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LECTURES

ON

THE NATURAL HISTORY

AND MANAGEMENT OF

THE TEETH;

THE CAUSE OF THEIR DECAY;

THE ART OF PREVENTING ITS ACCESSION;

AND

VARIOUS OPERATIONS, NEVER HITHERTO SUGGESTED,
FOR THE PRESERVATION OF SUCH TEETH AS
IT IS TOO FREQUENTLY CONSIDERED
NECESSARY TO EXTRACT.

BY L. S. PARMLY,

DENTIST TO THE PRINCIPAL MEMBERS OF THE ROYAL COLLEGES
OF PHYSICIANS AND SURGEONS, OF LONDON.

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Southern District of New-York, ss.

BE IT REMEMBERED, That on the seventh day of June, in the forty-fourth year of the Independence of the United States of America, L. S. Parmly, of the said district, hath deposited in this office the title of a book, the right whereof he claims as author and proprietor, in the words following, to wit:

"Lectures on the Natural History and Management of the Teeth; the cause of their decay; the art of preventing its accession; and various operations, never hitherto suggested, for the preservation of such teeth as it is too frequently considered necessary to extract. By L. S. Parmly, Dentist to the principal members of the Royal College of Physicians and Surgeons, of London."

In conformity to the act of the Congress of the United States, entitled "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the time therein mentioned;" and, also, to an act, entitled "an act supplementary to an act, entitled an act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching, historical and other prints."

G. L. THOMPSON,
Clerk of the Southern District of New-York.

Copy of a certificate received by L. S. PARMLY, from ANTHONY CARLISLE, Surgeon to His Britannic Majesty, Professor of Anatomy, M. R. C. S. L. &c. &c. &c.

"SOHO-SQUARE, AUGUST 12, 1818.

As an act of justice, due to extraordinary merit, I offer this professional testimonial in behalf of Mr. Parmly, Dentist.

I consider his discovery of the causes which produce decay in teeth, to be a valuable accession to surgical knowledge; while his liberality and candour, in making his experience public, do him honour as a Man.

I have equal reason to be satisfied with Mr. Parmly's skill in the several operations belonging to his vocation.

ANTHONY CARLISLE."

Copy of a note from ASTLEY COOPER, to Mr. BOND, Surgeon, of Brighton.

"MY DEAR SIR,

Mr. Parmly, who will deliver you this note, is a Dentist of very scientific views, and of excellent practical information.

You will do me a favour by examining his inventions, which I am sure you will be pleased with; and you will oblige me by recommending him to your friends at Brighton.

Yours truly,

ASTLEY COOPER."

Copy of a certificate from RICHARD RUSH, Esq. Envoy Extraordinary and Minister Plenipotentiary of the United States of America at the Court of the United Kingdom of Great Britain and Ireland.

"I have had opportunities of knowing the estimation in which Mr. Parmly, of the United States, is held, as a Dentist, in London, by persons competent to form a judgment, and know that his standing is of the highest kind, both for practical skill and scientific attainments in his profession.

He is the Dentist of my family, and has performed an operation on my teeth, greatly to my satisfaction in all respects.

RICHARD RUSH.

LONDON, APRIL 6, 1820."

PROSPECTUS

OF

MR. PARMLY'S LECTURES

ON THE CAUSE OF DECAY,

AND ON THE MANAGEMENT OF

THE TEETH;

AS DELIVERED AT

FRANKLIN-HOUSE, BROADWAY,

NEW-YORK.

In these Lectures, the Natural History and Diseases of the Teeth are developed and illustrated by Physiological inferences. Various operations for the assistance of partial Defects, and for the removal of Disease, are demonstrated; and Mr. PARMLY's peculiar mode of preventing its accession fully detailed.

The advantages to be derived from careful and judicious operations upon unsound Teeth, prove that the too frequent practice of extracting them, is, in the greater number of instances, quite unnecessary; and that, by mechanical adaptations of form and surface, portions only of decaying Teeth, may be rendered of the most essential service to the Possessor, for the remainder of life.

Mr. PARMLY is particularly anxious to direct the attention of Parents to the prevention of Disorders and malformations in Children's Teeth, and to impress the importance of effecting perfect arches as essential to distinct articulation, and as first rate auxiliaries of Public speaking.

Tickets for a single Lecture, 75 cents each, or for the three Lectures, subscribed for at once, $1 50.

LECTURE FIRST.

The importance of the Teeth to the health, appearance, and enunciation of Man, and to the general welfare of the animal economy, must be evident to every contemplative mind. Wherefore, it may not be improper to commence this Essay with a brief view of their Natural History, for the purpose of elucidating such technical phraseology as may of necessity occur in its progress.

Nature has supplied these important organs with a greater portion than any other of the human body, of that earthy matter on which all the solidity and firmness of an animal frame depend, and has protected them in a manner suited to their situation as more or less exposed.

1st. The cutting edges and crowns of the Teeth have an additional firm covering, termed the *cortex striatus*, or enamel, placed out of the reach of the general circulation, and so durable as to resist the influence of those causes by which the common bones crumble to dust.

2ndly. The necks of the Teeth are closely invested and protected by the Gum, which is highly vascular, a vermillion substance, of a peculiar nature, protecting also the *alveoli*, or sockets of the Teeth, and capable of bearing extreme pressure, without injury to its circulation, or inducing that kind of inflammatory action, which takes place in other soft solids, when exposed to similar causes.

3rdly. The alveolar processes, which are of a yielding and elastic nature, are formed entirely for the reception of the Teeth, and, along with the Gum, are intended to prevent injury from concussion, which would otherwise arise. These processes, after

dentition, embrace the fangs immediately under the Gum, and acquire, by age, an increased firmness, nearly as hard as that of the Teeth themselves.

Thus, the Teeth and their appendages form one peculiar structure, the whole intimately connected, dependant on each other, and admirably perfected for their various functions; displaying, when in health, superior strength and durability to all the other parts of the animal frame. It appears, by minute observation, that their premature loss or decay cannot arise from any defect of original organization, but is to be ascribed solely to the action of impure matter, the result of uncleanliness, on a part incapable of freeing itself from extraneous accretions, as in the other parts of the living body; and, to supply this want of natural power, the interference of art appears indispensable.

Thus, it is of importance to Society to know what the qualifications of the in-

structor ought to be, for enabling him to do justice to this particular art.

In the first place, he should be an anatomist, to understand the structure of the mouth and teeth, and the art of preserving their original regularity and soundness.

Secondly, a surgeon, to know their diseases, and the mode of treating them.

Thirdly, a good mechanic, to supply the defect, or loss of parts; and should, further, understand the art and effect of colouring, so as to imitate nature with all possible correctness.

Thus, the acquirements requisite for the Dentist, in the management of the Mouth and Teeth, constitute, of themselves, an important professional education, and should be studied and acted upon, by distinct individuals, for the benefit of mankind.

This has been done, in a certain degree, since the time of Mr. John Hunter, who first placed it on a practical foundation, while his successors, (for example,

Blake and Fox,) with the same zeal and industry as he displayed, gradually extended the means of alleviating disease and restoring the symmetry of the face.

But, however useful the improvements of medical science have been to society in the alleviation and cure of diseases incident to the mouth and teeth, the preventive means which Mr. Fox, in his work termed the "delightful secret," will, if prosecuted and brought forward, supersede the necessity of every other; since the want of preventive means, has been one great cause of human misery, and the only reason why mankind do not longer retain these important organs for masticating their food and preserving a perfect voice, the functions of which apparatus, constitute in some degree, a main spring of life.

The means of preserving it, therefore, should be duly valued by every individual; and it is the express object of this Essay, to display the real value and importance of

the art of preventing disease, to show how much the functions of the mouth, are connected with the great processes that support and prolong life by a perfect digestion of food, and also with the attribute of distinct articulation.

From the intimate connexion of the Teeth with these great functions of life, Nature has rendered them durable in their substance, combining strength with symmetry; and the idea is absurd, that an unhealthful condition of these organs depends on imperfect formation. Can we conceive that any thing comes imperfect from the hand of the Creator into the service of life? Do we not find perfection the attribute of all his works, from the highest to the lowest?

How unjust is such a reflection on the great Author of our existence, who clearly has formed nothing in vain!

This truth we find strongly illustrated, when we contemplate the nicety and art, not only with which the human body is

constructed, but each separate organ which belongs to every individual of the animal and vegetable kingdoms.

But the Teeth, the hardest parts of the frame, although intended by Nature to survive every other apparatus, are, through neglect and mismanagement, the first that give way; a circumstance which weakens the energies of the system, since the food cannot be duly prepared for digestion without considerable mastication: and the internal organs are not altogether sufficient for this purpose, if it enter the stomach in that crude state, which must be the case when little masticated. Hence arise innumerable disorders of the abdominal viscera, and the necessary supply of nutriment not being furnished to the system, the whole frame becomes enfeebled and emaciated.

It is on this principle we are able to explain numerous symptoms affecting different parts of the body; and which could not be ac-

counted for, but by the intimate connexion of the whole, and by the sensations of one part being conveyed by nervous sympathy to another, or other causes, which have not been fully explained.

