13]	6·86	[131·86]	132·71
50 „ 55 ...	[21·4]	27·6	[2·68]	2·22	2·22	[12·50]	8·51	[137·46]	136·38
55 „ 60 ...	[28·8]	30·2	[2·76]	3·14	3·15	[9·58]	10·93	[172·43]	150·22
60 „ 65 ...	[38·4]	35·6	[9·32]	5·19	4·81	[24·28]	15·20	[230·64]	176·38
65 „ 70 ...	[74·1]	46·8	[26·35]	10·07	7·56	[35·57]	24·22	[355·71]	252·30
70 and over...	[94 1]	58·4‡	[39·23]	16·97†	12·10†	[41·68]	32·63‡	No deaths.	268·97‡

* Strictly speaking these are for the age-periods 16 and under 21, 21 and under 26, &c.   † In passing from age 72 to age 73.   ‡ For age-period, 71-75.

On the whole it may be said that the portions of the New Zealand experience which, being founded on a considerable body of facts, are the most reliable, show less sickness than the English experience, and (still more decidedly) a smaller percentage of sick members, but a longer average sickness amongst those who are actually sick. A little reflection will show that these are precisely the phenomena that might have been expected to present themselves if, as I have pointed out, a considerable number of members in our societies have, especially in cases of *short* illness, forborne to claim sick pay This subject will be further elucidated by the following data relative to protracted sickness :—

Ages.	No. of Years of Life under Observation.	Continued Sickness after Six Months' Continuous Sickness.			Continued Sickness after Twelve Months' Continuous Sickness.		
		No. of Weeks' Experienced.	Average No. of Weeks per annum to each Member.		No. of Weeks' Experienced.	Average No. of Weeks per annum to each Member.	
			New Zealand.	England.		New Zealand.	England.
Under 20 ...	806·0	61·4	[0·08]	0·03	25·6	[0·03]	0·00
20 and under 25 ...	2,907·5	167·1	0·06	0·06	116·3	0·04	0·02
25 „ 30 ...	3,723·5	250·0	0·07	0·10	118·5	0·03	0·05
30 „ 35 ...	5,664·0	580·6	0·10	0·15	278·5	0·05	0·09
35 „ 40 ...	4,942·0	1,693·5	0·34	0·21	1,195·4	0·24	0·13
40 „ 45 ...	2,640·0	1,402·1	0·53	0·32	1,158·3	0·44	0·20
45 „ 50 ...	917·5	166·1	[0·18]	0·53	121·1	[0·13]	0·36
50 „ 55 ...	205·5	307·6	[1·50]	0·81	280·0	[1·36]	0·56
55 „ 60 ...	62·5	97·4	[1·56]	1·33	71·3	[1·14]	0·95
60 „ 65 ...	49·5	355·2	[7·18]	2·40	317·0	[6·40]	1·78
65 „ 70 ...	13·5	330·2	[24 47]	4·32	313·0	[23·19]	3·25
70 and upwards ...	8·5	313·0	[36·82]	8·19*	313·0	[36·82]	6·52*
Unspecified ...	147·0	Nil	Nil	...	Nil	Nil	...
Totals ...	22,087·0	5,725·4	0·26	...	4,309·2	0·20	...

* In passing from age 72 to age 73.

Confining our attention to those portions of the table which are founded on a considerable body of facts—namely, the portions relating to members between 20 and 45 years of age—we see that the superiority shown by New Zealand societies in regard to the total sickness of all durations is not maintained in the matter of protracted sickness. From 20 to 35 the New Zealand societies experienced considerably less protracted sickness, in proportion to their numbers, than the Manchester Unity of Odd Fellows in England; but from 35 to 45 they experienced very much more. It is evident also that, according to this table, 1,000 New Zealand members would experience a greater total amount of protracted sickness in passing from age 20 to 45 than 1,000 of their English brethren, in the proportion of 110 to 84.* Whether these results are due to the accidental features presented by what is, in

* Assuming, for the sake of simplicity, that the figures relating to the English society are the averages for the whole of each quinquennial age-group, instead of being the averages for the *middle year* of each group.

relation to *protracted* sickness, after all a very small group of lives, or to some permanent cause operating on the New Zealand societies, I cannot say I do not regard the number of facts as sufficiently great to justify the latter conclusion ; but, as it may eventually turn out that there is such a permanent cause, and that, further, though I think this unlikely, the favourable experience of acute sickness has been mainly due to the forbearance of members in fairly good circumstances, I do think that there is the gravest reason for not at present relaxing one whit the rigour of our standard in the valuation of New Zealand friendly societies, and for not lowering the minimum scale of contributions recommended for adoption.

