REMARKS ON MYOSITIS OSSIFICANS.

By MAJOR MANFRED MORRIS,
Royal Army Medical Corps.

The writer offers his apologies to readers of our Journal for being unable to throw any new light on this well-known condition, but he feels that many medical officers will find themselves in a position to save their patients considerable trouble and pain if attention is drawn to the etiology and treatment of this by no means rare complication of injuries involving the elbow-joint, so common in the Service.

I am unable to give a better description of typical cases than to repeat the remarks of the late Sir Robert Jones. He was of opinion that this alarming condition may arise after any fracture about the elbow, but is most commonly associated with dislocation of the elbow backwards. Its onset is gradual, and, when established, may result in a complete or partial ankylosis of the elbow-joint. It is generally due to tearing of the muscular and periosteal tissue from bone, accompanied by hemorrhage. Fragments of periosteum and osteogenetic tissue are pulled away, and probably in this way the formation of new bone takes place along the interfibrillary and intermuscular septa. The symptoms are insidious. An elbow which is doing well begins to get stiff in the third or fourth week, and, if an X-ray film is not taken, passive movements may be prescribed. This is a dangerous procedure. A film will show a suspicious cloudiness about the attachments of some muscle, usually the brachialis anticus. In two or three weeks this shadow becomes more dense, and traces of bone structure are noted. It is a mistake at this stage to operate, because further osteogenesis often occurs. The elbow should be kept quite still until evidence is obtained that bone deposit has ended, a fact which is easily ascertained by successive radiograms, and then only should active movements be allowed. In rare instances the bone may be completely absorbed, but in many cases only partial absorption occurs. If the deposit remains and is inactive, but causes disability, it can now be removed, but if the movements of the elbow are free it should be ignored. These deposits may remain for many months, sometimes years, and ultimately be absorbed.

While, therefore, we have every right to expect a good result from injuries of the elbow, we should be alive to possibilities and dangers. We should carefully note any nerve involvement at the moment of injury; we should speak of the possibilities of myositis ossificans, and warn patients of the dangers of energetic massage and movement campaigns.

We should also recollect that the surgeon is not necessarily to blame if an ischemic palsy occurs; it may have nothing to do with tight bandaging, and it has occurred without flexion of the elbow, without splints, and without bandaging. At the same time we should, if we can,
Clinical and other Notes

prevent pressure from within by reducing displacements which cause acute venous obstruction, and avoid pressure from without. By no argument can the surgeon be held guilty of the origin of a myositis ossificans, and neither can he be blamed for its development, provided that he does not prescribe passive movements during the period of bone formation. If myositis ossificans appears and any error is to be made let

it be on the side of rest. Finally, do not fully flex an elbow without first reducing the fracture or displacement, and, having flexed the elbow, do not obstruct the circulation of the arm by bandaging it in the flexed position.

During the last year my attention has been drawn to no less than five cases of injury to the elbow-joint, which, on examination, were found to be suffering from limitation of movements of the joint, pain, partial ankylosis

Fig. 1.—Elbow-joint, fourteenth day.
(two cases), swelling, and definite bone deposits in the flexor aspects of the arm just above the ante-cubital fossa lateral to the internal condyle. In all these cases the trauma was trivial (except one, who had a typical dislocation backwards—reduced immediately without difficulty) resulting from falls at football on the elbow or on the outstretched hand. As is almost invariably the case in the Service, these cases were X-rayed during the first three days after the accident and in each case no bone lesion was demonstrated. The cases were treated by putting the affected limb in a sling and applying lead and opium lotion. Massage and radiant heat were commenced about the fourth day. My earliest case of myositis ossificans commenced with typical symptoms, and radiological evidence of bone deposits was visible on the tenth day; my latest on the sixteenth day after injury (the dislocation case). The photographs represent one of the typical

Fig. 2.—Elbow-joint, thirty-fifth day.
cases out of the five as seen on the fourteenth day, and on the thirty-fifth day after treatment.

The condition when it arises is definitely an alarming complication. Starting as a case of trivial injury with a negative X-ray (if taken), one is suddenly confronted with a problem of threatened ankylosis and grave disablement.

I treated these five cases by complete fixation and rest for three weeks. Two of the cases were put in plaster with the elbow at a right angle, and the other three placed on external angular splints. In four out of the five cases, the bone deposits were almost completely absorbed after a month's rest, and the fifth case, the most obstinate, commenced to improve after six weeks.

I have not had a case in which operative treatment was indicated, and have not seen the condition in any other part of the body except in the brachialis anticus muscle.

I consider that the lesson to be learnt from these cases is to go very easy as regards movements and massage in the early days after injuries to or near the elbow-joint, and further, that on the slightest suspicion of myositis ossificans arising, the limb should be immediately placed at complete rest and the elbow-joint immobilized at a right angle. I would lay stress on the fact brought out by my cases, and not generally described or mentioned, that the condition may arise after trauma in which there has been no apparent or radiologically demonstrated bone injury, as well as by gross fractures and dislocations. The length of time the joint is immobilized must be judged chiefly by frequent radiological examinations.

My thanks are due to Colonel J. W. L. Scott, D.S.O., for permission to send these notes for publication, and to Assistant Surgeon P. F. D'Mellow, I.M.D., for the radiograms.

---

Travel.

BEYOND LEH.

A SHOOTING TRIP IN LADAKH, 1926.

Being a Diary kept by

K. W. DICKSON, F.R.G.S.

(Continued from p. 144.)

XII.—IN NUMBER SIXTEEN BLOCK.

Kiamjun, Tuesday, May 14, our shortest march, only nine miles. We arrived at 9 a.m., and pitched camp in a very sandy field. It was rather exciting feeling we had actually arrived on the ground where R. could shoot. The camping ground was like any other, but there were high precipitous hills on three sides, and only a narrow opening where a little stream came down to join the Indus. It was up this opening that R. had