MR. SHAW ON DOCTORS

BY

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[As Mr. Bernard Shaw has attacked medicine and the medical profession in his new book "Everybody's Political What's What," we asked Prof. Greenwood to pick out some points for criticism in a review that should help non-medical as well as medical readers to get the matter in perspective.]

If it is possible for a humane man living in the year of our Lord, 1944, to be happy, Mr. Bernard Shaw should be a happy man. He began life with few material advantages, his earlier writings were consistently and grossly misrepresented; now, in the evening of his days, he is among the half-dozen writers of English universally known and read. Those who disagree most vehemently with many of his opinions will, if they have what Disraeli described as the rare virtue of gratitude, thank him for some happy hours and valuable instruction. Mr. Shaw has never hesitated to denounce other men in the strongest language, not only when he was young and unknown, but now, when he is old and famous. If, in commenting upon some of Mr. Shaw's assertions, I forget what is due to a man old enough to be my father, I hope that the Editor will use his blue pencil ruthlessly. Every man is in debt to his profession, but our profession has no need of wounding invective; *non tali auxilio nec defensoribus istis tempus eget*.

We all know that words change in meaning with time; the word *prove* is a good example; once—as illustrated by the saying "The exception proves the rule"—it meant to test or to try; now it means to most of us "to demonstrate the truth of by evidence or argument." In this latter sense we can hardly prove anything intellectually save by a deductive process. I cannot prove there are milestones on the Dover Road to a man who has never left Boston. I can say I have seen them; neighbours of his who have travelled along the Dover Road can say they saw them. If he is a normal being he will accept that evidence and also believe there are milestones on the Dover Road; but if the existence of those milestones conflicts with some doctrines he believes intensely the testimony of his neighbours would not shake his conviction, nor would the testimony of his own eyes. Few people hold beliefs inconsistent with the presence of milestones on the Dover Road. Many believe that the injection of "filth" or "poisons" into the bodies of healthy children is horrible; Mr. Shaw is one of these people, and no evidence we could produce would shake his belief. All one can do is to try to state a case fairly for the consideration of those whose beliefs are not so vivid; and, of course, one is under two disadvantages. The first is that Mr. Shaw is one of the most accomplished writers of our time; the second, that he is not hampered by regard for dull exactitude of statement. He says himself: "It is always necessary to overstate a case startlingly to make people sit up and listen to it, and to frighten them into acting on it. I do this myself habitually and deliberately" (p. 49).

The method of Miss Pross applied by a first-rate writer is formidable, because one is easily betrayed into anger. Thus, when we are told that Lister was a half-wit, or read an innuendo that diphtheria prophylaxis has had something to do with the increased prevalence of epidemic poliomyelitis, or—worst of all—a, to me, horrible insinuation that the treatment of venereal disease may be responsible for its signs and symptoms, there is a temptation to play Mr. Shaw's own game—viz., to repay abuse with abuse and by playing it badly to lose the game.

Mr. Shaw writes: "Eminent mathematicians of my acquaintance have gone to Monte Carlo, where, having proved that certain results of spinning the ball on a roulette table could occur only once every thousand years, they saw them occur three times in seven weeks." No mathematician, however eminent, could prove—in either sense of the word—that any result could occur only once in any number of trials; what he could prove (in the modern sense of the word) is that on a particular hypothesis such or such result will on the average occur only once in so-and-so-many trials. If on trial the result happens much oftener—or much less often—than his calculation requires, he will ask himself whether the hypothesis upon which

the calculation was based may not be inapplicable, and will reject the hypothesis if there is an acceptable alternative. Suppose we have a statistically ideal, and very rarely realized, experiment. We have patients all of the same age, sex, occupation, nationality, all at the same stage of a disease, half treated expectantly, half receiving treatment A. Suppose that a statistician fulfilling one of Mr. Shaw's statistical requirements—viz., he must not be a "doctor"—makes the appropriate calculations and finds that if remedy A had no influence the advantage in fatality rate the treated had over the untreated would occur only by "chance" on the average once in a billion trials. Then, if A has a rationally acceptable basis, most people will prefer the hypothesis that treated and untreated groups were not *in pari materia* to the hypothesis that a very unlikely event has happened. At the risk of being pedantically dull, I must stress this point. If treatment A had consisted in sticking a postage stamp (without the knowledge of patients or staff) on half the bedsteads, odds of billions to one would not generate any belief in the therapeutic virtues of postage stamps. Of course astronomically improbable events happen every day. The chance that a pack of cards shall be dealt in any assigned order is the same and less than one in a billion; we suspect a joke or a fraud only if the particular order in which the cards fall suggests design.

