oil. The difference in the frequency of respiratory infections in the two groups was very striking during the winter, but during the summer, when all the children were much out of doors, vitamin D consequently being produced in the patients' own tissues, there was little difference between the susceptibility to catarrhal infections of the two groups.

The PRESIDENT felt that the high mortality of pneumonia in young children did not redound to the credit of the profession, and that more active measures were necessary. He strongly recommended immuno-transfusion as a method of treatment in urgent cases of infective disease.

THE HISTORICAL ASPECT OF QUACKERY.*

BY

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THE term quack simply means one who pretends to knowledge or skill that he does not possess, and the fact that this term has come to signify in popular usage a pretender to medical knowledge indicates very clearly that there is something about the cure of disease that particularly attracts both delusion and imposture.

The quacks who prey upon human suffering are actuated by a variety of motives, the simplest of which is frank greed, and to it we owe the semi-permanent commercialized quackery of so-called patent medicines. Among the ordinary quack medicines are sensational examples of the utter callousness and recklessness of those who seek to exploit human suffering for gain, and also remarkable evidence regarding the unlimited gullibility of the general public; but these traits are exhibited in many other fields of human activity, and therefore have no specific interest to students of medical history. There are, however, other aspects of quackery which I believe deserve the attention of medical historians, not because their study throws any light on the history of the development of medical science, but because it provides evidence regarding the reaction of the popular mind to the spread of this science.

The question that I wish to consider is why the general public so often turns away from the medical profession and follows quacks who pretend to the possession of cures unknown to medical science. Such pretenders usually claim direct personal inspiration and in consequence assert complete independence of medical science. The nature of the cures is so varied as to defy classification, but usually their freedom from the fetters of science causes them to be cures applicable to all diseases.

Prior to the seventeenth century the occurrence of such revolts from official medicine was not surprising, for orthodox medicine was based not on experimental science but on the authority of Galen, and the recognition of any infallible authority always arouses the opposition of all those who wish to think for themselves. Many revolts of this nature led to valuable results because they favoured the testing of the accuracy of dogmas held to be infallible. The career of Hahnemann, however, is a striking example of the way in which a rebel against authority who commences with an appeal to reason may finish by establishing a dogmatic faith even more absurd than the orthodox traditions he tried to explode.

Prior to the nineteenth century the quack might claim that he was merely asserting the authority of his reason against the weight of tradition, but during the past century medicine has broken away from tradition and to-day claims to be an applied art based on experimental science. This change has been accompanied by an unprecedented increase in the efficacy of medical methods, and hence to-day the quack challenges not tradition but the findings of experimental science.

Another outstanding feature of the nineteenth century was the spread of popular education, and many imagined that this alone would be fatal to quackery. The fallacy of this belief is, however, well illustrated by the experience of the medical profession in Germany. The laws of Prussia

forbade the practice of medicine by unqualified persons, but in 1869 general liberty to practise was granted. This change was indeed supported by the physicians, partly on the ground that the repressive legislation was ineffective, but also partly because it was believed that the spread of popular education would safeguard the people from being deceived by quacks. The number of quacks in Germany is known because they are required to register, and their number has steadily increased until to-day the proportion in Berlin between quacks and medical men is one to three and a half; the proportion throughout the whole of Prussia is nearly one to four.

In consequence the German medical profession is now agitating to induce the Government to protect the health of the people by restricting the activity of quacks. Since Prussia is one of the best educated nations in Europe I think this is a very striking evidence of the fact that the spread of education does not influence the popularity of quackery, although it may influence the form which it assumes.

The activities of the quacks, therefore, have not been checked by the dramatic successes of medicine nor by the spread of popular education. At the same time there is a considerable amount of evidence to indicate that while the medical profession has become more scientific and more successful, it has also become increasingly unpopular with the masses. The last century has seen the development of numerous popular agitations against medical science, such, for example, as the antivaccination and antivivisection movements, and there is no evidence that the popularity of these causes is decreasing. This opposition is not confined to the uneducated, but finds its leaders amongst those who claim to be pioneers of advanced thought.