To every organ of the animal body, is assigned some peculiar and needful office; and in a healthy state, the most perfect harmony subsists between them. Neither interrupts, but each assists the operation of another; and thus the ultimate preservation of the whole is promoted.

By this wise adjustment there is no schism in the body, no separate or interfering ends are pursued by the multiplicity of its members; but the safety and support of each, are the undivided care of all. Hence, in this view, there is no part of the frame that is not of importance, however trifling or insignificant it may appear. The most vital, as well as those on which the lesser energies of the system depend, are equally essential to life and its comforts. On every

consideration, then, the mouth claims an important rank in the human structure; for on its functions depend, in a great degree, the health, beauty, and strength of the body, and those functions which form the essence of life.

The Eye, the first of the senses, from which we form our judgment of all creation, is greatly influenced by the state of the mouth. For example, during the period of dentition, with inflammation and pain; and in age, it is materially affected, from the connexion of nerves by tooth-ach, and has even its strength and power sensibly diminished from the continued existence of this irritating cause.

The sense of Hearing is often imperfect, unless the air is allowed to pass through the mouth, and have free access into the *Eustachian* tube, so as to balance that received through the ear.

The extensive sympathy of the Teeth, with the different parts of the Head, also, is strong-

ly displayed in that species of ear-ach which often precedes as well as attends a diseased Tooth; and still more so, in that grievous disease which is termed, *Tic Douloureux*, where a primary affection of a Tooth is the original source of that excruciating anguish which is felt in this malady, and which produces that deranged and irritable state of nervous sensation that can only be removed by dividing the excited nerve by an incision of the cheek, which painful operation may, upon many occasions, be spared, upon a careful examination of the Teeth, and the judicious treatment of those in fault.

Pursuing the subject further, we find the sense of Smell loses its acuteness by any disease of the mouth, which affects the breath. The taint being constantly conveyed into the olfactory cavities.

The Taste is seated in the mouth alone; and the correctness of this sense depends upon its healthy state.

The peculiar prerogative of Speech, the

power of revealing or manifesting the mind, and all those distinguishing characteristics which constitute the pre-eminence of the Human race, depend upon the functions of the mouth; the teeth tending to heighten the effect of every feature, and modulate the voice to that degree of perfection, which no musical instrument can ever attain.

The art of preserving the Teeth, Gums, and the apparatus which nature has connected with them, is, therefore, of the highest importance; since, from the mistaken refinements of the culinary art, they require more attention than any other part of the body.

First, In consequence of the relics of food insinuating themselves between the enamel and gum, an injurious matter is constantly imparted from them, by absorption, into the constitution at large.

Secondly, From the Teeth being almost extraneous bodies, nature does not, as in other parts of the frame, possess the power of freeing them from whatever is injurious.

A knowledge, therefore, of the art of preserving them from the earliest period of life, appears indispensable for the purpose of promoting its health, comfort, and happiness.

This it will be my endeavour to explain, in the hope of pointing out the proper and safe tract, by which these blessings may be more largely attained and renderded permanent; for the Mouth without Teeth, may not be unaptly compared to a house without furniture; and the preservation of the Teeth, as the preservation of furniture, depends entirely on proper care and attention.

The Teeth may be considered in two points of view; with respect to their structure or sensibility, and with regard to their use. In regard to the *latter*, it may be observed, that in quadrupeds they possess a two-fold use, both as weapons of defence, and instruments of support.

Do they not give to Man the same healthful and spirited appearance? And how

tame do the face and features look when deprived of this appendage of character!

As a preliminary step to the consideration of their important functions, it will be proper to give a short view of their formation and progress.

The Temporary Teeth are originally formed with the alveoli or sockets by the process of secretion.

At Birth, the bodies of ten Teeth, of a bony substance, appear distinctly shaped in each Jaw. As they proceed in ossification and more perfect shape, the investing membrane secretes a fluid from which a very white substance is deposited upon the pulp.

This is the Enamel, which is at first of a consistence not harder than Chalk; but, in Age, it acquires such hardness that a file, in cutting it, is soon worn smooth.

After Birth, the growth of the Teeth is rapid, and cannot therefore be confined long within the alveolar cavities. The fangs

or roots are the only parts that lengthen; and, as this takes place, the sockets grow round, and more closely invest them.

On the progressive ossification of the second or permanent, set of Teeth, (thirty-two in number) the fangs of the first set, twenty in number, undergo the process of Absorption, and are carried out of the system, having completed their original and destined purpose.

A series of distinct vessels form and deposit this solid part of the structure, and it is maintained in health and use for a certain period, after which others are employed to disorganize and remove it, when it becomes as it were an extraneous substance, and no longer required for the service of the system.

A similar process takes place in other parts of the body, in cases of diseased bone: tumours of a bony consistence having been absorbed by this active power of the small vessels. Anatomical History abounds with

strong proofs of these efforts of nature, either to complete the perfection of her work, or to preserve it in a healthy state. The power of the absorbent vessels may be judged of from the experiment of feeding Animals with madder, or other colouring matter, which completely tinges the most minute recesses of the bones, but not the Enamel.

Having thus stated the leading particulars of the structure and changes of the Teeth, I shall next proceed to make some observations on their importance.

In order to promote perfect digestion, it is necessary that the food be sufficiently comminuted by the action of the Teeth, during which it becomes blended with a certain quantity of saliva, thus rendering its solution easier when it descends into the Stomach, to be mixed with the Gastric juice. The necessity for the comminution of food, and the importance of the Teeth as instruments in effecting this, cannot be better illustrated than by considering the manner in

which food is taken by animals which feed on vegetable productions. They eat very hastily, and for the purpose of correcting this disadvantage, Nature has provided them with more than one Stomach, or receptacle for food, from the first of which the animal has the power to return it into the Mouth, for the purpose of undergoing a second mastication, which office is vulgarly called "chewing the Cud." This process fits it for the proper reservoir, where it is finally converted into nourishment for the system at large.

The *Incisores* or front Teeth of these Animals are thin, by which they are enabled to crop their food quickly, and the *Molares* or grinders in each Jaw have a large surface for grinding the food subjected to their action.

These circumstances serve to show the same necessity for mastication in the human subject, and the importance of the Teeth being in a sound and healthy state, as the only Instruments that can perform this office.

Surely the provision that nature has so wisely and carefully made in all Animals cannot be defective in Man, without his health and comforts suffering in proportion. Where the Teeth are wanting, the food can never be properly divided, nor a due quantity of saliva elicited from the Glands to render its solution in the Stomach complete, and form it into perfect chyle; for the human body may be considered a living laboratory; it being sufficiently evident, that the component parts of the animal frame are at all times under the influence of a powerful chymical agency.

The process of digestion converts the food in the Stomach into nutriment or chyle, and separates the useful from the feculent parts.

The Chyle, again, is converted into blood, and from the blood are formed various fluids fitted for the different purposes of life.

The Enamel, and afterwards the bony parts of the Teeth receive their indurating

matter from vessels which are destined to secrete or separate it from the common mass of circulating blood.

But no sooner is the Enamel sent into the service of life than it is exposed to the action of that matter which has the power of decomposing it in the way already explained. The extent of this exposure depends entirely on ourselves; for nature has completed the Enamel when the second set of Teeth appear.

From neglect, then, on our part, and its destructive consequences, arise the first traces of injury to the general health. The first symptoms of mortality are here allowed to show themselves, and to proclaim that no sooner do we begin to live, than, from inattention to cleanliness, we begin to decay; a truth which seems to make but slight impression, from the little exertion made for the prevention of latent mischief.

But if it be remembered, that the putrid matter, which, though minute in quantity,

acts so powerfully on the solid structure of a Tooth, must act with no less energy on parts of a less compact texture, we shall be awakened to a serious consideration of this subject, and remind ourselves that the matter which destroys bone when applied to it, if allowed to accumulate, will, by being absorbed, which it cannot fail to be, taint in a similar manner, the whole frame, and be finally the means of breaking up the constitution.

Thus the Teeth, when neglected, are the despositories of a matter which acts as a constant source of disease to the system, and is followed by a most disagreeable effect, viz. an offensive breath; a fact which, without difficulty, may be more than sufficiently demonstrated.

The breath, or air which is exhaled by the nostrils, is widely different from that which is expired through the mouth of a person with diseased Teeth and Gums. The first, or that breathed through the Nos-

trils, possesses nothing but the natural *effete* matter deprived of its *oxygenous* principle furnished by Nature. The other is, that passing through the Mouth, and receiving a peculiar noxious impregnation from the fermenting *sordes*, *caries*, and other matter about the Teeth, the mischief being caused by portions so minute as to escape our observation, and consequently requiring an apparatus more efficient than that commonly used.

That this is the case, every day's observation will confirm, where the breath of Old People ceases to be offensive after they have lost their Teeth, which was not the case before; the same may be proved by Infants, and those with clean Teeth.

Fetid Breath, therefore, is occasioned entirely by the state of the Mouth, and has no connexion with that of the Stomach or digestive Organs, as erroneously supposed. The escape of vapour from a disordered Stomach can only produce a temporary

effect; but from uncleanliness of the mouth we find the taint constant and habitual, and unless the cause be eradicated, all the spices and perfumes of the East, though they may for a moment conceal, cannot remove it. Cleanliness of the mouth, therefore, is of great importance to the general health. In fact, the danger of the lungs, from constantly inhaling a putrid effluvium, has been strongly commented upon by the Faculty of Medicine as a leading cause of Pulmonary Consumption.

