

The Life Assurance Companies of Germany; their Business and Position in the Year 1858. By G. HOPF, Manager of the Gotha Life Insurance Bank, Corresponding Member of the Institute of Actuaries in London, of the Commission Centrale de Statistique at Brussels, and of the Useful Sciences at Erfurt.

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WIDOWS' Funds and Burial Societies have existed in Germany already for more than 200 years, and in very great numbers. There was no town of any importance that did not possess one or more establishments of that kind. The guilds (corporations) of artisans usually maintained such institutions for their members; seeking in them, at the same time, a tie of stronger combination, and uniting their corporate interests. The love of these institutions, and the endeavour to provide, by means of them, for those left behind, spread from the guilds of artisans to the other classes of the people, in consequence of which, many hundreds, even thousands, of those little Burial Societies and Funeral Funds are to be found in Germany, from which, at the death of a member, a certain sum of money is paid to the survivors, to defray the expenses of interment, and to provide for the family immediately after the death of the subscriber. An extensive use was also made at all times of these establishments by such classes of people as were not so wealthy, because even the poorest are ambitious to take measures that they may have after their death a decent burial furnished at a fixed expense. This motive induces many, and particularly women, to subscribe to a Funeral Fund in Germany.

The number of Widows' Funds, from which, after the death of the husband, a yearly pension is paid to the widow, is much smaller in Germany than the number of Burial Societies. Such institutions were, principally, founded by Governments and Princes for their public functionaries and officers, and there is scarcely one country in Germany that has not one or several Widows' Funds for the officers of state, and all the persons in the service of the sovereign, generally also for clergymen, schoolmasters, and military officers. Duke Ernest the Pious, of Gotha, the ancestor of all the princes of the Ducal Saxon houses, who has deserved very well of the churches and schools of his country, laid the foundation of a Widows' Fund for the clergy of the churches of his country, as far back as the year 1645, and a similar one for the schoolmasters, in 1662—establishments which subsisted until recent times, with many changes in their previous regulations, until they were united, about

40 years ago, with the Widows' Fund, founded in 1775, for all public functionaries and officers of the Duchy.

All those establishments, which had their origin in ancient times, were very imperfectly regulated, and many of them, which did not require the forced accession of the members of certain corporations, have been ruined for this reason. The scientific elements were totally wanting at the time of their foundation. Partly the laws of mortality were not yet sufficiently investigated, partly the mathematicians had not yet paid the necessary attention to the parts of their science relating to life contingencies. In both respects, little was done till the eighteenth century. There were, indeed, facts already collected relating to mortality in Germany; and it is known that Halley calculated his table of mortality from observations collected in the town of Breslau during the years 1687-91. But even though the defective method followed by him in this calculation had not then been perceived, yet it was evident that the law of mortality could not be found out from such a limited experience as could be gathered in one town only, during the above-named short period, and that, therefore, no confidence was to be bestowed upon the table of Halley. It has, therefore, never been made use of in Germany for calculations relating to Burial or Widows' Funds, or similar establishments.

It was not till the middle of the last century that the inquiry into the law of human mortality made great progress. The man who distinguished himself, not only in this branch of statistics, but who examined into all the theory of population, and raised it to a science, was Süssmilch. The work published by him, *Die göttliche Ordnung in den Veraenderungen des menschlichen Geschlechts*, appeared first in 1741, and was followed by several much enlarged editions. It forms the basis of all the later inquiries in this wide subject. Not long after a table of mortality had been constructed by Süssmilch, the mathematical rules for the calculations as to life insurance and annuities, founded on such observations, were also made public by several learned men of Germany. The most prominent, at that time, were Euler,¹ Florencourt,² Karstens,³ and Tetens.⁴ The latter treated the whole method of these compu-

¹ *Histoire de l'Academie Prusse, Année 1760*; Berlin, 1761; p. 163. *Neues Hamburger Magazin*; Leipzig, 1770; No. 43.

² Florencourt: *Abhandlungen aus der Juristischen und Politischen Rechenkunst*; Altenburg, 1781.

³ Karstens: *Theorie der Wittuencassen*; Halle, 1784.

⁴ Tetens: *Einleitung zur Berechnung der Leibrenten und Anwartschaften, die von Leben und Tode einer oder mehrerer Personen abhaengen*; 2 vols.; Leipzig, 1785-6. Mr. Hendriks has drawn attention to this work in a clever paper "On the early History of Auxiliary Tables for the Computation of Life Contingencies," *Ass. Mag.*, vol. i., p. 1.

tations with such sagacity and judgment, and gave, at an early period (1785), such practical rules for performing the calculations, that his directions are not, even to this day, to be considered as antiquated, and they form the foundation of all the later labours in this field. But it was long before the principles laid down by those learned men were employed by the institutions depending on human life, and a great many Widows' and Burial Funds were consequently established with the old imperfect regulations, even after the appearance of their works.

The Burial Funds are Life Insurance Societies upon a small scale. Every member pays a premium, either once only or periodically, to the fund, and after his death a certain sum is paid out of it to his heirs. Though the idea of establishing Insurance Societies for higher sums, and for the admission of members from more extended localities, was made very intelligible by the great number of Burial Funds in Germany; yet it required the observations made in similar Societies in England to stimulate the Germans to found such institutions. This was done at first at Gotha, where, after the establishment of the Mutual Fire Insurance Bank for Germany, which is still flourishing there, the idea was seized and the resolution taken to create a Life Insurance Company, based on similar principles. After various preparations and calculations, in which the work of Charles Babbage (*A Comparative View of the various Institutions for the Assurance of Lives*; London, 1826; translated into German: Weimar, 1827) did useful service, the first plan was published in 1827, and from that date members were enlisted for it. A considerable number of members was soon found, notwithstanding that their policies were not delivered till the 1st January, 1829; consequently, a period of 30 years, closing with the year 1858, has passed since the opening of this branch of Assurance on German soil. Since the establishment of the Gotha Company, scarcely any year has passed without the formation of one or more similar Companies.

