FIG. 29.—Long hand splint.

FIG. 30.—Long hand splint,
with thumb-piece.

FIG. 31.—Long hand splint applied.

in order that the fingers may maintain their grasping power (Figs. 24, 25, 26, 27, and 28). Fractures of the hand may be immobilized as shown (Figs. 29, 30, and 31).

Care must be taken to fit the wrist flexion accurately to the splint flexion, thus avoiding any possible strain of the carpal joints.

RETENTION OF LOOSE PIECES OF BONE.

I do not intend to deal with the surgical considerations

involved in the treatment of the suppurating wound. Many distinguished surgeons are devoting themselves to this problem. It may be well, however, to offer a word of warning against the destruction of loose pieces of bone removed from the wound. If quite loose they can be taken out, cleaned, and replaced. Suppurative compound fractures unite well if time be given them; a common source of failure is due to the removal of bone.

THE USE OF CRUTCHES TO PREVENT PRIMARY CONTRACTION.

By DR. HAGENTORN,
PETROGRAD.

CRUTCHES are commonly used by patients after the loss of one of the lower limbs or after injury before complete recovery. The latter, using them in the same way as the former, lift the injured limb when walking; we frequently see them walking with the knee lifted and bent, or the thigh hanging straight with a bent knee, according to the position of the wound, as in cases of wounds of the soft parts of the thigh, etc.

This method of holding the leg in walking, if it is continued over ten to twelve days, makes a bent knee and extended ankle-joint immobile. The contraction thus caused by injuries of the lower limb is merely reflex; this reflex primary contraction is easily cured; the secondary cicatricial contraction may get worse with time—for instance, after loss of muscular substance. To prevent pain from the injury of the muscle, the ends of it are approximated and fixed by the other flexors. The patients acquire this crooked position of the limb before they begin to use crutches, from the first day after the injury. A fortnight later the knee can scarcely be extended without force.

If the surgeon waits for the healing of the wound, and does not take precautions to prevent the contraction by splinting, and lets the patient walk with crutches with a lifted leg, shortening of the ligaments of the joints follows the muscular contraction; extension apparatus is required, and time is lost before the harm can be undone.

This can be prevented if crutches be used as follows: It is not enough to give crutches to a patient; the surgeon must teach him how to use them. The presence of the surgeon is necessary to give the patient assurance that he is going the right way without the least danger to his injured limb. His presence is desirable at the first trial to watch the patient. After lying in bed for several days the patient may feel giddy in the upright position, and may fall. Not many patients can walk at once with crutches as if they had never walked without them. Many require teaching.

Give the patient his crutches in the way in which they have to be used. Put the ends of them at a near and equal distance in front and aside of him, and let him take two steps, putting the wounded leg with the sole, as far as he can, flat on the floor, like the healthy one; then put both crutches at a rather greater distance in front of him, and so on. Care should be taken to let the patient put his feet symmetrically, not putting the bad one in abduction as he is inclined to do, nor the toes of the bad one pointing inward. In the absence of the surgeon the nurse must see that the patient learns his lesson thoroughly.

A light lateral splint, applied during the first days, can

be removed, and the patient will not feel inclined to bend the knee, nor to keep the ankle-joint in an equinus position.

There is no need to wait for the use of crutches till the wound has entirely healed or the suppuration has ceased. There is no danger whatever in using the lower limb for walking as soon as the wound is granulating. The crutches must not be merely a support of the weight of the body, as in cases of amputation; they ought also to be a means of helping the physiological graduated use of muscles and bones.

To decide the time for using both crutches, or only one, or a stick, there is a simple method. Reach both hands to the patient instead of crutches, and let him take a few steps. If the pressure on both your hands is rather heavy, he must continue to walk with both crutches; if your hand feels the pressure of the hand on the bad side, he can walk with one crutch; if the pressure be slight on both your hands, he can walk with a stick.

Another important point for the same purpose is the length of time that the patient takes over touching the floor in making a step with the injured limb. If the time be very short he must use crutches. The more the difference of time between the steps of the two lower limbs diminishes the sooner he will be able to use a stick.

The length of crutches must exceed by $1\frac{1}{2}$ to 2 inches the vertical line from the armpit to the ground.

Patients brought into hospital ten or more days after injury are many of them unable to straighten the leg at the knee-joint. Judicious forcible straightening, with fixation by means of a plaster-of-Paris bandage, with graduated movements and use of crutches, will remove the deformity. I have never had, either in civil or in war practice, to resort to physio-therapeutic measures to restore a recent contraction, if taken in time.

These remarks chiefly refer to cases of wounds of the soft parts of the leg; but the crutch *cliquette* is much wider than that. I will give the approximate times at which to begin the use of crutches in different cases of injuries of the lower limb. Allowance must be made for individuality.