When the great annual mortality from this disease is considered, we cannot doubt that this putrid matter may so change the nature of the air inhaled, as to cause that slow inflammation of the lungs productive of those Tubercles which are the foundation of the disease. The same putrid effluvium, from a number of diseased Teeth, is the cause of the noxious exhalations in crowded places, and not properly the Taint of the Atmosphere, from the Air being merely heated or

confined: and this circumstance renders a person not only offensive to himself, but a positive nuisance to Society, where the olfactory nerves are acute.

Where then can we look for a cause of early constitutional decay so certain, so constant, and so active as that of the putrid matter generated in the mouth, and acting powerfully on the hardest parts of our frame.

This matter may also contain Animalcules large enough to irritate the nerves of the Teeth to such a degree, as to occasion Tooth-ach in all the violence of its torments.

It is the peculiar quality of all putrescent matter to act as a ferment in assimilating every thing it touches, if allowed to remain, to its own nature.

Its ravages are slow, insidious, and for a long time imperceptible. At length, however, the destructive enemy is revealed. He overpowers us in all the fulness of his

deformity, and our City is a heap of ruins before we suspected his arrival at our Gates.

A species of mortification is induced, which though apparently seated in a minute part, extends its baneful influence throughout the whole body.

To those unaccustomed to extreme nicety in respect to the mouth, this conclusion may seem extended beyond reasonable bounds, but it is not the case.

The effect of this noxious matter is often so strongly felt by a bystander, as to occasion nausea and faintness, which are erroneously supposed to arise from some other cause. The latent existence of this mischief may be compared to the rot, in wood, which extends to every part, and in the end is a certain destruction to the whole structure.

Thus the very part of our body which is meant for the support and prolongation of life, by preparing for use the supplies which

renovate exhausted strength, when neglected, becomes equally the medium of inducing disease and decay; so that the first marks of mortality are conspicuous in a death or destruction of the most solid parts of the frame; from which we are led to conclude, that, in proportion to the health and soundness of the Mouth will be the general health, soundness, and energy of the system; and the first sign of decay plainly proclaims to us, (though a hint we are not disposed to take) that Death is at the door, and has commenced his first approaches in the destruction of this important organization, the inlet equally to health and disease.

Can the care of our Teeth then reasonably occupy too much of our attention? At least, let us have recourse to those means which will prevent the constitution from being worn out by sleepless nights and days of irritation and pain which no species of torture can exceed.

It must surely be interesting to every one to know how disease of this nature may be prevented.

We see of late years what has been done by vaccination alone, in a decrease of the annual Bills of Mortality, by preventing the destruction of the human species by one disease only. What may not be expected from preventing diseases of the Mouth, which it is undoubted are capable of extending their influence, and occasioning others which imperceptibly lay the foundation of ill health at every period of life. By preventing the accession of those, life may be prolonged, and its blessings preserved in the human race; as they are with every other class of the Animal Creation.

When these facts are reflected on, can there be a stronger inducement to give due attention to the Mouth and Teeth, in a regular and proper manner, as a preventive of general disease, that we may enjoy a sound body and perfect senses to the latest period of life.

Thus the principle which I have now briefly explained, claims the most serious attention, as it is deeply concerned with the prolongation of life, and the enjoyment of health: I shall conclude this Lecture with a quotation from Dr. Ewell's Letters on Cleanliness.

"The last point which I shall with solicitude press upon you, is the purification of the Teeth and Mouth.

"If possible, this is more all important for your general health, than cleaning any other part. To the scripture, that 'out of the mouth cometh forth evils,' might have been added with equal truth, 'in it are engendered many.' It is inconceivable how greatly the whole system is affected, sometimes inflamed, by the mouth. You must have witnessed, that a small quantity of spirit held in the mouth of a sick person invigorates the whole body. A disgusting mouthful frequently excites vomiting in persons not very delicate; and diseases of the Mouth almost universally produce serious effects in other parts of the body."

LECTURE SECOND.

The advantages of cleanliness to the well being of Animal life, are too obvious to require illustration; and the influence it exerts on contagious and various other diseases, is more than a sufficient groundwork for this position.

Since it applies no less as an axiom to local than to general circumstances, those important Instruments of the Animal machine, the Teeth, demand its fullest exertion; for these, when disordered, produce the seeds of constitutional disease.

By a Chymical Agency on those relics of the food, which accidently lodge between them, a deleterious change takes place.

constituting an Active Poison, which corrodes their structure.

The importance of the Teeth to the functions of the System, and the perfect enjoyment of health, is apparent from the moment of their development, a process which constitutes the most critical period of infancy, and which shows at once their extensive influence on the constitution at large.

The effects of those aches and pains that then distress the Child excite a general derangement of the whole machine; fever accedes, the functions in every part are disturbed, and the Brain not unfrequently suffers by an attack of Convulsion.

The Teeth are alone the cause of this dangerous attack on health and existence; and they display an influence no less serious at an after period of life when they become diseased.

Hence, we should bear in mind the care that ought to be taken of this important part of our frame.

Nature, to guard the Teeth against disease, has placed them as extraneous bodies; and it is only from neglect in allowing their structure to be acted upon by what ought to be removed, that disease occurs. But although nature has guarded them thus far against the attacks of incidental disease, she has deprived them of that power of freeing themselves by their own efforts, which other organs possess, by a dense and compact structure to fit them for their mechanical use.

But the healthy condition of the Teeth is necessary even to the perfect exercise of our senses, in consequence of their connexion with the nervous system.

The secretions of the mouth furnish a stimulus to the nerves, which excite the sensation of taste, and these form an intimate communication with those of the organs of hearing, of smell, and of vision.

This view alone should establish the importance of preserving the mouth and its

apparatus in a healthful condition, the better to derive, through the use of our senses, the full and perfect enjoyment of life from every surrounding object presented to them.

In a vitiated state of the mouth, where the secretions are loaded with disease, and impregnated with noxious matter, the offspring of *uncleanliness*, the general feelings are annoyed to such a degree, that the individual is often in a manner deranged. In that state, can the palate convey the proper sensation of taste? Can the olfactory nerves receive the free impression of pleasing odours, or the ear be duly acted on by sound?

Thus, a want of cleanliness counteracts the harmony of the system, by which the growth of a child is unprosperous, and the senses do not receive that full evolution which they would have made, if not thus restrained.

Since in childhood the first sufferings begin, in childhood also the foundation of a

good or bad constitution is laid. Hence, as these sufferings are in part unavoidable, it is at this stage of life, in particular, that art, as the assistant of nature, (when too slow in her operations) should interfere as far as possible to alleviate them. It is also at this critical time that the greatest attention should be paid to the state of the gums, to mark the protrusion of the Teeth, as well as the after change; for it is only by knowing the steps and order of their progress that proper aid can be given to the efforts of nature during the years of childhood.

So important is the interference of art at this time, that to judge properly of its effect, let us compare two children from the time of dentition, or immediately after the protrusion of the front Teeth; in one of whom a proper attention has been paid to their cleanliness, and the other where it is neglected. The first evidently enjoys the greatest advantage for securing comfort and health, his organs will receive the supplies

of nourishment, duly prepared; his system will not only be thriving, but the development of natural attributes and bodily strength, will gradually proceed to maturity. He will possess sound health and an active frame, his mind unfolding with equal rapidity and perfection as his body.

No disorder of the mouth will communicate its distress to the other parts, and excite sympathetic anguish.

His mind, vigorous and active, will apply with ardour to every study and pursuit suitable to his years. His disposition will be pleasant and cheerful, for he has had no malady to contort his temper, or distress his frame.

Contrast this happy picture with that of a child where the Teeth and Gums are diseased from a want of cleanliness.

The causes of pain and irritation are ever present, and are increased by the influence of the tartar, which gradually accumulates on the Teeth, producing inflamma-

tion of the gums, and even an absorption and destruction of the *alveolar* processes, which all provident nature intended for the security of those instruments.

The consequences of this are, occasional severe fits of Tooth-ach, swelled face, and other marks of indisposition, which by the least cold lay him aside for weeks and months, putting a stop to every study and pursuit.

The body, instead of being gradually increased and duly nourished, as in the other instance, is here puny and diminutive; nay, even rickety, deformed, and unsightly, upon too many occasions. The mind, instead of being active and vigorous, is fretful, peevish, and not alive to external impressions, owing to continual irritation and pain.

The most critical years of life, which are intended to form the mind, are lost in a struggle to get the better of indisposition, brought on by neglect, and nourished and rendered permanent by the same cause; for

it is an incontrovertible fact, that no child, with bad Teeth is ever healthy; and as this fact has been abundantly verified, in my experience, the same cause will prove a certain excitement of whatever constitutional disease the system may be naturally predisposed to. Thus, diseases, which might have been dormant without this baneful cause, are always ready to appear in children whose Teeth are bad, and to the disgrace of their nurses, neglected; for little in a habit predisposed will excite the action of inbred disease.