Table I. shows what results all these Companies have had, up to the end of 1858; and Table II., what premiums are payable to them for an assurance for life. Both the tables are arranged like those which we published in the former volumes of this *Journal*. If we compare Table I. with the same table for the year 1857 (p. 163, vol viii.), we see that since then two new Life Insurance Companies were established in Germany — the Life Assurance Branch of Nuova Società at Trieste, and the Anker at Vienna. They are both Share-Companies. The latter is founded with a

share capital of 2,000,000 Austrian florins, and has been called into existence principally by Belgian resources and influence; the former is founded with a capital stock of 4,000,000 florins.

By comparing the two tables, it appears also that one of the older Companies, the Hammonia of Hamburgh, has ceased to exist. It was reduced to such a sadly ruinous condition by the unsoundness of its operations, especially by too high expenses of administration, that it could no longer meet its obligations, and was obliged to declare itself insolvent. The state of this Society was very unsatisfactory. The share-capital was very small, and did not exceed the sum of £35,714, of which not more than £4,587 were paid up. Many shareholders now refuse to pay up the balance of their shares, for which reason many actions must be brought against them, the result of which is very doubtful. It is doubted whether the creditors of the Hammonia will receive more than 30 per cent. of their claims, at the settlement of the bankruptcy.

The number of German Life Insurance Companies, which were in active operation during the year 1858, amounted to 26. The number of the English, French, and Belgian Companies, which have extended their business to Germany, is as great, if not greater. Of these, the English Companies especially do a considerable business in the large commercial and seaport towns. In the greater part of the States of Germany, the permission of Government is necessary for establishing an agency, and this licence is often refused, or connected with troublesome conditions. Legislation is, in this respect, very different in the different German States. Whilst some Governments, as those in the Hanseatic towns, in the kingdom of Saxony, and in the Thuringia countries, proceed liberally, and leave free the establishment of agencies for Life Insurance, or require only the observation of formalities easily to be performed, it is very difficult in others to obtain the requisite permission. And these prohibitive measures extend as much to German Companies as to foreign ones. The severest restrictions are in Austria, which has not allowed admission into its States to any foreign Assurance Company, whereas Austrian Companies have been allowed to carry on operations in many German countries. But the protection afforded, by this method of proceeding, to the few Life Insurance Companies in Austria against foreign competition, has by no means brought them to a flourishing condition. On the contrary, we maintain that it has turned rather to their prejudice than to their advantage; and to prove this, we refer to Table I. Of the five older Life Insurance Companies in Austria,

only two have hitherto published reports of their results; and of these, only one, the *Assicurazioni Generali* of Trieste, has made remarkable, but by no means brilliant, progress—the operations of the other having remained till now of very limited extent; and we think we are not mistaken in affirming, that the affairs of the three Companies which have not yet made a report are still less satisfactory. Likewise, it cannot be denied, that the legislation which excludes entirely all foreign Assurance Companies from Austria, turns also to the prejudice of the Austrian people. From want of competition, they have not been duly made acquainted with the nature, use, and the varied applicability of Life Insurance; and those who are acquainted with it, have often felt the want of an institution which suited their necessities and wishes; and their people have been obliged to disregard an important means of increasing their prosperity.

Casting a glance on Table I., we see that, in 1858, 14,645 persons have newly entered the 20 German Life Assurance Companies which, out of the existing 26, have made public reports; and that, the subsequent assurances (*Nachversicherungen*) included, they have insured, upon the whole, a sum of £2,340,298 in case of death—for our table comprehends only the insurances effected for the case of *death*, the life assurances in the proper sense of the word. The state of assurance of those 20 Companies was—

At the beginning of the year, £12,875,128 on the lives of 80,523 persons.

At the end of the year . 14,383,010 „ „ 90,128 „

Showing an increase of £1,507,882 „ „ 9,605 „

According to this statement, the total amount of assurances increased, in the course of 1858, by 11·71 per cent. of its amount at the beginning of the year, and the number of assured persons by 11·93 per cent. The average sum assured on one life is about £160.

The receipts of premiums and interest increased in a greater degree than the assurances. According to Table I. on p. 163, vol. viii., these receipts were—

In the year 1857 . . .	£509,007
„ 1858 . . .	618,382

Increase equal to . £109,375, or 21 per cent.

Whilst £251,545 were paid for claims on 1,510 persons who died in the year 1857, a payment of £303,438 was made for 1,900 cases of death in 1858.

The total of assurance funds was—

At the end of 1857	.	.	£2,258,088
„ 1858	.	.	2,437,844

Increase . . . £179,756, or 8 per cent.

As every new enterprise in Germany always requires time for its development, and people learn but by slow degrees to accustom themselves to new institutions and to make use of them, such also was the case with life assurance. It requires considerable time to give the German a clear idea of the nature and manifold utility of life assurance, and to inspire him with confidence in it; but when this is once done, the interest in this means of advancing the welfare of families increases from year to year. During the last few years, life assurance has developed itself in Germany in the following rapid manner:—

Year.	Number of the reporting Offices.	New Assurances in the course of the Year.		Assurances at the end of the Year.	
		Persons.	£	Persons.	£
1852	12	5,236	841,844	46,980	8,224,130
1853	13	5,558	939,854	50,019	8,750,239
1854	14	5,224	841,459	52,876	9,150,885
1855	18	9,366	1,361,711	61,832	10,411,549
1856	18	12,778	1,633,272	71,169	11,487,487
1857	19	13,601	1,930,649	81,348	12,893,086
1858	20	14,645	2,340,298	90,128	14,383,010

It results from these figures that the use people make of life assurance has increased, especially in the latter years, since the termination of the oriental war, during which a stagnation took place on account of the doubtful security of our position, and the predilection for insuring has made considerable progress. It is to be expected that, with security, this rate of increase will continue a long time before it reaches its culminating point.

