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To/

Samuel S. Fitch M.D.

With the Authors
friendly regards

New York

March 4th 1828

AN ESSAY
ON THE
DISORDERS AND TREATMENT
OF
THE TEETH.

The diseases of the Teeth, considered abstractedly, are indeed very simple ; but by the relations which they bear to the Body in general, and to the parts with which they are immediately connected, they become extremely complicated.

JOHN HUNTER.

✓ BY
ELEAZAR PARMLY, DENTIST.

THIRD EDITION.

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TO HIS EXCELLENCY

RICHARD RUSH,

ENVOY EXTRAORDINARY AND MINISTER

PLENIPOTENTIARY

OF THE

UNITED STATES OF AMERICA,

AT THE COURT OF THE UNITED KINGDOMS

OF

GREAT BRITAIN AND IRELAND,

&c. &c. &c.

THIS TREATISE IS DEDICATED,

AS A TESTIMONY OF THE

GRATITUDE AND ESTEEM OF

THE AUTHOR.

No. 1 St. James's Street,
London, July, 1821.

ADVERTISEMENT

TO THE NEW-YORK EDITION.

THERE is no individual branch of practice of more universal utility than the one the author has, in the following pages, endeavoured to illustrate ; and he, at the same time, is well aware, that, in this country, there is no art or science so much in the hands of “ charlatans and empirics, to the prejudice and ridicule of the medical profession, and to the suffering of mankind.” Here, the profession of Dentist has been but very little cultivated ; and, instead of, as in many other useful improvements, taking the lead, we have been obliged either to submit to the impositions of arrogant pretenders, or acknowledge our gratitude to foreigners, for exertions our own indolence has prevented us sharing in. In England, until the time of Mr. John Hunter, who spent no inconsiderable portion of his life in researches on the human teeth, the subject was

equally neglected ; and but little attention was paid, either to their diseases or treatment. The opportunities afforded Mr. Hunter, by being frequently consulted by the principal Dentists of his day, gave him a complete insight into the miserable state in which the profession then existed. His observations were accordingly given to the public, which soon gave rise to further inquiries into the subject. Since that time, Ireland has to boast of Blake, England of Fox,* and many others, who have eminently distinguished themselves in this particular practice.

These names have been mentioned merely to show how short the time has been since the study of this science has been considered, by its professors, an object of necessity. It is now, however, universally allowed, and we

* As the chief object of this little volume is to point out the best mode of treating the teeth, and to convey to persons who are unacquainted with the subject, some idea of what may be done for their improvement, when in a disordered state, the author has omitted giving a detailed account of their formation, structure, &c. &c. To those who may wish for such information, he would refer them to the works of the above named gentlemen, who have published at considerable length their Anatomical and Physiological investigations.

may as reasonably expect to see improvements in it, as in any other branch of surgery, from which its professors will obtain distinction and patronage for whatever degrees of merit they may severally possess.

After thoroughly investigating the practice of the principal Dentists in America, France, and England, the author has herein recommended those modes of treatment which he has found, in his own practice, uniformly successful, and which have gained him the confidence of the first medical gentlemen in Europe,* who have testified their entire approbation of his professional views and practice. He conceives there are disorders of the teeth, and their appendages, which originate in constitutional causes, and others which depend altogether on the influence the stomach and digestive organs have on the fluid secretions of the mouth; these, of course, do not constitute objects of the present work.

New-York, February, 1822.

* Among whom are Doctor Baillie, Physician; Sir Astley Cooper and Sir Anthony Carlisle, Surgeons to His Britannic Majesty.



INTRODUCTION.

THE teeth are the hardest and most compact parts of the human structure, as is evident from their being commonly found, after interment, in a perfect condition, when all the other bones have mouldered away. Hence we may reasonably conclude, that, from their formation, they are little liable to decay, and that the inattention of the individual, and the action of extraneous matter upon them, are the chief causes of those diseases with which they are oftentimes affected.

Though to a superficial observer the teeth may appear to be a part of the body, which is little deserving of regard, yet, those who consider the many functions, which the teeth have to perform must allow, that their claims on our attention are as many, and as strong, as

those of any other part of the human frame: without teeth we cannot in a proper manner prepare our food; without teeth, man's peculiar attribute of speech is rendered not only imperfect, but even disagreeable: in short, without teeth a countenance, in every other respect the most perfect, loses all its symmetry and character. Such instruments must merit, and, consequently, will obtain, the greatest attention from every thinking mind. Those means should be studied, therefore, which may tend to preserve them in their original perfection, and every argument used to impress upon the minds of society at large the importance and necessity of having recourse thereto, whenever circumstances may require their aid. To point out these means is the object of the following Essay; but it is first necessary to say a few words in order to prove their importance. We constantly see the effects which a deficien-

cy of this kind will produce on the countenance, and on the faculty of enunciation. But these will appear only as secondary arguments of their importance, when we learn that the general health of the constitution depends in no small degree on the state of these organs ; and that this is really the truth, will, I am convinced, become evident by the following statement. That the general health of the body is affected by the state of the stomach and lungs, is a proposition which few, if any, will deny. And that the state of either depends on the nature of whatever is introduced into them, will likewise be readily admitted. The effects which the state of the teeth may have upon the lungs may, therefore, be considered in the first place. The chemical process, which is always carried on in the mouth, by means of its moisture and heat, will always, in a greater or less degree, cause the putrefaction of whatever extraneous matter is per-

mitted to lodge upon, or between the teeth. The air, even in the most open situation, is affected by passing over any putrescent substance. Now, as the mouth is the chief passage through which the air enters the lungs, and as the air is affected by whatever it passes over or through, the lungs can never receive it in a pure state, except the mouth through which it is introduced be perfectly clean and healthy. But while any extraneous matter is permitted to accumulate and remain on the teeth, the mouth will naturally become unclean and unhealthy, imparting an infectious taint to the air which is inhaled.

The effect of this putrid effluvia issuing from mouths filled with unclean and unhealthy teeth, is particularly shown in crowded places, where the breaths of a great number are confined in the same atmosphere. So strong is its influence here, that alarming accidents often take place, which could never arise from the

mere heat of the atmosphere, without its being loaded with some noxious impregnation.

The above arguments apply equally to the case of the stomach. . But if they have not already satisfactorily proved the truth of my proposition, I think the following will put it beyond the possibility of doubt. If we may judge from the opinions of the most able physicians and surgeons, it is evident that the digestion of our food depends greatly on the quantity of saliva, which is elicited from the glands, and mingled with it, and to its being properly masticated by the teeth, before it descends into the stomach.

