REVIEW XI.

1. *On the Results of the Operations of the Gotha Life Assurance Bank for the First Twenty-five Years of its Existence, particularly with respect to the Mortality amongst the Lives Assured.* By G. HOPF, Esq., Manager of the Gotha Life Assurance Bank, and Corresponding Member of the Institute of Actuaries in London.*
2. *On the Medical Selection of Lives for Assurance.* By WILLIAM BRINTON, M.D., Fellow of the Royal College of Physicians; Honorary Fellow of King's College; Physician to the Royal Free Hospital; Lecturer on Physiology and on Forensic Medicine in St. Thomas's Hospital; Physician to the Mutual Life Assurance Society; Examining Physician to the Indian Railways, &c. &c.—London, 1856. pp. 58.

THE statistics of life assurance companies must be carefully distinguished from the statistics of the population at large, since the aggregate of insurers may be regarded as the most provident as well as the most healthy part of the community. The deductions obtained by an analysis of the numbers presented by life assurance companies can therefore only be put into comparison with the results obtained from similar data; but the data being essentially the same, we may expect, in comparing different countries with one another, to acquire very interesting and valuable conclusions. The value of such comparisons does not, however, only refer to the duration of life or the rate of mortality, but also to social questions and political relations, by which we may account for the greater or less frequency of the withdrawal of policies, of the occurrence of fraudulent declarations, and the like. Thus, Mr. Hopf finds, in comparing the results of the Gotha Company, the oldest German insurance association (established 1827), with the experience of fifteen English companies, that whereas in the former the number of deaths was somewhat greater than of those whose policies lapsed or were withdrawn, in the latter, the number of deaths was 3928, while that of lapsed policies was 11,226. This would appear to bear out Mr. Hopf's observation, that "the German heads of families therefore seem to execute with greater perseverance the resolution they have once taken of being assured;" it is explicable on the ground of the majority of the insurers in Germany having fixed annual incomes, and of the changes of fortune incident to a commercial population not generally affecting them in the same manner as it does the bulk of insurers in Great Britain. The general fact of insurance indicating a vigorous class of the community, is equally borne out in all the countries from which data have been obtained. Thus we find, in Germany and Great Britain, the rate of mortality to be much lower among the insurers than among the population at large. The same has been observed to apply to our trades' friendly societies, as shown by Neison and Finlaison. Both in a scientific and in a moral and practical point of view, these questions are of great importance. The following table is a condensed view of two tables given by Mr. Hopf, in which our readers will find a comparison between the average mortality of different periods of life in the Gotha and other insurance companies and friendly societies, and the mortality of the same periods in mixed populations:

* The Assurance Magazine, July and October, 1855.

Mortality of the Gotha Company compared with that of other Companies and of Mixed Populations.

Ages.	Insurance Companies and Friendly Societies.						Mixed Populations.				
	Gotha Company.	Equitable Society.	Seventeen English offices.	Friendly Societies (Neison).	Friendly Societies (Finlason).	Prussian Widows' Fund.	England (Farr).	France (Démonferrand).	Belgium (Quetelet).	Hanover (Tallkamp).	Saxony (Leonhardt).
26—30	0·87	0·78	0·81	0·73	0·75	0·70	0·97	0·88	1·50	1·11	1·07
31—35	0·92	0·88	0·89	0·80	0·80	0·85	1·10	0·95	1·58	1·25	0·99
36—40	1·00	1·03	0·99	0·89	0·95	1·09	1·25	0·94	1·72	1·35	1·15
41—45	1·04	1·18	1·13	1·04	1·13	1·35	1·42	1·17	2·16	1·48	1·57
46—50	1·45	1·38	1·43	1·29	1·37	1·74	1·62	1·43	2·43	1·77	2·07
51—55	1·82	1·85	1·91	1·70	1·77	2·24	1·87	1·93	2·47	2·50	2·71
56—60	2·77	2·68	2·65	2·24	2·45	3·11	2·71	2·50	3·15	3·61	3·71
61—65	3·83	3·72	3·79	3·05	3·12	4·60	3·95	4·10	4·24	5·70	5·43
66—70	6·08	5·48	5·55	4·62	4·75	6·57	5·75	5·60	5·83	7·91	7·37
71—75	9·04	7·89	8·13	6·85	6·70	10·04	8·32	9·25	8·65	9·34	10·39
76—80	11·35	11·18	11·88	8·84	10·32	13·18	11·94	12·79	12·86	12·74	15·48
81—85	23·94	17·97	17·22	11·97	15·31	19·32	16·90	18·62	18·01	18·50	21·74

It appears from the table that the ratio is particularly favourable to our own population, whether belonging to the class of insurers, members of friendly societies, or the mixed population. The rate of mortality is especially low for the advanced periods of life, and Mr. Hopf, in trying to account for this undeniable feature, admits that we can only come to the conclusion that, in general, mortality is less at the higher ages in England than in Germany.

