

profession will, I think, agree that should their present proposals meet with the approval of the Departmental Committee now sitting, and should an Anaesthetics Act embodying them be passed, a very great step will have been achieved, and one which will have the effect of reducing the risks of anaesthetics and of restoring public confidence. In order that the views of the General Medical Council upon this important matter may thoroughly be grasped it is necessary to read the report of their Anaesthetics Committee as a whole,¹ and if this be done your readers will, I think, obtain a different impression to that conveyed by the leading article to which I have referred.—I am, etc.,

London, W., Dec. 6th.

FREDERIC HEWITT.

AMBULANCE LECTURES AND VOLUNTARY AID DETACHMENTS.

SIR,—The letter of S. Hillier and the editorial remarks on scouting quincey in your last issue are not entirely unconnected. To take the ambulance lectures first: I think your correspondent is perfectly right in his objection to giving courses of ambulance lectures for the War Office free of charge. It is not uncommon to find people ready to show their charity or their patriotism at some one else's expense. As one of the earliest lecturers on first aid and nursing for the St. John Ambulance Association, I always, on principle, accepted one guinea a lecture, which, I may add, was always cheerfully paid. Our charity may be bestowed in other ways more in accordance with our inclinations and our knowledge of where it is needed most.

As regards the Boy Scouts, it must be regretted that such mischievous directions should have been mixed up with their otherwise excellent rules, and I feel sure that Sir Robert Baden-Powell would be the first to erase them, his one idea being to raise up among the young people of this country a body at once disciplined, honourable, useful, and patriotic. No nobler or more practical scheme has ever been inaugurated for bringing back the British people to a true sense of citizenship and nationhood; but is not the intrusion of absurd and useless rules of treatment common to the teaching of first aid and nursing lectures all over the country? Is it realized that nine out of ten of those who attend these lectures approach the subject for the first time, and are totally ignorant of Latin? Why, then, burthen their puzzled brains with scientific terms which either get jumbled up in their memories or, happily, forgotten? A thorough knowledge of a few simple and practical expedients would be of infinitely more value, and, I may add, more available in case of emergency, if not mixed up with the detail which is now too often demanded (and therefore produced to order) by the examiners in these subjects.

To protect a broken bone one does not require a full knowledge of the skeleton; to stop serious bleeding one does not need to know the names of all the main arteries in the body, or of the valves of the heart. A little knowledge—or, as I would rather interpret it, imperfect knowledge—of many things is a dangerous thing, while a thorough and practical acquaintance with a few simple expedients may save many lives. Words, and especially scientific terms, slip easily out of the memory of the ordinary man, while a practical illustration of what can be done in drowning, serious bleeding from artery or vein, choking, fits of various kinds, broken bone, and many other emergencies which common sense will suggest, live in the memory, and are immediately available, when needed, without the assistance of a notebook.—I am, etc.,

December 4th.

M. B. OXON.

SIR,—The original letter of November 6th by the Representative of the Cleveland Division on the above subject has been so far discussed to my satisfaction in the columns of November 13th, 27th, and December 4th as to seem to require no answer to the letter of the "R.A.M.C. Major (Ret.)" in the issue of December 4th, except to say that civil and military manners differ.—I am, etc.,

THE VICE-PRESIDENT, THE WINCHESTER
DIVISION.

December 4th.

¹ See SUPPLEMENT, December 4th, 1909, p. 360.

A PORTABLE OXYGEN GENERATOR AND INHALER.

SIR,—In producing a portable and practical oxygen generator Dr. Leonard Hill has conferred a great boon upon anaesthetists, and I for one hasten to thank him for it.

In the theatres of hospitals and the best class nursing homes oxygen in cylinders is, of course, always provided ready for immediate use, but in many nursing homes, and in all private houses, it is conspicuous by its absence. I have for years at odd times pondered over the possibility of generating it for myself, but have had neither the time nor scientific knowledge necessary to think out a practical scheme. For a time I carried oxygen in a gas cylinder, but found this too heavy for convenience. Now, in Dr. L. Hill's apparatus comes the very thing I have wanted, and, curiously, this use for it does not seem to have occurred to him.

Dr. Hill will confer a further favour if he can assure us that the heat developed will not be a source of danger in the presence of ether vapour, as an anaesthetist might well be too busily engaged to superintend the cooling of the bag. I presume I may take it for granted that the apparatus could be fitted to an ordinary face-piece for administration to an unconscious patient.—I am, etc.,

London, W., Nov. 26th.

G. A. H. BARTON.

INTERMITTENT CLOSING OF CEREBRAL ARTERIES.

SIR,—The recent discussion on the subject of temporary contraction of cerebral arteries interested me considerably as it seemed to account for some hitherto very obscure cases.