Here we have the case for the scepticism of a Charles Creighton. If vaccinia was a different disease from variola, or, as I think we should now say, the viruses had no biological kinship, Edward Jenner was doing something wholly without rational precedent or analogy. Like many book-learned men, Creighton despised the views of the unlettered, and, judged by a Creightonian standard, Jenner was unlettered. Creighton contemptuously dismissed Jenner's observations on the habits of the cuckoo not recorded by learned authors as a tissue of absurdities (they have been verified in our own time), and to him vaccination was also a scientific absurdity. If, therefore, statistics did—in the sense of my comparison—show long odds against the differentiation of the groups vaccinated and unvaccinated being a chance happening, he could not accept a hypothesis that vaccination itself differentiated the groups. He did not adopt so readily the view that the statistics were faked, as Mr. Shaw does—no doubt Mr. Shaw would remind us that Creighton was after all a doctor—but he did not accept their *prima facie* suggestion. All through, the gravamen of his charge was the biological absurdity of the process.

Almost a generation after Creighton's critique of Jenner, Monckton Copeman successfully inoculated a monkey with variola and by innoculation from the monkey produced vaccinia in a calf; later still Mervyn Gordon by cross-immunization found an affinity between variola and vaccinia virus, but none between variola and varicella. So it seemed to most of us, not of course to Mr. Shaw, that Jenner's preposterously false analogy was after all a true analogy—a lucky guess or an intuition of genius. That is why to moderately sceptical people—I have been told that my own department is known as the cold-water department, so perhaps I am not wildly credulous—it is easier to accept the hypothesis that the advantage on paper of the vaccinated is not due to chance.

Mr. Shaw, of course, would agree: he would offer at least two alternatives to "chance." The first—the one I think he prefers—is that the statistics have been deliberately falsified by the doctors; the second, that vaccinated persons have generally been better fed and better housed than the unvaccinated. I will not play Mr. Shaw's game by flying into a temper, but try to consider *how* such data as those of the Metropolitan Asylums Board hospitals, which monotonously showed in each large age group a much lower fatality rate on the vaccinated than on the unvaccinated, could have been faked. We must believe that the doctors were such masters of prognosis that on the admission of a patient they could tell whether he would die or live, that, however obvious the vaccinal scars on an arm, obvious to the nurses and the patient's friends, they could go on weighing down the scales of the unvaccinated group with well-vaccinated patients doomed to perish. If I favoured Mr. Shaw's vocabulary I should say that only a half-wit could believe anything so silly. The alternative that only well-fed and well-housed people were vaccinated—which dialectically makes hay of the complaint that compulsory vaccination was an odious tyranny

practised on the poor—is not supported by any cogent data and has against it Macdonnell's analysis of Glasgow experience (it is true that a doctor, Brownlee, provided the data, but then Macdonnell was not a medical man, which guarantees his statistical impartiality by Shavian standards).

But Mr. Shaw will still boast that after the introduction of compulsory vaccination there were epidemics of smallpox. It is true that Jenner himself believed, fanatically believed, that no properly cow-poxed person could take smallpox, so that if after compulsion all the inhabitants of England, France, and Germany alive in 1870 had been vaccinated the event proved that Jenner was mistaken. Of course even in Government-fearing Germany many were not vaccinated, and the question is not whether Jenner put his claim too high but whether on the whole, on the average, vaccination has saved lives. Many people have lost their lives in Anderson or in Morrison shelters, but I think when the time for rendering a statistical account comes it will be found that these shelters saved lives. Our gratitude to the inventors will not be diminished even if we find—as we may—that the value of the protection was less than they had hoped it would be. Mr. Shaw is not one of Disraelie's rarities; he is not a grateful person. He agrees that the revolution in surgical practice due to Lister saved many lives, but because Lister overstated a case and did not anticipate discoveries made fifty years later Lister is a half-wit at whom a gentleman who is not known to have saved any lives may point the finger of scorn.

I have lingered over the smallpox tale, tedious as it must be, having been told much oftener than twice; but the case for diphtheria prophylaxis involves no new statistical principle; the pros and cons are as before. One relatively new argument has been used—namely, that before active immunization was introduced diphtheria mortality and morbidity rates were declining and we have confused *post* and *propter*. It is only a relatively new argument, because Creighton had argued that by the end of the 18th century smallpox was an obsolescent disease. The best discussion I know is in Dr. W. T. Russell's recent report to the Medical Research Council (that Mr. Shaw may not dismiss Dr. Russell unread, I note that he is a Doctor of Science, not Medicine). In New York and in Toronto the annual case rates of diphtheria were declining from the beginning of this century; in the former city diphtheria prophylaxis was not introduced on a large scale before 1928, in the latter not before 1931. Dr. Russell graduated the trends of the pre-immunization periods by exponential curves. He then extended, extrapolated, the curves over the period of active immunization. The result was that the "predicted" rates were much higher than the observed rates. This, impressive enough to a layman, is even more so to a statistician who plays the fascinating game of prophecy, because one almost always finds that the prophecy is better than the truth: part of the reason is that as one approaches zero rates improvement is likely to be much slower than the comparatively simple curves which give a good graduation allow. Most people will, I think, accept the result as cogent evidence that active immunization did greatly quicken up the decline. The alternative, which Mr. Shaw will adopt (unless, of course, he prefers to believe that from the start of immunization the statistics were faked), is that aesthetic sanitation which had reduced the incidence so successfully over 28 years was suddenly intensified in these two cities just when active immunization began.

