(4) courses of calcium both intravenously and intramuscularly; (5) the usual local treatment. All have failed miserably. Any suggestions will be welcomed.

A.—The diagnosis of persistent ulcers of the tongue in the absence of evidence of neoplasm or syphilis is often difficult. In the present case the duration excludes the former and the Wassermann reaction the latter. There are three possibilities, however, which require further investigation—tuberculosis, vitamin deficiency, and electrolytic effect from dissimilar metals in the denture and any tooth stoppings. Tuberculosis is best confirmed by biopsy, but search of the stools (or stomach washings) for the organism may be of help. The distribution of the ulcers outside as well as on the tongue would agree with a vitamin deficiency, particularly, of course, the B factors, while the dentist should be able to express an opinion as to the likelihood of electrolytic action

Immunization against Pertussis

Q.—*In your review of "Preventive Inoculation," by W. Powell Phillips and C. Woodroffe Anderson (March 20, p. 353), you say, "It is pleasing to note this advocacy of immunization against pertussis; unfortunately the recent work of Bell on the efficacy of two doses of pertussis vaccine at a month's interval instead of 4 to 5 weekly injections came too late for inclusion in the text." There seems to be a good deal of controversy about the best method to adopt. I should be greatly helped if you could kindly tell me which is the work of Bell in which I can see his conclusions on this subject.*

A.—Most of the field trials on the prophylaxis of pertussis by specific vaccines have been done in the U.S.A., where the usual practice is to give 3, 4, or 5 weekly injections of smooth-phase vaccine (10,000–20,000 million organisms per c.cm.) totalling 80,000–100,000 million organisms. To avoid frequent injections of such big doses, which for large-scale immunization introduce difficulties in both production and administration, Bell[1] carried out a well-planned and well-controlled experiment in Norfolk, Virginia, using two 1-c.cm. doses (10,000 million organisms per c.cm.) of alum-precipitated vaccine at one month's interval. Very few children had any systematic reaction. There was some local tenderness and stiffness, but if the vaccine was not injected too superficially the firm nodule which usually developed was not noticed by the parents. The results were similar to those obtained with more frequent and larger doses. In the period of 34 months after vaccination 11.2% and 9.4% of two different age groups developed pertussis, compared with 39.1% and 29.7% among control uninoculated children. As usually happens, pertussis in a vaccinated child was milder and of shorter duration than the attack in uninoculated children. Since then Kendrick[2] has carried out comparative tests with plain and alum-precipitated vaccines, giving three 10,000-million doses of each at intervals of one week between the first and second doses and four weeks between the second and third doses, and she found no significant difference in the protective value of the two vaccines.

Diphtheria toxoid and pertussis vaccine may be combined without any inhibitory effect on the immunizing property of either antigen. It must be remembered, however, that pertussis has an earlier age incidence than diphtheria; in fact, about half the deaths from pertussis occur in the first year of life, so that specific prophylaxis should be begun at three to six months of age.

LETTERS, NOTES, ETC.

The Imperial Institute's Jubilee

On May 10, 1893, one of the least publicized but most useful national institutions in Britain was opened. It was the Imperial Institute in South Kensington, and ever since Queen Victoria performed the ceremony the Institute has carried on with the work for which it was founded. Designed as a shop window and show room in which could be exhibited all the wealth of raw materials that the British Empire can provide, the Institute also had two other functions which it has admirably performed during its 50 years of life. In the laboratories a scientific staff examines samples of minerals and plant and animal products which are submitted from all over the Empire with a view to their being put to commercial use. Not long ago the Colonial Office was anxious to have an assessment made of the nutritional properties of several native foodstuffs grown in Nyasaland; the experts in South Kensington were able to provide the answer. In the plant and animal products department oils, oil seeds, gums, fibres, insecticides, and other materials from all over the Empire can be scientifically examined and their use decided; and the same type of work is being carried out on the Empire's mineral resources in the minerals department. For example, wild rubbers found in Africa are being tested for elasticity and durability—it is hoped that they may help to replace the supplies of cultivated rubber lost in Malaya. Further, the Institute sends films and lecturers to schools and discussion groups all over Britain.

[1] *Publ. Hlth. Rep.*, Wash., 1941, **56**, 1535.
[2] *Amer. J. publ. Hlth.*, 1942, **32**, 615.