The Gotha Company has reached the greatest development of all the Companies. Table I. shows that their insurances comprehend more than one-third of the sums assured in all German Life Insurance Companies. As it is founded on mutuality, all surplus, annually ascertained, is returned as dividend to the assured, and deducted from the premiums, or paid in cash if the assurance is extinguished—a proceeding adopted also by the other German Companies which give dividends to the assured. On each premium paid a dividend is granted—generally five years after payment of the premium—in proportion to the surplus of the corresponding year for which the premium is paid, no matter whether the assurance be still in existence or not at the time of distribution. The

practice of adding the bonus to the sum assured is not found in any German Life Office. The dividends in the Gotha Office amounted, upon an average, to 28 per cent. of the premium, and, consequently, the cost of assuring in this Company is the lowest of all German Offices, as Table II. shows. It is also the Company which is managed at the most reasonable rate. All the expenses of administration, the commission for the agents included, do not now amount to quite 4 per cent. of the annual receipts of premiums and interest.

The Gotha Company passed through the third decennium at the end of 1858. Table III. shows the working of the business in each one of these periods. The new assurances amounted in the

1st decennium (1829-38), in- cluding the preliminary period of 1827 and 1828, to . . .	}	10,648 persons, with 18,387,200 thalers.	
2nd decennium (1839-48), to		10,404	16,692,000
3rd decennium (1849-58), to	12,380	20,959,000	
Total . . .	33,432	56,038,200	

The new members were, therefore, considerably more numerous in the last period than in either of the two former; and as they exceed the withdrawals by more than double, we may surely hope that the assurances in the Gotha Office will reach a still greater extent than they have already done.

The calculations of the Gotha Office are founded on the table computed by Charles Babbage according to the experience of the Equitable Society, with the modification that the mortality of the higher ages above 55 years, which that table seemed to represent as too small, was augmented. It will not be without interest to see how true and safe that table has proved in the 30 years now past. This is shown by the Table IV.; according to it—

Should die 6787·68 persons, with 11,215,898 thalers assured sum.		
Died . 6628·00	„	10,988,974
Therefore, <i>less</i> died 159·68	„	226,924

There have been, then, disbursed in the 30 years past, 226,924 thalers, or about 2 per cent. *less* for deaths than might have been spent according to the basis of calculation adopted; and the number of the claims was about 2½ per cent. below the expectation. The adopted table of mortality has therefore proved, upon the whole, convenient and safe. If, however, we follow mortality into the single classes of age, there appear, indeed, greater deviations; for mor-

tality at the ages under 55 years was regularly less, and at the ages above 55 years greater, than the table in use led us to expect, as this was formerly (vol. iv., p. 54; vol. v., p. 58; vol. vi., p. 295; vol. vii., p. 177) proved by the results of single years. A nearer examination has shown that the greater mortality at the ages above 55 years is not caused by such of the assured as are admitted at these ages, but by those who, having been assured at the younger periods of life, attain to the higher ages. The health of the latter, examined at earlier periods, is naturally, on an average, not so good at their entrance into the higher ages, as the health of those who did not undergo the examination till later in life. The examination of health, however, just at the period from the 40th to the 55th year is of great consequence, because at that period of life essential change takes place in the constitution of man—not only of females, but also of males—which have a decided influence on their health. Of those who pass an examination as healthy lives at the age of 40, a greater number is doubtful and bad after 10 years than of those who have been selected as healthy at ages 30 and 50, and are reconsidered after an equal period.

During the 30 years past (1829–58), 6,779 cases of death occurred amongst the persons assured in the Gotha Office, which are distributed in the different classes of age, as shown in Table V. This table has been constructed in the same manner as the table published vol. v., p. 329, for the first 25 years (1829–53), during which period 4,521 cases of death had happened. The experience has, therefore, been enriched by 2,258 cases in the last five years. However, the results formerly obtained have not been essentially modified thereby, as is seen by a comparison of cols. 9 and 10 in Table V. This table is founded on the experience gathered from one calendar year to another. Beside the registers destined for them, on the basis of which the annual balances are made and the reserves are computed, there are arranged registers of the persons assured and the cases of death according to the years of assurance (vol. vi., p. 1), which do not require a correction for admission and withdrawal, as was necessary in Table V., cols. 6 and 7, and they furnish, therefore, more exact data. A table of mortality deduced from these data will be computed as soon as the experience in the younger and higher ages has become somewhat fuller, and, in consequence, more certain in its results.

Table VI. exhibits a comparative view of mortality according to different tables. It results from this table that the mortality in the Gotha Company in the ages under 55 years agrees almost

entirely with the mortality in the English Life Insurance Companies, as it is expressed in the Actuaries' Table, founded on the experience of 17 Companies. Beyond the 55th year of age, however, the mortality is essentially greater among the assured in the Gotha Office than in the English Companies. This difference has a general reason, because, in our opinion, mortality is in general less at the higher ages in England than on the continent. It may be that people enter there the higher ages with less weakened vitality, or that they are preserved from adverse influences at this period of life more in England than on the continent, or that both causes co-operate. The fact itself seems no longer doubtful, and the same result will be noticed on a comparison of the tables of mortality founded on the experience of the mixed population, though these tables are less accurate and certain than those which are based on the experience of the Assurance Companies. We refer to the data furnished by Nos. 8-12 of Table VI. According to them, the proportions for the higher ages seem to be more unfavourable, particularly in Germany (Hanover and Saxony), because mortality after the 50th year is greater there, even considerably greater, than in England. The mortality at the higher ages does not appear so favourable either in Belgium or in France, as in England, which country is, therefore, a particularly fortunate locality for aged persons.

It is rather remarkable that mortality amongst the members of the Friendly Societies in England is essentially less than amongst the members of Life Insurance Companies, though they are not obliged to undergo, at their entrance, so severe an examination respecting their health as the latter. The correctness of this fact is not liable to any doubt whatever, in consequence of the carefulness of the investigations made by the two highly-respectable authorities, Finlaison and Neison, the results of which are shown by Nos. 4 and 5 in Table VI. This observation, however, is of weight only for England—it is just the reverse in Germany.