"In concluding this letter (on the Treatment of Children, says Dr. Ewell) I feel some pain at the apprehension that I have not said enough to induce a strict adherence to the practices recommended. I knew them to be so judicious, that I felt as if argument were useless. The subject is those, of whom our Christ declared, 'of such is the kingdom of heaven!' Ladies, if you feel as mothers, if you have souls to partake of the heaven of doing good to innocence in pain, you will not require long

arguments to adopt practices promoting the health of children. I ask, I pray you, if I have not urged sufficiently to induce you to do it; then, as a favour, as a kind compliance, in return for the wish I have to serve, immediately prescribe."

Thus the proper treatment of the Teeth, when properly considered, forms the foundation of happiness; *First*, as the prime strengthener of the constitution; *Secondly*, as the grand means of extending the growth: and, *Thirdly*, as the sure foundation of health and harmony in the system. By care of the Teeth, and thereby avoiding frequent illnesses, directly or indirectly arising from the neglect of them, we are enabled to undertake those pursuits fitted to our age and genius. We may thus economise time, and apply life to every beneficial purpose.

The possession of carious Teeth, besides its effects on the temper and growth of childhood, is liable to produce very serious evils at a more advanced period of life, by giving to the air inhaled a putrid taint or

impregnation, which being conveyed into the lungs, diminishes the benefits of its otherwise healthful office.

Indeed, it may be regarded as an established fact, that it is only by the influence of the living principle that the human frame is prevented from yielding to the powers of a chymical agency constantly acting on it, as on inanimate substances. But there are certain parts to which this living principle does not so strongly extend, and here the laws of Chymistry take full effect; the part being subjected to all these changes which heat and stagnation produce, and thus exciting a fermentation in the matter subjected to their operation, as is strongly marked in the Teeth, which are, as we have seen, beyond the reach of the circulation, since they are exposed to accumulations from what we eat and drink; and the particles of the matter so accumulated are highly disposed to morbid changes, deleterious to the healthful state of these organs.

The same matter introduced into the stomach, which thus acts on the Teeth, would be harmless to that organ;—the constant motion of its contents, their admixture with a variety of fluids, changing their relations and powers, and the strong influence of the living principle on this viscus, are counteracting circumstances which prevent all injury and accumulation here. Thus we see it is not by any failure of the natural qualities of the Teeth that their premature decay is occasioned. This malady is alone to be attributed to the situation in which they are placed, whereby they are exposed to the common fate of all matter under the influence of chymical powers, and which even their compact structure cannot resist, unless those accumulations be prevented, which finally constitute a corroding power they cannot of themselves oppose.

From these facts we may venture to assert, that soundness of constitution and

duration of life, greatly depend upon the healthy condition of the mouth.

All these facts are important reasons then, for an early attention to the Teeth, and the natural organs connected with them, for it is principally in childhood that the means of preserving them perfect can fully succeed before the evil commences.

The preservation of the Teeth and Gums, therefore, is one of the first objects to be studied for insuring health and strength.

As they form by nature, a complete arch, the removal of a Tooth destroys the evenness of the gum and the alveoli, diminishing the strength of the jaw, and proportionally reducing the perfection of voice and articulation.

If the great distinctive attribute of man be the faculty of speech, that speech can never be complete or perfect, without two arches of Teeth to modulate the sound, and give proper utterance to the words. Indeed, it is obvious to every one, that when the

Teeth are lost, the speech becomes imperfect, and often scarcely intelligible.

This circumstance makes them valuable beyond measure, to a public speaker, and their preservation ought to meet due attention from those who wish to shine either in the Senate, at the Bar, or in the Pulpit.

Without these instruments of utterance, the graces of eloquence are lost, and the power of impressing the mind, and convincing the understanding, if not taken away, is considerably diminished.

It is the premature loss of this part of the human structure, that produces the leading mark of age, and occasions the contracted countenance, the wrinkles of the face, and those unseemly changes which youth and beauty ever wish to see placed at a distance.

This may be done in a certain degree, and the countenance exhibit the great lines of character that belong to it, by a proper attention to the cleanliness and regularity of

the Teeth. 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, or intelligence of character, 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, where we are disgusted by a foul mouth.

Nay, from the very form, position, and cleanliness of the Teeth, so far as depends on the individual himself, may be justly inferred his taste in other matters. Hence, in order to win that admiration which is the natural wish of every one, the care of the

Teeth becomes an essential qualification, and ought to form an early branch of education, which cannot be too forcibly impressed on the minds of children.

Independent of their soundness, as a necessary appendage of external symmetry, the Teeth are no less important, as has been stated, to the preservation of the general health. From their structure being highly sensible, and every where surrounded with parts of equal sensibility, they communicate every impression of their disease to the system at large. Thus, the first pains that undermine the constitution, and sow the seeds of irreparable mischief, may often be traced to the diseased state of the Teeth when unable to perform their natural functions.

So conspicuous is this with all animals in a domesticated state, that the failure of their Teeth may be considered as the very breaking up of their constitution. Unless fed on soft food, where the use of the Teeth is less

required, their lives cannot be protracted. In proof of the same fact, we may adduce the long lives of fowls, and other animals, having no Teeth are consequently not subject to any disease of the Mouth; a strong corroboration of which, is also afforded by the long lives of some kinds of fish.

Thus the lives of animals as well as man, seem by nature to be in a considerable degree regulated by the health and permanence of the Mouth. In the Teeth of all animals in a state of nature, we discover no diseased structure or deformity, and therefore we must ascribe it in the human subject to fortuitous, not constitutional or hereditary causes; for that they are less destructible, than any other part of the frame is evident, since, in places where bodies have lain for centuries, Teeth are found entire and sound, while the other bones crumble to dust; a sufficient proof that disease is not naturally entailed upon their structure, but is the effect of the constant

accumulation and action of offensive matter upon them, which operates by a putrid fermentation on those parts unnoticed, before the agonizing pain of a single Tooth calls our attention to those adjoining; when we are astonished, as much as we are grieved, to find many in a state of rapid decay.

It may not be uninteresting in this place, to notice the opinions of former writers respecting the cause of caries, or diseases of the Teeth, some of which have been highly detrimental to the interests of society, and have led to a supineness, and even neglect of this part of our frame, on no just or solid foundation.

The first opinion I beg leave to mention, is that of Mr. Hunter: viz. that diseases of the Teeth are, in part, hereditary. In his work on the Natural History and Diseases of the Teeth, he thus expresses himself: (page 140.)

"This decay of the Teeth does not seem to be so entirely the effect of accident as

might be imagined; it sometimes takes place in them by pairs, in which case, we may suppose it owing to an original cause, coming into action at its stated time, the corresponding Teeth being in pairs, with respect to the disease, as well as to situation, shape, &c.

"This disease has not hitherto been accounted for. If it had *been* always on the inside of the cavity, it might have *been* supposed to be owing to a deficiency of nourishment, from some fault in the vascular system; but as it begins most commonly externally, in a part where the Teeth, in their most sound state, receive little or no nourishment, we cannot refer it to that cause.

"We may, therefore, reasonably suppose, that it is a disease arising originally in the Tooth itself."*

The fallacy of this opinion must be apparent from the fact we have endeavoured to establish, viz. that the Teeth, in regard to the other parts of the system, may be considered as extraneous bodies; and, since

* Natural History of the Human Teeth; by John Hunter. London: printed 1800.

they cannot exfoliate or release themselves from disease, so, in the same manner, the other parts of the system under disease cannot introduce into them the seeds of a constitutional malady.

The next opinion I beg leave to notice, is that of Mr. Fox, which supposes a defect in their original formation, or that the Teeth do not possess sufficient stability and permanence for their intended functions. Mr. Fox thus expresses himself. (Page 12.)

" The proximate cause of Caries appears to be, an inflammation in the bone of the Crown of the Tooth, which, on account of its peculiar structure, terminates in mortification.

" The chief predisposition to this disease, consists in a defective formation of either the enamel or bony part of the Teeth.

" The great distress which usually accompanies, and the inconvenience which always follows the loss of the Teeth, makes the discovery of some mode of prevention of caries very desirable.

"This delightful secret, although it is pretended to in the advertisements of every Quack, we can only expect so acquire, when the philosopher's stone, and the grand panacea have been obtained.

"It is not in our power to alter the laws of Nature, or change the natural constitution of man, we can only obviate evils by attending to the causes which produce them, and it is in this manner we can, in a very great measure, preserve the Teeth from disease."*

The incorrectness of this opinion, I explained by the circumstance, that the Teeth in their structure, are more compact, than any other kind of bone, by their incasement in the enamel; and as a proof of this, they are found to survive all the other parts of the system, an evidence of their permanence, and non-liability to decay.

A third opinion, equally erroneous, is that which supposes the Teeth are acted upon by changes of temperature. This is the

* Natural History and Diseases of the Human Teeth, by Joseph Fox. London, printed 1814.

opinion of Mr. Hertz, as exemplified by the following quotation—(Page 37.)

