

Ontario Medical Journal.

R. B. ORR, M.B., - Managing Editor. | W. H. B. AIKINS, M.D., - Associate Editor.

SENT FREE TO EVERY MEMBER OF THE PROFESSION IN ONTARIO AND BRITISH COLUMBIA.

All Business Communications should be addressed to DR. ORR, 147 Cowan Avenue, Toronto.

VOL. I.]

TORONTO, DECEMBER, 1892.

[No. 5.

Original Communications.

IMPERFECT REPAIR OF BONE.*

BY DR. A. H. FERGUSON,

Professor of Surgery, Manitoba Medical College.

GENTLEMEN,—The subject I wish to present to you to-day is the "Imperfect Repair of Bone," and the case before you for operation is an illustration of it.

The amount of callus thrown out to repair a fractured bone may be :

1. Perfect.
2. Imperfect.
 - (1) Superabundant.
 - (2) Deficient ; resulting in
 - (a) Delayed Union.
 - (b) Absolute Non-Union.
 - (c) Fibrous Union, or
 - (d) False Joints (pseudarthroses).

Delayed union is most frequently met with in cases having little or no displacement of the fragments, and where the laceration of the periosteum and surrounding structures is not extensive. When the usual time for union to be complete has expired, the bone that was fractured is examined ; but abnormal mobility is present almost as much as four or six weeks previously. The callus thrown out is not perceptible, and union is said to be delayed. From your knowledge of the case, per-

fect coaptation had been secured and maintained. It was certain that no soft structures were at any time between the fragments.

A fracture of any of the long bones may behave in this manner. You now, probably, for the first time, enquire into the family and personal history of your patient, and should any constitutional affection be suspected, you at once prescribe the appropriate remedies for it. It is well, before putting up such a fracture for a second term of weeks, to stimulate it by friction (rubbing the broken ends together) or percussion.

Absolute non-union is very rare, except in fracture of the patella and in intracapsular fracture of the neck of the femur. In the shaft of long bones, the callus provided by nature may have become absorbed, leaving the bone totally ununited. At other times, no attempt to form a callus can be detected. Such cases are reported, but I have never met with one.

Instead of finding delayed union or absolute non-union, more frequently you will discover that fibrous tissue, more or less perfect, has formed between the fragments, even when they are far apart. The bands of tissue intervening may be short or long, weak or strong, with perhaps (in cases of long standing) islets of cartilage or spicula of bone scattered through them.

When a broken bone, in which osseous union has not occurred, is of several months', or may be years' duration, the constant motion rounds off the fragments, which become eburnated. The connective tissue cells form a false membrane not unlike the synovial, and in it may be found an oily

* A Clinical Lecture delivered at the Winnipeg General Hospital, October 18th, 1892.