In conclusion, we must not omit to draw attention to the mortality amongst the members of the Mutual Life Assurance Society at New York, which is *less* at most ages than amongst the members of the English and German Life Insurance Companies, though part of them live in the southern regions of North America, which are injurious to health. We owe the statement of this interesting fact to the elaborate researches of the able actuary of that Society, Mr. Homans, in his valuable report on the experience of the Society during the first 15 years of its existence.

TABLE I.—*New Business and Position of the Life Assurance Companies of Germany in the Year 1858.*

Established.	Name of Company.	Assurances existing at the beginning of the Year.		New Assurances during the Year.		Assurances existing at the end of the Year.		Income (Premiums and Interest).		Claims paid.		Expenses of Management.			Assurance Fund.				Share Capital.			
		Persons.	Sums.	Persons.	Sums.	Persons.	Sums.	Persons.	Sums.	Per-sons.	Sums.	Abso-lute.	Per Cent. of Income.	Per cent. of Assurances at the end of Year.	In General.	Per Cent. of Sums at end of Year.	Reserve and advanced Premiums.	Clear Surplus.	Average Dividend in per Cent. of Premium.	Nominal.	Paid up.	
1827	Gotha	20,841	4,792,614	1,316	331,329	21,470	4,944,028	231,897	1,171,793	517	125,871	3.98	1.87	£ 1,324,212	26.78	£ 1,080,968	216,177	28	£ 72,857	Mutual	£ 7,286	
1828	Lubeck	6,936	984,571	2,396	272,512	8,777	1,171,793	48,062	1,171,793	133	24,872	12.94	5.31	£ 1,222,656	10.47	?	?	(0.251 On sum of last ten years)	£ 420,000	Mutual	?	
1830	Leipzig	4,881	786,786	357	51,886	5,041	807,171	38,924	807,171	133	21,086	6.18	2.98	£ 233,135	28.88	£ 198,838	27,126	16½	Mutual	Mutual		
1830	Hanover	*2,889	251,685	*105	10,100	*2,878	251,671	9,186	251,671	59	4,979	?	?	£ 44,943	17.86	?	?	None	Mutual	?		
1834	Trieste	†4,400	971,429	†2,000	471,428	†5,600	1,285,714	57,143	1,285,714	†110	†25,714	?	?	?	?	?	?	None	420,000	Mutual	?	
1836	Berlin	8,990	1,469,486	480	105,843	8,510	1,508,043	72,532	1,508,043	256	42,671	7.29	3.51	£ 336,486	22.31	£ 284,872	51,614	14½	£ 142,857	Capital of the Loan	28,571	
1836	Munich	2,424	262,278	318	40,424	2,570	286,016	6,286	286,016	47	4,718	?	?	£ 46,441	16.24	?	?	None	Mutual	?		
1839	Vienna	10,419	426,963	1,322	56,819	11,142	455,916	18,013	455,916	184	8,337	11.90	4.70	£ 48,181	10.57	£ 36,815	11,366	13½	Mutual	Mutual		
1842	Brunswick	1,020	79,314	70	6,086	1,063	83,243	3,286	83,243	19	1,329	?	?	£ 14,285	17.16	?	?	c. 6	Mutual	Mutual		
1844	Frankfort	1,336	256,637	322	53,009	†1,600	285,714	13,428	285,714	15	2,343	13.83	6.50	£ 17,149	6.00	?	?	6½	244,898	Mutual	24,489	
1847	Hamburg	*6,235	716,880	*1,270	131,196	*7,032	792,878	28,550	792,878	84	10,284	17.36	6.25	£ 61,185	7.72	?	?	7½	71,428	Mutual	71,428	
1852	Leipzig	*1,259	95,447	*327	32,463	*1,440	117,181	6,375	117,181	53	2,661	29.42	16.00	£ 12,286	..	{ 21,222 Debit	None	None	85,714	Mutual	12,857	
1853	Cologne	†3,400	973,262	†1,000	221,812	†4,200	1,112,865	32,857	1,112,865	†50	16,548	?	?	£ 109,433	9.84	£ 79,351	23,341	None	869,714	Mutual	173,943	
1853	Schwerin	*292	51,900	*73	14,600	*349	63,886	1,868	63,886	5	1,114	?	?	£ 3,586	5.61	£ 2,059	1,527	..	14,286	Mutual	1,428	
1854	Halle	*1,868	182,956	575	61,736	*2,232	217,349	10,455	217,349	62	4,982	30.46	14.02	£ 7,392	3.40	{ 12,870 Debit	None	None	28,571	Mutual	?	
1854	Stuttgart	1,539	247,460	516	87,640	2,002	323,795	12,102	323,795	19	1,796	7.34	2.27	£ 27,728	8.56	£ 16,594	10,354	..	Mutual	Mutual		
1855	Darmstadt	861	49,720	283	14,825	1,073	62,744	2,149	62,744	42	820	6.06	2.27	£ 4,435	..	?	None	None	282,000	Annuit. Society.	58,400	
1856	Magdeburg	*933	154,811	*573	111,233	†1,353	252,608	13,015	252,608	94	1,526	4.689	18.56	£ 8,864	..	£ 8,837	3,056	None	428,571	Mutual	85,714	
1857	Stetin	†600	121,429	†1,150	228,571	1,606	323,832	11,251	323,832	16	1,614	?	?	£ 9,798	..	£ 14,362	6,184	None	Capital of the Credit Bk.	..		
1857	Zurich . . . .	..	..	192	36,786	190	36,563	1,283	36,563	2	223	?	?	£ 5,649	..	?	202	None	..	..	..
	Total	80,523	12,875,128	14,645	2,340,298	90,128	14,383,010	618,382	14,383,010	1,900	303,498	£ 2,437,844

* Policies. † Approximated.