"Heat, to a certain degree, is highly detrimental to the vitality of the Teeth; hence we find that those animals who live chiefly on hot food, are most subject to carious Teeth. Increased circulation in the gums, whether the effect of mercury, or general fever of the system, is also very injurious to the Teeth; and hence caries of the Teeth, are a common consequence of salivation and inflammatory fever."*

The opinion of Mr. Fuller may next be quoted, being much the same as that of Mr. Hunter, though differently expressed. He supposes that an organic mischief is originally implanted, during their formation, and is finally the cause of their decay.

Mr. Fuller thus expresses himself: (Page 48.)

"Caries, or decay of the Teeth, appears to be the only disease to which the Teeth themselves, strictly speaking, are subject.

* Familiar Dissertation, on the Causes and Treatment of the Diseases of the Teeth: by J. P. Hertz. London, printed 1815.

By caries, is understood, a rotting, or mouldering away of the substance of a Tooth. Numerous causes have been assigned as the origin of decay in the Teeth—such as scurvy, heat of the stomach, heat of the mouth, nervous fever, acidity of the saliva, &c. none of which appear sufficiently to account for caries.

"From the various causes assigned for it, we may suppose it is not properly or generally understood; not from want of ability, in those who have treated on the subject, but, probably, from an idea, that it does not deserve so particular an investigation. This, however, may readily be seen to be a mistake; for, as caries frequently terminates only by extraction of the offending Tooth, and, as this is at all times a painful operation, persons on whose minds reason has its proper influence, will more readily submit to a severe remedy, when they know it is the best the nature of the case will possibly admit; nor, indeed, can a rational or satisfactory practice be established, in any instance, without a complete knowledge of the subject, both in its natural history and

present state; and, so far as we are defective in either, so far we must submit to the dictates of chance, or, perhaps, be the humble dupes of *empiricism*. From the careful attention to circumstances, caries will be found not so much the effect of chance, as is generally imagined: it appears, almost universally, to be an organic mischief, implanted during the formation of the Teeth."*

Mr. De Chemant, in his work, candidly acknowledges his ignorance of the cause of caries, and thus very properly expresses himself on the subject: (Page 5.)

"Of those parts which enter into the composition of a beautiful person, there can be no doubt, but that the first place belongs to the Teeth and the Eyes; and if these latter are denominated the mirror of the soul, the Teeth may be considered as the thermometer of health, and the principal ornament of the face. He who should be so happy as to discover an infallible means of always preserving them healthy and beautiful, would certainly make a discovery in-

* Popular Essay on the Structure, Formation, and Management of the Teeth: by Mr. Fuller. London, printed 1815.

finitely more valuable to mankind, than that which is now offered to the public: then, the number of evils which precede, accompany, or follow, the loss of the natural Teeth, would disappear from the catalogue of complaints which afflict the human race. But, unhappily, all the researches that have been made on this subject, have hitherto remained fruitless, because, in the present state of our knowledge, we cannot foresee the disorganization of the Teeth."*

Mr. Murphy only states the fact, and gives a history of its progress, in the following words: (Page 76.)

"No medicine has yet been discovered, which will prevent caries of the Teeth, or which will effectually operate as a cure, nor is the cause from which it originates, positively ascertained.

"As caries is liable to commence on every part of a Tooth, except the fangs, it sometimes begins on parts of the Teeth which are difficult to get at, in order to

* Advice to Mothers and Nurses, on the Prevention and Cure of those Diseases which attend the first Dentition: by N. De Chemant. London, printed 1816.

apply any thing to arrest its progress; such as on the sides of the necks, or on the sides of the bodies of such Teeth as are in close contact with a neighbouring Tooth.

"The molares are much more subject to decay, than any of the other Teeth."*

Some other authors (for example, the Chevalier Ruspini and Son) ascribe caries to many causes, as expressed in the following quotations: (Page 55.)

"Various are the species of *caries;* almost every part of the Teeth is affected by it, and both internal and external causes produce it. A *caries*, may be divided into soft, superficial, deep, and dry: it attacks the root the *neck*, or the *crown*, of the Teeth.

"The *Caries* that proceeds from internal causes, namely, the scurvy, &c. *generally* affects the root of the Tooth, often the internal surface, sometimes the external, and even the inward cavity of the body."†

* Natural History of the Human Teeth, with a Treatise on their Diseases, from Infancy to Old Age: by Joseph Murphy. London, printed 1811.

† Treatise on the Teeth: by Barth Ruspini. London, printed 1784.

"When we reflect on the important purposes which the Teeth are destined to serve in the animal economy, we cannot but regret their premature destruction, arising from various diseases in the Teeth and the adjoining parts, by which these useful agents are rendered unserviceable, or, perhaps, totally lost. Many of these diseases are produced by the carelessness and inattention of the individual, and might be easily prevented; or when the disease has commenced, if proper assistance were called, in due time, it might be easily removed."*

Mr. Wooffendale's opinion for the imperfect appearances of the Teeth, is thus delivered:

"These indentures and yellow marks of the human Teeth are more common at this period, than formerly; to account for which, I have been at some pains, and, I believe, my endeavours have not been in vain, to ascertain a cause.

"I have frequently seen these marks on both the first and second sets of Teeth,

* Observations on the Teeth: by J. B. Ruspini. London, printed 1816.—(Page 3.)

which causes me to suspect such children have had the small pox twice."*

Mr. Gerbeaux, of Paris, thus expresses his opinion: (Page 54.)

"People who inhabit marshy, cold, and moist countries, have rarely fine Teeth.

"If, to this unfavourable local situation, are superadded the use of the pipe and the habit of chewing tobacco, the Teeth commonly become of a yellowish brown colour, deformed and shaking; the gums get diseased, and the *toute ensemble* of the mouth offers the most diagreeable appearance.

"It ought, therefore, perhaps, to be remarked, that diseased Teeth, among many individuals, originate in an organic disposition, which may be transmitted hereditarily from fathers to their children."†

However climate or temperature may act on the soft parts of the body, it can never produce any permanent change on the Teeth. Its influence can only extend to the surrounding parts, and may give rise

* Observations on the Teeth: by Mr. Wooffendale. Printed 1783.

† Observations on the most frequent Diseases incidental to the Mouth, &c. &c. &c. by Gerbeaux. Printed 1802.

to inflammation, which would only affect the Teeth as a remote cause, and not excite any primary action upon them.

The last opinion to be animadverted upon, is that of Mr. Bew, in his recent work, as containing a doctrine dangerous in the extreme, as far as it regards the management of the Teeth; being that which considers the origin of their diseases, particularly caries, as arising from lateral pressure of the Teeth on each other. On this subject, he expresses himself as follows: (Page 22.)

"In offering this portion of my opinion on the maladies incidental to the Teeth, I am well aware, that, by rending the veil from a treatment I have long contemplated in theory, and reduced to practice, with the happiest success, during many years, I tread on ground untrodden before, and offer a wide field for the contemplation of the philosopher, in the anatomy and pathology of these organs of mastication. All will be open to their investigation; and

should I, in the scale of their more profound inquiry, be 'tried and found wanting in the balance,' the success of the practice will plead my apology for the crime of innovation; and, by having drawn wiser heads than my own to the consideration, 'a good end may be gained to a bad beginning;' but should the theory, through their analization, like pure gold come forth from the furnace, neither wanting in weight nor value, my rejoiced spirit 'shall applaud to the very echo that shall applaud again,' the happy thought which led to the promulgation.

"To those who only casually glance at the Teeth primary or permanent, with healthy gums, fitly arranged in their several sockets, for the purposes of mastication, aided by the conviction of sight and feeling, that they are the hardest substances in our system, how inexplicable and irreconcilable to credibility must it appear, that these *very hard* substances, with their *flinty coatings*, date their destruction from completion, by *lateral pressure against each other?*"*

* Opinions on the Causes and Effects of Diseases in the Teeth and Gums: by Charles Bew. London, printed 1819.

This opinion or discovery, however important in the author's mind, who supposes that nature acts, with regard to the Teeth, in a different manner from what she does in any other part of the system, by extending their growth beyond due bounds, is certainly incorrect: if this does not take place in the soft parts, capable of an easy extension, surely it is not likely to take place in the hardest. The doctrine is contrary to the laws of the animal economy; and, wherever the circumstance appears, it may be considered as a deviation from the ordinary course of nature.

Caries begins most frequently between the Teeth, because the accumulation of the morbid matter, where it is most readily detained and allowed to act, has full liberty to exert its influence, owing to its not being duly removed, or prevented from collecting and accreting. Mr. Bew, therefore, only mistakes the *cause*, though correct in regard to the most frequent *seat* of disease, in the greater number of instances.

Extract from the Medico Chirurgical Journal; or, London Medical and Surgical Review, April, 1820.

"The importance which is now attached by the public to DENTAL pathology, is sufficiently evinced by the great segregation from the body of the profession, and the concentration of talent and respectability in this exclusive line of practice.

