

In other experiments, a strip of periosteum was excised and immediately implanted in the neck of the same animal around the jugular vein. Usually it absorbed completely; once a tiny osseous nodule was found, derived probably from an attached chip of bone. Macewen points out the great practical importance of this in such an operation as subperiosteal excision of the elbow. If care is not taken to inspect the periosteum, adherent bony flakes may be left which will grow, and lock the joint. If they are all removed, an excellent free joint results. This represents the experience of over two hundred cases. On the other hand, care must be taken not to encroach on the diaphysis of the humerus by removing too much, or it may sprout new bone.

In other experiments, Macewen removed portions or the whole length of a bone subperiosteally. No regeneration took place to fill the gap, except in a few cases where the animal was young, and the growing epiphyseal ends pushed the extremities together to diminish or obliterate the gap. No new periosteal bone was formed.

He then repeated Duhamel's silver-ring observation, and found that the burying beneath new osseous tissue occurred just as well if the bone in that neighbourhood, or indeed in its whole length, was first deprived of periosteum. The new bone could be seen overflowing the ring from the edges. In this case it is perfectly evident that the osteoblasts providing for growth must have come from the shaft, not from the periosteum.

A number of important observations are recorded,