TABLE II.—Showing the Gross Premium per Cent., the Average Dividends,

Established.	Name of Company.	Average Dividend per Cent.	Age 25.			Age 30.			Age 35.		
			Gross Premium.	Dividends.	Net Premium.	Gross Premium.	Dividends.	Net Premium.	Gross Premium.	Dividends.	Net Premium.
1827	Gotha	28	2-356	0-660	1-696	2-633	0-737	1-896	2-969	0-831	2-138
1828	Lubeck	Old Tariff: 0-251 on sum assured New Tariff: non profit, 1857	2-403	0-251	2-152	2-669	0-251	2-418	2-992	0-251	2-741
			..	..	1-828	..	..	2-106	..	..	2-461
1830	Leipzig	16½	2-356	0-389	1-967	2-633	0-434	2-199	2-969	0-490	2-479
1834	Trieste (Assicurazioni Generali) }	Non profit	..	..	2-14	..	..	2-42	..	..	2-76
1836	Berlin	Old Tariff: 14½ New Tariff: 1854: Not yet divided	2-406	0-346	2-060	2-672	0-385	2-287	2-992	0-431	2-561
			2-133	?	?	2-433	?	?	2-817	?	?
1836	Munich	Non profit	..	..	2-000	..	..	2-283	..	..	2-658
		Non profit	..	..	2-167	..	..	2-433	..	..	2-750
1839	Vienna (Mutual) ..	c. 13	2-150	0-279	1-871	2-483	0-323	2-160	2-883	0-375	2-508
1842	Brunswick	c. 6	2-125	0-127	1-998	2-382	0-143	2-239	2-722	0-163	2-559
1844	Frankfort	Non profit	..	..	1-992	..	..	2-242	..	..	2-550
1847	Hamburg	Non profit	..	..	1-950	..	..	2-225	..	..	2-542
1851	Trieste (Azienda Assicuratrice) .. }	Non profit	..	..	2-12	..	..	2-40	..	..	2-76
1852	Vienna (First Austrian Assurance Company) }	Non profit	..	..	2-100	..	..	2-383	..	..	2-717
1852	Leipzig (Teutonia)	Not yet divided	2-181	?	?	2-500	?	?	2-861	?	?
1853	Trieste (Riunione Adriatica di Sicurtà)	Non profit	..	..	1-96	..	..	2-25	..	..	2-57
1853	Cologne	Non profit	..	..	1-783	..	..	2-042	..	..	2-383
1853	Schwerin	Only two dividends Not yet divided	2-203	?	?	2-521	?	?	2-906	?	?
1854	Halle (Iduna)		2-192	?	?	2-500	?	?	2-861	?	?
1854	Stuttgart	Only one dividend	2-230	?	?	2-457	?	?	2-760	?	?
1855	Darmstadt		Non profit	1-750	2-017	..	..	2-350
1856	Magdeburg	Non profit	..	..	1-867	..	..	2-083	..	..	2-358
1856	Erfurt (Thuringia)	Non profit	..	..	1-758	..	..	2-008	..	..	2-333
1857	Stettin (Germania)	Non profit	..	..	1-817	..	..	2-075	..	..	2-408
1857	Frankfort	Non profit	..	..	1-883	..	..	2-125	..	..	2-425
1857	Zurich		Non profit	2-174	2-439	..	..	2-778
1857	Trieste (Nuova Società Commerciale)	Non profit	..	..	2-050	..	..	2-330	..	..	2-660
1858	Vienna (Anker) ..	Non profit	..	..	1-920	..	..	2-240	..	..	2-550
	Average Premium	..	2-249	..	1-958	2-535	..	2-221	2-885	..	2-542

An average dividend is only computed for those

and the Net Premium after Reduction, in the German Life Assurance Companies.

Age 40.			Age 45.			Age 50.			Age 55.			Age 60.		
Gross Premium.	Dividends.	Net Premium.	Gross Premium.	Dividends.	Net Premium.	Gross Premium.	Dividends.	Net Premium.	Gross Premium.	Dividends.	Net Premium.	Gross Premium.	Dividends.	Net Premium.
3386	0.948	2.438	3.961	1.109	2.852	4.733	1.325	3.408	5.742	1.608	4.134	7.161	2.005	5.156
3400	0.251	3.149	3.894	0.251	3.643	4.531	0.251	4.280	5.317	0.251	5.066	6.367	0.251	6.116
..	..	2.928	..	..	3.564	..	..	4.417	..	..	5.561	..	..	7.123
3886	0.641	3.245	3.961	0.654	3.307	4.733	0.781	3.952	5.742	0.947	4.795	7.161	1.182	5.979
..	..	3.21	..	..	3.81	..	..	4.66	..	..	5.78	..	..	7.25
3400	0.490	2.910	3.898	0.561	3.337	4.533	0.653	3.880	5.317	0.766	4.551	6.367	0.917	5.450
3333	?	?	3.950	?	?	4.750	?	?	5.858	?	?	7.417	?	?
..	..	3.150	..	..	3.758	..	..	4.558	..	..	5.650	..	..	7.142
..	..	3.183	..	..	3.750	..	..	4.517	..	..	5.533	..	..	6.933
3333	0.433	2.900	3.950	0.513	3.437	4.733	0.615	4.118	5.667	0.737	4.930	6.967	0.906	6.061
3187	0.191	2.996	3.805	0.228	3.577	4.660	0.280	4.380	5.854	0.351	5.503	7.479	0.449	7.030
..	..	2.950	..	..	3.483	..	..	4.192	..	..	5.142	..	..	6.422
..	..	2.950	..	..	3.425	..	..	4.100	..	..	5.125	..	..	6.492
..	..	3.24	..	..	3.84	..	..	4.64	..	..	5.70	..	..	7.23
..	..	3.167	..	..	3.767	..	..	4.550	..	..	5.633	..	..	7.183
3300	?	?	3.900	?	?	4.667	?	?	5.624	?	?	6.833	?	?
..	..	2.99	..	..	3.62	..	..	4.35	..	..	5.55	..	..	7.07
..	..	2.825	..	..	3.417	..	..	4.208	..	..	5.267	..	..	6.692
3391	?	?	4.005	?	?	4.802	?	?	5.906	?	?	7.661	?	?
3317	?	?	3.850	?	?	4.600	?	?	5.750	?	?	7.200	?	?
3182	?	?	3.757	?	?	4.572	?	?	5.688	?	?	7.077	?	?
..	..	2.800	..	..	3.433	..	..	4.300	..	..	5.550	..	..	7.317
..	..	2.758	..	..	3.333	..	..	4.108	..	..	5.033	..	..	6.300
..	..	2.750	..	..	3.317	..	..	4.083	..	..	5.267	..	..	6.717
..	..	2.842	..	..	3.417	..	..	4.192	..	..	5.208	..	..	6.592
..	..	2.821	..	..	3.396	..	..	4.167	..	..	5.212	..	..	6.671
..	..	3.226	..	..	3.846	..	..	4.545	..	..	5.556	..	..	7.143
..	..	3.100	..	..	3.710	..	..	4.500	..	..	5.660	..	..	7.160
..	..	2.990	..	..	3.600	..	..	4.390	..	..	5.430	..	..	6.830
3329	..	2.980	3.903	..	3.526	4.665	..	4.271	5.679	..	5.285	7.063	..	6.670