Lastly, I have to submit to you the facts respecting sickness which I have compiled for each of the four separate classes of localities already enumerated and defined (page 3), namely, (1) large towns, (2) small towns, (3) country districts, and (4) mining districts. These are exhibited and compared in the following table :

Ages.	Average No. of Weeks' Sickness per Annum to each Person.					Average No. of Weeks' per Annum to each Person of Sickness protracted beyond Six Months.				
	Large Towns.	Small Towns.	Country Districts.	Mining Districts.	All Societies.	Large Towns.	Small Towns.	Country Districts.	Mining Districts.	All Societies.
Under 20	[0·94]	[0·72]	[0·96]	[0·86]	[0·87]	[Nil]	[Nil]	[0·22]	[0·04]	[0·08]
20 and under 25 ...	0·53	0·39	0·60	0·61	0·52	0·15	0·01	0·10	0·02	0·06
25 ,, 30 ...	0·75	0·45	0·42	0·67	0·57	0·22	0·04	0·01	0·07	0·07
30 ,, 35	0·78	0·85	0·58	0·72	0·74	0·30	0·13	0·02	0·07	0·10
35 ,, 40 ...	0·77	0·73	1·11	1·16	0·98	0·38	0·24	0·30	0·42	0·34
40 ,, 50 ...	1·36	0·82	0·86	1·40	1 11	0·82	0·19	0·24	0·57	0·44
50 ,, 60 ...	[4·08]	[2·84]	[0·81]	[1·48]	2·69	[2·24]	[1·88]	[Nil]	[Nil]	1·51
60 ,, 70 ...	[14·99]	[18·14]	[1·63]	No lives	[12·97]	[12·86]	[15·81]	[Nil]	No lives	[10·88]
70 and upwards ...	[52·14]	[52·17]	[8·17]	No lives	[39·23]	[52·14]	[52·17]	[Nil]	No lives	[36·82]
Unspecified	[0·39]	[0·21]	[0·35]	[Nil]	[0·28]	[Nil]	[Nil]	[Nil]	[Nil]	[Nil]
Totals ...	1·04	0·84	0·71	0·91	0·87	0·51	0·27	0·12	0·22	0·26

I have grouped the ages above 40 in decennial instead of quinquennial periods, as otherwise the progression would have been too irregular. The most noticeable feature about this table is that the large towns show the heaviest and the country districts the lightest sickness, while the small towns and mining districts occupy an intermediate position. If, however, we confine our attention to those portions of the table which have the greatest value—namely, those relating to ages 20-50, the mining districts present a greater total of sickness than even the large towns, while the small towns and country districts approximate pretty closely to each other. Taking into account the fact that the mining districts include in this experience a relatively very large body of facts, and also that the membership of friendly societies in these districts constitutes, to a greater extent than in the case of the others, what I have termed " a shifting population," a circumstance which would tend, other things equal, to lighten the apparent rate of sickness, I think a slight probability is established that the occupation of gold-mining is somewhat less healthy or somewhat more hazardous, or both, than the average of occupations followed by members of friendly societies. As regards the contrast between the rates experienced in the larger and smaller centres of population, I think it may either be due to superior healthiness of the country avocations, or to the fact that persons living in country districts are better known to each other than those living in large towns, and that therefore unhealthy members are perhaps less likely to gain admission to the societies ; or it may be due to a combination of the two causes.

The most important conclusions embodied in this report may be summed up as follows :—

(1.) The observed rates of sickness and mortality at the ages for which a considerable body of facts exists are lower than those which obtain for the corresponding ages in England.

(2.) It would be unsafe, however, to infer from this that the actual vitality of the members composing our societies is higher than that of their English brethren, as, apart from the circumstance that this is the first experience ever compiled in New Zealand, and moreover requires to be viewed with especial caution owing to the impossibility of completely verifying the accuracy of the returns, the result may be explained by the more shifting character of the New Zealand membership, and, in the case of the sickness, by the forbearance exercised by many members in claiming sick pay during short illnesses.

