These sulci are generally found uncovered at some point by enamel, an imperfection so common as to render them less resistive than their fellows; hence

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I rather doubt if parents generally have given to this subject the attention to which it is entitled. I trust, however, that those who have followed me thus far, may be impressed with its importance. We cannot shut our eyes to the complaint which so generally prevails of decayed teeth; and a moment's reflection will call to mind the number of the young and beautiful who are prematurely hurried to the tomb, ere yet the bud has expanded into the full-developed flower. Nay, comparing the two countries, the statistics of life and death communicate to us also the important fact, that while the greatest mortality shows itself in England in infancy and childhood, on this side the Atlantic it is found at a more mature age.

Neither has the tendency of the physical organization of woman on this continent to degenerate escaped the observation of one of our greatest medical philosophers in this country, who regards this retrogression as a national calamity, and impresses upon his students the importance of the subject, and the propriety of their attention in attempting to arrest it; and he particularly specifies the great object to be gained in the use of bran-bread made from unbolted flour. On this head I shall have more to say hereafter.

With these observations, let us now direct our attention to what can be offered in remedy of this evil.

We have already stated that in no country in the world are children more beautiful or more lovely,—healthy in complexion, quick, smart, and intelligent,—active, sprightly, and playful in their disposition. Now, in the period from infancy until the child becomes mature,—let us, at all events, say until thirteen or fourteen years, and even to a more advanced age,—there is a continued growth,—a continual deposition of organic and inorganic or earthy particles, which are required for the formation of bone, teeth, flesh, and every part of the human body. I have shown that the essential ingredients for these several formations are all found in the milk of the mother; consequently, as long as the infant is deriving nourishment from the mother, she ought to partake of good, wholesome, nourishing food, that the blood, deriving these principles from the food, may be able to supply them in turn to the milk from which it is secreted. So long, then, as the child is thus nourished, so long is it safe, and the rudiment or foundation of a robust frame is laid. And if we are to expect, in future life, the stalwart frame of man, or the enduring, firmly-knit, compact, and healthy physical constitution in woman, the organic and inorganic or earthy compounds of which that frame is composed must not be denied. Nature must be supplied, or nature will fail.

It is not for me to dictate to any parent what shall be the food of his child: it is enough that I point out for their information what may be required to give what in common language is called "bone and sinew" to their offspring. It is necessary, then, that the food of children shall contain:

1st. Aliment having the *calorifacient* or heat-sustaining principle. And this is contained in quite sufficient quantity in the usual food,—in milk, wheaten bread, potatoes, arrow-root, Indian corn (as mush, hominy, or corn-bread), in most vegetable matter, and in sugar.

2d. Aliment containing the *nutrient* principle. And this is contained in animal food,—the lean of beast, bird, and fish,—in milk, eggs, wheat, rye, potatoes, beans, etc.

And 3d. Aliment containing the inorganic or earthy constituents,—on which depends strength of frame, and from which are formed the bones and teeth of the individual. And these are contained in milk, eggs, animal food, and particularly in wheat, rye, oats, potatoes, etc.*

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* On this subject, the author extracts the following from Carpenter's Physiology, p. 488: "These substances are contained, more or less abundantly, in most articles generally used as food; and where they are deficient, the animal suffers in consequence, if they are not supplied in any other way. Thus, common *salt* exists, in no inconsiderable quantity, in the flesh and fluids of animals, in milk and in eggs;

caries is most frequent in this class. Particularly is this the case with the dentes sapientiæ, an operculum of gum being too often found an added cause

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Of the inorganic constituents contained in wheat (and the same may be said of the other *cereal* grains) I have already alluded to the benefit to be derived from using bread made of unbolted flour. On this subject allow me to refer to the difference of flour having much of the bran remaining, and superfine flour, or that in general use throughout this country, and on which Prof. Johnston has made the following curious but practical observations. Examining wheat and flour, as to the amount of the nutrient or muscular matter, the fat-forming principle, and the bone and saline material, contained in grain in different states, he found—

	Muscular matter.	Fat principle.	Bone and salt.
In 1000 lbs. of whole grain...	156 lbs.	25 lbs.	170 lbs.
" " fine flour.....	130 "	20 "	60 "
" " bran.....	.....	60 "	700 "

Taking the three substances together, according to Prof. Johnston, of a thousand pounds, the three substances contain of the ingredients mentioned,—

	Whole grain.	Fine flour.
Of muscular matter.....	156 lbs.	130 lbs.
Of bone material.....	170 "	60 "
Of fat.....	28 "	20 "
	354 lbs.	210 lbs.