Malignant Tertian Malaria

Dr. RICHARD FAWCITT (Ulverston) writes: I have read with interest an account of a case of malignant tertian malaria by Drs. W. L. Anderson and D. B. Bradshaw (April 24, p. 508). I should like to draw attention to the fact that a number of cases were treated at the Albert Dock Hospital in the summer and early autumn of 1940. These cases came from a ship travelling to England by the West African route. My son, Fl. Lieut. J. B. Fawcitt, now serving abroad, was at that time acting as house-physician at the hospital, and, by the kind permission of Sir Philip Manson-Bahr, published an article recording some of the cases in the *London Hospital Gazette* (1940, **44**, No. 1, 9) under the heading of "Subtertian Malaria at the Albert Dock Hospital." Furthermore, he recorded a case in conjunction with A. H. Walters under the title of "Acute Malignant Tertian Malaria: Treatment aided by Reconstituted Serum" in the *British Medical Journal* of Jan. 4, 1941 (p. 14). I trust that these references may be helpful.

Cramp in Arteriosclerosis: A Cure

Dr. J. W. J. WILLCOX (Glastonbury) writes: The one treatment which will cure most cases of cramp at night associated with arteriosclerosis is 3 gr. of quinine sulphate at bedtime. I have not known it fail in any case during the past 3 years, and I can produce 4 patients at the present time who find it infallible. Its use for this purpose is supported by the literature on the subject, to which I am indebted for its introduction, but I confess that my search for a cure extended over 25 years.

*** Under an order, which came into force on Jan. 5 last, quinine and its salts may not be prescribed except as antimalarial drugs.—ED., *B.M.J.*

Supply of Occupational Therapists

Dr. ELIZABETH CASSON writes: May I be allowed to correct an error in the article on rehabilitation in civilian hospitals (April 10, p. 454). It is stated that the sources of supply of masseuses and occupational therapists are the Chartered Society and Dorset House School respectively. "Dorset House School" should read "The Association of Occupational Therapists." The profession is young and therefore small, but it has organized itself well, and though the Dorset House School has been privileged to supply a considerable number of the personnel required for the E.M.S. hospitals, it is only one of several schools whose pupils take the Association examination.

External Application of Opium

Dr. D. PRIESTLEY SMITH (Birmingham) writes: There must be many who can confirm Dr. J. McLaren's observations (March 20, p. 370) that opium and its derivatives do take effect through the skin. It was common knowledge to our medical forefathers. Here is a striking example which anyone can verify: Dissolve two grains of morphine in a drachm of oleic acid, and, with the finger-tip, dab it lightly on the painful area in a case of herpes zoster ophthalmicus. In ten minutes you will find the patient's pain relieved and your finger-tip numb. I do not know of any other treatment that gives the patient so much relief in this condition. Those who say that opium preparations applied externally are useless state what is simply not true. The men of former generations knew better.

"Scientific" or "Unlimited" Freedom?

Dr. DONALD M. O'CONNOR (Brenchley, Kent) writes: The spiritual descendants of the courtiers of King Canute who belittle all existing public medical services and attempt to denigrate any which are suggested for the future exhibit an amazing complacency with the present state of our affairs. Their latest war-cry is a demand for "scientific freedom." During recent years a great part of the profession has exercised its scientific freedom to abstain from learning the indications for the use of sulphapyridine, and to refrain from ascertaining whether these existed in any given case, so that this potently toxic drug has been lavishly administered for any and every febrile condition, and we have arrived at a state of affairs when nearly every mother of a pyrexial child asks on one's first visit, "Aren't you going to give M & B, doctor?" Unlimited freedom, whether it can be dubbed "scientific" or not, has its dangers.

Disclaimer

Dr. EUSTACE AKWEI of Accra, Gold Coast, West Africa, wishes to state that he has no connexion of any kind with Lieut. Eustace Alar Akwei, R.A.M.C., who was referred to in the London *Evening News* of Nov. 25, 1942, under the heading "African posed as Bachelor of Surgery."

Corrigendum

In the leading article on "Medical Applications of the Cyclotron" (May 1) the identity of the Lawrence brothers was confused. The work referred to in column 1 of page 543 is that of E. O. Lawrence (Nobel prizeman) and not J. H. as mentioned in line 11. J. H. Lawrence's work is that described in the middle of column 1 of page 544.