(3.) I cannot, as the result of this investigation, recommend the adoption of lower rates of contribution than those I have already submitted, or of less rigorous standards of valuation than those of which I have expressed my approval.

I have, &c.,

F W FRANKLAND,

Actuary.

The Registrar of Friendly Societies.

SCHEDULE I.

SICKNESS and MORTALITY EXPERIENCE, &c., for the SEPARATE YEARS 1873-77

Ages of Members at Beginning of Year.	No. of Members Admitted during Year.	No. of Members who Left during Year.	No. of Members who Left by Clearance during Year.	No. of Members at End of Year.	No. of Members Sick during Year.	No. of Weeks' Sickness experienced during Year.			No. of Deaths during Year.	
						Not Protracted beyond Six Months.	Second Six Months of Continuous Sickness.	Continued Sickness after Twelve Months of Continuous Sickness.	Members.	Wive
1873.						Wks. dys.	Wks. dys.	Wks. dys.		
Under 20 ...	157	22	...	247	13	74 2	...	...	...	...
20 and under 25	159	69	12	544	56	223 6	40 2	...	2	...
25 „ 30	180	144	12	882	91	319 3	...	52 0	1	...
30 „ 35	167	129	22	1,228	167	709 5	59 5	...	4	6
35 „ 40	58	69	13	822	109	386 6	46 3	260 4	...	4
40 „ 45	11	12	2	367	58	256 2	8 2	104 2	1	3
45 „ 50	...	1	...	103	18	87 3	...	...	...	1
50 „ 55	...	...	...	22	8	28 4	...	104 2	1	...
55 „ 60	1	...	...	11	1	3 1	...	...	...	...
60 „ 65	...	...	...	9	4	46 0	7 0	104 2	...	...
65 „ 70	...	...	...	2	2	7 0	...	52 1	...	...
70 and upwards	...	1	...	1	2	6 3	...	52 1	...	...
Ages unspecified	5	11	3	35	3	26 4	...	...	1	...
Totals	738	458	64	4,273	532	2,175 4	161 5	729 5	10	17
1874.										
Under 20 ...	159	16	1	307	21	92 1	...	...	3	...
20 and under 25	192	82	13	586	53	213 6	...	52 1	1	...
25 „ 30	196	95	18	873	87	359 3	9 2	...	5	...
30 „ 35	133	133	19	1,212	163	709 1	86 2	102 1	11	2
35 „ 40	73	90	20	874	111	535 4	39 0	118 2	8	2
40 „ 45	11	17	2	459	67	303 3	102 6	199 2	6	5
45 „ 50	2	1	...	160	22	91 5	...	...	...	1
50 „ 55	...	2	...	26	8	44 6	...	53 2	1	1
55 „ 60	...	..	...	13	4	15 6	...	...	...	1
60 „ 65	...	1	...	10	3	5 2	...	104 2	...	...
65 „ 70	...	...	...	2	1	...	...	52 1	...	...
70 and upwards	...	...	...	1	1	..	...	52 1	...	...
Ages unspecified	5	4	1	35	1	2 0	...	...	1	...
Totals	771	441	74	4,558	542	2,373 2	237 3	733 5	36	12
1875.										
Under 20 ...	209	34	5	375	50	218 5	14 0	...	1	...
20 and under 25	293	100	11	805	94	315 2	2 0	15 3	4	...
25 „ 30	181	125	16	852	113	527 3	10 4	4 4	10	3
30 „ 35	199	154	19	1,292	161	769 3	35 4	111 5	8	4
35 „ 40	106	84	10	1,063	171	774 2	147 1	201 0	9	3
40 „ 45	26	31	5	548	85	349 5	58 2	239 3	11	3
45 „ 50	7	5	...	175	25	103 3	...	..	2	1
50 „ 55	..	3	...	30	7	37 5	18 3	52 1	1	1
55 „ 60	...	1	...	12	4	25 6	26 1	13 1	...	...
60 „ 65	...	...	...	12	6	11 0	17 5	104 2	...	...
65 „ 70	...	...	...	2	1	...	...	52 1	...	...
70 and upwards	...	...	...	1	1	...	...	52 1	...	...
Ages unspecified	3	6	1	32	2	5 3	...	...	...	...
Totals	1,024	543	67	5,199	720	3,138 2	329 6	846 0	46	15
1876.										
Under 20 ...	133	33	5	321	41	168 3	21 5	25 6	3	...
20 and under 25	191	136	15	856	75	318 2	1 6	46 5	3	1
25 „ 30	113	110	7	799	78	377 0	95 5	9 0	4	1
30 „ 35	111	152	22	1,177	161	768 5	55 3	3 5	8	4
35 „ 40	59	88	12	1,142	180	785 5	167 5	355 4	7	3
40 „ 45	6	30	5	597	92	414 5	0 1	261 3	5	7
45 „ 50	3	7	...	213	31	168 1	26 1	19 0	3	...
50 „ 55	...	1	...	56	11	44 5	8 3	70 2	1	1
55 „ 60	...	1	...	12	5	18 4	...	6 1	1	...
60 „ 65	..	...	..	9	3	27 0	1 6	4 1	1	...
65 „ 70	...	...	...	3	3	8 2	17 2	104 3	1	...
70 and upwards	...	...	...	2	1	...	...	52 2	...	...
Ages unspecified	...	11	7	21	...	...	...	...	...	...
Totals	616	569	73	5,208	681	3,099 4	396 2	958 4	37	17
1877.										
Under 20 ...	125	21	2	271	29	86 2	...	...	3	...
20 and under 25	184	126	13	872	77	282 6	6 4	2 1	4	1
25 „ 30	124	116	20	803	78	284 0	15 5	53 1	7	...
30 „ 35	95	114	19	1,099	129	642 6	65 1	61 1	9	2
35 „ 40	36	85	10	1,147	155	673 6	97 6	260 1	12	10
40 „ 45	3	37	4	647	103	440 0	74 1	354 0	8	3
45 „ 50	2	13	2	264	33	174 2	18 6	102 1	1	1
50 „ 55	...	1	...	66	10	86 1	1 0	...	...	...
55 „ 60	1	...	...	15	4	11 3	...	52 1	...	1
60 „ 65	...	...	...	8	3	16 5	11 5	...	1	...
65 „ 70	...	...	..	4	3	10 1	...	52 1	..	...
70 and upwards	...	..	...	3	3	14 0	...	104 2	...	...
Ages unspecified	...	2	1	19	3	7 4	...	...	...	..
Totals	570	515	71	5,218	630	2,730 1	291 0	1,041 2	45	18

