will consist of severe cerebral oedema with an associated high intracranial pressure. Again, it is customary at this stage to prescribe hypertonic salines, whether in the form of intravenous injection of saline (30 per cent. solution, 30 c.cm.) or rectal magnesium sulphate (4 oz. in 8 oz. of water). Recent experiences with acute head injuries have abundantly demonstrated the drawbacks—if not the actual dangers—of hypertonic medication, by pointing out that an excessive rise in intracranial pressure usually follows rapidly upon an initial decrease.

Probably the safest—as well as the most effective—measure for the reduction of cerebral oedema after electrical injuries is the prompt withdrawal of cerebro-spinal fluid. This can be repeated as often as required. It must be strongly emphasized, however, that the precise tension of cerebro-spinal fluid should always be determined by means of a spinal manometer at every lumbar puncture. The chief merits of lumbar puncture in electrical coma are: (1) cerebral hypertension and coma are rapidly reduced; (2) the cerebro-spinal fluid itself may be at an excessive temperature; (3) the cerebro-spinal fluid may possibly contain toxic products of electrolysis; (4) there is no danger, as in cases of cranial injury, of starting or restarting dangerous intracranial bleeding.

In cases of motor agitation and delirium accompanying the unconsciousness lumbar puncture should be followed by attempts at sedation. The room is to be darkened and the bed reinforced by padded sideboards. If necessary the patient's limbs can be padded and bandaged, so as to protect himself against injury. An icebag to the head is impressive but probably useless. Purgation is a slipshod method of reducing cranial tension, and is much less effective than lumbar puncture. Injections of morphine or of hyoscine are often efficacious but dangerous; they are better replaced by the newer and safer drugs such as rectal nembutal, avertin, or paraldehyde, or intramuscular injections of somnifaine or luminal.

Burns

The special features of electrical necroses which influence treatment include: (1) the unusual depth of the lesions and their circumscribed nature; (2) the rigidity and friability of the surrounding blood vessels; and (3) the tendency of the lesions to spread.

Two widely divergent views are held as to the correct management of electrical burns: conservative measures are enjoined by Jellinek and others, while Wells advocates immediate radical treatment. Jellinek teaches that early amputations and tissue resections should never be adopted. Except in the rare cases in which dangerous toxæmia has developed, it is better to leave the areas of necrosis alone. The innate healing propensities of electrical burns are stressed, and applications of simple antiseptic vaseline dressings and the use of a splint are suggested. Sometimes, in order to accelerate the separation of slough, Jellinek induces active hyperæmia by means of benzene compresses applied for fifteen minutes and repeated daily.

Blue advocates the following treatment in cases of electrical burns. After thorough cleansing of the wound with soap and water, followed by lavage with sterile water, dressings soaked in ice-cold solutions of aluminium acetate (1½ oz. to the pint) are supplied. Dead and charred tissue should not be removed. During the stage of repair various dressings may be employed. Dusting with an antiseptic powder may be sufficient; lint soaked in paraffin (or paraffin with picric acid or flavine) may be applied. Some prefer to cover the injured limb with a cradle in which electric light bulbs are suspended. Skin grafts or plastic operations may finally be necessary. Tannic acid applications prove as satisfactory in electrical lesions as in other types of burn or scald.

Wells differs widely from Jellinek in advocating strongly an immediate resection or débridement of the necrosed

tissue. He claims that in this way healing takes place more rapidly and with less ultimate deformity. Resection *en bloc* of the eschar—sparing, of course, such structures as large vessels, nerves, and joints—is followed either by primary suture or by immediate skin graft. Haemorrhage, apparently, is not as difficult to control as might be anticipated. J. P. Tourneaux advocates a similar resection of diseased tissue in electrical burns of the cranium. By trephining the skull beyond the involved areas it is claimed that cranial wounds will heal in one-seventh the time. Blue, however, considers this treatment worse than the disease.