Companies who have divided at least five dividends.

TABLE III.—Assurances in the Gotha Life

Year.	Assurances proposed.		New Assurances effected.		Assured in the course of the Year.		DECREASED.	
	Pers.	Thlrs.	Pers.	Thlrs.	Pers.	Thlrs.	By discontinued, expired, and lapsed Policies.	
	Pers.	Thlrs.	Pers.	Thlrs.	Pers.	Thlrs.	Pers.	Thlrs.
1829	1,581	2,746,600	1,285	2,379,200	1,285	2,379,200		
1830	607	1,121,700	504	1,044,700	1,777	3,408,800	14	26,200
1831	1,491	2,501,400	1,244	2,348,400	2,991	5,696,700	46	126,000
1832	1,574	2,513,500	1,165	2,168,100	4,083	7,687,500	212	490,100
1833	1,351	1,975,300	1,041	1,738,100	4,857	8,832,800	120	358,700
1834	1,218	1,749,800	902	1,424,500	5,593	9,825,700	154	335,500
1835	1,318	1,877,900	989	1,577,600	6,361	10,958,000	155	298,300
1836	1,635	2,390,400	1,213	1,932,500	7,333	12,422,600	170	333,800
1837	1,581	2,435,600	1,151	1,886,200	8,204	13,743,300	170	290,200
1838	1,555	2,224,900	1,154	1,887,900	9,061	15,114,200	156	338,200
Total } 1829-38	13,911	21,537,100	10,648	18,387,200	51,545	90,069,000	1,197	2,647,000
1839	1,419	2,143,000	1,024	1,743,200	9,803	16,304,700	195	378,900
1840	1,485	1,942,800	1,089	1,568,400	10,570	17,283,500	193	354,600
1841	1,414	2,002,100	983	1,604,800	11,217	18,255,700	178	292,400
1842	1,352	1,939,800	1,013	1,594,700	11,888	19,264,100	167	348,600
1843	1,503	2,082,600	1,049	1,658,400	12,572	20,259,200	193	398,600
1844	1,493	2,101,700	1,073	1,747,500	13,249	21,281,800	183	291,800
1845	1,412	2,046,000	1,018	1,646,800	13,884	22,231,000	178	327,100
1846	1,484	1,961,300	1,096	1,648,500	14,564	23,218,700	208	388,800
1847	1,706	2,425,200	1,235	1,948,200	15,361	24,412,400	240	396,500
1848	1,151	1,790,200	824	1,531,500	15,652	25,070,700	277	543,200
Total } 1839-48	14,419	20,434,700	10,404	16,692,000	128,760	207,631,800	2,012	3,720,500
1849	1,377	1,946,500	1,011	1,629,800	16,047	25,641,000	239	449,500
1850	1,537	2,138,000	1,138	1,860,500	16,609	26,479,600	196	402,300
1851	1,667	2,369,200	1,262	2,013,800	17,342	27,522,000	190	359,000
1852	1,868	2,671,600	1,423	2,326,600	18,278	29,028,900	217	421,200
1853	1,804	2,576,900	1,324	2,153,900	19,039	30,182,300	213	418,800
1854	1,534	2,240,700	1,073	1,855,900	19,500	30,971,100	252	443,400
1855	1,699	2,466,300	1,156	2,032,600	20,014	31,927,200	180	304,300
1856	1,910	2,768,800	1,314	2,183,100	20,677	33,071,800	169	309,800
1857	1,913	3,090,400	1,363	2,578,500	21,461	34,637,900	167	332,300
1858	1,901	2,938,200	1,316	2,319,300	22,157	35,867,600	151	341,700
Total } 1849-58	17,210	25,206,600	12,380	20,959,000	191,124	305,329,400	1,974	3,782,300
Total . . . Average for one year . . }	45,540	67,178,400	33,432	56,038,200	371,429	603,030,200	5,183	10,149,800
	1,518	2,239,280	1,114	1,867,940	12,381	20,101,007	173	338,327

Assurance Bank during the Years 1829-58.