Accordingly, the whole grain is one-half more nutritious than fine flour.* It also shows the very great proportion of *bone material*—that is, *earthy constituents*—contained in the bran; no less than 700 out of a thousand parts, or a *little more than two-thirds* of the whole. Now, by reference to the same work, we find, in a communication from a Mr. Bentz, the difference in weight of a barrel of flour without the bran, and when only the outer coating of the wheat is taken off. He says, "The weight of the bran or outer coating would, therefore, in the common superfine flour, constitute the *offal*, weighing only 5¼ lbs. to the barrel of flour, while the ordinary weight of offal is from 65 to 70 lbs. to each barrel of flour; showing a gain of from 59¾ to 65 lbs. of wheat in every barrel of flour." Now, if we estimate the earthy constituents to be two-thirds of the offal or bran, we must consider that there is an actual loss of these important constituents, which might be reserved, in every barrel of flour, of 40 lbs.

Again, if we estimate (according to the average of the consumption of flour to the amount of population, as one barrel to each individual) that every child shall consume annually only half a barrel of flour, then we find that by the use of the superfine flour, as commonly used in families, the child is deprived yearly of twenty pounds of those earthy substances which are required to form the bones and the teeth. When we speak of a child consuming half a barrel of flour annually, it appears a large quantity; but when we reduce the same

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it is not so abundant, however, in plants; and the deficiency is usually supplied to herbivorous animals by some other means. *Phosphorus* exists also in the yolk and white of the egg, and in milk; and it abounds not only in many animal substances used as food, but also (in the state of phosphate of lime or bone-earth) in the seeds of many plants, especially the *grasses*. In smaller quantities, it is found in the ashes of almost every plant. *Sulphur* is derived alike from vegetable and animal substances. It exists in flesh, eggs, and milk; also in the azotized compounds of plants; and (in the form of sulphate of lime) in most of the river- and spring-water that we drink. *Iron* is found in the yolk of egg and in milk, as well as in animal flesh; it also exists in small quantities in most vegetable substances used as food by man,—such as potatoes, cabbage, peas, cucumbers, mustard, etc. *Lime* is one of the most universally diffused of all mineral bodies; for there are few animal or vegetable substances in which it does not exist. It is most commonly taken in, among the higher animals, combined with phosphoric acid: in this state it exists largely in the seeds of most grasses, and especially in wheat-flour. If it were not for their deficiency of *lime*, some of the leguminous seeds (peas) would be more nutritious than wheaten flour; the proportion of azotized matter they contain being greater. A considerable quantity of lime exists, in the state of carbonate and sulphate, in all hard water."

* Patent Office Report, 1847, p. 116.

of offence. To write any exact description of the irregularities of the faces of the molar teeth would be impossible, owing to the diversified aspects pre-

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to a daily allowance, we find that it is little more 4 oz. or 4⅓ oz.; and every parent must know that this would be a very small amount to limit children to. Yet we see how large a quantity of the bony material would be added if unbolted flour was used instead of the present superfine flour. I may here add that the oatmeal used in Scotland, already referred to, contains the bran or inorganic constituents, while the oatmeal used in England is deprived of it. Now, this is a great loss of the most valuable constituents in only one of the principal articles of the food of children; and if we allude to another article, which is largely used on this continent,—I mean Indian corn (and I may also add the fat of meat, both of which, children, if allowed, will partake of very freely),—we shall find that both of these abound more in the calorifacient or heat-sustaining principle, and for the deposition of fat, than the nutrient, and that they are quite deficient in the earthy material *of lime*,—that material on which so much depends the proper structure of the teeth. Analysis of Indian corn shows the following composition,—as taken from Mr. Salisbury's prize essay read at the New York Agricultural Society for 1849:

Whole kernel:	
Starch	50.64
Sugar and extractive	7.46
Sugar	1.50
Fibre	6.28
Matter separated from fibre	0.05
Albumen	8.64
Casein	1.76
Gluten	4.56
Oil	4.00
Dextrine or gum	4.84
Water	10.22
	99.89

Ash of the kernel, constituting about two per cent.:	
Carbolic acid	a trace.
Silicic acid	1.450
Sulphuric acid	0.206
Phosphoric acid	50.955
Phosphate of iron	4.355
Lime	0.150
Magnesia	16.530
Potash	8.286
Soda	10.908
Chloride of soda	0.249
Organic acid	3.400
	97.000

This is a most elaborate analysis,—far more minute than any analysis we have had of any of the articles of food,—in fact, more minute than satisfactory; for the analysis of the whole kernel does not exhibit any amount of inorganic constituent; and when the whole is converted into ashes, we find that the *lime* only amounts to *the one-sixth of one part* in a hundred. Now, on inquiry, I find, on the authority of a very intelligent miller of this city, that in grinding corn the bran or thin skin of the grain is detained in forming it into corn-meal; consequently, it is deprived of even that portion more particularly containing the earthy constituents. This gentleman, in conversation, mentioned an important fact relative to this deficiency of lime in corn. To the best of my recollection, he observed, "This stands to reason; for, ten years ago, all the lower part of Jersey grew excellent corn, but would not grow wheat; but since the introduction of *lime* as a manure they have raised considerable wheat crops." Now, the fact is, it is not the habit or food of this plant, even had *lime* been in the earth; and magnesia and the saline manures are recommended to the agriculturist as best suited for its proper development.

It is generally looked upon as invidious, and one is more likely to incur odium than to receive credit for saying one word against a food which stands so high in public estimation and is so universally used over this continent. Yet it must not for one moment be supposed that I condemn the use of Indian corn in its various forms of mush, hominy, bread, or pudding as an article of diet; far from it. But, containing, as it does, a large proportion of starch and fatty matter, rather a small proportion of the nutrient principle, and quite a deficiency of the inorganic or earthy constituents, I consider it as valuable, as a light diet, for heat-sustaining purposes only, and therefore a desirable adjunct *to other food* containing more nutriment and a due proportion of the earthy constituents.

As an example or illustration of the want of the nutrient principle in corn or corn-meal, I may here allude to the effects I have seen in the West Indies, where, in a dearth of the ordinary provisions on which prisoners were fed, corn-meal was substituted; corn-meal and salted herrings, fish, etc., constituting their food. Now, the effect was that all the prisoners lost their natural strength; at the same time they became fat and bloated, inclining to

senting themselves. Sometimes such sulci are double, crossing each other at right angles. Frequently a single depression will separate the face into two

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dropsy. And this was not the effect of incarceration; for the prisoners were engaged in road-making, trimming fences, etc.,—consequently, in a healthy and exhilarating employment.

In reference to our domesticated animals, it may be asked, Why is corn so useful as an article of food to animals generally,—horses, hogs, sheep, etc.? I have already shown that the overplus of the calorifacient food, after what may be required for sustaining the temperature, is stored away in the form of fat. Now, if we instance the horse, corn is generally, if not always, given as an adjunct to his more usual food,—hay. And we find by an analysis that grass or hay contains not only the nutrient principle, but the inorganic constituents required in the formation of bone, etc.

One hundred parts of dry hay contain—

Carbon	45.8	Ashes†	9.0
Hydrogen	5.0		
Oxygen	38.7		100.
Nitrogen*	1.5		

Thus, the hay gives to the animal strength in bone and muscle, while the corn supplies additional heat-sustaining properties, and lays by, in the form of fat, the overplus as a reserve. The harder the horse is worked, the more corn he can bear; the great proportion of the carbon being carried off by the lungs, and the hydrogen and oxygen, as water, in exhalation and perspiration. But if the same quantity is given to a horse at rest, it overloads him with fat, which in his case accumulates more internally, or around the internal organs, and will, in course of time, induce disease; while in the pig, under similar circumstances, the fat is laid on externally, if I may so speak, giving the rich fat pork of our markets. And here I would again remark that no farmer would consider it necessary or essential to give corn to a young colt or horse, until required to work; nay, so careful is nature in appropriating just so much and no more of any constituent that may be required, that the food of the young horse should be more nutritious than heat-sustaining, and that there shall be no superfluity to store away fat, we find by analysis that the milk of the mare has little or no butter—in fact, only traces of it—in its composition.‡ What a lesson in the animal economy is here given, and what a practical illustration of the requirements of the young of that and other animals!

