

seriously involved, owing to the fact of the condition being general or local in its character.

In saying this much I am assuming a little, as the data at present extant is somewhat limited. There are other cases of softening of teeth or rather destruction from the use of elixir of vitriol and muriated tincture of iron, where the surfaces of the enamel first and subsequently the dentine, is extensively softened and decayed away with characteristic appearances familiar to all dentists of long experience.

In such cases where the remedy has been long continued even an acid diathesis might be anticipated sufficient to cooperate in the local distinction, the bones even in some instances may be temporarily implicated but subject to subsequent reparation.

So even in case of the teeth after the cause of the softening is removed, subsequent hardening may and does take place if the process be not too long continued and the destruction too extensive, especially if from constitutional causes.

ARTICLE III.

Report on Dental Chemistry.

By DR. JOHN ALLEN.

Read before the American Dental Association.

As organic chemistry treats of the substances which form the structure of organized bodies and their products whether animal or vegetable, let us look at dental chemistry a moment from two stand points, viz. : the constituents of which the teeth are formed, and the source from which those constituents are derived.

According to Johnston's chemical analysis, the constituents which enter into and are embodied in the osseous structure of the human teeth are as follows :

Phosphate of lime, with traces of fluoride of calcium, 66.72; carbonate of lime, 3.36; soluble salts, 0.86; cartilage, 27.61; fat, 0.40, : phosphate of lime, 1.08.

The enamel, or vitreous substance which covers the crown of a human tooth, is composed of phosphate of lime and traces

of calcium, 87.82; carbonate of lime, 4.37; phosphate of magnesia, 1.34; soluble salts, 0.88; organic substances, 3.39; fat, 0.20

These constituents form the basis of the bones and teeth of a person. In order, therefore, to produce a good osseous structure of the human frame such articles of food should be used as contain a due proportion of these constituents, for such are the operations of nature in the animal economy that when food is taken into the system it is duly apportioned and converted into muscle, bone, fat etc. For this purpose the necessary materials of which our systems are formed exist in the proper nourishment designed for man. But by the present mode of preparing certain articles of food (some of which we will notice) a large portion of the essential elements for osseous formations are taken out and discarded. For example, the wheat, rye, etc., of which bread is formed, is stripped of the hull and coarser portions of the grain which are requisite materials for bones and teeth, as deduced from the following well authenticated chemical analysis, by which it is found that in 500 lbs. of whole grain there is:

Muscle material, 78 lbs.; of the fat principle, 12 lbs.; of the inorganic elements for bone, etc., 85 lbs. 500 lbs. of fine flour contains: muscle material, 65 lbs.; fat principle, 10 lbs.; bone material, 30 lbs. 500 lbs. of bran contains, muscle material, none; fat principle, 30 lbs.; bone material, 125 lbs.

The foregoing facts should teach the importance of using such food as contains the requisite elements for developing and sustaining a perfect organism in all its parts.

By close and careful scientific researches we have sufficient light upon this subject to serve as a guide which we should follow, for nature is so independent in the administration of her laws that those who disregard or depart from them must abide the result. Food for children ought to be plain and substantial; such as bread, milk, eggs, potatoes, rice, beans, etc. These constitute the principle articles of food necessary for a good development of the human system.

Adults require the same constituents to sustain the organization of the body that the young do to produce it; otherwise deterioration and decay ensue. More meat may be used as persons grow older.

Condiments possess none of the necessary elements for producing or sustaining a healthy organism.

Candies, which contain poisonous substances, (as many of them do), are detrimental. Many of the confectioners in coloring their candies, etc., employ the following materials: For their greens they use Brunswick green, carbonate of copper, or arsenic of copper. For their yellows, chromate of lead, or gamboge. For their reds, red lead, vermilion or cinnabar; and for their whites, white lead. All of which are poisonous. Although some confectioners use coloring ingredients comparatively harmless, such as saffron, French berries, Persian berries, fustic wood, etc., for yellows; for reds, cochineal, including carmine, Brazil wood, and madder; for blues, litmus and indigo; for greens, mixtures of any of the above vegetable yellow with indigo. If the eye *must* be gratified as well as the taste, in these matters, the latter colorings are far preferable to the former, but the purchaser of the candies can seldom tell the one from the other, therefore it is better to use them sparingly.

There are many articles of luxury used that are deleterious to the general health when indulged in too freely; that do not act directly upon the teeth, but indirectly prove injurious by producing vitiated secretions which affect them. Pure saccharine substances, when used moderately, are not considered injurious to the teeth, but when used in *excess* they become detrimental. When these are taken into the system they are converted into lactic fluid. If this becomes predominant in the salivary secretions it attacks the lining portions of the teeth, and thus produces decay.

Now, as a profession we should do all in our power to diffuse practical information with reference to the best means of forming and preserving the natural teeth, for however perfect we may be able to construct artificial dentures, man

can not do the work of his Creator as well as he can do it Himself.

ARTICLE IV.

Use of the Sesqui-Chloride of Chromium in Sensitive Dentine.

By GEO. S. YINGLING, M. D.

While on a visit to my home in Tiffin, Ohio, I was requested by Dr. Bricker, of that city, to procure for him on my return to Baltimore, a small quantity of the Sesqui-Chloride of Chromium, for the purpose of applying it to a cancerous breast.

He stated that its action, when applied for the removal of cancerous growths, was peculiar; accomplishing the result thoroughly by a sort of disintegrating or crumbling away process and entirely painless.

With some difficulty I procured the chromium, but before sending it to Dr. Bricker, I showed it to my preceptor, Jas. H. Ludwig, M. D., D. D. S., and made known to him the name of the article, and the purpose for which it was procured.

Having at that time an engagement with a patient, whose teeth were exceedingly sensitive, and being somewhat at a loss what agent to use in order to relieve the hypersensitiveness in the particular tooth which he intended to fill then, most of the agents having already been used unfavorably, the idea occurred to him that the chromium might effect the purpose desired.

The following is an account of Dr. Ludwig's case in his own language, which I apprehend will be both useful and interesting to the profession:

"The tooth I selected for testing the merits of the sesquichloride of chromium, as an agent for the treatment of inflamed dentine, was but slightly decayed, the caries having penetrated but little further than the enamel.

"The sensitiveness was of such an exalted character that cold fluids and even the cool air would affect it painfully.