

CORRESPONDENCE.

CONSUMPTIVE FAMILY HISTORY.

To the Editor of the Journal of the Institute of Actuaries.

SIR,—The recent papers by Mr. Manly and Dr. Lyon on the extra risk arising from a consumptive family history (*J.I.A.*, xxx, 97, 120), and the discussions which followed, are among the most interesting which have occupied the attention of the Institute for some time, because the subject is one of such intense practical

importance. Anything which will aid in a more scientific and accurate classification of applicants is an onward step, and is of the greatest value to life assurance in general. I venture, therefore, to draw attention to a few points that arise in connection with these papers. We are all under too great an obligation to their authors to be at all super-critical, and yet I feel that it is not desirable to allow the matter to pass without comment.

1. The conclusion that "cases of consumption in the family, other than in a parent, may be disregarded where the applicant is perfectly sound", is one which cannot be accepted without strong confirmatory evidence. Even the statistics which Mr. Manly offers in its support are subject to criticism. The records include not only the cases which show an admittedly consumptive family history, but those which contain doubtful causes of death, which, in the opinion of Dr. Lyon, should really be classified as consumption. Now there is no doubt that Dr. Lyon did his work thoroughly and conscientiously, but it is quite possible that another equally competent and conscientious physician might make a different classification. So far as an outsider can judge, his inclusion of so many "childbirth" cases as being really consumption, leads to the belief that he has been unduly severe in his examination of the applications, and that the whole record has, perhaps, been swelled by the addition of a number of cases which, though doubtful, are not really consumptive at all. If this be so, the effect would probably be noticed, especially in the class containing the cases of supposed consumption among brothers or sisters, for these members of the family are more numerous than the parents, and probably more frequently separated from the applicants by long distances than the latter, and thus more likely to furnish cases with indefinite or unknown causes of death. The inclusion of any considerable number of cases which are, in spite of a doubt attaching to them, really non-consumptive, and therefore show a favourable mortality, would have the effect of greatly reducing the death rate from consumption in the whole class, and render any deductions therefrom valueless. I do not say that this has been done, but if individual judgment is allowed to enter at all into the classifications, a doubt must inevitably arise as to their reliability. There are surely enough cases to be found in which the record is beyond dispute, to make it unnecessary to include "doubtful" cases at all.

The Washington Life investigated 694 deaths which had a "doubtful" family record, owing to the presence of cases of "child-birth", "change of life", "exposure", "grief", "fever", "general debility", &c., and found that only 111 or 15·99 per-cent of these terminated in death by consumption, as against 16·02 per-cent of the total cases having no hereditary consumptive taint. We well may doubt, therefore, whether Dr. Lyon's apparent classification of all such cases as consumption is sound.

2. The conclusion that the record as regards brothers and sisters may be practically disregarded in applicants who are personally sound is, moreover, at variance with statistics derived from some other sources at least. The experience of the Mutual Life of New York contains a comparison between the family records of their 1,031

deaths from consumption, and an equal number of their deaths from accidents and zymotic diseases, with the following results:

Deaths	Total	SOME MEMBER OF FAMILY CONSUMPTIVE							Total	No. Member of Immediate Family Consumptive
		Father and Mother	Father only	Mother only	Father and Brother or Sister	Mother and Brother or Sister	Two or more Brothers or Sisters	One Brother or Sister		
Consumptives . . .	1,031	2	36	40	7	16	22	71	194	837
Non-Consumptives .	1,031	0	18	20	2	12	5	45	102	929

These results were summarized as follows:

Deaths	PARENT CONSUMPTIVE			Brothers or Sisters only	Total with Family Taint
	Father	Mother	Total		
Consumptives . . .	45	56	101	93	194
Percentage . . .	...	...	9.79	9.02	18.81
Non-Consumptives .	20	32	52	50	102
Percentage . . .	...	...	5.04	4.85	10.89

These figures, so far as they go, show that the history of brothers and sisters is of almost precisely the same value as that of the parents, since the ratios of the consumptive cases were just about double in each class. Important and reliable statistics of this kind should at least make us hesitate before coming to a different decision.

3. Some of the speakers apparently considered that since a consumptive tendency can only be inherited from the parents, the collateral record can be largely, if not entirely, disregarded where neither parent died of consumption. But, as Dr. Lyon pointed out, it is but rarely that the disease is inherited. What is inherited is a weakness, a lack of ability to resist as successfully as more robust persons, the exposure and infection which come in greater or less degree to all. The fact that the parent did not die of consumption is not necessarily proof of that parent's robustness. Is it not, then, a matter of the first importance to see how the brothers and sisters of the applicant, children of the same parents, have withstood the physical trials of life?

Yours truly,

Montreal,

T. B. MACAULAY.

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P.S.—Attention may also be drawn to the fact that the average age at entrance was not the same in the different groups. In tables

I and II, where father or mother alone died of consumption, it was 33-58 years, while in the three "collateral" tables it was 37-80 years. If there be any value then in the theory that "the greatest risk of hereditary taint being developed is in early manhood, and when that time is past and the applicant is of sound constitution, and in every respect, but for the family history, a first-class life, then the risk is small", it would naturally follow that the class of collaterals, being older, would show a more favourable mortality than the lineals, on the ground of age alone. The difference of four years is probably, however, only a minor factor in bringing about the results shown. But in this connection, if I might be allowed to throw out a hint, I would suggest that Mr. Manly would still further increase the obligation of the members to him if he could find time to divide his groups, say, at 40 at entrance (not by age at death), and tell us briefly how the actual mortality among those entering after age 40 compared with the expected. This would help in forming an opinion as to the theory in question. It would probably be found, however, that personal physique, as shown chiefly by the relation of weight to height has much more to do with neutralizing a consumptive taint in the family than mere age.

To the Editor of the Journal of the Institute of Actuaries.

SIR,—Having been favoured with a perusal of Mr. Macaulay's letter, I should like to be allowed to make a few observations upon it at once.

1. In the first place, Mr. Macaulay, in quoting my conclusion with reference to "cases of consumption other than in a parent, &c.", has omitted my special qualification: "so far as these observations have any weight." The President, in the course of the discussion which followed the reading of my paper, expressed a fear that the conclusion might be accepted without the qualifying words, and apparently his fears were justified.

2. So far from "childbirth" cases having been classified as "consumption", as assumed by Mr. Macaulay, the greatest care was taken to separate them; and I do not see what other conclusion could be drawn from my "Tables of Observations XI and XII" (where the cases of consumption alone in collaterals are collated) than the one I have drawn.

3. I do not consider the experience of the "Washington Life" sufficiently long to give any weight to their deductions as to the causes of death. The experience of the "Mutual Life of New York", as given by Mr. Macaulay, is very interesting, *medically*, and is an additional proof, if such were needed, that children born of consumptive parents are more likely to contract that disease than others. I am also willing to admit that, amongst those who die of consumption, there may be found a greater number who had brothers or sisters die of that disease, than amongst a similar number who die from other causes.