1. Small wounds of the soft parts of the leg, scarcely discharging; light splint: Crutches on fifth to seventh day after injury.

2. Larger and more actively discharging wounds, with splint: Crutches on tenth to fourteenth day from commencement of granulating.

3. Wounds of the knee or ankle joint, penetrating the joint; splinted with a suitable plaster-of-Paris bandage; opening into joint closed: Crutches two to three weeks after the injury. If the joint has not been opened and the cartilages are uninjured, crutches on the fifth to seventh day after injury.

4. Special care must be taken over the use of crutches in cases of suspected or existing lesions of blood vessels.

5. Compound fractures of tibia or fibula or both: at the

time of diminished discharge, before consolidation of fracture. Crutches on the fifth to fifteenth day, with suitable plaster-of-Paris bandage.

6. Compound fractures of the thigh: According to the degree of bone-splitting and of suppuration, crutches on the third to seventh week, with plaster-of-Paris.

7. Wounds of the foot, even of the sole, do not contraindicate the use of crutches during the period of granulation.

The early use of the physiological functions of muscles and bones after injuries and gunshot wounds reduces to a considerable extent the number of patients requiring physio-therapeutic after-treatment.

PSEUDOTUBERCULOMA SILICOTICUM.

BY

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THE following case is an example of a rare lesion resulting from the traumatic insertion of silica into the lip:

A man, aged 39, seen by me on May 18th, 1916, gave the following history:

In 1906 he fell off his bicycle when riding along a dusty country road, cutting his nose and the mucous membrane on

FIG. 1.—A group of multinucleated giant cells distributed in a circumscribed aggregate of proliferated connective tissue cells, the whole being surrounded with a narrow zone of fibrous tissue, as in a miliary tubercle. The whole of the new formation was constructed after a similar manner. Many of the giant cells enclose particles of silica. $\frac{2}{3}$ in. objective.

the buccal aspect of his lower lip. He thought that in all probability some road grit was ground into the wound, for he distinctly remembers spitting out blood and sand after he picked himself up. He used a mouth wash, and healing took place in about fourteen days. The resulting scar was somewhat thickened, but underwent no further change until five months ago, when a swelling began to form in its centre. Four months later the submental glands became enlarged and tender. The glandular enlargement, combined with the deformity of the lip produced by the increasing size of the tumour, led the patient to consult his doctor, who brought him to see me.

He was a tall, well-built man, with a somewhat prominent lower lip. He stated that he had always been perfectly healthy and that there was no history of phthisis or specific disease. Von Pirquet's cutaneous reaction was negative. On the inner side of the lower lip, slightly to the left of the mid-line and just above the frenum, there was a hard rounded tumour, a little larger than a shilling (about 2.3 cm.) in circumference and about 1 cm. in thickness. The mucous membrane was firmly adherent to the whole of its buccal surface, and it appeared to be invading the muscles of the lip. The skin was freely movable over the tumour. The submental glands were slightly enlarged and tender, but freely movable. The scar in the nose was small, soft, and hardly visible. Palpation of the tumour through the skin conveyed an impression similar to that given by a preputial chancre. A provisional diagnosis of an endothelioma or of a fibroma surrounding a foreign body was made.

On May 20th the tumour, together with the mucous membrane covering it and a quarter of an inch of the surrounding tissues, was excised from the buccal aspect of the lip, and the submental glands were removed. Healing was uneventful, and up to the present date there has been no sign of recurrence.

Pathological Report.

The tumour was tough and somewhat granular on section. It was sent to Professor S. G. Shattock for examination, and I have to thank him for the diagnosis of a very unusual condition, the nature of which is indicated by the name which he has given it.

Microscopic examination showed that the lesion consisted of a congeries or a mosaic of giant-celled systems and huge giant cells, hardly to be distinguished from those of tuberculosis, although no caseation was present. No tubercle bacilli or other bacteria were discoverable in the lesion in microscopic sections.

FIG. 2.—Giant cells with an included particle of silica. $\frac{1}{6}$ in. objective.

In practically all the giant cells, however, and elsewhere, there were particles of silica, which stood brilliantly out when the sections were polarized. That the material consisted chemically of silica was proved by its insolubility in boiling nitric acid. The figures appended will, perhaps, convey at a glance the details of the structure of this singular formation.

WHEN the *Letimbro* was torpedoed Major Giulio Fantoli, of the Medical Service of the Italian army, who was on board, got away in one of the boats. For a long time nothing was heard of him. Recently General Ameglio, commander-in-chief of the Tripolitan army, discovered that the boat had fallen into the hands of Arab pirates and been taken to Misorata where Dr. Fantoli is still a prisoner. The adventure recalls the old days of the Algerian raiders of the sea whose most famous victim was Cervantes.