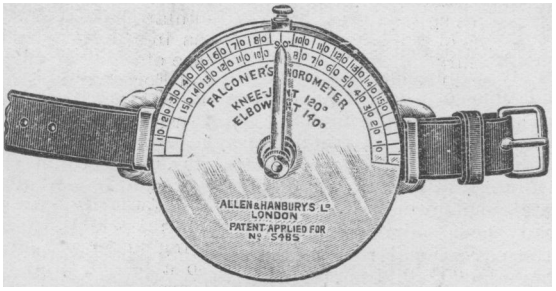
MEDICAL AND SURGICAL APPLIANCES.

An Arthrometer.

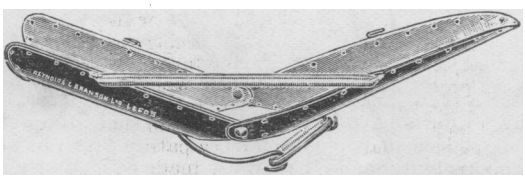
DR. R. FORTESCUE FOX writes: The illustration depicts a new device for measuring the angles of movements of joints, which has been designed by Mr. Wilbraham Falconer, superintendent of mechanical treatment in the Red Cross clinic for the physical treatment of disabled officers. This "arthrometer" is simple in construction and easily adjusted to the limbs, and the measurements



are quickly taken. It is intended to be used with all joints, and therein differs from the various forms of protractors and goniometers at present in use. If properly adjusted to the limb the readings cannot be otherwise than accurate. The apparatus is manufactured by Allen and Hanburys, Limited, 48, Wigmore Street, London, W. 1.

A Splint for Dislocation and Fracture of the Elbow.

Dr. J. C. R. HUSBAND (Ripon) sends a description of a splint he devised some years ago to prevent stiffening of the elbow-joint after dislocation accompanied, as it frequently is, especially in the case of children, with fracture. It is made of tin, perforated round the edge with holes for padding, and is light and strong. It should be applied to the outer side of the arm, bent at the angle most comfortable to the patient. If the limb is in the flexed position elastic bands are then attached to the



hooks directly behind the elbow-joint, and when the continuous contraction of these, acting for some hours, has gradually straightened out the limb, the bands should be changed to the hooks on each side of the front of the splint; when acting on the other side of the limb they bring it back to a fully flexed position. In this way slight, continuous, and prolonged pressure can be applied. The axis of the hinge is the same as that of the joint, and when the limb moves in extension and flexion it does not alter its position on the splint; the elastic bands can be changed by the nurse or even the patient as often as thought desirable without readjustment. The force employed is easily regulated by the number and size of the elastic bands. The splint is made by Messrs. Reynolds and Branson, Leeds.

THE fourth National (American) Exposition of Chemical Industries, which was held at New York in the last week of September, showed how largely America has within a few years freed itself from the domination of German chemistry, and what has been accomplished in capturing the chemical, glass, and dye industries from Germany. The fifth exposition will be held at Chicago in September, 1919.

BOECKEL (*Med. Klinik*, 1918, xiv, 860–1) thinks that a tender spot in the lumbar region is pathognomonic of influenza. A horizontal line is drawn two fingerbreadths above the highest points of the iliac crests with the patient in the vertical position. The point where this line intersects the outer border of the longissimus dorsi is the tender point characteristic of influenza, and corresponds, according to Boeckel, to the junction of the third and fourth lumbar vertebrae. It is often the only objective sign at the beginning of the disease, and sometimes persists after all the other manifestations have disappeared. During the last six years he has never found it in any other disease, and considers that its constant presence in influenza on one or both sides proves that there is usually in this disease more or less marked neuritis affecting all the branches of the lumbar segment, especially the fourth lumbar nerve. This hypothesis explains the pain in the back and legs, and also accounts for the giving way of the knees in severe attacks, as the fourth lumbar nerve sends motor fibres to the quadriceps extensor muscle, and is the sensory nerve of the inner side of the leg.

THE SCHOOL MEDICAL SERVICE.

THE annual report for 1917 of the chief medical officer of the Board of Education[1] contains many interesting observations which are of particular importance at the present time. The School Medical Service was established ten years ago as a national institution under the general direction of the Board of Education. In common with almost all other national institutions it has had to contend with many difficulties during the past four years; but there is this compensating feature, that the war "has brought home to every one the imperative necessity of using every means not merely to diminish the ordinary wastage of infant life, but also to make and keep the rising generation sound in body and mind."

