

much the same in man and the plants and lower animals. There is therefore an *a priori* presumption that among human beings all variations, favourable or unfavourable (including "degeneracy"), are due, not to external influences acting through the parents on the germ cells, but solely to sexual reproduction.

3. The changes occurring in human beings during the period of reproduction are very great, but apparently they have no influence on offspring. Certainly no one is able to distinguish the child of a boy and girl from one born to aged parents.

4. If, as is commonly alleged, alcohol and the toxins of disease circulating in the blood injure the offspring through the germs then this "degeneracy" is evidently an inborn or congenital trait and differs from other variations only in that it is caused by external influences and not by intermixture. It is what is technically known as a "variation" of germ plasms. But "variations," as contrasted with "acquirements," are known to be transmissible to future descendants. Thus, unlike mutilations, congenital abnormalities are apt to be repeated generation after generation and may by careful breeding—i.e., by mating individuals with the same variations—be rendered stable in the race. It is by preserving and accumulating variations that nature has evolved new species, and it is by this means that breeders evolve improved varieties of plants and animals. Now alcohol, opium, and many diseases have afflicted many races for thousands of years. In the case of alcohol and malaria they have been so prevalent among certain races that hardly an individual during long ages can have escaped their influence. It follows, if alcohol or toxins circulating in the parents' blood injure offspring, this "degeneracy," being inborn, must accumulate in future generations. The son will transmit his congenital defect to the grandson with an increment added by his own intemperance or disease. The grandson will transmit this greater defect to the great-grandson with an additional increment—and so on, till the race, growing more and more degenerate, at last becomes extinct. This racial degeneracy due to alcohol and disease would be inevitable under the conditions and has in fact been alleged by numerous writers. On the other hand, if the hypothesis is wrong and alcohol, toxins, and other deleterious agencies do *not* affect offspring, it is evident there will be no degeneracy. On the contrary, the race, by the weeding out of its weaker members, will tend continually to grow stronger. We will have then a simple case of natural selection. In the case of alcohol the removal of drunkards—i.e., those most inclined to drunkenness—will tend to render the race more temperate; in the case of disease the elimination of the least resistant to any disease will tend to render the race more resistant to that particular disease. Here, again, the result will be inevitable. We have thus a simple but entirely conclusive means of testing the doctrine of degeneracy.

Before applying the test, however, it should be noted that we are really dealing now with two fundamentally opposed and quite incompatible doctrines of heredity and therefore of evolution. Natural selection implies evolution through the operation of injurious agencies which, by destroying the unfittest, raise the "racial mean" by the gradual accumulation of favourable variations in successive generations. But if these injurious agencies—e.g., privation, alcohol, and toxins—cause degeneracy in offspring there can of course be no natural selection, since under such conditions every variation must be unfavourable. Now all races, especially in the plant and lower animal worlds, are subject to deteriorating agencies. It follows if the doctrine of filial degeneracy held almost universally by medical men be true that the doctrine of natural selection universally held by biologists must be false. It is quite impossible that both can be true. The medical belief, therefore, raises issues which are vastly more important than appears at first sight. If the views held by alienists and others who have written so much concerning degeneracy are correct it follows that Darwin, Wallace, and Romanes were mistaken; the whole biological work of the last half century is wrong, and biological science is once more reduced to chaos. Let us, then, apply the test. The races of mankind had once a common origin, as is proved scientifically by the fact that they are able to interbreed. The fact that there are big races and small, black races and white, and so forth, proves that they have altered greatly in different directions from the primitive type. In no respect is this divergence greater or of more importance than in the proneness to intemperance or in the power of resisting

disease, some races being vastly more prone to intemperance or less resistant to certain forms of disease than others. Now what direction has this divergence taken? Have races afflicted by alcohol and disease grown more and more degenerate or have they become more temperate and resistant? The answer is decisive. The simple fact is that every race without exception that has command of alcohol is temperate precisely in proportion to its past sufferings from the poison and every race afflicted by any lethal disease is resistant to that disease precisely in proportion to its past experience of it. The Jews and inhabitants of Southern Europe and Western Africa, who have longest had a plentiful supply of alcohol, are the most temperate peoples on earth; North Europeans, who have had a less plentiful supply, are less temperate; the inhabitants of the Western hemisphere, who have had little or no experience of alcohol, are the most intemperate of all; Africans are more resistant to malaria than Europeans; Europeans are more resistant to phthisis than natives of the Western hemisphere; Boers are more resistant to enteric fever and Hindoos to dysentery than Englishmen. Measles and whooping-cough are mild diseases to us; they depopulate the Pacific Islands. In no single instance can it be shown that any sort of degeneration has been caused in any race by alcohol, disease, or any sort of deteriorating agency. Such agencies cause evolution, not degeneracy; were it otherwise the world would be uninhabitable.

