

or the lodgment of nerve filaments, or both. These we see in the works of all writers upon the subject; but an equally if not more important reason than either has been touched upon, which, although it has existed quite as long and is no less plain than these, seems to be neglected, and remains almost unconsidered.†

The opponents of the doctrine of nerve filaments claim that hydrostatic pressure upon the pulp from the fluid in the tubuli, the waves sent along these channels, and the transmission of vibratile motions by the solid substance, would all account for the peculiar sensations of dentine, thus apparently rendering these filaments unnecessary. By Prof. McQuillen it is urged that if the pulp had such an infinite number of connections with the tubuli, it would be held firmly in position, and could no more be drawn out of its cavity than Gulliver could stand up when first he found himself bound by the Liliputians.‡

To these arguments I think might be added the effect of osmosis on the pulp through the tooth, and reflex action through the nerve; the former, as shown by the two currents between fluids of different densities through organized material, and the latter, by the familiar effects of sapid substances, as vinegar, &c., upon the salivary glands.

On the other hand, the advocates of this doctrine claim that they have found fibres occupying these canals, which would be very conclusive if their opponents did not have the theory of coagulated fibrine to fall back upon. Some say that there are no changes in dentine once formed, but this is untenable; every midwife knows that a pregnant or nursing woman frequently finds her teeth suffering from softening of the tissues. Finally, others claim that there is not abrasion, or wear of dentine, and that it needs no nourishment. From a review of the above one might almost be persuaded that there is some chance that the dentinal tubuli are of very limited use and could be dispensed with altogether. Nature, however, has good and weighty reasons for forming this tissue after so uniform a pattern, and, if we search, no doubt others yet unthought of will some day be understood by all.

The architect has long since learned the lesson, which the economy of nature has taught by the hollow tubes of the long bones, woody

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† "A Course of Lectures on Dental Physiology and Surgery." By John Tomes, Surgeon-Dentist to the Middlesex Hospital, &c. London: 1848.

‡ See DENTAL COSMOS for October, 1869, page 524.