"The general expression of public feeling would appear to indicate that division of labour in the medical, as well as in every other art, tends to accelerate its progress towards perfection. The senses of sight and hearing are now separately studied, and the diseases of them claimed by their respective cultivators; and it is highly probable that, ere a century elapses, we shall have the stomach, the lungs, the liver, the kidneys, and the brain, each the foundation of a distinct professorship, at least in the metropolis and the larger cities of the empire. Yet, when we consider how intimately the various internal organs are associated in function, and how necessary it is, that the whole body should be carefully studied, in order to comprehend the struc-

ture and office of a part, we are induced to discountenance this system of exclusive organology, since we are confident that it opens a wide field for the exercise of that wretched practice of *demi charlatanism* which is the disgrace, the bane, and almost the ruin of our science! We have seen so much of this in our professional pilgrimage, especially in private practice, that we shall take an early opportunity of introducing some severe, but, we hope, just strictures on certain disingenuous manœuvres, too often employed by men who ought to remember the dignity of the science they profess. These remarks are not levelled against any particular class of practitioners, but against the *trick of trade*, wherever it exists, and by whomsoever practised. In short, we consider that a neglect of the almost divine precept conveyed in the motto of our Journal,* is the worst evil existing in the medical profession, and that which stands in the greatest need of reform. But more of this hereafter.

"We believe with Mr. Bell, that the vital organization of the Teeth is a generally

* "Nec tibi quid liceat sed quid fecisse decebit
"Occurrat mentemque domat respectus honesti." CLAUD.

received doctrine among those physiologists who have paid most attention to the subject." "Yet, as we very frequently see caries in two contiguous Teeth, it is desirable that the circumstance should be accounted for."

"Mr. Parmly, an ingenious and expert Dentist, of this metropolis, maintains, in his work and lectures on the Teeth, that external agents are the principal causes of decay; and his apparatus for removing all impurities from their surface, we have found extremely useful, and can, therefore, recommend it."

I trust it is now sufficiently evident, that the premature decay of the Teeth, is the consequence of uncleanliness, which acts upon them in the same manner as on other parts, by sapping and corroding the vital energy, and thereby causing them to moulder away.

Where the Teeth are kept literally clean, no disease will ever be perceptible. Their structure will equally stand the summer's heat and winter's cold, the changes of

climate, the variation of diet, and even the diseases to which the other parts of the body may be subject from constitutional causes. The opinions I have now suggested, on this important subject, are founded on practical experience.

If, then, health can be improved and disease averted, by means so easy and simple, if the growth of the body and the enjoyment of life and comfort can be so materially promoted in like manner; if the symmetry of the countenance, the improvement of the voice, and a more complete enunciation can also be effected by means so easily attainable, who would not be tempted steadily to adopt this plan, thereby establishing in their highest perfection, a mind unfettered by constant sources of irritation, and a body impervious to those tortures, which, with all the vigour of electric shocks, are darted through the medium of the nervous system, from one disordered spot to the remotest part of the frame, distressing in childhood, miserable in youth, and agonising in manhood.

LECTURE THIRD.

After the considerations which have been offered in the preceding pages, it may be interesting to know, that by judicious treatment, innumerable inconveniences attendant on dentition, may be obviated in the beginning of life, and imperfections remedied at a more advanced period, by the appropriate operations of a skilful and discriminating Dentist.

The protrusion of the Teeth, or what is usually termed dentition, is an effort in which nature has many struggles for effecting the absorption of the investing membrane, the alveolar processes, and the gum, to make way for their passage, and establish

their final character. By these efforts, they sometimes advance too rapidly, which occasions a strong tension and pressure on the membrane and gum, and produces pain and irritation in the surrounding parts.

In order to prevent these sufferings, the Gum should be daily rubbed with the finger and a little fine salt, for several weeks before the Teeth appear, and as soon as they are perfected, the strictest attention should be paid to cleaning them with the apparatus which has been recommended in this work.

But where these unpleasant circumstances have already taken place for want of due precaution, an early recourse to the lancet is the safest expedient, and the only one to be depended on, for removing every distressing and dangerous symptom, with which dentition may be attended.

It is further to be remembered, that during dentition a more than usual attention should be paid to the state of a child's stomach, and alimentary canal, the particulars

of which rest more with the Physician than the Dentist.

Practice and experience will render easy of use, the apparatus I have devised, and which, without arrogating too much credit to myself, I may pronounce more effective than any which has yet been offered to the world; and its simplicity enhances its value. If constantly used, the accumulation of tartar is obviated, and the lodgment of all offensive matter prevented.

Instead of this simple manual operation for the removal of tartar, many dentists have employed chymical solvents, without considering that in proportion as they remove the tartar, they must, at the same time, act on the enamel itself; for since the tartar contains phosphate of lime, as well as the enamel, whatever tends to destroy the one in its more loose state, must also tend, if not to destroy, greatly to injure the texture of the other. Such means, therefore, though apparently simple, are to be

strongly condemned, and no judicious practitioner will ever venture on the use of them.

In the removal of tartar, the benefit to the Teeth arises chiefly from the particular situation it has occupied.

If it collect in the interstices of the Teeth, or round their necks, it is here that it chiefly does mischief, by destroying the connexion between the Tooth and Gum, and finally occasioning the loss of the former.

A quantity of tartar collected on the crown of a Tooth is unsightly, and spoils its natural character, although it does no injury to its texture; on the contrary, it forms a sort of protection to it: hence caries can never attack the crown of a Tooth so defended, but when this covering is removed, and the same neglect goes on as before, the Tooth is more prone to rapid decay than if the tartar had never been removed. This circumstance, which is undeniable, has been urged as a strong reason against the re-

moval of tartar; but it would certainly be a poor excuse for allowing our bodies to be covered with filth, to maintain that it may tend to keep us warm.

The best effects will always attend the removal of this noxious accretion, if once properly and carefully performed, and a system of cleanliness afterwards persevered in, will supersede any future necessity for the operation, and may be completely effected by the constant use of the apparatus under consideration.

I shall now proceed to consider another operation, which has been much abused, and is more general than any other among practical Dentists—I mean the *extraction* of Teeth, an operation which cannot fail justly to create some alarm when the circumstances attending it are considered. We know that, in the hands of the most dexterous operators, it has sometimes been attended with serious, nay, even fatal consequences; and therefore it should be avoided

wherever in our power, instead of being adopted, as too often happens, in the first instance. There is, perhaps, a greater share of manual dexterity necessary in performing it, than is generally imagined, to prevent fracturing that portion of the socket where the fang is situated, and if the alveolar process is uncommonly firm, and does not yield to the force of the instrument directed against it, the fracture will extend a considerable way into the jaw, and the effects of it may injure the patient for life. The operation is sometimes followed by a most dangerous hemorrhage, which, in many cases, has defied every effort of the most experienced Surgeons. Nor is the profuse loss of blood the only frightful cause of death from the difficult extraction of a Tooth, for the fatal event has often been occasioned by nervous exhaustion from the operation, when no unusual loss of blood has occurred.

As these consequences can never be foreseen, and depend on the size, situation,

and form of the Tooth, the distribution of the blood vessels and nerves, and certain peculiarities in the habit of the patient, this operation of extracting should never be performed needlessly, or trusted to the hands of the rash and uninstructed. Indeed, I would limit its exercise either to the preventing or remedying irregularity in the arrangement of the permanent or second set of Teeth, and to some peculiar instances of disease in the *Maxillary Sinus*, or to Teeth having ulcerated fangs. In all other cases, it is objectionable, whatever pain the patient may feel, and however ready he may be to submit to such a measure.

Whenever extraction becomes necessary, I have made it a rule to perform it in a different manner from that generally adopted, so as to avoid the fracture of the socket, and thus evade any dangerous consequences that may attend it.

In support of the justice of my argu-

ments against this operation, I will explain the common method of extracting with the instrument in general use.

Previous to fixing the key, or claw, as it is termed, it is common to separate the connexion between the Tooth and Gum, with a common lancet; after which, the fulcrum of the instrument, resting upon the socket on one side, and its claw, embracing the Tooth, on the other, while one hand of the Operator keeps it in this situation, his other hand, applied to the handle, turns it round, thus raising and drawing laterally the diseased Tooth, which makes part of the socket to give way.

On the removal of the Tooth, the soft parts are brought together, attention to avoid the effects of cold is enjoined, and nature is allowed to repair the injury which the jaw or socket has sustained.

The consequences which I have shown to follow this operation will, I hope, deter every person from submitting to it, unless

where it is pronounced eligible by a skilful Dentist.

It forms, however, a chief part of the business of all the low and uneducated practitioners, more fitly ycleped Tooth Drawers, throughout the world; and the success of their practice is generally estimated by the number of Teeth displayed either in their windows or travelling boxes, for captivating the vulgar; many of these mouldering treasures having descended from generation to generation with the family talent for Tooth drawing, and being of course carefully cleared of the frightful portions of bone which have been torn with them, in one common mass, from the jaw of the sufferer, while no records are kept of the ulcerated Gums which long existed after these injuries; nor of the numerous splinters of bone, which, for many months after, tormented the patient, by forcing their way through the soft parts of the mouth; nor of the sponginess and fungous excrescences

of the cheek, or jaw-bones, which have dragged down youth and vigour to a premature grave, constituting sacrifices to ignorance and brutality, and warnings of the dangers of impatience.

This picture, which is by no means heightened, will, I hope, impress the importance and necessity of early attention to preserving the Teeth and Gums in their original and healthy condition, that the danger of their loss, by extraction, may be avoided; and that all the painful circumstances preceding this event, may not be an inducement to submit, without reflection, to so harsh and severe a measure.