The conclusion that medical men are mistaken in their doctrine of degeneracy, then, is irresistible. That doctrine is supported by nothing but statistics of the vaguest description which have been allowed to pass unquestioned only because they were in accord with an ancient and very natural myth. They are not half so voluminous and precise as those formerly published in support of the exploded doctrine of the transmission of acquirements and which all men found so convincing till the critical faculty had been awakened by doubt. In the case of alcohol the research committee of the Society for the Study and Cure of Inebriety, after investigations extending for nearly two years, quite failed to discover any evidence that parental intemperance affects offspring and, as you may remember, a prolonged discussion (April 6th to Sept. 21st, 1899) in the columns of THE LANCET gave no better results.

I am, Sirs, yours faithfully,

Southsea, June 27th, 1903.

G. ARCHDALL REID.

GENERAL INFECTION BY A NEMATODE.

To the Editors of THE LANCET.

SIRS,—Since publishing my article "A Case of General Infection by a Nematode" in THE LANCET of May 23rd, p. 1435, I have examined the blood of a number of persons and I find the same nematode in a large proportion of cases; its presence is indicated by troublesome itching of the skin on the flexor aspects of the upper and lower extremities and the chest.

I believe that the infection is spread by means of the milk-supply, as I have found it therein on several occasions. I would emphasise the necessity of first boiling milk where used in large quantities for low diet.

It is my opinion that this parasite has been brought over from South Africa by our returning troops, the cycle being completed by means of the sewage farm, turnips and other roots, cows and their milk.

I am, Sirs, yours faithfully,

J. DENCER WHITTLES.

The University, Birmingham, June 25th, 1903.

MOTOR CYCLING.

To the Editors of THE LANCET.

SIRS,—The advantages of motor cycling as a means of locomotion for professional men are not sufficiently appreciated. During the last few months I have ridden hundreds of miles on a small Werner cycle both in town and country and it has occurred to me that my experiences might be of interest. I have been a cyclist for many years and I have from time to time employed the ordinary "push bicycle" in my work. During last March I decided to get a motor cycle, and after careful consideration and consultation with some motor-cycling friends I decided that a one and three-quarter horse-power Werner with a 22-inch frame was the most suitable for my work and I accordingly

procured one. I had no difficulty in familiarising myself with the working of this machine, for its construction is simplicity itself. Needless to say there have been some temporary troubles such as occur to all cyclists—such as soiling of the trembler, slipping of the belt, misfiring from excessive lubrication, fouling of the sparking plug, &c.—but I have had no serious mishap or breakage. At the end of March I was a fairly efficient rider and I was able to get about with comfort and ease. In the second week of April I was able to dispense with the services of one horse and in the first week of June with those of a second. I do not care for cycling in wet weather and I am therefore not able to dispense entirely with horseflesh. The cycling has given me a great deal of pleasure and I have been able to get over my work in a much shorter time. My health is also much better, as I am now compelled to take more exercise. These facts are sufficient to indicate that motor cycling may be not only pleasurable but also profitable to the medical practitioner. The one drawback to motor cycling is the vibration, but this I have reduced to a minimum in my Werner by not inflating tightly my front tyre and by employing a large motor saddle. The vibration in my new two horse-power 1903 Werner has been reduced very greatly. With experience in riding it is not necessary to put any great weight on the handle-bar. On an open stretch of road with no obstacles my machine will steer itself without my touching the handle-bar.

My advice to those about starting motor cycling is to get a low frame of 22 or 24 inches. With this, if in difficulties from any cause, the feet of an average man can be put on the ground at once. Great speed is not necessary; a strong, reliable machine, from one and three-quarter to two horse-power, weighing about 100 or 125 pounds, with good brakes, is all that is required. With this machine most hills—all in my neighbourhood—can be climbed with ease. It is well to carry a spare belt and to change belts when the machine gives warning of belt-slipping. It will be well to carry on long journeys some spare parts such as springs, &c. There are many other details which I might supply, but if any man with average mechanical dexterity will carefully study the construction and working of his cycle he will have no formidable difficulties to contend with.

I am, Sirs, yours faithfully,
Cardiff, June 27th, 1903. P. R. GRIFFITHS.