Again, it may be contended that among the beautiful children we see on every hand, there is no want of those who are fat and hearty. It is not *fat* we want; it is bone and muscle, with so much fat only as shall give firmness to the flesh and plumpness to the figure. Fat, although it enters intimately into union with the other component parts of bone and muscle, cannot be transformed either into the inorganic constituents of bone or teeth, or into muscular fibre. These must be contained in the food consumed, in the first place, and thence transferred to the blood.

How necessary, then, how important it is, if we expect to give strength and vigor to the constitution, that the food, in the first years of infancy and childhood, when the formative process is going on, should receive some further attention than has hitherto been given to it! and if our youth,—if our young females have hitherto been deprived of the necessary constituents for the full development of every portion of the body,—can we wonder that a woman should be the delicate and fragile being she is, or that by the decay which assails the teeth in early life she should be deprived of an ornament of so much value? If this

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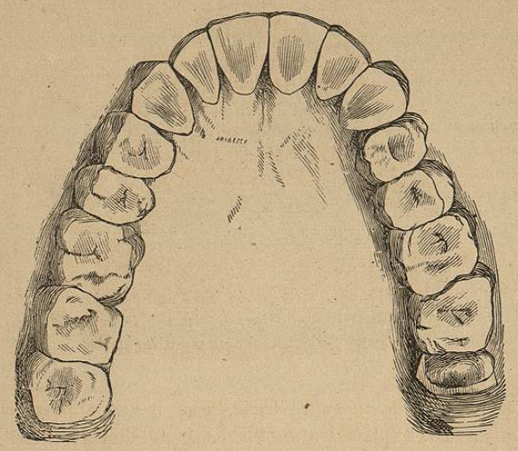
* Fifteen pounds of such hay, containing oz. 3.095 of nitrogen.
† These ashes having a good proportion of lime.
‡ Analysis of mare's milk:

Water	896.3
Butter	traces.
Casein	16.2
Sugar of milk, extractive matters, and fixed salts	87.5
	1000.

principal cusps, and, running over the side, will terminate in a pit. Still again a single deep sulcus will occupy the very centre of the grinding face,

Fig. 70.—Superior Dental Arch.



the four cusps being more or less associated and ranged round it, ring fashion. In still other cases, a multitude of pits will cover the surface. On a single face as many as fifteen have been counted.

The bicuspidati, for a similar reason, are markedly subject to be attacked. These teeth not only decay from their cutting face, but, because of a peculiar flatness characteristic of their approximal planes, are more frequently affected upon the sides than even upon the grinding surface.

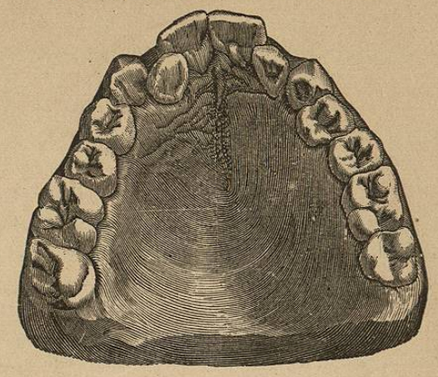
The next in the order of liability are the incisors of the upper jaw. Observation of the diagram exhibits a flatness on the palatine face of these

state of things can be altered,—if the physical constitution of woman in America can be saved from further degeneracy,—a purpose may be effected of consequence even in a national point of view; for it is to the healthy and vigorous constitution of woman that we must look for a race of hardy, vigorous, and enterprising freemen.