From this view we are led to consider the use of the teeth as essential instruments in preparing our food. The front teeth are intended to take hold of, and divide the food, and those placed back in the jaws to grind or comminute

it, in which state only it is fit to pass into the stomach.

Digestion then is performed first by the action of the teeth, during which process the saliva is elicited from the glands in order to be mixed with it, and, as it is comminuted, descends into the stomach along with this powerful solvent for its assimilation. It is then mixed with the gastric juice, and receives the other changes which convert it into nutritive matter.

If the teeth then are incapable of performing their office, the process of digestion must be imperfectly carried on, and the health of the individual suffer in proportion. The supply of nourishment to the system is the first and great function of life; and the health of the teeth, so essential to it, cannot claim too much attention from every individual.

The necessity of mastication is also strongly confirmed with what takes

place in animals. Horses, when they are unable to masticate their usual food, soon die : but if fed on soft food, their lives may be prolonged.

The saliva may also become changed from decayed and uncleanly teeth, and consequently rendered unfit for performing its proper office in assisting the digestion, without which the stomach cannot remain in a healthy condition.

Thus I have endeavoured, and I hope not without some success, to prove, that the state of the stomach and lungs, and consequently, of the whole system, eminently depends on the healthy condition of the mouth and teeth.

After making a single quotation from the *Dictionnaire des Sciences Medicales*, published in Paris, I think it will be unnecessary to enlarge any farther on the importance that ought to be attached to the subject which forms the present treatise.

X “ The teeth are the most lovely ornament of the human countenance ; their regularity and their whiteness constitute that ornament : these qualities rivet our regards, and add new charms to the beauty of the countenance.

“ If the mouth exceeds in size its ordinary proportions, fine teeth serve to disguise this natural error in its conformation, and often even the illusion, which results from the perfection of their arrangement, is such, that we imagine the mouth would not have looked so well if it had been smaller.

“ Observe that lady smile, whose mouth discloses the perfection of their arrangement ; you will never think of remarking the extent of the diameter of her mouth : all your attention will be fixed upon the beauty of her teeth, and upon the gracious smile which so generously exposes them.

“ This ornament is equally attractive in both sexes ; it distinguishes the ele-

gant from the slovenly gentleman, and diffuses amiability over the countenance by softening the features. Those of the black African cease to frighten the timid beauty when he smilingly shows his teeth sparkling with whiteness.

“ But it is more particularly to woman that fine teeth are necessary, since it is her destiny first to gratify our eyes, before she touches our soul, and captivates and enslaves our heart.

“ The influence which the teeth exercise over beauty, justifies the pre-eminence which I attribute to them over all the other attractions of the countenance. Let a woman have fine eyes, a pretty mouth, a handsome nose, a well turned forehead, elegant hair, a charming complexion, but let her also have bad teeth, teeth blackened by caries, or covered with thick tartar, or a viscid concretion, in a word, let her exhale a contaminated breath, (which discovers her approach before herself

appears,) we should cease to think her beautiful the moment she opens her mouth. She, herself, aware of the unhappy effects of her smile, constrains it into grimace to conceal the ravages which disease has made on her teeth.

“ On the contrary, if she has a large nose or small eyes, if she be even ugly, provided that her teeth are regularly planted, that they are white, and, above all, that she possesses the whole of them, or, at least, those which are visible, this woman’s countenance, however frightful she be, will appear agreeable the moment that a smile comes to her aid, and she will hear whispered around her those words so consoling to her vanity, ‘ *What beautiful teeth she has.*’

“ When nature, sparing of her gifts, has failed to bestow them on the teeth, making them defective in form and tarnished in colour, care and extreme cleanliness must be resorted to to supply the imperfections and hide the

faults. In this case, at least, if the teeth do not attract our regard, they do not affect us disagreeably."

GENERAL DIVISION.

A treatise on the teeth may be divided into three parts, viz.

- 1st. The growth of the teeth.
- 2d. The diseases of the teeth.
- 3d. The operation on the teeth.

PART I.

May be subdivided into two sections.

- 1st. The several periods of dentition, and treatment of the temporary teeth.
- 2d. The changing of the teeth, and their treatment.

SECTION I.

OF DENTITION, AND THE TREATMENT OF
THE FIRST TEETH.

The first set of teeth begins to protrude generally about the sixth or eighth month. But in some cases the teeth have been known to make their appearance as early as the fourth or fifth month; and sometimes, on the contrary, not until the fourteenth or fifteenth.

The period of teething does not depend on the health and strength of the child, as this process sometimes seems slowest with the strongest children.

The two incisors of the under jaw are the first which make their appearance; and are followed in about three weeks or a month by similar teeth in the upper jaw. The lateral incisors of the un-

der jaw are the next, which follow. Nature then interrupts this uniformity of progress, and instead of the canine teeth, which are the next in situation, the anterior molares of the under jaw make their appearance, and are succeeded in a short time by those of the upper. The canine teeth and larger molares then follow to complete the set, which is generally effected in about two years and a half. Deviations from this order are occasionally met with; and, in some instances, children have been known to be born with the two front incisors of the lower jaw; but as such premature growth cannot be perfect, and as they occasion much pain and inconvenience to the child, it is always advisable to extract them.

The dentition of the first set of teeth is a most critical period in the life of a child; and the mortality from this cause is clearly ascertained to be more than

one half of those who die under the age of two years.

The efforts which the teeth make to unfold themselves naturally produce a powerful tension and pressure on the gums, and thus give rise to irritation and pain. The gums become swelled and inflamed; the saliva is constantly discharged from the mouth; and the whole frame seems to labour under the influence of fever.

It is proper, therefore, that every parent should be aware of the consequences which may ensue, in order that they may have recourse to those means which experience has found to be most successful in affording relief. This can be obtained only by lessening the pressure of the tooth on the gum. To accomplish this, the child is generally allowed some hard substance to rub thereon; but this, although it may give a temporary relief, tends in the end to increase the irritation. Gentle friction

with the finger will be found to afford more relief, and may be rendered still more effectual by the use of a little fine salt, or any other substance, which will cause a discharge, and thereby reduce the inflammatory action of the vessels.

