Modified Thomas Knee-splint (for Treatment of the Knee Joint).

Another for the same purpose can be made from a Thomas knee-splint by moulding out the bars in the knee area to any required distance. This is done in the manner shown in the accompanying photographs. In order to facilitate access to the joint three zinc bands, each 3 inches wide, support the knee posteriorly. These are moved up and down the splint by means of fly-nuts. A ring should be placed over the anterior bar of the apparatus. The splint is then fixed in the required position. During dressings the ring is freed from the bar. During dressings they are unfastened at one side and allowed in turn to fall back out of the way in the manner illustrated. (Fig. 11.) Each zinc strip should have its own super-imposed dressing.

Extension Apparatus for Stumps.

Types of such apparatus have been made by cutting short the Thomas splint and fixing on a square of aluminium, to which extension is applied to the stump. In most of these apparatus the square is much too large for the size of the stump, and extension is thus not in line with the axis of the stump. This can be overcome by fixing a ring, the size of the stump, inside this square by means of short legs. At the same time it is much more convenient if the square can be made movable up and down the splint by fly-nuts. (Fig. 12.)

Application.—Adjust the ring of the apparatus accurately into position on the ischial tuberosity and perineum. Then apply strips of inch adhesive plaster firmly to the skin and made taut upon the inner ring of the apparatus. The free ends of the adhesive plaster are now carried away from the stump and fixing it at the required strain. Counter-extension is obtained in the usual way. In the same way its elongation. 'A tendency to myopia is caused by the production of myopia, and certainly nothing of the sort has been proved. Even when the selected occupations have been given—composer, lithographer, &c.—it will be found that the myopia was not contracted in their occupations, but the operation was selected because of the short sight.

The Primary and Essential Cause of Myopia.

The cause of myopia must be looked for in other directions. The outflow of lymph from the eye may be divided into anterior and posterior channels. We are here only concerned with the posterior channels, which empty themselves into the lymph spaces of the optic nerve. The lymph space which is found between the retina and choroid empties into that of the optic nerve. 'Up to the present nothing certain is known in regard to disturbances of the function of the posterior lymph passages. It is the purpose of this paper to show that the primary and essential cause of myopia is an obstruction of the outflow of this fluid, which, increasing the intra-ocular tension, distends the sclerotic and causes myopia by elongation of the eyeball. If anyone tries to lift a very heavy weight which is clearly above his power a feeling of tension may be noticed in the eyes. The posterior portion of the sclerotic is a weak spot just like the inguinal ring, which will give way on undue pressure. This is particularly likely to occur whilst the eye is growing, but under great stress appears to occur at almost any age.

The diagram will make my point clear: E is a cistern and water is escaping at the outlet A. B, C, and D are tubes open to the air, and the height of the column of water shows the pressure at each point, this diminishing as the outlet is open to the air, and the height of the column of water shows the pressure at each point, this diminishing as the outlet is open to the air. The free ends of the adhesive plaster are now carried and made taut upon the inner ring of the apparatus. The extension pull is now made by moving the outer square away from the stump and fixing it at the required strain. Counter-extension is obtained in the usual way. In the course of time, when the skin has come down to the end of the stump, it can be further moulded round by crossing the extension straps and by reducing the distance between the end of the stump and the squares holding the ring.

THE CAUSE AND PREVENTION OF MYOPIA.

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S.ENG., OPHTHALMIC SURGEON, NATIONAL SERVICE MEDICAL BOARDS, SOUTH LONDON AREA.

All authorities are agreed that myopia, or short sight, is rarely a congenital defect, but is acquired through elongation of the eyeball. A point which has not been satisfactorily settled is the method by which this elongation is produced. All authorities, however, are agreed that it is the use of the eyes for near work which causes myopia, but are not unanimous as to the method of causation. The majority favour the view that the convergence of the eyes required for near work causes pressure on the eyeball and in some way its elongation. 'A tendency to myopia is caused by prolonged reading and near work.' While there are doubts that near work produces near sight, observers have not been able to agree as to how it does it."