The present situation is indeed rather curious, for whilst medical science has advanced from triumph to triumph and is even now steadily increasing its powers to combat and control disease, yet a large section of the population appears to regard the profession with distrust and to turn eagerly to any charlatan, however ignorant, who chooses to claim that he possesses special or supernatural powers of healing.

A consideration of the careers of the outstanding charlatans furnishes some clue to the factors upon which their success has depended. The common type is that of a man of unusual force of personality who in virtue of an imperfect education and ill balanced judgement has acquired the profound belief that some direct inspiration has made him independent of the slow advance of science and has endowed him with semi-miraculous powers of healing. The list of these persons is long. A hundred years ago Perkins persuaded millions that all disease could be cured by stroking the body with two pencils of metal, whilst to-day the followers of Abrams believe that all diseases can be both diagnosed and treated by means of two boxes containing some simple electrical apparatus.

In addition to the cures that achieve fame there are, of course, an indefinite number that fail to catch the public fancy, and it is puzzling to know what are the factors that ensure success, for often the failures appear to be much more ingenious and attractive than the successes. The truth appears to be that reason is not involved in the process, but that the initial success depends on the personality of the healer and subsequent success is ensured by mass suggestion. The reason for the successes is that these mysterious cures provide what the public want, for they furnish an escape from science and a line of retreat back to the old primitive beliefs of the cave man. The facts regarding the fundamental beliefs of mankind have been summarized by Sir James Frazer¹:

"When we survey the existing races of mankind from Greenland to Tierra del Fuego, or from Scotland to Singapore, we observe that they are distinguished one from the other by a great variety of religions. . . . Yet when we have penetrated through these differences, which affect mainly the intelligent thoughtful part of the community, we shall find underlying them all a solid stratum of intellectual agreement among the dull, the weak, the ignorant, the vast majority of mankind. . . . This universal faith, this truly catholic creed, is a belief in the efficacy of magic. . . . Among the ignorant and superstitious classes of modern Europe it is very much what it was thousands of years ago in Egypt and India, and what it now is among the lowest savages surviving in the remotest corners of the world."

* Read in the Section of the History of Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1927.

¹ *The Golden Bough*. Abridged edition, 1925, p. 55.

It is in this universal and eternal creed that the charlatan finds his support. In a civilized community the belief in magic is concealed beneath the veneer of education and does not obtrude itself in normal life, but the veneer cracks as soon as any strong emotion is aroused, and both pain and fear of death are potent causes for arousing such emotions. The exactitudes of science are utterly antipathetic to the sick person, who resents being regarded as a "case" for whom the chances of recovery are so many per thousand. The more intelligent turn to religion and to spiritual healers to appeal to some higher power to intervene on their behalf and set aside the soulless laws of nature that are threatening their safety.

The less intelligent revert to the oldest form of belief and seek someone who will make strong magic for them and defeat the evil spirits by some potent charm. This is the feeling to which the quack appeals; he claims to be above the laws of science and to possess some charm for defeating disease of any variety.

The nature of the charm changes with the growth of education. A naked nigger howling to the beat of a tom-tom does not impress a European, and most modern Europeans would be either amused or disgusted by the Black Mass that was popular in the seventeenth century. To-day some travesty of physical science appears to be the most popular form of incantation. But although the form is changeable yet the underlying belief is unchanging and ineradicable, and I think that the medical profession must face the fact that, although their alliance with science has brought them great material success, yet it has brought its special penalty in that it is ever alienating them to an increasing degree from the fundamental beliefs of the common man.

THE TREATMENT OF BURNS.*

BY

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It is highly advisable from time to time to review our doctrines on treatment, even the most orthodox. We must be ever on the watch for discoveries in collateral science which may be applicable to our own. Many conundrums are awaiting for their solution the preliminary discovery—Pasteur must precede Lister. In the case of burns we are confronted by several problems.

Pain.

Anyone who has been at all severely burned will at once assert that the only problem in burns is the relief of pain, and that in the quickest possible time. I readily agree that it is the most important part of the subject. If this were the only item to be dealt with there would be no difficulty, but our remedies to ensure immediate mitigation of the disaster must not endanger the future for the victim. Fortunately the perception of pain is limited by exhaustion of the nerve centres, and most of those fatally burned are ominously comfortable during the brief interval between the accident and death.