Scarification, however, appears to be the safest expedient that can be had recourse to. This is performed by the point of a lancet being pressed down upon the tooth until the gum and investing membrane be fully divided. The pressure being by this means taken off, the child will experience instantaneous relief. Parents should be cautious how they give way to any vulgar prejudice against an operation by which many have been freed from the most dangerous symptoms.

The use of the coral is recommended by persons totally ignorant of the disorders of dentition, in opposition to the opinions of those who have made the teeth their exclusive study. I am deci-

dedly in favour of the theory of Doctor Blake, who says, “ the coral is a most dangerous weapon, put into the hands of children to destroy themselves ; for as the teeth arise and become slightly elevated above the edge of the socket, those hard bodies press and bruise the gum between them, and the sharp points or edge of the tooth underneath : inflammation and its consequences undoubtedly follow ; and in this way I am firmly persuaded the lives of thousands of children have been lost.”

Dentition is often accompanied by fever of an inflammatory nature. The cheeks become flushed ; the eyes heavy, and the skin hot and parched ; the rest is broken, and the appetite lost ; and if timely assistance be not had recourse to, convulsions will sometimes suddenly come on, and have been known not unfrequently to terminate fatally.

The mildest effort which marks the interposition of nature, is the appear-

ance of numerous eruptions on the skin : the period of dentition marks their true nature, and they are never removed or cured until the cause ceases to exist.

Such is the progress of the first set of teeth, which, if proper attention be observed, occasion only a small degree of temporary pain and irritation.

SECTION II.

OF THE CHANGING OF THE TEETH, WITH
THEIR TREATMENT.

The protrusion of the second set of teeth is in general attended with little or no pain or uneasiness. This set, when complete, consists of thirty-two teeth, being twelve more than the first set. But though the regular number of the second set of teeth is thirty-two, a deficiency of this number sometimes occurs, and this deficiency is generally confined to the *dentes sapientiæ*, or wisdom teeth, the protrusion of the two last of which, at times, does not take place until the fortieth year, and in some instances, not even then. There are cases recorded of persons never having any teeth: one case of this kind has

come under my own immediate observation, and in that instance the gums were sufficiently callous to answer every purpose of mastication.

The removal of the temporary teeth is a curious operation of nature. The fang being absorbed, they loosen by degrees, and are pushed from their situations by the pressure of the second set. But there are instances in which this absorption does not take place, and consequently, the second set not being permitted to come forward in their proper places, become irregular and deformed. The only means of preventing this irregularity and deformity is by having timely recourse to extraction.

PART II.

OF THE DISEASES OF THE TEETH AND THEIR APPENDAGES.

This Part may comprehend the following considerations :

1. TARTAR.
2. CARIES.
3. THE DENUDING PROCESS.
4. THE TOOTH-ACHE AND OTHER EFFECTS PRODUCED BY DISEASED TEETH.

SECTION I.

OF TARTAR.

TARTAR is an accumulation of acrimonious earthy matter, round the necks

of the teeth. This accretion arises from the fluid secretions of the mouth, and consequently few persons are entirely free from it, though some, through the state of their general health, may be more subject to it than others.

The teeth to which it is generally attached are those which are the least acted upon in the process of mastication ; and the molares of the upper, as well as the incisors of the under jaw, being situated nearer to the salivary ducts, more readily become affected. Whenever tartar is permitted to accumulate around the teeth, the gums, the membrane lining the alveoli, and even the alveolar process itself, are liable to suffer, through the powers of absorption being increased by inflammatory action. It thus not unfrequently happens that persons, through want of proper care and attention to the removal of tartar, have lost the whole of their teeth.

SECTION II.

OF CARIES.

THIS is the most frequent disease of the teeth. The general seat of it is on the sides of the front teeth, and in the centre and sides of the back ones. Its progress through all its different stages is easily marked. First of all a small dark spot appears on the enamel, through which the disease quickly passes into the internal structure of the bone. When this has taken place, the least pressure from chewing any hard substance is liable to break away portions of the enamel, and thus the internal part becomes subject to every injury which can arise from extraneous matter lodging therein. The molares are more subject to this disease than the front teeth; first, because their in-

dented surfaces more easily retain any extraneous matter ; and secondly, because they are less in view, and consequently less attended to.

In the enamel of the most apparently perfect teeth, small cracks may, with a magnifying power, easily be discovered. These, although unnoticed by the individual, are sufficient to admit disordered fluids, and to account for many forms of decay. This may likewise account for decay taking place in the broad surfaces of the molares, where the points of contraction always produce a depression, and thus afford a convenient lodgement for acrid saliva and other decomposing agents.

From my own observations, I am induced to believe that caries is universally caused by the action of external agents, and therefore cleanliness, after the proper offices of the dentist are performed, is the only guard against it. But some teeth, from their being of

less dense structure, are less capable of resisting the action of decomposing matter, and consequently will require greater attention to ward off disease.

SECTION III.

OF THE DENUDING PROCESS.

THIS disease first shows itself by the teeth appearing as if small portions of their enamel had been removed by the file, and it sometimes happens that the whole anterior part of the enamel is wasted away, without exposing the cavity of the tooth, or producing any other effect upon the bony structure than that of rendering it more easily affected by the action of every external agent, and particularly of heat and cold.

I am satisfied that this loss of substance depends altogether on the influ-

ence of external causes, from the state or peculiarity of the bodily health, of which the following is an example.

A lady whose teeth were and are still suffering much from the denuding process, had, about a year since, an artificial tooth engrafted. This tooth, at the time of its insertion, had not the slightest blemish on its surface: but since that time, it has become denuded like the neighbouring teeth.

As no remedy for this disease has yet been discovered, it is the most perplexing the dentist has to contend with.

SECTION IV.

OF TOOTH-ACHE, AND THE EFFECTS OF
DISEASED TEETH.

Every painful sensation in the teeth is termed the tooth-ache. This disease arises from various causes, and is slight or severe accordingly. Sometimes it is so severe as to produce alarming derangements of health ; while, at other times, it is merely an annoying sensation, which can scarcely be termed pain. The cavity of the tooth is the original seat of this malady. But as the teeth are supplied by ramifications of those nerves which supply different parts of the face and head, it frequently happens that one or more of those parts may suffer more severely than the tooth itself.

Disease in the *dentes sapientiæ* or wisdom teeth of the lower jaw affects the ear ; and when those of the upper jaw are diseased, the temples generally become affected.