Another feature which appears to characterize the class of persons who insure their lives, and results from Mr. Hopf's analysis of the Gotha statistics, is the much greater mortality of women at the earlier periods of life; in mixed populations, the reverse holds good. Thus, in the quinquennial periods, 26 to 30, 31 to 35, 36 to 40, the mortality of men is respectively 0·77, 0·88, and 0·98 per cent., while that of women at the same periods of life is 1·66, 1·79, 1·92. After 40, the difference ceases, and at the most advanced periods the females acquire an advantage over males. The Gotha bank do not insure pregnant women, nor have they ever succeeded in determining a case of fraud on the part of a female; and yet, as the author observes, the numbers before us clearly prove that "females understand better than males to gain advantage in the assurance." The following is his explanation of the fact:

"I think we must seek the principal cause of it in the circumstance that women, from the greater bashfulness peculiar to their sex, frequently do not communicate all their bodily infirmities and irregularities to their physicians, much less to others, and feel themselves much less under obligation to give notice to the assurance office of what they consider their own secret respecting the condition of their body."

And again:

"There is no doubt that a greater proportion of females who assure their lives at the younger years, die early. The deviation is too significant and too constant to be considered accidental. We are not able to explain it by any other supposition than by the circumstance that women feel internal hidden infirmities and defects in a higher degree than men, and have a presentiment of approaching danger in consequence of them, which impels them to assure their lives, or that they understand better and more skilfully than men to hide the true state of their health, and to deceive by it even their medical men."

It is, however, to be observed that the greater mortality of females below the age of forty does not apply in England, where the mortality of the two sexes is equal at that period of life. Our own experience would tend to show that this greater mortality among females before the climacteric, in Germany, is due rather to the greater fatality of child-birth, than to the hidden defects adverted to. We throw this out merely as an impression obtained by inspecting numerous returns of foreign agencies, than as a fact, since nothing but the comparison of extended statistics can serve to determine such a question. We should have no difficulty in accounting for the circumstance, if proved to be based in truth, from the much more frequent employment of midwives during labour, in Germany, even among the higher classes, than among ourselves.

We pointed out at the commencement of our remarks on the subject of life insurance, that insurers, as a class, present a much more favourable average duration of life than their uninsured compatriots. This, however, would not be the case, were it not for the surveillance exercised by the police of the insurance companies—their medical officers.

Persons who feel the taint of any disease that may sap their vital power, are even more likely than others to offer to insure their lives, in order to secure a provision for their wives and children. Were they admitted at the ordinary rates, the favourable averages spoken of as peculiar to the insured would soon be reduced below the average of the general population. It can only be by the careful and conscientious appreciation of all the injurious influences to which mankind are subjected, and by a deliberate weighing of the circumstantial as well as the direct evidence bearing upon the health of an individual, that a medical examiner to an insurance company can completely fulfil the duties of his post. He has to guard against nervous anxiety in watching over the interests of his company, quite as much as against a laxity in examining the applicants for the benefits of the institution. The shock to a person in average health on being declined on the ground of some imaginary predisposition, and the injury inflicted upon him by thus refusing him the benefits of assurance, not easily obtained elsewhere when once refused, are matters for the serious consideration of the medical officer of an insurance company. Dr. Brinton, we think, has put together all the points at issue in an extremely fair manner. He shows why it is necessary that the medical man should be made in a measure the guardian of the insurance company, and he gives a succinct outline of the principles by which the medical officer should be guided, as well as practical directions for the best mode of arriving at a satisfactory conclusion. While the limits of a single lecture are necessarily too circumscribed to discuss fully the bearing of various morbid conditions or previous diseases upon the prospects of ultimate longevity, or to enter minutely into the numerous details which are constantly suggesting themselves to medical men who are engaged in this kind of business, we would recommend a perusal of Dr. Brinton's lecture to all young hands who are about to undertake the duties of medical officers to insurance companies, and are not fully aware of the double responsibility which they assume, and probably not entirely acquainted with the points deserving their special consideration, or the manner in which they should be elicited.