DECREASED (continued).				Net Increase.		EXISTING AT THE END OF THE YEAR.			
By Death.		Total Decrease.				Average Sum on one Life.		Average Age of Assured.	
Pers.	Thlrs.	Pers.	Thlrs.	Pers.	Thlrs.	Pers.	Thlrs.	Thlrs.	Yrs. Ms.
12	15,100	12	15,100	1,273	2,364,100	1,273	2,364,100	1,857	42 7
16	34,300	30	60,500	474	984,200	1,747	3,348,300	1,917	42 9
27	51,300	73	177,300	1,171	2,171,100	2,918	5,519,400	1,892	41 10
55	102,700	267	592,800	898	1,575,300	3,816	7,094,700	1,859	42 4½
46	72,900	166	431,600	875	1,306,500	4,691	8,401,200	1,791	42 9
67	109,800	221	445,300	681	979,200	5,372	9,380,400	1,746	43 1
86	169,400	241	467,700	748	1,109,900	6,120	10,490,300	1,714	43 3½
110	181,900	280	565,700	933	1,366,800	7,053	11,857,100	1,681	43 5
127	226,800	297	517,000	854	1,369,200	7,907	13,226,300	1,673	43 8
126	214,500	282	552,700	872	1,335,200	8,779	14,561,500	1,659	44 0
672	1,178,700	1,869	3,825,700	8,779	14,561,500	..	..	17,789	..
127	210,700	322	589,600	702	1,153,600	9,481	15,715,100	1,658	44 4½
143	278,000	336	632,600	753	935,800	10,234	16,650,900	1,627	44 8½
164	293,900	342	536,300	641	1,018,500	10,875	17,669,400	1,625	45 1
198	314,700	365	663,300	648	931,400	11,523	18,600,800	1,614	45 5
203	326,300	396	724,900	653	933,500	12,176	19,534,300	1,604	45 10
200	355,800	383	647,600	690	1,099,900	12,866	20,634,200	1,604	46 0
238	383,700	416	710,800	602	936,000	13,468	21,570,200	1,602	46 4
230	365,700	438	754,500	658	894,000	14,126	22,464,200	1,590	46 7
293	476,700	533	873,200	702	1,075,000	14,828	23,539,200	1,588	46 10
339	516,300	616	1,059,500	208	472,000	15,036	24,011,200	1,597	47 4
2,135	3,521,800	4,147	7,242,300	6,257	9,449,700	..	..	16,109	..
337	572,400	576	1,021,900	435	607,900	15,471	24,619,100	1,591	47 7
333	574,100	529	976,400	609	884,100	16,080	25,503,200	1,586	47 10
297	460,700	487	819,700	775	1,199,100	16,555	26,702,300	1,584	48 0
346	579,300	563	1,000,500	860	1,326,100	17,715	28,028,400	1,582	48 2
399	648,300	612	1,067,100	712	1,086,800	18,427	29,115,200	1,580	48 3
390	633,100	642	1,076,500	431	779,400	18,858	29,894,600	1,585	48 6
471	734,200	651	1,038,500	505	994,100	19,363	30,888,700	1,595	48 9
410	702,600	579	1,012,400	735	1,170,700	20,098	32,059,400	1,595	48 11
453	757,300	620	1,089,600	743	1,488,900	20,841	33,548,300	1,610	49 0
536	917,700	687	1,259,400	629	1,059,900	21,470	34,608,200	1,612	49 2
3,972	6,579,700	5,946	10,362,000	6,434	10,597,000	..	..	15,920	..
6,779	11,280,200	11,962	21,430,000	21,470	34,608,200	..	..	49,818	..
226	376,007	399	714,333	716	1,153,607	..	..	1,661	..

TABLE IV.—Claims payable during 1829–58.

Year.	AMOUNT.					EXPECTED ACCORDING TO THE TABLE IN USE.			DIFFERENCE.			
	Pers.	Thlrs.	Average for one Life.	Per cent. of the Assurances.		Pers.	Thlrs.	Average for one Life.	There died			
				Pers.	Thlrs.				Plus.	Minus.		
1829	12	15,100	1,258	0·93	0·63	15·19	27,979	1,842	..	..	3·19	12,879
1830	16	34,300	2,144	0·99	1·01	22·84	43,688	1,913	..	..	6·84	9,388
1831	27	50,300	1,863	0·90	0·88	32·38	63,254	1,954	..	..	5·38	12,954
1832	53	102,300	1,930	1·30	1·33	50·25	94,681	1,884	2·75	7,619	..	..
1833	46	71,032	1,544	0·95	0·80	64·81	117,700	1,816	..	..	18·81	46,668
1834	65	108,300	1,666	1·16	1·10	77·19	135,909	1,761	..	..	12·19	27,609
1835	85	165,400	1,946	1·34	1·51	89·34	156,092	1,747	..	9,308	4·34	..
1836	108	179,200	1,659	1·47	1·44	103·42	178,234	1,723	4·58	966	..	..
1837	123	217,417	1,768	1·50	1·58	117·99	202,162	1,713	5·01	15,255	..	..
1838	124	211,900	1,709	1·37	1·40	133·88	228,054	1,703	..	..	9·88	16,154
Total } 1829–38	659	1,155,249	17,487	11·82	11·68	707·29	1,247,753	18,056	12·34	33,148	60·63	125,652
1839	123	206,400	1,678	1·25	1·26	149·74	254,226	1,699	..	..	26·74	47,826
1840	136	256,200	1,884	1·29	1·48	164·25	276,936	1,686	..	..	28·25	20,736
1841	158	278,525	1,763	1·41	1·53	179·02	299,402	1,672	..	..	21·02	20,877
1842	191	300,800	1,575	1·61	1·56	193·93	322,746	1,664	..	..	2·93	21,946
1843	201	323,800	1,611	1·60	1·60	208·55	345,219	1,655	..	..	7·55	21,419
1844	197	340,400	1,728	1·49	1·60	224·81	370,748	1,649	..	..	27·81	30,348
1845	235	381,200	1,622	1·69	1·71	241·13	397,277	1,648	..	..	6·13	16,077
1846	224	353,800	1,579	1·54	1·52	257·03	421,986	1,642	..	..	33·03	68,186
1847	289	470,000	1,629	1·88	1·93	275·53	450,174	1,634	13·47	19,826	..	..
1848	326	496,500	1,523	2·08	1·98	290·27	474,505	1,636	35·73	21,995	..	..
Total } 1839–48	2,080	3,407,625	16,592	15·84	16·17	2184·26	3,613,219	16,585	49·20	41,821	153·46	247,415
1849	335	566,500	1,691	2·09	2·21	302·28	494,798	1,638	32·72	71,702	..	..
1850	326	556,600	1,707	1·96	2·10	318·57	520,490	1,634	7·43	36,110	..	..
1851	293	459,000	1,567	1·69	1·67	337·52	550,166	1,630	..	..	44·52	91,166
1852	335	554,900	1,656	1·83	1·91	359·54	584,449	1,626	..	..	24·54	29,549
1853	392	635,800	1,625	2·06	2·11	382·07	618,850	1,620	9·93	16,950	..	..
1854	375	608,600	1,623	1·99	2·04	400·52	649,828	1,622	..	..	25·52	41,228
1855	466	721,450	1,548	2·41	2·34	417·83	681,135	1,630	48·17	40,315	..	..
1856	406	692,450	1,706	2·02	2·16	437·73	715,080	1,633	..	..	31·73	22,630
1857	444	749,700	1,688	2·06	2·16	459·28	752,017	1,637	..	..	15·28	2·317
1858	517	881,100	1,704	2·33	2·46	480·79	788,113	1,639	36·21	92,987	..	..
Total } 1849–58	3,889	6,426,100	16,515	20·44	21·16	3896·13	6,354,926	16,309	134·46	258,064	141·59	186,890
Total . . . Average for one Year	6,628	10,988,974	50,594	48·10	49·01	6787·68	11,215,898	50,950	196·00	333,033	355·68	559,957
	221	366,299	1,687	1·60	1·63	226·26	373,863	1,698	6·53	11,101	11·86	18,665