The effects of disease in one tooth, from nervous influence, is sometimes felt in the opposing tooth of the other jaw. In severe cases, the surrounding parts become so much inflamed as to prevent the opening of the mouth ; not unfrequently the eyes are closed in consequence of inflammatory action, and even the neck has been known to suffer much from the same cause.

No certain treatment can be laid down for tooth-ache ; it must be regulated entirely by a knowledge of the cause, whether arising from decay, the irritation of tartar, the application of cold, or merely as a sympathetic affection. The means of giving relief must be varied according to the case.

The disease which occasions this malady, is insidious in its progress, dangerous, and sometimes fatal in its consequences; but the danger more frequently arises from an improper application of remedies, than from the disease itself. Powerful remedies for tooth-ache as well as other diseases are hazardous in the hands of the ignorant. A case occurred a short time since in London, of a gentleman who died raving mad in consequence of the application of caustic, by a celebrated quack, who professed to cure tooth-ache radically without extraction.*

Similar impositions, I am informed, have been practiced by Nostrum Mongers in New-York. I therefore conceive it a duty which I owe the public, to caution them against the use of preparations for the relief of tooth-ache, with the effects of which they are un-

* This case is recorded in the London Medical Journal.

acquainted, and would farther recommend to those afflicted with disorders of the teeth, and wish for the assistance of a dentist, to pause before they proceed, and inquire farther than a plausible advertisement; lest they fall into the hands of one of that class of dentists who are the "bane and almost the ruin of our science," by their total want of proper qualification.

Another effect produced by diseased teeth is a swelling of the gum, generally ending in suppuration. This is commonly termed gum-boil. When of long continuance, a perpetual discharge ensues; the gums become fungous, and separating from the teeth, their fangs are exposed, and an absorption of the alveolar process naturally succeeds, unless by a timely removal of the diseased tooth, the healing of the part takes place. The adjoining teeth, in consequence of this loss of substance, lose their support, and are very fre-

quently lost if the disease be not timely arrested. In order to prevent disappointment to persons so situated, it is necessary here to remark, that when the gums have receded so much from the teeth, as to produce an absorption of the alveolar process, the only assistance to be expected from the dentist is the removal of all impurities from their surfaces, and the lessening as much as possible the pressure of the upper and under teeth against each other. When gum-boils are formed, if their progress be not checked, the diseased matter will extend itself into the jaw, produce mortification, and give rise to the tedious process of exfoliation. Should an exfoliation of the jaw be permitted to take place before the second set of teeth are completed, it is more than probable that they will thus be entirely destroyed ; and if there has been much destruction of substance, a deep scar generally re-

mains. This to a person of delicate feelings must be highly distressing.

Scurvy of the gums is another disease produced by disordered and uncleanly teeth ; but its nature is too universally known to require further notice.

When inflammation has been permitted to continue for any great length of time in the teeth of the upper jaw, a deep throbbing pain is felt at the roots of the back teeth. This is caused by matter having accumulated in the maxillary cavity, without having the means of egress, which is the only mode of effecting a cure. To this end, the middle grinder (which is placed immediately under the maxillary cavity) must be extracted, and a small trochar introduced, so as to make a perforation, which must be kept open, and a detergent injection occasionally thrown up, until the discharge subsides.

Another formidable but remote affection, which is sometimes supposed to be

connected with the state of the teeth, is the disease to which medical writers have given the name of *Tic Douloureux*. Affections of this kind are of the most alarming nature, from their obstinacy and excruciating pain, from their frequent occurrence on the slightest agitation, and from the means of effectual cure being beyond the reach of the healing art.

Besides these considerations, there is another equally to be dreaded; for what can be more disagreeable in intercourse with society than a fetid or disagreeable breath, which in general arises entirely from the state of the mouth, and has no connection whatever with the stomach.

Benserade said of a young lady whom he heard sing, and who had a breath very strong, "What a beautiful voice, and very charming words, but the *air* is worth nothing." Mais l'*air* n'en vaut rien.

Ovid very justly proposes as a remedy against love, to make her laugh who has defective teeth. *Sí malé dentata est ; narra quod rideat illi.* According to this remark, ought not the young of both sexes to know the best mode of treating the teeth in a natural state. The importance of this knowledge, is equally great to those who have good, as to those who have bad teeth. To the first it is of importance to know the best mode of preserving them ; and the latter ought certainly to know, that art is capable of supplying defects, and of remedying natural deficiencies and malformations if attended to in early life.

PART III.

OF OPERATIONS.

OPERATIONS on the teeth are directed either to the removal of disease, or the remedying of defects ; namely—by

1. SCALING OR CLEANING THE TEETH.
2. SEPARATING THOSE WHICH ENCROACH ON EACH OTHER.
3. STOPPING DISEASED CAVITIES.
4. DESTROYING THE NERVE.
5. EXTRACTION.
6. REMEDYING IRREGULARITIES.
7. THE APPLICATION OF LIGATURES.
8. ARTIFICIAL PALATES.
9. ARTIFICIAL TEETH.

SECTION I.

OF SCALING OR CLEANING THE TEETH.

ONE of the greatest causes of disease is an accumulation of tartar, and other accretions, on the surfaces of the teeth. These extraneous matters are safely removed by the operation of scaling or cleaning the teeth.

This object is more safely effected by instruments than by such chemical solvents as are too commonly employed: for, although the injuries they occasion are not at first perceptible, they ultimately disorder the texture and substance of the teeth. This is not the case when the operation is properly performed by means of instruments, and is attended neither with pain to the person, nor danger to the enamel.

A dislike to this operation, founded on erroneous opinions, is very prevalent with many people, and even physicians sanction the prejudice for which there is in reality no just grounds.

To enumerate the chemical preparations which have been used, and which have given rise to these objections, would be unnecessary; and to describe their baneful effects would be endless: they are all, however, formed of similar ingredients, variously combined, but the active constituents are generally mineral acids, far too powerful to be used with any shadow of security.

The prejudices against judicious cleaning would soon disappear, if persons would reflect on the causes which gave rise to them; for certainly every one who has the least knowledge of chemistry, will perceive that whatever will dissolve the calcareous substance of the tartar, will, at the same time, destroy the enamel of the teeth, the

indurating matter of which is also calcareous.

The manual operation of cleaning the teeth with instruments is not performed with equal skill and delicacy by all who practise it. There are, of course, as many different degrees of merit in dentists as there are in the practitioners of any other art or science.

SECTION II.

OF SEPARATING THE TEETH, OR WIDENING THEIR INTERSTICES.