Children are peculiarly susceptible to injury from burns, and most of us have been shocked by an unexpected fatality from a trivial burn. The much disputed status lymphaticus (in the absence of more precise knowledge) brings an otherwise unwarranted death into line with other injuries. The resistance to toxæmias is in those cases much lowered; the fatty degeneration of the liver frequently found at the necropsy may have some bearing on the fatal issue.

For the majority of patients who recover extensive resort to sedatives is necessary, and it is of great importance that their remote general effects be closely watched. I might suggest that the prolonged administration of chloroform, not as an anaesthetic but as an anodyne, may be less toxic and dangerous than the corresponding amount of morphine. The inhalation of a diluted vapour may be allowed for long periods, and may be safely carried out by a trustworthy nurse.

The surgeon's visit to a ward containing the victims of burning is evidently a time of trial to the patients; they

clamour for chloroform, morphine, and death. I know of no condition which occasions such an accumulation of suffering in a single ward. The remedies we employ will require to be many-sided, more than one effect being demanded. For example, while a remedy may be soothing it must not encourage suppuration or discharge. In exceptional instances an extensive burn is tided over the period of initial shock, and the subsequent treatment becomes daily more onerous. For these patients the continuous bath, where circumstances will permit, is a satisfactory plan; unfortunately in only a few cases can it be made available. Next to the principle of relieving the pain, the exact nature of the first dressing is of importance. Where bullae are present it is not my practice to drain them, the effused serum being the best covering possible; when they show signs of pus formation they should be emptied. Spraying the area involved with wax solution and covering it with an oily and bland substance are procedures which have rightly found a lasting place in treatment. I would suggest the value of covering the scorched surface with waxed paper; angles may be cut to allow of the discharge reaching the dressing. Such waxed paper may be sterilized without detriment. A thick tissue paper soaked in carbolic oil may be also similarly used.

There are few cases where good nursing is more rewarded; extreme gentleness in handling is demanded, and the raw surface should never be wiped with gauze, any discharge being washed off. I firmly believe that the pain associated with a burn, in all but the final stage, is the cause of most of the trouble met with; hence applications which relieve pain will give better results, even remotely. Thus alcohol has achieved some reputation as a suitable application; its effects are not due to its antiseptic action, but to its anaesthetic action on the nerve endings and to its desiccating properties. The possible precipitating effect on toxins can be ignored. In picric acid we have another remedy which is very effective, not altogether because it is an antiseptic, but because it is analgesic, and also because it coagulates albumin. By thus causing the production of a layer of sterile albumin which is at the same time emanating analgesic properties a very good effect is produced. Picric acid is one of the scheduled explosives, and can only be procured in solution or in gauze. It may be applied in a saturated solution, but should not be spread too extensively because of its own poisoning properties. Toxicity may be recognized by the onset of fever, accompanied by a rise in pulse rate and the production of a widespread itchy mealy rash. The urine becomes green tinted as in carboluria, and there is much general distress. After mitigating the pain future contingencies must be considered.

Shock.

The treatment of this accompanying condition should be conducted along recognized lines. Repeated small doses of opium or morphine with oral administration of alcohol should be given. If alcohol is being extensively applied as a dressing some will be absorbed, so it need not be given otherwise. In a burn the central nervous system is stimulated to the point of exhaustion, and there is no want of explanations for many of the associated phenomena.

The Body Fluids.

It has been shown that the blood tends to become—at first at any rate—concentrated and less alkaline, as well as to contain more waste products. The symptoms have been explained as being largely due to absorption of substances produced in the tissues by the destructive action of the heat, but this cannot be merely a chemical reaction. Some time ago in attempting to get protein shock I injected the products of partial destruction by heat of animal tissues, but neither intravenous nor intracellular injection caused the slightest effect. It is also affirmed that the chlorides are reduced as in pneumonia, and indeed in many other diseases. A diminution in the chlorides is more usually associated with an alkalosis. From whichever point we view the subject the essential treatment, whether acidosis or alkalosis be present, is the administration of fluid; this may be loaded with alkalis or sodium chloride—I do not think it matters which—provided we introduce fluids into the circulation.

* Read in the Section of Surgery at the Annual Meeting of the British Medical Association, Edinburgh, 1927.