Effects of the War.

As was only to be expected, the war has seriously disturbed the machinery of the School Medical Service—so much so that in some areas the work has been maintained with great difficulty and not always with complete success. There has also been considerable anxiety lest war conditions should have a harmful effect on the health of the children. School medical officers throughout the country were apprehensive that the children of the working classes might be injuriously affected by such social influences as food rationing, the high price of food, the diminution of parental control, daylight saving, and air raids. It is satisfactory to learn that in spite of all the untoward circumstances of recent times the children in the elementary schools are generally in a better nourished condition than they were before the war. Uncleanliness, however, has increased, and this is ascribed in part to the lessening of supervision by parents, and in part to the introduction of infection from returning troops. Fears with regard to the harmful influence of air raids upon the nervous system of children have, fortunately, proved to be groundless. In 1916 there were many complaints that the Daylight Saving Act was having an ill effect on children by depriving them of an hour of sleep daily; but in the second year of "summer time" practically nothing was heard on the subject, though it is probably still true that many parents keep their children up longer than is good for them.

The Education Act, 1918.

A short section of the report is devoted to medical arrangements under the new Education Act, and a summary is given of the provisions of this Act in so far as they relate directly to the School Medical Service. Though some time must elapse before many of the provisions can be brought into active operation, local education authorities are reminded that it is their duty to consider at once the problems involved and the steps that must be taken to fulfil the purposes of the Act. The new Act emphasizes the point, which has always been insisted upon by the chief medical officer, that the true objects of the School Medical Service are not the detection of defects and the discovery and treatment of child patients, but the improvement of the health and physical development of the whole child population of school age. In the present report Sir George Newman deprecates once more the narrow "bottle of medicine" conception which would restrict the work of the School Medical Service to sick children. What is required, he says, is a broad, carefully considered and unified system for the care and development of all children of school age; and this must be based on a full and complete system of medical inspection and diagnosis. The new Education Act recognizes that no single uniform plan will meet the needs of every area. Accordingly the responsibility for considering the kind of scheme best suited to local conditions is placed in the first instance upon each local education authority, and not upon the Board of Education.

A Model Inspection in Town and Country.

Section 3 of the report contains an interesting and instructive account of an inquiry into the physical condition of unselected samples of town and country children of school age, undertaken by Dr. C. J. Thomas, assisted by Dr. Norman. The object of this "model inspection" was to check the results of previous examinations conducted

[1] Cd. 9206. H.M. Stationery Office. 1918. To be obtained through any bookseller. (1s. net.)

during the past ten years by a large number of medical officers of varying competence and experience and working to different standards. On the whole, the findings are in accordance with former observations, both as to the proportion and the severity of the defects discovered. But the circumstances of this inquiry afforded an unusual opportunity of comparing the physique of town and country children. The general impression left upon the mind of these two expert observers was that the country children seemed rosier, healthier, and superior in general carriage, while defects of vision and hearing were less common among them. On the other hand, the condition of their teeth was worse to a great and surprising degree. The state of nutrition showed little difference. The country children, while notably freer from septic conditions of the skin, eyes, and ears, were considerably more prone to mouth breathing and the dullness of expression associated with adenoids and enlarged tonsils. As one would suppose, anaemia was much more prevalent among town than country children, as were also curvature of the spine and flat-foot; but, curiously enough, enlargement of the thyroid gland was far commoner in the country children, especially among the girls. Many of the children examined were much behind in their studies, and investigation of the circumstances forced the examiners to the conclusion that physical defect is one of the chief causes of backwardness in school.

Commenting upon the results of this intensive inquiry, Sir George Newman writes: "No one, I think, can consider these findings, or read Dr. Thomas's account of the physical condition of these children about to leave school for industrial occupation, without understanding, once and for all, the gravity of the situation. . . . It seems futile to attempt to reform education apart from the physical condition of the child; it seems unreasonable to expect healthy adolescence and healthy citizenship if we continue to neglect the remedy of the physical disabilities of childhood and the prevention of their cause." Further on, in the section on the medical treatment of the school child, we read that from 20 to 30 per cent. of the children inspected on a routine basis required treatment, which lends force to the general proposition laid down by Sir George Newman, that a State cannot effectually insure itself against physical disease unless it begins with its children. This, indeed, is the keynote of the whole report.

School Dental Work.