As great disadvantages frequently arise when teeth are decayed, from their crowding against each other, it becomes expedient, with a view to stop the progress of incipient disease, to remove portions from their sides by means of

a file ; but, if this operation be not had recourse to, before considerable parts are decayed, it must not be expected to afford lasting benefit.

The incisors and canine teeth may be filed with the greatest probability of success ; but the bicuspides and molares have such large surfaces, that caries often extends itself, by far too deeply before it is observed, to be effectually removed by the file.

It should be the chief care of the operator to leave as much as possible of the front part of the tooth, so that the interstitial space may not be rendered unsightly : and yet little or no advantage must be expected from filing, unless the whole diseased part be removed.

In some cases the file is not necessary, and the caries may be pared away with a suitable instrument. If the operation should prove too painful to be effected at once, it may be finished at the end of a few weeks, when the small

nervous filaments will be partially, if not wholly destroyed, and the tooth, consequently, rendered insensible to the application of the instrument.

It is fit, however, to observe, that there are some teeth, which, although attended to at an early period, are but little benefitted by the operation, either through some original defect in their organization, or certain peculiarities of constitution; but this is by no means commonly the case; and the instances of its proving essentially serviceable are so innumerable, that it may be recommended with the highest confidence of success.

SECTION III.

OF STOPPING TEETH.

THE benefits of this operation are so truly important, that it is impossible to recommend it too earnestly to the public; for thousands of the most useful teeth, which otherwise would, on account of their painfulness, be sacrificed by extraction, may thus be preserved, not only for many years, but for the remainder of a long life.

The finest teeth are commonly the most highly organized, and therefore become more acutely painful when only a very small portion is decayed. The operation of stopping will always succeed, if performed before the decay has reached the sensible part of the tooth, unless its cavity be superficial, or of a funnel shape, and not capable of being

sufficiently deepened for retaining the gold. In such cases, all attempts at stopping it will be fruitless. But, if the depth be sufficient towards the sensible part of the tooth to allow of the excavation being made larger, or directed obliquely or otherwise, as may be most eligible for securing the gold, the caries may be so effectually arrested, as to cause no further uneasiness to the patient.

The operator must be careful, before he introduces the gold, to remove every portion of caries, however minute, and to dry the cavity thoroughly, by means of small portions of cotton wrapped round the point of an instrument; for if any moisture from saliva, which has an opportunity to enter during the operation, be suffered to remain, the tooth will soon become painful, and the caries proceed as before. For the same reason, the gold requires to be introduced with very considerable force, until the

cavity be thoroughly and minutely filled, so as to obviate effectually the accession of salivary moisture. The gold is best introduced by cutting it in rather a broad fringe-like manner, and wrapping the part, which would represent the top of the fringe, round the end of the instrument, while the slips remain at liberty to be forced in the direction most desirable.

Should it be found that the tooth is too far decayed to bear the degree of force which is necessary for applying the gold, pure tin, well prepared, may be used in its stead.

SECTION IV.

OF DESTROYING THE NERVES.

THE success of attempts at destroying the nerves of teeth is far more limited

than is generally imagined ; and I wish it particularly to be borne in mind, that I approve of the practice only in a limited way. In a front tooth, the nerve is most commonly destroyed by a single operation, because the fang is single, and has the advantage of being more perpendicular than in a tooth with divaricating fangs. But it is an erroneous idea, that a diseased tooth, if it has more than a single fang, may be rendered useful and free from pain by destroying its nerves. The practice has only served to expose the emptiness of the theory, since most of those who have undergone the operation, which can be termed little less than martyrdom, have barely found that they have been made to forget the usual pain of tooth-ache in the unutterable agony of the operation. But this is not all the objection ; for where the operator is so fortunate as partially to destroy the nerves of double teeth, and even this is

very rarely the case, the membranes are apt to become diseased by inflammatory action, and the tooth requires to be extracted in a very short time afterwards. It cannot, therefore, be too strongly urged, that where a double tooth is painful, and has become so much decayed as not to be capable of being saved by the operation of stopping, it should, in order to prevent all unpleasant consequences, be extracted immediately. In evidence of the fallacy of the attempts at destroying the nerves of back teeth, I shall adduce a single instance, which came under my own observation.

A gentleman possessing highly organized teeth, having twice suffered very serious lacerations of the bone from extraction, and having even been threatened with lock-jaw, submitted to have the fangs of the first lower molaris, which had long been a source of torture, drilled, with the hope of thus era-

dicating its nerves. The operation, after excruciating agonies, proved within a few hours, to have been useless ; the cavity of the tooth was then filled with a compound metallic stopping ; but the pain returned with such violence that it was necessary to remove it. The patient continued during many months to make every application, and adopt every measure, which the most experienced medical practitioners could suggest, but in vain. His protracted sufferings brought on a low fever, accompanied by frequent delirium. Efforts were again and again made at extraction ; but at the first touch of an instrument, the patient was always seized with convulsions, and the operation could not be effected. Having thus lingered on for six months, the tooth was fortunately extracted during a period of insensibility, the result of intense suffering ; but, although the expected local relief was thus obtained, several months

elapsed before he regained his former health and vigour. The tooth was examined after extraction, when it appeared that very trifling portions of nerve had been destroyed; that one fang contained a large and vigorous nerve, sending off five branches at its point: the other fang a large nerve equally unaltered, sending off six branches around its point.

SECTION V.

OF THE EXTRACTION OF TEETH.

THE foregoing remarks on the possibility of preserving unsound teeth, by means of filing, stopping, and destroying the nerve, it must be remembered, are given with certain limitations; for there are instances, and those not a few,

when relief can be afforded by no other means than by extraction.

For this operation I prefer a key instrument; but that which is commonly used subjects both the patient and the operator to many inconveniences. The claw is too thick for taking a complete hold of the tooth, and consequently, by shifting its situation, is liable to cause much injury to the surrounding parts.

Beside this, the instrument is altogether much larger than is necessary. It therefore occurred to me that improvements might be adopted in the size and arrangement of a key instrument, without diminishing its capability of being used with sufficient force. Accordingly, I devised an instrument of this kind, the claw of which being much smaller and thinner, more easily preserves its hold; and that part which rests upon the gum being wider, longer, and at the same time moveable, to any requisite degree, preserves the exact si-

tuation in which it is first placed, and thus renders the extraction of the tooth more easy by raising it almost perpendicularly out of the socket, without producing any injury to the surrounding parts.