In conclusion, I would briefly state that this is a matter in which professional aid can avail little; it lies at the door and must be the work of parents generally. It is for them to understand the great value to be attached to the food on which their children subsist,—that it shall be wholesome and nutritious, and abounding in the earthy compounds so absolutely necessary to their proper development. If the chief articles of food have hitherto consisted of compounds made of superfine flour, corn-meal, and the fat of meat, let there be substituted in their stead bran-bread, milk, eggs, the lean of meat, and potatoes; let more attention be given to the nutrient quality of the food; let there be no deficiency of those articles containing the earthy material, that the bones and teeth shall not be deficient in those constituents so necessary in their composition and structure; and I should be inclined to hope that the evils which now exist will be lessened, and the physical organization of succeeding generations be equal to that of any nation upon earth.

teeth, which in many instances falls into a positive sulcus. These pits it is impossible to keep clean: hence an antagonism which results in caries.

Fig. 71.—Superior Dental Arch.



The surface most liable to suffer from caries is the approximal. This in many instances finds explanation in the constant abrasion here going on as the result of motion produced by the act of mastication, the enamel being literally worn or cracked away. In other instances, a species of pocket-like flatness is found near the necks, in which is lodged and retained the débris of diet. In still other instances, the dentine becomes deprived of its protecting enamel as the result of lateral pressure, such pressure being increased with the development of each new tooth; this applies most particularly when the relation of approximal contact is a limited one and not diffused over the face of the tooth at large.

The inferior incisors and cuspidati are the teeth least disposed to decay. An explanation of such exception seems found in the shape of the organs and in their being fully surrounded by an antiseptic saliva.

The wisdom-teeth, universally viewed as being most predisposed to caries, derive such tendency from a twofold direction. Developing at a period when the formative force is losing vigor, these teeth are commonly deficient in the amount of that inorganic material which constitutes what might be called the mechanical resistance of the dental organs: in structure they are found, comparatively speaking, loose, while their general resistive power is low; they might, indeed, be likened to the osteophytes which form after bone operations, and which represent so imperfectly the tissue replaced, being found unable to resist antagonisms not at all injurious to properly-formed tissue. Again, as a local signification is concerned, these teeth, making their appearance at a period when all the others are formed, find so little room in the arch as to render the process of eruption difficult, slow, and in some cases impossible: hence not only is a chronic morbidity engendered, but the face of the tooth is

in many instances so long overlaid by an unabsorbed operculum (see diagram) that a perfect pocket exists, constantly filled by ingesta.

CONDITION 3. *Constitutional relations.*—This is the purely medical aspect of the question: it considers the varying alterations in the individual as manifested in the changes of dental health,—whether such relation resides in altered nutrition of the organs or in the production of adverse associated expressions. An example is furnished in the condition of utero-gestation, a second in dyspepsia, a third in the anæmic diseases.

The common proverb, "for every child, a tooth," has passed into general acceptation: statistics demonstrate that women lose their teeth in a twofold proportion to men, and that child-bearing women lose them in a threefold proportion to single women. Teeth which, up to a period of pregnancy, never required attention, will, in some individuals, be attacked by a malignancy of carious action that quickly destroys a whole denture; such caries having the twofold signification of a perverted nutrition and antagonistic local action.

An all-important question here presenting itself is the cure. To esteem this as residing in plugs of gold, and to so practice, is to find one's self resting upon a staff of reed. The matter, primarily, is solely one of nutrition; not that necessarily phosphate of lime or other special material is demanded; the patient may have of such agents quite enough, both for teeth and fœtus; but the presence of agents of nutrition is not nutrition. Repair in living tissues resides in that function, as expressed by the physiologist, "by which nutritive matter, already elaborated by the various organic actions, loses its own nature and assumes that of the different living tissues, to repair their losses and support their strength." Here lies the indication: it is, to correct the morning sickness which compels the stomach to refuse its food; to keep cleansed an alimentary canal which, because of perverted secretions, is denied the office of its lacteals, the whole economy thereby, Tantalus-like, being starved, even with plenty around; it is to antagonize the perversions of appetite, which, refusing proper pabulum, craves substances injurious to the health at large; it is to control nervous irregularities. To express the requirements in one sentence, it is to secure, and to preserve to the system, that assimilative force through which it may be enabled to add to its ordinary functional work the new labor demanded.

