

teeth lay horizontally in the jaw, their grinding surfaces resting against the roots of the second molars, with their fangs extending under the *coronoid* process. Over these crowns no absorption took place; but according to Mr. Bell's theory, their presence should have been sufficient to open a passage, whether their growth pushed them in that direction or not. Yet this was not the case, nor is it ever the case under similar circumstances, and therefore we think it cannot be properly called a process of anticipation.

Mr. Fox tells us that the absorption of the temporary fang is induced by direct pressure of the permanent tooth upon it; but how can this be reconciled with the fact that dental structure contains no absorbents, and consequently when the tooth of replacement comes in contact with it, absorption by the direct action of vessels cannot take place, for the membrane which contained those vessels is destroyed; and therefore this process cannot, as he believes, be the result of direct pressure upon the substance of the fang. There are cases in which a total destruction of the temporary fang has taken place, while the tooth of replacement was yet confined in its bony follicle; and Mr. Fox himself mentions this fact as a conflicting argument to his own theory, without attempting to answer it. But we have seen, in the case mentioned that the absorption of the fangs of one tooth was induced by the irritation consequent upon the ulceration of another; and if we admit that the absorbents may be stimulated to action by irritation, we must not look for an explanation of such cases whenever we meet them.

The development of teeth in the solid structure of the jaw, affords abundant evidence that absorption of the bone is not induced by actual contact of the growing tooth. When, by accident, the tooth is prevented from pushing forward through the gum, it remains embedded in the jaw, and as it increases in length, by a deposition of dental bone from the pulp, the absorbents contained in the sac, or membrane which covers the pulp, carry away the jaw as fast as space is required for the newly formed fang, and so it continues to grow to precisely the same form and size that it would under the most favourable circumstances. It is evident, that direct contact in this case would not only prevent the excavation of the jaw, but it would render the growth of the tooth impossible, for the organs which perform these two offices could not exist at all.

Bourdet discovered what he supposed to be a distinct organ for the removal of the temporary teeth. This was afterwards noticed by Laforgue, who dignified it by the name of *absorbing apparel*; but this substance is nothing more than an altered condition of the outer

membrane of the dental sac, and the peduncle or cord which leads to the gum. The alveolo-dental periosteum is also subject to the same change, and it always takes place, to a certain degree, where irritation is most severe; the membrane first becomes more vascular, and as soon as absorption commences, it becomes thicker, and the absorbents are undoubtedly more active where these membranes are most vascular. It has been urged, in proof of the agency of this fleshy tubercle in the removal of the temporary teeth, that when this substance "fails to be developed, or is destroyed by an injurious operation," the permanent tooth often remains in its socket. Now, instead of sustaining the opinion that these tubercles are necessary to the eruption of the teeth, this argument completely overturns it; for when the tooth of replacement cannot come forward, absorption must go on to a still greater extent, so as to make room for the newly formed fang, and this is done without the assistance of the absorbing apparel; therefore we are bound to believe that the change necessary to absorption may take place in any part of the alveolo-dental periosteum, for "it is certainly unphilosophical to attribute a phenomenon to two distinct causes, when one alone is sufficient for its explanation."

Dr. Goddard says, "the shedding of the temporary tooth depends chiefly upon its death, produced by a loss of arterial supply. When the permanent tooth," says the same author, "impinges upon the end of the fang of its predecessor, it cuts off its supply of arterial blood, thus producing its death." With how much truth he says this, we shall see by comparing it with certain facts connected with our subject, which are as follows: "Absorption of the root seldom, if ever, commences at its extremity, but generally at a considerable distance from it, and often near its neck. The vessels of the tooth frequently remain entire, performing their natural functions in the crown, long after the fang has been absorbed, and thus they continue to carry their fluids to the remaining portion of the tooth, while everything else about them is swept away by the process of absorption. Therefore it cannot be true that the destruction of the fang depends upon its death, by the loss of arterial supply.

Many other theories have been advanced for the explanation of the peculiar process by which nature removes the first set of teeth, but none of them furnish that evidence of their truth which a correct theory should do. They do not account for exceptions, as well as general rules.

In consideration of the various phenomena of absorption in the buccal cavity, we are induced to believe that its causes, in young subjects particularly, are en-