Whichever line of treatment is adopted—radical or conservative—complications are to be expected within the second or third week. Owing to the morbid fragility of the blood vessels surrounding the burns there is a grave danger of reactionary haemorrhage. This complication should never take the nursing staff unawares, for during the third week haemorrhage should be anticipated and instruments and dressings should be close to hand. Ligations of the principal blood vessels is usually required, but it should be emphasized that the ligation must be applied at some distance proximal to the bleeding point, owing to the diffuse spread of the degenerative vascular changes. In the same way, where amputation is necessary, it should be carried out well above the limits of the necrosed area. Otherwise the spreading nature of the burn may cause the flap to be invaded and produce severe secondary bleeding.

THE OUT-PATIENT PROBLEM AND HOSPITAL CONSTRUCTION

THE NEW WESTMINSTER HOSPITAL

BY

E. ROCK CARLING, F.R.C.S.

The problem of dealing expeditiously with out-patients still awaits solution. There will always be a great deal of "waiting" for some ambulatory patients between the first examination and the complete diagnosis. Time must be allowed for pathological and radiological examinations, and in preparation for certain forms of investigation, and for some forms of treatment. That is inseparable from the fulfilment of the purpose of the visit. But the waiting associated with preliminary sorting and classification in the out-patient department subjects many patients to undesirable fatigue, and ought to be minimized as far as possible. One of the difficulties in effecting this reduction of waiting time arises from the structural plan hitherto employed, which necessitates grouping all the visiting patients in a common out-patient department irrespective of their ultimate destination.

A plan under consideration for the new Westminster Hospital seeks to secure the attention of the same permanent personnel for a patient throughout the whole of his hospital career, first as an out-patient and later as an in-patient. By bringing the patient from the first attendance into the knowledge of one sister and one clinical registrar it is hoped to secure much saving of time and some saving of current expense.

Individual Out-Patient Departments

To effect this each unit or firm, with certain exceptions, will have its own out-patient department on the same floor as its wards, and adjacent to them, though reached by a separate corridor. Thus the senior and junior members of the honorary staff will be working in the same part of the hospital, though generally at different times, so as to reduce the intermittency of their presence in the unit.

There will, as in the past, be a "front surgery" on the ground floor and adjacent to it a sorting department under the charge of semi-permanent medical officers of registrar status, but there will be no extensive out-patient

department where all ambulatory cases of whatever type are seen and treated by the junior honorary staff.

As at present a patient arriving casually at the hospital will be sent to the out-patient rooms of the firm of that day. But patients arriving with a personal letter will be sent direct to the out-patient clinic of senior or junior as the case may be.

On every floor there will be an almoner to assist the patient in every way. It will be this almoner's task to make every possible use of the external and internal telephones and other methods of communication to arrange work by appointment. If by error patients arrive at a time when neither senior nor junior is in attendance, it does not follow that the visit will be wasted, for in many cases the doctor's letter or preliminary inquiries by the full-time officers will show that investigations by a special department will be needed, and it may thus be possible to save the time of members of the honorary staff when, by appointment, they do see such patients. All "follow-up" routine—and nowadays this takes a great deal of time—will be done in the unit by the personnel of the firm and will occupy the out-patient rooms which otherwise might be empty. There are, too, many subsidiary clinics that take place at other times than, or extend beyond the time of, the visiting staff's attendance. Squint clinics, speech clinics, varicose vein clinics, ante-natal, post-natal, and child welfare clinics, fracture clinics, and so on, could be so arranged that there should be no question of waste through the multiplication of out-patient rooms.