Close Work as Cause of Myopia not Proved.

Now do facts support the hypothesis of myopia being caused by close work? Quite apart from mechanical difficulties which present themselves on the convergence hypothesis, we find that in converging eyes as in convergent strabismus or internal squint, myopia is not produced and convergent strabismus is almost exclusively found in hypermetropic eyes. Again, it is freely stated that as few of the labouring classes are seen to be wearing glasses, their sight must be better than those who do. This argument is a very fallacious one, as it does not follow that because a man does not wear glasses he does not require them. There is a great prejudice against wearing glasses among the labouring classes, and they will not wear them if they can possibly avoid doing so. A barrister will wear glasses for the correction of a trivial defect, as, for instance, 0.25 D. of myopic astigmatism, whereas a dock-labourer with very high myopia of -25 D. will not wear them, and does not even feel the need of them. Again, many children become myopic without having used their eyes particularly for near work. All are educated alike; why should a certain number become myopic, and how is it that a certain number become myopic who have scarcely used their eyes for near work at all. It is very doubtful whether the use of the eyes for near work has anything to do with the production of myopia, and certainly nothing of the sort has been proved. Even when the selected occupations have been given—composer, lithographer, &c.—it will be found that the myopia was not contracted in their occupations, but the occupation was selected because of the short sight.

Evidence in Support of Theory.

The examination of a large number of cases of myopia, particularly those of a progressive kind, showed that one of
the factors described above was present in every case. A boy would state that he had no trouble with his eyes until after he had left school, but in his employment, where he had continually to lift heavy boxes, began to get more and more short-sighted. Then he will complain of a feeling of great tension in the eyes and headache after much lifting. The ordinarily given causes of myopia cannot apply in a large number of cases, as, for instance, porters, carmen, and those who do not use their eyes for near work. Again, in many of those having a sedentary occupation the form of exercise selected will be found to be one which would not act in the way described, as, for instance, boxing, wrestling, cycling, rowing, or digging. Coughing also appears to be a potent cause. A boy will state that there was nothing wrong with his eyes until he had a very bad attack of bronchitis; immediately on returning to school the master noticed that he was short-sighted and sent him to a doctor to be examined, and he was found to be myopic. It is obvious that any cause tending to diminish the resistance of the sclerotic will be an important factor. The pathological anatomy of the eye in a case of high myopia corresponds exactly to the view advanced; the changes at the macula, the atrophy of the choroid between it and the optic nerve, the elongation of the posterior pole, the thinning of the sclerotic, the enlargement of the lymph spaces are exactly what we should expect.

In order to make the point clearer it may be as well to give a few illustrative cases.

A warehouse boy had very good sight until after he had left school and bought a bicycle; riding uphill caused him pain in the eyes, and then he would feel pain and in his employment, because of it, and found he had become short-sighted. Numerous cases could be given in which the myopia was found to result from whooping-cough, rheumatic fever, diphtheria, or scarlet fever.

A public-school boy had very good sight until 15. Used to keep wicket at cricket because of his sharp sight; then got the eyes. On returning to school could not see the ball at all and had to give up cricket.

A man aged 26. Very good sight until he was 26. Very fond of going to the theatre. At 26 he became a warehouse porter and had to lift very heavy boxes. Then noticed that he could not see at a theatre, and that he had to wear glasses of steadily increasing strength. Came to the conclusion that his work was affecting his eyes, and accordingly gave it up after 2½ years. His sight has not got worse since he has adopted a sedentary occupation.

A man had very good sight until after he had left school; then worked in a timber-yard lifting heavy wood. Then noticed a severe attack of measles, with much coughing and pain in the eyes. On returning to school could not see the ball at all and had to give up cricket.

Moir, R.A.M.C., for furnishing me with numerous examples similar to mine which have occurred in his recruiting experiences.