Daily experience renders me more and more satisfied of the advantages and convenience of this instrument above any other ; and although it gratifies me to find that it has been much adopted, because I am anxious to advance the welfare of my profession, and wish to publish rather than conceal any improvements of my own, I cannot help observing that the copies of this instrument have been made surreptitiously, and given to the world with that affectation and mystery which is attached only to artifice and dishonour.

It unfortunately happens, that the extraction of teeth is in many cases attended with difficulty, and in some instances even with danger ; but this depends

on the particular nature of the circumstances which demand the operation. In youth it is sometimes necessary to remedy irregularities, and is then of little moment. In adults, it is frequently rendered difficult by curvatures of the fangs ; and, when serious consequences follow, they are either the result of constitutional disease, of extreme nervous irritability from protracted sufferings, or an unfortunate distribution of the blood vessels, which it is impossible to anticipate. Extraction is sometimes requisite also to give vent to matter confined within the maxillary sinus, and when the fangs are diseased from ulceration.

I have in several instances, when extraction became necessary on account of intense suffering, extracted the tooth, and when only a small portion of it was decayed, filled up the decayed part with a dense metallic stopping, and returned it into its place. Slight irrita-

tion has generally succeeded, but when this has subsided, and it is seldom of any long continuance, no farther inconvenience has been experienced by the patient.

Where the fangs of teeth are widely divaricated, curved, or converging, the operation of extraction in some cases, occasions a fracture of the alveolar process, whereby the disease is rendered more extensive instead of being removed ; and it not unfrequently happens, that teeth are broken under the operation, and portions of their fangs, by this means, left in the jaw. When such cases have unfortunately occurred, the remaining fangs not unfrequently give rise to much pain and inflammation, and as the instruments in common use will not take a secure hold of these fangs, I have lately devised one for the express purpose, and, as it has in every instance succeeded, I

can, with the greatest confidence, recommend its adoption.

From the above it is apparent that many dangers and inconveniences may attend the operation of extraction ; but, as in most cases, these dangers and inconveniences may be, by proper attention and skill in the practitioner, avoided, it would be nothing less than childishness to refuse to incur a little risk for the sake of a positive advantage.

SECTION VI.

OF REMEDYING IRREGULARITIES.

THIS deformity generally arises from inattention during the time of shedding the teeth. The remedy consists in removing the causes, of which there are many. The first, is where the growth

of the jaw is insufficient for the new set, and thus forcing them to crowd and overlap each other, by which the central incisors of the upper jaw are pressed forward, and thus forming what has been termed from its shape, "a rabbit mouth." In such cases, the extraction of one or more of the bicuspides from each side of the mouth is absolutely necessary, in order to bring the incisors into a regular arrangement, which, after this operation, is easily effected by the occasional pressure of the thumb and finger, or by a judicious application of silken ligatures.

A second irregularity arises from supernumerary teeth. This takes place most frequently in the front teeth of the upper jaw, and thus gives it a most unseemly appearance. In this case it is likewise necessary to have recourse to extraction as soon as possible.

A third irregularity, and one of very frequent occurrence, arises from one

tooth projecting beyond another. This is easily remedied by removing the projecting part with a proper instrument.

A fourth irregularity consists in the teeth having formed themselves into ragged edges; and a fifth from their having received fractures from blows or falls. The two last irregularities are principally confined to the front teeth, from their frequent action against each other, (more especially when the back ones have been lost,) and from being by their situation more exposed to accident. These irregularities are likewise remedied by removing portions from their cutting edges. This operation is not only one of the most useful, but it is often absolutely necessary; for diseases of the tongue are oftentimes occasioned by projecting or badly formed teeth; and it not unfrequently happens that very useful teeth are extracted to the future inconvenience of the patient, when the judicious removal of portions

only would have answered every purpose. And that a partial loss of enamel from the cutting edges never produces decay, while the natural cavity in the tooth remains untouched, is evident from the well known practice of savage nations, in cutting their teeth into various shapes, without incurring any disease. When fractures are too extensive to be remedied by the above treatment, various circumstances, particularly the age of the person, must influence the mode of proceeding. If the fracture be of one tooth, and the patient has not arrived at the age of maturity, the extraction of the fractured tooth, by thus giving the adjoining ones the means of approaching each other, will render the defect but inconsiderable. When, however, such accidents occur at a more advanced period of life, this kind of treatment can hardly be expected to be entirely successful; but as there is no other means of remedying the de-

fect, unless it be the insertion of an artificial tooth, the earlier assistance is procured, the greater will be the chance of success.

A tooth that has been knocked out, without injury to its socket, will fasten again, if immediately returned and secured in its place.

SECTION VII.

OF LIGATURES.

WHEN an accumulation of tartar has destroyed the membranes of the teeth, or produced an absorption of the gums and alveolar process, the teeth will become loose, and consequently require an artificial support. This support is afforded by ligatures. Irregular teeth

may likewise, by this means, be brought into a proper arrangement.

It has often been objected, that this operation tends to wear away and loosen those teeth which were before sound ; but this will never be effected unless improper materials are made use of ; for I have always found that ligatures formed of untwisted silk, never caused the least evil to the neighbouring teeth.

SECTION VIII.

ARTIFICIAL PALATES.

WHERE the natural palate has by any means been destroyed, an opening is formed through the roof of the mouth, into the nose, and consequently not only

the speech is rendered imperfect, but many inconveniences are experienced in taking food. Both these defects are counteracted by a thin plate of gold or silver being properly adapted to the aperture.

SECTION IX.

ARTIFICIAL TEETH.

THE chief object of attention in artificial teeth is, that the substance be durable, and not liable to change colour. Human teeth, and those of small animals, therefore, answer the purpose best, as their enamel is far superior, both in colour and texture, to any that art can produce. Teeth formed from those of the sea-horse are next in general use, and lately also they have been formed

with great success of fine baked clay, covered with a coat of enamel, after the manner of China, which gives them the advantage of not changing colour ; but these are better adapted for entire sets than for separate teeth. Great improvements have been made in this art by Mons. Moury of Paris.