The dental condition of the school children throughout England and Wales remains very serious. It is estimated that of the six million children on the registers of elementary schools not less than half are in need of dental treatment, and for many this need is urgent. The Board has advised that dental inspection should be carried out only by qualified dentists, and preferably by those who undertake subsequent treatment. Admirable advice; but where are the qualified dentists to attend to the carious teeth of three million elementary school children? It is recommended, further, that the inspection of the children's teeth should, as a rule, take place on the school premises and in school hours. The amount of dental work among children is so great that the scope of school dentistry has usually to be restricted at present to certain age groups, more especially the group of children from six to eight years of age—that is to say, the period of eruption of the permanent teeth. The reports of the school medical officers for those areas in which dental schemes are in operation all testify to the excellence and great value of the work undertaken by the school dentists. There are now upwards of 300 dental clinics, with a staff of 239 school dentists; but more than half of the local education authorities in England and Wales have as yet made no arrangements whatsoever for the dental care of the children under their charge. Obviously there is much room for further effort, for the findings of medical and dental inspection in schools have demonstrated an overwhelming case for the organized dental treatment of school children.

Special Schools.

A substantial part of the medical treatment of a certain group of defective children—blind, deaf, feeble-minded, epileptic, and tuberculous—takes the form of a special kind of education which is undertaken in the "special schools." It would appear that accommodation has been provided at present for less than half the children affected. Much remains to be done for these children, but perhaps the most pressing need is a careful and systematic survey of all the physically defective children in each area. With regard to the tuberculous child the reports of the school medical officers indicate that much attention was given by them to this subject in 1917, but, generally speaking, the problem of tuberculosis among school children has been somewhat neglected during the war. In this connexion it is worthy of note that the provision made by local education authorities for the teaching of children under open-air conditions has lagged far behind the recommendations of the school medical officers. "It is to be feared that only too commonly the war is being made an excuse for inaction in this matter, and by some authorities that did little or nothing before the war."

An interesting section is devoted to the problem of the mentally subnormal child. Much valuable experience has already been gained in the special schools with regard to the educational requirements of dull, backward, and feeble-minded children for whom the ordinary classroom is quite unsuited. Of the various forms of educational hand-work, gardening would seem to be the most valuable in its effect upon physical and mental development. More than this, "in a peculiar way it exerts a moral influence recognized by all teachers of defective children." Hence no special school can be considered complete without ample provision for a school garden.

Health and Education.

Physical education, the provision of school meals, and the control of juvenile employment, are dealt with in separate sections of the report. There appear to be signs that educationalists are at last coming round to Sir George Newman's view that a comprehensive scheme of physical training should be one of the essential elements of education. The effect of industrial employment upon the physical and educational well-being of the child worker is a matter of profound national importance, and its significance has been much increased by the war, which created a new and almost universal demand for child labour. Efforts have been made to safeguard the welfare of the children so employed, but here again much has been left undone by the more backward local education authorities. Sir George Newman's conclusions on juvenile employment are worthy of the closest study.

The last section gives a review in outline of the first ten years' work of the School Medical Service and of its organization. While the system is as yet neither complete nor adequate, it has already begun to exercise a powerful influence on the educational system of the country, and this should bear more and more fruit as time goes on. One effect of the School Medical Service has been to secure fuller recognition of the principle that a true education must be individual, and that no child can be educated wisely or well without regard to its physical and mental health. Further, the School Medical Service has already succeeded in bringing to light the prevalent defects and diseases which are undermining the physique of the child. Most of these, if taken in time, are preventable. The nature and extent of the evil have been determined, but it remains to apply the remedy.

WOLBACH and MORSE report (*Amer. Journ. Dis. Children*, 1918, xvi, 63) three cases, one in considerable detail, of neuroblastoma sympatheticum, a rarely recognized tumour. From a review of the literature they bring the number of recorded cases up to 29, of which 20 were primary in the adrenals, 3 in the retroperitoneal tissues, 3 in the sympathetic ganglia, and one each in the coccygeal gland, the nose, and the uterus. It is, however, highly probable that many other cases of primary tumours of the medulla of the adrenals reported as sarcoma were really neuroblastomas. As in so many other instances, Virchow long ago described this form of tumour, and recognized the nervous nature of an adrenal tumour, and compared the cells with the neuroblasts of the fetal sympathetic. The diagnosis of these tumours turns on the presence of delicate protoplasmic fibrils representing axis cylinder processes. They have been variously labelled as neurocytoma, ganglioma embryonale sympatheticum, and neuroblastoma sympatheticum. Of the 29 cases reported there has been but one survival, Lehman's case in an infant successfully operated upon.