TABLE V.—*Persons Assured in the Gotha Life Bank, and Deaths during 1829–58.*

Ages.	Number of Persons assured.	Number of Persons entered.	Number of Persons gone in lifetime.	Total of 3 and 4.	Half of the Numbers in Col. 5.	Number exposed to the Risk of Mortality for a whole Year.	Deaths.	Rate of Mortality per cent. 1829–58.	Rate of Mortality per cent. 1829–53.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
15–25	2,833	1,241	165	1,406	703	2,130	12	0·56	0·46
26–30	14,643	4,625	557	5,182	2,591	12,052	100	0·83	0·87
31–35	37,584	7,304	896	8,200	4,100	33,484	290	0·87	0·92
36–40	56,680	7,180	873	8,053	4,027	52,653	508	0·97	1·00
41–45	64,213	5,201	850	6,051	3,025	61,188	628	1·03	1·04
46–50	61,802	3,715	799	4,514	2,257	59,545	868	1·46	1·45
51–55	52,195	2,464	523	2,987	1,493	50,702	963	1·90	1·82
56–60	38,599	1,446	323	1,769	884	37,715	1,014	2·69	2·77
61–65	23,926	241	133	374	187	23,739	917	3·86	3·83
66–70	12,145	15	43	58	29	12,116	734	6·06	6·08
71–75	4,944	..	15	15	7	4,937	482	9·76	9·04
76–80	1,562	..	6	6	3	1,559	190	12·19	11·35
81–85	281	..	..	..	..	281	65	23·13	23·94
86–90	24	..	..	..	..	24	8	33·33	33·33
Total	371,431	33,432	5,183	38,615	19,306	352,125	6,779		

TABLE VI.—*Comparative View of the Annual Rate of Mortality according to different Tables.*

	26–30.	31–35.	36–40.	41–45.	46–50.	51–55.	56–60.	61–65.	66–70.	71–75.	76–80.	81–85.
1. Gotha Life Experience (1829–58)	0·83	0·87	0·97	1·03	1·46	1·90	2·69	3·86	6·06	9·76	12·19	23·13
2. Actuaries' Table (17 English Life Offices, 1762–1840)	0·81	0·89	0·99	1·13	1·43	1·91	2·65	3·79	5·55	8·13	11·88	17·22
3. Equitable Experience (1762–1840, Morgan)	0·78	0·88	1·03	1·18	1·38	1·85	2·68	3·72	5·48	7·89	11·18	17·97
4. Friendly Societies' Experience (1836–40, Neison) ..	0·73	0·80	0·89	1·04	1·29	1·70	2·24	3·05	4·62	6·85	8·84	11·97
5. Ditto ditto (1846–50, Finlaison)	0·75	0·80	0·95	1·13	1·37	1·77	2·45	3·12	4·75	6·70	10·32	15·31
6. New York Mutual Society Exp. (1844–53, Homans) ..	0·85	0·89	0·93	0·96	1·20	1·52	2·03	3·07	4·85	7·66	13·01	18·96
7. Carlisle Table (1779–87, Heysham—Milne)	0·87	1·02	1·15	1·45	1·41	1·61	2·50	3·84	4·66	7·67	11·08	14·88
8. Hanover (1825–43) Tellkamps	1·11	1·25	1·35	1·48	1·77	2·50	3·61	5·70	7·91	9·34	12·74	18·50
9. Saxony (1840–49, Heym)	0·84	0·99	1·11	1·32	1·63	2·24	3·22	4·81	7·35	11·31	15·94	21·58
10. England, Males (1841, Farr) ..	0·97	1·10	1·25	1·42	1·62	1·87	2·71	3·95	5·75	8·32	11·94	16·90
11. France, Males (1817–31, Demoufferrand)	0·88	0·95	0·94	1·17	1·43	1·93	2·50	4·10	5·60	9·25	12·79	18·62
12. Belgium, Males (1841–45, Quetelet)	1·50	1·58	1·72	2·16	2·43	2·47	3·15	4·24	5·83	8·65	12·86	18·01