Of the various methods which have been devised for fixing artificial teeth, the most successful is that of fastening a new tooth by means of a pivot to a sound fang : when thus fastened, the tooth may be worn for a considerable length of time without producing any inconvenience. The next method is to adapt a tooth to the aperture from which another has been extracted, and fastening it to the adjoining. This operation has been objected to under the idea that it injures and loosens those by which it is supported ; but as no better method has yet been devised, it some-

times becomes necessary to adopt it. When a tooth is made to fit the aperture with exactness, little or no inconvenience will be experienced; and I have known many persons who have long pursued this plan without any injury to the adjoining teeth. The chief success depends on the ability of the dentist: for if the artificial tooth be too large, the natural ones are pushed out of their situations; and if too small, they are made to approximate each other; in either case, looseness of them must occur.

The operation cannot be expected to prove successful where a tooth has been lost by the absorption of the gums and alveolar process, for this loss of substance seldom takes place about a single tooth, for the loss of one may generally be considered as the forerunner of the loss of the others. This being the case, many persons who lose their

teeth after the operation, would have lost them in like manner if it had never been performed ; therefore, many objections are made, both to the operation and to the person who has recommended it, when, in justice, no fault could possibly be ascribed to either. A third method is to supply the place of teeth by means of a gold plate, to which the substitutes are affixed, the plate being fitted to the gums, and supported by means of ligatures or springs. I give the preference to springs, as not the slightest injury will be sustained if they are properly made, whereas ligatures wear away the teeth round which they are passed, and particularly if they are formed of metal. Whole sets of teeth therefore may be formed after this plan, care being had to adapt the springs as circumstances may require.

A very excellent method of arranging whole sets of teeth is practised by

Mr. Charles Newton, dentist, in this city, whereby they are worn with every convenience, from their close adhesion to the parts to which they are adapted.

PRACTICAL ADVICE.

THE most useful advice with which I can conclude this treatise, is by urging on every individual the necessity of aiming at the prevention of disease altogether, which can in a great measure be effected without engrossing more time than its importance merits.

This is a subject which demands the attention of parents, and those who are entrusted with the care of children. It should be the first object of every person so situated to habituate children to clean their teeth, at least twice a day, and when this practice has been once adopted, it will be continued as a matter of course. Beside this, from the age of six to twelve years in particular, a dentist should be consulted three or four times a year, and at a later period, once or twice for the purpose of exa-

mining the teeth, and counteracting, by the timely removal of such causes as may produce disease, any mischief, which is likely to take place.

In London and Paris, the principal academies and boarding schools are regularly attended by dentists, for the purpose of having the childrens' teeth examined, and of performing such operations as they may require when necessary. I should be glad to see this plan adopted in this country, for I am convinced the advantages arising from it, are incalculable, for if proper care and attention be not paid during the time teeth are shedding, a countenance, however naturally beautiful, may in consequence be totally disfigured ; and it frequently happens, that an unpleasing countenance, although united to an amiable mind, produces a dislike that is not easily overcome. “ It is therefore (says Mr. Murphy) a duty incumbent on parents, and those who have the care and education

of youth while they do justice to their minds, not to overlook their personal advantages.”

Mr. L. S. Parmly says, in his lectures on the management of the teeth, page 44, that, “no face, however pleasing and prepossessing, can ever be complete in its attraction, where the mouth is disfigured. However worthy of admiration by natural symmetry a still and silent countenance may be, we at once lose the grateful impression when a disclosure of bad teeth is made by the influence of any excitement. The circumstance either attaches disgrace to the individual, for present want of cleanliness, or to its parents or nurse, for past neglect. Even the laugh, the test of good humour and openness, which invites to cordiality and confidence, fails to produce a reciprocal effect when we are disgusted by a foul mouth.”

I have thus adduced several arguments in order to impress upon the minds of

my readers, the importance of my subject, as far as it relates to an early and attentive care to the management of the teeth. No fact that I have brought forward can be considered in the slightest degree exaggerated, for it will be supported by the feelings of every individual that reflects upon it. If from what has been said, the subject shall meet due weight, I shall have performed a duty highly pleasing to myself, from a consciousness of having pointed out the right way, which, if practised, will not only add to happiness and comfort by a freedom from pain and other inconveniences, but also to the improvement of personal appearance at every age of life.

The commencement of disease is too generally looked upon as a matter of little importance ; and thus but few persons take any notice of its progress, until the agonizing pain of tooth-ache forces it upon their consideration ; and

when the disease has been permitted to extend itself so far, it seldom happens that it can be effectually remedied by any other means than extraction; but as it is not always in the power of every individual to have recourse to a dentist on the first attack of tooth-ache, the patient may possibly obtain a temporary relief by applying to the diseased tooth a strong solution of camphor in spirits of wine, which, if it prove not altogether successful, has at least the advantage of safety, and this is much more than can be said of most of the celebrated remedies. Every extreme of heat and cold should be avoided, as both are equally liable to cause pain in the teeth. Attention to cleanliness of the teeth in early life cannot sufficiently be insisted on, since it is evident that most of their diseases arise from extraneous matters being suffered to remain upon them; and no time, therefore, should be lost in removing whatever has

accumulated, as soon as it is discovered.

The brush and powders which are the common means had recourse to, will never more than half perform this office, as they act only on the outer parts, and thus leave the interstices entirely untouched. Some tinctures may for a time give a whiteness to the enamel, but they are certain ultimately to injure its texture, and render it more liable to decay. In short, it may be concluded, that in proportion as any dentifrice, paste, or lotion, whitens the enamel, its structure is injured or destroyed. The only means necessary to preserve its colour is by removing whatever may collect around the teeth, and thus allow them to possess their natural whiteness and polish. The best method to effect this is with a brush and warm water; should this prove insufficient, Armenian bole may be safely used with the addition of a little fine table salt,

which, by its stimulus, keeps up a healthy action in the vessels of the gums. Charcoal, well prepared, cleanses and purifies the teeth and mouth better than any other dentifrice with which I am acquainted, and when the gums are perfectly healthy it may be used with very great advantage. But, even when the teeth have been thus cleaned, the interstices are not cleared. This may be effected by passing between the teeth a thread of waxed silk, thereby to dislodge whatever may have collected on their sides.

The means which have been pointed out for the prevention of disease will be found of much greater advantage to society at large than all that has been said respecting the treatment. In concluding, I cannot too strongly urge the importance of this particular object.

OF THE
PROFESSION OF DENTIST.

FROM the view that has been taken of the importance of the teeth as a part of the human frame, the functions of which are so essential to the general health, and their soundness and regularity to the appearance of the face and expression of the countenance, it is necessary that an inquiry should be made into the qualifications requisite for every one who undertakes the charge of them.