INCOME TAX ASSESSMENT AND THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—Mr. Ritchie in his Budget speech admitted the injustice of the manner in which the income tax is at present assessed and levied and promised to give the matter his consideration with a view to reform, and has within the last few days appointed a select committee of which Sir Michael Hicks-Beach is chairman. It is the plain duty of the medical profession to lay before the committee such evidence as will bring about an amelioration of our treatment. The long and costly training, the arduous nature of the work by night as well as by day, the inevitable and heavy expenses, the few prizes, the many blanks, and the small average net incomes, the strictly personal and precarious character of the work which causes all earnings to cease during illness or incapacity, the short average duration of life which is less than that of other professions, such as the clerical and legal, and the alarming increase of insanity from the intolerable strain, form strong grounds for claiming more lenient treatment than is at present accorded to us.

I am, Sirs, yours faithfully,
Harley-street, W., June 24th, 1903. J. FLETCHER LITTLE.

THE ROYAL DENTAL HOSPITAL AND ITS ANÆSTHETISTS.

To the Editors of THE LANCET.

SIRS,—On June 16th the committee of management appointed six honorary anæsthetists and two paid "house anæsthetists." The six senior anæsthetists were appointed in order of their former seniority on the staff, Mr. Harvey Hilliard being reinstated to the original seniority that he had lost through having once resigned his appointment. By this arrangement I was made seventh on the list and was consequently not reappointed.

The precise advantage gained to the hospital by not reappointing to the staff all who applied for reinstatement at the instigation of the circular letter of the chairman is not obvious. The late dental superintendent, upon whose criticisms the recent effort to get rid of the staff was based, is, I am informed, appointed to one of the paid appointments. Under the existing arrangement the anæsthetic work at the hospital will be conducted one morning or one afternoon each day by a paid "house anæsthetist" and not by an honorary anæsthetist. During the six months that the committee of management have been considering the matter the work of the anæsthetic department of the hospital has been conducted by the former staff of anæsthetists with only one hitch, the hitch being that the salaried official did not turn up at the hospital during the absence of one of the staff, so that the administrations had to be conducted by a qualified medical man who was a dental student.

I am, Sirs, yours faithfully,
Old Burlington-street, W., June 27th, 1903. GEORGE FLUX.

THE GENERAL MEDICAL COUNCIL AND THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—Under the above heading a letter appeared in THE LANCET of June 27th, p. 1839, from Mr. F. W. Collingwood, in which he writes, "no man will take a diploma when he has reasonable facilities for taking a degree, provided the respective standards nearly approximate." So far I am with him, but we part issue when he continues, "It is on these grounds that the Colleges should, I submit, be merged into the University of London."

Thanks to your courtesy this subject was pretty thoroughly gone into in your columns some six months ago, with a result which was more gratifying to those London graduates who took an interest in the matter than to the advocates of the scheme for associating the London University and Royal Colleges for examination purposes. I contended then, and I contend now, that the respective standards of the two sets of examinations do not "nearly approximate" and that therefore any suggestion that the two should be merged is unreasonable. It is in no dog-in-the-manger spirit that I oppose this scheme, but rather in that of the dog in the kennel who has only won there with some difficulty and who, not unnaturally, therefore, eyes with disfavour any attempt to force an entrance from the rear. Anyone who cares to know the *pros* and *cons* of this question can learn them by looking up the back numbers of THE LANCET.

I am, Sirs, yours faithfully,
Fulham, June 29th, 1903. C. FRANCIS STEELE.

THE MUTILATION OF PRESCRIPTIONS.

To the Editors of THE LANCET.

SIRS,—I am sending under separate cover a copy of the *Eastbourne Gazette* which contains the report of a case of importance under the Food and Drugs Acts. A prescription was written and taken by a sanitary inspector to various chemists and in one instance 78 per cent. of the principal drug—viz., mercuric chloride—was left out, although only one-sixteenth of a grain per dose had been prescribed by me. What I think is interesting to call attention to is the extraordinary defence of the defendant's solicitor—namely, that as it was the ordinary full dose as given by the British Pharmacopœia he thought it would be safer to give a smaller dose. Such an extraordinary proceeding deposed to by a chemist before the magistrates, involving the altering of a medical man's prescription to suit his fancy, is, I should say, unique.

I am, Sirs, yours faithfully,
Eastbourne, July 1st, 1903. W. G. WILLOUGHBY,
Medical Officer of Health.

* * We have read the report in question, which shows well how entirely the public and the medical man are at the mercy of the druggist. The circumstances in which a well-merited conviction was arrived at may be detailed later.—ED. L.