

According to some German and French observations, blood-clot has an influence not only in providing a suitable medium in which bone may be formed, but further, in exerting a direct chemical stimulus upon the osteoblasts.

We may now apply these researches to surgical practice, considering first the consequences and repair of fractures. In subperiosteal fractures, rapid and firm union takes place without any ensheathing callus, and the bone feels quite normal after a few months. When the periosteum is extensively torn, osteoblasts wander out beyond its limits, and ensheathing callus may be formed in quantity. Much will depend on the amount of movement to which the part is subjected. Vigorous movement, or, in those cases where the periosteum is stripped away, deep massage applied too early just over the site of the fracture, will disseminate the osteoblasts far and wide. Not only may the callus be excessive, and, perchance, lock the nearest joint, but muscles, nerves, or tendons may become ensheathed by new bone, and their functions be impaired.

Here belong those interesting and by no means infrequent cases in which, after a fracture, especially near the elbow joint, an osseous mass develops in the muscles, as for instance in the brachialis anticus. This is called *traumatic myositis ossificans*. The mass can be moved apart from the bone, and casts a shadow with the x-rays. What has happened is that massage or movements have scattered the osteoblasts far and wide, and they have, after a few weeks, performed their usual function, and regenerated bone