A man had very good sight until he was 12 and had measles, and then became slightly short-sighted. Many years afterwards he had pneumonia, and found on recovery his sight had become slightly short-sighted. In the left eye, the myopia right eye, very high. Two well-defined and distinct myopic crescents in left eye.

Cases in which the myopia is found in only one eye are still more difficult to explain on the old hypothesis and are usually found after an illness.

Numerous cases could be given of those who have become myopic at an early age, and this myopia has not increased, even with excessive use of the eyes for near work. The most rapid increase of myopia in my experience was in the case of a warehouse boy, whom I advised to obtain glasses and to get a lighter occupation. When he obtained his glasses he was informed that he must not use his eyes for near work, and exercise had nothing to do with it. He accordingly, in addition to his regular work, joined the boxing club, and for boxing. After six months he stated that his glasses (which were high) were absolutely useless to him.

Prevention of Myopia.

Any cause which will increase the intra-ocular tension by obstructing the outflow should be avoided in case of commencing myopia so as to stop increase in the myopia and in advanced cases, detachment of the retina. The student who takes his exercise very intermittently should particularly avoid these forms—as, for instance, riding up steep hills and bending forward, if a cyclist. If a rapid increase in the myopia is coincident with his cycling this habit should be given up. An occupation which involves heavy lifting is not suitable for a myopic. It is particularly in those who have sedentary occupations and who are not in a fit physical condition, and have a hereditary tendency to myopia, that these forms of exercise should be avoided. The careful regulation of exercise, especially in the debilitated, is necessary. Exercises which, whilst very easy for some, are accomplished by the patient with the greatest difficulty and strain should be forbidden; for instance, if a child can only with the greatest difficulty and pain in the eyes do the exercises which after inquiry are found to cause a feeling of pain and tension in the eyes should be strictly forbidden, but it is not necessary to keep the patient from books. As exercise must play such an important part in the development of the eye after birth hypermetropes should take as much as possible and avoid sedentary occupations.

It should, of course, be remembered that a myopic eye is a damaged eye and should not be unduly strained. This is particularly the case when the myopia has just occurred or is increasing rapidly. It is necessary to take precautions in the case of illness, like measles and the other fevers that have been mentioned. Patients should not be kept longer than possible in a recumbent position, and exercises which are likely to increase the intra-ocular tension should be forbidden until the eyes have quite recovered.

I must here express my indebtedness to Major J. Drew Moir, R.A.M.C., for furnishing me with numerous examples similar to mine which have occurred in his recruiting experiences.

Some Notes on Portuguese Surgery during the First Three Months on the Western Front.

By Lieutenant J. Monjardino, M.D., Temporary Assistan at the Faculty of Medicine, Lisbon.

After three years of war and surgical practice, nothing new can be expected from a practice of only three months, during which an endevour was made to put into execution, without any attempt at innovation, what appeared to be the results of the most recent and important part of the new teaching. The importance of the time Portuguese wounded already number some hundreds. It becomes necessary to refer to the methods so far chiefly used in the attempts to treat the various wounds, observing their immediate effects, as the remote ones can only be detected in the course of time.

In the work done so far, not only Portuguese but also British surgeons should be mentioned, as for a short time at the beginning the wounded were almost exclusively looked after by the staff of the Highland No. — Casualty Clearing Station. Warm tribute should here be paid to the zeal of the British personnel (both doctors and nurses) for the work in which they carried out this sympathetic mission.

Owing to the increasing number of Portuguese contingents at the front a Portuguese section was attached to the Casualty Clearing Station, the duties of which took over the entire clinical direction with, however, the great help of the British sisters and Portuguese staff.

Finally, a third phase was marked by the opening of our own hospital, and the clinical service of the first line was transferred to it, as it was already from the regiments to the ambulances.

Scheme of Organisation.

I am not now going to describe the organisation of the Portuguese sanitary service from its foundation in connection with the war of movement in regard to its surgical aspect, which is now chiefly in view; but it is necessary to describe briefly the scheme in the manner in which endeavours are made to make a service complete as far as possible.