These are satisfactory for a wide range of adult figures, but need some adjustment for children and out-sizes. The spare fragments are used for reinforcing weak regions.

Position.—When anaesthesia is essential the patient's head and shoulders are allowed to project beyond the edge of the table, with a narrow board attached to the table supporting the back. The head is held. When anaesthesia is not required the spica is applied with the patient sitting or standing. The arm is abducted at the shoulder to almost a right-angle. The elbow is flexed as found convenient. The arm projects forward at an angle of 45 degrees. The forearm is in mid-pronation, the wrist dorsiflexed.

Pressure Points.—The main weight is carried from the iliac crests. Protection is needed here, on the shoulder, and at the upper border of the opposite axilla.

Application.—The slabs for front and back are identical. They are dipped in water with 1½% borax, in a sink or deep trough. When wet they are dragged backwards and forwards over the edge of the sink to remove excess water, and then transferred to a table. There they are smoothed over carefully to remove all air bubbles. The slab is now taken by its upper edges and applied to the patient. With the aid of an assistant the lower part is firmly applied to the iliac crests. The upper part of the shoulder parts are then applied. The reverse half completes the body support, which is fixed in place by a few turns of previously wetted muslin bandage, while the arm section is similarly soaked, smoothed, and applied. The forearm is adjusted first. Lateral slits are made to fit the elbow. Finally the shoulder region is fitted. The axillary region is reinforced and the whole completed with a few plaster bandages. A support of wire or rope for the abducted arm is found to be unnecessary. This has the great advantage of enabling the patient to get his arm into a sleeve.

FIG. 8.—Pattern for shoulder spica.

Application of the hip spica is equally rapid with the wide bandages and special patterns. The mode of application is described in detail in a handbook recently issued by T. J. Smith and Nephew, Ltd., to which those interested are referred. The method is described here to introduce the principle. Various technical modifications will no doubt be required before its full value is determined in practice (Fig. 9).

Figs. 6, 8, and 9 are reprinted from Cellona Handbook, "The Preparation of Plaster Casts, with Special Reference to the Use of Wide Cellona Material."—January, 1941.

FIG. 9.—Pattern for hip spica.

My thanks are due to Messrs. J. Robson and E. V. Willmott for their co-operation in the production of diagrams and photographs.

THE IMPORTANCE OF NIGHT-VISION TESTS

BY

FRANCIS E. PRESTON, D.O.M.S.

In these days when special efforts are being made to lessen the number of road deaths and when statistics are being produced that give us the conditions under which accidents are most likely to occur, we find that twilight yields a high percentage. The ordinary motorist, when filling in his form of application for a driver's licence, must give some indication of what his day vision is, but nothing is said regarding his night vision. This is hardly surprising, because until recent times there has been no night-vision test which even the ophthalmologist could conveniently install in his consulting-room. The prospective driver tests himself, and if he can say that he is able to read a number-plate at so many yards' distance he is accepted so far as his sight is concerned. We know that he may have 6/6 vision and yet his fields be so contracted that he passes his friends in the street, and he may be even unaware of the disability himself. No one can imagine a company accepting a client for a £1,000 life policy on the usual terms merely on what the proposer had to say about his own health: a medical examination would be considered essential. Then why not a medical examination of the motorist, not only as regards general fitness but also as to hearing and night vision as well as day vision? In the former the risk is of money, in the latter of a life or lives, for he endangers not only his own life but the lives of others.

The Bishop Harman Test

In my experience most folk have a very erroneous idea of their visual ability in subdued light. If they have excellent vision in daylight they generally conclude that their night

vision is good also, and this leads them to take unwarranted risks. When light begins to fail there is a definite change in vision values, and it is for this reason that so many accidents occur during this period. Recently I was asked by a Government official to make a special examination of a young lady who claimed that she could see just as well at night as she did in the daytime. If she could have done all she claimed to do she would have been extremely useful for the Services. I examined her on a Bishop Harman disk-spotting night-vision test, and found that her ability to see in feeble light was less than mine, and I might add that I am twice her age. Such people are a menace at night. Even motorists who can see exceptionally well in poor light can be a source of danger if they are not conscious of the fact that, though they can see pedestrians, pedestrians may not be able to see them. It is for these reasons that the public should be brought to realize the value of an assessment being made of their night vision as well as of their day vision. Such education could easily start with the young, and examinations could be carried out on children by school medical officers. The Bishop Harman test is equally suitable for young and old, and is easily and quickly executed, so there is now no excuse for such valuations not being made. Those who use the test will be interested in the apparent jumping about of the white disks. No doubt this is due to the side-to-side movement of the eyes in the feeble light as rivalry goes on between the macular and paramacular areas. This reminds us of the conditions associated with miners' nystagmus.

A short time ago I attended a patient who had had a severe fall at night 6 weeks earlier. Her complaint is that in the twilight, and at that time only, she occasionally sees minute flashes of light. She apparently had had a small intra-ocular haemorrhage as a result of the fall, for a tiny strand of tissue can be seen passing from the centre of the vitreous to the retina on the temporal side, and the side-to-side movements of the eyes in the twilight are evidently causing retinal irritation through the filament.