Mr. Shaw devotes a chapter to the praise of statisticians, and although I am excluded from this class by the possession of a medical diploma, I still wish to be grateful, because I can remember the time when there was no passion for statistics in the medical profession. But a passage on page 246 supposed to be descriptive of writers in *Biometrika* forces one to conclude that it is not only a medical qualification which obstructs admission to or involves expulsion from the statistical paradise. Should a non-medical statistician reach conclusions of which Mr. Shaw does not approve, his mathematics will not save him—he too will be a half-wit if not a knave, in fact "as credulous, as prejudiced, as thoughtless as to the facts they were measuring and the assumptions from which they started as Isaac Newton himself."

I have confined myself to an examination of the case for and against modern methods of prophylaxis, because, whether my

conclusions are right or wrong, at least I have studied the evidence closely and had a good deal of experience of statistical methods. Other topics of Mr. Shaw's book tempt me to be polemical. Mr. Shaw seems to me wholly to misunderstand the fundamental principles of the experimental method, and it seems a pity he did not listen more attentively to the expositions of his friend Sir Almroth Wright—one of the very eminent investigators not classed as a half-wit. But many colleagues understand that subject better than I do, a remark which applies to Mr. Shaw's view of medical tyranny.

SOCIAL MALAISE AND DISORDER

VIEWS OF THE MEDICAL WOMEN'S FEDERATION

For some time the Medical Women's Federation has been anxious to express its views on certain aspects of social medicine. At a recent meeting of its Council the work of a small subcommittee was approved in the form of the memorandum printed below:

Medical women are frequently invited to express their views on the reported increase in venereal diseases, and the Medical Women's Federation considers that it may be timely, in view of anticipated medical and security legislation, to set out in general terms conclusions collectively arrived at as a result of the experience of its members during the last war, the uneasy interval, and this war. While there is naturally divergence of professional opinion as to the best methods of handling so controversial a problem, there is complete agreement that the eventual solution must depend in large measure on a clear recognition of the relation of venereal disease to social and personal maladjustments, which has been much accentuated by war conditions. V.D. cannot be regarded merely as an acute contagious illness which affects only those directly infected; it can never be eradicated solely by medical precautions and treatment however sound and effective in themselves; and it is to the wider implications of the presence of venereal diseases, with their deplorable results on the health of the nation, that the Federation desires to direct attention.

The Federation holds the view that doctors, while having an obligation to society for the treatment of individual patients, have also a duty to interest and educate public opinion in medico-social questions so that these may be approached with understanding and sympathy.

It is realized that the war has brought out splendid qualities in many people, and that young people in particular are displaying magnificent courage, endurance, and selflessness; yet at the same time, partly as a result of the very conditions calling forth such qualities, it is clearly seen that there also exists an accompanying state of serious social malaise. Social disorders are associated with a failure to develop and practise an ideal of conduct, as well as with a lack of discipline and sense of personal responsibility. Such conditions are likely to lead to an increased state of unrest and a diminishing degree of happy satisfaction in life.

Among the signs of social malaise and disorder are found:

1. A lowering of the standards of honesty and of consideration for others.
2. An increase in delinquency, including juvenile delinquency.
3. A more widespread and growing habit of indulgence in alcohol among young people.
4. The loosening of family ties.
5. Sexual incontinence, promiscuity, an increase in soliciting, and a consequent rise in the incidence of venereal disease.
6. The toleration of a low standard of certain types of reading matter and of public entertainment.

We believe that an acceptance of materialistic ideals as the main standard for living has led to spiritual poverty and unthinking egoism. The sense of insecurity of life, the loss of home background and other dislocations of war have added to the confusion. The immediate satisfaction of an impulse is often accepted as justifying any action. This is seen in the increase of petty misdemeanours, and still more in irresponsible sex relationships.

We believe that continence (apart from marital relationship) is the ideal for both sexes if the vitality of the race and the happiness of individuals is to be ensured. We condemn the