SCHEDULE II.

SICKNESS and MORTALITY EXPERIENCE, &c., for the QUINQUENNIUM, 1873–77, of FOUR SEPARATE GROUPS of SOCIETIES.

LODGES, ETC., SITUATED IN LARGE TOWNS.

Ages of Members.	No. of Years of Life under Observation.	No. of Members Admitted during Quinquennium.	No. of Members who Left during Quinquennium.	No. of Members who Left by Clearance during Quinquennium.	Not Protracted beyond Six Months. Wks.	dys.	Second Six Months of Continuous Sickness. Wks.	dys.	Continued Sickness after Twelve Months of Continuous Sickness. Wks.	dys.	Deaths Members.	Deaths Wives.
Under 20	203·5	130	16	1	130	3	...		...		3	..
20 and under 25	523·0	173	78	8	167	2	...		64	2	1	1
25 „ 30	549·0	130	74	8	253	4	60	5	48	0	4	1
30 „ 35	661·0	102	58	9	292	4	77	1	103	3	4	1
35 „ 40	670·0	28	39	6	260	5	12	2	234	3	3	..
40 „ 45	499·0	4	24	2	272	3	58	4	538	3	4	3
45 „ 50	227·5	...	3	...	117	3	...		...		...	2
50 „ 55	54·5	...	3	...	98	5	26	6	71	2	2	2
55 „ 60	9·5	...	...	...	19	1	26	1	19	2	1	1
60 „ 65	13·0	..	...	...	30	1	24	5	..		...	...
65 „ 70	6·5	...	...	...	11	3	17	2	208	5	1	...
70 and upwards	1·0	..	...	...	...		...		52	1	...	...
Ages unspecified	72·0	4	1	1	27	0	...		...		1	...
Totals	**3,489·5**	**571**	**296**	**35**	**1,680**	**6**	**303**	**5**	**1,340**	**0**	**24**	**11**

LODGES, ETC., SITUATED IN SMALL TOWNS.