Dyspepsia and anæmia, as causes of dental caries, have the same general constitutional signification as found in the condition just referred to. To enter into a discussion of these relations would, as is seen, carry us necessarily over the grounds of general medicine,—a domain with which it has been taken for granted the reader is familiar.

CONDITION 4. *Character of agents in contact with the teeth.*—The idea, as commonly held, that caries of the teeth depends exclusively on the existence of free acids in the oral cavity, is, to the mind and experience of the

writer, a proposition which needs but little observation to limit to very circumscribed boundaries. If any one hundred mouths be taken, having in them carious teeth, and the ordinary test of litmus-paper be made, four-fifths of them will be found neutral, if not alkaline. Alkalinity we would infer, then, to be a more common association of caries than acids; and of the truth of such position experiment will show that there can be little doubt. It is, however, a fact that the presence of any alkali may result in the formation of an eroding acid in a depression, or sulcus, and it does this precisely as the same effect results in decaying woody fibre,—namely, by enabling substances to absorb oxygen which do not in themselves possess such power, or possess it to a very limited extent. Thus, perhaps in every mouth in which the fluids are alkaline, carbonic acid will be found in the débris of decaying teeth. (See *Oral Fluids.*) *

Mucous Deposits.—Every one who has occasion to make observations in the mouth has met most frequently with that condition of the mucoid secretion in which this fluid is glairy and tenacious, alkaline to the test, and not infrequently offensive in odor,—a condition universally associated, when a habit, with dental caries, and, indeed, with general dyscrasia. Teeth in such a mouth are universally covered with a film, and this so persistent that the ordinary use of the brush fails to disperse it, while the common dentifrices have alone the signification of a temporary good.

Teeth so diseased find relief alone in acids, not only locally employed, but internally administered. A system secreting such mucus may be said to labor under the dyscrasia of super-alkaline poisoning, the agent having its point of exhibition most markedly in the mouth. It is really the condition of oral typh fever,—a typhoid condition expressing itself in this particular secretion, precisely as in other instances accident might have directed it to

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* "No acids or soluble lime-salts are in the innermost decayed mass; hence no acetic, tartaric, or lactic acid has dissolved much of the lime-salts, because the acetates, lactates, etc., would not be found washed out completely from the decayed mass, but a small amount would still remain, which, being soluble, would be easily shown by oxalate of ammonia acid."

"One large decay sliced up into several parts, and the slices analyzed, showed as follows:

"First slice—Outermost, very gelatinous, soft layer.

"Water, 58 per cent.; organic, 26 per cent.; lime-salts, 16 per cent.

"Or, omitting the water: Organic, 61 per cent.; inorganic, 39 per cent.

"Second slice—Middle, water not determined, because no longer reliable. (The specimen had become a little dry.)

"Organic, 55.8 per cent.; inorganic, lime-salts, 44.2 per cent.

"Third slice—Innermost, white, friable mass just close to the healthy dentine; scraped out with a soft iron wire, and very crumbling.

"Organic, 32.1 per cent.; lime-salts, 67.9 per cent.

"This decay which was analyzed in these slices shows, therefore, from the outside, a uniform advancement to the normal composition of the tooth. It shows that the lime-salts are removed, but not in any way which the acid theory demands. . . . The tooth is disorganized, the soft, friable white decay is no longer organized, though chemically differing only slightly from the tooth-substance."—*Experiments by Prof. Charles Mayer, A.M.*

the degeneration of the glands of Peyer or of the liver. A poison is in the blood, and by means of the circulation is diffused throughout every part of the system; that it expends its force most markedly on certain parts is not unlike the expression of disease in general. If the blood of a patient laboring under this typh condition be examined under a microscope, it will be found that the normally-shaped red disks are diminished in number as compared with what are known to the pathologist as "the melanosed" corpuscles; that is to say, as expressed by Chambers, "the dying or dead disks, shrivelled and small, of a dark color, with black specks in them, and with gimped edges."