I was reminded of it a few days ago by a visit from a patient I had not seen for a couple of years. On her first visit in 1907, she stated that about a fortnight previously she had been suddenly seized with clonic spasm on the right side with "numbness." The mouth on that occasion only was drawn to one side. This attack and several subsequent ones passed off quickly and she felt no ill effects. Up to the time I saw her she had had several similar seizures. Careful examination failed to discover any cause. On her recent visit she stated that these attacks had continued during the two years, but were becoming more frequent and were always immediately preceded by profuse sweating for a few moments. Now in this case there is, first, relaxation of the systemic arterioles, and immediately after, as I think, contraction of the cerebral arterioles on the left side. On questioning her I found the sense of heat and sweating was chiefly felt to the right side.

I have seen, as I am sure most other practitioners have, these transient cases of hemiplegia where no cause could be traced unless that vague term "neurasthenia" can be called one. The temporary character of these attacks, and the fact that they leave no permanent traces, seems to me to exclude any organic cerebral lesion, and, so far as I can judge, contraction of the cerebral vessels is a reasonable hypothesis. Why it should be localized is probably as inexplicable as "dead fingers."—I am, etc.,

Cootehill, co. Cavan, Nov. 29th.

T. H. MOORHEAD.

THE ORIGIN OF CANCER.

SIR,—Dr. Newbigging's letter (BRITISH MEDICAL JOURNAL, November 13th, p. 1441) is entirely in accordance with my theory, although he says that his views are diametrically opposed to mine. It is not acids generally that I blame, but sulphurous and sulphuric acids in particular. If I am right, the beneficial effects which Dr. Newbigging claims for acetic acid are quite intelligible, since the two are in this respect antagonistic. It is, indeed, to me rather a disquieting fact that SO₂ is now introduced into nearly all wines and preserved fruits simply because it has been found to counteract acetic acid fermentation.

When I am writing, will you allow me to quote a passage from De Bary, which I think may throw an entirely new light on the parasitic theory of cancer, and clear up what are, after all, the only objections to it—namely, that so few actual parasites have been found, that the cancer cell seems itself to be the parasite, and that the heterotype mitosis, which is apparently characteristic of reproductive and germ cells, is also a feature in the multiplication of the

cells of malignant tumours. The Saprolegniae, one of the groups of fungi which live on dead organic matter, are themselves attacked by a parasite known as *Rozella*, the swarm spores of which bore their way into the growing tubes of the fungus. When a spore has effected an entrance in this way it remains visible for a short time in the protoplasm of the tube, and then can no longer be distinguished. It loses its individuality and is lost in the protoplasm of the tube, which at once swells out and divides by transverse walls formed in the same way as in the delimitation of sporangia in normal Saprolegniae. On these surprising effects De Bary makes the following comment:

If no later investigations bring to light facts at variance with those here given, and this, according to Fischer's statements, is not probable, but cannot, however, be considered to be impossible, the above case is an instance of a parasite surrendering its individuality, so far as that can be recognized morphologically, after its entrance into the host; it becomes changed into a part of its host, and the two can no longer be distinguished from one another by our present means of investigation. The parasite also communicates new properties to the host, which is some two hundred times its size, and through them the host develops into its own parasite. This transmutation of the host by the parasitic spore which has coalesced with it, though peculiar, is yet analogous with the fertilizing effect of the spermatozoid on the oosphere of organisms which in the sexual sense are highly differentiated from one another.—*Comparative Morphology and Biology of the Fungi, Mycetozoa, and Bacteria*, page 395.

The italics are mine, but I think that no one familiar with the cytology of cancer who carefully weighs the italicized words can fail to be impressed with their importance. Here we have a parasite so behaving towards its host that its protoplasm is lost in that of its host, and that the cells of the host become its own parasite. Could anything more closely resemble the conditions of the cancer cell?

It must also be borne in mind that this parasite *Rozella* is closely akin to *Plasmodiophora brassicae*, which causes tumours in plants, and to another known as *Woronina*, the morphology and course of development of all of which are so strange that De Bary himself hesitates whether to class them among the myxomycetes as plants or among the mycetozoa or protozoa as animals. We have also the striking fact that Wade and Ford Robertson detected in carcinomatous tumours organisms morphologically identical with *Plasmodiophora brassicae*, and, as pointed out in my *Theory*, that organism has been proved by the Board of Agriculture to be fostered and encouraged by sulphuric acid manures.

