the lesion could not have been cured, any extra lease of life secured by rigid limitation of effort would have been dearly purchased at the price of invalidism, coupled by continual apprehension.

Tunbridge Wells.

FLAVINE IN THE TREATMENT OF COMMINUTED FRACTURES OF THE JAWS AND ACUTE SEPTIC STOMATITIS.

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THE treatment of fractures of the jaws due to shrapnel or gunshot presents a complicated problem, special difficulties being extensive comminution of bone and laceration of soft tissues, and the high degree of septic infection. Provided the patients came under treatment before extensive necrosis of bone had occurred—i.e., not later than seven to ten days after injury—the results have been highly favourable in many cases with very severe damage and infection. I attribute my success in great part to the use of flavine, which has been shown to possess powerful antiseptic action in dilutions relatively harmless to tissue elements.

Method of Treatment.

The following method was adopted as a general practice. After the patient had been anaesthetised a tube was passed into the larynx and the anaesthetic administered by means of it; the throat being plugged with gauze there was no possibility of foreign bodies passing downward. Teeth in the lines of fracture were removed wherever possible, and also every septic tooth and root. In dealing with fractured bone where comminution was extensive, it was impossible to decide which fragments were viable and which were necrotic. Accordingly I made a rule to leave all bony fragments undisturbed and to bathe and soak the whole fractured area for five to ten minutes with 1:1000 flavine solution, disturbing the parts as little as possible, so as to avoid mechanical injury to tissues already devitalised. The external wound was cleansed with flavine solution and dressed with gauze soaked in flavine, which was also used to pack lightly any sinuses. In fractured mandible the jaw was supported with a knitted chin support. Subsequent to this the treatment followed on the usual lines; cap-splints were fitted to maxilla and mandible and were wired together. Cleanliness of the mouth was ensured by frequent syringing.

I am convinced that the favourable results were largely due to the early treatment with flavine, which, hastening the extinction of septic infection, yet left unimpaired the vitality of the osteogenic tissue. Had the living bone been destroyed in the course of treatment such complete bony union as occurred in these cases could not have been obtained.

Illustrative Cases.

The following notes indicate the results in two particularly severe cases:—

CASE 1.—Pte., admitted Sept. 3rd, 1918. The X ray photograph showed very extensive comminution of bone; there was much destruction of soft tissues and profuse suppuration. After treatment on the lines described there was practically reconstruction of the mandible, as shown in a photograph taken on March 25th, 1919.

CASE 2.—Australian Lt. There was a fracture of the right maxilla with involvement of the antrum, which was filled with pus. The soft palate was badly lacerated, and the hard palate extensively comminuted; the mouth was very foul. The parts were cleansed with flavine and the antrum washed out with the solution, then all the soft tissues were soaked with flavine; all broken teeth were removed. At the close of the operation the soft palate was stitched up. It is to be specially noted that although the wound was completely closed, and no provision was made for drainage, the parts healed excellently and there was no recrudescence of sepsis.

Acute Stomatitis.

The frequency of acute stomatitis of all degrees up to actual gangrene has been a striking feature among soldiers. These acute infections were usually superadded on a chronic septic condition of the mouth. When such cases first come under observation the gums are exceedingly tender and painful, and there is often extensive sloughing and an exceedingly foul odour. It is essential to get rid of the

acute inflammation before instituting thorough operative measures.

The following method of preliminary treatment has yielded excellent and rapid results:—The mouth is syringed out with flavine 1:1000, special attention being paid to all pockets. Then gauze soaked with flavine solution is lightly packed into the angle of the cheek and all round the gums, and is retained in the mouth for 20 to 30 minutes. This procedure is repeated thrice daily.

As regards the results, not merely is the application painless, but it leads quickly to relief of pain and to subsidence of the acute inflammatory condition. Further, in several cases where the mouth was so foul that one could readily detect the bad odour at a distance of several yards, 24 hours after commencing treatment with flavine the breath has become quite free from smell.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE USE OF BISMUTH AND IODOFORM IN THE TREATMENT OF CHRONIC SUPPURATIVE OTITIS MEDIA.

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EARLY in 1916 I was introduced to the merits of bipp¹ by its inventor, Professor Rutherford Morison. The results he was attaining by its use in bone surgery impressed me very greatly, and I put into operation his suggestion of using it in mastoid work. The sequel more than justified our expectations, and encouraged me to use a powder of bismuth and iodoform in the same proportions as in bipp in certain cases of chronic ear suppuration.

Types.—Chronic ear suppuration may be divided roughly into the following types: 1. Those in which the suppuration is not confined to the tympanum, but has extended to the mastoid or the labyrinth. Although in acute suppuration the whole middle ear cleft is generally involved, this by no means holds good in the chronic stage. It is a common experience to observe the relief of mastoid pain and tenderness after tympanic drainage is established in acute cases, and it is equally common to open a healthy mastoid antrum when operating for the cure of chronic suppuration. 2. Cases in which naso-pharyngeal or tubal sepsis is responsible for the continuance of the suppuration. 3. Those in which the bony tympanum is carious. 4. Those in which the suppuration is limited to the mucous tympanum.

It is only in cases belonging to the last group that cure may be hoped for by local conservative measures, but such cases are extremely common. The usual method of treating them with syringing, mopping, "drops," &c., is discouraging. One is so completely at the mercy of the patient's attendants, and the effect of the "drops," even when they are correctly instilled, is so transitory, that it is difficult to expect a cure. The use of "bip"² to a great measure removes these handicaps.

Technique.—1. Establishment and maintenance of thorough drainage. In the generality of cases that is already present, very many "chronic ears" presenting but a rim of membrane or even none at all. 2. Removal of crusts, dead epithelium, and all morbid material with hydrogen peroxide. 3. Thorough cleansing of meatus and tympanum with spirit, applied on a wool-carrying applicator, and allowing to dry. 4. Covering the tympanum with bip. The powder is blown in with a fine-pointed, slightly curved, powder-blower through a large speculum. In cases with profuse suppuration I have not found that more than three applications a week are necessary, and in milder ones a weekly application fulfils

¹ Bismuth, iodoform, and paraffin paste, containing bismuth and iodoform in the proportions of 1 of bismuth to 2 of iodoform.

² Bismuth and iodoform powder.