But what is this typh poison? it may be asked. Unfortunately, the nature and scope of the present volume limit an answer to the simple elements of one of the most interesting questions in medicine. By typh poison is meant the existence in the blood of a super-alkalinity, which tends to dissolve the blood-corpuscles and to defeat the ends of tissue-metamorphosis. This poison, according to its quantum, depresses to death, as seen too often in cases of typhoid fever, or it may expend itself in a simple deranged vitality, as witnessed in the stringy mucus now under consideration. How this poison enters the system, necessarily provokes much discussion. That one of its inroads, however, is by the stomach, is not to be doubted, seeing that in epidemic typhoid fever an emetic at the beginning of an attack seldom fails to lessen the force and extent of the impression, such emetic seeming to act mechanically by emptying the stomach, thus preventing all the poison which had been received into that viscus from being taken up; while still again it is observed that during the prevalence of such epidemics, those who smoke and chew tobacco, and thus eject their saliva, are least apt to be attacked.

That, however, the typh poison may be generated from within, is scarcely to be doubted. In such chronic cases as associate with dental caries, this is the direction, no doubt, of the production; and yet the condition may reside in a subacidity, the alkalinity being what might in proper health be normal, but which is in excess from the deficiency of a neutralizing acid. Unable, however, to devote a greater space to the consideration of a question well worthy a chapter in itself, we leave the subject with this hasty glance, extracting the deduction that the prophylaxis of caries in this direction is found in the free use of acids. If to the mind of any one this may need confirmation, let a deduction be drawn from any two cases of ordinary typhoid fever,—one being treated with alkaline medicines, the other with acids. In seven cases out of ten, the patients treated exclusively with the first will die; seven out of ten treated with acids will recover.*

As a systemic medicament, let, therefore, the following be prescribed:

* This assertion is founded on observations made in daily attendance on quite a number of patients during an epidemic lasting nine months.

℞.—Acidi hydrochlorici diluti, gtt. x;
Syrupi, ℥ss;
Aquæ, ℥j. M.

S.—To be repeated from one to three times a day, as may seem required; or it might be that even five drops of the acid would be found sufficient for the requirements. In cases of typhoid fever, the author has administered as many as twenty-five drops to the dose, repeated every three hours for two weeks.

Conjoined with the acid it will be found serviceable to employ the quiniæ sulphas,—a grain pill once or twice a day, according to the length of time it is proposed to continue the medicine. A very good plan is to direct thirty pills:

℞.—Quiniæ sulphatis, gr. xxx;
Extracti gentianæ, ℥j. M.

To be divided into pills No. xxx; one or more to be taken each day.

As a mouth-wash, the following combination will be found applicable:

℞.—Tincturæ capsici compositæ, ℥ij;
Aquæ Coloniæ, ℥ij;
Spiritus vini, ℥ij;
Tincturæ quillai, ℥iss;
Tincturæ gentianæ compositæ, ℥j;
Acidi acetici diluti, ℥ss;
Acidi carbolici fluidi, ♏ij. M.

S.—To be used by saturating a tooth-brush which has been first dipped into water.

Where much offensiveness in odor is associated with this inspissated mucus, it may be necessary to use a gargle of the permanganate of potassa or of the aqua chlorinata. For the former, a very good proportion would be as follows:

℞.—Potassii permanganatis, gr. xv;
Aquæ, ℥viij. M.

S.—Use as required.

Still another most excellent preparation for such disinfection is the phenol sodique; indeed, by many, preference is given to this article above most others. It is used diluted with water in such proportions as seem demanded to meet the indication of the special cases prescribed for,—ordinarily one part to twenty parts of water.

Acid Secretions.—That the common oral fluids are occasionally found of an acidity sufficiently strong to be injurious to the limy structure of the teeth is not, of course, to be denied. When such state exists, it is easily to be demonstrated by furnishing the patient with a few strips of litmus-paper, which are to be wet with the fluids of the mouth at varying periods of the twenty-four hours. In the morning, immediately upon rising and before taking fluids, is the test perhaps of most signification. If such test reddens the paper for a series of mornings, an antacid indication would seem to be