Having shown that I consider the extraction of Teeth eligible to a very limited extent only, from the dangerous consequences attending it, I have now to speak of an operation, intended to supersede extraction, which may be termed *mending* or *capping* carious Teeth—an operation which I have found uniformly successful; and it must be

consolatory to know, that diseased or carious Teeth may be completely repaired and retained by judicious treatment.

The operation is performed with such exactness as entirely to escape detection.—Thus, the same Teeth which another practitioner would have removed, are, by my plan, rendered useful and ornamental through life, and the several diseases prevented which arise from imperfect mastication. This operation I conceived at first would only be successful in a few cases; but much experience enables me now to perform it with complete success, in situations where it did not then appear practicable. It is of consequence, however, that as soon as a Tooth is discovered to be carious, this remedy should be resorted to without delay. The progress of decay will thus be immediately checked, and all the accompanying symptoms of pain, irritation, and tainted breath, suspended. Previous to performing it, however, if an inflammatory state of the Gums

prevail, it should be allowed to subside, and it may, in the mean time, be lessened or removed by an application to the cavity of the Tooth of some powerful aromatic and sedative combination.

To such perfection have I carried the mode of operating, in these cases, that even where the whole crown of a Tooth is entirely gone, the deficiency may be supplied, in a permanent manner, without employing the common means, either of metallic matter, or of ligature, as is usual with Dentists.

ARTIFICIAL TEETH.

If the Teeth are of importance to our health and attributes, at every period of life, their premature loss demands a remedy, since the expression of the countenance is thereby changed, the process of mastication rendered imperfect, and distinct enunciation entirely obviated. The mouth is not the

only feature of which the symmetry is destroyed by loss of the Teeth; for all the others participate in the failure of support which these organs furnished. The margins of the Gums become flattened, and the roof of the mouth daily less arched. The nose loses its support; the fall beneath the forehead is lengthened; the upper jaw and cheek form a concavity; the lower jaw is drawn upwards, and the lips inwards. The principal muscles of the face having their fibres placed nearly at right angles with the mouth, occasion the two latter alterations, whilst wrinkles are contracted over the whole countenance, in various directions, by the remaining muscles, owing entirely to the want of that support which the Teeth afforded.

The necessity for, and the advantage of, Artificial Teeth, is, therefore, so obvious, as to stand in need of no further argument.

My present object will be, to show that my peculiar mode of supplying this defect,

is preferable to any at present known or practised, in point of appearance, personal convenience, and real service.

The substance of which they are formed, is of the most durable texture, and such as may be depended on for not changing colour, so that their natural character is maintained to the last. On no part of the dental art has so much ingenuity and real labour been bestowed, without complete success, as on this; and its perfection consists in the Teeth being exactly adapted to the mouth, and worn at the same time with perfect convenience to the individual.

The chief difficulty of Dentists has hitherto existed in their mode of supporting Artificial Teeth, which has been by means of ligatures, or springs, attached to the natural Teeth, or, by a pivot, to the fang of a lost Tooth.

Ligatures are sure to loosen the adjacent Teeth, and the pivot soon wears away the fang. Thus, the artificial crown becoming

loose, it drops out, and, besides inconvenience to the possessor, often gives rise to very ludicrous occurrences.

Further: this awkward contrivance, by allowing a lodgment of particles of food, occasions the breath to receive a taint unpleasant to the individual, as well as those who are near him. For these reasons, I have, for many years, abandoned this objectionable practice, and am able to secure Artificial Teeth, without any unpleasant expedients. The method is entirely new, and every one who witnesses its advantages, will acknowledge the merits of it.

When the Teeth in each jaw are nearly all lost, it is necessary that an artificial socket should be formed for their insertion, by taking a mould of their risings and depressions, and every point along the surface of the jaw.

If accurately fitted, speech and mastication will be properly exercised, and no

sort of inconvenience experienced by the wearer.

Where, however, from irregularity of the jaw, surfaces are not adapted minutely to each other, it may be supported by springs, to which habit soon reconciles the wearer, the parts acquiring, with time, a decrease of sensibility, and no uneasiness is felt.

Artificial Teeth have been objected to chiefly on account of their colour differing from that of the human Teeth; but this has been caused, in a great measure, by the unfitness of the substances from which they have been formed. The material generally preferred has been the Tooth of the Hippopotamus, which possesses durability and fine enamel, but too much whiteness for the natural character of the human Teeth. These, however, are preferable, but a strong popular prejudice prevails against the use of them, from an idea that various diseases may be introduced into the system by such means. To obviate objections of this kind,

I have had recourse to a safe and durable substitute, equal, by its several advantages, to the human Teeth, in those of certain Quadrupeds smaller than the Hippopotamus, and possessing, at the same time, a finer enamel.

A successful practice of many years sets the superiority of this method beyond a doubt, and its value will be best appreciated by comparison with the practice commonly adopted.

Besides the substances alluded to, Artificial Teeth have been formed of what has been termed "Mineral Paste," which is a substance similar to fine porcelain; and it is impossible, in this place, that I can pass unnoticed the very extraordinary degree of perfection to which this curious art has lately been brought, by the merits and exertions of Mons. Maury, of Paris, who has succeeded in imitating nature with an exactness of which no language can convey an adequate idea.

An operation, long since devised by the late Mr. Hunter, is now entirely laid aside, namely, that of transplanting human Teeth. It consists in extracting the diseased Tooth, and substituting another in its place. The operation is extremely limited, being confined to only the front Teeth, or those having single fangs.

With a view to success, the Tooth to be substituted must be instantly transferred from the mouth of the individual who submits to the sacrifice, to its intended situation, and there properly fixed until it acquires a firm position in the socket. The failure of this operation in the greater number of cases, has occasioned it to be laid aside, as the adhesion of the Tooth, in its proper situation, depends on a variety of minute circumstances; for example, the substituted Tooth must be rather smaller than the one extracted. The extraction also must be so carefully made, as not to produce any material injury to the socket; and, lastly, both

parties must be of a healthy constitution, that the process of healing or adhesion may readily take place. Hence, after undergoing this painful operation, and submitting to the penance of a fluid regimen for some weeks, it has too often proved unsuccessful, and cases are notorious, in which, after it has been considered successful, very grievous diseases have been introduced into the system.

Experience has now fully proved, that the duration of these Teeth is limited to a very few years. In favour of the operation, however, Mr. Hunter has adduced a variety of arguments to show, that disease cannot be inoculated into the system by such means; but facts are not wanting to prove the reverse, and any explanation on the principle of common irritation, to account for its numerous varied and even fatal consequences, cannot do away the just and well grounded prejudice that attaches to this practice.

It was, notwithstanding, an ingenious speculation on the part of Mr. Hunter, and

showed what the powers of the system are capable of doing in the reparation of disorganized parts.

OF IRREGULARITY OF THE TEETH.

In the preceding pages, it has been my strong recommendation, that particular attention should be paid to the period of shedding the Teeth, or that when the first set begin to give way, and the second come forward to fill their places. The want of this attention is the great cause why irregularities of the Teeth, and consequent deformity of the mouth, are apt to take place; a circumstance which may always be prevented, if parents were sufficiently informed on the subject.

The regular inspection of the Dentist, at the critical period of shedding, will save this inconvenience, and its disgusting appearance. Until deformity is conspicuous from this cause, it is seldom that profes-

sional aid is called, and this is frequently delayed so long that it is a matter of difficulty, and even more commonly of impossibility, to rectify the fault.

To give examples of these irregularities, we may observe, that, where the permanent Teeth are large, and the growth of the jaw does not proceed in a corresponding proportion, they are found to crowd and overlap each other. It is then observable, that the central incisores of the upper jaw are often so pressed forward, and show such prominence, as to render the mouth of the person more like that of a quadruped in shape than that of the highest subject of animal nature. Wherever the space of the jaw appears too much confined, and does not allow a regular arrangement of the Teeth, one or more ought to be removed to give room for their expansion. This should be done before the fangs are formed, and one or more of the bicuspides may, with incalculable advantage, become a sacrifice on

this occasion. When the bicuspides are removed, the front Teeth must be forced, in a gradual manner, into their natural situation. If early attended to, the occasional pressure of the thumb and finger will be sufficient to place them properly; and all instruments to produce a continued pressure, as recommended by Mr. Fox, and others, should be avoided.

Wherever supernumerary Teeth exist, they cause an irregular cavity, by confining the space of the jaw. Such Teeth are of a deformed shape, and protrude generally in the upper jaw. If within, they show themselves in front, and if without, near the molares; being always conspicuous, and making a disagreeable appearance, they should, as soon as possible, be extracted.

A species of irregularity may be properly noticed in this place, being one that most frequently occurs to disfigure the character of the Teeth; namely, that of one being longer than the other, or where they pre-

sent ragged edges. In this way, the front Teeth are often so irregular as to resemble the edge of a saw.

The consequence of this species of irregularity is, much irritation and even inflammation of those parts which come in contact with their serrated edges; and the defect should be remedied by the Dentist, since it is easily done, without any unpleasant sensation; and I have materially improved the instruments which are applicable to such purposes.