Other Tests

There may be other night-vision tests which from the physicist's point of view give more constant results than Mr. Bishop Harman's. For example, it may be possible to have a luminous body which is less affected by atmospheric conditions than a standard candle burning 120 grains an hour, but I do not think there is any other test which will meet the requirements of the average busy ophthalmologist. Most ophthalmologists have had experience of elaborate colour-vision tests, which have now given place to those that are simple and easy to use.

A few years ago a useful dark-adaptation test was put on the market. Fortunately A.R.P. regulations have protected us from the dazzling lights of inconsiderate motorists, and even those of us who are deficient in dark adaptation are not at times made temporarily night-blind as used to be the case. Let us hope that these regulations in some form or other will continue after the war. In this event the dark-adaptation test will lose some of its significance; however, the night-vision test must necessarily always remain important.

A Note on Terminology

It is unfortunate that the words "hemeralopia" and "nyctalopia" no longer have precise meanings. If we turn to Chambers's *Twentieth Century Dictionary* we find: "Hemeralopia: day-blindness, a defect of vision except in artificial or dim light; also applied to night-blindness. Nyctalopia: the defective vision of persons who can see in a faint light but not in bright daylight; sometimes applied to the opposite defect." I have drawn the attention of a scholastic friend to this mixed nomenclature, and he suggests the term "nyctamauria" for night-blindness. Though medical men talk about tests for night-blindness, what they really mean is tests for deficiency or dimness of sight at night. Nyctamauroma ($\nu\kappa\tau$ =night, $\alpha\mu\alpha\rho\omega\mu\alpha$ =dimness of sight) would convey what they wish to express. Both nyctamauria and nyctamauroma are words that are pleasant in sound and precise in meaning. The termination "oma" is one which we often meet with in medical literature. We can easily recall to mind trachoma, glioma, glaucoma, fibroma, neuroma, osteoma, and many others. Nyctamauroma, therefore, does not seem unfamiliar to us.

Correspondence

Social Medicine

SIR,—There is much talk abroad as to the part which social medicine is destined to play in our educational, medical, and communal planning for the post-war world. Sir Farquhar Buzzard (June 6, p. 703) has further excited our interest. But we still lack a convenient definition. Until a better one is forthcoming perhaps the following will serve: "Social medicine is clinical medicine activated in its aetiological inquiries by social conscience as well as scientific intent, and having as its main purpose the education of professional and lay thought and the direction of legislation on behalf of national health and efficiency."

Where the early education of the doctor is concerned the wards of our teaching hospitals are not lacking in living texts. Every clinical teacher who is prepared to develop his interest in aetiology is in a position to teach the elements of social medicine, but few perhaps at present regularly do so. In the quest for intimate causes we have long tended to neglect the ultimate causes of disease. Poverty, crowding, unemployment and the fear of it, the varying liabilities due to age, sex, season, occupation, and industrial hazards—why have we paid such superficial attention to these while emphasizing the importance of the bacillus, the chemical poison, or the vitamin deficiency? These specific factors, after all, find their opportunity solely or largely in company with the other non-specific or predisposing factors. Why in our teaching have we touched as a rule so lightly on the combined effects of known non-specific factors (environmental and genetic) in the causation of such prevalent non-specific maladies as psychoneurosis and peptic ulceration? The child with tuberculous meningitis; the young man with pleurisy; the young woman with hypochromic anaemia; the doctor or bus-driver with duodenal ulcer; the girl from shop or factory or the office clerk with anxiety symptoms; the occasional "bachelor scurvy" and (in wartime at least) the more frequent old age pensioner living alone and just too near the borderline of nutritional deficiency; the labourer with a Pott's fracture remaining too long, or permanently, out of a job for lack of rehabilitation facilities; the victim of sickness or injury incapacitated for a previous occupation but not trained for new tasks within his powers; the middle-aged working-class mother worn to a state of chronic ill-health by too much child-bearing and its attendant cares—here are texts all ready to hand in ward and clinic. Preoccupied with the teaching of the symptoms and signs of disease and ill-health, we have not sufficiently stressed the importance of pursuing their causes to their source, and in this we have somewhat failed as teachers, scientists, and humanists. Nor, as a profession, have we been as insistent as we should in pressing for the better prevention of such preventable diseases as diphtheria and tuberculosis of bovine origin.

The field surveys of the future students of social medicine must take them from the hospital to the homes of the people, to the shops, the factories, the docks, the mining townships, and the mines, at times to live and work in them. Research in social medicine may well require, but should not be too firmly anchored to, university departments and the office of the statistician. Nor must field studies, while welcoming their aid, be deputed entirely to non-medical social workers. The training for them should be clinical and sociological rather than in the nature of a D.P.H. course. Functions and careers to follow training and implement research will need to be carefully considered. The industrial medical service should open one important avenue. But where or how social science and medical science can best collaborate in the first instance must be carefully discussed and clearly defined in conjunction with leading sociologists before any experimental programme is launched.

Meanwhile it is salutary to remind ourselves that aetiology is the most important but the most neglected branch of medicine, and that social medicine (which is applied aetiology) might immediately engage the more active attention of all teachers, students, and practitioners of medicine, and will eventually require the co-operation of all citizens.—I am, etc.,

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JOHN A. RYLE.