The Medical Side

It is true that the general physicians do not feel the same need of separate accommodation for the ambulatory patients of each firm as do the surgeons and specialists, and they would have one common out-patient suite on their floor. Even in the case of the surgeons the plan is not, as would at first sight appear, uneconomical, for the same holds good here as in the case of the theatres. The out-patient consulting rooms and theatres will be paired, so that A's theatre and out-patient room will be available for B's use as well as his own unless some special demand makes it essential that it should be in use simultaneously by A. To have two small theatres in which to work is economical of time, and there is no need for much space for onlookers, since students are discouraged from wasting time in watching operations, and there will be in the hospital one large theatre suitable for demonstration work. Similarly it is convenient to have two consulting rooms of moderate size simultaneously in use; a registrar or first assistant or clerks taking clinical histories in a communicating consulting room facilitates teaching and saves time. The exigencies of the site at Westminster and slight differences of requirement will make it easier for the linking of departments to be by ward above ward rather than by wards side by side as at some other hospitals. To the older generation it is of course simpler to walk along a corridor on one level than to go down one floor in a lift, but the present and future generations are, and will be, more accustomed to lifts and will find vertical proximity just as convenient as lateral. So with the theatres grouped vertically in pairs there will be not only no greater expense but probably even a saving in heating and service as against grouping in a series along a long corridor. In staffing, whether of sisters, nurses, almoners, or porters, the advantage will be with the vertical rather than the horizontal system.

Attendance by Appointment

Where all the work of a unit or firm is grouped together it is believed that the appointment system of attendance will be very much simplified and the time of the visiting staff be saved thereby rather than wasted. It is possible that the number of permanent or semi-permanent paid officers will be greater, but that is a tendency which has been very obvious even with the existing lay-out, and will be, not a true increase due to the plan, but an acceleration necessitated by adopting a structure which more nearly fits the functions of a general hospital than that at present prevailing.

HEALTH OF THE SCHOOL CHILD

DR. MACNALT'S REPORT

The annual report of the Chief Medical Officer for the Board of Education for 1934 is issued by Dr. Arthur MacNalty, but refers to the work done under the direction and supervision of Sir George Newman. In his introduction Dr. MacNalty utters a warning against that education which is overbalanced on either the mental or the physical side, or is unfitted to the age, sex, habits, circumstances, and state of health of the child.

Nutrition and School Feeding

The report repeats the emphasis of former reports on the necessity for satisfactory nutrition. The total number of school meals provided in the year was 68,100,000, and the milk meals provided free of payment increased to 42,200,000. During the routine medical examination 12 children per 1,000 were found to be malnourished and 14 per 1,000 undernourished. This is a slight increase on the figure of 11.1 for 1933. On the whole the reports received from the districts were reassuring. Special attention has been paid to the nutrition of the pre-school child and of adolescents attending the junior instruction centres. An investigation into the nutritive value of milk, made by a committee of the Milk Marketing Board, is expected to confirm the results published by Dr. Corry Mann; and the Minister of Health has now definitely decided that pasteurized milk is better than raw milk, the changes of quality being too small to outweigh the great advantage of protection from disease.

Physical Training

Progress in all directions has been made in physical training in elementary schools. The chief danger is that the provision of suitable rooms and equipment and playing fields may lag behind the ability and enthusiasm of the teachers. Striking features of the advance are the transition from formality and limited objectives to freedom and wide scope, and the fusion of various elements into a British system fulfilling the needs of our national characteristics. The report regrets that there are at present only 122 local education authorities who employ organizers of physical training, and quotes some interesting details from local reports. In East Suffolk, for example, it was found that very few of the children could swim, and there was little enthusiasm for this exercise. The organizer, however, has worked so patiently and successfully that now there are over forty swimming centres in the area, and over 500 children gained swimming certificates last year. The total expenditure was approximately £70.

A change in the training of teachers may be looked for. There is at present only one college for men, but the well-known colleges for women provide an excellent course. There is, however, a tendency among head mistresses to desire their gym mistresses to have a shortened university course combined with their physical training, so that they can teach other subjects in small schools. The voluntary associations are finding a growing demand for recreative facilities, and are doing much good work. The education of teachers to train children in hygiene is also receiving continued attention.

Inspection and Treatment

The report stresses again the desirability of co-operation between school medical officer, teacher, and parent, and gives figures illustrating the importance of the detailed medical examination as well as the general review. The number of children inspected during 1934 was 1,794,963,