This operation is highly useful to the preservation of the Teeth, by its preventing any further cracking or separation of the enamel, besides its improving their shape. A prejudice has long prevailed against the operation, from an idea that the removal of part of the enamel is followed by a decay of the Teeth; but such will never take place, provided the cavity remains untouched, even if a large portion of the Tooth be removed; and the truth of

this assertion is evident, where the enamel suffers from accident, or is removed by filing, in order to take away a carious part. Nay, it is a practice with many of the Eastern nations, to file away considerable parts of Teeth, in order to give them a particular shape; and wherever they do not interfere with the cavity of a Tooth, its health and soundness are unimpaired. In fact, the prejudice against this operation arises more from the unpleasant manner in which it is commonly done, than from danger of its consequences. By a method, peculiar to myself, I have the satisfaction to state, that no one has experienced either inconvenience or pain from it.

OF FRACTURES OF THE TEETH.

As the Teeth stand in a prominent and exposed situation, they are as liable to injury by accident as bones in other parts of the body. They are frequently driven

out by pugilistic exercises, by boys in their quarrels, by balls in the field of battle, and various other causes. Convulsive attacks, the grinding our Teeth in unsound sleep, and even mastication, will produce partial fracture, where they are not in the best condition; the extent of the injury must, of course, regulate the treatment.

Where the fracture only affects the point of a Tooth, a file will soon smooth the surface, and render it uniform.

The management of more serious accidents must be regulated by their nature and extent: and the ingenuity of the Dentist will be shown in repairing the defects, without any unseemly appearance or injury to the speech; upon which circumstances the perfection of his art will depend.

OF CRACKS OF THE ENAMEL.

This disease seems to arise from the too frequent and violent action of the cutting

edges of the Teeth upon each other, and is confined principally to the incisores.

The loss of the back Teeth is in a great measure the occasion of it, by rendering the act of mastication to depend chiefly on the incisores. The appearance they thus assume is something like caries, but it is caused only by the enamel parting from the bone, and extends no farther than the outer surface, being neither attended with inflammation, or any degree of softness.

The remedy here is to cut away the disfigured part, and leave the edges somewhat rounded.

The Teeth, like other kinds of bone, are at times apt to waste away by exposure. This waste begins by attacking the enamel, where a small portion appears as if scooped out or filed away. This, for want of a more definite term, is called the *denuding process.*

As it increases, the bone is laid bare, and the Tooth becomes discoloured, taking on a brownish hue, and appearing still smooth

and polished, in which state it will often continue for years. By this process some Teeth have the anterior part of their enamel entirely removed, and the bony part remains prominent, but still without any exposure of the natural cavity. At the same time, however, in consequence of their wanting a part of their natural investment, the Teeth become tender in their sensation, and are influenced by every change of atmospheric temperature. From my own experience, I have been led to believe, that this disease, with very few exceptions, is produced by the use of lotions and other applications, of which acids form a principal part, and the opinion may be regarded as one which gives considerable weight to my perfect conviction, that the most simple plan of treating the Teeth, in their natural state, is the most eligible; or, in other words, that benefit is alone to be expected from a strict and rigid observance of cleanliness.

WEARING OF THE TEETH.

Though the Teeth, from their natural structure, are much stronger and more compact than any other kind of bone, yet, from their exercise in mastication, and the friction which occurs from other movements, to say nothing of the chymical influence of food, they experience considerable mechanical alterations, and, in part, are literally worn away, as is particularly instanced when the cutting edges of the incisores of the upper jaw meet the corresponding ones of the under jaw, instead of overlapping them as they ought to do.

Where the back Teeth are decayed or lost, this process sometimes takes place to such an extent, that the whole crown of each Tooth is worn away; and where the mischief is not so extensive, the Teeth are rendered morbidly sensible, and at times give much pain, which, however, is gradu-

ally lessened as ossific matter becomes deposited in the natural cavities.

If the deposition of indurating matter take place favourably, the Tooth acquires a firmness of structure nearly equal to that of the enamel, and hence, after the age of fifty, any further decay rarely happens.

OF DISEASES OF THE GUMS.

From the connexion between the Tooth and Gum, no affection of the one can occur without communicating its influence to the other.

Hence decayed Teeth, irritating and inflaming the vessels of the Gums, occasion a preternatural organization, constituting excrescences or tumours of various sizes.

To remedy this evil, the irritating edges of the Tooth must be taken away, and the fang repaired, in doing which, the slight hemorrhage which occurs reduces the Gum, and arrests its fungous growth. Still, how-

ever, disease of this nature sometimes occurs without any evident cause, when it becomes necessary to pay strict attention to the general health. Where a soft vascular growth is conspicuous, such tumours are removed either by the knife or ligature. The latter is the safest practice, as not endangering so great a loss of blood as may take place by the former.

Another species of tumour at times affects the Gums, which is always the consequence of a diseased jaw-bone, and may be distinguished by a particular softness and disposition to bleed. The removal of the diseased portion of bone is here the only remedy, and if connected with a carious state of the fangs of a Tooth, the extraction of them will be the first step towards the cure, which should be followed by such applications as may promote an exfoliation of the disordered portion of bone.

OF ARTIFICIAL PALATES.

A misfortune formerly very frequent, and which requires the art of the Dentist, is an opening between the mouth and nose by the loss of the palate. This loss equally affects articulation and the use of nutriment. A thin plate of gold or silver, adapted with extreme nicety to the opening, and secured by a piece of sponge connected with it, is the best remedy for this inconvenience.

Artificial Palates have been so improved of late, as to fit without the use of a sponge; but wherever there is a necessity for such a contrivance, it ought to be frequently removed, for the purpose of being cleaned with the utmost nicety.

OF LIGATURES.

Whenever a tooth becomes loose, it has been usual to give it an artificial support by

ligature, until nature shall have completed the process of its adhesion to the connecting parts.

An accumulation of tartar, an absorption of the alveolar processes, and various accidents, may give rise to diseases of this kind.

In adjusting a ligature, much caution is required not to reduce the adjoining Teeth, over which it is passed, to the same state of looseness, and thus increase the evil.

It is fit to observe that, in many cases, the success of this practice is very doubtful, and therefore should be seldom employed. At all events, let an experienced Dentist be consulted.

During the application of ligatures for accidental looseness, the patient should be kept on a fluid regimen until the process of adhesion be completed. But, for many years, I have laid aside the use of ligatures altogether, and employed a method infinitely preferable, by its safety. which is my own

DISEASE OF THE MAXILLARY SINUS.

The inflammation of the upper jaw, from diseased Teeth, or other causes, often extends to the investing membrane, lining the maxillary sinus. The marks of this inflammation of the membrane are, a deep throbbing pain, situated, as it were, at the roots of the upper molares. As it proceeds, the eye, nose, and ear become affected, and as suppuration advances, the cavity is filled with matter, which commonly destroys the neighbouring bone.

In mild cases of this kind, the matter, though formed, will often continue long confined without much perceptible injury; although latent mischief, of a serious nature, may be appehended from its absorption, when in a putrescent state.

The disease is often difficult to ascertain, but when this is done, the discharge of the matter is the first step to be taken; for

which purpose, the molaris, or grinding Tooth, lying immediately under the maxillary cavity, must be extracted, and a small trochar passed through the socket into the Sinus. This passage should be kept open for some time, and injections thrown up until the discharge ceases altogether.

There are other causes of disease in the Maxillary Sinus, which belong strictly to the province of Surgery.

Having now concluded my brief sketch of the various objects which constitute the study, the duties, the practice, and the qualifications of a Dentist, who, by due attention to the whole, may bring credit to himself by the alleviation of pain and suffering, (for, certainly, that mysterious labyrinth of nature, the Nervous System, has few points so frequently assailed by pain and its attendant grievances, as those which branch into the Teeth,) I humbly beg leave to observe, that the motive by which I have been actuated was solely a wish to

be useful, by informing the sufferer that considerable relief may be in store for him when his case seems hopeless, and by awaking the apathy of parents from inattention, to what they suspect not in infancy, may become a source of calamity in manhood.

MR. PARMLY, being desirous that his peculiar treatment of the Teeth, his operations and general views of the subject, should become as widely diffused as possible, for the common benefit of Society, undertakes to qualify gentlemen of liberal education for practice, as Dentists, on the following terms:

For practice in London, ...	$1000
In any other City of Great Britain or America, ...	700
For foreign practice, ...	500

These terms apply solely to a finished course of instruction, including every particular of the Art with which he is acquainted.

MR. PARMLY's

PATENT APPARATUS

FOR CLEANING THE TEETH, ALLUDED TO IN THIS WORK, COMPREHENDS,

1. A Brush, which cleans, at once, the upper, the outer, and the inner surfaces of the Teeth.

2. A Polisher, for removing extraneous matter from the enamel or bone, without injury—the composition of which is peculiarly his own.

3. Prepared Silk, for cleaning the interstices and the necks of the Teeth, where the lodgment of the smallest quantity of impure matter irritates the gums, taints the breath, and is the chief cause of caries and other diseases.

4. Glasses for examining the inner surfaces of the Teeth; with trifling conveniences, which it is not necessary to enumerate.

The whole contained in a small pocket case.