In my little book I have given several instances of what seemed to me a close connexion between sulphurous and sulphuric acids and cancer. Since issuing it I have come across another which is certainly curious. In the new edition of Bryant and Buck's *Surgery* it is stated that scrotal cancer nowadays is found among workers in guano as well as among chimney-sweeps and coal-tar workers. This seems inexplicable until one realizes that the richest deposits of guanos have been largely worked out, and that the stores now largely drawn upon are in many cases compact and rocky in texture, and require now to be disintegrated and treated with sulphuric acid (*Encyclopaedia of Agriculture*, vol. ii, p. 287).

I can only say that if these acids have no connexion with cancer I have stumbled across an extraordinary series of coincidences.

Although I at one time accepted the germ-cell theory, some years of work on the deductive method have convinced me that cancer is due to a parasite of the nature to which I have referred. If this be so, it will certainly ultimately be amenable to treatment. Even as things are, rodent ulcer is curable by the ultra-violet rays. This in itself is strongly suggestive, since amoeboid protozoa react vigorously in red light, whose protoplasmic movements almost cease in rays from the violet end of the spectrum.—I am, etc.,

Edinburgh, Nov. 29th.

C. E. GREEN.

TUBERCULOSIS IN CHILDREN AND SCHOOL INSPECTION.

SIR,—I read with pleasure the report on the Tuberculosis Congress at Oxford, published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of November 20th. I was much interested in the papers which dealt with tuber-

culosis in children with special reference to school inspection. In this connexion I should like to make some remarks regarding pulmonary tuberculosis and the medical inspection of school children.

In the first place, it may be taken as undoubtedly true that school life plays a part in the increased incidence of tuberculosis in children. In the second place, it is now more generally recognized that chronic tuberculosis of the lungs is more common in children than was formerly supposed. In proof of this witness the *post-mortem* records of children who have died from other causes, but in whom there is evidence of old-standing or healed tuberculous lesions. In view of the fact that acute tuberculosis of the lungs is a dangerous and fatal disease in children, it stands to reason that healed lesions have in all probability resulted from chronic or subacute conditions.

It is fully believed in certain quarters that the medical inspection of school children will afford an excellent means for the early recognition of chronic pulmonary tuberculosis, but I venture to doubt if this new development will at present fulfil anticipations. In my opinion, chronic pulmonary phthisis in children is one of the most difficult diseases to diagnose, and I fail to see how, in the course of a few minutes' examination, it is possible to come to a definite diagnosis. The conflicting evidence in the reports of medical inspectors lends some support to this conclusion. We find that in one district the incidence is stated as 15.4 per cent, while in other districts the figures given are less than 1 per cent. No doubt the incidence will vary in different localities, but for the present the statistics submitted by medical inspectors are not comparable. There is no standard on which the diagnosis can be based, and the figures merely reflect the personal opinions of the medical officers of the respective districts. Until some definite standard is adopted, and until medical inspectors come into line, it is not possible for any reliable and comparable figures to be obtained.

It may be pointed out that there is no one symptom which is pathognomonic, and that there is no single physical sign on which one can definitely base the diagnosis. Even Grancher's phenomenon, which is essentially asymmetry of inspiration, is not infallible, and cannot be considered in any sense as applicable to every case, nor do I think that the association of dullness on percussion, bronchial breathing, and intermittent crepitations is diagnostic of pulmonary phthisis in the child. It is only after weeks, perhaps months, of careful observation that an approximation to the truth can be arrived at.

I would suggest that all cases in which suspicious symptoms are evident or suspicious physical signs detected should be referred to the family practitioner for further examination and observation. Many of these children, who can best be described as "physiologically delicate," are prone to, and may under adverse circumstances develop, pulmonary tuberculosis, and I believe that if we had the means of directly inspecting the lungs, we should find in some a chronic tuberculous focus. My contention is that the medical inspector with the ordinary means of diagnosis at his disposal, based on symptoms and physical signs, cannot with certainty diagnose chronic tuberculosis of the lungs in every case in which it exists. If in the future school clinics are established, and if certain diagnostic aids can then be made use of, more conclusive evidence may be obtained. At the present time I maintain that the means of diagnosis are inadequate, and, further, that a child will be included among, or excluded from, the tuberculous according to the standard adopted by the medical examiner.

These children, who are the subjects of chronic pulmonary tuberculosis, or who are merely "physiologically delicate," are not, indeed, dangerous to others, but they are physically defective, and are, therefore, not able to compete on equal terms with their more fortunate companions who are in good health. They require most careful medical supervision, and this supervision can be best carried out at the hands of the family medical attendant, or, in necessary cases, by the medical staff of the local hospital. The benefits accruing to medical inspection will fall short of expectations unless there be pleasant relations between the medical inspectors and the practitioners in the district; and in the problem of the future of the tuberculous child, or the child who is