The care of the teeth, and their diseases, like every other part of the human structure, requires a knowledge of their formation, their changes, and their relations to other parts: in order to which, a proper acquaintance with the anatomy and physiology of the jaws and teeth should be first acquired, that

the dentist may know where to press an operation if necessary, and where, if danger be present, to avoid it. By this knowledge, also, he can trace the connection of pain in a distant part to the state of the teeth, and give that relief which a want of it would prevent his detecting. But anatomy is not the only essential branch of science with which the dentist ought to be acquainted. The secretions of the mouth have a particular influence on the state of the teeth, since their solvent qualities, in a vitiated habit of body, often act upon and loosen the texture of the membranes enclosing them, as well as injure the enamel itself.

Instances of this kind are met with in the course of every medical man's practice, and particularly in cases where mercury has been extensively administered.

The action of mercury is to increase the solvent powers of the animal fluids,

so that the textures upon which they have an opportunity of acting soon give way under its use. Of all other animal fluids, it gives the greatest solvent powers to the saliva, by which the gum and investing membranes of the teeth, which are reflected from the gum, are influenced accordingly; they soon become soft and spongy, and being gradually thinned and absorbed, the teeth become loose, and drop out. The cause of this absorption the dentist cannot know, unless he has some acquaintance with the principles and effects of medicine; the means of giving relief, and of counteracting these effects, he cannot understand without some acquaintance with chemical combinations, so as to judge of their agency, and to know when they prove injurious, or the reverse: the foundation, then, of his art, lies much in a knowledge of anatomy and chemistry.

I may even go a step farther in pointing out his acquirements; for no man can do justice to the profession of dentist, unless he is acquainted with operations in surgery, for the removal of tumours and excrescences which arise from the state of the teeth come within his province. He should, likewise, understand the causes which give rise to inflammations in the face and neighbouring glands and muscles; for very serious consequences often result from it, particularly when the bones of the face become diseased from its influence. These effects are easily counteracted by the skilful practitioner.

Although it is necessary that the dentist should have these acquirements, in addition to his mechanical skill, in order that he may be successful in his treatment of the teeth and their appendages, it is to be regretted that, in this country, the profession has seldom been made a study of by those who profess

to understand it, and who practise it with no small degree of pecuniary success, to the prejudice of others, who have been at great labour and expense in obtaining instructions from the ablest European masters.

I am aware, that here the profession of dentist is too generally considered as consisting wholly in manual ingenuity ; and, on this assumed and false idea, it has been taken up and practised by mechanics, whose only merit was their manual dexterity. These men, finding they could get on in the operative part, directed their attention no farther, and thus the profession of dentist here has been in a great measure confined to a mere mechanical art, which has made it to be considered in an inferior light to what its merits and importance entitles it ; but when its consequences to the interests of society are considered, and which I have endeavoured to point out in the preceding pages, it certainly

ought to rank on an equal footing with other branches of surgery.

The prevailing opinion, with regard to this branch of practice, and to dentists in general, may be considered as arising entirely from the ignorance of its professors, and to the disappointment of the public in their expectations of relief when applying to them. The same disapprobation would have been manifested toward any other branch of medicine or surgery under the same circumstances.

“ If dentists would content themselves with enterprises no greater than are sanctioned by the dictates of reason and experience, they would enhance a firmness of reputation more lasting than the affectation and presumption of doing impossibilities could ever establish ; and acknowledge the limitation of their art in common with that of the more weighty branches of chirurgical science.”

“The teeth are worthy objects of the anatomist, the physiologist, the chemist, the naturalist, and the practical surgeon, for it is dreadful to reflect upon the injuries to health, and the actual causes of mortality which are daily levelled upon the unwary by ‘buffoons and chatterers—by quacks and mountebanks,’ and by the most illiterate mechanics, in meddling with disordered teeth.”*

Doctor Brown, of Edinburgh, in his remarks on the subdivision of surgery, makes the following observations :

“If surgery has need of being subdivided, in order to its advancement and perfection, such subdivision is in a particular manner applicable to the branches which require great manual address ; and perhaps there is no one which demands more habit and dexte-

* T. Hare on the digestive organs, p. 294.

rity than the dentist. If he who embraces it joins to the knowledge of a detail of his art that which is required of medical men, he will not fail to hold a distinguished rank in science, and to contribute to the elevation of a branch of the healing art which has been too long usurped and degraded by ignorance and presumption. Without being duly qualified, no one ought ever to command the confidence of the world, or induce patients to trust with security to his care the remedying of affections in organs so precious as the teeth."

In stating these considerations I do not wish to be understood, that I conceive the treatment of the teeth ought not to form a distinct line of practice : on the contrary, I conceive that a proper knowledge of this treatment, constitutes an important subject in the healing art, and that the profession of dentist, in itself, unites as great variety as any one person can cultivate and do justice to,

and therefore, for the general benefit of society, should be practised by distinct individuals.

In order to obtain perfection in any art or science, the attention of the individual must be limited to one particular object, which must be made the theme of his whole pursuit until acquired. The advantage of this circumscribed plan, has long been felt and acknowledged in the mechanical arts. The same will apply to the profession of dentist; but no part of it ought to be taken up, or practised as a branch of mechanism, until this previous knowledge be first acquired, which will then become concentrated, and, like the rays of the sun, illumine the minutest branch of it, which will enable the operator to act with success in whatever he undertakes.

It is to be hoped that those who intend to practise the profession of dentist, will hereafter pay particular atten-

tion to the acquirements which are so essential to its success, by which it will have a fair prospect of raising itself in public regard ; and it will be looked upon in its true and proper light, and will, consequently, be regarded as a scientific profession ; it will likewise receive corresponding encouragement, and a dentist will be here, as in England and France, considered necessary in each family to inspect the teeth at stated periods, in order, if necessary, to perform operations, or guard them against any fault which may occasion deformity or produce disease.

Such are my views of the profession and practice of a dentist, and of the diseases to which the teeth are subject, which I have endeavoured to state in a clear and intelligible manner ; and in doing this I have enumerated no one but what has come under my own frequent review and management both in Europe and this country. The treat-

ment I have recommended is such as I have, in all cases, found most successful from experience. But however useful the knowledge of this treatment may be, and the aid of medical science in general to the alleviation and cure of diseases incident to the mouth and teeth, still let me again enforce it, that the most useful advice which can be given on this subject is the prevention of disease ; and this can, in a great measure, be effected by timely care and attention.

THE END.

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