

As a medical student, and as Resident Physician to the Edinburgh Maternity Hospital, I worked for years during the relevant period of time in the very population which Professor Pearson chose, and I am only too thankful to believe that attention to nurture—of which Professor Pearson thinks so little—has somewhat improved its indescribably degraded and diseased state. But things are bad enough still; and I have the permission of Mr. Andrew Young, the head master of the school—who has worked during nearly two decades amongst and for this very population, who knows the homes and the relatives almost as well as the children, and to whom, as to the rest of us who have seen with our own eyes, Professor Pearson's conclusions are simply ludicrous—to say that Professor Pearson will be heartily welcome in the class-rooms, and for a tour of inspection in the district, should he have any curiosity to see the population about which he has so disastrously misinformed the world. In biology the microscope is more useful than the telescope.

What we want now, of course, is a report which not even its authors could be argued into calling "idle." We must observe the order in time of the poisoning and the offspring—lest we confound correlation with causation (which the correlation method, ignoring time, cannot distinguish), and thus be found estimating the "influence" of something on something else that antedated it. We must, if possible, as I suggested in my last letter, compare the offspring of the same parents, who satisfy us as initially healthy, before, during, and after the alcoholism; and even so, there will remain the rest of the fallacies which the "idle" report includes. Above all, we must distinguish real alcoholism, with its inevitable soakage of the germinal tissues, and possible blastophthoria, from the inebriety of the feeble-minded who may take very little alcohol at all; and we must use, for example, delirium tremens, rather than the number of convictions for drunkenness, as a measure of the intensity of alcoholism; notwithstanding Professor Pearson's fantastic preference for the latter as a criterion in his latest report.

In a word, we must follow the lines of the experimental work on this subject already done with alcohol, lead, and arsenic—perhaps the principal "racial poisons," as one may call them. I say "we," but I do not practise, and the work can only be done by combining the expert, analysed, and prolonged observations of many practitioners. These could be collected and submitted to Professor Pearson, who, after some weeks or months of labour, would doubtless then produce the result which the figures would evidently bear upon their faces, as he has just done in his report on the feeble-minded inebriate—whom he found to be feeble-minded.—I am, etc.,

London, W., Feb. 4th.

C. W. SALSBY.

SIR,—Professor Pearson has arrived at the conclusion that "the children of the intemperate are healthier than the children of the sober." He states this as a "fact, as shown in these figures." Whether his figures be or be not correct—and he can argue that point with Sir Victor Horsley—they do not demonstrate any such fact as he alleges. In reality, they demonstrate the direct contrary.

His figures (Table, JOURNAL, January 7th) show that "in a population of 1,400 children with a majority of drinking parents" the percentage of dull and mentally defective offspring lies between 15.6 and 25.8; whereas in an examination of 100,000 school children, Dr. Francis Warner found that "8 per cent. of the boys and 6.8 per cent. of the girls were reported by the teachers as below average ability in school work." The comparison speaks for itself.

Again, if we eliminate the suspected cases and deal only with parents of known habits, the difference between the percentages of healthy offspring in the two alcoholic and in the two sober classes is negligible; and hence, if we accept the view that alcoholism connotes superior physique and virility, we must also conclude that alcoholism neutralizes these advantages, as measured in terms of healthy offspring. It is clear, then, that what Professor Pearson terms "a fact, as shown in these figures" is not a fact at all, but an incorrect deduction.

One would have thought that a statistician's eye would have been attracted by a feature in the table which is *prima facie* evidence of its unsoundness. For both healthy and unhealthy offspring it gives a much higher percentage

among the "suspected" than among either drinkers or sober. If alcohol has no effect, what reason can be given for so marked a variation in an unselected sample? Superior physique would help us when the mentally deficient are in excess. The other parent cannot be introduced as a factor without destroying the whole scheme of the table. Nor does the alleged evil influence of alcohol explain why "suspected" parents should have more healthy children than drunkards. Statistically the table is too crude to be of any value whatever, and it bears on its face the stigmata of worthlessness.

If the question is worth solving, would it not be as well to carry out an inquiry on a more extensive scale, and preferably among a population that was not subject to so many other influences toward defects in the offspring?—I am, etc.,

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Exeter, Feb. 6th.

SIR,—Professor Pearson's confused letter will be difficult to follow by those who have not had the opportunity of reading the original papers, "memoirs," his letter in the *Journal of the Royal Statistical Society* and the letters which have recently been published in the *Times* by Professor Pearson and ourselves.

From these last Professor Pearson, with what he and Miss Elderton called "judicial calm," has refurbished statements which he evidently considers quite good enough for our JOURNAL, but the errors of which we have, as a matter of fact, already fully exposed and corrected in the columns of the *Times*. To bring order out of the unwarrantable confusion¹ which, designedly or not, has been cast over this perfectly simple question, we will follow the order of our detailed criticism of his and Miss Elderton's work which we published in the BRITISH MEDICAL JOURNAL, January 14th, 1911.

In passing we shall correct the numerous errors of fact scattered throughout Professor Pearson's letter.

One preliminary observation is necessary. We at any rate have no paradoxical mission to further, but are solely concerned in a critical examination of what purported to be highly accurate, scientific, biologic-statistical memoirs on the subject of parental alcoholism, its effects on offspring and on the wage-earning power, mentality, and physique of the drunken workman compared to the sober one.

We will begin with the first two errors which we found in Professor Pearson and Miss Elderton's papers:

Error 1. *Absence of controls.*Error 2. *Unscientific use of terms.*

We showed on January 14th in your columns that the authors had not only neglected to provide as controls a really non-alcoholic class of parents to compare with the drunken, but had committed the scientifically inexcusable fault of labelling the less alcoholic parents as "non-alcoholic." Professor Pearson says in another part of this letter that a charge like this amounts to an accusation of "falsifying data." If it does, nobody is to blame but himself and Miss Elderton, for they are responsible for what they have done in this matter of wrongful description, not only in this part of their work, but in many others, as we have already shown, and shall again directly, on further points which we did not discuss in our paper of January 14th.

Professor Pearson, in his last letter to you of February 4th,

¹ Professor Pearson's intellectual confusion, as your readers must have noticed, really amounts to a scientific obsession. The following are examples:

- Sir Victor belongs to that small group of temperance advocates who apparently believe that moderate and excessive uses of alcohol are identical in their results (p. 279).
- If Sir Victor and Dr. Sturge succeed in showing that the wage-earning power of the alcoholic man is markedly lower than that of the sober man, apart from disabilities due to periods of alcoholic incapacity, they will find it absolutely impossible to investigate whether alcoholic and non-alcoholic are initially of the same stock (sic) (p. 280).
- That there has been very little change in the habits of the parents is demonstrated by the fact that the number of quite young children relative to all the children is practically the same in our sober and drinking sections (p. 279).

The italics are ours.

- I have several times asked Sir Victor Horsley for an explanation of why he has elsewhere cited with approval Dr. Mac-Nicholl and other authors, etc. He has given no answer to this question.

Sir Victor Horsley and Dr. Sturge answered this question in the BRITISH MEDICAL JOURNAL, December 31st, 1910, p. 2048.