Ages of Members.	Years Life	Admitted	Left	Left Clearance	Not Protracted Wks.	dys.	Second Six Wks.	dys.	Continued Wks.	dys.	Members.	Wives.
Under 20	307·0	232	22	5	138	1	...		...		4	...
20 and under 25	1,114·5	369	139	11	351	4	8	3	...		5	...
25 „ 30	1,093·0	241	113	12	399	6	27	5	14	1	6	1
30 „ 35	1,667·0	233	143	23	1,111	6	153	6	45	4	18	5
35 „ 40	1,435·0	105	86	14	683	4	121	6	204	2	7	5
40 „ 45	886·5	24	34	6	572	4	82	4	42	6	7	6
45 „ 50	402·0	5	7	...	231	2	45	0	69	0	4	1
50 „ 55	94·0	...	2	...	84	0	1	0	208	5	2	...
55 „ 60	46·0	1	1	...	50	5	...		52	1	...	..
60 „ 65	25·5	...	1	..	63	6	13	4	317	0	2	..
65 „ 70	2·0	...	...	...	...		...		104	2	...	...
70 and upwards	5·0	...	...	...	...		...		260	6	...	...
Ages unspecified	52·5	2	19	9	10	4	...		...		..	..
Totals	**7,130·0**	**1,212**	**567**	**80**	**3,698**	**0**	**454**	**0**	**1,318**	**6**	**55**	**18**

LODGES, ETC., SITUATED IN COUNTRY DISTRICTS.

Ages of Members.	Years Life	Admitted	Left	Left Clearance	Not Protracted Wks.	dys.	Second Six Wks.	dys.	Continued Wks.	dys.	Members.	Wives.
Under 20	350·0	223	31	1	177	2	26	1	25	6	2	...
20 and under 25	883·0	210	99	21	386	2	26	2	52	1	3	..
25 „ 30	929·5	165	109	14	352	3	0	5	4	4	9	2
30 „ 35	1,001·5	114	91	12	530	4	16	0	...		6	2
35 „ 40	787·0	45	62	10	620	5	82	3	145	4	7	6
40 „ 45	327·0	4	16	3	186	2	58	5	53	3	4	7
45 „ 50	139·0	2	6	...	99	4	...		...		2	...
50 „ 55	39·0	...	2	...	32	4	...		..		...	1
55 „ 60	7·5	...	1	...	5	0	...		...		...	1
60 „ 65	11·0	...	...	...	12	0	...		...		...	...
65 „ 70	5·0	...	...	...	14	0	...		...		...	...
70 and upwards	2·5	...	1	...	20	3	...		...		...	...
Ages unspecified	11·5	...	2	...	4	0	...		..		1	...
Totals	**4,493·5**	**763**	**420**	**61**	**2,441**	**1**	**210**	**2**	**281**	**4**	**34**	**19**

LODGES, ETC., SITUATED IN MINING DISTRICTS.

Ages of Members.	Years Life	Admitted	Left	Left Clearance	Not Protracted Wks.	dys.	Second Six Wks.	dys.	Continued Wks.	dys.	Members.	Wives.
Under 20	337·0	198	57	6	194	0	9	4	...		1	...
20 and under 25	896·5	267	197	24	449	0	16	0	...		5	1
25 „ 30	1,549·0	258	294	39	861	3	42	1	52	0	8	3
30 „ 35	2,687·0	256	390	57	1,664	6	55	1	129	5	12	10
35 „ 40	2,216·0	154	229	35	1,591	2	281	4	611	2	19	11
40 „ 45	956·0	25	53	7	732	6	43	6	523	5	16	5
45 „ 50	156·0	7	11	2	176	5	...		52	1	...	1
50 „ 55	18·0	...	...	...	26	5	...		...		...	...
55 „ 60	0·5	1	...	...	..		...		...		...	...
60 and upwards	..	...	...	...	...		...		...		...	...
Ages unspecified	17·5	7	12	3	...		...		...		...	...
Totals	**8,833·5**	**1,173**	**1,243**	**173**	**5,696**	**6**	**448**	**2**	**1,368**	**6**	**61**	**31**